IBM i

Systems management
Performance reference information

7.1

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Note

Before using this information and the product it supports, read the information in "Notices," on page 267.

This edition applies to IBM i 7.1 (product number 5770-SS1) and to all subsequent releases and modifications until otherwise indicated in new editions. This version does not run on all reduced instruction set computer (RISC) models nor does it run on CISC models.

Contents

Reference information for Performance

Additional reference materials related to performance.

Collection Services data files

You can generate database files from the collection objects maintained by Collection Services. Use this topic to find the names, descriptions and attributes of these database files.

Performance data is a set of information about the operation of a system (or network of systems) that can be used to understand response time and throughput. You can use performance data to make adjustments to programs, system attributes, and operations. These adjustments can improve response times and throughputs. Adjustments can also help you to predict the effects of certain changes to the system, operation, or program.

Collection Services collects performance data into a management collection object (*MGTCOL). The Create Performance Data (CRTPFRDTA) command processes data from that collection object and stores the result into performance database files.

Additional field information, such as number of bytes and buffer position, is available by using the Display File Field Description (DSPFFD) command. For example, type the following on any command line:

```
DSPFFD file(QSYS/QAPMCONF)
```

Related information:

Collection Services
Use Collection Services to collect performance data for later analysis.

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance database files.

Display File Field Description (DSPFFD) command
See the Display File Field Description (DSPFFD) command for information on how to display field information.

Collection Services data files containing time interval data

These files contain performance data that is collected each interval.

Collection Services data files: QAPMAPPN

This database file defines the fields in the Advanced Peer-to-Peer Networking (APPN) data file record.

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command	PD (5,0)
DTETIM	Interval date (yymmdd) and time (hhmmss): The date and time of the sample interval	C (12)
INTSEC	Elapsed interval seconds: The number of seconds since the last sample interval	PD (7,0)
ANTGU	Total number of transmission group (TG) updates processed	PD(11,0)

Field Name	Description	Attribute
ATTGU	Cumulative time (in milliseconds) to process the TG updates	PD(11,0)
ANTGUM	Number of TG updates that require one or more resources to be added to the topology database update (TDU) buffer	PD(11,0)
ANRATG	Number of resources added to TDU buffers due to TG update processing	PD(11,0)
ANTSTG	Number of TDUs sent as a result of initially creating a TDU buffer on behalf of TG updates	PD(11,0)
ANNTTG	Number of network nodes that had TDUs sent to them due to TDUs being created for TG update processing	PD(11,0)
ANNCTC	Total number of node congestion transition changes processed	PD(11,0)
ATNCTC	Cumulative elapsed time for processing congestion transition changes	PD(11,0)
ATRSNC	Number of times that topology routing services (TRS) entered into non-congested state	PD (11,0)
ATRSC	Number of times that TRS entered into congested state	PD (11,0)
ATNCS	Cumulative elapsed time (in milliseconds) that the system was in non-congested state	PD(11,0)
ATCS	Cumulative elapsed time (in milliseconds) that the system was in congested state	PD (11,0)
ATSCP	Number of TDUs sent as a result of initially creating a TDU buffer on behalf of node congestion processing	PD (11,0)
ANTSCP	Number of network nodes that had TDUs sent to them due to TDUs being created for node congestion processing	PD (11,0)
ANTDUP	Total number of received TDUs processed by this node	PD (11,0)
ATTDUP	Cumulative elapsed time for processing the received TDUs	PD (11,0)
ANNRTD	Number of new resources received in TDUs that cause resources to be added to the TDU buffer	PD (11,0)
ANORTN	Number of old resources received in TDUs that do not require a resource to be added to the TDU buffer	PD (11,0)
ANORTA	Number of old resources received in TDUs that do require resources to be added to the TDU buffer	PD (11,0)
ANTSRT	Number of TDUs sent as a result of initially creating a TDU buffer on behalf of processing a received TDU	PD (11,0)
ANNTST	Number of network nodes that had TDUs sent to them due to TDUs being created for processing received TDUs	PD (11,0)
ACNTID	Network ID of the node that received the most TDUs within the interval	C (8)
ACCPNM	Control point (CP) name of the node that received the most TDUs within the interval	C (8)
ANTRFN	Number of TDUs received this interval by the node that received the most TDUs in the interval	PD (11,0)

Field Name	Description	Attribute
ANITEP	Total number of initial topology exchanges processed by this node	PD (11,0)
ATPIE	Cumulative elapsed time for processing the initial exchange	PD (11,0)
ANTECT	Number of times the initial topology exchange caused the complete network node topology to be sent	PD (11,0)
ANTDE	Total number of entries in the entire topology database (this value is not a delta)	PD (11,0)
ANTERS	Number of resources (nodes and TGs) added to the TDU buffer due to initial topology exchange	PD (11,0)
ANTETS	Number of TDUs sent as a result of initial topology exchange	PD (11,0)
ANGCP	Number of times that obsolete topology entries were removed	PD (11,0)
ATGCP	Cumulative elapsed time for removing the obsolete topology entries	PD (11,0)
ANTEDG	Number of topology entries that were deleted	PD (11,0)
ANTGC	Number of TDUs that were sent when obsolete topology entries were deleted	PD (11,0)
ANNTGC	Number of network nodes that had TDUs sent to them when obsolete topology entries were removed	PD (11,0)
ANRRP	Total number of registration requests processed	PD (11,0)
ANNLRR	Total number of locations processed with the registration requests	PD (11,0)
ATPRR	Cumulative elapsed time to process registration requests	PD (11,0)
ANDRP	Total number of deletion requests processed	PD (11,0)
ANLDDR	Total number of locations deleted with deletion requests	PD (11,0)
ATPDR	Cumulative elapsed time to process deletion requests	PD (11,0)
ANCNAP	Total number of requests to change network attributes processed	PD (11,0)
ATCNA	Cumulative elapsed time to process requests to change network attributes	PD (11,0)
ANDDRC	Number of times the directory database was deleted and re-created due to processing the requests to change network attributes	PD (11,0)
ANLRSC	Number of location registration requests sent due to processing the requests to change network attributes	PD (11,0)
ANLDSC	Number of location deletion requests sent due to processing the requests to change network attributes	PD (11,0)
ANTDRC	Number of times the topology database was deleted and re-created due to processing the requests to change network attributes	PD (11,0)
ANCART	Number of times the requests to change network attributes caused a node entry resource to be added to the TDU buffer	PD (11,0)
ANTSTC	Number of TDUs sent as a result of initially creating a TDU buffer on behalf of requests to change network attributes	PD (11,0)

Field Name	Description	Attribute
ANNTSC	Number of network nodes that had TDUs sent to them due to TDUs being created for processing requests to change network attributes	PD (11,0)
ANDAII	Number of times APPN information was displayed (DSPAPPNINF command)	PD (11,0)
ANLLUP	Total number of local location list updates processed	PD (11,0)
ATLLUP	Cumulative elapsed time to process the local location list updates	PD (11,0)
ANLRSL	Number of location registration requests sent due to local location list updates	PD (11,0)
ANLDLL	Number of location deletion requests sent due to local location list updates	PD (11,0)
ANRLUP	Total number of remote location list updates processed	PD (11,0)
ATRLUP	Cumulative elapsed time to process the remote location list updates	PD (11,0)
ANMDUP	Total number of mode description updates processed by APPN	PD (11,0)
ATMDUP	Cumulative elapsed time to process the mode description updates	PD (11,0)
ANCSUP	Total number of class-of-service updates processed by APPN	PD (11,0)
ATCSUT	Cumulative elapsed time to process the class-of-service (COS) update by TRS	PD (11,0)
ATCSUC	Cumulative elapsed time to process the COS update by the CPMGR task	PD (11,0)
ANCSSA	Number of contention CP-CP session setups attempted	PD (11,0)
ANCSSS	Number of contention CP-CP session setups successful	PD (11,0)
ANRRS	Total number of registration requests sent	PD (11,0)
ANLRRR	Total number of locations registered with registration requests	PD (11,0)
ATSRR	Cumulative elapsed time to send registration requests	PD (11,0)
ANSTC	Number of single-hop route requests made to TRS for contention CP session setup	PD (11,0)
ANSTCS	Number of single-hop route requests made to topology routing services (TRS) for contention CP session setup that were successful	PD (11,0)
ATSTCS	Cumulative elapsed time for processing single-hop route requests on behalf of contention CP session setups	PD (11,0)
ANARMC	Number of activate-route requests made to MSCP for contention CP session setups	PD (11,0)
ANSARM	Number of successful activate-route requests processed by MSCP for contention CP session setups	PD (11,0)
ATARMC	Cumulative elapsed time for activate-route requests on behalf of contention CP session setups	PD (11,0)
ANTDSC	Number of requests made to the T2 SIOM to perform device selection on behalf of contention CP session setups	PD (11,0)

Field Name	Description	Attribute
ATTDSC	Cumulative elapsed time for device selection processing to complete on behalf of contention CP session setups	PD (11,0)
ANDSS	Number of device selection requests that were successful on behalf of contention CP session setups	PD (11,0)
ATCCSA	Cumulative elapsed time for processing contention CP session activation requests	PD (11,0)
ANLSAP	Number of contention CP session activations processed	PD (11,0)
ANCST	Number of contention CP-CP session ends	PD (11,0)
ATCST	Cumulative elapsed time for processing contention CP-CP session ends	PD (11,0)
ANLST	Number of contention CP-CP session ends	PD (11,0)
ATLST	Cumulative elapsed time for processing contention CP-CP session ends	PD (11,0)
ANCWSA	Number of winning CP-CP sessions currently active (this is not a delta)	PD (11,0)
ANCLSA	Number of losing CP-CP sessions currently active (this is not a delta)	PD (11,0)
ANCDRR	Number of data-received requests processed (CP capabilities)	PD (11,0)
ANCBDR	Number of bytes of data received (CP capabilities)	PD (11,0)
ATCDRR	Cumulative elapsed time for processing the data-received requests (CP capabilities)	PD (11,0)
ANCSDR	Number of send-data requests processed (CP capabilities)	PD (11,0)
ANCBDS	Number of bytes of data sent through the send-data requests (CP capabilities)	PD (11,0)
ATCSDR	Cumulative elapsed time for processing the send-data requests (CP capabilities)	PD (11,0)
ANTDRR	Number of data-received requests processed (topology database update)	PD (11,0)
ANTBDR	Number of bytes of data received (topology database update)	PD (11,0)
ATTDRR	Cumulative elapsed time for processing the data-received requests (topology database update)	PD (11,0)
ANTSDR	Number of send-data requests processed (topology database update)	PD (11,0)
ANTBDS	Number of bytes of data sent through the send-data requests (topology database update)	PD (11,0)
ATTSDR	Cumulative elapsed time for processing the send-data requests (topology database update)	PD (11,0)
ANDDRR	Number of data-received requests processed (directory search)	PD (11,0)
ANDBDR	Number of bytes of data received (directory search)	PD (11,0)
ATDDRR	Cumulative elapsed time for processing the data-received requests (directory search)	PD (11,0)
ANDSDR	Number of send-data requests processed (directory search)	PD (11,0)

Field Name	Description	Attribute
ANDBDS	Number of bytes of data sent by send-data requests (directory search)	PD (11,0)
ATDSDR	Cumulative elapsed time for processing send-data requests (directory search)	PD (11,0)
ANRDRR	Number of data-received requests processed (registration/deletion)	PD (11,0)
ANRBDR	Number of bytes of data received (registration/deletion)	PD (11,0)
ATRDRR	Cumulative elapsed time for processing data-received requests (registration/deletion)	PD (11,0)
ANRSDR	Number of send-data requests processed (registration/deletion)	PD (11,0)
ANRBDS	Number of bytes of data sent through send-data requests (registration/deletion)	PD (11,0)
ATRSDR	Cumulative elapsed time for processing send-data requests (registration/deletion)	PD (11,0)
Local system initiated sessions		
ANWAP1	Total number of work activities of this type processed	PD (11,0)
ATWAP1	Cumulative elapsed time to complete work activities of this type	PD (11,0)
ATWAS1	Total number of work activities of this type that yielded a successful result	PD (11,0)
ASSSA1	Number of session setup attempts satisfied through an existing APPN session	PD (11,0)
AASNA1	Number of APPC session requests satisfied by using non-APPN device descriptions	PD (11,0)
ASPAC1	Number of session setup requests that require APPN control point services for directory, route selection, and device selection processing	PD (11,0)
ASPSP1	Number of session setup requests that are placed in pending due to another session setup being in progress for the same local location, remote location, and mode	PD (11,0)
ASLNS1	Number of searches that the local end node satisfied locally (that is, without sending a search to its network node (NN) server)	PD (11,0)
AS1HS1	Number of one-hop search requests sent by the end node (EN)	PD (11,0)
A1HSS1	Number of searches satisfied by the end node by sending one-hop search requests	PD (11,0)
ASSBN1	Number of searches satisfied by sending a bind directly to an attached network node server (because the end node has no CP-CP session to a server)	PD (11,0)
ASFNS1	Number of searches that failed because of no network services being available for the local end node	PD (11,0)
ATILP1	Cumulative elapsed time required for the locate phase initiated by the end node to complete	PD (11,0)
ANSSL1	Number of searches satisfied locally (using the topology database or the directory services (DS) database and finding an entry for an end node that does not support CP sessions)	PD (11,0)

Field Name	Description	Attribute
ANIHS1	Number of one-hop search requests sent by the network node	PD (11,0)
ANSS11	Number of searches satisfied by the network node by sending one-hop search requests	PD (11,0)
ANDSS1	Number of directed searches sent	PD (11,0)
ASSDS1	Number of searches that were satisfied by sending directed searches	PD (11,0)
ATDSR1	Cumulative elapsed time for directed search responses to be received	PD (11,0)
ANDBE1	Number of domain broadcasts that have been run	PD (11,0)
ANNDB1	Number of nodes that these domain broadcasts have been sent to	PD (11,0)
ATRDB1	Cumulative elapsed time for the first positive response to be returned on domain broadcasts	PD (11,0)
ATLRD1	Cumulative elapsed time for the last response to be returned on domain broadcasts	PD (11,0)
ASSDB1	Number of searches that were satisfied by sending a domain broadcast	PD (11,0)
ANBSE1	Number of broadcast searches that have been run	PD (11,0)
ANNBS1	Number of adjacent nodes that these broadcast searches have been sent to	PD (11,0)
ATRBS1	Cumulative elapsed time for the first positive response to be returned on broadcast searches	PD (11,0)
ATLRB1	Cumulative elapsed time for the last response to be returned on broadcast searches	PD (11,0)
ANSBS1	Number of searches that were satisfied by sending a broadcast search	PD (11,0)
ATSPR1	Cumulative elapsed time from the start of search processing on the local node until a positive response has been returned to the local user	PD (11,0)
ATSPC1	Cumulative elapsed time from the start of search processing until the local directory services task has completed all processing for the request. This measurement takes into account the time required to process domain broadcast or broadcast search responses even though a positive response has already been sent back to the local user	PD (11,0)
AN1HT1	Number of single-hop route requests made to topology routing services (TRS)	PD (11,0)
AS1HT1	Number of single-hop route requests made to TRS that were successful	PD (11,0)
AT1HC1	Cumulative elapsed time for processing single-hop route requests	PD (11,0)
ANRRT1	Number of request-route requests made to TRS	PD (11,0)
ASRRT1	Number of request-route requests made to TRS that were successful	PD (11,0)
ATRRT1	Cumulative elapsed time for processing request-route requests	PD (11,0)

Field Name	Description	Attribute
AARRM1	Number of activate-route requests made to machine services control point (MSCP)	PD (11,0)
AARCV1	Number of activate-route requests that require a controller description to be automatically created and/or varied on by the system	PD (11,0)
ATRCV1	Cumulative elapsed time for automatic creation and/or vary on of the controller to be processed	PD (11,0)
ASARR1	Number of successful activate-route requests processed by MSCP	PD (11,0)
ATARP1	Cumulative elapsed time for processing activate-route requests by MSCP	PD (11,0)
ARDS1	Number of requests made to the T2 SIOM to perform device selection	PD (11,0)
ATDS1	Cumulative elapsed time for device selection processing to complete	PD (11,0)
ADSS1	Number of device selection requests that were successful	PD (11,0)
Receiver of search requests as an end node		
ANWAP2	Total number of work activities of this type processed	PD (11,0)
ATWAP2	Cumulative elapsed time to complete work activities of this type	PD (11,0)
ATWAS2	Total number of work activities of this type that yielded a successful result	PD (11,0)
Network node performing search requests on behalf of an end node		
ANWAP3	Total number of work activities of this type processed	PD (11,0)
ATWAP3	Cumulative elapsed time to complete work activities of this type	PD (11,0)
ATWAS3	Total number of work activities of this type that yielded a successful result	PD (11,0)
ANSSL3	Number of searches satisfied locally (by referring to the topology database or by using the directory services database and finding an entry for an end node that does not support control point sessions)	PD (11,0)
ANIHS3	Number of one-hop search requests sent by the network node	PD (11,0)
ANSS13	Number of searches satisfied by the network node by sending one-hop search requests	PD (11,0)
ANDSS3	Number of directed searches sent	PD (11,0)
ASSDS3	Number of searches that were satisfied by sending directed searches	PD (11,0)
ATDSR3	Cumulative elapsed time for directed search responses to be received	PD (11,0)
ANDBE3	Number of domain broadcasts that have been run	PD (11,0)
ANNDB3	Number of nodes that these domain broadcasts have been sent to	PD (11,0)
ATRDB3	Cumulative elapsed time for the first positive response to be returned on domain broadcasts	PD (11,0)

Field Name	Description	Attribute
ATLRD3	Cumulative elapsed time for the last response to be returned on domain broadcasts	PD (11,0)
ASSDB3	Number of searches that were satisfied by sending a domain broadcast	PD (11,0)
ANBSE3	Number of broadcast searches that have been run	PD (11,0)
ANNBS3	Number of adjacent nodes that these broadcast searches have been sent to	PD (11,0)
ATRBS3	Cumulative elapsed time for the first positive response to be returned on broadcast searches	PD (11,0)
ATLRB3	Cumulative elapsed time for the last response to be returned on broadcast searches	PD (11,0)
ANSBS3	Number of searches that were satisfied by sending a broadcast search	PD (11,0)
ATSPR3	Cumulative elapsed time from the start of search processing on the local node until a response has been returned to the local user or remote system that initiated the search process on the local system	PD (11,0)
ATSPC3	Cumulative elapsed time from the start of search processing until the local directory services task has completed all processing for the request. This measurement takes into account the time required to process domain broadcast or broadcast search responses even though a positive response has already been sent back to the local user or remote system that initiated a search	PD (11,0)
ANRRT3	Number of request-route requests made to TRS	PD (11,0)
ASRRT3	Number of request-route requests made to TRS that were successful	PD (11,0)
ATRRT3	Cumulative elapsed time for processing request-route requests	PD (11,0)
Intermediate node on a directed search request		
ANWAP4	Total number of work activities of this type processed	PD (11,0)
ATWAP4	Cumulative elapsed time to complete work activities of this type	PD (11,0)
ATWAS4	Total number of work activities of this type that yielded a successful result	PD (11,0)
Network node that is the destination node of a directed search request		
ANWAP5	Total number of work activities of this type processed	PD (11,0)
ATWAP5	Cumulative elapsed time to complete work activities of this type	PD (11,0)
ATWAS5	Total number of work activities of this type that yielded a successful result	PD (11,0)
ANSSL5	Number of searches satisfied locally (by referring to the topology database or by using the directory services database and finding an entry for an end node that does not support control point sessions)	PD (11,0)
ANIHS5	Number of one-hop search requests sent by the network node	PD (11,0)

Field Name	Description	Attribute
ANSS15	Number of searches satisfied by the network node by sending one-hop search requests	PD (11,0)
ANDBE5	Number of domain broadcasts that have been run	PD (11,0)
ANNDB5	Number of nodes that these domain broadcasts have been sent to	PD (11,0)
ATRDB5	Cumulative elapsed time for the first positive response to be returned on domain broadcasts	PD (11,0)
ATLRD5	Cumulative elapsed time for the last response to be returned on domain broadcasts	PD (11,0)
ASSDB5	Number of searches that were satisfied by sending a domain broadcast	PD (11,0)
Network node processing a received-broadcast-search request		
ANWAP6	Total number of work activities of this type processed	PD (11,0)
ATWAP6	Cumulative elapsed time to complete work activities of this type	PD (11,0)
ATWAS6	Total number of work activities of this type that yielded a successful result	PD (11,0)
ANSSL6	Number of searches satisfied locally (by referring to the topology database or by using the directory services database and finding an entry for an end node that does not support control point sessions)	PD (11,0)
ANIHS6	Number of one-hop search requests sent by the network node	PD (11,0)
ANSS16	Number of searches satisfied by the network node by sending one-hop search requests	PD (11,0)
ANDBE6	Number of domain broadcasts that have been run	PD (11,0)
ANNDB6	Number of nodes that these domain broadcasts have been sent to	PD (11,0)
ATRDB6	Cumulative elapsed time for the first positive response to be returned on domain broadcasts	PD (11,0)
ATLRD6	Cumulative elapsed time for the last response to be returned on domain broadcasts	PD (11,0)
ASSDB6	Number of searches that were satisfied by sending a domain broadcast	PD (11,0)
Network node processing a received-search request from a node in a non-System i® network		
ANWAP7	Total number of work activities of this type processed	PD (11,0)
ATWAP7	Cumulative elapsed time to complete work activities of this type	PD (11,0)
ATWAS7	Total number of work activities of this type that yielded a successful result	PD (11,0)
ANSSL7	Number of searches satisfied locally (by referring to the topology database or by using the directory services database and finding an entry for an end node that does not support control point sessions)	PD (11,0)
ANIHS7	Number of one-hop search requests sent by the network node	PD (11,0)
ANSS17	Number of searches satisfied by the network node by sending one-hop search requests	PD (11,0)

Field Name	Description	Attribute
ANDSS7	Number of directed searches sent	PD (11,0)
ASSDS7	Number of searches that were satisfied by sending directed searches	PD (11,0)
ATDSR7	Cumulative elapsed time for directed search responses to be used	PD (11,0)
ANDBE7	Number of domain broadcasts that have been run	PD (11,0)
ANNDB7	Number of nodes that these domain broadcasts have been sent to	PD (11,0)
ATRDB7	Cumulative elapsed time for the first positive response to be returned on domain broadcasts	PD (11,0)
ATLRD7	Cumulative elapsed time for the last response to be returned on domain broadcasts	PD (11,0)
ASSDB7	Number of searches that were satisfied by sending a domain broadcast	PD (11,0)
ANBSE7	Number of broadcast searches that have been run	PD (11,0)
ANNBS7	Number of adjacent nodes that these broadcast searches have been sent to	PD (11,0)
ATRBS7	Cumulative elapsed time for the first positive response to be returned on broadcast searches	PD (11,0)
ATLRB7	Cumulative elapsed time for the last response to be returned on broadcast searches	PD (11,0)
ANSBS7	Number of searches that were satisfied by sending a broadcast search	PD (11,0)
ATSPR7	Cumulative elapsed time from the start of search processing on the local node until a response has been returned to the remote system that initiated the search process on the local system	PD (11,0)
ATSPC7	Cumulative elapsed time from the start of search processing until the local directory services task has completed all processing for the request. This measurement takes into account the time required to process domain broadcast or broadcast search responses even though a positive response has already been sent back to the remote system that initiated a search	PD (11,0)
ANRRT7	Number of request-route requests made to topology routing services (TRS)	PD (11,0)
ASRRT7	Number of request-route requests made to topology routing services (TRS) that were successful	PD (11,0)
ATRRT7	Cumulative elapsed time for processing request-route requests	PD (11,0)
Network node processing a received-bind request from a node in the System i network without routing information		
ANWAP8	Total number of work activities of this type processed	PD (11,0)
ATWAP8	Cumulative elapsed time to complete work activities of this type	PD (11,0)
ATWAS8	Total number of work activities of this type that yielded a successful result	PD (11,0)

Field Name	Description	Attribute
ASPSP8	Number of session setup requests that are placed in pending status due to another session setup being in progress for the same local location, remote location, and mode	PD (11,0)
ANSSL8	Number of searches satisfied locally (by referring to the topology database or by using the directory services database and finding an entry for an end node that does not support control point sessions)	PD (11,0)
ANIHS8	Number of one-hop search requests sent by the network node	PD (11,0)
ANSS18	Number of searches satisfied by the network node by sending one-hop search requests	PD (11,0)
ANDSS8	Number of directed searches sent	PD (11,0)
ASSDS8	Number of searches that were satisfied by sending directed searches	PD (11,0)
ATDSR8	Cumulative elapsed time for directed search responses to be used	PD (11,0)
ANDBE8	Number of domain broadcasts that have been run	PD (11,0)
ANNDB8	Number of nodes that these domain broadcasts have been sent to	PD (11,0)
ATRDB8	Cumulative elapsed time for the first positive response to be returned on domain broadcasts	PD (11,0)
ATLRD8	Cumulative elapsed time for the last response to be returned on domain broadcasts	PD (11,0)
ASSDB8	Number of searches that were satisfied by sending a domain broadcast	PD (11,0)
ANBSE8	Number of broadcast searches that have been run	PD (11,0)
ANNBS8	Number of adjacent nodes that these broadcast searches have been sent to	PD (11,0)
ATRBS8	Cumulative elapsed time for the first positive response to be returned on broadcast searches	PD (11,0)
ATLRB8	Cumulative elapsed time for the last response to be returned on broadcast searches	PD (11,0)
ANSBS8	Number of searches that were satisfied by sending a broadcast search	PD (11,0)
ATSPR8	Cumulative elapsed time from the start of search processing on the local node until a response has been returned to the local system to allow the bind processing to continue	PD (11,0)
ATSPC8	Cumulative elapsed time from the start of search processing until the local directory services task has completed all processing for the request. This measurement takes into account the time required to process domain broadcast or broadcast search responses even though a positive response has already been sent back to the local system to allow the bind processing to continue	PD (11,0)
ANRRT8	Number of request-route requests made to topology routing services (TRS)	PD (11,0)

Field Name	Description	Attribute
ASRRT8	Number of request-route requests made to TRS that were successful	PD (11,0)
ATRRT8	Cumulative elapsed time for processing request-route requests	PD (11,0)
AARRM8	Number of activate-route requests made to machine services control point (MSCP)	PD (11,0)
AARCV8	Number of activate-route requests that require a controller description to be automatically created and/or varied on by the system	PD (11,0)
ATRCV8	Cumulative elapsed time for automatic creation and/or vary on of the controller to be processed	PD (11,0)
ASARR8	Number of successful activate-route requests processed by MSCP	PD (11,0)
ATARP8	Cumulative elapsed time for processing activate-route requests by MSCP	PD (11,0)
Network node processing a received-bind request from a node in a non-System i network without routing information		
ANWAP9	Total number of work activities of this type processed	PD (11,0)
ATWAP9	Cumulative elapsed time to complete work activities of this type	PD (11,0)
ATWAS9	Total number of work activities of this type that yielded a successful result	PD (11,0)
ASPSP9	Number of session setup requests that are placed in pending status due to another session setup being in progress for the same local location, remote location, and mode	PD (11,0)
ANSSL9	Number of searches satisfied locally (by referring to the topology database or by using the directory services database and finding an entry for an end node that does not support control point sessions)	PD (11,0)
ANIHS9	Number of one-hop search requests sent by the network node	PD (11,0)
ANSS19	Number of searches satisfied by the network node by sending one-hop search requests	PD (11,0)
ANDSS9	Number of directed searches sent	PD (11,0)
ASSDS9	Number of searches that were satisfied by sending directed searches	PD (11,0)
ATDSR9	Cumulative elapsed time for directed search responses to be received	PD (11,0)
ANDBE9	Number of domain broadcasts that have been run	PD (11,0)
ANNDB9	Number of nodes that these domain broadcasts have been sent to	PD (11,0)
ATRDB9	Cumulative elapsed time for the first positive response to be returned on domain broadcasts	PD (11,0)
ATLRD9	Cumulative elapsed time for the last response to be returned on domain broadcasts	PD (11,0)
ASSDB9	Number of searches that were satisfied by sending a domain broadcast	PD (11,0)

Field Name	Description	Attribute
ANBSE9	Number of broadcast searches that have been run	PD (11,0)
ANNBS9	Number of adjacent nodes that these broadcast searches have been sent to	PD (11,0)
ATRBS9	Cumulative elapsed time for the first positive response to be returned on broadcast searches	PD (11,0)
ATLRB9	Cumulative elapsed time for the last response to be returned on broadcast searches	PD (11,0)
ANSBS9	Number of searches that were satisfied by sending a broadcast search	PD (11,0)
ATSPR9	Cumulative elapsed time from the start of search processing on the local node until a response has been returned to the local system to allow bind processing to continue	PD (11,0)
ATSPC9	Cumulative elapsed time from the start of search processing until the local directory services task has completed all processing for the request. This measurement takes into account the time required to process domain broadcast or broadcast search responses even though a positive response has already been sent back to the local system to allow bind processing to continue	PD (11,0)
ANRRT9	Number of request-route requests made to topology routing services (TRS)	PD (11,0)
ASRRT9	Number of request-route requests made to TRS that were successful	PD (11,0)
ATRRT9	Cumulative elapsed time for processing request-route requests	PD (11,0)
AARRM9	Number of activate-route requests made to machine services control point (MSCP)	PD (11,0)
AARCV9	Number of activate-route requests that require a controller description to be automatically created and/or varied on by the system	PD (11,0)
ATRCV9	Cumulative elapsed time for automatic creation and/or vary on of the controller to be processed	PD (11,0)
ASARR9	Number of successful activate-route requests processed by MSCP	PD (11,0)
ATARP9	Cumulative elapsed time for processing activate-route requests by MSCP	PD (11,0)
Network node processing a received-bind request from a node in the System i network with routing information		
ANWAPA	Total number of work activities of this type processed	PD (11,0)
ATWAPA	Cumulative elapsed time to complete work activities of this type	PD (11,0)
ATWASA	Total number of work activities of this type that yielded a successful result	PD (11,0)
ASPSPA	Number of session setup requests that are placed in pending status due to another session setup being in progress for the same local location, remote location, and mode triplet	PD (11,0)
AARRMA	Number of activate-route requests made to machine services control point (MSCP)	PD (11,0)

Field Name	Description	Attribute
AARCVA	Number of activate-route requests that require a controller description to be automatically created and/or varied on by the system	PD (11,0)
ATRCVA	Cumulative elapsed time for automatic creation and/or vary on of the controller to be processed	PD (11,0)
ASARRA	Number of successful activate-route requests processed by MSCP	PD (11,0)
ATARPA	Cumulative elapsed time for processing activate-route requests by MSCP	PD (11,0)
Network node processing a received-bind request from a node in a non-System i network with routing information		
ANWAPB	Total number of work activities of this type processed	PD (11,0)
ATWAPB	Cumulative elapsed time to complete work activities of this type	PD (11,0)
ATWASB	Total number of work activities of this type that yielded a successful result	PD (11,0)
ASPSPB	Number of session setup requests that are placed in pending status due to another session setup being in progress for the same local location, remote location, and mode triplet	PD (11,0)
AARRMB	Number of activate-route requests made to machine services control point (MSCP)	PD (11,0)
AARCVB	Number of activate-route requests that require a controller description to be automatically created and/or varied on by the system	PD (11,0)
ATRCVB	Cumulative elapsed time for automatic creation and/or vary on of the controller to be processed	PD (11,0)
ASARRB	Number of successful activate-route requests processed by MSCP	PD (11,0)
ATARPB	Cumulative elapsed time for processing activate-route requests by MSCP	PD (11,0)

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Related information:

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance database files.

Collection Services data files: QAPMARMTRT

This database file contains information about Application Response Measurement (ARM) transaction types that are reported in the QAPMUSRTNS file.

This optional secondary file is created only when the system collects performance data for ARM transactions. The QAPMARMTRT file contains one record for each ARM transaction type that is known to the system.

Applications use ARM APIs to provide information about the progress of application-level transactions. If ARM transactions are enabled on a system, performance data for the ARM transactions from ARM applications and middleware is reported in the QAPMUSRTNS file.

You can identify the ARM transaction type by a combination of the ARM application name and the ARM application group name.

The ARM transaction type name has a prefix of "QARM" followed by a 16-character representation of an 8-byte internal ARM transaction type ID.

Field Name	Description	Attribute
ATTYP	ARM transaction type.	C (20)
ATANAME	ARM application name. **Note:** This field is in Unicode.	G (127)
ATAGNAME	ARM application group name. **Note:** This field is in Unicode.	G (255)

Note:

1. The QAPMUSRTNS file contains specific data for the first 15 transaction types for each job being reported. The rest of the data is combined in the *OTHER transaction type. However, the QAPMARMTRT file contains records for all ARM transaction types that are known to the system.
2. The ARM APIs are shipped in a disabled state. For information on how to enable ARM APIs on a system, see Enable ARM on IBM-instrumented applications.
3. Different ARM-instrumented applications and middleware products might require specific configuration steps to enable the ARM instrumentation.
4. ARM transaction data is reported only for applications which call the ARM API implementation that is shipped with the operating system.

Related reference:

"Collection Services data files: QAPMUSRTNS" on page 205
This database file contains performance data for the user-defined and Application Response Measurement (ARM) transactions.

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Related information:

Enable ARM on IBM-instrumented applications
See the Enable ARM on IBM-instrumented applications topic for information on how to information on how to enable ARM APIs on a system.

Collection Services data files: QAPMASYN

This database file includes asynchronous file entries and lists the fields in the asynchronous file.

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DTETIM	Interval date (*yymmdd*) and time (*hhmmss*): The date and time of the sample interval.	C (12)
INTSEC	Elapsed interval seconds: The number of seconds since the last sample interval.	PD (7,0)

Field Name	Description	Attribute
IOPRN	IOP resource name.	C (10)
AIOPID	Reserved	C (1)
ASTYPE	The resource type of the IOP or adapter represented by this record.	C (4)
ASLND	Line description: The name of the description for this line.	C (10)
ASLSP	Line speed: The speed of this line in bits per second (bps.)	PD (11,0)
ASBTRN	Number of bytes transmitted (data and control characters) including bytes transmitted again because of errors.	PD (11,0)
ASBRCV	Number of bytes received (data and control characters), including characters received in error.	PD (11,0)
ASPRCL	Protocol type: A for asynchronous.	C (1)
ASPDUR	The total number of protocol data units received.	PD (11,0)
ASPDUE	The total number of protocol data units received with parity and stop bit errors.	PD (11,0)
ASPDUT	The total number of protocol data units successfully transmitted and the data-circuit ending equipment (DCE) acknowledged.	PD (11,0)
ASDUP	The duplex state of the line. For some lines, this value might change over time. This field can have the following values: • Blank - The duplex state is not known. • F - Full duplex. the line can simultaneously transmit and receive data. • H - Half duplex. The line can either transmit data or receive data, but the line cannot simultaneously transmit and receive data.	C (1)

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Related information:

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance database files.

Collection Services data files: QAPMBSC

This database file includes binary synchronous file entries and lists the fields in the binary synchronous file.

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)

Field Name	Description	Attribute
DTETIM	Interval date (yymmdd) and time (hhmmss): The date and time of the sample interval.	C (12)
INTSEC	Elapsed interval seconds: The number of seconds since the last sample interval.	PD (7,0)
IOPRN	IOP resource name.	C(10)
BIOPID	Reserved	C (1)
BSTYPE	The resource type of the IOP or adapter represented by this record.	C (4)
BSLND	Line description: The name of the description for this line.	C (10)
BSLSP	Line speed: The speed of the line in bits per second (bps).	PD (11,0)
BSBTRN	Bytes transmitted: The number of bytes (data and control characters) transmitted, including bytes transmitted again.	PD (11,0)
BSBRCV	Bytes received: The number of bytes (data and control characters) received including bytes received in error.	PD (11,0)
BSPRCL	Protocol type: B for binary synchronous.	C (1)
BSDCRV	Data characters received: The number of data characters received successfully (excluding synchronous characters) while in data mode. For feature types 2507 and 6150, this value is equal to field BSBRCV.	PD (11,0)
BSDCRE	Data characters received in error: The number of data characters received with a block-check character error while in data mode. For feature types 2507 and 6150, this value is equal to field BSCRER.	PD (11,0)
BSDCTR	Data characters transmitted: The number of data characters transmitted successfully while in data mode. For feature types 2507 and 6150, this value is equal to field BSBTRN.	PD (11,0)
BSCRER	Characters received in error: The number of characters received with a block-check character error.	PD (11,0)
BSLNK	Negative acknowledgment character received to text sent (see note). The number of times the remote station or device did not understand the command sent from the host system.	PD (11,0)
BSLWA	Wrong acknowledgment character to text sent (see note). The host system received an acknowledgment from the remote device that was not expected. For example, the system expected an ACK0 and received an ACK1.	PD (11,0)
BSLQTS	Enqueue to text sent (see note): Text was sent by a station and an ENQ character was returned. The receiving station expected some form of acknowledgment, such as an ACK0, ACK1, or NAK.	PD (11,0)
BSLINV	Invalid (unrecognized format): One of the delimiter characters that encloses the data in brackets being sent/received is not valid (see note).	PD (11,0)

Field Name	Description	Attribute
BSLQAK	Enqueue to acknowledged character: The remote station returned an acknowledgment (for example, ACK0) and the host system sent an ENQ character. This indicates that the host station did not recognize the acknowledgment as a valid acknowledgment (see note).	PD (11,0)
BSLTNK	Negative acknowledgment character received to text sent (total): The number of times the remote station did not understand the command sent from the host system (see note).	PD (11,0)
BSLTWA	Wrong acknowledgment character to text sent (total): The host system received an acknowledgment from the remote device that was not expected. For example, the host system expected an ACK0 and received an ACK1 (see note).	PD (11,0)
BSLTQT	Enqueue to text sent (total): Text was sent by a station and an ENQ character was returned. The receiving station expected some form of acknowledgment such as an ACK0, ACK1, or NAK (see note).	PD (11,0)
BSLTIV	Invalid (unrecognized format) (total): One of the delimiter characters that enclose the data in brackets being sent/received is not valid (see note).	PD (11,0)
BSLTQA	Enqueue to acknowledged character (total): The remote station returned an acknowledgment (for example, ACK0) and the host station sent an ENQ character. This indicates that the host station did not recognize the acknowledgment as a valid acknowledgment (see note).	PD (11,0)
BSLDRA	Disconnect received: The remote station issued a disconnect with abnormal end. This could occur when error recovery did not succeed or the binary synchronous job was ended.	PD (11,0)
BSLEAB	End of transmission (EOT) received (abnormal end): Similar to a disconnect.	PD (11,0)
BSLDFA	Disconnect received (forward abnormal end): The host station issued a disconnect with abnormal end. This could occur when the error recovery did not succeed, or the binary synchronous job was ended.	PD (11,0)
BSLEFA	EOT received (forward abnormal end): Similar to a disconnect.	PD (11,0)
BSLDBT	Number of data blocks transmitted.	PD (11,0)
BSLDBR	Number of data blocks received.	PD (11,0)
BSLBKR	Number of data blocks transmitted again.	PD (11,0)
BSLBKE	Number of data blocks received in error.	PD (11,0)
BSLTRT	Total number of characters transmitted again, including control characters.	PD (11,0)
BSLDRT	Total number of data characters transmitted again.	PD (11,0)

Note: The counters BSLNK through BSLQAK are error recovery counters and are increased the first time the error is detected. The counters BSLTNK and BSLTQA are error recovery counters and are increased every time the error occurs. The same errors are being counted in each set of counters, so the first set indicates how many times an error was detected and the second set indicates how many retries it took to recover from the errors.

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Related information:

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance database files.

Collection Services data files: QAPMBUS

This database file includes Licensed Internal Code bus counters and lists the fields in the bus counters file.

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DTETIM	Interval date (yymmdd) and time (hhmmss): The date and time of the sample interval.	C (12)
INTSEC	Elapsed interval seconds: The number of seconds since the last sample interval.	PD (7,0)
BUIOPB	System bus number. Bus numbering begins with one. Before V4R5, bus numbering began at zero.	PD (5,0)
BUOPSR	Number of OPSTARTs received: RRCB in server storage.	PD (11,0)
BUSGLR	Signals received.	PD (11,0)
BUOPSS	Number of OPSTARTs sent.	PD (11,0)
BUSGLS	Signals sent.	PD (11,0)
BURSTQ	Restart queues sent.	PD (11,0)
BUBNAR	Occurrences of BNA received.	PD (11,0)
BUTPKT	Total packets (sent or received).	PD (11,0)
BUKBYO	Reserved	PD (11,0)
BUKBYI	Reserved	PD (11,0)
BUNOSR	Normal flow OPSTARTs received	PD (11,0)
BUNRDR	A Not ready state received	PD (11,0)
BUORQS	OPSTART requests sent	PD (11,0)
BUTIMO	Bus timeouts	PD (11,0)
BUBNAS	BNAs sent	PD (11,0)
BUQSAS	Queue space available sent	PD (11,0)
BUTYPE	Bus type. Supported values include S (SPD Bus) and P (PCI bus).	C (1)

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Related information:

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance database files.

Collection services data files: QAPMBUSINT

This file contains data for internal system buses.

The metrics supported are dependent on the instrumentation within the hardware chips. Support for a particular bus is dependent on both the type of bus as well as the chip family. Initially only the RIO HSL busses with Galaxy chip families are supported.

There may be one or more records each interval for a reported bus. The number of records as well as the metrics supported are dependent on both bus type and chip type.

The collection partition must be authorized to obtain this data (reference the "Allow performance information collection" option within the HMC partition configuration).

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DATETIME	Interval date and time. The date and time of the sample interval.	Timestamp
INTSEC	Elapsed interval seconds. The number of seconds since the last sample interval.	PD (7, 0)
BUNBR	Bus number. The hardware assigned number associated with the bus.	B (9, 0)
BUTYPE	Bus type. Supported bus types are: • 4 - RIO HSL Loop	B (4, 0)
BUDFMT	Bus data format. This field is being provided to help understand what data is instrumented by the hardware components of the bus should there be future differences.	Char (4)
BUATTR1	Bus attribute 1. The meaning of this field depends on the bus type. • Type 4: Port identifier. One record will be present for each supported port 0 = even port 1 = odd port	B (4, 0)
BUPKTSND	Packets sent.	B (18, 0)
BUPKTRCV	Packets received.	B (18, 0)
BUBYTESND	Bytes sent. **Note:** This metric is an estimate based on the number of packets and maximum byte rate.	B (18, 0)
BUBYTERCV	Bytes received. **Note:** This metric is an estimate based on the number of packets and maximum byte rate.	B (18, 0)
BUMAXRATE	Maximum byte rate. The estimated maximum rate that data may be both sent and received in bytes per second.	B (18, 0)

Field Name	Description	Attribute
BUDATA1	Reserved.	B (18, 0)
BUDATA2	Reserved.	B (18, 0)

Collection Services data files: QAPMCIOP

This database file includes communications IOP file entries and lists the fields in the communications IOP file.

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DTETIM	Interval date (yymmdd) and time (hhmmss): The date and time of the sample interval.	C (12)
INTSEC	Elapsed interval seconds: The number of seconds since the last sample interval.	PD (7,0)
IOPRN	IOP resource name	C (10)
CIIOP	Reserved	C (1)
CITYPE	The type of IOP described by this record.	C (4)
CTIPKT	Total packets transferred.	PD (11,0)
CIKBYO	Total KB transmitted from an IOP to the system across the bus.	PD (11,0)
CIKBYI	Total KB transmitted to the IOP from the system across the bus.	PD (11,0)
CIOPSR	OPSTART bus unit message received from another bus unit using normal flow.	PD (11,0)
CIOPSS	OPSTART bus unit message received from another bus unit using reverse flow method 2 (always 0).	PD (11,0)
CISGLR	Signals received.	PD (11,0)
CIOPST	OPSTARTs sent.	PD (11,0)
CISLGS	Signals sent.	PD (11,0)
CIRSTQ	Restart queues sent.	PD (11,0)
CIRQDO	DMA requests sent for output of data: The number of requests the IOP sends to the system for data to be sent from the IOP to the system across the bus.	PD (11,0)
CIRQDI	DMA requests sent for input of data: The number of requests the IOP sends to the system for data to be sent to the IOP from the system across the bus.	PD (11,0)
CIBNAR	Occurrences of BNA received.	PD (11,0)
CIPRCU	Processor utilization: The number of fixed-time intervals that this communications IOP spent in the idle state.	PD (11,0)
CIIDLC	Idle loop count (see notes): The number of times the communications IOP ran an idle loop. This is done when the IOP has no work to perform. This count is used with the idle loop time to calculate the primary IOP processor utilization in seconds.	PD (11,0)
CIIDLT	Idle loop time (see notes): The time (in hundredths of microseconds) for the primary IOP processor to run the idle loop once.	PD (11,0)

Field Name	Description	Attribute
CIRAMU	Available local storage (in bytes): The number of bytes of free local storage in the IOP. The free local storage will probably be non-contiguous because of fragmentation.	PD (11,0)
CISYSF	The total time (in milliseconds) used by the IOP for basic system function that is running in the primary IOP processor.	PD (11,0)
CICOMM	Combined processing time (in milliseconds) accounted for by all of the communication protocol tasks that are running in the primary IOP processor.	PD (11,0)
CISDLC	Processing time (in milliseconds) used by SDLC communications tasks that are running in the primary IOP processor.	PD (11,0)
CIASYN	Processing time (in milliseconds) used by asynchronous communications tasks that are running in the primary IOP processor.	PD (11,0)
CIBSC	Processing time (in milliseconds) used for bisynchronous protocol tasks that are running in the primary IOP processor.	PD (11,0)
CIX25L	Processing time (in milliseconds) used by X.25 LLC tasks that are running in the primary IOP processor.	PD (11,0)
CIX25P	Processing time (in milliseconds) used by X.25 PLC tasks that are running in the primary IOP processor.	PD (11,0)
CIX25D	Time (in milliseconds) accounted for by X.25 DLC tasks that are running in the primary IOP processor.	PD (11,0)
CILAN	LAN communications time: Total processing unit time (in milliseconds) used by token-ring network, Ethernet, frame relay, and fiber distributed data interface (FDDI) communications tasks that are running in the primary IOP processor.	PD (11,0)
CILAP	Processing time (in milliseconds) used by ISDN LAPD, LAPE, and PMI tasks that are running in the primary IOP processor.	PD (11,0)
CIQ931	Processing time (in milliseconds) used by ISDN Q.931 tasks that are running in the primary IOP processor.	PD (11,0)
CIF1ID	Subfunction 1 ID: The identifier for addition functions that may be running in the primary IOP processor.	C (2)
CIF1TM	Subfunction 1 time: The total processing unit time (in milliseconds) used by the IOP function that is running in the primary IOP processor.	PD (11,0)
CICPU2	Processor time in milliseconds for the second IO processor, which handles specialized functions. This field applies to Integrated xSeries Servers (excluding I/O adapter versions) and wireless IOPs. This field is zero for other IOPs. Collection Services will not report values for Integrated xSeries Servers.	PD (11,0)

Note:

The idle loop count and time are used to calculate the communications IOP utilization as follows:

1. Convert the product of the idle loop count times the idle loop time from hundredths of microseconds to seconds. Subtract this from the interval time, and divide the results by the interval time. For example:

   IOP Utilization = (INTSEC - (CIIDLC * CIIDLT)/10**8) / INTSEC
2. The performance monitor reports I/O processor (IOP) statistics different beginning with Version 3 Release 7. Therefore, performance statistics for IOPs introduced in Version 3 Release 7 or later releases are reported in the QAPMMIOP file. Performance statistics are reported in the QAPMMIOP file even if the IOP supports only one of the three IOP functions (communications, disk, or local workstation). Performance statistics for IOPs that were introduced before Version 3 Release 7 will continue to be reported in the appropriate IOP file (QAPMCIOP, QAPMDIOP, QAPMLIOP, and QAPMMIOP).
3. The function 1 identifier is for additional functions that may be running in the primary IOP. Each function identifier has an associated function time value. The function identifier may have the following value:

Value	Description
00	No time value supplied
11	Integrated xSeries Server pipe task (Integrated xSeries Server was previously known as file server I/O processor and FSIOP)
42	Localtalk task
43	Wireless task

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Related information:

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance database files.

Collection Services data files: QAPMDDI

This database file defines the fields in a distributed data interface (DDI) file record.

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DTETIM	Interval date (yymmdd) and time (hhmmss): The date and time of the sample interval.	C (12)
INTSEC	Elapsed interval seconds.	PD (7,0)
IOPRN	IOP resource name.	C(10)
DDIOPI	Reserved	C (1)
DITYPE	The resource type of the IOP or adapter represented by this record.	C (4)
DDLND	Line description: The name of the description for this line.	C (10)

Field Name	Description	Attribute
DDLSP	Line speed: The line speed expressed in bits per second (bps).	PD (11,0)
DLTFT	Total number of Type II frames transmitted.	PD (11,0)
DLTFR	Total number of Type II frames received.	PD (11,0)
DLIFT	Total number of I-frames transmitted.	PD (11,0)
DLIFR	Total number of I-frames received.	PD (11,0)
DLICT	Total number of I-frame character transmitted.	PD (11,0)
DLICR	Total number of I-frame characters received.	PD (11,0)
DLPRCL	Protocol type: C for DDI	C (1)
DLRFT	Total number of receive-not-ready frames transmitted.	PD (11,0)
DLRFR	Total number of receive-not-ready frames received.	PD (11,0)
DLFFT	Total number of frame-reject (FRMR) frames transmitted.	PD (11,0)
DLFFR	Total number of frame-reject (FRMR) frames received.	PD (11,0)
DLRJFR	Number of reject frames received.	PD (11,0)
DLRJFT	Number of reject frames transmitted.	PD (11,0)
DLSFT	Number of set asynchronous balanced mode extended frames transmitted.	PD (11,0)
DLSFR	Number of set asynchronous balanced mode extended frames received.	PD (11,0)
DLDFT	Number of disconnect (DISC) frames transmitted.	PD (11,0)
DLDFR	Number of disconnect (DISC) frames received.	PD (11,0)
DLDMT	Number of disconnect mode (DM) frames transmitted.	PD (11,0)
DLDMR	Number of disconnect mode (DM) frames received.	PD (11,0)
DLN2R	N2 retries end count: This count is updated when the host has attempted to contact a station n times, and the T1 timer ended n times before the station responded.	PD (11,0)
DLT1T	T1 timer end count: Number of times the T1 ended. This count is updated when the host has attempted to contact a station n times, and the T1 timer ended n times before the station responded.	PD (11,0)
DMFRV	Number of MAC frames received.	PD (11,0)
DMFCC	Number of MAC frames copied.	PD (11,0)
DMFTR	Number of MAC frames transmitted.	PD (11,0)
DMTKN	Number of MAC tokens received.	PD (11,0)
DMERR	MAC error count.	PD (11,0)
DMLFC	Lost frame count.	PD (11,0)
DMTVX	TVX expiration count.	PD (11,0)
DMNCC	Not copied count.	PD (11,0)
DMLAT	MAC late count.	PD (11,0)
DLROP	Ring operation count.	PD (11,0)
DMABE	PortA elasticity buffer (EB) errors.	PD (11,0)
DMATF	PortA LCT count: count of consecutive times the confidence test (LCT) has failed.	PD (11,0)

Field Name	Description	Attribute
DMALR	PortA reject count.	PD (11,0)
DMAEC	PortA link error monitor (LEM) count.	PD (11,0)
DMBBE	PortB elasticity buffer (EB) errors.	PD (11,0)
DMBTF	PortB LCT count: count of consecutive times the confidence test (LCT) has failed.	PD (11,0)
DMBLR	PortB reject count.	PD (11,0)
DMBEC	PortB link error monitor (LEM) count.	PD (11,0)
DMANR	Address not recognized.	PD (11,0)
DMFNC	Frame not copied.	PD (11,0)
DMTKE	Reserved	PD (11,0)
DMDUP	Duplicate address count.	PD (11,0)
DMDFR	Discarded frame count.	PD (11,0)
DMTXU	Transmit underruns.	PD (11,0)
DMRER	Recoverable errors.	PD (11,0)
DMNER	Nonrecoverable errors.	PD (11,0)
DMSIN	Spurious interruptions.	PD (11,0)

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Related information:

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance database files.

Collection Services data files: QAPMDIOP

This database file contains storage device (disk) IOP file entries.

It lists the fields in the storage device IOP file. Consider the following information in these fields:

- Device means disk.
- The idle loop count and time are used to calculate the storage device controller IOP utilization as follows:

  Convert the product of the idle loop count times the idle loop time from hundredths of microseconds to seconds. Subtract this from the interval time, and divide the result by the interval time. For example:

  IOP Utilization = (INTSEC - (DIIDLC * DIIDLT)/10**8)/INTSEC

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DTETIM	Interval date (yymmdd) and time (hhmmss): The date and time of the sample interval.	C (12)
INTSEC	Elapsed interval seconds: The number of seconds since the last sample interval.	PD (7,0)

Field Name	Description	Attribute
IOPRN	IOP resource name.	C (10)
DIIOP	Reserved	C (1)
DITYPE	IOP type.	C (4)
DIIDLC	Idle loop count: The number of times the disk controller IOP ran an idle loop. This is done when the IOP has no work to perform. This count is used with the idle loop time.	PD (11,0)
DIIDLT	Idle loop time: The time (in hundredths of microseconds) to run the idle loop once.	PD (11,0)
DITPDK	Total packets transferred.	PD (11,0)
DIKBYO	Total KB transmitted from the IOP to the system across the bus.	PD (11,0)
DIKBYI	Total KB transmitted to the IOP from the system across the bus.	PD (11,0)
DIOPSR	OPSTART bus unit message received from another bus unit using normal flow.	PD (11,0)
DIOPSS	OPSTART bus unit message received from another bus unit using reverse flow method 2 (always 0).	PD (11,0)
DISGLR	Signals received.	PD (11,0)
DIOPST	OPSTARTs sent.	PD (11,0)
DISGLS	Signals sent.	PD (11,0)
DIRSTQ	Restart queues sent.	PD (11,0)
DIRQDO	DMA requests sent for output of data: The number of requests the IOP sends to the system for data to be sent from the IOP to the system across the bus.	PD (11,0)
DIRQDI	DMA requests sent for input of data: The number of requests the IOP sends to the system for data to be sent to the IOP from the system across the bus.	PD (11,0)
DIBNAR	Occurrences of BNA received.	PD (11,0)
DIRID0	Reserved	C (8)
DISMP0	Reserved	PD (11,0)
DIQLN0	Reserved	PD (11,0)
DINRQ0	Reserved	PD (11,0)
DIRID1	Reserved	C (8)
DISMP1	Reserved	PD (11,0)
DIQLN1	Reserved	PD (11,0)
DINRQ1	Reserved	PD (11,0)
DIRID2	Reserved	C (8)
DISMP2	Reserved	PD (11,0)
DIQLN2	Reserved	PD (11,0)
DINRQ2	Reserved	PD (11,0)
DIRID3	Reserved	C (8)
DISMP3	Reserved	PD (11,0)
DIQLN3	Reserved	PD (11,0)

Field Name	Description	Attribute
DINRQ3	Reserved	PD (11,0)
DIRID4	Reserved	C (8)
DISMP4	Reserved	PD (11,0)
DIQLN4	Reserved	PD (11,0)
DINRQ4	Reserved	PD (11,0)
DIRID5	Reserved	C (8)
DISMP5	Reserved	PD (11,0)
DIQLN5	Reserved	PD (11,0)
DINRQ5	Reserved	PD (11,0)
DIRID6	Reserved	C (8)
DISMP6	Reserved	PD (11,0)
DIQLN6	Reserved	PD (11,0)
DINRQ6	Reserved	PD (11,0)
DIRID7	Reserved	C (8)
DISMP7	Reserved	PD (11,0)
DIQLN7	Reserved	PD (11,0)
DINRQ7	Reserved	PD (11,0)
DIRID8	Reserved	C (8)
DISMP8	Reserved	PD (11,0)
DIQLN8	Reserved	PD (11,0)
DINRQ8	Reserved	PD (11,0)
DIRID9	Reserved	C (8)
DISMP9	Reserved	PD (11,0)
DIQLN9	Reserved	PD (11,0)
DINRQ9	Reserved	PD (11,0)
DIRIDA	Reserved	C (8)
DISMPA	Reserved	PD (11,0)
DIQLNA	Reserved	PD (11,0)
DINRQA	Reserved	PD (11,0)
DIRIDB	Reserved	C (8)
DISMPB	Reserved	PD (11,0)
DIQLNB	Reserved	PD (11,0)
DINRQB	Reserved	PD (11,0)
DIRIDC	Reserved	C (8)
DISMPC	Reserved	PD (11,0)
DIQLNC	Reserved	PD (11,0)
DINRQC	Reserved	PD (11,0)
DIRIDD	Reserved	C (8)
DISMPD	Reserved	PD (11,0)
DIQLND	Reserved	PD (11,0)
DINRQD	Reserved	PD (11,0)

Field Name	Description	Attribute
DIRIDE	Reserved	C (8)
DISMPE	Reserved	PD (11,0)
DIQLNE	Reserved	PD (11,0)
DINRQE	Reserved	PD (11,0)
DIRIDF	Reserved	C (8)
DISMPF	Reserved	PD (11,0)
DIQLNF	Reserved	PD (11,0)
DINRQF	Reserved	PD (11,0)

Note: The performance monitor reports I/O processor (IOP) statistics different beginning with Version 3 Release 7. Therefore, performance statistics for IOPs introduced in Version 3 Release 7 or later releases are reported in the QAPMMIOP file. Performance statistics are reported in the QAPMMIOP file even if the IOP supports only one of the three IOP functions (communications, disk, or local workstation). Performance statistics for IOPs that were introduced before Version 3 Release 7 will continue to be reported in the appropriate IOP file (QAPMCIOP, QAPMDIOP, QAPMLIOP, and QAPMMIOP).

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Related information:

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance database files.

Collection Services data files: QAPMDISK

This database file includes disk file entries and contains one record for each disk resource.

Typically, there is one disk resource per disk unit except for a multipath disk unit that has multiple disk resources associated with it. The associated disk response time boundaries (in milliseconds) are reported in the QAPMCONF file in GKEY fields B1-B5.

Field Name	Description	Attribute
INTNUM	Interval number: The *n*th sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DTETIM	Interval date (*yymmdd*) and time (*hhmmss*): The date and time of the sample interval.	C (12)
INTSEC	Elapsed interval seconds: The number of seconds since the last sample interval.	PD (7,0)
IOPRN	IOP resource name	C (10)
DIOPID	Reserved	C (1)

Field Name	Description	Attribute
DSARM	Disk unit (arm) number: Specifies the unique identifier of the unit. Each actuator arm on the disk drives available to the machine represents a unit of auxiliary storage. The value of the unit number is assigned by the system when the unit is allocated to an auxiliary storage pool.	C (4)
DSTYPE	Disk unit type such as 4326 or 2105.	C (4)
DSDRN	Device resource name. Typically, there is one disk (device) resource per disk unit except for a multipath disk unit that has multiple disk resources associated with it (see note 3 on page 42).	C (10)
DSSCAN	Number of search string commands: This count is zero for disk types which do not support search string commands.	PD (5,0)
DSBLKR	Number of blocks read: Block is one sector on the disk unit.	PD (11,0)
DSBLKW	Number of blocks written: Block is one sector on the disk unit.	PD (11,0)
DSIDLC	Processor idle loop counter (see note 1 on page 41): The number of times the disk controller passed through the idle loop. This field is zero for disk types which do not have a dedicated disk processor. DSIDLC and DSIDLT are duplicated across all diskunits attached to the same disk controller.	PD (11,0)
DSIDLT	Processor idle loop time (see note 1 on page 41): The time (in hundredths of microseconds) to make one pass through the idle loop. This field is zero for disk types which do not have a dedicated disk processor. The value reported could be a multiple of the actual idle loop time. In that case, the value reported for the processor idle loop count field (DSIDLC) is reduced accordingly so that the calculated processor utilization is correct. DSIDLC and DSIDLT are duplicated across all disk units attached to the same disk controller.	PD (11,0)
DSSK1	Number of seeks > 2/3: The number of times the arm traveled more than 2/3 of the disk on a seek.	PD (11,0)

Field Name	Description	Attribute
DSSK2	Number of seeks > 1/3 and < 2/3: The number of times the arm traveled more than 1/3 but less than 2/3 of the disk on a seek.	PD (11,0)
DSSK3	Number of seeks > 1/6 and < 1/3: The number of times the arm traveled more than 1/6 but less than 1/3 of the disk on a seek.	PD (11,0)
DSSK4	Number of seeks > 1/12 and < 1/6: The number of times the arm traveled more than 1/12 but less than 1/6 of the disk on a seek.	PD (11,0)
DSSK5	Number of seeks < 1/12: The number of times the arm traveled from its current position but less than 1/12 of the disk on a seek.	PD (11,0)
DSSK6	Number of zero seeks: The number of times the access arm did not physically move on a seek request. The operation may have resulted in a head switch.	PD (11,0)
DSQUEL	Total queue elements: The number of I/O operations waiting service at sample time. This number includes the I/O operation that is in progress. Divide this by DSSMPL to get the average queue length.	PD (11,0)
DSNBSY	Number of times arm not busy: The number of times there were no outstanding I/O operations active at sample time.	PD (11,0)
DSSMPL	Number of samples taken: The number of samples taken for the DSQUEL and DSNBSY fields.	PD (11,0)
DSCAP	Drive capacity (in bytes): Total number of bytes of auxiliary storage provided on the unit for the storage of objects and internal machine functions when the auxiliary storage pool containing it is not under checksum protection. The unit reserved system space value is subtracted from the unit capacity to calculate this capacity.	PD (15,0)
DSAVL	Drive available space (in bytes): Total number of bytes of auxiliary storage space that is not currently assigned to objects or internal machine functions, and therefore is available on the unit.	PD (15,0)

Field Name	Description	Attribute
DSASP	Auxiliary storage pool number: Specifies the auxiliary storage pool to which this unit is currently allocated. A value of 1 specifies the system auxiliary storage pool. A value from 2 through 32 specifies a basic auxiliary storage pool. A value from 33 to 255 specifies an independent auxiliary storage pool. A value of 0 indicates that this unit is currently not allocated.	PD (5,0)
DSCSS	Reserved	C (2)
DSPCAP	Reserved	PD (11,0)
DSPAVL	Reserved	PD (11,0)
DMFLAG	' ' means this disk unit is not locally mirrored. 'A' means this is the designated first unit of a locally mirrored pair. 'B' means this is the designated second unit of a locally mirrored pair.	C (1)
DMSTS	Local mirroring status. 1 = active, 2 = resuming, 3 = suspended	PD (1,0)
DMIRN	Locally mirrored IOP resource name	C (10)
DMDRN	Locally mirrored device resource name	C (10)
DSRDS	Number of read data commands.	PD (11,0)
DSWRTS	Number of write data commands.	PD (11,0)
DSBUFO	Number of buffer overruns: The number of times that data was available to be read into the disk controller buffer from the disk, but the disk controller buffer still contained valid data that was not retrieved by the storage device controller. Consequently, the disk had to take an additional revolution until the buffer was available to accept data.	PD (11,0)
DSBUFU	Number of buffer underruns: The number of times that the disk controller was ready to transfer data to the disk on a write, but the disk controller buffer was empty. The data was not transferred in time by the disk IOP to the disk controller buffer. The disk was forced to take an extra revolution awaiting the data.	PD (11,0)
DSMDLN	Model Number: The model number of the disk drive.	C (4)
DSDCRH	Device cache read hits: The number of times that all of the data requested by the read operation was obtained from the device read or write cache.	PD (11,0)

Field Name	Description	Attribute
DSDCPH	Device cache partial read hits: The number of times that a portion, but not all, of the data requested by the read operation was obtained by the device read or write cache. A physical operation to the device media was required to obtain the remaining data.	PD (11,0)
DSDCWH	Controller cache write hits: The number of times that the data associated with a write operation replaces, or is combined with, existing data in the device write cache, thereby eliminating a write operation.	PD (11,0)
DSDCFW	Device cache fast writers: The number of times that space was available in the device write cache for the data associated with a write operation and a response was returned immediately.	PD (11,0)
DSDROP	Device read operations: The number of read operations issued to the device by the controller. This includes operations generated by controller for data protection (RAID) or data compression. This does not include operations generated for diagnostics and operations to access the controller reserved area that occur during this idle time.	PD (11,0)
DSDWOP	Device write operations: The number of write operations issued to the device by the controller. This includes operations generated by controller for data protection (RAID) or data compression. This does not include operations generated for diagnostics and operations to access the controller reserved area that occur during this idle time.	PD (11,0)
DSCCRH	Controller cache read hits: The number of times that all of the data requested by the read operation was obtained from the controller read or write cache.	PD (11,0)
DSPCPH	Controller cache partial read hits: The number of times that a portion of the data requested by the read operation was obtained from the controller read and write cache. An operation to the device was required to obtain the remaining data.	PD (11,0)

Field Name	Description	Attribute
DSCCWH	Controller cache writes hits: The number of times that the data associated with the write operation replaces or is combined with existing data in the controller write cache. This eliminates a write operation.	PD (11,0)
DSCCFW	Controller cache fast writes: The number of times that space was available in the controller write cache for all of the data associated with a write operation and a response was returned immediately.	PD (11,0)
DSCOMP	Compressed Unit indicator. '0' if disk data is not compressed and '1' if disk data is compressed.	C (1)
DSPBU	Physical blocks used. For compressed units, this field contains the total number of physical blocks used (written) in the device user data area. For non-compressed units, this field contains 0.	PD (11,0)
DSPBA	Physical blocks allocated. For compressed units, this field contains the total number of physical blocks committed (reserved) in the device user data area for DASD extents. This value includes all of the Physical Blocks Used. For non-compressed units, this field contains 0.	PD (11,0)
DSLBW	Logical blocks written. For compressed units, this field contains the total number of logical blocks written in the device user data area. This value represents the total amount of data written to allocated extents. For non-compressed units, this field contains 0.	PD (11,0)
DSLBA	Logical blocks allocated. For compressed units, this field contains the total number of logical blocks contained in allocated compression groups. This value represents the total sum of all allocated compression groups in the device user data area. For non-compressed units, this field contains 0.	PD (11,0)
DSPBCO	Physical blocks for compression overhead. For compressed units, this field contains the total number of physical blocks that are used for compression directory structures and reserved areas that are unavailable for storing user data. For non-compressed units, this field contains 0.	PD (11,0)

Field Name	Description	Attribute
DSFGDR	Foreground directory reads. For compressed units, this field is the number of device read operations that have been performed to read directory structures required to complete host system commands. For non-compressed units, this field contains 0.	PD (11,0)
DSFGDW	Foreground directory writes. For compressed units this is the number of device write operations that have been performed to write directory structures required to complete host system commands. For non-compressed units, this field contains 0.	PD (11,0)
DSBGDR	Background directory reads. For compressed units, this is the number of device read operations that have been performed in the management of compression directory structures, but were not immediately required to complete host system commands. For non-compressed units, this field contains 0.	PD (11,0)
DSBGDW	Background directory writes. For compressed units, this is the number of device write operations. For non-compressed units, this field contains 0.	PD (11,0)
DSFGRE	Foreground read exceptions. For compressed units, this is the number of times an additional device read operation was issued to read data that had been stored in the exception area on a compressed device (this count applies only to multi-page operations). This count reflects only those operations immediately required to complete host system commands.	PD (11,0)
DSFGWE	Foreground write exceptions. For compressed units, this field is the number of times an additional device write operation was issued to write data into the exception area on a compressed device (this count applies only to multi-page operations). This count reflects only those operations immediately required to complete host system commands. For non-compressed units, this field contains 0.	PD (11,0)

Field Name	Description	Attribute
DSFGS	Foreground sweeps. For compressed units, a sweep is the process used to store a 1-MB compression group in the correct number of sectors so there are no unused areas in the data region and no used areas in the exception region of the compression group. The number of foreground sweeps is the number of times an entire 1-MB compression group was required to be swept to complete host system commands. The sweep is needed because the data for a host system write operation does not fit into the physical space reserved. The new data does not compress as well as the data that was previously in the space. For non-compressed units, this field contains 0.	PD (11,0)
DSBGS	Background sweeps. For compressed units, a sweep is the process used to store a 1-MB compression group in the correct number of sectors so there are no unused areas in the data region and no used areas in the exception region of the compression group. The number of background sweeps is the number of times an entire 1-MB compression group was swept to maintain the compressed data storage efficiency. This count reflects only those sweeps that were not immediately required to complete host system commands. Background sweeps are intended to increase performance or increase usable capacity of drive. For non-compressed units, this field contains 0.	PD (11,0)
DSCERC	Controller simulated read cache hits: The number of times that all of the data requested by the read operation could have been, but was not, obtained from a controller read cache (not the controller write cache). This field is updated only when Extended Adaptive Cache Simulator is enabled.	PD (11,0)
DSASPN	Auxiliary storage pool resource name. Specifies the resource name of the auxiliary storage pool to which this unit is currently allocated. A value of blanks specifies the system auxiliary storage pool or a basic auxiliary storage pool.	C (10)

Field Name	Description	Attribute
DSPS	Parity set. The valid value for this field is '1' or '0'. The value of this field is '1' when the disk unit is in a parity set; otherwise, it is '0'.	C (1)
DSHAPS	High availability parity set. The valid value for this field is '1' or '0'. The value of this field is '1' when the disk unit is in a high availability parity set; otherwise, it is '0'.	C (1)
DSMU	Multipath unit. The valid value for this field is '1' or '0'. The value of this field is '1' when the disk resource represents a multipath disk unit (see note 3 on page 42); otherwise, it is '0'.	C (1)
DSIP	Initial path of multipath unit. The valid value for this field is '1' or '0'. The value of this field is '1' when the disk resource represents the initial path of a multipath disk unit; otherwise it is '0'. The initial path is the first path observed by the system. It can change after restarting the system (IPL). The resource name of the initial path can be used for reporting a multipath disk unit under a single resource name.	C (1)
DSPC	Production copy of remotely mirrored independent auxiliary storage pool. The valid value for this field is '1' or '0'. The value of this field is '1' when the disk unit is in a production copy of a remotely mirrored independent auxiliary storage pool; otherwise, it is '0'.	C (1)
DSMC	Mirror copy of remotely mirrored independent auxiliary storage pool. The valid value for this field is '1' or '0'. The value of this field is '1' when the disk unit is in a mirror copy of a remotely mirrored independent auxiliary storage pool; otherwise, it is '0'.	C (1)
DSRDT	RAID type: type of RAID parity set for this disk unit. The valid value for this field is '1' or '0'. This field only has meaning for disk units in a parity set (DSPS field set to '1'). '0' = RAID 5 parity set, '1' = RAID 6 parity set.	C (1)

Field Name	Description	Attribute
DSIOPF	Managed by IOP. The valid value for this field is '1' or '0'. The value of this field is '1' when this disk unit is attached to the disk storage adapter which is managed by IOP; otherwise, it is '0'. When data is collected by operating system versions earlier than V5R4, this field is always set to '1', because earlier versions cannot determine if the disk unit was IOP-based or not.	C (1)
DSCAT	Disk unit category. This field indicates if this disk unit has some special characteristics, which may require a special interpretation of its performance data. Each bit in this field has an independent meaning: X'00' = no special category applies X'01' = this disk unit is located in external storage media. This can also be determined by examining device type and model for this disk unit. X'02' = data on this disk unit is encrypted. X'04' = this is a virtual disk unit. This can also be determined by examining device type and model for this disk unit. X'08' = this disk unit has an alternate path.	C (1)
DSSRVT	Disk service time (see note 4 on page 42). Combined service time of all disk operations completed since last sample (milliseconds). Divide by number of read and write commands to obtain average service time. Set to zero if data is not available.	B(9,0)
DSWT	Disk wait time. Combined wait (queue) time of all disk operations completed since last sample (milliseconds). Divide by number of read and write commands to obtain average wait (queue) time. Add to disk service time to obtain disk response time. Set to zero if data is not available.	B(9,0)
DSBKCT1	Disk operations in disk response time bucket 1 (see note 5 on page 43). Number of disk operations since last sample, the response time of which was less than the first disk response time boundary.	B(9,0)

Field Name	Description	Attribute
DSBKRT1	Disk response time in disk response time bucket 1. Combined response time of all disk operations since last sample, the response time of which was less than the first disk response time boundary (milliseconds).	B(9,0)
DSBKST1	Disk service time in disk response time bucket 1. Combined service time of all disk operations since last sample, the response time of which was less than the first disk response time boundary (milliseconds).	B(9,0)
DSBKCT2	Disk operations in disk response time bucket 2 (see note 5 on page 43). Number of disk operations since last sample, the response time of which was greater than the first disk response time boundary but less than the second disk response time boundary.	B(9,0)
DSBKRT2	Disk response time in disk response time bucket 2. Combined response time of all disk operations since last sample, the response time of which was greater than the first disk response time boundary but less than the second disk response time boundary (milliseconds).	B(9,0)
DSBKST2	Disk service time in disk response time bucket 2. Combined service time of all disk operations since last sample, the response time of which was greater than the first disk response time boundary but less than the second disk response time boundary (milliseconds).	B(9,0)
DSBKCT3	Disk operations in disk response time bucket 3 (see note 5 on page 43). Number of disk operations since last sample, the response time of which was greater than the second disk response time boundary but less than the third disk response time boundary.	B(9,0)
DSBKRT3	Disk response time in disk response time bucket 3. Combined response time of all disk operations since last sample, the response time of which was greater than the second disk response time boundary but less than the third disk response time boundary (milliseconds).	B(9,0)

Field Name	Description	Attribute
DSBKST3	Disk service time in disk response time bucket 3. Combined service time of all disk operations since last sample, the response time of which was greater than the second disk response time boundary but less than the third disk response time boundary (milliseconds).	B(9,0)
DSBKCT4	Disk operations in disk response time bucket 4 (see note 5 on page 43). Number of disk operations since last sample, the response time of which was greater than the third disk response time boundary but less than the fourth disk response time boundary.	B(9,0)
DSBKRT4	Disk response time in disk response time bucket 4. Combined response time of all disk operations since last sample, the response time of which was greater than the third disk response time boundary but less than the fourth disk response time boundary (milliseconds).	B(9,0)
DSBKST4	Disk service time in disk response time bucket 4. Combined service time of all disk operations since last sample, the response time of which was greater than the third disk response time boundary but less than the fourth disk response time boundary (milliseconds).	B(9,0)
DSBKCT5	Disk operations in disk response time bucket 5 (see note 5 on page 43). Number of disk operations since last sample, the response time of which was greater than the fourth disk response time boundary but less than the fifth disk response time boundary.	B(9,0)
DSBKRT5	Disk response time in disk response time bucket 5. Combined response time of all disk operations since last sample, the response time of which was greater than the fourth disk response time boundary but less than the fifth disk response time boundary (milliseconds).	B(9,0)
DSBKST5	Disk service time in disk response time bucket 5. Combined service time of all disk operations since last sample, the response time of which was greater than the fourth disk response time boundary but less than the fifth disk response time boundary (milliseconds).	B(9,0)

Field Name	Description	Attribute
DSBKCT6	Disk operations in disk response time bucket 6 (see note 5 on page 43). Number of disk operations since last sample, the response time of which was greater than the fifth disk response time boundary.	B(9,0)
DSBKRT6	Disk response time in disk response time bucket 6. Combined response time of all disk operations since last sample, the response time of which was greater than the fifth disk response time boundary (milliseconds).	B(9,0)
DSBKST6	Disk service time in disk response time bucket 6. Combined service time of all disk operations since last sample, the response time of which was greater than the fifth disk response time boundary (milliseconds).	B(9,0)
DSSECT	Disk unit sector size.	B(4,0)
DSIOARN	Disk storage adapter (IOA) resource name.	C(15)
DSSRLN	Disk unit serial number.	C(15)
DSVAL01	Reserved	B(18,0)
DSVAL02	Reserved	B(18,0)
DSVAL03	Reserved	B(18,0)
DSVAL04	Reserved	B(18,0)
DSPTROP	Path total read operations. This is the number of read requests received by internal machine functions, which is not the same as the device read operations reported in the DSDROP field.	B(18,0)
DSPTWOP	Path total write operations. This is the number of write requests received by internal machine functions, which is not the same as the device write operations reported in the DSDWOP field.	B(18,0)
DSWWNN	World wide node name. A unique identifier representing the external storage subsystem the disk belongs to. This will be null for non-external disks.	BINCHAR(8)

Notes:

1. The idle loop count and time are used to calculate the storage device controller utilization as follows:

   Convert the product of the idle loop count times the idle loop time from hundredths of microseconds to seconds. Subtract this from the interval time, and divide the result by the interval time. For example:

Disk processor utilization = (INTSEC - (DSIDLC * DSIDLT)/10**8)/ INTSEC

2. The following formulas describe the traditional way that several of the fields in the previous table can be used to calculate utilization and service time for each arm. The preferred way is to use the DSSRVT field. For a multipath disk unit, these formulas will give the utilization and service time for each path (resource).
   - Arm utilization (DSUTL): The part of the total interval that the arm was being used for I/O operations.

     ```
     DSUTL = Arm Busy = (DSSMPL - DSNBSY)/DSSMPL
     ```

   - Arm accesses per second (DSAS): The number of reads and writes per second for this arm during the interval.

     ```
     DSAS = (DSRDS + DSWRTS)/INTSEC
     ```

   - Service time (DSSRVCT): The average time for an arm I/O operation. This includes disk controller time.

     ```
     DSSRVCT = DSUTL/DSAS
     ```

     Use the following formula to calculate the service time (DSSTM) for a multipath disk unit, where Xi is the calculated value of X for the i-th path and sum(Xi) is the sum of Xi over all paths:

     ```
     DSSTM = sum(DSSRVCTi * (DSRDSi + DSWRTSi)) / sum(DSRDSi + DSWRTSi)
     ```

     If the disk unit is managed by an IOP (DSIOPF = '1') and if the operation rate is very low, the service time calculated with this formula should be ignored. This is a calculated value based on data obtained through sampling. When the number of operations is small compared to the number of samples, the statistical error makes the result unreliable.

     The formulas shown above for disk utilization and disk service time are based on a simplified statistical model. The results produced by these formulas should only be used as an estimate.

3. Performance data is reported for each disk resource that is associated with a multipath disk unit. For a multipath disk unit, the following counters come from the device, which means that their values are duplicated for each disk resource that is reported:
   - DSIDLC - Processor idle loop count
   - DSIDLT - Processor idle loop time
   - DSSK1-6 - Number of seeks
   - DSBUFO - Number of buffer overruns
   - DSBUFU - Number of buffer underruns
   - DSDCRH - Device cache read hits
   - DSDCPH - Device cache partial read hits
   - DSDCWH - Device cache write hits
   - DSDCFW - Device cache fast writes
   - DSDROP - Device read operations (IOP-less devices only)
   - DSDWOP - Device write operations (IOP-less devices only)

   Other field values that are duplicated include disk unit capacity (DSCAP), disk unit available space (DSAVL), disk unit serial number (DSSRLN), and disk unit sector size (DSSECT).

   The arm number (DSARM) and mirror flag (DMFLAG) of a particular multipath disk unit can be used to identify the records associated with that unit.

   The device read operations (DSDROP) and device write operations (DSDWOP) fields are device level counters (duplicated for each disk resource that is reported) for IOP-less devices (DSIOPF = '0') only. If the device is managed by an IOP (DSIOPF = '1'), then these two fields contain path level counters, which means that their values are unique for each disk resource that is reported.

4. Measured service time may differ from service time calculated using formula from note 2 above, because the formula is based on a simplified statistical model.

5. For disk units managed by IOP (DSIOPF = '1'), data for disk response time buckets is measured at different level in program stack compared to data used in the formulas from note 2 on page 42 above. Because of this, differences should be expected when comparing this data with results obtained using those formulas.

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

"Collection Services data files: QAPMCONF" on page 221
This database file contains general information about the collection.

Related information:

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance database files.

Collection Services data files: QAPMDISKRB

This database file includes disk file response bucket entries and contains one record for each device resource name. It is intended to be used in conjunction with the QAPMDISK file.

This file reports separate response bucket entries for read operations and for write operations. The response times and service times are reported in microseconds. The associated disk response time boundaries (in microseconds) are reported in the QAPMCONF file in GKEY fields G1-GA.

Field Name	Description	Attribute
INTNUM	Interval number: The *n*th sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DSDRN	Device resource name. Typically, there is one disk (device) resource per disk unit except for a multipath disk unit that has multiple disk resources associated with it.	C (10)
DSRBKCTR1	Disk read operations in disk response time bucket 1. Number of read operations since last sample, the response time of which was less than the first disk response time boundary.	B (9, 0)
DSRBKRTR1	Disk response time in disk read response time bucket 1. Combined response time of all disk read operations since last sample, the response time of which was less than the first disk response time boundary (microseconds).	B (18, 0)
DSRBKSTR1	Disk service time in disk read response time bucket 1. Combined service time of all disk read operations since last sample, the response time of which was less than the first disk response time boundary (microseconds).	B (18, 0)

Field Name	Description	Attribute
DSRBKCTRnn DSRBKRTRnn DSRBKSTRnn	Disk read operations, disk response time and disk service time are repeated for a total of 11 counter sets per record.	
DSRBKCTW1	Disk write operations in disk response time bucket 1. Number of disk write operations since last sample, the response time of which was less than the first disk response time boundary.	B (9, 0)
DSRBKRTW1	Disk response time in disk write response time bucket 1. Combined response time of all disk write operations since last sample, the response time of which was less than the first disk response time boundary (microseconds).	B (18, 0)
DSRBKSTW1	Disk service time in disk write response time bucket 1. Combined service time of all disk write operations since last sample, the response time of which was less than the first disk response time boundary (in microseconds).	B (18, 0)
DSRBKCTWnn DSRBKRTWnn DSRBKSTWnn	Disk write operations, disk response time and disk service time are repeated for a total of 11 counter sets per record.	

Collection Services data files: QAPMDOMINO

This database file contains data collected by the Domino® for i5/OS category.

This file contains 1 record per interval for each Domino server active on the system.

Note: These descriptions include the name of the metric as it is found in the Domino "show stat" function.

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DTETIM	Interval date (yymmdd) and time (hhmmss): The date and time of the sample interval.	C (12)
INTSEC	Elapsed interval seconds: The number of seconds since the last sample interval.	PD (7,0)
DTECEN	Century digit: where 0 indicates 19XX and 1 indicates 20XX.	C (1)
DMSUBS	Server subsystem.	C (10)
DMJNAM	Server job name.	C (10)
DMJUSR	Server job user.	C (10)
DMJNBR	Server job number.	C (6)

Field Name	Description	Attribute
DMSRVN	Server name (first 25 characters if the name is longer than this field).	C (25)
DMSSDT	Server start date time, (yyyymmddhhmmss).	C (14)
DMDBPM	Database.BufferPool.Maximum.Megabytes: The configured maximum size for database control pools that may be used.	B (9,0)
DMDBPP	Database.BufferPool.Peak.Megabytes: Maximum amount of the buffer pool that has been used by Domino over the life of the server.	B (9,0)
DMDBPR	Database.Database.BufferPool.PerCentReadsInBuffer: Percentage of database reads present in buffer pool.	B (5,2)
DMDBCH	Database.DbCache.Hits: Number of hits to the database cache.	B (18,0)
DMDBCL	Database.DbCache.Lookups: Number of lookups to the database cache.	B (18,0)
DMNLCH	Database.NAMELookupCacheHits: Number of cache hits when doing name lookups in the server's name and address book.	B (18,0)
DMNLCL	Database.NAMELookupCacheLookups: Number of lookups in the server's name and address book.	B (18,0)
DMASPN	Platform.LogicalDisk.1.AuxStoragePool: The number of the auxiliary storage pool that includes the Domino data directory.	B (4,0)
DMASPU	Platform.LogicalDisk.1.PctUsed: Percent of total disk space used in the auxiliary storage pool that includes the Domino data directory. **Note:** This metric is calculated by the server and is based on an internal sample interval as configured for the server.	B (5,2)
DMASPB	Platform.LogicalDisk.1.PctUtil: Percent of time the drives are busy reading or writing in the auxiliary storage pool that includes the Domino data directory. **Note:** This metric is calculated by the server and is based on an internal sample interval as configured for the server.	B (5,2)
DMTRNS	Server.Trans.Total: Number of transactions.	B (18,0)
DMUSRO	Server.Users: Number of users with open sessions on the server. (This is the current value at time data was sampled.)	B (9,0)
DMUSRP	Server.Users.Peak: Peak number of concurrent users since the server was started.	B (9,0)
DMUSRT	Server.Users.Peak.Time: Time that last peak users occurred (YYYYMMDDHHMMSS).	C (14)
DMMLCP	Mail.TotalPending: Number of outbound mail messages in this server's MAIL.BOX waiting to be processed by the Domino Router job. Mail will be pending until the Router job wakes up and moves outgoing mail from MAIL.BOX to the destination mail servers. If a mail server cannot be contacted, the message will remain pending in MAIL.BOX. (This is the current value at the time data was sampled.)	B (9,0)

Field Name	Description	Attribute
DMMLWR	Mail.WaitingRecipients: Number of inbound mail messages in this server's MAIL.BOX waiting to be processed by the Domino Router job. Mail will be waiting until the Router job wakes up and moves incoming mail from MAIL.BOX into user mail files. (This is the current value at time data was sampled.)	B (9,0)
DMMLBX	Mail.Delivered: Combined number of inbound and outbound mail messages placed into this server's MAIL.BOX.	B (18,0)
DMCMCD	Domino.Command.CreateDocument: Count of 'CreateDocument' URLs that have come into the server.	B (18,0)
DMCMDD	Domino.Command.DeleteDocument: Count of 'DeleteDocument' URLs that have come into the server.	B (18,0)
DMCMED	Domino.Command.EditDocument: Count of 'EditDocument' URLs that have come into the server.	B (18,0)
DMCMOA	Domino.Command.OpenAgent: Count of 'OpenAgent' URLs that have come into the server.	B (18,0)
DMCMOB	Domino.Command.OpenDatabase: Count of 'OpenDatabase' URLs that have come into the server.	B (18,0)
DMCMOD	Domino.Command.OpenDocument: Count of 'OpenDocument' URLs that have come into the server.	B (18,0)
DMCMOF	Domino.Command.OpenForm: Count of 'OpenForm' URLs that have come into the server.	B (18,0)
DMCMOI	Domino.Command.OpenImageResource: Count of 'OpenImageResource' URLs that have come into the server.	B (18,0)
DMCMOV	Domino.Command.OpenView: Count of 'OpenView' URLs that have come into the server.	B (18,0)
DMCMSD	Domino.Command.SaveDocument: Count of 'SaveDocument' URLs that have come into the server.	B (18,0)
DMCMTU	Domino.Command.Total: Count of all URLs that have come into the server.	B (18,0)
DMRQ1M	Domino.Requests.Per1Minute.Total: Total requests over the past minute. (This is the current value at the time data was sampled.)	B (9,0)
DMNPT1	NET.*: Domino port (1 of 4) for which data is being reported. **Note:** The asterisk (*) in the node name indicates the name of the port.	C (32)
DMNBR1	NET.*.BytesReceived: Number of network bytes received for this port. **Note:** The asterisk (*) in the node name indicates the name of the port.	B (18,0)
DMNBS1	NET.*.BytesSent: Number of network bytes sent for this port. **Note:** The asterisk (*) in the node name indicates the name of the port.	B (18,0)
DMNSI1	NET.*.Sessions.Established.Incoming: Number of Incoming sessions established for this port. **Note:** The asterisk (*) in the node name indicates the name of the port.	B (9,0)

Field Name	Description	Attribute
DMNSO1	NET.*.Sessions.Established.Outgoing: Number of Outgoing sessions established for this port. **Note:** The asterisk (*) in the node name indicates the name of the port.	B (9,0)
DMN*	**Note:** The above 5 fields are repeated for ports 2, 3, and 4.	

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Related information:

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance database files.

Collection Services data files: QAPMDPS

This database file contains data port services performance data. Data port services is Licensed Internal Code (LIC) that supports the transfer of large volumes of data between a source system and one of *N* specified (switchable) target systems in a System i cluster.

Data port services, such as remote independent ASP mirroring, is used by LIC clients. There is one record per IP address per client per collection interval.

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DTETIM	Interval date (yymmdd) and time (hhmmss): The date and time of the sample interval.	C (12)
INTSEC	Elapsed interval seconds: The number of seconds since the last sample interval.	PD (7,0)
DTECEN	Century digit. 0 indicates 19xx, and 1 indicates 20xx.	C (1)
DPTYPE	Client type. The type of client that is registered to data port services: • 1 -- Remote independent ASP mirroring.	B (4,0)

Field Name	Description	Attribute
DPNAME	Client name. The name of the client registered to data port services. This name is unique for a particular client type but might not be unique across all client types. This name is defined as follows by client type: • 1 -- ASP resource name of remotely mirrored primary independent ASP.	C (10)
DPIPV	IP version. This field defines the IP version (4 or 6) for the target IP address.	B (4,0)
DPIPAD	Target IP address. The IP address of the target system. This record reports statistics for the client's communication on the connection associated with this IP address. An IP version 4 address, which is 4 bytes wide, is right-justified and padded with zeroes.	H (16)
DPIPAS	Target IP address status. The valid value for this field is 1 or 0. The value of this field is 1 if the target IP address is currently being used for messaging; otherwise, it is 0.	C (1)
DPNID	Target node ID. The node ID of the target system in the cluster.	C (8)
DPDTA1	Client data 1. Optional data provided by the client. This data is defined as follows by client type: • 1 -- ASP number of remotely mirrored primary independent ASP.	B (9,0)
DPDTA2	Client data 2. Optional data provided by the client. This data is defined as follows by client type: • 1 -- Not defined.	B (9,0)
DPDTA3	Client data 3. Optional data provided by the client. This data is defined as follows by client type: • 1 -- Not defined.	C (10)
DPDTA4	Client data 4. Optional data provided by the client. This data is defined as follows by client type: • 1 -- Not defined.	C (40)

Field Name	Description	Attribute
DPASYN	Asynchronous mode. The valid value for this field is 1 or 0. The value of this field is 1 for asynchronous mode; otherwise, this field is 0 for synchronous mode. For asynchronous mode, the client sends a message and receives an ACK back when the message is received but before it is processed by the remote client. For synchronous mode, the client sends a message and receives an ACK back after the message is received and processed by the remote client.	C (1)
DPMS	Messages sent. The number of messages sent by the client. This value is incremented when the client requests a send; it does not depend on whether the send is successful.	B (18,0)
DPAS	Acknowledgments sent. The number of acknowledgments (ACKs) sent by the client.	B (18,0)
DPNS	Negative acknowledgments sent. The number of negative acknowledgments (NACKs) sent by the client.	B (18,0)
DPMR	Messages received. The number of messages received by the client.	B (18,0)
DPAR	Acknowledgments received. The number of acknowledgments (ACKs) received by the client.	B (18,0)
DPNR	Negative acknowledgments received. The number of negative acknowledgments (NACKs) received by the client.	B (18,0)
DPMRO	Messages retried once. The number of client messages retried only once. The messages counted are those associated with a data port services initiated retry and not a TCP-initiated retry.	B (18,0)
DPMRM	Messages retried more than once. The number of client messages retried more than once. The messages counted are those associated with data port services initiated retries and not TCP-initiated retries. If a message is retried two or more times, then this value is incremented by 1.	B (18,0)
DPTMR	Total message retries. The total number of client message retries. The retries counted are data port services initiated retries and not TCP-initiated retries. If a message is retried *n* times, then this value is incremented by *n*.	B (18,0)

Field Name	Description	Attribute
DPMRR	Messages rerouted to alternate address. The number of messages rerouted to an alternate IP address because the attempt to transmit the message timed out too many times.	B (18,0)
DPMNA	Messages not acknowledged. The number of client messages sent that did not receive an ACK or NACK in response.	B (18,0)
DPMBR	Message bytes received. The number of bytes associated with messages received by the client. This does not include bytes associated with retries or ACK and NACK responses.	B (18,0)
DPMBS	Message bytes sent. The number of bytes associated with messages sent by the client. This does not include bytes associated with retries or ACK and NACK responses. This value is incremented when the client requests a send; it does not depend on whether the send is successful.	B (18,0)
DPSMS	Small messages sent. Number of messages of size less than or equal to 4K sent by the client.	B (18,0)
DPMMS	Medium messages sent. Number of messages of size greater than 4K but less than or equal to 64K sent by the client.	B (18,0)
DPLMS	Large messages sent. Number of messages of size greater than 64K sent by the client.	B (18,0)
DPSRTT	Smoothed round trip time in microseconds. Current estimate of the average round trip time up to the time the data was collected (see DTETIM field). This estimate is maintained by data port services. The round trip time is the time it takes for a client message to be sent and acknowledged successfully.	B (18,0)
DPTRTT	Total round trip time in microseconds. The sum of all of the round trip times. The round trip time is the time it takes for a client message to be sent and acknowledged successfully. Divide this value by round trips to get the average round trip time.	B (18,0)
DPRT	Round trips. The number of round trips. Divide total round trip time by this value to get average round trip time.	B (18,0)

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Related information:

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance database files.

Collection Services data files: QAPMECL

This database file includes token-ring network file entries and lists the fields in the token-ring local area network (LAN) file.

Token-ring protocol statistics are reported for active token-ring line descriptions that are associated with token-ring ports and with asynchronous transfer mode ports that support token-ring LAN emulation.

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DTETIM	Interval date (yymmdd) and time (hhmmss): The date and time of the sample interval.	C (12)
INTSEC	Elapsed interval seconds: The number of seconds since the last sample interval.	PD (7,0)
IOPRN	IOP resource name.	C(10)
EIOPI	Reserved	C (1)
ELITYPE	The resource type of the IOP or adapter represented by this record.	C (4)
ELLND	Line description: The name of the description for this line.	C (10)
ELLSP	Line speed: The line speed expressed in bits per second (bps).	PD (11,0)
ELTFT	Total number of Type II frames transmitted.	PD (11,0)
ELTFR	Total number of Type II frames received.	PD (11,0)
ELIFT	Total number of I-frames transmitted.	PD (11,0)
ELIFR	Total number of I-frames received.	PD (11,0)
ELICT	Total number of characters transmitted in all I-frames.	PD (11,0)
ELICR	Total number of characters received in all I-frames.	PD (11,0)
ELPRCL	Protocol type: E for token-ring network.	C (1)
ELRFT	Number of receive-not-ready frames transmitted.	PD (5,0)
ELRFR	Number of receive-not-ready frames received.	PD (5,0)
ELFFT	Number of frame-reject frames transmitted.	PD (5,0)
ELFFR	Number of frame-reject frames received.	PD (5,0)
ELRJFR	Number of reject frames received.	PD (5,0)
ELRJFT	Number of reject frames transmitted.	PD (5,0)
ELSFT	Number of set asynchronous balanced mode extended frames transmitted.	PD (5,0)

Field Name	Description	Attribute
ELSFR	Number of set asynchronous balanced mode extended frames received.	PD (5,0)
ELDFT	Number of disconnect frames transmitted.	PD (5,0)
ELDFR	Number of disconnect frames received.	PD (5,0)
ELDMT	Number of disconnect mode frames transmitted.	PD (5,0)
ELDMR	Number of disconnect mode frames received.	PD (5,0)
ELN2R	N2 retries end count: This count is updated when the host has attempted to contact a station n times and n times the T1 timer ended before the station responded.	PD (5,0)
ELT1T	T1 timer end count: Number of times the T1 timer ended. This count is updated when the host has attempted to contact a station n times and n times the T1 timer ended before the station responded.	PD (5,0)
EMFTR	Total frames transmitted: Total number of frames (LLC and MAC) transmitted. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (11,0)
EMFRV	Total frames received: Total number of frames (LLC and MAC) received. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (11,0)
EMMFT	MAC frames transmitted: Total number of MAC frames transmitted. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (11,0)
EMMFR	MAC frames received: Total number of MAC frames received. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (11,0)
EMRIT	Routing information frames transmitted: Total number of frames (LLC and MAC) with a routing-information field transmitted. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (11,0)
EMRIR	Routing information frames received: Total number of frames (LLC and MAC) with a routing-information field received. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (11,0)
EMLNE	Line error: Code violation of frame-check sequence error. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (5,0)
EMINE	Internal error: Adapter internal error. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (5,0)
EMBRE	Burst error: Burst of same polarity is detected by the physical unit after the starting delimiter of a frame or token. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (5,0)
EMAFE	Address-recognized indicator or frame-copied indicator error: Physical control field-extension field error. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (5,0)
EMABT	Abnormal ending delimiter: Abnormal ending delimiter transmitted because of internal error. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (5,0)

Field Name	Description	Attribute
EMLST	Lost frame: Physical trailer timer ended while IOA is in transmit stripping state. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (5,0)
EMRXC	Receive congestion: Frame not copied because no buffer was available for the IOA to receive. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (5,0)
EMFCE	Frame-copied error: The frame with a specific destination address was copied by another adapter. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (5,0)
EMFQE	Frequency error on the adapter. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (5,0)
EMTKE	Token error: The adapter that was ended by any token timer without detecting any frame or token. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (5,0)
EMDBE	Direct memory access bus error: IOP/IOA bus DMA error. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (5,0)
EMDPE	Direct memory access parity error: IOP/IOA DMA parity error. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (5,0)
EMANR	Total number of frames with address not recognized error. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (5,0)
EMFNC	Total number of frames with frame not copied error. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (5,0)
EMTSE	Total number of adapter frame transmit or frame strip process errors. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (5,0)
EMUAP	Unauthorized access priority: The access priority requested is not authorized. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (5,0)
EMUMF	Unauthorized MAC frame: The adapter is not authorized to send a MAC frame with the source class specified, or the MAC frame has a source class of zero, or the MAC frame physical control field attention field is > 1. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (5,0)
EMSFT	Soft error: Total number of soft errors as reported by the adapter. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (5,0)
EMTBC	Total number of beacon frames transmitted. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (5,0)
EMIOA	IOA status overrun: Adapter interrupt status queue overrun, earliest status discarded. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (5,0)

Field Name	Description	Attribute
EMFDC	Total number of frames discarded. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (11,0)
EMSIN	Total number of interrupts that MAC could not decode. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (11,0)
EMBRV	Total MAC bytes received ok: This contains a count of bytes in frames that are successfully received. It includes bytes from received multicast and broadcast frames. This number includes everything starting from destination address up to but excluding FCS. Source address, destination address, length or type, and pad are included.	PD(11,0)
EMBTR	Total MAC bytes transmitted ok: Total number of bytes transmitted successfully. This number includes everything starting from destination address up to but excluding FCS. Source address, destination address, length or type, and pad are included.	PD(11,0)
EMFNTR	Total frames not transmitted: This contains a count of frames that could not be transmitted due to the hardware not signaling transmission completion for an excessive period of time. This field does not apply to LAN emulation over asynchronous transfer mode.	PD(11,0)
EMRGUC	Ring use count. Percentage LAN utilization = EMRG*C. Most likely, the value of this field is zero, because only a few adapters use this function.	PD(11,0)
EMRGSC	Ring sample count. Percentage LAN utilization = EMRG*C. Most likely, the value of this field is zero, because only a few adapters use this function.	PD(11,0)
EMCVRF	FCS or code violations detected in repeated frames: This counter is incremented for every repeated frame that has a code violation or fails the frame check sequence (FCS) cyclic redundancy check. This field does not apply to LAN emulation over asynchronous transfer mode.	PD(5,0)
EMFNR	Frames transmitted that failed to return: This counter is incremented when a transmitted frame fails to return from around the ring due to time out or the reception of another frame. This field does not apply to LAN emulation over asynchronous transfer mode.	PD(5,0)
EMUNDR	Number of underruns: This counter is incremented each time a DMA underrun is detected. This field does not apply to LAN emulation over asynchronous transfer mode.	PD(5,0)
EMDUP	The duplex state of the line. For some lines, this value might change over time. This field can have the following values: • Blank -- The duplex state is not known • F -- Full duplex: the line can simultaneously transmit and receive data • H -- Half duplex: the line can either transmit data or receive data, but the line cannot simultaneously transmit and receive data.	C (1)

Field Name	Description	Attribute
EMUPF	Unsupported protocol frames: Number of frames that were discarded because they specified an unsupported protocol. This count is included in the frames discarded counter. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (11,0)

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Related information:

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance database files.

Collection Services data files: QAPMETH

This database file includes Ethernet file entries and lists the fields in the Ethernet file.

Ethernet LAN protocol statistics are reported for the active Ethernet line descriptions that are associated with Ethernet ports and with asynchronous transfer mode ports that support Ethernet LAN emulation.

There will be one record per line per port per interval. Port resource name should be used to uniquely associate records across intervals.

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DTETIM	Interval date (yymmdd) and time (hhmmss): The date and time of the sample interval.	C (12)
INTSEC	Elapsed interval seconds: The number of seconds since the last sample interval.	PD (7,0)
IOPRN	IOP resource name.	C (10)
ETIOPI	Reserved	C (1)
ETTYPE	The resource type of the IOP or adapter represented by this record.	C (4)
ETLLND	Line description: The name of the description for this line.	C (10)
ETLLSP	Line speed: The line speed expressed in bits per second (bps). For some lines, this value might change as time progresses.	PD (11,0)
ETLTFT	Total number of Type II frames transmitted.	PD (11,0)
ETLTFR	Total number of Type II frames received.	PD (11,0)
ETLIFT	Total number of I-frames transmitted.	PD (11,0)
ETLIFR	Total number of I-frames received.	PD (11,0)
ETLICT	Total number of characters transmitted in all I-frames.	PD (11,0)
ETLICR	Total number of characters received in all I-frames.	PD (11,0)

Field Name	Description	Attribute
ETLPRCL	Protocol type: T for Ethernet.	C (1)
ETLRFT	Number of receive-not-ready frames transmitted.	PD (5,0)
ETLRFR	Number of receive-not-ready frames received.	PD (5,0)
ETLFFT	Number of frame-reject frames transmitted.	PD (5,0)
ETLFFR	Number of frame-reject frames received.	PD (5,0)
ETLRJR	Number of reject frames received.	PD (5,0)
ETLRJT	Number of reject frames transmitted.	PD (5,0)
ETLSFT	Number of set asynchronous balanced mode extended frames transmitted.	PD (5,0)
ETLSFR	Number of set asynchronous balanced mode extended frames received.	PD (5,0)
ETLDFT	Number of disconnect frames transmitted.	PD (5,0)
ETLDFR	Number of disconnect frames received.	PD (5,0)
ETLDMT	Number of disconnect mode frames transmitted.	PD (5,0)
ETLDMR	Number of disconnect mode frames received.	PD (5,0)
ETLN2R	N2 retries end count: This count is updated when the host has attempted to contact a station n times and n times the T1 timer ended before the station responded.	PD (5,0)
ETLT1T	T1 timer end count: Number of times the T1 timer ended. This count is updated when the host has attempted to contact a station n times and n times the T1 timer ended before the station responded.	PD (5,0)
ETLTIT	Number of times the TI timer (Inactivity Timer) expired. This count is updated when the host has attempted to contact a station n times and n times the T1 timer ended before the station responded.	PD (5,0)
ETLFRT	Number of times I-frame retransmission occurred.	PD (11,0)
ETLBRT	I frame bytes transmitted again.	PD (11,0)
ETLLBC	Local busy count: Number of times station entered local busy substate.	PD (5,0)
ETMFTG	Frames transmitted without error. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (11,0)
ETMFRG	Frames received without error. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (11,0)
ETMIFM	Inbound frames missed: A receiver buffer error or a missed frame was detected by the IOA. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (5,0)
ETMCRE	CRC error: Checksum errors detected by the receiver. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (5,0)
ETMEXR	More than 16 retries: Frame unsuccessfully transmitted due to excessive retries. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (11,0)
ETMOWC	Out of window collisions: Collision occurred after slot time of channel elapsed. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (5,0)

Field Name	Description	Attribute
ETMALE	Alignment error: Inbound frame contained non-integer number of bytes and a CRC error. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (5,0)
ETMCRL	Carrier loss: Carrier input to the chipset on the IO adapters is false during transmission. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (5,0)
ETMTDR	Time-domain reflectometry: Counter used to approximate distance to a cable fault. This value is associated with the last occurrence of more than 16 retries. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (5,0)
ETMRBE	Receive buffer errors: A silo overflow occurred on receiving a frame. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (5,0)
ETMSPI	Spurious interrupts: An interrupt was received but could not be decoded into a recognizable interrupt. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (5,0)
ETMDIF	Discarded inbound frames: Receiver discarded frame due to lack of AIF entries. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (11,0)
ETMROV	Receive overruns: Receiver has lost all or part of an incoming frame due to buffer shortage. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (5,0)
ETMMEE	Memory error: The chipset on the IO adapters is the bus master and did not receive ready signal within 25.6 usecs of asserting the address on the DAL** lines. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (5,0)
ETMIOV	Interrupt overrun: Interrupt not processed due to lack of status queue entries. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (5,0)
ETMTUN	Transmit underflow: Transmitter has truncated a message due to data late from memory. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (5,0)
ETMBBE	Babble errors: Transmitter exceeded maximum allowable time on channel. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (5,0)
ETMSQE	Signal quality error: Signal indicating the transmit is successfully complete did not arrive within 2 usecs of successful transmission. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (5,0)
ETMM1R	More than 1 retry to transmit: Frame required more than one retry for successful transmission. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (11,0)
ETM1R	Exactly one retry to transmit: Frame required 1 retry for successful transmission. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (11,0)

Field Name	Description	Attribute
ETMDCN	Deferred conditions: The chipset on the IO adapters deferred transmission due to busy channel. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (11,0)
ETMBRV	Total MAC bytes received ok: This contains a count of bytes in frames that are successfully received. It includes bytes from received multicast and broadcast frames. This number includes everything starting from destination address up to but excluding FCS. Source address, destination address, length or type, and pad are included.	PD (15,0)
ETMBTR	Total MAC bytes transmitted ok: Total number of bytes transmitted successfully. This number includes everything starting from destination address up to but excluding FCS. Source address, destination address, length or type, and pad are included.	PD (15,0)
ETMFNT	Total frames not transmitted: This contains a count of frames that could not be transmitted due to the hardware not signaling transmission completion for an excessive period of time. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (11,0)
ETMMFD	Total mail frames discarded. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (5,0)
ETMTFD	Transmit frames discarded. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (5,0)
ETMDUP	The duplex state of the line. For some lines, this value might change over time. This field can have the following values: • Blank -- The duplex state is not known • F -- Full duplex: the line can simultaneously transmit and receive data • H -- Half duplex: the line can either transmit data or receive data, but the line cannot simultaneously transmit and receive data.	C (1)
ETMUPF	Unsupported protocol frames: Number of frames that were discarded because they specified an unsupported protocol. This count is included in the discarded inbound frames counter. This field does not apply to LAN emulation over asynchronous transfer mode.	PD (11)
ETMPORT	Port resource name.	C (10)

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Related information:

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance database files.

Collection Services data files: QAPMFRLY

This database file includes frame relay counter entries.

QAPMFRLY is a database file for the frame relay counter.

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5 0)
DTETIM	Interval date (yymmdd) and time (hhmmss): The date and time of the sample interval.	C (12)
INTSEC	Elapsed interval seconds.	PD (7 0)
IOPRN	IOP resource name.	C(10)
YIOPI	Reserved	C (1)
YITYPE	The resource type of the IOP or adapter represented by this record.	C (4)
YLND	Network interface (NWI) description: The name of the description for this network interface.	C (10)
YLSP	Line speed: The line speed expressed in bits per second (bps).	PD (11,0)
YLTFT	Total number of frames transmitted.	PD (11,0)
YLTFR	Total number of frames received.	PD (11,0)
YLIFT	Total number of I-frames transmitted.	PD (11,0)
YLIFR	Total number of I-frames received.	PD (11,0)
YLICT	Total number of I-frames characters transmitted.	PD (11,0)
YLICR	Total number of I-frames characters received.	PD (11,0)
YLPRCL	Protocol type: Y for frame relay.	C (1)
YLRFT	Number of receive-not-ready (RNR) frames transmitted.	PD (11,0)
YLRFR	Number of receive-not-ready (RNR) frames received.	PD (11,0)
YLFFT	Number of frame-reject frames transmitted.	PD (11,0)
YLFFR	Total number of frame-reject frames received.	PD (11,0)
YLRJFR	Number of reject frames received.	PD (11,0)
YLRJFT	Number of reject frames transmitted.	PD (11,0)
YLSFT	Number of set asynchronous balanced mode extended (SABME) frames transmitted.	PD (11,0)
YLSFR	Number of set asynchronous balanced mode extended (SABME) frames received.	PD (11,0)
YLDFT	Number of disconnect (DISC) frames transmitted.	PD (11,0)
YLDFR	Number of disconnect (DISC) frames received.	PD (11,0)
YLDMT	Number of disconnect mode (DM) frames transmitted.	PD (11,0)
YLDMR	Number of disconnect mode (DM) frames received.	PD (11,0)
YLN2R	N2 retries end count: This count is updated when the host has attempted to contact a station n times, and the T1 timer ended n times before the station responded.	PD (11,0)

Field Name	Description	Attribute
YLT1T	T1 timer end count: Number of times the T1 timer ended. This count is updated when the host has attempted to contact a station n times, and the T1 timer ended n times before the station responded.	PD (11,0)
YMLTI	Local management interface (LMI) time-outs.	PD (11,0)
YMLSE	Local management interface (LMI) sequence errors.	PD (11,0)
YMLPE	Local management interface (LMI) protocol errors.	PD (11,0)
YMPDE	Port monitor data set ready (DSR) errors.	PD (11,0)
YMPCE	Port monitor clear to send (CTS) errors.	PD (11,0)
YMMER	MAC errors.	PD (11,0)

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Related information:

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance database files.

Collection Services data files: QAPMHDLC

This database file includes high-level data link control (HDLC) file entries.

Statistics are kept on a line basis for the fields in the HDLC file.

Field Name	Description	Attribute
INTNUM	Interval number: the nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DTETIM	Interval date (yymmdd) and time (hhmmss): The date and time of the sample interval.	C (12)
INTSEC	Elapsed interval seconds: The number of seconds since the last sample interval.	PD (7,0)
IOPRN	IOP resource name.	C (10)
SHIOP	Reserved	C (1)
SHTYPE	The resource type of the IOP or adapter represented by this record.	C (4)
SHLND	Line description: The name of the description for this line.	C (10)
SHLSP	Line speed: The speed of the line in bits per second (bps.)	PD (11,0)
SHBTRN	Bytes transmitted: The number of bytes transmitted including bytes transmitted again.	PD (11,0)
SHBRCV	Bytes received: The number of bytes received including all bytes in frames that had any kind of error.	PD (11,0)
SHPRCL	Protocol type: S for SDLC.	C (1)

Field Name	Description	Attribute
SHFTRN	Number of frames transmitted (I, supervisory, and frames not numbered) excluding frames transmitted again.	PD (11,0)
SHIFTR	Number of I-frames transmitted excluding I-frames transmitted again.	PD (11,0)
SHIFRT	Number of I-frames transmitted again.	PD (11,0)
SHFRT	Number of I, supervisory, and frames not numbered transmitted again.	PD (11,0)
SHEFFR	Error-free frames received: The number of I, supervisory, and frames not numbered received without error (whether or not they were transmitted again from the remote side.)	PD (11,0)
SHEFIR	Error-free I-frames received: The number of I-frames received without error (whether or not they were transmitted again from the remote side.)	PD (11,0)
SHFRIE	Frames received in error: The number of I, supervisory, and frames not numbered received in error. There are three error possibilities: (1) a supervisory or I-frame was received with an Nr count that is requesting retransmission of a frame, (2) an I-frame was received with an Ns count that indicates that frames were missed, (3) a frame is received with one of the following errors: a frame check sequence error, an abnormal end, a receive overrun, or a frame truncated error.	PD (11,0)
SHIFR	Frames received that are not valid: The number of not valid frames received. These are frames received with either: (1) short frame error-frame is less than 32 bits or (2) residue error-frame is not on a byte boundary.	PD (11,0)
SHRRFT	Number of receive ready supervisory frames transmitted.	PD (11,0)
SHRRFR	Number of receive ready supervisory frames received.	PD (11,0)
SHRNRT	Number of receive not ready supervisory frames transmitted.	PD (11,0)
SHRNRR	Number of receive not ready supervisory frames received.	PD (11,0)
SHLNKR	Data link resets: The number of times a set normal response mode (SNRM) was received when the station was already in normal response mode.	PD (11,0)
SHCPT	The length of time (in tenths of seconds) that the system waits for the response to a poll while in normal disconnect mode before polling the next station.	PD (3,0)

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Related information:

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance

database files.

Collection Services data files: QAPMHTTPB

This database file contains basic data collected by the IBM® HTTP Server (powered by Apache) category.

This file represents basic data associated with each instance of the server. This file will contain one record per interval per server instance.

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DTETIM	Interval date (yymmdd) and time (hhmmss): The date and time of the sample interval.	C (12)
INTSEC	Elapsed interval seconds: The number of seconds since the last sample interval.	PD (7,0)
DTECEN	Century digit: where 0 indicates 19XX and 1 indicates 20XX.	C (1)
HTJNAM	Server job name (server name) This field and next two server job fields identify the child job for the server.	C (10)
HTJUSR	Server job user.	C (10)
HTJNBR	Server job number.	C (6)
HTSSDT	Server start date/time (yyyymmddhhmmss): most recent start or restart time.	C (14)
HTTHDA	Threads active: The number of threads doing work when the data was sampled.	B (9,0)
HTTHDI	Threads idle: The number of idle threads when the data was sampled.	B (9,0)
HTNINC	Inbound connections (not SSL): The number of non-SSL inbound connections accepted by the server.	B(18,0)
HTSINC	Inbound connections (SSL): The number of SSL inbound connections accepted by the server.	B (18,0)
HTRRCV	Requests received: The number of requests of all types received by the server.	B (18,0)
HTRSND	Responses sent: The number of responses of all types sent by the server.	B (18,0)
HTBRQR	Requests rejected: The number of requests received that were not valid.	B (18,0)

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Related information:

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance database files.

Collection Services data files: QAPMHTTPD

This database file contains detail data collected by the HTTP Server (powered by Apache) category.

This file contains detailed data that is repeated for different request types which are processed by the server. One record will be written to this file for each configured request type in each active server instance each interval.

Note: Request types are reported as long as they are configured for the server regardless of whether any data was processed by them.

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DTETIM	Interval date (yymmdd) and time (hhmmss): The date and time of the sample interval.	C (12)
INTSEC	Elapsed interval seconds: The number of seconds since the last sample interval.	PD (7,0)
DTECEN	Century digit: where 0 indicates 19XX and 1 indicates 20XX.	C (1)
HTJNAM	Server job name (server name): This and next two server job fields identify the child job for the server.	C (10)
HTJUSR	Server job user.	C (10)
HTJNBR	Server job number.	C (6)
HTRTYP	Request type: This identifies the type of request being reported by this record. Typical values are: • SR - Requests handled internally by server • SL - Requests of all types received via SSL (SSL is not actually a request type. This record reports activity that occurred over an SSL connection even though that activity is also reported with other applicable request types.) • PX - Proxy requests • CG - CGI requests • WS - WebSphere® requests • JV - IBM Java™ Servlet Engine requests • UM - Requests handled by user modules • FS - Static requests handled by FRCA (Fast Response Cache Accelerator) • FX - Requests proxied by FRCA	C (2)
HTRQSR	Requests received.	B (18,0)
HTRQSS	Responses sent.	B (18,0)
HTBRQS	Error responses sent.	B (18,0)
HTNOCR	Non-cached requests processed. **Note:** Cache is not used and therefore this field is reserved for the following request types: SL, CG, WS, JV, and UM.	B (18,0)
HTBRCV	Bytes received.	B (18,0)
HTBSND	Bytes sent.	B (18,0)
HTNRTM	Processing time for non-cached requests in milliseconds.	B (9,0)

Field Name	Description	Attribute
HTCRTM	Processing time for cached requests in milliseconds. **Note:** cache is not used and therefore this field is reserved for the following request types: SL, CG, WS, JV, and UM.	B (9,0)

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Related information:

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance database files.

Collection Services data files: QAPMIDLC

This database file includes integrated services digital network (ISDN) data link control file entries and lists the fields in the ISDN data link control (IDLC) file.

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DTETIM	Interval date (yymmdd) and time (hhmmss): The date and time of the sample interval.	C (12)
INTSEC	Elapsed interval seconds: The number of seconds since the last sample interval.	PD (7,0)
IOPRN	IOP resource name.	C(10)
ISIOP	Reserved	C (1)
ISTYPE	The resource type of the IOP or adapter represented by this record.	C (4)
ISLND	Line description: The name of the line description.	C (10)
ISNWI	Network interface description: The name of the network interface description.	C (10)
ISLSP	Link speed: The speed of this channel in bits per second.	PD (11,0)
ISPRCL	Protocol type: I for IDLC.	C (1)
ILCRCE	Receive CRC errors: The number of received frames that contain a cycle redundancy check (CRC) error.	PD (11,0)
ILSFE	Short frame errors: The number of short frames received. A short frame is a frame that has fewer octets between its start flag and end flag than is permitted.	PD (11,0)
ILORUN	Receive overrun: The number of times the ISDN subsystem could not keep pace with incoming data because of local controller overload.	PD (11,0)
ILURUN	Transmit underrun: The number of times the ISDN subsystem could not keep pace with outgoing data because of local controller overload.	PD (11,0)
ILABRT	Aborts received: The number of frames received that contained HDLC abort indicators.	PD (11,0)

Field Name	Description	Attribute
ILFRIE	Frames received in error: The sum of receive CRC errors, short frame errors, receive overrun, transmit underrun, aborts received, and frame sequence errors (ILCRCE, ILSFE, ILORUN, ILURUN, ILABRT, ISSEQE).	PD (11,0)
ISFRT	Retransmitted frames.	PD (11,0)
ISSEQE	Sequence errors: The number of received frames that contained sequence numbers indicating frames were lost.	PD (11,0)
ISFTRN	Total number of frames transmitted: This includes information (I), unnumbered information (UI), and supervisory (S) frames sent to a remote link station. This includes frames retransmitted and frames sent on transmissions stopped by transmit underruns, in addition to successful transmissions.	PD (11,0)
ISFRCV	Total number of frames received: This includes information (I), unnumbered information (UI), and supervisory (S) frames received from the remote link station. This includes no errors.	PD (11,0)
ISBTRN	Total bytes transmitted: The total number of bytes transmitted to a remote link station. This includes bytes retransmitted and bytes sent on transmissions stopped by a transmit underrun, in addition to successful transmissions.	PD (11,0)
ISBRCV	Total bytes received: The total number of bytes received from the remote link station. This includes no errors.	PD (11,0)
ISB1	B1 channel: Set to one if the B1 channel was used.	PD (1,0)
ISB2	B2 channel: Set to one if the B2 channel was used.	PD (1,0)
ISCHAN	B channel used: The B channel used is associated with a bit in this field being set to 1. Bit 0 (most significant bit) and 31 (least significant bit) are reserved. Bits 1 to 30 are associated with B channels 30 to 1, respectively.	C (4)

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Related information:

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance database files.

Collection Services data files: QAPMIOPD

This database file lists the fields in the IOP extended data file.

Data is reported for the Network Server (*IPCS category) and I/O adapters (*IOPBASE category). Network server data includes Integrated xSeries Server data and virtual I/O data. Virtual I/O data consists of one record for each virtual device in use. If Network Server is associated with a Network Server Host Adapter, virtual device might have more than one record reported per interval--one record

for each Network Server Host Adapter, used by this virtual device. If concurrent maintenance is done (adding or removing hardware under an IOP), the user should cycle the collector to insure that I/O adapter data is reported correctly.

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DTETIM	Interval date (yymmdd) and time (hhmmss): the date and time of the sample interval.	C (12)
INTSEC	Elapsed interval seconds: the number of seconds since the last sample interval. For operating system data (data type 2), this value might not be the same as the change in the interval date and time (DTETIM) for the interval because the elapsed interval time comes directly from the Integrated xSeries Server .	PD (7,0)
IOPRN	IOP resource name.	C(10)
XIIOP	Reserved	C (1)
XITYPE	The type of IOP represented by this record.	C (4)
XIDTYP	Data type: • 1 -- Reserved • 2 -- OS/2 or other operating system (*IPCS category) • 3 -- HPF386 (*IPCS category) • 4 -- LAN Server (*IPCS category) • 5 -- Virtual I/O (*IPCS category) • A -- I/O adapter (*IOPBASE category)	C (1)
XIDTA1	Data field 1	C (2)
XIDTA2	Data field 2	C (12)
XICT01	Counter 1	PD (11)
XICT02	Counter 2	PD (11)
XICT03	Counter 3	PD (11)
XICT04	Counter 4	PD (11)
XICT05	Counter 5	PD (11)
XICT06	Counter 6	PD (11)
XICT07	Counter 7	PD (11)
XICT08	Counter 8	PD (11)
XICT09	Counter 9	PD (11)
XICT10	Counter 10	PD (11)
XICT11	Counter 11	PD (11)
XICT12	Counter 12	PD (11)

Field Name	Description	Attribute
XICT13	Counter 13	PD (11)
XICT14	Counter 14	PD (11)
XICT15	Counter 15	PD (11)
XICT16	Counter 16	PD (11)
XICT17	Counter 17	PD (11)
XICT18	Counter 18	PD (11)
XICT19	Counter 19	PD (11)
XICT20	Counter 20	PD (11)
XICT21	Counter 21	PD (11)
XICT22	Counter 22	PD (11)
XICT23	Counter 23	PD (11)
XICT24	Counter 24	PD (11)
XICT25	Counter 25	PD (11)
XICT26	Counter 26	PD (11)
XICT27	Counter 27	PD (11)
XICT28	Counter 28	PD (11)
XICT29	Counter 29	PD (11)
XICT30	Counter 30	PD (11)
XICT31	Counter 31	PD (11)
XICT32	Counter 32	PD (11)
XICT33	Counter 33	PD (11)
XICT34	Counter 34	PD (11)
XICT35	Counter 35	PD (11)
XICT36	Counter 36	PD (11)
XICT37	Counter 37	PD (11)
XICT38	Counter 38	PD (11)
XICT39	Counter 39	PD (11)
XICT40	Counter 40	PD (11)
XICT41	Counter 41	PD (11)
XICT42	Counter 42	PD (11)
XICT43	Counter 43	PD (11)
XICT44	Counter 44	PD (11)
XICT45	Counter 45	PD (11)
XICT46	Counter 46	PD (11)
XICT47	Counter 47	PD (11)
XICT48	Counter 48	PD (11)
XICT49	Counter 49	PD (11)
XICT50	Counter 50	PD (11)

Field Name	Description	Attribute
XIADRN	Adapter resource name: If the resource reported is an adapter, then this field will contain the resource name of that adapter. If the resource reported is an IOP, then this field will contain the resource name of that IOP.	C (10)
XINWSD	Network server description name (blanks are reported if a network server description (NWSD) name is not applicable).	C (10)
XINWSH	Network server host adapter name (blanks are reported if a network server host adapter (NWSH) name is not applicable.	C (10)

Note:

The following chart shows the types of counters used.

D (Delta counter): Number of occurrences in the interval (what most performance counters are).

S (State counter): The value at the time of collection or the maximum value during the interval.

XIDTYP = '1' (Reserved)	
XIDTYP = '2' (OS/2 or other operating system)	
Counter	**Description**
(CTO1) D	CPU time (milliseconds). This value is normalized to the range of a single processor for adapters that have multiple processors.
(CTO2) D	Number of times threads rescheduled
(CTO3) D	Number of interrupts
(CTO4) D	CPU time servicing interrupts (milliseconds)
(CTO5) D	Number of page faults
(CTO6) D	Number of pages swapped in
(CTO7) D	Number of pages demand-loaded
(CTO8) D	Number of pages swapped out
(CTO9) D	Number of pages discarded
(CT10) D	Number of idle pages recovered
(CT11) D	Number of pages idled
(CT12) D	Number of idle pages reassigned
(CT13) S	Number of elements in free queue
(CT14) S	Length of time elements in free queue (milliseconds)
(CT15) S	Number of elements in used queue
(CT16) S	Length of time elements in used queue (milliseconds)
XIDTYP = '3' (HPFS386)	
XIDTYP = '4' (LAN server)	

XIDTYP = '1' (Reserved)	
XIDTYP = '2' (OS/2 or other operating system)	
Counter	**Description**
Record types 3 (HPFS386) and 4 (LAN server) refer to functions that are no longer supported.	
XIDTYP = '5' (Virtual I/O)	
Counter	**Description**
(DTA1) S	Type of a virtual device: • ' 1' = Adapter • ' 2' = Disk • ' 3' = Optical • ' 4' = Tape
(DTA2) S	• Characters 1-10: Virtual device name. Note: For tape and optical devices this is the device resource name. For disk devices, this is the name of the network server storage space. • Characters 11-12: Reserved (blank).
(CTO1) D	Read operations
(CTO2) D	Write operations
(CTO3) D	Other operations
(CTO4) D	Operations resulting in an error
(CTO5) D	Kilobytes read from virtual device
(CTO6) D	Kilobytes written to virtual device
(CTO7) S	Reserved
(CTO8) S	Reserved
XIDTYP = 'A'(I/0 adapter data)	
(DTA1) S:	Reserved (blank)
(DTA2) S:	• Characters 1-4: I/O adapter type • Characters 5-7: I/O adapter model • Characters 8-12: Reserved (blank)
(CT01) D:	Adapter time: Total processing time used by adapter tasks that are running in the primary IOP processor. Adapter tasks support the adapter and its attached hardware. For some old IOPs such as the 6112, adapter times are not reported.

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Related information:

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance database files.

Collection Services data files: QAPMJOBMI

These database file entries contain task, primary, and secondary thread data that are collected with the *JOBMI category. “Job” implies job, task, or thread.

Collection Services provides data only for jobs that consume CPU during an interval.

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DTETIM	Interval date (yymmdd) for job interval entry and job completion date, and time (hhmmss) for job completion entry.	C (12)
INTSEC	Elapsed interval seconds.	PD (7,0)
DTECEN	Century digit.	C (1)
JBNAME	Job name/workstation name.	C (16)
JBUSER	Job user.	C (10)
JBNBR	Job number.	C (6)
JBTYPE	Job type. • A:Autostart • B:Batch • I:Interactive • M:Subsystem monitor • R:Spool reader • S:System • V:SLIC task • W:Spool writer • X:SCPF job	C (1)
JBSTYP	Job subtype. • T:MRT (System/36 environment only) • E:Evoke (communications batch) • P:Print driver job • J:Prestart job • F:M36 (Advanced/36 server job) • D:Batch immediate job • U:Alternative spool user	C (1)

Field Name	Description	Attribute
JBSTSF	Status flag: indicates job status relative to this interval. The values are: • 0 -- normal interval collection • 1 -- job started in interval • 2 -- job ended in interval • 3 -- job started and ended. **Note:** Jobs that are rerouted or transferred will result in a termination record (JBSTSF = 2) and a new job record (JBSTSF = 1).	PD (1,0)
JBTTYP	Task type (01:Resident task, 02:Supervisor task, 03:MI process task, 04:S36 emulation task).	C (2)
JBTTYE	Task type extender.	C (2)
JBPOOL	Job pool.	C (2)
JBPRTY	Job priority.	C (3)
JBCPU	Thread unscaled interval CPU time charged. The amount of unscaled processing time (in milliseconds) charged to this thread. It includes unscaled processing time used by this thread and any unscaled processing time charged to the thread by server tasks that worked on its behalf within the interval. For server tasks, this field will be zero.	PD (15,3)
JBRSP	Total transaction time (in seconds).	PD (15,3)
JBSLC	Time-slice value (in milliseconds).	PD (11,0)
JBNTR	Number of transactions.	PD (11,0)
JBDBR	Number of synchronous database reads: Total number of physical synchronous database read operations for database functions.	PD (11,0)
JBNDB	Number of synchronous nondatabase reads: Total number of physical synchronous nondatabase read operations for nondatabase functions.	PD (11,0)
JBWRT	Number of writes: Total number of physical database and nondatabase write operations.	PD (11,0)
JBAW	Total number of transitions from active state to wait state for this job.	PD (11,0)
JBWI	Total number of transitions from wait state to ineligible state for this job.	PD (11,0)
JBAI	Total number of transitions from active state to ineligible state for this job.	PD (11,0)

Field Name	Description	Attribute
JBNDW	Number of synchronous nondatabase writes: Total number of synchronous physical nondatabase write operations for nondatabase functions.	PD (11,0)
JBDBW	Number of synchronous database writes: Total number of synchronous physical database write operations for database functions.	PD (11,0)
JBANDW	Number of asynchronous nondatabase writes: Total number of asynchronous physical nondatabase write operations for nondatabase functions.	PD (11,0)
JBADBW	Number of asynchronous database writes: Total number of asynchronous physical database write operations for database functions.	PD (11,0)
JBANDR	Number of asynchronous nondatabase reads: Total number of asynchronous physical nondatabase read operations for nondatabase functions.	PD (11,0)
JBADBR	Number of asynchronous database reads: Total number of asynchronous physical database read operations for database functions.	PD (11,0)
JBPW	Number of synchronous permanent writes.	PD (11,0)
JBPAGF	Number of PAG faults. Total number of times the program access group (PAG) was referred to, but was not in main storage. The Licensed Internal Code no longer uses process access groups for caching data. Because of this implementation, this field will always be 0 for more current releases.	PD (11,0)
JBOBIN	Number of binary overflows.	PD (11,0)
JBODEC	Number of decimal overflows.	PD (11,0)
JBOFLP	Number of floating point overflows.	PD (11,0)
JBIPF	Number of times a page fault occurred on an address that was currently part of an auxiliary storage I/O operation.	PD (11,0)
JBWIO	Number of times the process explicitly waited for outstanding asynchronous I/O operations to complete.	PD (11,0)
JBSZWT	Total seize wait time (in milliseconds).	PD (15,3)
JBSKSC	Number of socket sends.	PD (11,0)
JBSKBS	Number of socket bytes sent.	PD (11,0)
JBSKRC	Number of socket receives.	PD (11,0)

Field Name	Description	Attribute
JBSKBR	Number of socket bytes received.	PD (11,0)
JBXRFR	Stream file reads.	PD (11,0)
JBXRFW	Stream file writes.	PD (11,0)
JBTCPU	Job unscaled interval CPU time charged. Thread unscaled interval CPU time charged (in milliseconds) totaled for all threads of the job within the interval. **Note:** This value may not equal the sum of JBCPU for all threads due to timing differences in the collection and reporting of these values. This field is provided for primary threads only.	PD (15,3)
JBTHDF	Secondary thread flag. Identifies secondary threads of a multi-threaded job. The values are: 0 -- tasks and primary threads, 1 -- secondary threads.	PD (1,0)
JBTHID	Thread Identifier. A 4-byte displayable thread identifier. A hex string that is unique for threads within a process. It will be blank for tasks and prior release data.	C (8)
JBTHAC	Active threads. Current number of active threads in the process when the data was sampled. An active thread may be actively running, suspended, or waiting on a resource. Includes the primary thread.	PD (11,0)
JBTHCT	Threads created. Number of threads initiated within this job. Includes both active and terminated threads.	PD (11,0)
JBMTXT	Mutex wait time in milliseconds. Cumulative time the thread waited for a mutex.	PD (15,3)
JBIBM1	Reserved	PD (11,0)
JBINSX	Reserved.	PD (11,0)
JBSVIF	Server interactive flag. Set to '1' if the resource consumed by the function is charged to the interactive capability of the system.	C (1)
JBTFLT	Total page faults.	PD (11,0)
JBTDE	System task identifier.	C (8)
JBPTDE	Primary thread identifier.	C (8)
JBLDUM	Reserved.	PD (1,0)

Field Name	Description	Attribute
JBEDBC	Database CPU time. The amount of CPU time (in milliseconds) used to perform database processing within the single thread or task. This field is provided on an individual task or thread basis. For multi-threaded jobs, values are not summarized across threads.	P (15,3)
JBTDBC	Total database CPU time. The amount of CPU time (in milliseconds) used to perform database processing within all threads of a multithreaded job. **Note:** This may not equal the sum of JBEDBC for all threads in a job. This field is provided for primary threads only.	P (15,3)
JBCOP	Number of primary commit operations performed under the task.	PD (11,0)
JBCOS	Number of secondary commit operations performed under the task. This includes application and system-provided referential integrity commits.	PD (11,0)
JBDOP	Number of primary decommit operations performed under the task.	PD (11,0)
JBDOS	Number of secondary decommit operations performed under the task. This includes application and system-provided referential integrity decommits.	PD (11,0)
JBPJE	Number of physical journal write operations to disk performed under the task.	PD (11,0)
JBNSJE	Number of journal entries not directly related to SMAPP.	PD (11,0)
JBUJD	Number of SMAPP-induced journal entries deposited in user-provided journals.	PD (11,0)
JBSJD	Number of SMAPP-induced journal entries deposited in system-provided (default) journals.	PD (11,0)
JBBFW	Number of journal bytes written to disk. Such entries are packaged within the permanent area of the journal receiver. These are traditional journal entries which can be retrieved and displayed.	PD (15,0)

Field Name	Description	Attribute
JBBFA	Number of bytes deposited within the permanent area of the journal receiver. This count includes both those bytes already written to disk and those still cached in main memory. These are traditional journal entries which can be retrieved and displayed.	PD (15,0)
JBBTW	Number of transient area journal receiver bytes written to disk. The transient area contains hidden journal entries produced by the system, used during IPL, and routed to this transient area only if the customer specifies *RmvIntEnt on the CHGJRN command. This transient area is a separate area on the disk, distinct from the disk space used to store the normal journal entries.	PD (15,0)
JBBTA	Number of bytes generated for the journal receiver transient area. This count includes both transient bytes already written to disk and those still cached in main memory. The transient area contains hidden journal entries produced by the system, used during IPL, and routed to this transient area only if the customer specifies *RmvIntEnt on the CHGJRN command. This transient area is a separate area on the disk, distinct from the disk space used to store the normal journal entries.	PD (15,0)
JBTWT	Amount of time this task spent waiting for journal bundles to be written to disk (in milliseconds). This includes time spent waiting for physical disk write operations initiated by this task to be serviced, as well as time spent waiting for physical disk write operations initiated by other tasks whose journal entries reside in the same journal bundle.	PD (11,0)
JBTNW	Number of times this task waited for journal bundles to be written to disk.	PD (11,0)
JBXRRR	Number of random stream file read operations. This count includes files in the Root, QOpenSys, QDLS, QOPT (when the files are on a volume that is not formatted in Universal Disk Format (UDS)) and user-defined file systems.	PD (11,0)

Field Name	Description	Attribute
JBXRRW	Number of random stream file write operations. This count includes files in the Root, QOpenSys, QDLS, QOPT (when the files are on a volume that is not formatted in Universal Disk Format (UDS)) and user-defined file systems.	PD (11,0)
JBXRFS	Number of fsync operations. This count includes files in the Root, QOpenSys, QDLS, QOPT (when the files are on a volume that is not formatted in Universal Disk Format (UDS)) and user-defined file systems.	PD (11,0)
JBXRBR	Stream file bytes read. This count includes files in the Root, QOpenSys, QDLS, QOPT (when the files are on a volume that is not formatted in Universal Disk Format (UDS)) and user-defined file systems.	PD (15,0)
JBXRBW	Stream file bytes written. This count includes files in the Root, QOpenSys, QDLS, QOPT (when the files are on a volume that is not formatted in Universal Disk Format (UDS)) and user-defined file systems.	PD (15,0)
JBFSH	Number of full secure sockets layer (SSL) handshakes that use server authentication.	PD (11,0)
JBASH	Number of abbreviated (or fast) secure sockets layer (SSL) handshakes that use server authentication.	PD (11,0)
JBFSHA	Number of full secure sockets layer (SSL) handshakes that use server and client authentication.	PD (11,0)
JBASHA	Number of abbreviated (or fast) secure sockets layer (SSL) handshakes that use server and client authentication.	PD (11,0)
JBPGA	Total number of pages of temporary and permanent storage that have been allocated by the job since the job started	P (11,0)
JBPGD	Total number of pages of temporary and permanent storage that have been deallocated by the job since the job started.	P (11,0)
JBCUSR	The user profile that the job was running under at the time the data was sampled.	C (10)

Field Name	Description	Attribute
JBACPU	Accumulated job unscaled CPU time charged in milliseconds. The accumulated unscaled interval CPU time charged for all threads of the job since the job started. **Note:** This field is provided for primary threads only.	PD (15,3)
JBIPAF	The remote IP address family flag indicates the type of IP address information provided in field JBIPAD. The following are supported (see <sys/socket.h> and the API referenced under JBIPAD for more information on these values): • Hex 00 = Not set • Hex 02 = AF_INET (IPv4) • Hex 18 = AF_INET6 (IPv6) **Note:** An address may not be available if there is no current connection.	C (1)
JBIPAD	The binary form of IPv4 or IPv6 remote IP address most recently communicated with over sockets. If a sockets connection has not been established or has terminated (JBIPAF = X'00'), this field will be blank. An IPv4 address is 4 bytes long left justified in this field. An IPv6 address uses all 16 bytes. For examples and further explanation, refer to the Usage Notes section in the Convert IPv4 and IPv6 Addresses Between Text and Binary Form (inet_pton) API	C (16)
JBIPPT	The remote port number used in this connection.	P (5,0)
JBUAUF	Reserved.	C (1)
JBPGRQ	Page frames requested. Number of new page frames required by thread to satisfy page fault, read or clear operation.	B (9,0)
JBPGRL	Page frames released. Number of page frames explicitly released by thread.	B (9,0)
JBMSLR	File system symbolic link reads. This count includes the following file systems: Root (/), QOpenSys, and user-defined file systems.	B (9,0)
JBMDYR	File system directory reads. This count includes the following file systems: Root (/), QOpenSys, and user-defined file systems.	B (9,0)

Field Name	Description	Attribute
JBMLCH	File system directory lookup cache hits. This count includes the following file systems: Root (/), QOpenSys, and user-defined file systems.	B (9,0)
JBMLCM	File system lookup cache misses. This count includes the following file systems: Root (/), QOpenSys, and user-defined file systems.	B (9,0)
JBMOPN	File system opens. This count includes the following file systems: Root (/), QOpenSys, and user-defined file systems.	B (9,0)
JBMNDC	File system non-directory creates. Count of create operations for non-directory objects such as files or symbolic links. This count includes the following file systems: Root (/), QOpenSys, and user-defined file systems.	B (9,0)
JBMNDD	File system non-directory deletes. Count of delete operations for non-directory objects such as files or symbolic links. This count includes the following file systems: Root (/), QOpenSys, and user-defined file systems.	B (9,0)
JBSCPU	Thread scaled interval CPU time used charged. The amount of scaled processing time (in microseconds) charged to this thread. It includes scaled processing time used by this thread and any scaled processing time charged to the thread by server tasks that worked on its behalf within the interval. For server tasks, this field will be zero. **Note:** The ratio of JBSCPU to JBCPU shows the current processor speed in relation to nominal processor speed.	B (18,0)
JBSTCPU	Job scaled interval CPU time charged. Thread scaled interval CPU time charged (in microseconds) totaled for all threads of the job within the interval. **Note:** This may not equal the sum of JBSCPU for all threads due to timing differences in the collection and reporting of these values. This field is provided for primary threads only.	B (18,0)
JBFLDR1	Reserved.	B (18,0)

Field Name	Description	Attribute
JBFLDR2	Workload capping group delay time (in microseconds). The amount of time this thread could not be dispatched due to workload capping.	B (18,0)
JBFLDR3	Workload capping group. The identifier for the workload capping group this thread belonged to at the time this data was sampled. A value of zero is reported when no group was assigned.	B (9,0)
JBFLDR4	Reserved.	B (9,0)
JBJVMF	JVM started. Indicates if this process has ever started a JVM. • ' ' = unknown / not defined • '0' = No • '1' = Yes • '2' = JVM was active at time of sample **Note:** Note: This field is provided for primary threads only.	C (1)
JBJVMT	JVM Type If JBJVMF is set to something other than x "00", it indicates the type of JVM that was started. • x'00' = unknown / not defined • x'01' = IBM Technology for Java - 32 Bit • x'02' = IBM Technology for Java - 64 Bit • x'99' = Classic JVM **Note:** This field is provided for primary threads only.	H (1)
JBPASE	i5/OS PASE run time – Indicates if an i5/OS PASE runtime was active in the thread at the time this data was sampled. • ' ' = unknown / not defined • '0' = No • '1' = Yes	C (1)

Field Name	Description	Attribute
JBJTHDT	JVM thread type. For secondary threads within a process that has a JVM active, this field may be used to identify the type or function of the thread. Values other than those defined are reserved. Values supported by the IBM Technology for Java VM are: • x'00' = Thread not assigned • x'1E' - x'3B' = GC Thread • x'3C' - x'59' = Finalization Thread • x'5A' - x'77' = JIT Thread • x'78' - x‘95' = JVM Internal Thread	H (1)
JBNFHN	An identifier of a resource affinity domain this software thread or task is associated with. Thread or task is associated with resource affinity domain at a create time, but operating system may decide to move it to another resource affinity domain at a later time.	H (2)
JBNFLVL	Resource affinity level specifies the relative strength of the binding between a thread and the internal machine resources with which it has affinity (processors and main storage). • Hex 00 = Processor normal, main storage normal • Hex 01 = Processor normal, main storage high • Hex 10 = Processor high, main storage normal • Hex 11 = Processor high, main storage high • Hex 03 = Processor normal, main storage none • Hex 20 = Processor low, main storage normal	H (1)

Field Name	Description	Attribute
JBNFGRP	Identifier of a resources affinity group or resource affinity domain. This identifier specifies how threads or tasks are related to other threads or tasks in their use of internal machine processing resources, or how they are related to specific resource affinity domains. • Hex 00000000 = Independent This thread is not part of any affinity group and has no affinity to any specific resource affinity domain. Operating system determines which domain is used by this thread. • Hex 00010000 = Anonymous internal affinity group This thread is part of any anonymous internal affinity group which was created for an initial thread of this job. Operating system will choose the resource affinity domain for this group, but all threads within this job will have affinity to the same resource affinity domain. • Hex 40000000 - 7FFFFFFF = External affinity group identifier This thread is part of external affinity group, which was explicitly specified when this job was created. Operating system will choose the resource affinity domain for this group, but all threads for all jobs within this group will have affinity to the same resource affinity domain. • Hex FFFF0000 - FFFFFFFF = Affinity to a specific resource affinity domain This thread has affinity to a specific resource affinity domain. However, the resource affinity domain used by this thread is not specified directly. Rather an abstract number is used which is deterministically mapped by the operating system into a specific resource affinity domain. The same number is always mapped to the same domain and a set of consecutive values is mapped to different domains (for as many domains as may be installed within the machine).	H (4)

Field Name	Description	Attribute
JBNFHNC	Local dispatch time. Amount of CPU time used by the thread on the resource affinity domain this thread is associated with. The time is reported in internal model-independent units. See Note on the next field (JBNFFNC).	B (18, 0)
JBNFFNC	Non-local dispatch time. Amount of CPU time used by the thread on resource affinity domains other than the one this thread is associated with, but within the same group. The time is reported in internal model-independent units. **Note:** JBNFHNC and JBNFFNC fields do not have significance by themselves. The ratio of JBNFHNC to JBNFFNC shows relative amount of time this thread was dispatched to its optimal resource affinity domain.	B (18, 0)
JBNFHNP	Local page frames. Number of 4K page frames allocated for this thread during this interval from the resource affinity domain this thread is associated with.	B (9, 0)
JBNFFNP	Non-local page frame. Number of 4K page frames allocated for this thread during this interval from resource affinity domains other than the one this thread is associated with, but within the same group.	B (9, 0)
JBTNAME	Thread name. Name of secondary thread, at sample time. The field will be blank for primary threads, tasks, and unnamed secondary threads.	C (16)
JBSLTCNT	Short lifespan entry count. If this field is greater than zero, the entry does not represent a particular task or secondary thread. Instead it is a special record used to report data accumulated for tasks and threads whose lifespan was shorter than the reporting threshold that was in effect when the collection started. Short lifespan tasks are reported for the processor node they were associated with and short lifespan secondary threads are reported for the job to which they belong. See QAPMCONF GKEY F1 for the reporting thresholds that were in effect during this collection.	B (9, 0)

Field Name	Description	Attribute
JBSACPU	Accumulated job scaled CPU time charged (in microseconds). The accumulated scaled interval CPU time charged for all threads of the job since the job started. **Note:** This field is provided for primary threads only.	B (18, 0)
JBINDCPU	Thread unscaled CPU time used (in microseconds). The amount of unscaled processor time that represents the work done solely within this thread without regard for how server task work is charged.	B (18, 0)
JBSINDCPU	Thread scaled CPU time used (in microseconds). The amount of scaled processor time that represents the work done solely within this thread without regard for how server task work is charged.	B (18, 0)
JBCPUWC	Processor elapsed time. The elapsed time (in microseconds) that a task executes.	B (18, 0)
JBVPDLY	Virtual processor delay time. The elapsed delay time (in microseconds) due to virtualization for a task while it was executing. Virtual processor delay time included virtual processor thread wait event time, virtual processor thread wait ready time, and virtual processor thread dispatch latency.	B (18, 0)
JBSEIZECNT	Seize count. The number of seizes held by this thread at the time the data was sampled.	B (9, 0)
JBPSLCKCNT	Process scoped lock count. The number of process scoped locks held by this thread at the time data was sampled.	B (9, 0)
JBTSLCKCNT	Thread scoped lock count. The number of thread scoped locks held by this thread at the time data was sampled.	B (9, 0)
JBPSRCDLCK	Process scoped database record lock count. The number of process scoped database record locks held by this thread at the time data was sampled.	B (9,0)
JBTSRCDLCK	Thread scoped database record lock count. The number of thread scoped database record locks held by this thread at the time data was sampled.	B (9, 0)

Field Name	Description	Attribute
JBNFOGDT	Off-group dispatch time. Amount of CPU time used by the thread in a resource affinity group other than the one this thread is associated with. The time is reported in internal model-dependent units.	B (18, 0)
JBNFOGMA	Off-group page frames. Number of 4K page frames allocated for this thread during this interval from a resource affinity group other than the one this thread is associated with.	B (9, 0)

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

"Collection Services data files: Task type extender" on page 231
A task type extender identifies the area of functional support provided by the task.

Related information:

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance database files.

Collection Services data files: QAPMJOBOS

These database file entries contain data specific to system jobs.

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DTETIM	Interval date (yymmdd) for job interval entry and job completion date, and time (hhmmss) for job completion entry.	C (12)
INTSEC	Elapsed interval seconds.	PD (7,0)
DTCEN	Century digit.	C (1)
JBNAME	Job name/workstation name.	C (10)
JBUSER	Job user.	C (10)
JBNBR	Job number.	C (6)

Field Name	Description	Attribute
JBTYPE	Job type. • A:Autostart • B:Batch • I:Interactive • M:Subsystem monitor • R:Spool reader • S:System • V:SLIC task • W:Spool writer • X:SCPF job	C (1)
JBSTYP	Job subtype. • T:MRT (System/36 environment only) • E:Evoke (communications batch) • P:Print driver job • J:Prestart job • F:M36 (Advanced/36 server job) • D:Batch immediate job • U:Alternative spool user	C (1)
JBSTSF	Status flag: indicates job status relative to this interval. The values are: • 0 -- normal interval collection • 1 -- job started in interval • 2 -- job ended in interval • 3 -- job started and ended. **Note:** Jobs that are rerouted or transferred will result in a termination record (JBSTSF = 2) and a new job record (JBSTSF = 1.)	PD (1,0)
JBSSYS	Name of the subsystem the job is running in.	C (10)
JBSLIB	Name of the library the subsystem description is in.	C (10)
JBROUT	The routing entry index for the subsystem this job is in.	PD (5,0)
JBACCO	Job accounting code. Field cannot be displayed.	C (15)
JBRSP	Total transaction time (in seconds). **Note:** Certain IBM i functions support the concept of a transaction. The definition of a transaction and the characteristics of a transaction are different depending on the type of job or the specific function of the job. For interactive jobs, display I/O transactions are counted. The transaction starts on detection of enter from the workstation; the transaction ends when the keyboard is unlocked. For SNADS jobs, a transaction is the processing of a distribution.	PD (15,3)

Field Name	Description	Attribute
JBNTR	Number of transactions. **Note:** Certain IBM i functions support the concept of a transaction. The definition of a transaction and the characteristics of a transaction are different depending on the type of job or the specific function of the job. For interactive jobs, display I/O transactions are counted. The transaction starts on detection of enter from the workstation; the transaction ends when the keyboard is unlocked. For SNADS jobs, a transaction is the processing of a distribution.	PD (11,0)
JBAIQT	Total application input queuing time (in hundredths of a second).	PD (15,1)
JBNAIQ	Number of application input queuing transactions.	PD (11,0)
JBRUT	Total resource usage time (in seconds).	PD (15,3)
JBNRU	Number of resource usage transactions.	PD (11,0)
JBPLN	Number of print lines: Number of lines written by the program. This does not reflect what is actually printed. Spooled files can be ended, or printed with multiple copies.	PD (11,0)
JBPPG	Number of print pages.	PD (11,0)
JBPFL	Number of print files.	PD (11,0)
JBLWT	Number of database writes (logical): Number of times the internal database write function was called. This does not include I/O operations to readers/writers, or I/O operations caused by the CPYSPLF or DSPSPLF command. If SEQONLY(*YES) is specified, these numbers show each block of records written, not the number of individual records written.	PD (11,0)
JBLRD	Number of database reads (logical): Number of times the database module was called. This does not include I/O operations to readers/writers, or I/O operations caused by the CPYSPLF or DSPSPLF command. If SEQONLY(*YES) is specified, these numbers show each block of records read, not the number of individual records read.	PD (11,0)
JBDBU	Number of miscellaneous database operations: Updates, deletes, force-end-of-data, commits, rollbacks, and releases (logical).	PD (11,0)
JBCPT	Number of communications writes: These do not include remote workstation activity. They include only activity related to intersystem communications function (ICF) files when the I/O is for an intersystem communications function (ICF) device.	PD (11,0)
JBCGT	Number of communications reads (logical): These do not include remote workstation activity. They include only activity related to intersystem communications function (ICF) files when the I/O is for an intersystem communications function (ICF) device.	PD (11,0)
JBSPD	Total suspended time (in milliseconds.)	PD (11,0)
JBRRT	Total time job waited during reroutes (in milliseconds.)	PD (11,0)

Field Name	Description	Attribute
JBLND	Line description: Name of the communications line this workstation and its controller are attached to. This is only available for remote workstations.	C (10)
JBCUD	Controller description: Name of the controller this workstation is attached to.	C (10)
JB2LND	Secondary line description (pass-through and emulation only.)	C (10)
JB2CUD	Secondary controller description (pass-through and emulation only).	C (10)
JBIRN	IOP resource name.	C (10)
JBDRN	Device resource name.	C (10)
JBPORT	Workstation port number.	PD (3,0)
JBSTN	Workstation number.	PD (3,0)
JBPTSF	Pass-through source flag.	PD (1,0)
JBPTTF	Pass-through target flag.	PD (1,0)
JBEAF	Emulation active flag.	PD (1,0)
JBPCSF	System i Access application flag.	PD (1,0)
JBDDMF	Target DDM job flag.	PD (1,0)
JBMRTF	MRT flag.	PD (1,0)
JBS36E	Is job running in System/36 environment? (Y/N)	C (1)
JBQT	Total queuing time to enter the MRT (in hundredths of seconds).	PD (11,0)
JBMMT	Total time spent at MRTMAX (in seconds).	PD (11,0)
JBNEQT	Total number of entries into the MRT.	PD (11,0)
JBPUTN	The number of times ACPUT was called to send user or control data. Calls that result in no data being sent are not counted.	PD (11,0)
JBPUTA	The total amount of user and control data that was sent by the user's program. This value does not include the LLID, MAPNAME, or FMH-7 data lengths.	PD (11,0)
JBGETN	The number of times ACGET was called to receive user or control data. Calls that result in no data being given to the user application will not be counted.	PD (11,0)
JBGETA	The total amount of user and control data that was received by the user's program. This value does not include the LLID, MAPNAME, or FMH-7 data lengths.	PD (11,0)
JBPGIN	The number of intervals that begin at the first put of a chain and end when CD is returned to the user.	PD (11,0)
JBPGIL	The amount of time (in milliseconds) spent in intervals that begin at the first put of a chain and end when CD is returned to the user.	PD (11,0)
JBGGIL	The amount of time (in milliseconds) spent in intervals that begin when the first get of a get chain completes and ends when the first get of a new chain is issued.	PD (11,0)
JBRTI	This is the number of request I/O commands (REQIOs) issued to transmit data of any kind (including FMH-7s.)	PD (11,0)

Field Name	Description	Attribute
JBRRI	This is the number of REQIOs issued to receive data of any kind (including FMH-7s.)	PD (11,0)
JBXSLR	File system symbolic link reads. This count includes the following file systems: Root, QOpenSys, and user-defined file systems.	PD (11,0)
JBXDYR	File system directory reads. This count includes the following file systems: Root, QOpenSys, and user-defined file systems.	PD (11,0)
JBDLCH	File system directory lookup cache hits.	PD (11,0)
JBDLCM	File system lookup cache misses. This count includes the following file systems: Root, QOpenSys, and user-defined file systems.	PD (11,0)
JBSJNM	Submitter's job name.	C (10)
JBSJUS	Submitter's job user.	C (10)
JBSJNB	Submitter's job number.	C (6)
JBSJFG	Submitted job flag. This flag is designed to differentiate locally submitted jobs from jobs that are submitted from remote systems. Currently, this flag supports locally submitted jobs only.	C (1)
JBRSYS	Reserved.	C (10)
JBDEVN	Reserved.	C (10)
JBRLNM	Reserved.	C (8)
JBLLNM	Reserved.	C (8)
JBMODE	Reserved.	C (8)
JBRMNT	Reserved.	C (8)
JBBUP	Reserved.	PD (11,0)
JBBDL	Reserved.	PD (11,0)
JBBFE	Reserved.	PD (11,0)
JBBCO	Database commit operations.	PD (11,0)
JBBRO	Database rollback operations.	PD (11,0)
JBLBO	The cumulative number of SQL cursors which have been full opened.	PD (11,0)
JBLBC	Reserved.	PD (11,0)
JBLBI	Reserved.	PD (11,0)
JBLBS	The cumulative number of SQL cursors which have been pseudo-opened. Pseudo-opens are also known as *reused SQL cursors*.	PD (11,0)
JBDQS	Reserved.	PD (11,0)
JBDQR	Reserved.	PD (11,0)
JBNDA	Reserved.	PD (11,0)
JBNUS	Reserved.	PD (11,0)
JBSIT1	Reserved.	PD (11,0)
JBSIT2	Reserved.	PD (11,0)
JBSIT3	Reserved.	PD (11,0)
JBGRUP	Job group.	C (3)

Field Name	Description	Attribute
JBTDE	System task identifier. This field cannot be displayed.	C (8)
JBFLAG	Job flag (See notes.) Field cannot be displayed.	C (2)
JBSVRT	Server type. The type of server represented by the job. A value of blank (or blank space) indicates that the job is not part of a server. For more information on server types, see Server jobs and Server table.	C (30)
JBFSOPN	File system opens. This count includes the following file systems: Root, QOpenSys, and user-defined files systems.	PD (11,0)
JBFSDC	File system directory creates. This count includes the following file systems: Root, QOpenSys, and user-defined files systems.	PD (11,0)
JBFSNDC	File system non-directory creates. Count of create operations for non-directory objects such as files or symbolic links. This count includes the following file systems: Root, QOpenSys, and user-defined files systems.	PD (11,0)
JBFSDD	File system directory deletes. This count includes the following file systems: Root, QOpenSys, and user-defined files systems.	PD (11,0)
JBFSNDD	File system non-directory deletes. Count of delete operations for non-directory objects such as files or symbolic links. This count includes the following file systems: Root, QOpenSys, and user-defined files systems.	PD (11,0)

Notes:

Table 1. Job flags:

Bit
0 Pass-through service
1 Pass-through target
2 Emulation active
3 System i Access application
4 Target DDM job
5 MRT
6-15 not used

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Related information:

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance

database files.

Collection Services data files: QAPMJOBS and QAPMJOBL

The QAPMJOBL file is provided for compatibility with the performance monitor and combines data from the QAPMJOBMI file and the QAPMJOBOS file.

The QAPMJOBS file is created when the performance monitor database files are migrated with the Convert Performance Collection (CVTPFRCOL) command to a newer release. Collection Services does not create the QAPMJOBS file.

The database files contain data for each job, task or thread (one record per job, task, or thread). Collection Services provides data only for jobs that consume CPU during an interval. "Job" means job, task, or thread. Data in this file comes from the *JOBMI and *JOBOS categories.

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DTETIM	Interval date (yymmdd) for job interval entry and job completion date, and time (hhmmss) for job completion entry.	C (12)
INTSEC	Elapsed interval seconds.	PD (7,0)
JBSSYS	Name of the subsystem the job is running in.	C (10)
JBSLIB	Name of the library the subsystem description is in.	C (10)
JBNAME	Job name/workstation name.	C (16)
JBUSER	Job user.	C (10)
JBNBR	Job number.	C (6)
JBACCO	Job accounting code. Field cannot be displayed.	C (15)
JBTYPE	Job type (A:Autostart, B:Batch, I:Interactive, M:Subsystem monitor, R:Spool reader, S:System, V:SLIC task, W:Spool writer, X:SCPF job)	C (1)
JBSTYP	Job subtype. (T:MRT (System/36 environment only) E:Evoke (communications batch), P:Print driver job, J:Prestart job, F:M36 (Advanced/36 server job), D:Batch immediate job, U:Alternative spool user.)	C (1)
JBTTYP	Task type. (01:Resident task, 02:Supervisor task, 03:MI process task, 04:S36 emulation task).	C (2)
JBTTYE	Task type extender. See task type extender definitions for detailed information about a task type extender. (See note 1 on page 103.)	C (2)

Field Name	Description	Attribute
JBFLAG	Job flag. (Bit, 0:Pass-through source, 1:Pass-through target, 2:Emulation active, 3:System i Access application, 4:Target DDM job, 5:MRT, 6-15: Not used) Field cannot be displayed.	C (2)
JBS36E	Is job running in System/36 environment? (Y/N)	C (1)
JBPOOL	Job pool.	C (2)
JBPRTY	Job priority.	C (3)
JBCPU	Processing unit time (in milliseconds) used. (See note 2 on page 103.)	PD (15,3)
JBRSP	Total transaction time (in seconds.) Certain IBM i functions support the concept of a transaction. The definition of transaction and the characteristics of a transaction are different depending on the type of job or the specific function of the job. For interactive jobs, display I/O transactions are counted. The transaction starts on detection of enter from the workstation; the transaction ends when the keyboard is unlocked. For SNADS jobs, a transaction is the processing of a distribution.	PD (15,3)
JBSLC	Time-slice value (in milliseconds.)	PD (11,0)
JBNTR	Number of transactions. CertainIBM i functions support the concept of a transaction. The definition of transaction and the characteristics of a transaction are different depending on the type of job or the specific function of the job. For interactive jobs, display I/O transactions are counted. The transaction starts on detection of enter from the workstation; the transaction ends when the keyboard is unlocked. For SNADS jobs, a transaction is the processing of a distribution.	PD (11,0)
JBDBR	Number of synchronous database reads: Total number of physical synchronous database read operations for database functions. (See note 2 on page 103.)	PD (11,0)
JBNDB	Number of synchronous nondatabase reads: Total number of physical synchronous nondatabase read operations for nondatabase functions. (See note 2 on page 103.)	PD (11,0)

Field Name	Description	Attribute
JBWRT	Number of writes: Total number of physical database and nondatabase write operations. (See note 2 on page 103.)	PD (11,0)
JBAW	Total number of transitions from active state to wait state for this job. (See note 2 on page 103.)	PD (11,0)
JBWI	Total number of transitions from wait state to ineligible state for this job. (See note 2 on page 103.)	PD (11,0)
JBAI	Total number of transitions from active state to ineligible state for this job. (See note 2 on page 103.)	PD (11,0)
JBPLN	Number of print lines: Number of lines written by the program. This does not reflect what is actually printed. Spooled files can be ended, or printed with multiple copies. (See note 3 on page 103.)	PD (11,0)
JBPPG	Number of print pages. (See note 3 on page 103.)	PD (11,0)
JBPFL	Number of print files. (See note 3 on page 103.)	PD (11,0)
JBLWT	Number of database writes (logical): Number of times the internal database write function was called. This does not include I/O operations to readers/writers, or I/O operations caused by the CPYSPLF or DSPSPLF command. If SEQONLY(*YES) is specified, these numbers show each block of records written, not the number of individual records written. (See note 3 on page 103.)	PD (11,0)
JBLRD	Number of database reads (logical): Number of times the database module was called. This does not include I/O operations to readers/writers, or I/O operations caused by the CPYSPLF or DSPSPLF command. If SEQONLY(*YES) is specified, these numbers show each block of records read, not the number of individual records read. (See note 3 on page 103.)	PD (11,0)
JBDBU	Number of miscellaneous database operations: Updates, deletes, force-end-of-data, commits, rollbacks, and releases (logical). (See note 3 on page 103.)	PD (11,0)

Field Name	Description	Attribute
JBCPT	Number of communications writes: These do not include remote workstation activity. They include only activity related to intersystem communications function (ICF) files when the I/O is for an ICF device. (See note 3 on page 103.)	PD (11,0)
JBCGT	Number of communications reads (logical): These do not include remote workstation activity. They include only activity related to intersystem communications function (ICF) files when the I/O is for an ICF device. (See note 3 on page 103.)	PD (11,0)
JBSPD	Total suspended time (in milliseconds.) (See note 3 on page 103.)	PD (11,0)
JBRRT	Total time job waited during reroutes (in milliseconds.) (See note 3 on page 103.)	PD (11,0)
JBLND	Line description: Name of the communications line this workstation and its controller is attached to. This is only available for remote workstations. (See note 3 on page 103.)	C (10)
JBCUD	Controller description: Name of the controller this workstation is attached to. (See note 3 on page 103.)	C (10)
JB2LND	Secondary line description (pass-through and emulation only.) (See note 3 on page 103.)	C (10)
JB2CUD	Secondary controller description (pass-through and emulation only.) (See note 3 on page 103.)	C (10)
JBBRG	Reserved	PD (9,0)
JBPRG	Reserved	PD (9,0)
JBNDW	Number of synchronous nondatabase writes: Total number of synchronous physical nondatabase write operations for nondatabase functions. (See note 2 on page 103.)	PD (11,0)
JBDBW	Number of synchronous database writes: Total number of synchronous physical database write operations for database functions. (See note 2 on page 103.)	PD (11,0)
JBANDW	Number of asynchronous nondatabase writes: Total number of asynchronous physical nondatabase write operations for nondatabase functions. (See note 2 on page 103.)	PD (11,0)

Field Name	Description	Attribute
JBADBW	Number of asynchronous database writes: Total number of asynchronous physical database write operations for database functions. (See note 2 on page 103.)	PD (11,0)
JBANDR	Number of asynchronous nondatabase reads: Total number of asynchronous physical nondatabase read operations for nondatabase functions. (See note 2 on page 103.)	PD (11,0)
JBADBR	Number of asynchronous database reads: Total number of asynchronous physical database read operations for database functions. (See note 2 on page 103.)	PD (11,0)
JBPW	Number of synchronous permanent writes. (See note 2 on page 103.)	PD (11,0)
JBCS	Reserved	PD (11,0)
JBPAGF	Number of PAG faults. Total number of times the program access group (PAG) was referred to, but was not in main storage. The Licensed Internal Code no longer uses process access groups for caching data. Because of this implementation, this field will always be 0 for more current releases. (See note 2 on page 103.)	PD (11,0)
JBEAO	Reserved	PD (11,0)
JBOBIN	Number of binary overflows. (See note 2 on page 103.)	PD (11,0)
JBODEC	Number of decimal overflows. (See note 2 on page 103.)	PD (11,0)
JBOFLP	Number of floating point overflows. (See note 2 on page 103.)	PD (11,0)
JBIPF	Number of times a page fault occurred on an address that was currently part of an auxiliary storage I/O operation. (See note 2 on page 103.)	PD (11,0)
JBWIO	Number of times the process explicitly waited for outstanding asynchronous I/O operations to complete. (See note 2 on page 103.)	PD (11,0)
JBIRN	IOP resource name. (See note 3 on page 103.)	C (10)
JBDRN	Device resource name. (See note 3 on page 103.)	C (10)
JIOPB	Reserved	PD(3,0)
JIOPA	Reserved	PD(3,0)
JBPORT	Workstation port number. (See note 3 on page 103.)	PD (3,0)

Field Name	Description	Attribute
JBSTN	Workstation number. (See note 3 on page 103.)	PD (3,0)
JBPTSF	Pass-through source flag.	PD (1,0)
JBPTTF	Pass-through target flag.	PD (1,0)
JBEAF	Emulation active flag.	PD (1,0)
JBPCSF	IBM i Access application flag.	PD (1,0)
JBDDMF	Target DDM job flag.	PD (1,0)
JBMRTF	MRT flag.	PD (1,0)
JBROUT	The routing entry index for the subsystem this job is in.	PD (5,0)
JBAPT	Reserved.	PD (11,0)
JBNSW	Reserved.	PD (11,0)
JBSST	Reserved.	PD (11,0)
JBQT2	Reserved.	PD (11,0)
JBCDR	Reserved.	PD (11,0)
JBCDS	Reserved.	PD (11,0)
JBAIQT	Total application input queuing time (in hundredths of a second.) (See note 3 on page 103.)	PD (15,1)
JBNAIQ	Number of application input queuing transactions. (See note 3 on page 103.)	PD (11,0)
JBRUT	Total resource usage time (in seconds.) (See note 3 on page 103.)	PD (15,3)
JBNRU	Number of resource usage transactions. (See note 3 on page 103.)	PD (11,0)
JBQT	Total queuing time to enter the MRT (in hundredths of seconds.) (See note 3 on page 103.)	PD (11,0)
JBMMT	Total time spent at MRTMAX (in seconds.) (See note 3 on page 103.)	PD (11,0)
JBNEQT	Total number of entries into the MRT. (See note 3 on page 103.)	PD (11,0)
JBPUTN	The number of times ACPUT was called to send user or control data. Calls that result in no data being sent are not counted. (See note 3 on page 103.)	PD (11,0)
JBPUTA	The total amount of user and control data that was sent by the user's program. This value does not include the LLID, MAPNAME, or FMH-7 data lengths. (See note 3 on page 103.)	PD (11,0)

Field Name	Description	Attribute
JBGETN	The number of times ACGET was called to receive user or control data. Calls that result in no data being given to the user application will not be counted. (See note 3 on page 103.)	PD (11,0)
JBGETA	The total amount of user and control data that was received by the user's program. This value does not include the LLID, MAPNAME, or FMH-7 data lengths. (See note 3 on page 103.)	PD (11,0)
JBPGIN	The number of intervals that begin at the first put of a chain and end when CD is returned to the user. (See note 3 on page 103.)	PD (11,0)
JBPGIL	The amount of time (in milliseconds) spent in intervals that begin at the first put of a chain and end when CD is returned to the user. (See note 3 on page 103.)	PD (11,0)
JBGGIL	The amount of time (in milliseconds) spent in intervals that begin when the first get of a get chain completes and ends when the first get of a new chain is issued. (See note 3 on page 103.)	PD (11,0)
JBRTI	This is the number of request I/O commands (REQIOs) issued to transmit data of any kind (including FMH-7s.) (See note 3 on page 103.)	PD (11,0)
JBRRI	This is the number of REQIOs issued to receive data of any kind (including FMH-7s.) (See note 3 on page 103.)	PD (11,0)
JBSZWT	Total seize wait time in milliseconds. (See note 2 on page 103.)	PD (15,3)
JBSKSC	Number of socket sends. (See note 3 on page 103.)	PD (11,0)
JBSKBS	Number of socket bytes sent. (See note 3 on page 103.)	PD (11,0)
JBSKRC	Number of socket receives. (See note 3 on page 103.)	PD (11,0)
JBSKBR	Number of socket bytes received. (See note 3 on page 103.)	PD (11,0)
JBXRFR	Stream file reads. (See note 2 on page 103.)	PD (11,0)
JBXRFW	Stream file writes. (See note 2 on page 103.)	PD (11,0)
JBXSLR	File system symbolic link reads. (See note 3 on page 103.)	PD (11,0)
JBXDYR	File system directory reads. (See note 3 on page 103.)	PD (11,0)

Field Name	Description	Attribute
JBDLCH	File system directory lookup cache hits. (See note 3 on page 103.)	PD (11,0)
JBDLCM	File system lookup cache misses.	PD (11,0)
JBSJNM	Submitter's job name. (See note 3 on page 103.)	C (10)
JBSJUS	Submitter's job user. File system directory lookup cache hits. (See note 3 on page 103.)	C (10)
JBSJNB	Submitter's job number. (See note 3 on page 103.)	C (6)
JBSJFG	Submitted job flag. This flag is designed to differentiate locally submitted jobs from jobs that are submitted from remote systems. Currently, this flag supports locally submitted jobs only. (See note 3 on page 103.)	C (1)
JBRSYS	Reserved.	C (10)
JBDEVN	Reserved.	C (10)
JBRLNM	Reserved.	C (8)
JBLLNM	Reserved.	C (8)
JBMODE	Reserved.	C (8)
JBRMNT	Reserved.	C (8)
JBINSX	Reserved.	PD (11,0)
JBBUP	Reserved.	PD (11,0)
JBBDL	Reserved.	PD (11,0)
JBBFE	Reserved.	PD (11,0)
JBBCO	Reserved.	PD (11,0)
JBBRO	Reserved.	PD (11,0)
JBLBO	Reserved.	PD (11,0)
JBLBC	Reserved.	PD (11,0)
JBLBI	Reserved.	PD (11,0)
JBLBS	Reserved.	PD (11,0)
JBDQS	Reserved.	PD (11,0)
JBDQR	Reserved.	PD (11,0)
JBNDA	Reserved.	PD (11,0)
JBNUS	Reserved.	PD (11,0)
JBSIT1	Reserved.	PD (11,0)
JBSIT2	Reserved.	PD (11,0)
JBSIT3	Reserved.	PD (11,0)

Field Name	Description	Attribute
JBTCPU	Total job CPU in milliseconds. Total CPU used by all threads of a multi-threaded job. **Note:** This is not the sum of JBCPU for all job threads due to timing differences in the collection and reporting of these values. (See note 3 on page 103.)	PD (15,3)
JBTHDF	Secondary thread flag. Identifies secondary threads of a multi-threaded job. The values are: 0 for tasks and primary threads; 1 for secondary threads.	PD (1,0)
JBTHID	Thread Identifier. A 4-byte displayable thread identifier. A hex string that is unique for threads within a process. It will be blank for tasks and prior release data.	C (8)
JBTHAC	Active threads. Current number of active threads in the process when the data was sampled. An active thread may be actively running, suspended, or waiting on a resource. Includes the primary thread. (See note 3 on page 103.)	PD (11,0)
JBTHCT	Threads created. Number of threads initiated within this job. Includes both active and terminated threads. (See note 3 on page 103.)	PD (11,0)
JBMTXT	Mutex wait time in milliseconds. Cumulative time the thread waited for a mutex. (See note 2 on page 103.)	PD (15,3)
JBIBM1	Reserved	PD (11,0)
JBSTSF	Status flag: indicates job status relative to this interval. The values are: 0 -- normal interval collection, 1 -- job started in interval, 2 -- job ended in interval, 3 -- job started and ended. Jobs that are rerouted or transferred will result in a termination record (JBSTSF = 2) and a new job record (JBSTSF = 1)	PD (1,0)
JBSVIF	Server interactive flag. Set to '1' if the resource consumed by the function is charged to the interactive capability of the system.	C (1)
JBTFLT	Total page faults.	PD (11,0)
JBEDBC	Database CPU time. The amount of CPU time (in milliseconds) that is used to perform database processing within the single thread or task. (See note 3 on page 103.)	P (15,3)

Field Name	Description	Attribute
JBTDBC	Total database CPU time. The amount of CPU time (in milliseconds) that is used to perform database processing within all threads of a multithreaded job. **Note:** This may not equal the sum of JBEDBC for all job threads. (See note 3 on page 103.)	P (15,3)
JBSVRT	Server type. The type of server represented by the job. A value of blank (or blank space) indicates that the job is not part of a server.	C (30)
JBCOP	Number of primary commit operations performed under the task.	PD (11,0)
JBCOS	Number of secondary commit operations performed under the task. This includes application and system-provided referential integrity commits.	PD (11,0)
JBDOP	Number of primary decommit operations performed under the task.	PD (11,0)
JBDOS	Number of secondary decommit operations performed under the task. This includes application and system-provided referential integrity decommits.	PD (11,0)
JBPJE	Number of physical journal write operations to disk performed under the task.	PD (11,0)
JBNSJE	Number of journal entries not directly related to SMAPP.	PD (11,0)
JBUJD	Number of SMAPP-induced journal entries deposited in user-provided journals.	PD (11,0)
JBSJD	Number of SMAPP-induced journal entries deposited in system-provided (default) journals.	PD (11,0)
JBBFW	Number of journal bytes written to disk. Such entries are packaged within the permanent area of the journal receiver. These are traditional journal entries which can be retrieved and displayed.	PD (15,0)
JBBFA	Number of bytes deposited within the permanent area of the journal receiver. This count includes both those bytes already written to disk and those still cached in main memory. These are traditional journal entries which can be retrieved and displayed.	PD (15,0)

Field Name	Description	Attribute
JBBTW	Number of transient area journal receiver bytes written to disk. The transient area contains hidden journal entries produced by the system, used during IPL, and routed to this transient area only if the customer specifies *RmvIntEnt on the CHGJRN command. This transient area is a separate area on the disk, distinct from the disk space used to store the normal journal entries.	PD (15,0)
JBBTA	Number of bytes generated for the journal receiver transient area. This count includes both transient bytes already written to disk and those still cached in main memory. The transient area contains hidden journal entries produced by the system, used during IPL, and routed to this transient area only if the customer specifies *RmvIntEnt on the CHGJRN command. This transient area is a separate area on the disk, distinct from the disk space used to store the normal journal entries.	PD (15,0)
JBTWT	Amount of time this task spent waiting for journal bundles to be written to disk (in milliseconds). This includes time spent waiting for physical disk write operations initiated by this task to be serviced, as well as time spent waiting for physical disk write operations initiated by other tasks whose journal entries reside in the same journal bundle.	PD (11,0)
JBTNW	Number of times this task waited for journal bundles to be written to disk.	PD (11,0)
JBXRRR	Number of random stream file read operations. This count includes files in the Root, QOpenSys, QDLS, QOPT (when the files are on a volume that is not formatted in Universal Disk Format (UDS)) and user-defined file systems.	PD (11,0)
JBXRRW	Number of random stream file write operations. This count includes files in the Root, QOpenSys, QDLS, QOPT (when the files are on a volume that is not formatted in Universal Disk Format (UDS)) and user-defined file systems.	PD (11,0)

Field Name	Description	Attribute
JBXRFS	Number of fsync operations. This count includes files in the Root, QOpenSys, QDLS, QOPT (when the files are on a volume that is not formatted in Universal Disk Format (UDS)) and user-defined file systems.	PD (11,0)
JBXRBR	Stream file bytes read. This count includes files in the Root, QOpenSys, QDLS, QOPT (when the files are on a volume that is not formatted in Universal Disk Format (UDS)) and user-defined file systems.	PD (15,0)
JBXRBW	Stream file bytes written. This count includes files in the Root, QOpenSys, QDLS, QOPT (when the files are on a volume that is not formatted in Universal Disk Format (UDS)) and user-defined file systems.	PD (15,0)
JBFSH	Number of full secure sockets layer (SSL) handshakes that use server authentication.	PD (11,0)
JBASH	Number of abbreviated (or fast) secure sockets layer (SSL) handshakes that use server authentication.	PD (11,0)
JBFSHA	Number of full secure sockets layer (SSL) handshakes that use server and client authentication.	PD (11,0)
JBASHA	Number of abbreviated (or fast) secure sockets layer (SSL) handshakes that use server and client authentication.	PD (11,0)
JBPGA	Total number of pages of temporary and permanent storage that have been allocated by the job since the job started	P (11,0)
JBPGD	Total number of pages of temporary and permanent storage that have been deallocated by the job since the job started.	P (11,0)
JBCUSR	The user profile that the job was running under at the time the data was sampled.	C (10)
JBFSOPN	File system opens. This count includes the following file systems: Root, QOpenSys, and user-defined files systems.	PD (11,0)
JBFSDC	File system directory creates. This count includes the following file systems: Root, QOpenSys, and user-defined files systems.	PD (11,0)

Field Name	Description	Attribute
JBFSNDC	File system non-directory creates. Count of create operations for non-directory objects such as files or symbolic links. This count includes the following file systems: Root, QOpenSys, and user-defined files systems.	PD (11,0)
JBFSDD	File system directory deletes. This count includes the following file systems: Root, QOpenSys, and user-defined files systems.	PD (11,0)
JBFSNDD	File system non-directory deletes. Count of delete operations for non-directory objects such as files or symbolic links. This count includes the following file systems: Root, QOpenSys, and user-defined files systems.	PD (11,0)
JBACPU	Accumulated total job CPU time in milliseconds. Accumulated CPU time used by all threads of a multi-threaded job since the job started. **Note:** This field is provided for primary threads only.	PD (15,3)
JBIPAF	The remote IP address family flag indicates the type of IP address information provided in field JBIPAD. The following are supported (see <sys/socket.h> and the API referenced under JBIPAD for more information on these values): • Hex 00 = Not set • Hex 02 = AF_INET (IPv4) • Hex 18 = AF_INET6 (IPv6) **Note:** An address may not be available if there is no current connection.	C (1)
JBIPAD	Remote IP address (IPv4 or IPv6). This field displays the binary form of IPv4 or IPv6 address currently being used. If a socket connection has not been established or has ended, this field might be blank. An IPv4 address is 4-bytes long, left-justified in this field. An IPv6 address uses all 16 bytes.	C (16)
JBIPPT	Remote port number. This field displays the port number that is used in this connection.	Z (5,0)
JBUAUF	Reserved.	C (1)

Field Name	Description	Attribute
Notes: 1. For Detailed information about a task type extender, see task type extender definitions. 2. These fields are provided on an individual task or thread basis. For multithreaded jobs, they are not summarized across threads. 3. These fields are provided for primary threads only. If the field is a numeric counter, it is a cumulative total for all threads of a multithreaded job.		

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

"Collection Services data files: Task type extender" on page 231
A task type extender identifies the area of functional support provided by the task.

Related information:

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance database files.

Collection Services data files: QAPMJOBSR

This file contains data for jobs that have performed save or restore operations.

There will be one record per job for each operation type it has performed (see field JSTYPE).

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DATETIME	Interval date and time. The date and time of the sample interval.	Timestamp
INTSEC	Elapsed interval seconds. The number of seconds since the last sample interval.	PD (7, 0)
JSTDE	System task identifier.	C (8)
JSTYPE	Record/operation type. This field identifies the type of data contained within the record. Record types are based on the save/restore operation performed: • '1' - IFS save • '2' - IFS restore • '3' - Library save • '4' - Library restore	C (1)
JSOPSSTR	Operations started. The number of save or restore operations started.	B (9, 0)
JSGRPSTR	Groups started. The number of groups of objects started.	B (9, 0)
JSGPREPRC	Groups preprocessed. The number of groups of objects that have completed preprocessing.	B (9, 0)
JSGCHKRDY	Groups checkpoint ready. The number of groups of objects ready for checkpoint processing. (This metric is supported only for IFS save operations).	B (9, 0)

Field Name	Description	Attribute
JSGCHKISSU	Groups checkpoint issued. The number of groups of objects that have started checkpoint processing. (This metric is supported only for save operations).	B (9, 0)
JSGCHKCMP	Groups checkpoint complete. The number of groups of objects that have completed checkpoint processing. (This metric is supported only for save operations).	B (9, 0)
JSGIOISSU	Groups I/O issued. The number of groups of objects that have started I/O processing.	B (9, 0)
JSGIOCMP	Groups I/O complete. The number of groups of objects that have completed I/O processing. (This metric is not supported for IFS save operations).	B (9, 0)
JSGRLSRDY	Groups release ready. The number of groups of objects ready to be released. (This metric is supported only for IFS operations).	B (9, 0)
JSGOUTRDY	Groups output ready. The number of groups of objects ready for output processing. (This metric is supported only for IFS operations).	B (9, 0)
JSGRPCMP	Groups complete. The number of groups of objects completed.	B (9, 0)
JSCNTSTR	Container starts. The number of containers (libraries or directories) started.	B (9, 0)
JSCNTEND	Container ends. The number of containers (libraries or directories) completed.	B (9, 0)
JSIORQST	I/O requests. The number of I/O requests started.	B (9, 0)
JSIORESP	I/O responses. The number of I/O requests completed.	B (9, 0)
JSLDRQST	Internal object requests. The number of internal objects that have started I/O processing.	B (9, 0)
JSLDRESP	Internal object responses. The number of internal objects that have completed I/O processing.	B (9, 0)
JSCHKRQST	Checkpoint requests. The number of checkpoint requests started. (This metric is supported only for save operations).	B (9, 0)
JSCHKRESP	Checkpoint responses. The number of checkpoint requests completed. (This metric is supported only for save operations).	B (9, 0)
JSOPSCMP	Operations completed. The number of save or restore operations completed successfully.	B (9, 0)
JSOPSTRM	Operations terminated. The number of save or restore operations that ended unsuccessfully.	B (9, 0)
JSOBJSUCC	Successful object count. The number of objects successfully saved or restored.	B (9, 0)
JSOBJFAIL	Unsuccessful object count. The number of objects not successfully saved or restored.	B (9, 0)

Collection Services data files: QAPMJOBWT

This database file contains information about job, task, and thread wait conditions.

At least one record will be written for each job, task, or thread that consumed CPU during the interval (multiple records are possible especially during service activities).

Normally these entries contain individual data for each task and secondary thread that consumed CPU during the interval; however, tasks and secondary threads that both start and end in an interval and have a lifespan that is shorter than the reporting threshold will not be individually reported. Instead records will be added to report this activity each interval by job and node. See field JBSLTCNT in file QAPMJOBMI to identify these entries.

The purpose of this file is to account for the time a job (this means a task, primary thread, or secondary thread) spends waiting and to provide some indication as to the type of wait. Since the reasons for a wait are too numerous to handle individually, they are grouped into sets of functionally related waits. For each group, both the number of waits and time the job spent waiting are reported. The QAPMJOBWTD file provides a description of the type of wait conditions for each counter set.

Although the file contains fields for up to 32 sets of counters, not all may be used. The counter sets (buckets) actually used are reported in a separate file QAPMJOBWTD.

User of this file should be aware of the dynamic nature of the content of this file. Counter sets can be added or redefined by the new release of the operating system. In addition, IBM service representatives can define new counter sets or redefine existing counter sets to allow more granular or more specialized view of the job wait statistics. As a result, user cannot assume that the content of this file is always the same.

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
JWTDE	System task identifier.	X (8)
JWCURT	Current Wait Time: The time in milliseconds the job has spent in the current wait. See JWCURB field for the counter set (bucket) which will be updated when the current wait completes. (This time is not included in other wait counter sets).	B (9,0)
JWCURE	Reserved.	B (9,0)
JWCURB	Current Counter Set (bucket): If this field is non-zero, it reflects the counter set that will be updated when the wait completes.	B (4,0)
JWDSEQ	Description sequence number: Identifies the QAPMJOBWTD records associated with this wait data.	B (4,0)
JWCT01	Count 1. The number of times the job encountered wait conditions associated with this group.	B (9,0)
JWTM01	Time 1. The time in milliseconds the job spent waiting within this group.	B (9,0)
JWCTnn JWTMnn	Count and time are repeated for up to 32 counter sets per record. See note 1.	

Note:

1. When QAPMJOBWT file data was collected on a system with operating system version i5/OS V5R4, only the first 16 counter sets are provided.
2. A job that is waiting will not be reported if it has done no processing in the interval. However, current waits for jobs that have used no CPU are reported in the wait gap file QAPMJOBWTG.

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management

collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Related information:

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance database files.

Collection Services data files: QAPMJOBWTD

This database file contains a description of the counter sets found in file QAPMJOBWT.

One record will be written for each active counter set when the first instance of wait data is encountered (normally at the beginning of the collection). Multiple instances of this data are possible during service activities.

Field Name	Description	Attribute
DTETIM	Interval date (yymmdd) and time (hhmmss): The date and time of the sample interval providing these descriptions. Normally this is the first interval in the *MGTCOL object.	C (12)
DTECEN	Century digit: where 0 indicates 19XX and 1 indicates 20XX.	C (1)
JWDSEQ	Description sequence number: This provides a unique identifier for a set of descriptions. This value is used in file QAPMJOBWT field JWDSEQ to associate counter data with a set of descriptions. Each time updated descriptions are written to this file, this field will contain a new value for that set of descriptions.	B (4,0)
JWTNUM	Total number of wait counter sets reported.	B (4,0)
JWSNBR	Counter set number described by this record.	B (4,0)
JWDESC	Description of the type of data reported in the JWCT*nn* and JWTM*nn* fields. **Note:** This field is in Unicode.	G (50)

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Collection Services data files: QAPMJOBWTG

This database file contains information about job, task, and thread current wait conditions that is not available in the QAPMJOBWT file.

One record will be written for each job, task, or thread that did not consume CPU during the interval – those that are not reported in QAPMJOBWT.

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)

Field Name	Description	Attribute
JWTDE	System task identifier. This field can be used as a join field with QAPMJOBMI and field JBTDE to obtain information about the job associate with this record.	X (8)
JWCURE	Reserved.	B (9,0)
JWCURT	Current Wait Time: The time in microseconds the job has spent in the current wait (total time since the wait began, see note 1).	B (18,0)
JWCURINT	Current Wait Time this interval: The time in microseconds the job has spent waiting during this interval. (See note 1)	B (9,0)
JWDSEQ	Description sequence number: Identifies the QAPMJOBWTD records associated with this wait data.	B (4,0)
JWCURB	Current Counter Set (bucket): If this field is non-zero and positive, it indicates the job is currently waiting and which counter set is associated with the current wait. If this field is zero, wait state information is not available for this job (for example, for the job which has terminated in this interval). In rare cases a value of -1 indicates the data was not obtainable when sampled.	B (4,0)

Note:

1. If job data was collected on a release prior to V6R1, the collected data does not contain sufficient information for the wait gap file:
   - Records are only written for the jobs which eventually ran during the collection. Jobs which never ran during collection will not be represented.
   - Total wait in this wait state (JWCURT field) is estimated and should not be viewed as an accurate measurement.

Collection Services data files: QAPMJSUM

These database file entries contain job summary information.

This file is produced only when *JOBMI, *JOBOS, and *SYSLVL categories are all requested from the Create Performance Data (CRTPFRDTA) command.

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DTETIM	Interval date (yymmdd) for job interval entry and job completion date, and time (hhmmss) for job completion entry.	C (12)
INTSEC	Elapsed interval seconds.	PD (7,0)
DTECEN	Century digit.	C (1)

Field Name	Description	Attribute
JSCBKT	Job group: Identifies the type of jobs for which data is being reported within this record. Values supported are: • DDM: Distributed data management • CA4: System i Access • PAS: Pass-through • MRT: Multiple requester terminal • S6E: System/36 environment • CME: Communications batch • AUT: Autostart batch • BCH: Batch jobs (not included within other groups) • INT: Interactive jobs (job type "I" not reported in other buckets above) • SPL: Spool jobs and the Start CPF job. **Note:** Every job is categorized and reported in one and only one of the above job groups. • INF: Interactive Feature (This group reports the data that is associated with jobs that the machine considers to be interactive. The resource that is consumed in these jobs may be included in the Interactive Feature Utilization.	C (3)
JSCPU	Processing unit time (in milliseconds) used.	PD (11,0)
JSTRNT	Total transaction time (in seconds.)	PD (15,3)
JSTRNS	Number of transactions.	PD (11,0)
JSPRTL	Number of print lines: Number of lines written by the program. This does not reflect what is actually printed. Spooled files can be ended or printed with multiple copies.	PD (11,0)
JSPRTP	Number of print pages.	PD (11,0)
JSSPD	Total suspended time (in milliseconds.)	PD (11,0)
JSRRT	Total time job waited during reroutes (in milliseconds.)	PD (11,0)
JSNEW	New jobs.	PD (11,0)
JSTERM	Terminated jobs.	PD (11,0)
JSJBCT	Number of jobs.	PD (11,0)
JSPDBR	Number of synchronous database reads: Total number of physical synchronous database read operations for database functions.	PD (11,0)

Field Name	Description	Attribute
JSPNDB	Number of synchronous nondatabase reads: Total number of physical synchronous nondatabase read operations for nondatabase functions.	PD (11,0)
JSPWRT	Number of writes: Total number of physical database and nondatabase write operations.	PD (11,0)
JSLDBR	Number of database reads (logical): Number of times the database module was called. This does not include I/O operations to readers/writers, or I/O operations caused by the CPYSPLF or DSPSPLF command. If SEQONLY(*YES) is specified, these numbers show each block of records read, not the number of individual records read.	PD (11,0)
JSLDBW	Number of database writes (logical): Number of times the internal database write function was called. This does not include I/O operations to readers/writers, or I/O operations caused by the CPYSPLF or DSPSPLF command. If SEQONLY(*YES) is specified, these numbers show each block of records written, not the number of individual records written.	PD (11,0)
JSLDBU	Number of miscellaneous database operations: Updates, deletes, force-end-of-data, and releases (logical.)	PD (11,0)
JSCMPT	Number of communications writes: These do not include remote workstation activity. They include only activity related to intersystem communications function (ICF) files when the I/O is for an intersystem communications function (ICF) device.	PD (11,0)
JSCMGT	Number of communications reads (logical): These do not include remote workstation activity. They include only activity related to intersystem communications function (ICF) files when the I/O is for an intersystem communications function (ICF) device.	PD (11,0)
JSBRG	Reserved	PD (11,0)
JSPRG	Reserved	PD (11,0)
JSNDW	Number of synchronous nondatabase writes: Total number of synchronous physical nondatabase write operations for nondatabase functions.	PD (11,0)

Field Name	Description	Attribute
JSDBW	Number of synchronous database writes: Total number of synchronous physical database write operations for database functions.	PD (11,0)
JSANDW	Number of asynchronous nondatabase writes: Total number of asynchronous physical nondatabase write operations for nondatabase functions.	PD (11,0)
JSADBW	Number of asynchronous database writes: Total number of asynchronous physical database write operations for database functions.	PD (11,0)
JSANDR	Number of asynchronous nondatabase reads: Total number of asynchronous physical nondatabase read operations for nondatabase functions.	PD (11,0)
JSADBR	Number of asynchronous database reads: Total number of asynchronous physical database read operations for database functions.	PD (11,0)
JSPW	Number of synchronous permanent writes.	PD (11,0)
JSCS	Reserved	PD (11,0)
JSPAGF	Number of PAG faults. Total number of times the program access group (PAG) was referred to, but was not in main storage. The Licensed Internal Code no longer uses process access groups for caching data. Because of this implementation, this field will always be 0 for more current releases.	PD (11,0)
JSEAO	Reserved	PD (11,0)
JSOBIN	Number of binary overflows.	PD (11,0)
JSODEC	Number of decimal overflows.	PD (11,0)
JSOFLP	Number of floating point overflows.	PD (11,0)
JSIPF	Number of times a page fault occurred on an address that was currently part of an auxiliary storage I/O operation.	PD (11,0)
JSWIO	Number of times the process explicitly waited for outstanding asynchronous I/O operations to complete.	PD (11,0)
JSSKSC	Number of socket sends.	PD (11,0)
JSSKBS	Number of socket bytes sent.	PD (11,0)
JSSKRC	Number of socket receives.	PD (11,0)
JSSKBR	Number of socket bytes received.	PD (11,0)
JSXRFR	Stream file reads.	PD (11,0)

Field Name	Description	Attribute
JSXRFW	Stream file writes.	PD (11,0)
JSXSLR	File system symbolic link reads.	PD (11,0)
JSXDYR	File system directory reads.	PD (11,0)
JSDLCH	File system directory lookup cache hits.	PD (11,0)
JSDLCM	File system lookup cache misses.	PD (11,0)
JSSZWT	Total seize wait time in milliseconds.	PD (11,0)

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Related information:

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance database files.

Collection Services data files: QAPMJVM

This file contains data for Java Virtual Machines (JVM) that are active within a process at the time the data was sampled. There is one record per interval for each process that has a JVM active.

Note: The only supported JVM is IBM Technology for Java (J9).

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DTETIM	Interval date (yymmdd) for job interval entry and job completion date, and time (hhmmss) for job completion entry.	C (12)
INTSEC	Elapsed interval seconds. The number of seconds since the last sample interval.	PD (7,0)
DTECEN	Century digit.	C (1)
JVNAME	Job name/workstation name.	C (10)
JVUSER	Job user.	C (10)
JVNBR	Job number.	C (6)
JVTDE	System task identifier. The system task identifier associated with the initial thread of a job. This field can be used to join records to QAPMJOBMI field JBTDE.	H (8)

Field Name	Description	Attribute
JVTYPE	Job type. • 0: IBM Technology for Java - 32 Bit • 1: IBM Technology for Java - 64 Bit	C (1)
JVVRSN	JVM version (UTF-16 CCSID 1200).	G (10)
JVPID	Process identifier.	B (9,0)
JVPOLICY	Garbage collection policy (UTF-16 CCSID 1200).	G (15)
JVHEAPC	Current heap allocated. Current amount of heap storage allocated for this JVM in kilobytes.	B (18,0)
JVHEAPU	Heap in use. Amount of allocated heap actually being used in kilobytes.	B (18,0)
JVMLCMEM	Malloc memory size in kilobytes.	B (18,0)
JVINTMEM	Internal memory size in kilobytes.	B (18,0)
JVJITMEM	JIT memory size in kilobytes.	B (18,0)
JVSCLMEM	Shared class size in kilobytes.	B (18,0)
JVGCCNBR	Last garbage collection cycle number.	B (9,0)
JVGCCTME	Last garbage collection cycle time. Clock time spent performing garbage collection tasks during the last garbage collection cycle in milliseconds.	B (18,0)
JVGCITME	Interval garbage collection time. Clock time spent performing garbage collection tasks during this collection interval in milliseconds.	B (18,0)
JVGCTTME	Total garbage collection time. The total amount of clock time spent performing garbage collection by all tasks since the JVM started.	B (18,0)

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Collection Services data files: QAPMLAPD

This database file includes integrated services digital network LAPD file entries and lists the fields in the LAPD file.

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DTETIM	Interval date (yymmdd) and time (hhmmss): The date and time of the sample interval.	C (12)

Field Name	Description	Attribute
INTSEC	Elapsed interval seconds: The number of seconds since the last sample interval.	PD (7,0)
IOPRN	IOP resource name.	C(10)
LDIOP	Reserved.	C(1)
LDTYPE	The resource type of the IOP or adapter represented by this record.	C (4)
LDNWI	Network interface: The name of the network interface description.	C (10)
LDLSP	Link speed: The speed of this channel in bits per second.	PD (11,0)
LDPRCL	Protocol type: D for LAPD.	C (1)
LPLOFA	Loss of frame alignment: Total number of times when a time period equivalent to two 48-bit frames has elapsed without having detected valid pairs of line code violations.	PD (11,0)
LPLECV	Reserved.	PD (11,0)
LPDTSI	Reserved.	PD (11,0)
LPDTSO	Reserved.	PD (11,0)
LPFECV	Reserved.	PD (11,0)
LPES	Errored seconds: Total number of seconds that had one or more path coding violations, one or more out of frame defects, one or more controlled slip events, or a detected alarm indication signal defect.	PD (5,0)
LPSES	Severely errored seconds: Total number of seconds that had 320 or more path coding violation error events, one or more out of frame defects, or a detected alarm indication signal event. • For ESF signals, the number of seconds that had 320 or more path coding violation error events, one or more out of frame defects, or a detected alarm indication signal defect. • For E1-CRC signals, the number of seconds that had 832 or more path coding violation error events or one or more out of frame defects. • For E1-noCRC signals, the number of seconds that had 2048 or more line coding violations. • For D4 signals, the number of seconds that had framing error events, an out of frame defect, or 1544 or more line coding violations.	PD (5,0)
LPCOL	Collision detect: The number of times the TE detected that its transmitted frame had been corrupted by another TE attempting to use the same bus.	PD (11,0)
LLCRCE	Receive CRC errors: The number of received frames that contain a CRC (cycle redundancy check) error.	PD (11,0)
LLSFE	Short frame errors: The number of short frames received. A short frame is a frame that has fewer octets between its start flag and end flag than is permitted.	PD (11,0)
LLORUN	Receive overrun: The number of times the ISDN subsystem could not keep pace with incoming data because of local controller overload.	PD (11,0)

Field Name	Description	Attribute
LLURUN	Transmit underrun: The number of times the ISDN subsystem could not keep pace with outgoing data because of local controller overload.	PD (11,0)
LLABRT	Aborts received: The number of frames received that contained HDLC abort indicators.	PD (11,0)
LLFRIE	Frames received in error: The sum of receive cycle redundancy check (CRC) errors, short frame errors, receive overrun, transmit underrun, aborts received, and frame sequence errors (LLCRCE, LLSFE, LLORUN, LLURUN, LLABRT, LSSEQE).	PD (11,0)
LSFRT	Retransmitted frames.	PD (11,0)
LSSEQE	Sequence errors: The number of received frames that contained sequence numbers indicating frames were lost.	PD (11,0)
LSFTRN	Total number of frames transmitted: This includes information (I), unnumbered information (UI), and supervisory (S) frames sent to a remote link station. This includes frames retransmitted and frames sent on transmissions stopped by transmit underrun, in addition to successful transmissions.	PD (11,0)
LSFRCV	Total number of frames received: This includes information (I), unnumbered information (UI), and supervisory (S) frames received from the remote link station. This includes no errors.	PD (11,0)
LSBTRN	Total bytes transmitted: The total number of bytes transmitted to a remote link station. This includes bytes retransmitted and bytes sent on transmissions stopped by a transmit underrun, in addition to successful transmissions.	PD (11,0)
LSBRCV	Total bytes received: The total number of bytes received from the remote link station. This includes no errors.	PD (11,0)
LQTOC	Total outgoing calls: The number of outgoing call attempts. For X.31 this includes outgoing SETUP messages requesting a packet switched connection. For Q.932, outgoing REGISTER messages are not included in this count.	PD (11,0)
LQROC	Retry for outgoing calls: The number of outgoing calls that were rejected by the network. For X.31 this includes retry for outgoing SETUP messages requesting a packet switched connection. For Q.932, retry for outgoing REGISTER messages are not included in this count.	PD (11,0)
LQTIC	Total incoming calls: The number of incoming call attempts. For X.31 this includes incoming SETUP messages requesting a packet switched connection. For Q.932, incoming REGISTER messages are not included in this count.	PD (11,0)

Field Name	Description	Attribute
LQRIC	Rejected incoming calls: The number of incoming calls that are rejected by the TE. For passive bus, the call may be intended for another TE that shares the same passive bus. This includes calls rejected both directly by the IOP and by the IOM. For X.31 this includes rejected incoming SETUP messages requesting a packet switched connection. For Q.932, rejected incoming REGISTER messages are not included in this count.	PD (11,0)
LDCHLS1	S1 maintenance channel: Set to one if the S1 maintenance channel was active.	PD (1,0)
LPLES	Line errored seconds: The number of seconds that had one or more line coding violations.	PD (5,0)
LPCSS	Controlled slip seconds: The number of seconds that had one or more controlled slip events.	PD (5,0)
LPBES	Bursty errored seconds (error second type B): The number of seconds that had greater than one but fewer than 320 path coding violation error events, no severely errored frame defects, and no detected incoming alarm indication signal defects.	PD (5,0)
LPSEFS	Severely errored framing seconds: The number of seconds that had one or more out of frame defects or a detected alarm indication signal defect.	PD (5,0)
LPDM	Degraded minutes: The number of minutes during which the estimated error rate exceeds 1E-6 but does not exceed 1E-3.	PD (5,0)
LPUS	Unavailable seconds: The number of seconds during which the interface is unavailable.	PD (5,0)

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Related information:

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance database files.

Collection Services data files: QAPMLIOP

This database file includes twinaxial IOP data file entries and lists the fields in the twinaxial IOP data file.

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DTETIM	Interval date (yymmdd) and time (hhmmss): The date and time of the sample interval.	C (12)
INTSEC	Elapsed interval seconds: The number of seconds since the last sample interval.	PD (7,0)

Field Name	Description	Attribute
IOPRN	IOP resource name.	C(10)
LIIOP	Reserved	C (1)
LITYPE	IOP type.	C (4)
LIRIDC	Resource ID of controller: Field cannot be displayed.	C (8)
LITPKT	Total packets transferred.	PD (11,0)
LIKBYO	Total KB transmitted from the IOP to the system across the bus.	PD (11,0)
LIKBYI	Total KB transmitted to the IOP from the system across the bus.	PD (11,0)
LIOPSR	OPSTART bus unit message received from another bus unit using normal flow.	PD (11,0)
LIOPSS	OPSTART bus unit message received from another bus unit using reverse flow method 2.	PD (11,0)
LISGLR	Signal bus unit message received from another bus unit.	PD (11,0)
LIOPST	OPSTARTS sent to another bus unit using reverse flow method 2.	PD (11,0)
LISGLS	Signals sent to another bus unit.	PD (11,0)
LIRSTQ	Restart queues bus unit message sent to another bus unit.	PD (11,0)
LIRQDO	DMA requests sent for output of data: The number of requests the IOP sends to the system for data to be sent from the IOP to the system across the bus.	PD (11,0)
LIRQDI	DMA requests sent for input of data: The number of requests the IOP sends to the system for data to be sent to the IOP from the system across the bus.	PD (11,0)
LIBNAR	Occurrences of BNA received.	PD (11,0)
LIIOQC	Wait-on-I/O queue count: The number of I/O requests on the wait-on-I/O queue at sample time. The wait-on-I/O queue holds I/O requests that are being processed or waiting to be processed.	PD (11,0)
LISQC	Suspend queue count: The number of elements on the suspend queue at sample time.	PD (11,0)
LIAQC	Active queue count: The number of elements on the active queue at sample time. The active queue holds I/O requests that were sent from the host system and were not yet sent to the wait-on-I/O queue.	PD (11,0)
LITWIU	Twinaxial use count: The number of times when the wait-on-I/O queue was sampled and the count was not zero (I/O in progress). If this value is divided by the sample count, the result (times 100) is the percentage of time when I/O is occurring.	PD (5,0)
LISMPL	Sample count: The number of times during the snapshot interval that the various IOP queues were sampled.	PD (5,0)
LIIDLC	Idle counts (see notes): The number of times the workstation IOP ran an idle loop. This is done when the IOP has no work to perform. This count is used with the idle loop time.	PD (11,0)

Field Name	Description	Attribute
LIIDLT	Idle loop time (times 0.01 microsecond) (see notes): The time (in hundredths of microseconds) to run the idle loop once.	PD (11,0)

Notes: The idle loop count and time are used to calculate the communications IOP utilization as follows:

1. Convert the product of the idle loop count times the idle loop time from hundredths of microseconds to seconds. Subtract this from the interval time, and divide the results by the interval time. For example:

   IOP utilization = (INTSEC - (CIIDLC * CIIDLT)/10**8) / INTSEC

2. The performance monitor reports I/O processor (IOP) statistics different beginning with Version 3 Release 7. Therefore, performance statistics for IOPs introduced in Version 3 Release 7 or later releases are reported in the QAPMMIOP file. Performance statistics are reported in the QAPMMIOP file even if the IOP supports only one of the three IOP functions (communications, disk, or local workstation). Performance statistics for IOPs that were introduced before Version 3 Release 7 will continue to be reported in the appropriate IOP file (QAPMCIOP, QAPMDIOP, QAPMLIOP, and QAPMMIOP).

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Related information:

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance database files.

Collection Services data files: QAPMLPARH

This database file contains logical partition configuration and utilization data as it is known to the hypervisor.

This data is collected if the collecting partition has been authorized to obtain it. This authorization is a partition configuration attribute set on the Hardware Management Console (HMC).

| A POWER6® system with firmware level xx340_075 or later is required for this data to be available.

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DTETIM	Interval date (yymmdd) and time (hhmmss): The date and time of the sample interval.	C (12)
DTECEN	Century digit. 0 indicates 19*xx* , and 1 indicates 20*xx*.	C (1)
INTSEC	Elapsed interval seconds: The number of seconds since the last sample interval.	B (4,0)
HPPID	Partition identifier. This is the binary value that is consistent with the partition number in the QAPMCONF file with GKEY of PN.	B (4,0)

Field Name	Description	Attribute
HPOSID	Operating system identifier. • -1 = unknown • 0 = IBM i partition • 1 = other OS	B (4,0)
HPSHRF	Shared processor flag. Indicates if the partition uses shared processors: • 0 = Partition does not share physical processors. • 1 = Partition shares physical processors and partition is capped • 2 = Partition shares physical processors and partition is uncapped	C(1)
HPATRF	Reserved.	C (1)
HPVPRC	Virtual processors. The number of virtual processors currently configured for this partition.	B (4,0)
HPVPID	Virtual shared pool ID. This is the identifier of the partition's current virtual shared processor pool.	B (4,0)
HPPPID	Reserved.	B (4,0)
HPVALA	Reserved.	B (4,0)
HPPRCCC	Current processing capacity. The partition capacity that is represented as the number of processor units currently allocated to this partition.	B (5,2)
HPINTCC	Reserved.	B (5,2)
HPMEMC	Partition memory. This is the amount of memory in megabytes that is currently allocated to the partition.	B (18,0)
HPPRCE	Processor entitled time. The amount of processor time in milliseconds that the partition was entitled to consume based on its processing capacity.	B (18,0)
HPPRCEU	Processor entitled time used. The amount of processor time in milliseconds consumed by the partition. This value will not exceed the partition entitled time (field HPPRCE). For shared processor partitions this represents the capped capacity used .	B (18,0)
HPPRCUU	Uncapped processor time used. The amount of processor time in milliseconds consumed by a shared uncapped partition in excess of its entitled capacity. (Fields HPPRCEUand HPPRCUU should be added together for total processing time used by uncapped partitions.)	B (18,0)
HPPRCD	Donated processor time. The amount of processor time in milliseconds donated by the partition to the physical shared processor pool. This value may be non-zero only for dedicated partitions that are able to donate their unused CPU.	B (18,0)

Field Name	Description	Attribute
HPPRCIDL	Processor idle time. The amount of processor time in milliseconds the partition was idle as reported by the partition to the hypervisor. For all partitions (especially dedicated partitions), the hypervisor reported processor time used includes time the partition was in control of the processor but did not use it for real work. The partition view of idle time is reflected here for partitions that report it (dependent on the operating system). The following formula yields time used from a partition perspective: `HPPRCEU + HPPRCUU = HPPRCIDL`	B (18,0)
HPCYCL	Partition cycles. The number of processor run cycles attributed to the partition.	B (18,0)
HPINST	Partition instructions. The number of processor run instructions attributed to the partition.	B (18,0)
HPMEML	Minimum memory - the minimum amount of memory (in units of megabytes) that is needed in this partition.	B (18,0)
HPMEMH	Maximum memory - the maximum amount of memory (in units of megabytes) that can be assigned to this partition.	B (18,0)
HPVPRL	Minimum virtual processors. The minimum number of virtual processors that are needed in this partition.	B (4,0)
HPVPRH	Maximum virtual processors. The maximum number of virtual processors that can be assigned to this partition.	B (4,0)
HPPRCCL	Minimum processing capacity. The minimum amount of processing capacity that is needed in this partition.	B (5,2)
HPPRCCH	Maximum processing capacity. The maximum amount of processing capacity that can be assigned to this partition.	B (5,2)
HPINTCL	Reserved.	B (5,2)
HPINTCH	Reserved.	B (5,2)
HPVALB	Reserved.	H (4)
HPNAME	Partition name. Name of partition as entered into HMC (7 bit ASCII). Within this file the name is padded with blanks.	C (48)
HPVAL01 - HPVAL08	Reserved.	B (18,0)

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Related information:

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance database files.

Collection Services data files: QAPMMIOP

This database file includes multifunction IOP file entries and lists the fields in the multifunction IOP file.

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DTETIM	Interval date (yymmdd) and time (hhmmss): The date and time of the sample interval.	C (12)
INTSEC	Elapsed interval seconds: The number of seconds since the last sample interval.	PD (7,0)
IOPRN	IOP resource name.	C(10)
MIIOP	Reserved	C (1)
MITYPE	IOP type.	C (4)
MIPRCU	Processor utilization: The number of fixed-time intervals that this multifunction IOP spent in the idle state.	PD (11,0)
MIRAMU	Available local storage (in bytes): The number of bytes of free local storage in the IOP. The free local storage will probably be non-contiguous because of fragmentation.	PD (11,0)
MITPKT	Total packets transferred.	PD (11,0)
MIKBYO	Total KB transmitted from an IOP to the system across the bus.	PD (11,0)
MIKBYI	Total KB transmitted to the IOP from the system across the bus.	PD (11,0)
MIOPSR	OPSTART bus unit message received from another bus unit using normal flow.	PD (11,0)
MIOPSS	OPSTART bus unit message received from another bus unit using reverse flow method 2 (always 0).	PD (11,0)
MISGLR	Signals received.	PD (11,0)
MIOPST	OPSTARTs sent.	PD (11,0)
MISLGS	Signals sent.	PD (11,0)
MIRSTQ	Restart queues sent.	PD (11,0)
MIRQDO	DMA requests sent for output of data: The number of requests the IOP sends to the system for data to be sent from the IOP to the system across the bus.	PD (11,0)
MIRQDI	DMA requests sent for input of data: The number of requests the IOP sends to the system for data to be sent to the IOP from the system across the bus.	PD (11,0)
MIBNAR	Occurrences of BNA received.	PD (11,0)
MIIDLC	Idle loop count (see notes): The number of times the primary IOP processor ran an idle loop. This is done when the IOP has no work to perform. This count is used with the idle loop time to calculate the primary IOP processor utilization in seconds.	PD (11,0)

Field Name	Description	Attribute
MIIDLT	Idle loop time (see notes): the time (in hundredths of microseconds) for the primary IOP processor to run the idle loop once. The value reported could be a multiple of the actual idle loop time. In that case, the value reported for the idle loop count is reduced by the same multiple so that the calculated IOP processor utilization is correct	PD (11,0)
MISYSF	IOP system function time: Total processing unit time (in milliseconds) used by the IOP for basic system function that is running in the primary IOP processor.	PD (11,0)
MIDISK	Disk time: Total processing unit time (in milliseconds) used by disk tasks that are running in the primary IOP processor.	PD (11,0)
MICOMM	Total communications time: Total processing unit time (in milliseconds) used by all the communications protocol tasks that are running in the primary IOP processor.	PD (11,0)
MISDLC	SDLC communications time: Total processing unit time (in milliseconds) used by SDLC communications tasks that are running in the primary IOP processor.	PD (11,0)
MIASYN	ASYNC communications time: Total processing unit time (in milliseconds) used by asynchronous communications tasks that are running in the primary IOP processor.	PD (11,0)
MIBSC	BSC communications time: Total processing unit time (in milliseconds) used by BSC communications tasks that are running in the primary IOP processor.	PD (11,0)
MIX25L	X.25 LLC communications time: Total processing unit time (in milliseconds) used by X.25 LLC communications tasks that are running in the primary IOP processor.	PD (11,0)
MIX25P	X.25 PLC communications time: Total processing unit time (in milliseconds) used by X.25 packet layer communications (PLC) tasks that are running in the primary IOP processor.	PD (11,0)
MIX25D	X.25 DLC communications time: Total processing unit time (in milliseconds) used by X.25 data link control (DLC) and Point-to-Point Protocol (PPP) communications tasks that are running in the primary IOP processor.	PD (11,0)
MILAN	LAN communications time: Total processing unit time (in milliseconds) used by token-ring network, Ethernet, frame relay, fiber distributed data interface (FDDI), and asynchronous transfer mode (ATM) communications tasks. This includes processing time due to token-ring and Ethernet LAN emulation.	PD (11,0)
MISDLD	SDLC short-hold mode time: Total processing unit time (in milliseconds) used by SDLC short-hold mode tasks that are running in the primary IOP processor.	PD (11,0)
MIRV02	ISDN communications time: Total processing unit time (in milliseconds) used by ISDN LAPD, LAPE, and PMI communications tasks that are running in the primary IOP processor.	PD (11,0)

Field Name	Description	Attribute
MIRV03	ISDN communications time: Total processing unit time (in milliseconds) used by ISDN Q.931 communications tasks that are running in the primary IOP processor.	PD (11,0)
MISP	Service processor time: Total processing unit time (in milliseconds) used by the service processor function that is running in the primary IOP processor.	PD (11,0)
MIF1ID	Subfunction 1 ID: The identifier for additional functions that may be running in the primary IOP processor.	C (2)
MIF1TM	Subfunction 1 time: Total processing unit time (in milliseconds) used by the IOP function that is running in the primary IOP processor	PD (11,0)
MIF2ID	Subfunction 2 ID: The identifier for additional functions that may be running in the primary IOP processor.	C (2)
MIF2TM	Subfunction 2 time: Total processing unit time (in milliseconds) used by the IOP function that is running in the primary IOP processor	PD (11,0)
MIF3ID	Subfunction 3 ID: The identifier for additional functions that may be running in the primary IOP processor.	C (2)
MIF3TM	Subfunction 3 time: Total processing unit time (in milliseconds) used by the IOP function that is running in the primary IOP processor.	PD (11,0)
MIF4ID	Subfunction 4 ID: The identifier for additional functions that may be running in the primary IOP processor.	C(2)
MIF4TM	Subfunction 4 time: Total processing unit time (in milliseconds) used by the IOP function that is running in the primary IOP processor.	PD (11,0)
MIF5ID	Subfunction 5 ID: The identifier for additional functions that are running in the primary IOP processor.	C(2)
MIF5TM	Subfunction 5 time in milliseconds used by the IOP function that is running in the primary IOP processor.	PD (11,0)
MITWNX	Total processing unit time (in milliseconds) used by workstation and local twinaxial tasks that are running in the primary IOP processor.	PD (11,0)
MICPU2	Processor 2 utilization: The utilization (in milliseconds) of the second IOP processor that handles specialized function. This field applies to Integrated xSeries Server (excluding I/O adapter versions) and is zero for other IOPs. Collection Services will not report values for Integrated xSeries Server.	PD (11,0)
MIADP	Reserved.	PD (11,0)
MIOTH	Other function time: Total processing unit time (in milliseconds) used by other IOP functions that are running in the primary IOP processor. Other functions include those that cannot be reported in the subfunction 1-5 ID fields because all of the subfunction 1-5 ID fields are in use.	PD (11,0)
MIINT	Interrupt level time: Total processing unit time (in milliseconds) used by interrupt level processing that is running in the primary IOP processor. This does not include interrupt level processing time that can be associated with a particular task.	PD (11,0)

Field Name	Description	Attribute
MIRA	Remote access time: Total processing unit time (in milliseconds) used by the remote access tasks that are running in the primary IOP processor.	PD (11,0)

Notes: The idle loop count and time are used to calculate the multifunction IOP utilization as follows:

1. Convert the product of the idle loop count times the idle loop time from hundredths of microseconds to seconds. Subtract this from the interval time, and divide the results by the interval time. For example:

   IOP utilization = (INTSEC - (MIIDLE * MIIDLT)/10**8) / INTSEC

2. The performance monitor reports I/O processor (IOP) statistics different beginning with Version 3 Release 7. Therefore, performance statistics for IOPs introduced in Version 3 Release 7 or later releases are reported in the QAPMMIOP file. Performance statistics are reported in the QAPMMIOP file even if the IOP supports only one of the three IOP functions (communications, disk, or local workstation). Performance statistics for IOPs that were introduced before Version 3 Release 7 will continue to be reported in the appropriate IOP file (QAPMCIOP, QAPMDIOP, QAPMLIOP, and QAPMMIOP).
3. The function 1 - 5 identifiers are for additional functions that may be running in the primary IOP. Each function identifier has an associated function time value. The function identifier may have the following value:

Value	Description
00	No time value supplied.
11	Integrated xSeries Server pipe task (Integrated xSeries Server was previously known as file server I/O processor and FSIOP)
20	Storage subsystem task
22	Tape task
23	Diskette task
24	Optical task
30	Communications subsystem task
42	Localtalk task
43	Wireless task
60	Cryptography task

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Related information:

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance database files.

Collection Services data files: QAPMPOOL and QAPMPOOLL

The QAPMPOOLL file is provided to allow for compatibility between Collection Services and the performance monitor. The QAPMPOOL file is created when the performance monitor database files are

migrated with the Convert Performance Collection (CVTPFRCOL) command to a newer release. Collection Services does not create the QAPMPOOL file. Rather, Collection Services creates the QAPMPOOLL file.

This data includes main storage pool file entries and lists the fields in the storage pool file.

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command	PD (5,0)
DTETIM	Interval date (yymmdd) and time (hhmmss): The date and time of the sample interval.	C (12)
INTSEC	Elapsed interval seconds: The number of seconds since the last sample interval.	PD (7,0)
PONBR	Pool number: Specifies the unique identifier of this pool. The value is from 1 to 64.	C (2)
POACTL	Pool activity level setting: The maximum number of processes that can be active in the machine at the same time.	PD (5,0)
POSIZ	Pool size (in KB): The amount of main storage assigned to the pool.	PD (9,0)
PORES	Pool reserved size (in KB): Specifies the amount of storage from the pool that is dedicated to machine functions.	PD (9,0)
PODBF	Pool database faults: Total number of interruptions to processes (not necessarily assigned to this pool) that were required to transfer data into the pool to permit the MI instruction to process the database function.	PD (11,0)
PONDBF	Pool nondatabase faults: Total number of interruptions to processes (not necessarily assigned to this pool) that were required to transfer data into the pool to permit the MI instruction to process nondatabase functions.	PD (11,0)
PODBPG	Pool database pages read: Total number of pages of database data transferred from auxiliary storage to the pool to permit the instruction to run as a consequence of set access state, implicit access group movement, and internal machine actions.	PD (11,0)
PONDPG	Pool nondatabase pages read: Total number of pages of database data transferred from auxiliary storage to the pool to permit the instruction to run as a consequence of set access state, implicit access group movement, and internal machine actions.	PD (11,0)
POAW	Number of active to wait transitions: Total number of transitions by processes assigned to this pool from active state to wait state.	PD (11,0)
POWI	Number of wait to ineligible: Total number of transitions by processes assigned to this pool from wait state to ineligible state.	PD (11,0)
POAI	Number of active to ineligible: Total number of transitions by processes assigned to this pool from active state to ineligible state.	PD (11,0)

Field Name	Description	Attribute
PTTYPE	Type of tuning: The method used by the system to tune the storage pool: • 0 -- No tuning • 1 -- Static tuning • 2 -- Dynamic tuning of transfers into main storage • 3 -- Dynamic tuning of transfers into main storage and to auxiliary storage.	C (1)
PTPAGE	Change page handling. The method used by the system to determine when to write changed pages to auxiliary storage: • 0 -- Use the system default • 1 -- Periodically transfer changed pages to auxiliary storage.	C (1)
PTNDBF	Non-database blocking factor. The amount of data (in KB) that should be brought into main storage when a request is made to read non-database objects from auxiliary storage.	PD (3,0)
PTDBF1	Database blocking factor (class 1.) The amount of data (in KB) that should be brought into main storage when a request is made to read database objects from auxiliary storage.	PD (3,0)
PTDEX1	Database exchange operation type (class 1.) The exchange operation used to reduce the working set size. • 0 -- Use the system default • 1 -- Allow exchange operations • 2 -- Disable exchange operations • 3 -- Disable exchange operations. The data that already exists in main storage should be a good candidate to be replaced when additional storage is needed in the storage pool.	C (1)
PTDTS1	Database type of transfer to auxiliary storage (class 1.) The method the system uses to process a request to write an object to auxiliary storage. • 0 -- Use the system default • 1 -- Purge object from main storage • 2 -- Write object to auxiliary storage • 3 -- Indicate object is a good candidate for replacement • 4 -- Use the system page replacement algorithm.	C (1)
PTDBF2	Database blocking factor (class 2.) See PTDBF1.	PD (3,0)
PTDEX2	Database allow exchange operations (class 2.) See PTDEX1.	C (1)
PTDTS2	Database type of transfer to auxiliary storage (class 2.) See PTDTS1.	C (1)
PTDBF3	Database blocking factor (class 3.) See PTDBF1.	PD (3,0)
PTDEX3	Database allow exchange operations (class 3.) See PTDEX1.	C (1)
PTDTS3	Database type of transfer to auxiliary storage (class 3.) See PTDTS1.	C (1)

Field Name	Description	Attribute
PTDBF4	Database blocking factor (class 4.) See PTDBF1.	PD (3,0)
PTDEX4	Database allow exchange operations (class 4.) See PTDEX1.	C (1)
PTDTS4	Database type of transfer to auxiliary storage (class 4.) See PTDTS1.	C (1)

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Related information:

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance database files.

Collection Services data files: QAPMPOOLB

This database file includes main storage pool file entries and lists the counters for system storage pools.

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DTETIM	Interval date (yymmdd) and time (hhmmss): The date and time of the sample interval.	C (12)
INTSEC	Elapsed interval seconds: The number of seconds since the last sample interval.	PD (7,0)
DTECEN	Century digit.	C (1)
PONBR	Pool number: Specifies the unique identifier of this pool. The value is from 1 to 64.	C (3)
POACTL	Pool activity level setting: The maximum number of processes that can be active in the machine at the same time.	PD (5,0)
POSIZ	Pool size (in KB): The amount of main storage assigned to the pool.	PD (9,0)
PORES	Pool reserved size (in KB): Specifies the amount of storage from the pool that is dedicated to machine functions.	PD (9,0)
PODBF	Pool database faults: Total number of interruptions to processes (not necessarily assigned to this pool) that were required to transfer data into the pool to permit the MI instruction to process the database function.	PD (11,0)
PONDBF	Pool nondatabase faults: Total number of interruptions to processes (not necessarily assigned to this pool) that were required to transfer data into the pool to permit the MI instruction to process nondatabase functions.	PD (11,0)

Field Name	Description	Attribute
PODBPG	Pool database pages read: Total number of pages of database data transferred from auxiliary storage to the pool to permit the instruction to run as a consequence of set access state, implicit access group movement, and internal machine actions.	PD (11,0)
PONDPG	Pool nondatabase pages read: Total number of pages of database data transferred from auxiliary storage to the pool to permit the instruction to run as a consequence of set access state, implicit access group movement, and internal machine actions.	PD (11,0)
POAW	Number of active to wait transitions: Total number of transitions by processes assigned to this pool from active state to wait state.	PD (11,0)
POWI	Number of wait to ineligible: Total number of transitions by processes assigned to this pool from wait state to ineligible state.	PD (11,0)
POAI	Number of active to ineligible: Total number of transitions by processes assigned to this pool from active state to ineligible state.	PD (11,0)
POUNAL	Unallocated pool space (in KB). The amount of pool storage available to be used for new transfers into the main storage pool without displacing any virtual data already in the pool.	PD (9,0)

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Related information:

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance database files.

Collection Services data files: QAPMPOOLT

This database file includes main storage pool file entries and lists the tuning information for the storage pools.

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DTETIM	Interval date (yymmdd) and time (hhmmss): The date and time of the sample interval.	C (12)
INTSEC	Elapsed interval seconds: The number of seconds since the last sample interval.	PD (7,0)
DTECEN	Century digit.	C (1)
PONBR	Pool number: Specifies the unique identifier of this pool. The value is from 1 to 64.	C (3)

Field Name	Description	Attribute
PTTYPE	Type of tuning: The method used by the system to tune the storage pool: • 0 -- No tuning • 1 -- Static tuning • 2 -- Dynamic tuning of transfers into main storage • 3 -- Dynamic tuning of transfers into main storage and to auxiliary storage.	C (1)
PTPAGE	Change page handling. The method used by the system to determine when to write changed pages to auxiliary storage: • 0 -- Use the system default • 1 -- Periodically transfer changed pages to auxiliary storage.	C (1)
PTNDBF	Non-database blocking factor. The amount of data (in KB) that should be brought into main storage when a request is made to read non-database objects from auxiliary storage.	PD (3,0)
PTDBF1	Database blocking factor (class 1.) The amount of data (in KB) that should be brought into main storage when a request is made to read database objects from auxiliary storage.	PD (3,0)
PTDEX1	Database exchange operation type (class 1.) The exchange operation used to reduce the working set size. • 0 -- Use the system default • 1 -- Allow exchange operations • 2 -- Disable exchange operations • 3 -- Disable exchange operations. The data that already exists in main storage should be a good candidate to be replaced when additional storage is needed in the storage pool.	C (1)
PTDTS1	Database type of transfer to auxiliary storage (class 1.) The method the system uses to process a request to write an object to auxiliary storage. • 0 -- Use the system default • 1 -- Purge object from main storage • 2 -- Write object to auxiliary storage • 3 -- Indicate object is a good candidate for replacement • 4 -- Use the system page replacement algorithm.	C (1)
PTDBF2	Database blocking factor (class 2.) See PTDBF1.	PD (3,0)
PTDEX2	Database allow exchange operations (class 2.) See PTDEX1.	C (1)
PTDTS2	Database type of transfer to auxiliary storage (class 2.) See PTDTS1.	C (1)
PTDBF3	Database blocking factor (class 3.) See PTDBF1.	PD (3,0)
PTDEX3	Database allow exchange operations (class 3.) See PTDEX1.	C (1)
PTDTS3	Database type of transfer to auxiliary storage (class 3.) See PTDTS1.	C (1)

Field Name	Description	Attribute
PTDBF4	Database blocking factor (class 4.) See PTDBF1.	PD (3,0)
PTDEX4	Database allow exchange operations (class 4.) See PTDEX1.	C (1)
PTDTS4	Database type of transfer to auxiliary storage (class 4.) See PTDTS1.	C (1)

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Related information:

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance database files.

Collection Services data files: QAPMPPP

This database file includes the fields in the Point-to-Point Protocol (PPP) file.

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DTETIM	Interval date (yymmdd) and time (hhmmss): The date and time of the sample interval.	C (12)
INTSEC	Elapsed interval seconds: The number of seconds since the last sample interval.	PD (7,0)
DTECEN	Century digit: where 0 indicates 19XX and 1 indicates 20XX.	C (1)
IOPRN	IOP resource name	C (10)
PPTYPE	The resource type of the IOP or adapter represented by this record.	C (4)
PPLND	Line description: The name of the description for this line.	C (10)
PPLSP	Line speed: The speed of the line in bits per second (bps).	BIN (18,0)
PPPRCL	Protocol type: P for PPP.	C (1)
PPBTRN	Bytes transmitted: The number of bytes transmitted including bytes transmitted again.	BIN (18,0)
PPBRCV	Bytes received: The number of bytes received including all bytes in frames that had any kind of error.	BIN (18,0)
PPFTRN	Frames transmitted: The number of frames transmitted.	BIN (18,0)
PPEFFR	Error-free frames received: The number of frames received without errors.	BIN (18,0)
PPFRIE	Frames received in error: The number of frames received with one of the following errors: a frame check sequence error, an abnormal end, a receive overrun, or a frame truncated error.	BIN (9,0)

Field Name	Description	Attribute
PPIFR	Invalid frames received: The number of frames received with a residue error (frame is not on a byte boundary).	BIN (9,0)

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Related information:

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance database files.

Collection Services data files: QAPMRESP

This database file includes local workstation response time file entries and contains transaction information based on data collected within the local workstation controller.

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DTETIM	Interval date (yymmdd) and time (hhmmss): The date and time of the sample interval.	C (12)
INTSEC	Elapsed interval seconds: The number of seconds since the last sample interval.	PD (7,0)
IOPRN	IOP resource name.	C(10)
LRIOP	Reserved.	C (1)
LRBKT1	Transactions in first response time monitor bracket: The number of transactions from 0 up to and including n seconds for this workstation during the snapshot interval. The n value is the response time monitor 1 bracket upper limit, and is specified on the Advanced Local Response Time Options dialog from the Collection Services properties page within the System i Navigator interface. A transaction is defined as the time from when the keyboard locked because the Enter key or a function key was pressed to the time when the keyboard unlocked because the display was refreshed.	PD (7,0)
LRBKT2	Transactions in second response time monitor bracket: The number of transactions greater than the response time monitor 1 and up to and including response time monitor 2 limit.	PD (7,0)
LRBKT3	Transactions in third response time monitor bracket: The number of transactions greater than the response time monitor 2 and up to and including response time monitor 3 limit.	PD (7,0)
LRBKT4	Transactions in fourth response time monitor bracket: The number of transactions greater than the response time monitor 3 and up to and including response time monitor 4 limit.	PD (7,0)

Field Name	Description	Attribute
LRBKT5	Transactions in fifth response time monitor bracket: The number of transactions above (longer) than the response time monitor 4 limit.	PD (7,0)
LRPORT	Workstation port number.	PD (3,0)
LRSTN	Workstation number.	PD (3,0)
LRTRNS	The total of all the individual times for all exchanges measured and reported by this record including overflows (LRBKT5). The total time in seconds for all transactions.	PD (7,0)
LRCUD	Controller description name.	C (10)

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Related information:

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance database files.

Collection Services data files: QAPMSAP

This database file contains service access point (SAP) file entries and lists the fields in the SAP file.

SAP statistics are reported for active TRLAN, Ethernet, DDI, and frame relay line descriptions associated with TRLAN, Ethernet, DDI and Frame Relay ports, respectively. SAP statistics are also reported for ATM ports that support token-ring and Ethernet LAN emulation.

There will be one record per service access point per line per port per interval. Port resource name should also be used to uniquely associate records across intervals.

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DTETIM	Interval date (yymmdd) and time (hhmmss): The date and time of the sample interval.	C (12)
INTSEC	Elapsed interval seconds: The number of seconds since the last sample interval.	PD (7,0)
IOPRN	IOP resource name.	C(10)
SCIOPI	Reserved	C (1)
SCTYPE	The resource type of the IOP or adapter represented by this record.	C (4)
SCSSAP	SSAP ID: The source SAP (SSAP) ID.	C (2)
SCLND	Line description: The name of the description for the line containing the SAP listed above. For frame relay, this is the network interface (NWI) description.	C (10)

Field Name	Description	Attribute
SCLSPD	Line speed: The speed of the line in bits per second (bps). For some lines, this value might change as time progresses.	PD (11,0)
SCIRCV	UI frames received: Total number of UI frames received at this SSAP.	PD (11,0)
SCIXMT	UI frames transmitted: Total number of UI frames transmitted through this SSAP.	PD (11,0)
SCBRCV	UI bytes received: Total number of bytes received at this SSAP contained within a UI frame.	PD (11,0)
SCBXMT	UI bytes transmitted: Total number of bytes transmitted through this SSAP contained within a UI frame.	PD (11,0)
SCIDSC	Number of UI frames received and discarded by this SSAP.	PD (11,0)
SCPRCL	Protocol types: • E:Token-Ring • F:DDI • T:Ethernet • Y:Frame Relay	C (1)
SCPORT	Port resource name.	C (10)

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Related information:

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance database files.

Collection Services data files: QAPMSHRMP

This database file reports shared memory pool data.

Data is generated only when a partition is defined to use a shared memory pool. Data is reported for both the partition's use of the pool as well as pool metrics that are the sum of activity caused by all partitions using the pool.

A POWER6 system with firmware level xx340_075 or later is required for this data to be available.

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DATETIME	Interval date and time. The date and time of the sample interval.	Timestamp
INTSEC	Elapsed interval seconds. The number of seconds since the last sample interval.	PD (7, 0)
SMPOOLID	Shared memory pool identifier. The identifier of the shared memory pool which this partition is using.	B (5,0)

Field Name	Description	Attribute
SMWEIGHT	Memory weight. Indicates the variable memory capacity weight assigned to the partition. Valid values are hex 0 -255. The larger the value, the less likely this partition is to lose memory.	B (3,0)
SMREALUSE	Physical real memory used. The amount of shared physical real memory, in bytes, that was being used by partition memory at sample time.	B (18, 0)
SMACCDLY	Real memory access delays. The number of partition processor waits that have occurred because of page faults on logical real memory.	B (18, 0)
SMACCWAIT	Real memory access wait time. The amount of time, in milliseconds, that partition processors have waited for real memory page faults to be satisfied.	B (18, 0)
SMOVRCAP	Reserved	B (18, 0)
SMENTIOC	Entitled memory capacity for I/O. The amount of memory, in bytes, currently assigned to the partition for use by I/O requests.	B (18, 0)
SMMINIOC	Minimum entitled memory capacity for I/O. The minimum amount of entitled memory, in bytes, needed to function with the current I/O configuration.	B (18, 0)
SMOPTIOC	Optimal entitled memory capacity for I/O. The amount of entitled memory, in bytes, that would allow the current I/O configuration to function without any I/O memory mapping delays.	B (18, 0)
SMIOCUSE	Current I/O memory capacity in use. The amount of I/O memory, in bytes, currently mapped by I/O requests.	B (18, 0)
SMIOCMAX	Maximum I/O memory capacity used. The maximum amount of I/O memory, in bytes, that has been mapped by I/O requests since the partition was last IPLed or the value was reset by an explicit request.	B (18, 0)
SMIOMDLY	I/O memory mapping delays. The cumulative number of delays that have occurred because insufficient entitled memory was available to map an I/O request since the partition was last IPLed.	B (18, 0)
MPACCDLY	Pool real memory access delays. The number of virtual partition memory page faults within the shared memory pool for all partitions.	B (18, 0)
MPACCWAIT	Pool real memory access wait time. The amount of time, in milliseconds, that all partitions processors have spent waiting for page faults to be satisfied within the shared memory pool.	B (18, 0)
MPPHYMEM	Pool physical memory. The total amount of physical memory, in bytes, assigned to the shared memory pool	B (18, 0)
MPLOGMEM	Pool logical memory. The summation, in bytes, of the logical real memory of all active partition active partitions served by the shared memory pool.	B (18, 0)
MPENTIOC	Pool entitled I/O memory. The summation, in bytes, of the I/O entitlement of all active partitions served by the shared memory pool.	B (18,0)

Field Name	Description	Attribute
MPIOCUSE	Pool entitled I/O memory in use. The summation, in bytes, of I/O memory mapped by I/O requests from all active partitions served by the shared memory pool.	B (18,0)
SMFIELD1	Reserved	B (18,0)
SMFIELD2	Reserved	B (18,0)
SMFIELD3	Reserved	B (18, 0)
SMFIELD4	Reserved	B (18, 0)
MPFIELD1	Reserved	B (18, 0)
MPFIELD2	Reserved	B (18, 0)

Collection Services data files: QAPMSNA

This database file defines the fields in the Systems Network Architecture (SNA) file record.

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DTETIM	Interval date (yymmdd) and time (hhmmss): The date and time of the sample interval.	C (12)
INTSEC	Elapsed interval seconds: The number of seconds since the last sample interval.	PD (7,0)
SCTLNM	Controller description name.	C (10)
SLINNM	Line description name.	C (10)
STSKNM	T2 station I/O manager (SIOM) task name.	C (6)
SLIOMT	Line I/O manager task name.	C (6)
SACPNM	Adjacent control point (CP) name.	C (8)
SANWID	Adjacent network ID.	C (8)
SAPPN	APPN-capable (Y=yes, N=no).	C (1)
SCTYP	Controller type (A=APPC, H=Host).	C (1)
SSMFS	Send maximum frame size.	PD (11,0)
SRMFS	Receive maximum frame size.	PD (11,0)
STLLBU	Date (yymmdd) and time (hhmmss) when most recent connection was established with the adjacent system.	C (12)
SNLBU	Number of times a connection has been established with the remote system.	PD (11,0)
STACVO	Cumulative elapsed time for automatically created and/or varied-on devices.	PD (11,0)
SNACVO	Number of automatically created and/or varied-on devices.	PD (11,0)
SNADD	Number of automatically deleted devices.	PD (11,0)
SNWAIN	Number of work activities coming in from other T2 SIOM tasks (for example, messages received).	PD (11,0)
SNWAOU	Number of work activities sent out to other T2 SIOM tasks (for example, messages received).	PD (11,0)
The following fields refer to end point session attributes:		

Field Name	Description	Attribute
ENNSS	Number of network priority sessions started.	PD (11,0)
ENNSE	Number of network priority sessions ended.	PD (11,0)
ENNBB	Number of request units with begin bracket sent and received for all network priority sessions.	PD (11,0)
ENNEB	Number of request units with end bracket sent and received for all network priority sessions.	PD (11,0)
ENSPWT	The cumulative wait time for all network priority sessions (in milliseconds) caused by session-level send messages. This wait time measures the amount of time application data was blocked (could not be sent) waiting for a pacing response to be received from the adjacent system.	PD (11,0)
ENSPNW	Number of waits occurring for all network priority sessions for session-level send pacing. That is, the number of times application data was blocked (could not be sent) waiting for a pacing response to be received from the adjacent system.	PD (11,0)
ENSPPW	Number of potential waits occurring for all network priority sessions for session-level send pacing. This is the worst case that would occur if the sending of application data was delayed waiting for every pacing response sent by the adjacent system.	PD (11,0)
ENSPWS	The cumulative window size for all network priority sessions for session-level send pacing. Each time a pacing response is received from the adjacent system on a network priority session, this count is increased by window size specified by the pacing response.	PD (11,0)
ENIPWT	The cumulative wait time for all network priority sessions (in milliseconds) for internal session-level pacing. That is, the number of times application data was blocked (could not be sent) waiting for data to be delivered to the adjacent system.	PD (11,0)
ENIPNW	Number of waits occurring for all network priority sessions for internal session-level pacing. That is, the number of times application data was blocked (could not be sent) waiting for data to be delivered to the adjacent system.	PD (11,0)
ENQNRE	Number of network priority request/response units entering the transmission priority queue.	PD (11,0)
ENQLRE	Length of network priority request/response units entering the transmission priority queue.	PD (11,0)
ENQNRL	Number of network priority request/response units leaving the transmission priority queue.	PD (11,0)
ENQLRL	Length of network priority request/response units leaving the transmission priority queue.	PD (11,0)
ENQTRR	Cumulative wait time in network transmission priority queue.	PD (11,0)
ENNRUD	Number of network priority request/response units delivered to the adjacent system.	PD (11,0)
ENLRUD	Length of network priority request/response units delivered to the adjacent system.	PD (11,0)

Field Name	Description	Attribute
ENTRUD	Cumulative service time to deliver a network priority request/response unit to the adjacent system.	PD (11,0)
ENNRUR	Number of network priority request/response units received from the adjacent system.	PD (11,0)
ENLRUR	Length of network priority request/response units received from the adjacent system.	PD (11,0)
EHNSS	Number of high priority sessions started	PD (11,0)
EHNSE	Number of high priority sessions ended	PD (11,0)
EHNBB	Number of request units with begin bracket sent and received for all high priority sessions	PD (11,0)
EHNEB	Number of request units with end bracket sent and received for all high priority sessions	PD (11,0)
EHSPWT	The cumulative wait time for all high priority sessions (in milliseconds) caused by session-level send messages. This wait time measures the amount of time application data was blocked (could not be sent) waiting for a pacing response to be received from the adjacent system.	PD (11,0)
EHSPNW	Number of waits occurring for all high priority sessions for session-level send pacing. That is, the number of times application data was blocked (could not be sent) waiting for a pacing response to be received from the adjacent system.	PD (11,0)
EHSPPW	Number of potential waits occurring for all high priority sessions for session-level send pacing. This is the worst case that would occur if the sending of application data was delayed waiting for every pacing response sent by the adjacent system.	PD (11,0)
EHSPWS	The cumulative window size for all high priority sessions for session-level send pacing. Each time a pacing response is received from the adjacent system on a network priority session, this count is increased by window size specified by the pacing response.	PD (11,0)
EHIPWT	The cumulative wait time for all high priority sessions (in milliseconds) for internal session-level pacing. That is, the number of times application data was blocked (could not be sent) waiting for data to be delivered to the adjacent system.	PD (11,0)
EHIPNW	Number of waits occurring for all high priority sessions for internal session-level pacing. That is, the number of times application data was blocked (could not be sent) waiting for data to be delivered to the adjacent system.	PD (11,0)
EHQNRE	Number of high priority request/response units entering the transmission priority queue.	PD (11,0)
EHQLRE	Length of high priority request/response units entering the transmission priority queue.	PD (11,0)
EHQNRL	Number of high priority request/response units leaving the transmission priority queue.	PD (11,0)
EHQLRL	Length of high priority request/response units leaving the transmission priority queue.	PD (11,0)
EHQTRR	Cumulative wait time in high transmission priority queue.	PD (11,0)

Field Name	Description	Attribute
EHNRUD	Number of high priority request/response units delivered to the adjacent system.	PD (11,0)
EHLRUD	Length of high priority request/response units delivered to the adjacent system.	PD (11,0)
EHTRUD	Cumulative service time to deliver a high priority request/response unit to the adjacent system.	PD (11,0)
EHNRUR	Number of high priority request/response units received from the adjacent system.	PD (11,0)
EHLRUR	Length of high priority request/response units received from the adjacent system.	PD (11,0)
EMNSS	Number of medium priority sessions started	PD (11,0)
EMNSE	Number of medium priority sessions ended	PD (11,0)
EMNBB	Number of request units with begin bracket sent and received for all medium priority sessions	PD (11,0)
EMNEB	Number of request units with end bracket sent and received for all medium priority sessions	PD (11,0)
EMSPWT	The cumulative wait time for all medium priority sessions (in milliseconds) caused by session-level send messages. This wait time measures the amount of time application data was blocked (could not be sent) waiting for a pacing response to be received from the adjacent system	PD (11,0)
EMSPNW	Number of waits occurring for all medium priority sessions for session-level send pacing. That is, the number of times application data was blocked (could not be sent) waiting for a pacing response to be received from the adjacent system.	PD (11,0)
EMSPPW	Number of potential waits occurring for all medium priority sessions for session-level send pacing. This is the worst case that would occur if the sending of application data was delayed waiting for every pacing response sent by the adjacent system.	PD (11,0)
EMSPWS	The cumulative window size for all medium priority sessions for session-level send pacing. Each time a pacing response is received from the adjacent system on a network priority session, this count is increased by window size specified by the pacing response.	PD (11,0)
EMIPWT	The cumulative wait time for all medium priority sessions (in milliseconds) for internal session-level pacing. That is, the number of times application data was blocked (could not be sent) waiting for data to be delivered to the adjacent system.	PD (11,0)
EMIPNW	Number of waits occurring for all medium priority sessions for internal session-level pacing. That is, the number of times application data was blocked (could not be sent) waiting for data to be delivered to the adjacent system.	PD (11,0)
EMQNRE	Number of medium priority request/response units entering the transmission priority queue.	PD (11,0)
EMQLRE	Length of medium priority request/response units entering the transmission priority queue.	PD (11,0)

Field Name	Description	Attribute
EMQNRL	Number of medium priority request/response units leaving the transmission priority queue.	PD (11,0)
EMQLRL	Length of medium priority request/response units leaving the transmission priority queue.	PD (11,0)
EMQTRR	Cumulative wait time in medium transmission priority queue.	PD (11,0)
EMNRUD	Number of medium priority request/response units delivered to the adjacent system.	PD (11,0)
EMLRUD	Length of medium priority request/response units delivered to the adjacent system.	PD (11,0)
EMTRUD	Cumulative service time to deliver a medium priority request/response unit to the adjacent system.	PD (11,0)
EMNRUR	Number of medium priority request/response units received from the adjacent system.	PD (11,0)
EMLRUR	Length of medium priority request/response units received from the adjacent system.	PD (11,0)
ELNSS	Number of low priority sessions started	PD (11,0)
ELNSE	Number of low priority sessions ended.	PD (11,0)
ELNBB	Number of request units with begin bracket sent and received for all low priority sessions.	PD (11,0)
ELNEB	Number of request units with end bracket sent and received for all low priority sessions.	PD (11,0)
ELSPWT	The cumulative wait time for all low priority sessions (in milliseconds) caused by session-level send messages. This wait time measures the amount of time application data was blocked (could not be sent) waiting for a pacing response to be received from the adjacent system	PD (11,0)
ELSPNW	Number of waits occurring for all low priority sessions for session-level send pacing. That is, the number of times application data was blocked (could not be sent) waiting for a pacing response to be received from the adjacent system.	PD (11,0)
ELSPPW	Number of potential waits occurring for all low priority sessions for session-level send pacing. This is the worst case that would occur if the sending of application data was delayed waiting for every pacing response sent by the adjacent system.	PD (11,0)
ELSPWS	The cumulative window size for all low priority sessions for session-level send pacing. Each time a pacing response is received from the adjacent system on a network priority session, this count is increased by window size specified by the pacing response.	PD (11,0)
ELIPWT	The cumulative wait time for all low priority sessions (in milliseconds) for internal session-level pacing. That is, the number of times application data was blocked (could not be sent) waiting for data to be delivered to the adjacent system.	PD (11,0)
ELIPNW	Number of waits occurring for all low priority sessions for internal session-level pacing. That is, the number of times application data was blocked (could not be sent) waiting for data to be delivered to the adjacent system.	PD (11,0)

Field Name	Description	Attribute
ELQNRE	Number of low priority request/response units entering the transmission priority queue.	PD (11,0)
ELQLRE	Length of low priority request/response units entering the transmission priority queue.	PD (11,0)
ELQNRL	Number of low priority request/response units leaving the transmission priority queue.	PD (11,0)
ELQLRL	Length of low priority request/response units leaving the transmission priority queue.	PD (11,0)
ELQTRR	Cumulative wait time in low transmission priority queue.	PD (11,0)
ELNRUD	Number of low priority request/response units delivered to the adjacent system.	PD (11,0)
ELLRUD	Length of low priority request/response units delivered to the adjacent system.	PD (11,0)
ELTRUD	Cumulative service time to deliver a low priority request/response unit to the adjacent system.	PD (11,0)
ELNRUR	Number of low priority request/response units received from the adjacent system.	PD (11,0)
ELLRUR	Length of low priority request/response units received from the adjacent system.	PD (11,0)
The following fields refer to intermediate sessions:		
INNSS	Number of network priority sessions started	PD (11,0)
INNSE	Number of network priority sessions ended	PD (11,0)
INNBB	Number of request units with begin bracket sent and received for all network priority sessions	PD (11,0)
INNEB	Number of request units with end bracket sent and received for all network priority sessions	PD (11,0)
INSPWT	The cumulative wait time for all network priority sessions (in milliseconds) caused by session-level send messages. This wait time measures the amount of time application data was blocked (could not be sent) waiting for a pacing response to be received from the adjacent system.	PD (11,0)
INSPNW	Number of waits occurring for all network priority sessions for session-level send pacing. That is, the number of times application data was blocked (could not be sent) waiting for a pacing response to be received from the adjacent system.	PD (11,0)
INSPPW	Number of potential waits occurring for all network priority sessions for session-level send pacing. This is the worst case that would occur if the sending of application data was delayed waiting for every pacing response sent by the adjacent system.	PD (11,0)
INSPWS	The cumulative window size for all network priority sessions for session-level send pacing. Each time a pacing response is received from the adjacent system on a network priority session, this count is increased by window size specified by the pacing response.	PD (11,0)

Field Name	Description	Attribute
INIPWT	The cumulative wait time for all network priority sessions (in milliseconds) for internal session-level pacing. That is, the number of times application data was blocked (could not be sent) waiting for data to be delivered to the adjacent system.	PD (11,0)
INIPNW	Number of waits occurring for all network priority sessions for internal session-level pacing. That is, the number of times application data was blocked (could not be sent) waiting for data to be delivered to the adjacent system.	PD (11,0)
INQNRE	Number of network priority request/response units entering the transmission priority queue.	PD (11,0)
INQLRE	Length of network priority request/response units entering the transmission priority queue.	PD (11,0)
INQNRL	Number of network priority request/response units leaving the transmission priority queue.	PD (11,0)
INQLRL	Length of network priority request/response units leaving the transmission priority queue.	PD (11,0)
INQTRR	Cumulative wait time in network transmission priority queue.	PD (11,0)
INNRUD	Number of network priority request/response units delivered to the adjacent system.	PD (11,0)
INLRUD	Length of network priority request/response units delivered to the adjacent system.	PD (11,0)
INTRUD	Cumulative service time to deliver a network priority request/response unit to the adjacent system.	PD (11,0)
INNRUR	Number of network priority request/response units received from the adjacent system.	PD (11,0)
INLRUR	Length of network priority request/response units received from the adjacent system.	PD (11,0)
IHNSS	Number of high priority sessions started.	PD (11,0)
IHNSE	Number of high priority sessions ended.	PD (11,0)
IHNBB	Number of request units with begin bracket sent and received for all high priority sessions.	PD (11,0)
IHNEB	Number of request units with end bracket sent and received for all high priority sessions.	PD (11,0)
IHSPWT	The cumulative wait time for all high priority sessions (in milliseconds) caused by session-level send messages. This wait time measures the amount of time application data was blocked (could not be sent) waiting for a pacing response to be received from the adjacent system.	PD (11,0)
IHSPNW	Number of waits occurring for all high priority sessions for session-level send pacing. That is, the number of times application data was blocked (could not be sent) waiting for a pacing response to be received from the adjacent system.	PD (11,0)
IHSPPW	Number of potential waits occurring for all high priority sessions for session-level send pacing. This is the worst case that would occur if the sending of application data was delayed waiting for every pacing response sent by the adjacent system.	PD (11,0)

Field Name	Description	Attribute
IHSPWS	The cumulative window size for all high priority sessions for session-level send pacing. Each time a pacing response is received from the adjacent system on a network priority session, this count is increased by window size specified by the pacing response.	PD (11,0)
IHIPWT	The cumulative wait time for all high priority sessions (in milliseconds) for internal session-level pacing. That is, the number of times application data was blocked (could not be sent) waiting for data to be delivered to the adjacent system.	PD (11,0)
IHIPNW	Number of waits occurring for all high priority sessions for internal session-level pacing. That is, the number of times application data was blocked (could not be sent) waiting for data to be delivered to the adjacent system.	PD (11,0)
IHQNRE	Number of high priority request/response units entering the transmission priority queue.	PD (11,0)
IHQLRE	Length of high priority request/response units entering the transmission priority queue.	PD (11,0)
IHQNRL	Number of high priority request/response units leaving the transmission priority queue.	PD (11,0)
IHQLRL	Length of high priority request/response units leaving the transmission priority queue.	PD (11,0)
IHQTRR	Cumulative wait time in high transmission priority queue.	PD (11,0)
IHNRUD	Number of high priority request/response units delivered to the adjacent system.	PD (11,0)
IHLRUD	Length of high priority request/response units delivered to the adjacent system.	PD (11,0)
IHTRUD	Cumulative service time to deliver a high priority request/response unit to the adjacent system.	PD (11,0)
IHNRUR	Number of high priority request/response units received from the adjacent system.	PD (11,0)
IHLRUR	Length of high priority request/response units received from the adjacent system.	PD (11,0)
IMNSS	Number of medium priority sessions started.	PD (11,0)
IMNSE	Number of medium priority sessions ended.	PD (11,0)
IMNBB	Number of request units with begin bracket sent and received for all medium priority sessions.	PD (11,0)
IMNEB	Number of request units with end bracket sent and received for all medium priority sessions.	PD (11,0)
IMSPWT	The cumulative wait time for all medium priority sessions (in milliseconds) caused by session-level send messages. This wait time measures the amount of time application data was blocked (could not be sent) waiting for a pacing response to be received from the adjacent system.	PD (11,0)
IMSPNW	Number of waits occurring for all medium priority sessions for session-level send pacing. That is, the number of times application data was blocked (could not be sent) waiting for a pacing response to be received from the adjacent system.	PD (11,0)

Field Name	Description	Attribute
IMSPPW	Number of potential waits occurring for all medium priority sessions for session-level send pacing. This is the worst case that would occur if the sending of application data was delayed waiting for every pacing response sent by the adjacent system.	PD (11,0)
IMSPWS	The cumulative window size for all medium priority sessions for session-level send pacing. Each time a pacing response is received from the adjacent system on a network priority session, this count is increased by window size specified by the pacing response.	PD (11,0)
IMIPWT	The cumulative wait time for all medium priority sessions (in milliseconds) for internal session-level pacing. That is, the number of times application data was blocked (could not be sent) waiting for data to be delivered to the adjacent system.	PD (11,0)
IMIPNW	Number of waits occurring for all medium priority sessions for internal session-level pacing. That is, the number of times application data was blocked (could not be sent) waiting for data to be delivered to the adjacent system.	PD (11,0)
IMQNRE	Number of medium priority request/response units entering the transmission priority queue.	PD (11,0)
IMQLRE	Length of medium priority request/response units entering the transmission priority queue.	PD (11,0)
IMQNRL	Number of medium priority request/response units leaving the transmission priority queue.	PD (11,0)
IMQLRL	Length of medium priority request/response units leaving the transmission priority queue.	PD (11,0)
IMQTRR	Cumulative wait time in medium transmission priority queue.	PD (11,0)
IMNRUD	Number of medium priority request/response units delivered to the adjacent system.	PD (11,0)
IMLRUD	Length of medium priority request/response units delivered to the adjacent system.	PD (11,0)
IMTRUD	Cumulative service time to deliver a medium priority request/response unit to the adjacent system.	PD (11,0)
IMNRUR	Number of medium priority request/response units received from the adjacent system.	PD (11,0)
IMLRUR	Length of medium priority request/response units received from the adjacent system.	PD (11,0)
ILNSS	Number of low priority sessions started.	PD (11,0)
ILNSE	Number of low priority sessions ended.	PD (11,0)
ILNBB	Number of request units with begin bracket sent and received for all low priority sessions.	PD (11,0)
ILNEB	Number of request units with end bracket sent and received for all low priority sessions.	PD (11,0)
ILSPWT	The cumulative wait time for all low priority sessions (in milliseconds) caused by session-level send messages. This wait time measures the amount of time application data was blocked (could not be sent) waiting for a pacing response to be received from the adjacent system.	PD (11,0)

Field Name	Description	Attribute
ILSPNW	Number of waits occurring for all low priority sessions for session-level send pacing. That is, the number of times application data was blocked (could not be sent) waiting for a pacing response to be received from the adjacent system.	PD (11,0)
ILSPPW	Number of potential waits occurring for all low priority sessions for session-level send pacing. This is the worst case that would occur if the sending of application data was delayed waiting for every pacing response sent by the adjacent system.	PD (11,0)
ILSPWS	The cumulative window size for all low priority sessions for session-level send pacing. Each time a pacing response is received from the adjacent system on a network priority session, this count is increased by window size specified by the pacing response.	PD (11,0)
ILIPWT	The cumulative wait time for all low priority sessions (in milliseconds) for internal session-level pacing. That is, the number of times application data was blocked (could not be sent) waiting for data to be delivered to the adjacent system.	PD (11,0)
ILIPNW	Number of waits occurring for all low priority sessions for internal session-level pacing. That is, the number of times application data was blocked (could not be sent) waiting for data to be delivered to the adjacent system.	PD (11,0)
ILQNRE	Number of low priority request/response units entering the transmission priority queue.	PD (11,0)
ILQLRE	Length of low priority request/response units entering the transmission priority queue.	PD (11,0)
ILQNRL	Number of low priority request/response units leaving the transmission priority queue.	PD (11,0)
ILQLRL	Length of low priority request/response units leaving the transmission priority queue.	PD (11,0)
ILQTRR	Cumulative wait time in low transmission priority queue.	PD (11,0)
ILNRUD	Number of low priority request/response units delivered to the adjacent system.	PD (11,0)
ILLRUD	Length of low priority request/response units delivered to the adjacent system.	PD (11,0)
ILTRUD	Cumulative service time to deliver a low priority request/response unit to the adjacent system.	PD (11,0)
ILNRUR	Number of low priority request/response units received from the adjacent system.	PD (11,0)
ILLRUR	Length of low priority request/response units received from the adjacent system.	PD (11,0)

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Related information:

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance database files.

Collection Services data files: QAPMSNADS

This database file defines the fields in the SNA distribution services (SNADS) files record.

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DTETIM	Interval date (yymmdd) and time (hhmmss): The date and time of the sample interval.	C (12)
INTSEC	Elapsed interval seconds: The number of seconds since the last sample interval.	PD (7,0)
SNJNAM	SNADS job name.	C(10)
SNJUSR	SNADS job user.	C(10)
SNJNBR	SNADS job number.	C(6)
SNFTYP	This is a SNADS function type indicating which SNADS function this job is running. The SNFTYP field is used to determine the type of activity that this SNADS job conducts. • 1 -- SNADS router • 2 -- SNADS receiver • 3 -- SNADS sender • 8 -- SNADS DLS Gate (Document Library Services) • 9 -- SNADS RPDS Gate (VM/MVS bridge, SMTP, X.400)	PD(3,0)
SNNTR	Transaction count.	PD(11,0)
SNTRT	Transaction time: The time from a distribution being put on the queue to the time processing that distribution within this job is completed.	PD(11,0)
SNRUT	Resource usage time: The total time that distributions are processed, not including the time that they are waiting on the queue.	PD(11,0)
SNATN	Active transitions: The number of transitions between waiting for conditions to be satisfied (a distribution to process) and starting to process a distribution.	PD(11,0)
SNERR	Error count: Number of transactions that ended in error.	PD(11,0)
SNNRC	Number of recipients: The number of recipients identified in the distribution.	PD(11,0)
SNFSO	File server object (FSO) count: The number of transactions that required a data object or document to be processed.	PD(11,0)
SNFSOB	FSO byte count: The size of the FSOs (data objects and documents) processed by transactions.	PD (11,0)

Field Name	Description	Attribute
SNFOC	Fan-out count: The accumulated value of the number of distribution queues that received a copy of a distribution during routing. For a single distribution processed by the router, this value is the number of sender transactions (paths) the distribution will take leaving the system. This is the number of distribution copies that leave the system. (This field is only supported by the router job.)	PD (11,0)
SNLOC	Set to '1' when a local delivery queue received a copy of the distribution during routing. This indicates that the local system was a destination for the distribution. (This field is only supported by the router job.)	PD (11,0)

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Related information:

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance database files.

Collection Services data files: QAPMSTND

This database file includes FDDI station file entries.

This is the station counter file for distributed data interface (DDI) information. These fields are in the DDI station counter file.

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DTETIM	Interval date (yymmdd) and time (hhmmss): The date and time of the sample interval.	C (12)
INTSEC	Elapsed interval seconds: The number of seconds since the last sample interval.	PD (7,0)
IOPRN	IOP resource name.	C(10)
SDIOPI	Reserved	C (1)
SDTYPE	The resource type of the IOP or adapter represented by this record.	C (4)
SDPCEP	The provider connection end point (PCEP) ID.	C (8)
SDLND	Line description: The name of the description for this line.	C (10)
SDSTNN	Station name: The name of the station on this line.	C (10)
SDLSPD	Line speed: The line speed expressed in bits per second (bps).	PD (11,0)
SDTXMT	Total number of Type II frames transmitted.	PD (11,0)
SDTRCV	Total number of Type II frames received.	PD (11,0)

Field Name	Description	Attribute
SDBXMT	Total number of bytes transmitted in all I-frames.	PD (11,0)
SDBRCV	Total number of bytes received in all I-frames.	PD (11,0)
SDIXMT	Total number of I-frames transmitted.	PD (11,0)
SDIRCV	Total number of I-frames received.	PD (11,0)
SDIREX	Number of I-frames retransmitted.	PD (11,0)
SDBREX	Number of bytes retransmitted in I-frames.	PD (11,0)
SDRNRX	Number of receive-not-ready frames transmitted.	PD (5,0)
SDRNRR	Number of receive-not-ready frames received.	PD (5,0)
SDFRMX	Number of frame-reject frames transmitted.	PD (5,0)
SDFRMR	Number of frame-reject frames received.	PD (5,0)
SDREJR	Number of reject frames received.	PD (5,0)
SDREJX	Number of reject frames transmitted.	PD (5,0)
SDSABX	Number of set asynchronous balanced mode extended frames transmitted.	PD (5,0)
SDSABR	Number of set asynchronous balanced mode extended frames received.	PD (5,0)
SDDISX	Number of disconnect frames transmitted.	PD (5,0)
SDDISR	Number of disconnect frames received.	PD (5,0)
SDDMFX	Number of disconnect mode frames transmitted.	PD (5,0)
SDDMFR	Number of disconnect mode frames received.	PD (5,0)
SDN2RE	N2 retries end count: This count is updated when the host has attempted to contact a station n times, and the T1 timer ended n times before the station responded.	PD (5,0)
SDT1TE	T1 timer end count: Number of times the T1 timer ended. This count is updated when the host has attempted to contact a station n times, and the T1 timer ended n times before the station responded.	PD (5,0)
SDTITE	Ti timer end count: Number of times the Ti timer (inactivity timer) ended.	PD (5,0)
SDLBCT	Local busy count: Number of times station entered local busy substate.	PD (5,0)
SDPRCL	Protocol type: C for DDI.	C (1)

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Related information:

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance database files.

Collection Services data files: QAPMSTNE

This database file includes Ethernet station file entries and lists the fields in the Ethernet station file.

Ethernet LAN station statistics are reported for active Ethernet line descriptions that are associated with Ethernet ports and with ATM ports that support Ethernet LAN emulation.

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DTETIM	Interval date (yymmdd) and time (hhmmss): The date and time of the sample interval.	C (12)
INTSEC	Elapsed interval seconds: The number of seconds since the last sample interval.	PD (7,0)
IOPRN	IOP resource name.	C(10)
STIOPI	Reserved	C (1)
STTYPE	The resource type of the IOP or adapter represented by this record.	C (4)
STPCEP	The provider connection endpoint (PCEP) ID.	C (8)
STLND	Line description: The name of the description for this line.	C (10)
STSTNN	Station name: The name of the station on this line.	C (10)
STLSPD	Line speed: The line speed expressed in bits per second (bps). For some lines, this value might change as time progresses.	PD (11,0)
STTXMT	Total number of Type II frames transmitted.	PD (11,0)
STTRCV	Total number of Type II frames received.	PD (11,0)
STBXMT	Total number of bytes transmitted in all I-frames.	PD (11,0)
STBRCV	Total number of bytes received in all I-frames.	PD (11,0)
STIXMT	Total number of I-frames transmitted.	PD (11,0)
STIRCV	Total number of I-frames received.	PD (11,0)
STIREX	Number of I-frames retransmitted.	PD (11,0)
STBREX	Number of bytes retransmitted in I-frames.	PD (11,0)
STRNRX	Number of receive-not-ready frames transmitted.	PD (5,0)
STRNRR	Number of receive-not-ready frames received.	PD (5,0)
STFRMX	Number of frame-reject frames transmitted.	PD (5,0)
STFRMR	Number of frame-reject frames received.	PD (5,0)
STREJR	Number of reject frames received.	PD (5,0)
STREJX	Number of reject frames transmitted.	PD (5,0)
STSABX	Number of set asynchronous balanced mode extended frames transmitted.	PD (5,0)
STSABR	Number of set asynchronous balanced mode extended frames received.	PD (5,0)
STDISX	Number of disconnect frames transmitted.	PD (5,0)
STDISR	Number of disconnect frames received.	PD (5,0)
STDMFX	Number of disconnect mode frames transmitted.	PD (5,0)
STDMFR	Number of disconnect mode frames received.	PD (5,0)

Field Name	Description	Attribute
STN2RE	N2 retries end count: This count is updated when the host has attempted to contact a station n times and n times the T1 timer ended before the station responded.	PD (5,0)
STT1TE	T1 timer end count: Number of times the T1 timer ended. This count is updated when the host has attempted to contact a station n times and n times the T1 timer ended before the station responded.	PD (5,0)
STTITE	Ti timer end count: Number of times the Ti timer (inactivity timer) ended.	PD (5,0)
STLBCT	Local busy count: Number of times station entered local busy substate.	PD (5,0)
STPRCL	Protocol type: T for Ethernet network.	C (1)
STPORT	Port resource name.	C (10)

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Related information:

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance database files.

Collection Services data files: QAPMSTNL

This database file includes token-ring station file entries and lists the fields in the token-ring local area network (LAN) station file.

Token-ring LAN station statistics are reported for active token-ring line descriptions that are associated with token-ring ports and with ATM ports that support token-ring LAN emulation.

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DTETIM	Interval date (yymmdd) and time (hhmmss): The date and time of the sample interval.	C (12)
INTSEC	Elapsed interval seconds: The number of seconds since the last sample interval.	PD (7,0)
IOPRN	IOP resource name.	C(10)
SLIOPI	Reserved	C (1)
SLTYPE	The resource type of the IOP or adapter represented by this record.	C (4)
SLPCEP	The provider connection end point (PCEP) ID.	C (8)
SLLND	Line description: The name of the description for this line.	C (10)
SLSTNN	Station name: The name of the station on this line.	C (10)

Field Name	Description	Attribute
SLLSPD	Line speed: The line speed expressed in bits per second (bps).	PD (11,0)
SLTXMT	Total number of Type II frames transmitted.	PD (11,0)
SLTRCV	Total number of Type II frames received.	PD (11,0)
SLBXMT	Total number of bytes transmitted in all I-frames.	PD (11,0)
SLBRCV	Total number of bytes received in all I-frames.	PD (11,0)
SLIXMT	Total number of I-frames transmitted.	PD (11,0)
SLIRCV	Total number of I-frames received.	PD (11,0)
SLIREX	Number of I-frames retransmitted.	PD (11,0)
SLBREX	Number of bytes retransmitted in I-frames.	PD (11,0)
SLRNRX	Number of receive-not-ready frames transmitted.	PD (5,0)
SLRNRR	Number of receive-not-ready frames received.	PD (5,0)
SLFRMX	Number of frame-reject frames transmitted.	PD (5,0)
SLFRMR	Number of frame-reject frames received.	PD (5,0)
SLREJR	Number of reject frames received.	PD (5,0)
SLREJX	Number of reject frames transmitted.	PD (5,0)
SLSABX	Number of set asynchronous balanced mode extended frames transmitted.	PD (5,0)
SLSABR	Number of set asynchronous balanced mode extended frames received.	PD (5,0)
SLDISX	Number of disconnect frames transmitted.	PD (5,0)
SLDISR	Number of disconnect frames received.	PD (5,0)
SLDMFX	Number of disconnect mode frames transmitted.	PD (5,0)
SLDMFR	Number of disconnect mode frames received.	PD (5,0)
SLN2RE	N2 retries end count: This count is updated when the host has attempted to contact a station n times and n times the T1 timer ended before the station responded.	PD (5,0)
SLT1TE	T1 timer end count: Number of times the T1 timer ended. This count is updated when the host has attempted to contact a station n times and n times the T1 timer ended before the station responded.	PD (5,0)
SLTITE	Ti timer end count: Number of times the Ti timer (inactivity timer) ended.	PD (5,0)
SLLBCT	Local busy count: Number of times station entered local busy substate.	PD (5,0)
SLPRCL	Protocol type: E for token-ring network.	C (1)

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Related information:

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance

database files.

Collection Services data files: QAPMSTNY

This database file includes frame relay station file entries and lists the fields in the frame relay station file.

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DTETIM	Interval date (yymmdd) and time (hhmmss): The date and time of the sample interval.	C (12)
INTSEC	Elapsed interval seconds: The number of seconds since the last sample interval.	PD (7,0)
IOPRN	IOP resource name.	C(10)
SYIOPI	Reserved	C (1)
SYTYPE	The resource type of the IOP or adapter represented by this record.	C (4)
SYPCEP	The provider connection end point (PCEP) ID.	C (8)
SYLND	Network interface (NWI) description: The name of the description for this network interface.	C (10)
SYSTNN	Station name: The name of the station on this line.	C (10)
SYLSPD	Line speed: The line speed expressed in bits per second (bps).	PD (11,0)
SYTXMT	Total number of Type II frames transmitted.	PD (11,0)
SYTRCV	Total number of Type II frames received.	PD (11,0)
SYBXMT	Total number of bytes transmitted in all I-frames.	PD (11,0)
SYBRCV	Total number of bytes received in all I-frames.	PD (11,0)
SYIXMT	Total number of I-frames transmitted.	PD (11,0)
SYIRCV	Total number of I-frames received.	PD (11,0)
SYIREX	Number of I-frames retransmitted.	PD (11,0)
SYBREX	Number of bytes retransmitted in I-frames.	PD (11,0)
SYRNRX	Number of receive-not-ready frames transmitted.	PD (5,0)
SYRNRR	Number of receive-not-ready frames received.	PD (5,0)
SYFRMX	Number of frame-reject frames transmitted.	PD (5,0)
SYFRMR	Number of frame-reject frames received.	PD (5,0)
SYREJR	Number of reject frames received.	PD (5,0)
SYREJX	Number of reject frames transmitted.	PD (5,0)
SYSABX	Number of set asynchronous balanced mode extended frames transmitted.	PD (5,0)
SYSABR	Number of set asynchronous balanced mode extended frames received.	PD (5,0)
SYDISX	Number of disconnect frames transmitted.	PD (5,0)
SYDISR	Number of disconnect frames received.	PD (5,0)
SYDMFX	Number of disconnect mode frames transmitted.	PD (5,0)
SYDMFR	Number of disconnect mode frames received.	PD (5,0)

Field Name	Description	Attribute
SYN2RE	N2 retries end count: This count is updated when the host has attempted to contact a station n times and n times the T1 timer ended before the station responded.	PD (5,0)
SYT1TE	T1 timer end count: Number of times the T1 timer ended. This count is updated when the host has attempted to contact a station n times and n times the T1 timer ended before the station responded.	PD (5,0)
SYTITE	Ti timer end count: Number of times the Ti timer (inactivity timer) ended.	PD (5,0)
SYLBCT	Local busy count: Number of times station entered local busy substate.	PD (5,0)
SYPRCL	Protocol type: Y for frame relay.	C (1)

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Related information:

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance database files.

Collection Services data files: QAPMSYS and QAPMSYSL

The QAPMSYS file is created when the performance monitor database files are migrated with the Convert Performance Collection (CVTPFRCOL) command to a newer release.

Collection Services does not create this file. The QAMPSYSL file is provided for compatibility with the performance monitor and combines data from QAPMJSUM, QAPMSYSCPU, and QAPMSYSTEM files. This file is produced when all of these categories are requested from the Create Performance Data (CRTPFRDTA) command. This file contains system interval file entries.

The following terms are used in the field descriptions and are repeated for each group of jobs:

- Number of database read operations. Total number of physical read operations for database functions.
- Number of nondatabase read operations. Total number of physical read operations for nondatabase functions.
- Number of write operations. Total number of physical write operations.
- Number of print lines. Number of lines written by the program, which does not reflect what is actually printed. Spooled files can be ended or printed with multiple copies.
- Number of database writes/reads (logical). Number of times the database module was called, which does not include I/O operations to readers/writers or I/O operations caused by the Copy Spooled File (CPYSPLF) or Display Spooled File (DSPSPLF) command. If SEQONLY(*YES) is in effect, these numbers show each block of records read or written, not the number of individual records read or written.
- Number of communications writes/reads (logical). These do not include remote workstation activity. They include only activity related to intersystem communications function (ICF) files when the I/O is for a communications device.

Users should note that blocked I/O is considered one I/O operation.

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DTETIM	Interval date (yymmdd) and time (hhmmss): The date and time of the sample interval.	C (12)
INTSEC	Elapsed interval seconds: The number of seconds since the last sample interval.	PD (7,0)
SYDPGF	Directory page faults: Number of times a page of the auxiliary storage directory was transferred to main storage for a look-up or an allocation operation.	PD (11,0)
SYAPGF	Access group member page faults: Number of times a page of an object contained in an access group was transferred to main storage independently of the access group. This transfer occurs when the containing access group was purged, or because portions of the containing access group are displaced from main storage.	PD (11,0)
SYMPGF	Microcode page faults: Number of times a page of microcode was transferred to main storage.	PD (11,0)
SYMCTR	Microtask read operations: Number of transfers of one or more pages of data from auxiliary storage because of a microtask rather than a process.	PD (11,0)
SYMCTW	Microtask write operations: Number of transfers of one or more pages of data from main storage to auxiliary storage because of a microtask rather than a process.	PD (11,0)
SYSASP	System auxiliary storage pool space available: Number of bytes of space on auxiliary storage available for allocation in the system ASP that is not currently assigned to machine interface (MI) objects or internal machine functions.	PD (15,0)
SYPRMW	Permanent data transferred from main storage: Number of 512-byte blocks of permanent data transferred from main storage to the system ASP in auxiliary storage since the last sample.	PD (11,0)
SYXSRW	Reserved	PD (11,0)
SYEAOT	Reserved	PD (11,0)

Field Name	Description	Attribute
SYEAOL	Reserved	PD (11,0)
SYBSYC	Reserved	PD (11,0)
SYSIZC	Size count: Total number of size exceptions.	PD (11,0)
SYDECD	Decimal data count: Total number of decimal data exceptions.	PD (11,0)
SYSEZC	Seize count: Total number of seize waits.	PD (11,0)
SYSZWT	Seize/wait time in milliseconds.	PD (11,0)
SYSYNL	Synchronous lock conflict count.	PD (11,0)
SYASYL	Asynchronous lock conflict count.	PD (11,0)
SYVFYC	Verify count.	PD (11,0)
SYAUTH	Object authority checks. The number of times that authority was checked for objects. An authority check for one object can result in zero, one, or more than one user authority lookups that can be cached or noncached (see SYNUAL field description).	PD (11,0)
SYCHNB	Reserved	PD (11,0)
SYEXPN	Total number of exceptions.	PD (11,0)
SYLRT1	Transactions in first response time monitor bracket: Total number of local workstation transactions with response time less than the value of boundary 1 specified on the Advanced Local Response Time Options dialog from the Collection Services properties page within the IBM i interface.	PD (9,0)
SYLRT2	Transactions in second response time monitor bracket: Total number of local workstation transactions with response time less than the value of boundary 2 and greater than the value of boundary 1 specified on the Advanced Local Response Time Options dialog from the Collection Services properties page within the IBM i interface.	PD (9,0)
SYLRT3	Transactions in third response time monitor bracket: Total number of local workstation transactions with response time less than the value of boundary 3 and greater than the value of boundary 2 specified on the Advanced Local Response Time Options dialog from the Collection Services properties page within the IBM i interface.	PD (9,0)

Field Name	Description	Attribute
SYLRT4	Transactions in fourth response time monitor bracket: Total number of local workstation transactions with response time less than the value of boundary 4 and greater than the value of boundary 3 specified on the Advanced Local Response Time Options dialog from the Collection Services properties page within the IBM i interface.	PD (9,0)
SYLRT5	Transactions in fifth response time monitor bracket: Total number of local workstation transactions with response time greater than the value of boundary 4 specified on the Advanced Local Response Time Options dialog from the Collection Services properties page within the IBM i interface.	PD (9,0)
SDCPU	Total processing unit time used (in milliseconds) by target distributed data management (DDM) job.	PD (11,0)
SDRES1	Reserved.	PD (15,3)
SDRES2	Reserved.	PD (11,0)
SDPRTL	Total number of print lines of all target DDM jobs.	PD (11,0)
SDPRTP	Total number of print pages of all target DDM jobs.	PD (11,0)
SDSPD	Total count of suspended time of target DDM jobs.	PD (11,0)
SDRRT	Total count of time a target DDM job waited during rerouting.	PD (11,0)
SDNEW	Number of new target DDM job.	PD (11,0)
SDTERM	Number of ended target DDM jobs.	PD (11,0)
SDJBCT	Number of DDM jobs.	PD (11,0)
SDPDBR	Total number of physical synchronous database reads by target DDM jobs.	PD (11,0)
SDPNDB	Total number of physical synchronous nondatabase reads by target DDM jobs.	PD (11,0)
SDPWRT	Total number of physical synchronous database and nondatabase writes by target DDM jobs.	PD (11,0)
SDLDBR	Total number of logical database reads by target DDM jobs.	PD (11,0)
SDLDBW	Total number of logical database writes by target DDM jobs.	PD (11,0)

Field Name	Description	Attribute
SDLDBU	Total number of miscellaneous database operations by target DDM jobs.	PD (11,0)
SDCMPT	Total number of communications writes by target DDM jobs.	PD (11,0)
SDCMGT	Total number of communications reads by target DDM jobs.	PD (11,0)
SDBRG	Reserved	PD (11,0)
SDPRG	Reserved	PD (11,0)
SDNDW	Number of synchronous nondatabase writes: Total number of synchronous physical nondatabase write operations for nondatabase functions by target DDM jobs.	PD (11,0)
SDDBW	Number of synchronous database writes: Total number of synchronous physical database write operations for database functions by target DDM jobs.	PD (11,0)
SDANDW	Number of asynchronous nondatabase writes: Total number of asynchronous physical nondatabase write operations for nondatabase functions by target DDM jobs.	PD (11,0)
SDADBW	Number of asynchronous database writes: Total number of asynchronous physical database write operations for database functions by target DDM jobs.	PD (11,0)
SDANDR	Number of asynchronous nondatabase reads: Total number of asynchronous physical nondatabase read operations for nondatabase functions by target DDM jobs.	PD (11,0)
SDADBR	Number of asynchronous database reads: Total number of asynchronous physical database read operations for database functions by target DDM jobs.	PD (11,0)
SDPW	Number of permanent writes by target DDM jobs.	PD (11,0)
SDCS	Reserved	PD (11,0)
SDPAGF	Number of PAG faults. Total number of times the program access group (PAG) was referred to by target DDM jobs, but was not in main storage. The Licensed Internal Code no longer uses process access groups for caching data. Because of this implementation, this field will always be 0 for more current releases.	PD (11,0)
SDEAO	Reserved	PD (11,0)

Field Name	Description	Attribute
SDOBIN	Number of binary overflows by target DDM jobs.	PD (11,0)
SDODEC	Number of decimal overflows by target DDM jobs.	PD (11,0)
SDOFLP	Number of floating point overflows by target DDM jobs.	PD (11,0)
SDIPF	Number of times a target distributed data management (DDM) job had a page fault on an address that was currently part of an auxiliary storage I/O operation.	PD (11,0)
SDWIO	Number of times a target distributed data management (DDM) job explicitly waited for outstanding asynchronous I/O operations to complete.	PD (11,0)
SDSKSC	DDM number of socket sends.	PD (11,0)
SDSKBS	DDM number of socket bytes sent.	PD (11,0)
SDSKRC	DDM number of socket receives.	PD (11,0)
SDSKBR	DDM number of socket bytes received.	PD (11,0)
SDXRFR	DDM stream file reads.	PD (11,0)
SDXRFW	DDM stream file writes.	PD (11,0)
SDXSLR	DDM file system symbolic link reads.	PD (11,0)
SDXDYR	DDM file system directory reads.	PD (11,0)
SDDLCH	DDM file system lookup cache hits.	PD (11,0)
SDDLCM	DDM file system lookup cache misses.	PD (11,0)
SDSZWT	DDM seize/wait time in milliseconds.	PD (11,0)
SWCPU	Total processing unit time (in milliseconds) used by System i applications.	PD (11,0)
SWRES1	Reserved.	PD (15,3)
SWRES2	Reserved.	PD (11,0)
SWPRTL	Total number of print lines of all System i Access application jobs.	PD (11,0)
SWPRTP	Total number of print pages of all System i Access application jobs.	PD (11,0)
SWSPD	Total time System i Access application jobs were suspended.	PD (11,0)
SWRRT	Total time a System i Access applications job waited during rerouting.	PD (11,0)
SWNEW	Number of started System i Access application jobs.	PD (11,0)
SWTERM	Number of ended System i Access application jobs.	PD (11,0)

Field Name	Description	Attribute
SWJBCT	Number of System i Access jobs.	PD (11,0)
SWPDBR	Total number of physical synchronous database reads by System i Access application jobs.	PD (11,0)
SWPNDB	Total number of physical synchronous nondatabase reads by System i Access application jobs.	PD (11,0)
SWPWRT	Total number of physical synchronous database and nondatabase writes by System i Access application jobs.	PD (11,0)
SWLDBR	Total number of logical database reads by System i Access application jobs.	PD (11,0)
SWLDBW	Total number of logical database writes by System i Access application jobs.	PD (11,0)
SWLDBU	Total number of miscellaneous database operations by System i Access application jobs.	PD (11,0)
SWCMPT	Total number of communications writes by System i Access application jobs.	PD (11,0)
SWCMGT	Total number of communications reads by System i Access application jobs.	PD (11,0)
SWBRG	Reserved	PD (11,0)
SWPRG	Reserved	PD (11,0)
SWNDW	Number of synchronous nondatabase writes: Total number of synchronous physical nondatabase write operations for nondatabase functions by System i Access applications.	PD (11,0)
SWDBW	Number of synchronous database writes: Total number of synchronous physical database write operations for database functions by System i Access applications.	PD (11,0)
SWANDW	Number of asynchronous nondatabase writes: Total number of asynchronous physical nondatabase write operations for nondatabase functions by System i Access applications.	PD (11,0)
SWADBW	Number of asynchronous database writes: Total number of asynchronous physical database write operations for database functions by System i Access applications.	PD (11,0)

Field Name	Description	Attribute
SWANDR	Number of asynchronous nondatabase reads: Total number of asynchronous physical nondatabase read operations for nondatabase functions by System i Access applications.	PD (11,0)
SWADBR	Number of asynchronous database reads: Total number of asynchronous physical database read operations for database functions by System i Access applications.	PD (11,0)
SWPW	Number of permanent writes by System i Access applications.	PD (11,0)
SWCS	Reserved	PD (11,0)
SWPAGF	Number of PAG faults. Total number of times the program access group (PAG) was referred to by System i Access applications, but was not in main storage. The Licensed Internal Code no longer uses process access groups for caching data. Because of this implementation, this field will always be 0 for more current releases.	PD (11,0)
SWEAO	Reserved	PD (11,0)
SWOBIN	Number of binary overflows by System i Access applications.	PD (11,0)
SWODEC	Number of decimal overflows by System i Access applications.	PD (11,0)
SWOFLP	Number of floating point overflows by System i Access applications.	PD (11,0)
SWIPF	Number of times a System i Access application job had a page fault on an address that was currently part of an auxiliary storage I/O operation.	PD (11,0)
SWWIO	Number of times a System i Access application job explicitly waited for outstanding asynchronous I/O operations to complete.	PD (11,0)
SWSKSC	System i Access number of socket sends.	PD (11,0)
SWSKBS	System i Access number of socket bytes sent.	PD (11,0)
SWSKRC	System i Access number of socket receives.	PD (11,0)
SWSKBR	System i Access number of socket bytes received.	PD (11,0)
SWXRFR	System i Access stream file reads.	PD (11,0)
SWXRFW	System i Access stream file writes.	PD (11,0)
SWXSLR	System i Access file system symbolic link reads.	PD (11,0)

Field Name	Description	Attribute
SWXDYR	System i Access file system directory reads.	PD (11,0)
SWDLCH	System i Access file system lookup cache hits.	PD (11,0)
SWDLCM	System i Access file system lookup cache misses.	PD (11,0)
SWSZWT	System i Access seize/wait time in milliseconds.	PD (11,0)
SPCPU	Total processing unit time (in milliseconds) used by pass-through target jobs.	PD (11,0)
SPRES1	Total transaction time by pass-through target jobs.	PD (15,3)
SPRES2	Total number of transactions by pass-through target jobs.	PD (11,0)
SPPRTL	Total number of print lines of all pass-through target jobs.	PD (11,0)
SPPRTP	Total number of print pages of all pass-through target jobs.	PD (11,0)
SPSPD	Total count of suspended time of pass-through target jobs.	PD (11,0)
SPRRT	Total count of time a pass-through target job waited during rerouting.	PD (11,0)
SPNEW	Number of started pass-through target jobs.	PD (11,0)
SPTERM	Number of ended pass-through target jobs.	PD (11,0)
SPJBCT	Number of pass-through jobs.	PD (11,0)
SPPDBR	Total number of physical synchronous database reads by pass-through target jobs.	PD (11,0)
SPPNDB	Total number of physical synchronous nondatabase reads by pass-through target jobs.	PD (11,0)
SPPWRT	Total number of physical synchronous database and nondatabase writes by pass-through target jobs.	PD (11,0)
SPLDBR	Total number of logical database reads by pass-through target jobs.	PD (11,0)
SPLDBW	Total number of logical database writes by pass-through target jobs.	PD (11,0)
SPLDBU	Total number of miscellaneous database operations by pass-through target jobs.	PD (11,0)
SPCMPT	Total number of communications writes by pass-through target jobs.	PD (11,0)
SPCMGT	Total number of communications reads by pass-through target jobs.	PD (11,0)

Field Name	Description	Attribute
SPBRG	Reserved	PD (11,0)
SPPRG	Reserved	PD (11,0)
SPNDW	Number of synchronous nondatabase writes: Total number of synchronous physical nondatabase write operations for nondatabase functions by pass-through target jobs.	PD (11,0)
SPDBW	Number of synchronous database writes: Total number of synchronous physical database write operations for database functions by pass-through target jobs.	PD (11,0)
SPANDW	Number of asynchronous nondatabase writes: Total number of asynchronous physical nondatabase write operations for nondatabase functions by pass-through target jobs.	PD (11,0)
SPADBW	Number of asynchronous database writes: Total number of asynchronous physical database write operations for database functions by pass-through target jobs.	PD (11,0)
SPANDR	Number of asynchronous nondatabase reads: Total number of asynchronous physical nondatabase read operations for nondatabase functions by pass-through target jobs.	PD (11,0)
SPADBR	Number of asynchronous database reads: Total number of asynchronous physical database read operations for database functions by pass-through target jobs.	PD (11,0)
SPPW	Number of permanent writes by pass-through target jobs.	PD (11,0)
SPCS	Reserved	PD (11,0)
SPPAGF	Number of PAG faults: Total number of times the program access group (PAG) was referred to by pass-through target jobs, but was not in main storage. The Licensed Internal Code no longer uses process access groups for caching data. Because of this implementation, this field will always be 0 for more current releases.	PD (11,0)
SPEAO	Reserved	PD (11,0)
SPOBIN	Number of binary overflows by pass-through target jobs.	PD (11,0)
SPODEC	Number of decimal overflows by pass-through target jobs.	PD (11,0)
SPOFLP	Number of floating point overflows by pass-through target jobs.	PD (11,0)

Field Name	Description	Attribute
SPIPF	Number of times a pass-through target job had a page fault on an address that was currently part of an auxiliary storage I/O operation.	PD (11,0)
SPWIO	Number of times a pass-through target job explicitly waited for outstanding asynchronous I/O operations to complete.	PD (11,0)
SPSKSC	Passthrough number of socket sends.	PD (11,0)
SPSKBS	Passthrough number of socket bytes sent.	PD (11,0)
SPSKRC	Passthrough number of socket receives.	PD (11,0)
SPSKBR	Passthrough number of socket bytes received.	PD (11,0)
SPXRFR	Passthrough stream file reads.	PD (11,0)
SPXRFW	Passthrough stream file writes.	PD (11,0)
SPXSLR	Passthrough file system symbolic link reads.	PD (11,0)
SPXDYR	Passthrough file system directory reads.	PD (11,0)
SPDLCH	Passthrough file system lookup cache hits.	PD (11,0)
SPDLCM	Passthrough file system lookup cache misses.	PD (11,0)
SPSZWT	Passthrough seize/wait time in milliseconds.	PD (11,0)
SMCPU	Total processing unit time (in milliseconds) used by multiple requester terminal (MRT) jobs (System/36 environment only).	PD (11,0)
SMRES1	Reserved.	PD (15,3)
SMRES2	Reserved.	PD (11,0)
SMPRTL	Total number of print lines of all MRT jobs (System/36 environment only).	PD (11,0)
SMPRTP	Total number of print pages of all MRT jobs (System/36 environment only).	PD (11,0)
SMSPD	Total time MRT jobs (System/36 environment only) were suspended.	PD (11,0)
SMRRT	Total time a MRT job (System/36 environment only) waited during rerouting.	PD (11,0)
SMNEW	Number of started MRT jobs (System/36 environment only).	PD (11,0)
SMTERM	Number of ended MRT jobs (System/36 environment only).	PD (11,0)

Field Name	Description	Attribute
SMJBCT	Number of MRT jobs (System/36 environment only).	PD (11,0)
SMPDBR	Total number of physical synchronous database reads by MRT jobs (System/36 environment only).	PD (11,0)
SMPNDB	Total number of physical synchronous nondatabase reads by MRT jobs (System/36 environment only).	PD (11,0)
SMPWRT	Total number of physical synchronous database and nondatabase writes by MRT jobs (System/36 environment only).	PD (11,0)
SMLDBR	Total number of logical database reads by MRT jobs (System/36 environment only).	PD (11,0)
SMLDBW	Total number of logical database writes by MRT jobs (System/36 environment only).	PD (11,0)
SMLDBU	Total number of miscellaneous database operations by MRT jobs (System/36 environment only).	PD (11,0)
SMCMPT	Total number of communications writes by MRT jobs (System/36 environment only).	PD (11,0)
SMCMGT	Total number of communications reads by MRT jobs (System/36 environment only).	PD (11,0)
SMBRG	Reserved	PD (11,0)
SMPRG	Reserved	PD (11,0)
SMNDW	Number of synchronous nondatabase writes: Total number of synchronous physical nondatabase write operations for nondatabase functions by MRT jobs (System/36 environment only).	PD (11,0)
SMDBW	Number of synchronous database writes: Total number of synchronous physical database write operations for database functions by MRT jobs (System/36 environment only).	PD (11,0)
SMANDW	Number of asynchronous nondatabase writes: Total number of asynchronous physical nondatabase write operations for nondatabase functions by MRT jobs (System/36 environment only).	PD (11,0)
SMADBW	Number of asynchronous database writes: Total number of asynchronous physical database write operations for database functions by MRT jobs (System/36 environment only).	PD (11,0)

Field Name	Description	Attribute
SMANDR	Number of asynchronous nondatabase reads: Total number of asynchronous physical nondatabase read operations for nondatabase functions by MRT jobs (System/36 environment only).	PD (11,0)
SMADBR	Number of asynchronous database reads: Total number of asynchronous physical database read operations for database functions by MRT jobs (System/36 environment only).	PD (11,0)
SMPW	Number of permanent writes by MRT jobs (System/36 environment only).	PD (11,0)
SMCS	Reserved	PD (11,0)
SMPAGF	Number of PAG faults: Total number of times the program access group (PAG) was referred to by MRT jobs (System/36 environment only), but was not in main storage. The Licensed Internal Code no longer uses process access groups for caching data. Because of this implementation, this field will always be 0 for more current releases.	PD (11,0)
SMEAO	Reserved	PD (11,0)
SMOBIN	Number of binary overflows by MRT jobs (System/36 environment only).	PD (11,0)
SMODEC	Number of decimal overflows by MRT jobs (System/36 environment only).	PD (11,0)
SMOFLP	Number of floating point overflows by MRT jobs (System/36 environment only).	PD (11,0)
SMIPF	Number of times a MRT job (System/36 environment only) had a page fault on an address that was currently part of an auxiliary storage I/O operation.	PD (11,0)
SMWIO	Number of times a MRT job (System/36 environment only) explicitly waited for outstanding asynchronous I/O operations to complete.	PD (11,0)
SMSKSC	MRTS Number of socket sends.	PD (11,0)
SMSKBS	MRTS Number of socket bytes sent.	PD (11,0)
SMSKRC	MRTS Number of socket receives.	PD (11,0)
SMSKBR	MRTS Number of socket bytes received.	PD (11,0)
SMXRFR	MRTS stream file reads.	PD (11,0)
SMXRFW	MRTS stream file writes.	PD (11,0)

Field Name	Description	Attribute
SMXSLR	MRTS file system symbolic link reads.	PD (11,0)
SMXDYR	MRTS file system directory reads.	PD (11,0)
SMDLCH	MRTS file system lookup cache hits.	PD (11,0)
SMDLCM	MRTS file system lookup cache misses.	PD (11,0)
SMSZWT	MRTS seize/wait time in milliseconds.	PD (11,0)
S6CPU	Total processing unit time (in milliseconds) used by System/36 environment jobs.	PD (11,0)
S6TRNT	Total response time.	PD (15,3)
S6TRNS	Number of transactions.	PD (11,0)
S6PRTL	Total number of print lines of all System/36 environment jobs.	PD (11,0)
S6PRTP	Total number of print pages of all System/36 environment jobs.	PD (11,0)
S6SPD	Total time System/36 environment jobs were suspended.	PD (11,0)
S6RRT	Total time a System/36 environment job waited during rerouting.	PD (11,0)
S6NEW	Number of started System/36 environment jobs.	PD (11,0)
S6TERM	Number of ended System/36 environment jobs.	PD (11,0)
S6JBCT	Number of System/36 environment jobs.	PD (11,0)
S6PDBR	Total number of physical synchronous database reads by System/36 environment jobs.	PD (11,0)
S6PNDB	Total number of physical synchronous nondatabase reads by System/36 environment jobs.	PD (11,0)
S6PWRT	Total number of physical synchronous database and nondatabase writes by System/36 environment jobs.	PD (11,0)
S6LDBR	Total number of logical database reads by System/36 environment jobs.	PD (11,0)
S6LDBW	Total number of logical database writes by System/36 environment jobs.	PD (11,0)
S6LDBU	Total number of miscellaneous database operations by System/36 environment jobs.	PD (11,0)
S6CMPT	Total number of communications writes by System/36 environment jobs.	PD (11,0)

Field Name	Description	Attribute
S6CMGT	Total number of communications reads by System/36 environment jobs.	PD (11,0)
S6BRG	Reserved	PD (11,0)
S6PRG	Reserved	PD (11,0)
S6NDW	Number of synchronous nondatabase writes: Total number of synchronous physical nondatabase write operations for nondatabase functions by System/36 environment jobs.	PD (11,0)
S6DBW	Number of synchronous database writes: Total number of synchronous physical database write operations for database functions by System/36 environment jobs.	PD (11,0)
S6ANDW	Number of asynchronous nondatabase writes: Total number of asynchronous physical nondatabase write operations for nondatabase functions by System/36 environment jobs.	PD (11,0)
S6ADBW	Number of asynchronous database writes: Total number of asynchronous physical database write operations for database functions by System/36 environment jobs.	PD (11,0)
S6ANDR	Number of asynchronous nondatabase reads: Total number of asynchronous physical nondatabase read operations for nondatabase functions by System/36 environment jobs.	PD (11,0)
S6ADBR	Number of asynchronous database reads: Total number of asynchronous physical database read operations for database functions by System/36 environment jobs.	PD (11,0)
S6PW	Number of permanent writes by System/36 environment jobs.	PD (11,0)
S6CS	Reserved	PD (11,0)
S6PAGF	Number of PAG faults: Total number of times the program access group (PAG) was referred to by System/36 environment jobs, but was not in main storage. The Licensed Internal Code no longer uses process access groups for caching data. Because of this implementation, this field will always be 0 for more current releases.	PD (11,0)
S6EAO	Reserved	PD (11,0)
S6OBIN	Number of binary overflows by System/36 environment jobs.	PD (11,0)

Field Name	Description	Attribute
S6ODEC	Number of decimal overflows by System/36 environment jobs.	PD (11,0)
S6OFLP	Number of floating point overflows by System/36 environment jobs.	PD (11,0)
S6IPF	Number of times a System/36 environment job had a page fault on an address that was currently part of an auxiliary storage I/O operation.	PD (11,0)
S6WIO	Number of times a System/36 environment job explicitly waited for outstanding asynchronous I/O operations to complete.	PD (11,0)
S6SKSC	S36E number of socket sends.	PD (11,0)
S6SKBS	S36E number of socket bytes sent.	PD (11,0)
S6SKRC	S36E number of socket receives.	PD (11,0)
S6SKBR	S36E number of socket bytes received.	PD (11,0)
S6XRFR	S36E file system directory reads.	PD (11,0)
S6XRFW	S36E file system directory writes.	PD (11,0)
S6XSLR	S36E file system symbolic link reads.	PD (11,0)
S6XDYR	S36E directory stream file reads.	PD (11,0)
S6DLCH	S36E file system lookup cache hits.	PD (11,0)
S6DLCM	S36E file system lookup cache misses.	PD (11,0)
S6SZWT	S36E seize/wait time in milliseconds.	PD (11,0)
SECPU	Total processing unit time (in milliseconds) used by communications batch jobs.	PD (11,0)
SERES1	Reserved.	PD (15,3)
SERES2	Reserved.	PD (11,0)
SEPRTL	Total number of print lines of all communications batch jobs.	PD (11,0)
SEPRTP	Total number of print pages of all communications batch jobs.	PD (11,0)
SESPD	Total time communications batch jobs were suspended.	PD (11,0)
SERRT	Total time a communications batch job waited during rerouting.	PD (11,0)
SENEW	Number of started communications batch jobs.	PD (11,0)
SETERM	Number of ended communications batch jobs.	PD (11,0)
SEJBCT	Number of communications batch jobs.	PD (11,0)
SEPDBR	Total number of physical synchronous database reads by communications batch jobs.	PD (11,0)

Field Name	Description	Attribute
SEPNDB	Total number of physical synchronous nondatabase reads by communications batch jobs.	PD (11,0)
SEPWRT	Total number of physical synchronous database and nondatabase writes by communications batch jobs.	PD (11,0)
SELDBR	Total number of logical database reads by communications batch jobs.	PD (11,0)
SELDBW	Total number of logical database writes by communications batch jobs.	PD (11,0)
SELDBU	Total number of miscellaneous database operations by communications batch jobs.	PD (11,0)
SECMPT	Total number of communications writes by communications batch jobs.	PD (11,0)
SECMGT	Total number of communications reads by communications batch jobs.	PD (11,0)
SEBRG	Reserved	PD (11,0)
SEPRG	Reserved	PD (11,0)
SENDW	Number of synchronous nondatabase writes: Total number of synchronous physical nondatabase write operations for nondatabase functions by communications batch jobs.	PD (11,0)
SEDBW	Number of synchronous database writes: Total number of synchronous physical database write operations for database functions by communications batch jobs.	PD (11,0)
SEANDW	Number of asynchronous nondatabase writes: Total number of asynchronous physical nondatabase write operations for nondatabase functions by communications batch jobs.	PD (11,0)
SEADBW	Number of asynchronous database writes: Total number of asynchronous physical database write operations for database functions by communications batch jobs.	PD (11,0)
SEANDR	Number of asynchronous nondatabase reads: Total number of asynchronous physical nondatabase read operations for nondatabase functions by communications batch jobs.	PD (11,0)
SEADBR	Number of asynchronous database reads: Total number of asynchronous physical database read operations for database functions by communications batch jobs.	PD (11,0)

Field Name	Description	Attribute
SEPW	Number of permanent writes by communications batch jobs.	PD (11,0)
SECS	Reserved	PD (11,0)
SEPAGF	Number of PAG faults: Total number of times the program access group (PAG) was referred to by communications batch jobs, but was not in main storage. The Licensed Internal Code no longer uses process access groups for caching data. Because of this implementation, this field will always be 0 for more current releases.	PD (11,0)
SEEAO	Reserved	PD (11,0)
SEOBIN	Number of binary overflows by communications batch jobs.	PD (11,0)
SEODEC	Number of decimal overflows by communications batch jobs.	PD (11,0)
SEOFLP	Number of floating point overflows by communications batch jobs.	PD (11,0)
SEIPF	Number of times a communications batch job had a page fault on an address that was currently part of an auxiliary storage I/O operation.	PD (11,0)
SEWIO	Number of times a communications batch job explicitly waited for outstanding asynchronous I/O operations to complete.	PD (11,0)
SESKSC	Evoke number of socket sends.	PD (11,0)
SESKBS	Evoke number of socket bytes sent.	PD (11,0)
SESKRC	Evoke number of socket receives.	PD (11,0)
SESKBR	Evoke number of socket bytes received.	PD (11,0)
SEXRFR	Evoke file system directory reads.	PD (11,0)
SEXRFW	Evoke file system stream file writes.	PD (11,0)
SEXSLR	Evoke file system symbolic link reads.	PD (11,0)
SEXDYR	Evoke stream file reads.	PD (11,0)
SEDLCH	Evoke file system lookup cache hits.	PD (11,0)
SEDLCM	Evoke file system lookup cache misses.	PD (11,0)
SESZWT	Evoke seize/wait time in milliseconds.	PD (11,0)
SACPU	Total processing unit time (in milliseconds) used by autostart jobs.	PD (11,0)
SARES1	Reserved.	PD (15,3)
SARES2	Reserved.	PD (11,0)

Field Name	Description	Attribute
SAPRTL	Total number of print lines of all autostart jobs.	PD (11,0)
SAPRTP	Total number of print pages of all autostart jobs.	PD (11,0)
SASPD	Total time autostart jobs were suspended.	PD (11,0)
SARRT	Total time an autostart job waited during rerouting.	PD (11,0)
SANEW	Number of started autostart jobs.	PD (11,0)
SATERM	Number of ended autostart jobs.	PD (11,0)
SAJBCT	Number of autostart jobs.	PD (11,0)
SAPDBR	Total number of physical synchronous database reads by autostart jobs.	PD (11,0)
SAPNDB	Total number of physical synchronous nondatabase reads by autostart jobs.	PD (11,0)
SAPWRT	Total number of physical synchronous database and nondatabase writes by autostart jobs.	PD (11,0)
SALDBR	Total number of logical database reads by autostart jobs.	PD (11,0)
SALDBW	Total number of logical database writes by autostart jobs.	PD (11,0)
SALDBU	Total number of miscellaneous database operations by autostart jobs.	PD (11,0)
SACMPT	Total number of communications writes by autostart jobs.	PD (11,0)
SACMGT	Total number of communications reads by autostart jobs.	PD (11,0)
SABRG	Reserved	PD (11,0)
SAPRG	Reserved	PD (11,0)
SANDW	Number of synchronous nondatabase writes: Total number of synchronous physical nondatabase write operations for nondatabase functions by communications batch jobs.	PD (11,0)
SADBW	Number of synchronous database writes: Total number of synchronous physical database write operations for database functions by autostart jobs.	PD (11,0)
SAANDW	Number of asynchronous nondatabase writes: Total number of asynchronous physical nondatabase write operations for nondatabase functions by autostart jobs.	PD (11,0)

Field Name	Description	Attribute
SAADBW	Number of asynchronous database writes: Total number of asynchronous physical database write operations for database functions by autostart jobs.	PD (11,0)
SAANDR	Number of asynchronous nondatabase reads: Total number of asynchronous physical nondatabase read operations for nondatabase functions by autostart jobs.	PD (11,0)
SAADBR	Number of asynchronous database reads: Total number of asynchronous physical database read operations for database functions by autostart jobs.	PD (11,0)
SAPW	Number of permanent writes by autostart jobs.	PD (11,0)
SACS	Reserved	PD (11,0)
SAPAGF	Number of PAG faults: Total number of times the program access group (PAG) was referred to by autostart jobs, but was not in main storage. The Licensed Internal Code no longer uses process access groups for caching data. Because of this implementation, this field will always be 0 for more current releases.	PD (11,0)
SAEAO	Reserved	PD (11,0)
SAOBIN	Number of binary overflows by autostart jobs.	PD (11,0)
SAODEC	Number of decimal overflows by autostart jobs.	PD (11,0)
SAOFLP	Number of floating point overflows by autostart jobs.	PD (11,0)
SAIPF	Number of times an autostart job had a page fault on an address that was currently part of an auxiliary storage I/O operation.	PD (11,0)
SAWIO	Number of times an autostart job explicitly waited for outstanding asynchronous I/O operations to complete.	PD (11,0)
SASKSC	Autostart number of socket sends.	PD (11,0)
SASKBS	Autostart number of socket bytes sent.	PD (11,0)
SASKRC	Autostart number of socket receives.	PD (11,0)
SASKBR	Autostart number of socket bytes received.	PD (11,0)
SAXRFR	Autostart stream file reads.	PD (11,0)
SAXRFW	Autostart stream file writes.	PD (11,0)
SAXSLR	Autostart file system symbolic link reads.	PD (11,0)

Field Name	Description	Attribute
SAXDYR	Autostart file system directory reads.	PD (11,0)
SADLCH	Autostart file system lookup cache hits.	PD (11,0)
SADLCM	Autostart file system lookup cache misses.	PD (11,0)
SASZWT	Autostart seize/wait time in milliseconds.	PD (11,0)
SBCPU	Total processing unit time (in milliseconds) used by batch jobs.	PD (11,0)
SBRES1	Reserved.	PD (15,3)
SBRES2	Reserved.	PD (11,0)
SBPRTL	Total number of print lines of all batch jobs.	PD (11,0)
SBPRTP	Total number of print pages of all batch jobs.	PD (11,0)
SBSPD	Total time batch jobs were suspended.	PD (11,0)
SBRRT	Total time a batch job waited during rerouting.	PD (11,0)
SBNEW	Number of started batch jobs.	PD (11,0)
SBTERM	Number of ended batch jobs.	PD (11,0)
SBJBCT	Number of batch jobs.	PD (11,0)
SBPDBR	Total number of physical synchronous database reads by batch jobs.	PD (11,0)
SBPNDB	Total number of physical synchronous nondatabase reads by batch jobs.	PD (11,0)
SBPWRT	Total number of physical synchronous database and nondatabase writes by batch jobs.	PD (11,0)
SBLDBR	Total number of logical database reads by batch jobs.	PD (11,0)
SBLDBW	Total number of logical database writes by batch jobs.	PD (11,0)
SBLDBU	Total number of miscellaneous database operations by batch jobs.	PD (11,0)
SBCMPT	Total number of communications writes by batch jobs.	PD (11,0)
SBCMGT	Total number of communications reads by batch jobs.	PD (11,0)
SBBRG	Reserved	PD (11,0)
SBPRG	Reserved	PD (11,0)
SBNDW	Number of synchronous nondatabase writes: Total number of synchronous physical nondatabase write operations for nondatabase functions by batch jobs.	PD (11,0)

Field Name	Description	Attribute
SBDBW	Number of synchronous database writes: Total number of synchronous physical database write operations for database functions by batch jobs.	PD (11,0)
SBANDW	Number of asynchronous nondatabase writes: Total number of asynchronous physical nondatabase write operations for nondatabase functions by batch jobs.	PD (11,0)
SBADBW	Number of asynchronous database writes: Total number of asynchronous physical database write operations for database functions by batch jobs.	PD (11,0)
SBANDR	Number of asynchronous nondatabase reads: Total number of asynchronous physical nondatabase read operations for database functions by batch jobs.	PD (11,0)
SBADBR	Number of asynchronous database reads: Total number of asynchronous physical database read operations for database functions by batch jobs.	PD (11,0)
SBPW	Number of permanent writes by batch jobs.	PD (11,0)
SBCS	Reserved	PD (11,0)
SBPAGF	Number of PAG faults: Total number of times the program access group (PAG) was referred to by batch jobs, but was not in main storage. The Licensed Internal Code no longer uses process access groups for caching data. Because of this implementation, this field will always be 0 for more current releases.	PD (11,0)
SBEAO	Reserved	PD (11,0)
SBOBIN	Number of binary overflows by batch jobs.	PD (11,0)
SBODEC	Number of decimal overflows by batch jobs.	PD (11,0)
SBOFLP	Number of floating point overflows by batch jobs.	PD (11,0)
SBIPF	Number of times a batch job had a page fault on an address that was currently part of an auxiliary storage I/O operation.	PD (11,0)
SBWIO	Number of times a batch job explicitly waited for outstanding asynchronous I/O operations to complete.	PD (11,0)
SBSKSC	Batch number of socket sends.	PD (11,0)
SBSKBS	Batch number of socket bytes received.	PD (11,0)

Field Name	Description	Attribute
SBSKRC	Batch number of socket receives.	PD (11,0)
SBSKBR	Batch number of socket bytes received.	PD (11,0)
SBXRFR	Batch stream file reads.	PD (11,0)
SBXRFW	Batch stream file writes.	PD (11,0)
SBXSLR	Batch file system symbolic link reads.	PD (11,0)
SBXDYR	Batch file system directory reads.	PD (11,0)
SBDLCH	Batch file system lookup cache hits.	PD (11,0)
SBDLCM	Batch file system lookup cache misses.	PD (11,0)
SBSZWT	Batch seize/wait time in milliseconds.	PD (11,0)
SICPU	Total processing unit time (in milliseconds) used by interactive jobs.	PD (11,0)
SITRNT	Total transaction time by interactive jobs.	PD (15,3)
SITRNS	Total number of transactions by interactive jobs.	PD (11,0)
SIPRTL	Total number of print lines of all interactive jobs.	PD (11,0)
SIPRTP	Total number of print pages of all interactive jobs.	PD (11,0)
SISPD	Total time interactive jobs were suspended.	PD (11,0)
SIRRT	Total time an interactive job waited during rerouting.	PD (11,0)
SINEW	Number of started interactive jobs.	PD (11,0)
SITERM	Number of ended interactive jobs.	PD (11,0)
SIJBCT	Number of interactive jobs.	PD (11,0)
SIPDBR	Total number of physical synchronous database reads by interactive jobs.	PD (11,0)
SIPNDB	Total number of physical synchronous nondatabase reads by interactive jobs.	PD (11,0)
SIPWRT	Total number of physical synchronous database and nondatabase writes by interactive jobs.	PD (11,0)
SILDBR	Total number of logical database reads by interactive jobs.	PD (11,0)
SILDBW	Total number of logical database writes by interactive jobs.	PD (11,0)
SILDBU	Total number of miscellaneous database operations by interactive jobs.	PD (11,0)

Field Name	Description	Attribute
SICMPT	Total number of communications writes by interactive jobs.	PD (11,0)
SICMGT	Total number of communications reads by interactive jobs.	PD (11,0)
SIBRG	Reserved	PD (11,0)
SIPRG	Reserved	PD (11,0)
SINDW	Number of synchronous nondatabase writes: Total number of synchronous physical nondatabase write operations for nondatabase functions by interactive jobs.	PD (11,0)
SIDBW	Number of synchronous database writes: Total number of synchronous physical database write operations for database functions by interactive jobs.	PD (11,0)
SIANDW	Number of asynchronous nondatabase writes: Total number of asynchronous physical nondatabase write operations for nondatabase functions by interactive jobs.	PD (11,0)
SIADBW	Number of asynchronous database writes: Total number of asynchronous physical database write operations for database functions by interactive jobs.	PD (11,0)
SIANDR	Number of asynchronous nondatabase reads: Total number of asynchronous physical nondatabase read operations for nondatabase functions by interactive jobs.	PD (11,0)
SIADBR	Number of asynchronous database reads: Total number of asynchronous physical database read operations for database functions by interactive jobs.	PD (11,0)
SIPW	Number of permanent writes by interactive jobs.	PD (11,0)
SICS	Reserved	PD (11,0)
SIPAGF	Number of PAG faults: Total number of times the program access group (PAG) was referred to by interactive jobs but was not in main storage. The Licensed Internal Code no longer uses process access groups for caching data. Because of this implementation, this field will always be 0 for more current releases.	PD (11,0)
SIEAO	Reserved	PD (11,0)
SIOBIN	Number of binary overflows by interactive jobs.	PD (11,0)
SIODEC	Number of decimal overflows interactive jobs.	PD (11,0)

Field Name	Description	Attribute
SIOFLP	Number of floating point overflows by interactive jobs.	PD (11,0)
SIIPF	Number of times an interactive job had a page fault on an address that was currently part of an auxiliary storage I/O operation.	PD (11,0)
SIWIO	Number of times an interactive job explicitly waited for outstanding asynchronous I/O operations to complete.	PD (11,0)
SISKSC	Interactive number of socket sends.	PD (11,0)
SISKBS	Interactive number of socket bytes sent.	PD (11,0)
SISKRC	Interactive number of socket receives.	PD (11,0)
SISKBR	Interactive number of socket bytes received.	PD (11,0)
SIXRFR	Interactive stream file reads.	PD (11,0)
SIXRFW	Interactive stream file writes.	PD (11,0)
SIXSLR	Interactive file system symbolic link reads.	PD (11,0)
SIXDYR	Interactive file system directory reads.	PD (11,0)
SIDLCH	Interactive file lookup cache hits.	PD (11,0)
SIDLCM	Interactive file lookup cache misses.	PD (11,0)
SISZWT	Interactive seize/wait time in milliseconds.	PD (11,0)
SXCPU	Total processing unit time (in milliseconds) used by the start CPF (SCPF) job, spool reader jobs, or spool writer jobs.	PD (11,0)
SXRES1	Reserved.	PD (15,3)
SXRES2	Reserved.	PD (11,0)
SXPRTL	Total number of print lines of the SCPF job, spool reader jobs, or spool writer jobs.	PD (11,0)
SXPRTP	Total number of print pages of the SCPF job, spool reader jobs, or spool writer jobs.	PD (11,0)
SXSPD	Total time the SCPF job, spool reader jobs, or spool writer jobs were suspended.	PD (11,0)
SXRRT	Total time the SCPF job, spool reader jobs, or spool writer jobs waited during rerouting.	PD (11,0)
SXNEW	Number of started SCPF job, spool reader jobs, or spool writer jobs.	PD (11,0)
SXTERM	Number of ended SCPF job, spool reader jobs, or spool writer jobs.	PD (11,0)

Field Name	Description	Attribute
SXJBCT	Number of SCPF job, spool reader jobs, or spool writer jobs.	PD (11,0)
SXPDBR	Total number of physical synchronous database reads by the SCPF job, spool reader jobs, or spool writer jobs.	PD (11,0)
SXPNDB	Total number of physical synchronous nondatabase reads by the SCPF job, spool reader jobs, or spool writer jobs.	PD (11,0)
SXPWRT	Total number of physical synchronous database and nondatabase writes by the SCPF job, spool reader jobs, or spool writer jobs.	PD (11,0)
SXLDBR	Total number of logical database reads by the SCPF job, spool reader jobs, or spool writer jobs.	PD (11,0)
SXLDBW	Total number of logical database writes by the SCPF job, spool reader jobs, or spool writer jobs.	PD (11,0)
SXLDBU	Total number of miscellaneous database operations by the SCPF job, spool reader jobs, or spool writer jobs.	PD (11,0)
SXCMPT	Total number of communications writes by the SCPF job, spool reader jobs, or spool writer jobs.	PD (11,0)
SXCMGT	Total number of communications reads by the SCPF job, spool reader jobs, or spool writer jobs.	PD (11,0)
SXBRG	Reserved	PD (11,0)
SXPRG	Reserved	PD (11,0)
SXNDW	Number of synchronous nondatabase writes: Total number of synchronous physical nondatabase write operations for nondatabase functions by the SCPF job, spool reader jobs, or spool writer jobs.	PD (11,0)
SXDBW	Number of synchronous database writes: Total number of synchronous physical database write operations for database functions by the SCPF job, spool reader jobs, or spool writer jobs.	PD (11,0)
SXANDW	Number of asynchronous nondatabase writes: Total number of asynchronous physical nondatabase write operations for database functions by the SCPF job, spool reader jobs, or spool writer jobs.	PD (11,0)

Field Name	Description	Attribute
SXADBW	Number of asynchronous database writes: Total number of asynchronous physical database write operations for database functions by the SCPF job, spool reader jobs, or spool writer jobs.	PD (11,0)
SXANDR	Number of asynchronous nondatabase reads: Total number of asynchronous physical nondatabase read operations for nondatabase functions by the SCPF job, spool reader jobs, or spool writer jobs.	PD (11,0)
SXADBR	Number of asynchronous database reads: Total number of asynchronous physical database read operations for database functions by the SCPF job, spool reader jobs, or spool writer jobs.	PD (11,0)
SXPW	Number of permanent writes by the SCPF job, spool reader jobs, or spool writer jobs.	PD (11,0)
SXCS	Reserved	PD (11,0)
SXPAGF	Number of PAG faults: Total number of times the program access group (PAG) was referred to by the SCPF job, spool reader jobs, or spool writer jobs, but was not in main storage. The Licensed Internal Code no longer uses process access groups for caching data. Because of this implementation, this field will always be 0 for more current releases.	PD (11,0)
SXEAO	Reserved	PD (11,0)
SXOBIN	Number of binary overflows by the SCPF job, spool reader jobs, or spool writer jobs.	PD (11,0)
SXODEC	Number of decimal overflows by the SCPF job, spool reader jobs, or spool writer jobs.	PD (11,0)
SXOFLP	Number of floating point overflows by the SCPF job, spool reader jobs, or spool writer jobs.	PD (11,0)
SXIPF	Number of times the SCPF job or spool reader or spool writer job had a page fault on an address that was currently part of an auxiliary storage I/O operation.	PD (11,0)
SXWIO	Number of times the SCPF job or spool reader or spool writer job explicitly waited for outstanding asynchronous I/O operations to complete.	PD (11,0)
SXSKSC	Spool number of socket sends.	PD (11,0)

Field Name	Description	Attribute
SXSKBS	Spool number of socket bytes sent.	PD (11,0)
SXSKRC	Spool number of socket receives.	PD (11,0)
SXSKBR	Spool number of socket bytes received.	PD (11,0)
SXXRFR	Spool stream file reads.	PD (11,0)
SXXRFW	Spool stream file writes.	PD (11,0)
SXXSLR	Spool file system symbolic link reads.	PD (11,0)
SXXDYR	Spool file system directory reads.	PD (11,0)
SXXDLCH	Spool file system lookup cache hits.	PD (11,0)
SXXDLCM	Spool file system lookup cache misses.	PD (11,0)
SXSZWT	Spool seize/wait time in milliseconds.	PD (11,0)
SHCPU	Total processing unit time (in milliseconds) used by microcode/system jobs.	PD (11,0)
SMPLP	Machine pool paging: Number of pages transferred in and out of machine pool.	PD (11,0)
SMUPL	Highest user pool paging: Highest number of pages transferred in and out of any user pool.	PD (11,0)
SUPLI	Pool with highest paging: Pool number with highest number of pages transferred in and out.	C (2)
SMXDU	Maximum disk utilization. The largest utilization of all single path disk units and all paths of multipath disk units.	PD (11,0)
SMXDUI	Actuator with maximum utilization.	C (4)
SMMMT	Time (in seconds) spent at MRTMAX by all MRT requests.	PD (11,0)
SMME	Number of requesters that routed to a MRT.	PD (11,0)
SYFOPN	Number of full opens system wide.	PD (11,0)
SYIXRB	Number of index rebuilds system wide.	PD (11,0)
SYJOXR	Start journal operations initiated by user.	PD (11,0)
SYJOXP	Stop journal operations initiated by user.	PD (11,0)
SYJOIR	Start journal operations initiated by system.	PD (11,0)
SYJOIP	Stop journal operations initiated by system.	PD (11,0)
SYJOXD	Journal deposits resulting from user-journaled objects.	PD (11,0)

Field Name	Description	Attribute
SYJOID	Journal deposits resulting from system-journaled objects.	PD (11,0)
SYJOJP	Journal deposits resulting from system-journaled objects to user-created journals.	PD (11,0)
SYJOBJ	Bundle writes to user-created journals.	PD (11,0)
SYJOBD	Bundle writes to internal system journals.	PD (11,0)
SYJOJY	Exposed access paths currently being journaled by the system.	PD (11,0)
SYJOJN	Exposed access paths currently not being journaled.	PD (11,0)
SYJOSE	System-estimated access path recovery time exposure in milliseconds.	PD (11,0)
SYJORT	System-managed access path tuning adjustments.	PD (11,0)
SYJOND	System-estimated access path recovery time exposure in milliseconds if no access paths were being journaled by the system.	PD (11,0)
SYSCPU	Total processing time (in milliseconds) used by the first (or only) processing unit.	PD (9,0)
SYCPU2....4	Total processing time (in milliseconds) used by the second....fourth processing unit. This value is zero if there is no processing unit with this number on the system.	PD (9,0)
SYCP5....32	Total processing time (in milliseconds) used by the fifth....thirty-second processing unit. This value is zero if there is no processing unit with this number on the system.	PD (9,0)
SYHEAO	Number of tolerated crossings of a 16 MB boundary within any teraspace. Also called teraspace EAO exceptions.	PD (11,0)
SYHFTS	Number of space address computations (not addressing teraspace) that required extra processing. This may occur when a subtraction or addition of a signed value causes a result that is within the first page of a space object or associated space for which the machine did not choose alignment. Also called false traps.	PD (11,0)

Field Name	Description	Attribute
SYHFTH	Number of teraspace address computations that required extra processing. This occurs when a subtraction or addition of a signed value causes a result that is within the first page after any 16 MB boundary in teraspace. Also called false traps.	PD (11,0)
SYIFUS	Interactive CPU time. Total interactive CPU used (in milliseconds).	PD (9,0)
SYIFTE	Interactive CPU time over threshold. Interactive CPU used (in milliseconds) when exceeding interactive CPU threshold.	PD (9,0)
SYSDBC	Database CPU time. Total CPU time (in milliseconds) used for database processing.	PD (9,0)
SYSSWC	Secondary Workload CPU time. Total CPU time (in milliseconds) of all jobs that perform workloads that cannot fully exploit dedicated server resources.	PD (9,0)
SYLPTB	LPAR time base. This field provides a way to determine the difference between the system clocks on different partitions of a single system. This field has no meaning when looked at on a stand-alone basis. However, when this value is established on two (or more) partitions of a system, the difference between these values is the time difference (in seconds) between the two partitions.	PD (11,0)
SYNUAL	Noncached user authority lookups. The number of times that a noncached user authority lookup was performed. An authority check for one object can result in zero, one, or more than one user authority lookups. A user authority lookup can occur for the user, the user's groups, or an adopted user and can be cached or noncached.	PD (15,0)
SYIFTA	Interactive CPU time available. The amount of interactive CPU time that was available for use within the partition. This is the interactive capacity configured for use within the partition (also represented as interactive threshold).	PD (11,0)
SYSPTU	CPU time used. Total processing time (in milliseconds) used by the partition	PD (11,0)

Field Name	Description	Attribute
SYSCTA	Configured CPU time available. Total processing time (in milliseconds) that was configured or guaranteed to be available for this partition. This is the system processing capacity as determined by processor unit allocations during the interval. Note: For uncapped partitions, the actual CPU used can exceed this value.	PD (11,0)
SYSUTA	Uncapped CPU time available. Total processing time (in milliseconds) that was available for use by this partition (adjusted for configuration changes over time). It includes both the guaranteed configured capacity as well as the shared pool time that was not used by other partitions. For capped and dedicated partitions, or if shared pool data is not available, this is the same as Uncapped CPU time configured (SYSUTC).	PD (11,0)
SYSUTC	Uncapped CPU time configured. The maximum amount of CPU time that this partition is configured (allowed) to use within the shared pool (adjusted for configuration changes over time). This field defines the minimum of the virtual processors configured and the configured shared pool processors. For capped and dedicated partitions, this is the same as configured CPU time available (SYSCTA).	PD (11,0)
SYSPLU	Shared pool CPU time used. Total amount of CPU used within the shared pool by all partitions that share the pool. Set to zero if a shared pool is not used or the data is not available.	PD (11,0)
SYSPLA	Shared pool CPU time available. Total amount of CPU available within the shared pool. This value is determined based on the number of physical processors that are allocated to the pool. Set to zero if a shared pool is not used or the data is not available.	PD (11,0)

Field Name	Description	Attribute
SYVCPU	Virtual processor time configured. The processing capacity (in milliseconds) visible to the operating system based on the number of virtual processors configured and adjusted for configuration changes over time. This field is similar to SYSUTC except it is not affected by the shared pool configuration or the capped/uncapped state of the partition. The formula SYVCPU/INTSEC will yield the average number of virtual processors configured in the interval.	PD (11,0)
SYDPCH	Total Dispatch Time. The amount of time (in milliseconds) that the operating system has dispatched a job, task or thread to a processor. This is not the same as CPU time used due to the effects of processor virtualization.	PD (11,0)
SYSHRF	Shared processor flag. Indicates if the partition uses shared processors: • 0 = Partition does not share physical processors. • 1 = Partition shares physical processors.	C (1)
SCBGN	Reserved.	Z (3,0)
SYSIUL	Reserved.	PD (5,0)
SYSCIU	Reserved.	PD (7,0)

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Related information:

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance database files.

Collection Services data files: QAPMSYSCPU

This database file reports utilization for virtual processor units.

Virtual processors represent the operating system's view, within a logical partition, of the processors assigned to it. The utilization reported for virtual processors is the operating system's view of how much it has used the virtual processor.

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DTETIM	Interval date (yymmdd) and time (hhmmss): The date and time of the sample interval.	C (12)
INTSEC	Elapsed interval seconds: The number of seconds since the last sample interval.	PD (7,0)
DTECEN	Century digit.	C (1)
SCTNUM	Total number of system CPUs reported. The number of reported CPUs can include CPUs that are not currently in use because of configuration changes. Field SCTACT contains the number of active processors.	Z (3,0)
SCBGN	CPU number of the first CPU reported in this record.	Z (3,0)
SCPU01....32	Total processing time (in milliseconds) used by CPUs 1 to 32.	PD (9,0)
SCIFUS	Interactive CPU time. Total interactive CPU used (in milliseconds).	PD (9,0)
SCIFTE	Interactive CPU time over threshold. Interactive CPU used (in milliseconds) when exceeding interactive CPU threshold.	PD (9,0)
SCTACT	Current number of active processors at the time the data was sampled.	Z (3,0)

Related concepts:

Reporting CPU utilization
Find out how the total CPU that is consumed across virtual processors is reported.

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Related information:

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance database files.

Collection Services data files: QAPMSYSPRC

This database file reports utilization data for a system's physical processor units based on data obtained from the hypervisor. One record is written per processor per interval.

Physical processors are actual hardware processors contained within the physical system. The utilization for a system's physical processor is the time that the processor was made available by the hypervisor to any partition for it to do work. Dedicated processors will appear to be 100% utilized as the hypervisor is not in control of how the partition is using the processor.

Physical processor data is reported only if the collecting partition has been authorized to obtain it. This authorization is a partition configuration attribute set on the Hardware Management Console (HMC).

A POWER6 system with firmware level xx340_075 or later is required for this data to be available.

Field Name	Description	Attribute
INTNUM	Interval number: The *n*th sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DTETIM	Interval date (yymmdd) and time (hhmmss). The date and time of the sample interval. Logically this is the time at the end of the interval.	C (12)
DTECEN	Century digit.	C (1)
INTSEC	Elapsed interval seconds. The number of seconds since the last sample interval.	B (4, 0)
SPPID	Processor identifier. Unique identifier for each processor.	H(2)
SPTYPE	Type of processor: '1 = Physical processor	C (1)
SPATTR1	Processor state: • x'01' = not installed • x'02' = Guarded off (This processor has some runtime recoverable errors or it has been check stopped). • x'03' = Unlicensed (This processor is installed, but the license has not been purchased). • x'04' = Shared • x'05' = Borrowed (If this processor is not assigned to any partition, it has been taken from a dedicated partition that is set to donate its unused processors). • x'06' = Dedicated	C (1)
SPATTR2	Owning partition ID of the partition that owns this processor. If the processor is shared or unowned, a minus 1 will be reported.	B (4, 0)
SPTIME	Processing time. The time (in milliseconds) that this processor was dispatched to some partition.	B (18, 0)
SPVAL01-SPVAL10	Reserved for future use.	B (18, 0)

Related concepts:

Reporting CPU utilization
Find out how the total CPU that is consumed across virtual processors is reported.

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Related information:

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance database files.

Collection Services data files: QAPMSYSTEM

This database file reports system-wide performance data.

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DTETIM	Interval date (yymmdd) and time (hhmmss): The date and time of the sample interval.	C (12)
INTSEC	Elapsed interval seconds: The number of seconds since the last sample interval.	PD (7,0)
DTECEN	Century digit.	C (1)
SYDPGF	Directory page faults: Number of times a page of the auxiliary storage directory was transferred to main storage for a look-up or an allocation operation.	PD (11,0)
SYAPGF	Access group member page faults: Number of times a page of an object contained in an access group was transferred to main storage independently of the access group. This transfer occurs when the containing access group was purged, or because portions of the containing access group are displaced from main storage.	PD (11,0)
SYMPGF	Microcode page faults: Number of times a page of microcode was transferred to main storage.	PD (11,0)
SYMCTR	Microtask read operations: Number of transfers of one or more pages of data from auxiliary storage because of a microtask rather than a process.	PD (11,0)

Field Name	Description	Attribute
SYMCTW	Microtask write operations: Number of transfers of one or more pages of data from main storage to auxiliary storage because of a microtask rather than a process.	PD (11,0)
SYSASP	System auxiliary storage pool space available: Number of bytes of space on auxiliary storage available for allocation in the system auxiliary storage pool that is not currently assigned to machine interface (MI) objects or internal machine functions.	PD (15,0)
SYPRMW	Permanent data transferred from main storage: Number of 512-byte blocks of permanent data transferred from main storage to the system auxiliary storage pool in auxiliary storage since the last sample.	PD (11,0)
SYSIZC	Size count: Total number of size exceptions.	PD (11,0)
SYDECD	Decimal data count: Total number of decimal data exceptions.	PD (11,0)
SYSEZC	Seize count: Total number of seize wait exceptions.	PD (11,0)
SYSZWT	Seize/wait time in milliseconds.	PD (11,0)
SYSYNL	Synchronous lock conflict count.	PD (11,0)
SYASYL	Asynchronous lock conflict count.	PD (11,0)
SYVFYC	Verify count.	PD (11,0)
SYAUTH	Object authority checks. The number of times that authority was checked for objects. An authority check for one object can result in zero, one, or more than one user authority lookups that can be cached or noncached (see SYNUAL field description).	PD (11,0)
SYEXPN	Total number of exceptions.	PD (11,0)
SYLRT1	Transactions in first response time monitor bracket: Total number of local workstation transactions with response time less than the value of boundary 1 specified on the Advanced Local Response Time Options dialog from the Collection Services properties page within the System i Navigator interface.	PD (9,0)

Field Name	Description	Attribute
SYLRT2	Transactions in second response time monitor bracket: Total number of local workstation transactions with response time less than the value of boundary 2 and greater than the value of boundary 1 specified on the Advanced Local Response Time Options dialog from the Collection Services properties page within the System i Navigator interface.	PD (9,0)
SYLRT3	Transactions in third response time monitor bracket: Total number of local workstation transactions with response time less than the value of boundary 3 and greater than the value of boundary 2 specified on the Advanced Local Response Time Options dialog from the Collection Services properties page within the System i Navigator interface.	PD (9,0)
SYLRT4	Transactions in fourth response time monitor bracket: Total number of local workstation transactions with response time less than the value of boundary 4 and greater than the value of boundary 3 specified on the Advanced Local Response Time Options dialog from the Collection Services properties page within the System i Navigator interface.	PD (9,0)
SYLRT5	Transactions in fifth response time monitor bracket: Total number of local workstation transactions with response time greater than the value of boundary 4 specified on the Advanced Local Response Time Options dialog from the Collection Services properties page within the System i Navigator interface.	PD (9,0)
SHCPU	Total processing unit time (in milliseconds) used by microcode/system jobs.	PD (11,0)
SMPLP	Machine pool paging: Number of pages transferred in and out of machine pool.	PD (11,0)
SMUPL	Highest user pool paging: Highest number of pages transferred in and out of any user pool.	PD (11,0)
SUPLI	Pool with highest paging: Pool number with highest number of pages transferred in and out.	C (2)
SMXDU	Maximum disk utilization. The largest utilization of all single path disk units and all paths of multipath disk units.	PD (11,0)
SMXDUI	Actuator with maximum utilization.	C (4)

Field Name	Description	Attribute
SMMMT	Time (in seconds) spent at MRTMAX by all MRT requests.	PD (11,0)
SMME	Number of requesters that routed to an MRT.	PD (11,0)
SYFOPN	Number of full opens system wide.	PD (11,0)
SYIXRB	Number of index rebuilds system wide.	PD (11,0)
SYJOXR	Start journal operations initiated by user.	PD (11,0)
SYJOXP	Stop journal operations initiated by user.	PD (11,0)
SYJOIR	Start journal operations initiated by system.	PD (11,0)
SYJOIP	Stop journal operations initiated by system.	PD (11,0)
SYJOXD	Journal deposits resulting from user-journaled objects.	PD (11,0)
SYJOID	Journal deposits resulting from system-journaled objects.	PD (11,0)
SYJOJP	Journal deposits resulting from system-journaled objects to user-created journals.	PD (11,0)
SYJOBJ	Bundle writes to user-created journals.	PD (11,0)
SYJOBD	Bundle writes to internal system journals.	PD (11,0)
SYJOJY	Exposed access paths currently being journaled by the system.	PD (11,0)
SYJOJN	Exposed access paths currently not being journaled.	PD (11,0)
SYJOSE	System-estimated access path recovery time exposure in milliseconds.	PD (11,0)
SYJORT	System-managed access path tuning adjustments.	PD (11,0)
SYJOND	System-estimated access path recovery time exposure in milliseconds if no access paths were being journaled by the system.	PD (11,0)
SYHEAO	Number of tolerated crossings of a 16 MB boundary within any teraspace. Also called teraspace EAO exceptions.	PD (11,0)

Field Name	Description	Attribute
SYHFTS	Number of space address computations (not addressing teraspace) that required extra processing. This may occur when a subtraction or addition of a signed value causes a result that is within the first page of a space object or associated space for which the machine did not choose alignment. Also called false traps.	PD (11,0)
SYHFTH	Number of teraspace address computations that required extra processing. This occurs when a subtraction or addition of a signed value causes a result that is within the first page after any 16 MB boundary in teraspace. Also called false traps.	PD (11,0)
SYSDBC	Database CPU time. The amount of CPU time (in milliseconds) used for database processing.	PD (9,0)
SYSSWC	Secondary workload CPU time. The aggregate CPU time (in milliseconds) of all jobs performing workloads that cannot fully exploit dedicated server resources. **Note:** This metric measures non-Domino CPU usage on Domino servers. On non-Domino servers, this metric is not supported, so the reported value is 0.	PD (9,0)
SYJOER	Number of SMAPP evaluations requested. This count reveals how many times implicitly journaled objects were examined for potential SMAPP eligibility alterations. The evaluation can result in one of three outcomes: 1 - no action; 2 - start protecting this index via SMAPP; 3 - cease protecting this index via SMAPP.	PD (11,0)
SYJOES	Number of SMAPP evaluations serviced. This is a count of evaluations which led to a decision to change the protection state for a related index.	PD (11,0)

Field Name	Description	Attribute
SYJOIB	Number of SMAPP index build time estimations. The number of times background SLIC tasks have been asked to look at database keyed logical files or SQL indexes in order to estimate how long it will take to rebuild the index from scratch. Indexes whose estimated rebuild times are large will be SMAPPed. A large count here suggests that applications are frequently opening and closing files.	PD (11,0)
SYJOS1	First journal entry type. This field reports the most frequently occurring among the various journal entry types that have caused the SLIC layer of journal code to empty the journal cache prematurely. The number of bundles forced by this entry type is reported in the field SYJOC1.	C (2)
SYJOC1	Number of journal bundles forced prematurely by the journal entry type reported in the field SYJOS1.	PD (15,0)
SYJOS2	Second journal entry type. This field reports the second most frequently occurring among the various journal entry types that have caused the SLIC layer of journal code to empty the journal cache prematurely. The number of bundles forced by this entry type is reported in the field SYJOC2.	C (2)
SYJOC2	Number of journal bundles forced prematurely by the journal entry type reported in the field SYJOS2.	PD (15,0)
SYJOS3	Third journal entry type. This field reports the third most frequently occurring among the various journal entry types that have caused the SLIC layer of journal code to empty the journal cache prematurely. The number of bundles forced by this entry type is reported in the field SYJOC3.	C (2)
SYJOC3	Number of journal bundles forced prematurely by the journal entry type reported in the field SYJOS3.	PD (15,0)
SYSDNFE	The number of stream files which have been written to, but not forced to permanent storage. This count includes files in the Root, QOpenSys, QDLS, QOPT (when the files are on a volume that is not formatted in Universal Disk Format (UDS)) and user-defined file systems.	PD (11,0)

Field Name	Description	Attribute
SYSDNFO	The number of stream files currently exposed that have exceeded the target exposure time. This count includes files in the Root, QOpenSys, QDLS, QOPT (when the files are on a volume that is not formatted in Universal Disk Format (UDS)) and user-defined file systems.	PD (11,0)
SYSDTET	Exposure time (in milliseconds). The number of milliseconds between the time a stream file is written to and the time the file is forced to permanent storage. This time is a total for all files that were exposed during the interval. This count includes files in the Root, QOpenSys, QDLS, QOPT (when the files are on a volume that is not formatted in Universal Disk Format (UDS)) and user-defined file systems.	PD (15,0)
SYSDNST	The number of tasks running that are forcing stream files to permanent storage. This count includes files in the Root, QOpenSys, QDLS, QOPT (when the files are on a volume that is not formatted in Universal Disk Format (UDS)) and user-defined file systems.	PD (5,0)
SYSDFAL	The number of stream files that have been exposed and needed to be forced. This count includes files in the Root, QOpenSys, QDLS, QOPT (when the files are on a volume that is not formatted in Universal Disk Format (UDS)) and user-defined file systems.	PD (11,0)
SYSDFRL	The total number of stream files that have been asynchronously forced to permanent storage. This count includes files in the Root, QOpenSys, QDLS, QOPT (when the files are on a volume that is not formatted in Universal Disk Format (UDS)) and user-defined file systems.	PD (11,0)
SYSDPFD	The number of stream file pages that have been asynchronously forced to permanent storage. This count does not include pages forced by an fsync operation. This count includes files in the Root, QOpenSys, QDLS, QOPT (when the files are on a volume that is not formatted in Universal Disk Format (UDS)) and user-defined file systems.	PD (15,0)

Field Name	Description	Attribute
SYSDPFF	The number of stream file pages explicitly forced to permanent storage as a result of an fsync operation. This count includes files in the Root, QOpenSys, QDLS, QOPT (when the files are on a volume that is not formatted in Universal Disk Format (UDS)) and user-defined file systems.	PD (15,0)
SYBTAC	The number of asynchronous clear operations performed. This count includes files in the Root, QOpenSys, QDLS, QOPT (when the files are on a volume that is not formatted in Universal Disk Format (UDS)) and user-defined file systems.	PD (11,0)
SYBTAP	The number of asynchronous prebring operations performed. This count includes files in the Root, QOpenSys, QDLS, QOPT (when the files are on a volume that is not formatted in Universal Disk Format (UDS)) and user-defined file systems.	PD (11,0)
SYBTAPP	The number of parallel prebring operations performed. This count includes files in the Root, QOpenSys, QDLS, QOPT (when the files are on a volume that is not formatted in Universal Disk Format (UDS)) and user-defined file systems.	PD (11,0)
SYBTAPC	The number of asynchronous create operations performed. This count includes files in the Root, QOpenSys, QDLS, QOPT (when the files are on a volume that is not formatted in Universal Disk Format (UDS)) and user-defined file systems.	PD (11,0)
SYBTAPD	The number of asynchronous delete operations performed. This count includes files in the Root, QOpenSys, QDLS, QOPT (when the files are on a volume that is not formatted in Universal Disk Format (UDS)) and user-defined file systems.	PD (11,0)
SYLPTB	LPAR time base. This field provides a way to determine the difference between the system clocks on different partitions of a single system. This field has no meaning when looked at on a stand-alone basis. However, when this value is established on two (or more) partitions of a system, the difference between these values is the time difference (in seconds) between the two partitions.	B (11,0)

Field Name	Description	Attribute
SYNUAL	Noncached user authority lookups. The number of times that a noncached user authority lookup was performed. An authority check for one object can result in zero, one, or more than one user authority lookups. A user authority lookup can occur for the user, the user's groups, or an adopted user and can be cached or noncached.	PD (15,0)
SYIFUS	Interactive CPU time used. Total interactive CPU used (in milliseconds).	PD (9,0)
SYIFTE	Interactive CPU time used over threshold. Interactive CPU used (in milliseconds) when exceeding interactive CPU threshold.	PD (9,0)
SYIFTA	Interactive CPU time available. The amount of interactive CPU time that was available for use within the partition. This is the interactive capacity configured for use within the partition (also represented as interactive threshold).	PD (11,0)
SYSPTU	CPU time used. Total processing time (in milliseconds) used by the partition	PD (11,0)
SYSCTA	Total CPU time configured for the partition. Total processing time (in milliseconds) that was configured or guaranteed for this partition. This is the system processing capacity as determined by processor unit allocations during the interval. Note: For uncapped partitions, the actual CPU used can exceed this value.	PD (11,0)
SYSUTA	CPU time that could have been used by this partition. Total processing time (in milliseconds) that could have been used by this partition (adjusted for configuration changes over time). It includes both the guaranteed configured capacity as well as the shared pool time that was not used by other partitions. For capped and dedicated partitions, or if shared pool data is not available, this is the same as Uncapped CPU time configured.	PD (11,0)

Field Name	Description	Attribute
SYSUTC	Uncapped CPU time configured. The maximum amount of CPU time that this partition is configured (allowed) to use within the shared pool (adjusted for configuration changes over time). This field defines the Minimum of the virtual processors configured and the configured shared pool processors. For capped and dedicated partitions, this is the same as total CPU time configured for the partition.	PD (11,0)
SYSPLU	Shared pool CPU time used. Total amount of CPU used within the shared pool by all partitions that share the pool. Set to zero if a shared pool is not used or the data is not available.	PD (11,0)
SYSPLA	Shared pool CPU time available. Total amount of CPU available within the shared pool. This value is determined based on the number of physical processors that are allocated to the pool. Set to zero if a shared pool is not used or the data is not available.	PD (11,0)
SYVCPU	Virtual processor time configured. The processing time capacity (in milliseconds) visible to the operating system based on the number of virtual processors configured and adjusted for configuration changes over time. This field is similar to SYSUTC except it is not affected by the shared pool configuration or the capped/uncapped state of the partition. The formula SYVCPU/(INTSEC*1000) will yield the average number of virtual processors configured in the interval. **Note:** Will be zero for data obtained prior to V5R4	PD (11,0)
SYDPCH	Total Dispatch Time. The amount of time (in milliseconds) that the operating system has dispatched a job, task, or thread to a processor. This is not the same as CPU time used due to the effects of processor virtualization. **Note:** this field will contain data only if file QAPMJOBWT data is available	PD (11,0)

Field Name	Description	Attribute
SYSHRF	Shared processor flag. Indicates if the partition uses shared processors: ‘ ’ = unknown '0'= Partition does not share physical processors. '1' = Partition shares physical processors.	C (1)
SYSIUL	Reserved.	PD (5,0)
SYSCIU	Reserved.	PD (7,0)
SYJDUM	Reserved.	PD (1,0)
SYJDDM	Reserved.	C (3)
SYJCA4	Reserved.	C (3)
SYJPAS	Reserved.	C (3)
SYJMRT	Reserved.	C (3)
SYJS6E	Reserved.	C (3)
SYJCME	Reserved.	C (3)
SYJAUT	Reserved.	C (3)
SYJBCH	Reserved.	C (3)
SYJINT	Reserved.	C (3)
SYJSPL	Reserved.	C (3)
SYVPID	Virtual shared pool ID. This is the identifier of the partition's current virtual shared processor pool.	B (4,0)
SYVPCAP	Virtual shared pool entitled capacity. The entitled capacity of the partition's current virtual shared processor pool (in units of 1/100 of a physical processor).	B (9,0)
SYPPLU	Physical shared pool CPU time used. Total amount of CPU time (in milliseconds) used within the physical shared processor pool by all partitions that share the pool. Set to zero if physical shared pool is not used or the data is not available.	B (18,0)

Field Name	Description	Attribute
SYPPLA	Physical shared pool CPU time available. Total amount of CPU time (in milliseconds) available within the physical shared processor pool. This value is determined based on the number of physical processors that are allocated to the pool. Set to zero if physical shared pool is not used or the data is not available. Note that this field will reflect CPU time donated by the dedicated partitions associated with the pool, if these partitions were configured to donate the unused CPU cycles to the pool.	B (18,0)
SYPTHV	Hypervisor CPU time. Amount of CPU time (in milliseconds) used by hypervisor for its internal needs. This time is included in SYSPTU.	B (18,0)
SYPTINT	Interrupt CPU time. Amount of CPU time (in milliseconds) used by operating system for interrupt processing. This time is included in SYSPTU.	B (18,0)
SYPTWS	Waittask time. Amount of CPU time (in milliseconds) used by waittask in SMT mode. This time is not included in SYSPTU.	B (18,0)
SYPTDN	Donated CPU time. Amount of CPU time (in milliseconds) donated by this partition to the physical shared processor pool. This time is only reported for dedicated partitions configured to donate their unused CPU cycles to physical shared pool.	B (18,0)
SYSSPTU	Scaled CPU time used (milliseconds). On some system models, the processors may operate at different speeds at different times, depending on power consumption or operating temperature. Ratio of SYSSPTU to SYSPTU shows the current processor speed in relation to nominal processor speed.	B (18,0)
SYUCAPF	Partition uncapped flag. Indicates if the partition capacity is uncapped: ‘ ‘ = unknown '0'= Partition capacity is capped or this partition does not share physical processors. '1' = Partition capacity is uncapped.	C (1)

Field Name	Description	Attribute
SYDONF	Partition donation flag. Indicates if the partition supports donation of unused processing time to the physical shared processor pool: ' ' = unknown '0' = Partition does not support donation of processing time. '1' = Partition supports donation of processing time.	C (1)
SYPTWAIT	Virtual processor thread wait event time. The elapsed time in microseconds that blocked threads of the partition's virtual processors were waiting for an event that caused them to become ready to run.	B (18, 0)
SYPTREADY	Virtual processor thread wait ready time. The elapsed time in microseconds that ready to run threads of the partition's virtual processors waited to be dispatched while entitled capacity was exhausted.	B (18, 0)
SYPTLATEN	Virtual processor thread dispatch latency. The elapsed time in microseconds that ready to run threads of the partition's virtual processors waited to be dispatched while entitled capacity was not exhausted and a physical processor was not available.	B (18, 0)
SYPTACT	Virtual processor thread active time. The elapsed time in milliseconds summed for all threads of a virtual processor for the time that the virtual processor is active in the partition. A virtual processor that is active is one that is varied on; a virtual processor that is not active is either varied off or not installed.	B (18, 0)
SYPTIDLE	Virtual processor thread idle time. The elapsed time in milliseconds summed for all threads of a virtual processor for the time that thread is idle in the partition. A processor thread that is idle is one that is varied on and running the partition's idle loop.	B (18, 0)
SYPTINTR	Virtual processor thread interrupt time. The elapsed time in milliseconds summed for all threads of a virtual processor for the time that thread is handling interrupts in the partition.	B (18, 0)

Field Name	Description	Attribute
SYFRMCPU	Processor firmware time used (in microseconds). The amount of processor firmware time used by this partition.	B (18, 0)
SYFRMSCPU	Processor scaled firmware time used (in microseconds). The amount of scaled processor firmware time used by this partition.	B (18, 0)
SYPFOLDSW	Processor folding switch state. The current state of the processor folding switch. • ' ' = data not available • '0' = off • '1' = on • '2' = system controlled	C (1)
SYPFOLDST	Processor folding state. The current state of processor folding. • ' ' = data not available • '0' = disabled • '1' = enabled	C (1)
SYEMMAJCDE	Energy management major code (see minor code)	C (1) (binary char)
SYEMMINCDE	Energy management minor code. Major and minor code meanings are: • Maj 0, Min 0 = Unspecified or unavailable • Maj 0, Min 2 = Disabled (nominal performance) • Maj 0, Min 1 = Enabled (maximum performance) • Maj 0 , Min 3 = Enabled (power saver) • Maj 1, Min 0-127 = Enabled (dynamic power optimizer)	C (1) (binary char)
SYEMATTR	Energy management attributes. • Bit 0 = Power draw limit type (0 = soft, 1 = hard) • Bit 1-7 = Reserved	C(1) (binary char)
SYEMPWRLMT	Energy management power draw limit in watts.	B (9, 1)

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Related information:

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance

database files.

Collection Services data files: QAPMSYSWLC

This database file reports workload capping group data.

Data is generated only when one or more workload capping groups were in use during the collection. A record is written for each group that is active.

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DATETIME	Interval date and time: The date and time of the sample interval.	Timestamp
INTSEC	Elapsed interval seconds: The number of seconds since the last sample interval.	PD (7,0)
SWGROUP	Group ID. The identifier for the workload group.	B (9,0)
SWGNAME	Group Name. The name assigned to the workload group when allocated by License Management	C (10)
SWPRCASN	Processors assigned. The maximum number of processors which may be used concurrently by all threads of all processes which are associated with the workload group. This is the value associated with the group at the time data was sampled.	B (4,0)
SWPRCAVL	Processor time available (in microseconds). The amount of processor time that this group had available to it based on the number of processors assigned to the group over time.	B (18,0)
SWPRCUSE	Processor unscaled time used (in microseconds). The amount of unscaled processor time used within threads assigned to this group. **Note:** This does not include time charged to a thread by server tasks.	B (18,0)
SWSPRCUSE	Processor scaled time used (in microseconds). The amount of scaled processor time used within threads assigned to this group. **Note:** This does not include time charged to a thread by server tasks.	B (18,0)
SWDELAY	Dispatch latency time . The amount of time ready to run threads could not be dispatched due to the group's maximum concurrent processor limit.	B (18,0)

Field Name	Description	Attribute
SWPRCADD	Processes added. The number of process instances that became associated with this group during the interval.	B (18,0)
SWPRCRMV	Processes removed. The number of process instances that were disassociated from this group during the interval.	B (18,0)

Collection Services data files: QAPMTAPE

This database file contains the tape device data collected in the *RMVSTG collection category.

It contains one record per interval per tape device connected to the system.

Field Name	Description	Attribute
INTNUM	Interval number: The *n*th sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DATETIME	Interval data and time. The date and time of the sample interval.	Timestamp
INTSEC	Elapsed interval seconds. The number of seconds since the last sample interval.	PD (7,0)
TPDRN	Tape device resource name.	C (10)
TPTYPE	Tape device type.	C (4)
TPMDLN	Model number. The model number of the tape drive.	C (4)
TPIOPRN	IOP resource name.	C (10)
TPIOARN	Storage adapter (IOA) resource name.	C (10)
TPRDS	Number of reads.	B (18, 0)
TPWRTS	Number of writes.	B (18, 0)
TPBRD	Bytes read.	B (18, 0)
TPBWRT	Bytes written.	B (18, 0)
TPWREQ	Time spent waiting for a request from the client (in milliseconds).	B (18, 0)
TPWRESP	Time spent waiting for a response from the drive (in milliseconds).	B (18, 0)
TPSFMCMD	Space by file mark commands.	B (18, 0)
TPFLMRKSPC	File marks spaced.	B (18, 0)
TPSBCMD	Space block commands.	B (18, 0)
TPBLCKSPC	Blocks spaced.	B (18, 0)
TPWFMCMD	Write file mark commands.	B (18, 0)
TPFLMRKWRT	File marks written.	B (18, 0)
TPSEODCMD	Space to EOD commands.	B (18, 0)
TPWBCMD	Write buffer commands.	B (18, 0)

Field Name	Description	Attribute
TPRESERVES	Reserve commands.	B (18, 0)
TPRELEASES	Release commands.	B (18, 0)
TPREWINDS	Rewind commands.	B (18, 0)
TPUNLOADS	Unload commands.	B (18, 0)
TPSTPOSCMD	Set tape position commands.	B (18, 0)
TPRDPOSCMD	Read tape position commands.	B (18, 0)
TPVAL1	Reserved	B (18, 0)
TPVAL2	Reserved	B (18, 0)
TPVAL3	Reserved	B (18, 0)
TPVAL4	Reserved	B (18, 0)
TPVAL5	Reserved	B (18, 0)
TPVAL6	Reserved	B (18, 0)
TPVAL7	Reserved	B (18, 0)
TPVAL8	Reserved	B (18, 0)
TPVAL9	Reserved	B (18, 0)
TPVAL10	Reserved	B (18, 0)

Collection Services data files: QAPMTCP

This database file contains system-wide TCP/IP data.

There is one record per collection interval.

Note: The TCP/IP performance data includes data for both for Internet Protocol version 4 (IPv4) and Internet Protocol version 6 (IPv6).

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DTETIM	Interval date (yymmdd) and time (hhmmss). The date and time of the sample interval.	C (12)
INTSEC	Number of seconds TCP/IP was active in this sample interval.	PD (7,0)
DTECEN	Century digit.	C (1)
TCDIRV	Number of input datagrams received from interfaces, including those received in error.	PD (15,0)
TCDIHE	Number of input datagrams discarded due to errors in their IP headers.	PD (11,0)
TCDIAE	Number of input datagrams discarded due to an address that is not valid in the IP headers.	PD (11,0)

Field Name	Description	Attribute
TCDIUP	Number of input datagrams discarded due to unknown or unsupported protocol.	PD (11,0)
TCDIDS	Number of input datagrams discarded due to other problems (for example, lack of buffer space).	PD (11,0)
TCDIFW	Number of datagrams forwarded, including Source-Routed through this system.	PD (15,0)
TCDIDL	Number of input datagrams successfully delivered to IP user-protocols (including ICMP).	PD (15,0)
TCDOTR	Number of datagrams which IP user-protocols supplied for transmission (including ICMP).	PD (15,0)
TCDONR	Number of output datagrams discarded because no route was found to transmit them to their destination.	PD (11,0)
TCDODS	Number of output datagrams discarded due to other problems (for example, lack of buffer space).	PD (11,0)
TCASMR	Number of IP fragments received which needed reassembly.	PD (15,0)
TCASMS	Number of datagrams successfully reassembled.	PD (15,0)
TCASMF	Number of failures detected by the reassembly algorithm.	PD (11,0)
TCFRGS	Number of datagrams successfully fragmented.	PD (15,0)
TCFRGF	Number of fragmentation failures.	PD (11,0)
TCFRGN	Number of datagram fragments generated.	PD (15,0)
TCAOPN	Number of times TCP connections made a transition from CLOSED state to SYN-SENT state.	PD (11,0)
TCPOPN	Number of times TCP connections made a transition from LISTEN state to SYN-RCVD state.	PD (11,0)
TCFOPN	Number of times TCP connection establishment attempts failed.	PD (11,0)
TCCRST	Number of times TCP connection was reset.	PD (11,0)
TCSGRV	Number of TCP segments received.	PD (15,0)
TCSGTR	Number of TCP segments sent.	PD (15,0)
TCSGRT	Number of TCP segments retransmitted.	PD (11,0)
TCSGER	Number of TCP segments received in error.	PD (11,0)

Field Name	Description	Attribute
TCUDRV	Number of UDP datagrams delivered to UDP users.	PD (15,0)
TCUDTR	Number of UDP datagrams sent.	PD (15,0)
TCUDNP	Number of received UDP datagrams for which there was no application on the destination port.	PD (11,0)
TCUDER	Number of received UDP datagrams that could not be delivered for other reasons.	PD (11,0)
TCICRV	Number of ICMP messages received.	PD (15,0)
TCICTR	Number of ICMP messages which were attempted to be sent.	PD (15,0)
TCICIE	Number of received ICMP messages that had ICMP-specific errors.	PD (11,0)
TCICOE	Number of ICMP messages that were not sent due to ICMP-specific problems.	PD (11,0)

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Related information:

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance database files.

Collection Services data files: QAPMTCPIFC

This database file contains TCP/IP data related to individual TCP/IP interfaces.

There are one or two records per TCP/IP interface per collection interval. If both Internet Protocol version 4 (IPv4) and Internet Protocol version 6 (IPv6) data are available for an interface, the primary record will contain the combined data. If the data was collected on a release that supports the collection of independent data for IPv6, a secondary record will contain the data specific to IPv6. If data is available for only one Internet Protocol version, the primary record will contain data specific to that Internet Protocol version and there will not be a secondary record.

Note: The TCP/IP performance data includes data for both for Internet Protocol version 4 (IPv4), for Internet Protocol version 6 (IPv6), or for both Internet Protocol version 4 and Internet Protocol version 6.

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DTETIM	Interval date (yymmdd) and time (hhmmss). The date and time of the sample interval.	C (12)

Field Name	Description	Attribute
INTSEC	Number of seconds TCP/IP interface was active in this sample interval.	PD (7,0)
DTECEN	Century digit.	C (1)
TINUM	TCP/IP interface number.	PD (5,0)
TITYPE	TCP/IP interface type. Possible TCP/IP interface types include: • 01 = other • 05 = RFC877 X25 • 06 = Ethernet CSMACD • 07 = ISO88023 CSMACD • 09 = ISO88025 Token Ring • 15 = FDDI • 23 = PPP • 24 = Software Loopback • 28 = SLIP • 32 = Frame Relay This is a partial list. For a full list, see RFC 1213.	PD (5,0)
TILIND	Line description object name.	C (10)
TISTAT	Interface status. Possible values include: • 1 - Active • 2 - Inactive • 3 - Test	PD (3,0)
TIMTU	MTU size for interface. For a primary record that contains both IPv4 and IPv6 data, this is the IPv4 MTU size.	PD (5,0)
TIBIRV	Number of bytes received on interface.	PD (15,0)
TIPIUC	Number of unicast packets received.	PD (15,0)
TIPINU	Number of non-unicast packets received.	PD (15,0)
TIPIER	Number of inbound packets that contained errors.	PD (11,0)
TIPIUP	Number of inbound packets with protocol errors.	PD (11,0)
TIPIDS	Number of inbound packets discarded for other reasons (for example, lack of buffer space).	PD (11,0)
TIBOTR	Number of bytes transmitted out of interface.	PD (15,0)
TIPOUC	Number of unicast packets requested to be sent.	PD (15,0)
TIPONU	Number of non-unicast packets requested to be sent.	PD (15,0)
TIPOER	Number of outbound packets that could not be sent because of errors.	PD (11,0)

Field Name	Description	Attribute
TIPODS	Number of outbound packets discarded for other reasons (for example, lack of buffer space).	PD (11,0)
TIIPV	Internet protocol version for which data in this sample interval was collected. Possible values include: • 0 - Both IPv4 and IPv6 • 1 - IPv4 • 2 - IPv6	C (1)
TIRTYP	Record type indicates whether the record is primary or secondary for this sample interval. Possible values include: • 1 - Physical interface primary record • 2 - Physical interface secondary record	C (1)

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Related information:

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance database files.

Collection Services data files: QAPMUSRTNS

This database file contains performance data for the user-defined and Application Response Measurement (ARM) transactions.

One record is created for each type of transaction that occurs for a given job during the interval.

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DTETIM	Interval date (*yymmdd*) and time (*hhmmss*): The date and time of the sample interval.	C (12)
INTSEC	Elapsed interval seconds: The number of seconds since the last sample interval.	PD (7,0)
DTECEN	Century digit: where 0 indicates 19*XX* and 1 indicates 20*XX*.	C (1)
UTNAM	Job name.	C (10)
UTUSR	Job user.	C (10)
UTNUM	Job number.	C (6)

Field Name	Description	Attribute
UTTYP	Transaction type. The type of user-defined transaction reported in this record for this job. The transaction type has the same value as the application identifier parameter passed to the Start Transaction API and End Transaction API. If Collection Services encounters more than 15 transaction types for this job, it will combine the transaction data for any additional transaction types into the transaction type of *OTHER. When Application Response Measurement (ARM) transaction data is reported in the QAPMUSRTNS file, this field contains an ARM transaction type name. Names of ARM transaction types start with the prefix "QARM". You can find additional information about ARM transactions in the optional secondary file, QAPMARMTRT.	C (20)
UTTIM	Total time in microseconds used by all transactions of this type for this job.	B (18,0)
UTNUMT	Total number of transactions of this type for this job. This represents the number of calls to the End Transaction API.	B (9,0)
UTSTR	Number of calls to the Start Transaction API for this transaction type and job. For ARM transaction types, this field is 0, because ARM APIs do not go through the Start Transaction API.	B (9,0)
UTBAD	Number of calls to the End Transaction API for this transaction type and job which passed a bad transaction start time. This can occur for various reasons including: The start time is zero. The start time is after the end time. The start time is before the job start time.	B (9,0)
UTNUMC	Number (N) of user-provided counters associated with this transaction type and job. These counters are reported in the first N UTCT*n* fields. This field is zero if there are no user-provided counters.	B (9,0)
UTCT1	User-provided counter 1. For ARM transaction types, this field contains the total ARM transaction queuing time in milliseconds.	B (18,0)
UTCT2	User-provided counter 2.	B (18,0)
UTCT3	User-provided counter 3.	B (18,0)
UTCT4	User-provided counter 4.	B (18,0)
UTCT5	User-provided counter 5.	B (18,0)
UTCT6	User-provided counter 6.	B (18,0)
UTCT7	User-provided counter 7.	B (18,0)
UTCT8	User-provided counter 8.	B (18,0)
UTCT9	User-provided counter 9.	B (18,0)
UTCT10	User-provided counter 10.	B (18,0)
UTCT11	User-provided counter 11.	B (18,0)
UTCT12	User-provided counter 12.	B (18,0)
UTCT13	User-provided counter 13.	B (18,0)

Field Name	Description	Attribute
UTCT14	User-provided counter 14.	B (18,0)
UTCT15	User-provided counter 15.	B (18,0)
UTCT16	User-provided counter 16.	B (18,0)
Note: ARM transaction data is reported only for applications which call the ARM API implementation that is shipped with the operating system.		

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

"Collection Services data files: QAPMARMTRT" on page 15
This database file contains information about Application Response Measurement (ARM) transaction types that are reported in the QAPMUSRTNS file.

Related information:

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance database files.

Collection Services data files: QAPMWASAPP

This data includes information about applications running on the IBM WebSphere Application Server.

The data file contains one record for each application per interval. Applications can be either of the following types:

- Servlet sessions
- Web applications (servlets and JSPs)

Much of the data comes from WebSphere Performance Monitoring Infrastructure (PMI) data and transaction counters. Where PMI data is used directly, the name of the PMI field is provided.

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DTETIM	Interval date (yymmdd) and time (hhmmss): The date and time of the sample interval.	C (12)
INTSEC	Elapsed interval seconds: The number of seconds since the last sample interval.	PD (7,0)
DTECEN	Century digit. 0 indicates 19XX and 1 indicates 20XX.	C (1)
WSNAME	Job name of server job.	C (10)
WSUSER	User name of server job.	C (10)
WSNBR	Job number of server job.	C (6)
WSJKEY	Server job key.	H (16)
WAKEY	Application key.	H (8)
WAAPP	Application name (first 10 characters if the name is longer than this field). This field is in unicode.	G (40)
Servlet session counters		

Field Name	Description	Attribute
WACRT	Servlet sessions created. The number of servlet sessions that were created during the interval. (PMI: servletSessionsModule.createdSessions)	B (9,0)
WAINV	Servlet sessions invalidated. The number of servlet sessions that were invalidated during the interval. (PMI: servletSessionsModule.invalidatedSessions)	B (9,0)
WATLIF	Servlet Session Accumulated Lifetime. The accumulated servlet session lifetime in milliseconds (time invalidated - time created) during the interval. (PMI: servletSessionsModule.sessionLifeTime) To calculate average lifetime: WATLIF / WAINV	B (18,0)
WALIV	Servlet Session Current Live Count. The number of sessions that were cached in memory at the time the data was sampled. (PMI: servletSessionsModule.liveSessions)	B (9,0)
Web application counters – servlets		
WASLD	Servlets loaded. The total number of servlets loaded during the interval. This field includes both servlets and JSPs. (PMI: webAppModule.numLoadedServlets; CountStatistic)	B (9,0)
WASRD	Servlets reloaded. The total number of servlets reloaded during the interval. This field includes both servlets and JSPs. (PMI: webAppModule.numReloads; CountStatistic)	B (9,0)
WASCNT	Current servlets. Number of servlets at the time the data was sampled. This field does not include JSPs.	B (9,0)
WASCNTNZ	Current servlets with non-zero response time. The number of servlets which had a response time > 0 at the time the data was sampled. This field does not include JSPs.	B (9,0)
WASREQ	Servlet requests. Total number of requests that servlets processed during the interval. This field does not include JSPs. (PMI: webAppModule.servlets.totalRequests; CountStatistic)	B (9,0)
WASRT	Servlet response time. Total accumulated response time in milliseconds during the interval for servlets. This field does not include JSPs. (PMI: webAppModule.servlets.responseTime; TimeStatistic) To calculate response time per servlet: WASRT / WASREQ	B (18,0)
WASWE	Current servlets with errors. The number of servlets which had an error count > 0 at the time the data was sampled. This field does not include JSPs. (PMI: Number of servlets where webAppModule.servlets.numErrors > 0)	B (9,0)

Field Name	Description	Attribute
WASERR	Servlet error count. The total number of errors for all servlets. This field does not include JSPs. (PMI: webAppModule.servlets.numErrors; CountStatistic)	B (9,0)
Web application counters – JSPs		
WAJCNT	Current JSPs. Number of JSPs at the time the data was sampled.	B (9,0)
WAJREQ	JSP requests. Total number of requests that JSPs processed during the interval. (PMI: webAppModule.servlets.totalRequests; CountStatistic)	B (9,0)
WAJRT	Total JSP response time. Total accumulated response time in milliseconds during the interval for all JSPs. (PMI: webAppModule.servlets.responseTime; TimeStatistic) To calculate response time per JSP: WAJRT/WAJREQ	B (18,0)
WAJWE	JSP count with errors. Number of JSPs which had an error count > 0 at the time the data was sampled. (PMI: Number of JSPs where webAppModule.servlets.numErrors > 0).	B (9,0)
WAJERR	JSP error count. The total number of errors for JSPs during the interval. (PMI: webAppModule.servlets.numErrors; CountStatistic).	B (9,0)
Reserved fields		
WARES1	Reserved	B (9,0)
WARES2	Reserved	B (9,0)
WARES3	Reserved	B (9,0)
WARES4	Reserved	B (9,0)
WARES5	Reserved	B (18,0)
WARES6	Reserved	B (18,0)

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Related information:

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance database files.

WebSphere servlet session counters
See WebSphere servlet session counters for more information about WebSphere servlet session counters data.

WebSphere Web application counters
See WebSphere Web application counters for more information about WebSphere Web application

counters data.

Collection Services data files: QAPMWASCFG

This data includes configuration information about the different server jobs.

This information is static and therefore does not change during the life of the server. There will be one record per server. If a WebSphere server stops and is restarted later, it will have a different job name/user name/job number, but the same server name.

Field Name	Description	Attribute
WSNAME	Job name of server job.	C (10)
WSUSER	User name of server job.	C (10)
WSNBR	Job number of server job.	C (6)
WSJKEY	Server job key.	H (16)
WSLIB	WebSphere library name.	C (10)
WSIHP	Initial heap size in bytes.	B (18,0)
WSMHP	Maximum heap size in bytes. 0 = *NOMAX	B (18,0)
WSPRF	Profile name (first 40 characters if the name is longer than this field). This field is in Unicode.	G (40)
WSNODE	Node name (first 40 characters if the name is longer than this field). This field is in Unicode.	G (40)
WSCELL	Cell name (first 40 characters if the name is longer than this field). This field is in Unicode.	G (40)
WSSVR	Server name (first 40 characters if the name is longer than this field). This field is in Unicode.	G (40)
WSVER	WebSphere version (first 40 characters if the name is longer than this field). This field is in Unicode.	G (40)
WSED	WebSphere edition (first 40 characters if the name is longer than this field). This field is in Unicode.	G (40)
WSJDK	JDK version (first 40 characters if the name is longer than this field). This field is in Unicode.	G (40)
WSSEC	Security information (first 40 characters if the name is longer than this field). This field is in Unicode.	G (40)
WSSTRS	Starting statistics level (first 40 characters if the name is longer than this field). This field is in Unicode.	G (40)
WSREF	Pass by reference flag.	C (1)
WSJVM	Generic JVM invocation string (first 200 characters if the name is longer than this field). This field is in Unicode.	G (200)
WSCRES1	Reserved.	G (20)
WSCRES2	Reserved.	G (20)
WSCRES3	Reserved.	G (40)
WSCRES4	Reserved.	G (40)

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Collection Services data files: QAPMWASEJB

This data includes information about applications with enterprise Java beans (EJBs) running on the IBM WebSphere Application Server.

Each record represents one type of EJB (such as stateful, stateless, entity, or message-driven) per application per interval. If there is no bean activity for a particular EJB type, then no record will be written.

Much of the data comes from WebSphere Performance Monitoring Infrastructure (PMI) data and transaction counters. Where PMI data is used directly, the name of the PMI field is provided.

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DTETIM	Interval date (yymmdd) and time (hhmmss): The date and time of the sample interval.	C (12)
INTSEC	Elapsed interval seconds: The number of seconds since the last sample interval.	PD (7,0)
DTECEN	Century digit. 0 indicates 19XX and 1 indicates 20XX.	C (1)
WSNAME	Job name of server job.	C (10)
WSUSER	User name of server job.	C (10)
WSNBR	Job number of server job.	C (6)
WSJKEY	Server job key.	H (16)
WAKEY	Application key	H (8)
WEAPP	Application name (first 10 characters if the name is longer than this field). This field is in Unicode.	G (40)
WETYPE	Type of bean. '1' = Stateful '2' = Stateless '3' = Entity '4' = Message driven	C (1)
WEHOME	EJB homes. Number of EJB homes at the time the data was sampled.	B (9,0)
WECRT	Beans created. The total number beans created during the interval. (PMI: beanModule.creates; CountStatistic)	B (9,0)
WERMV	Beans removed. The total number of beans removed during the interval. (PMI: beanModule.removes; CountStatistic)	B (9,0)
WEPSV	Beans passivated. The total number of beans that were passivated during the interval. (PMI: beanModule.passivates; CountStatistic)	B (9,0)
WELOAD	Beans loaded. The total number of beans that were loaded during the interval. This field applies only to entity beans. (PMI: beanModule.loads; CountStatistic)	B (9,0)
WESTORE	Beans stored. The total number of beans that were stored during the interval. This field applies only to entity beans. (PMI: beanModule.stores; CountStatistic)	B (9,0)

Field Name	Description	Attribute
WERSP	Total accumulated bean method response time. The total response time in milliseconds for the bean methods (home, remote, local) during the interval. To calculate average response time per bean: WERSP / WECALL (PMI: beanModule.avgMethodRt; TimeStatistic)	B (18,0)
WERDY	Current ready beans. The number of ready beans at the time the data was sampled. (PMI: beanModule.readyCount; RangeStatistic)	B (9,0)
WELIV	Current live beans. The number of live beans at the time the data was sampled. (PMI: beanModule.concurrentLives; RangeStatistic)	B (9,0)
WECALL	Bean method calls. The total number of bean method calls during the interval. (PMI: beanModule.totalMethodCalls; CountStatistic)	B (9,0)
WERTP	Returns to pool. The total number of calls returning bean to the pool during the interval. This field applies only to stateless and entity beans. (PMI: beanModule.returnsToPool; CountStatistic)	B (9,0)
WEDISC	Returns discarded. The total number of times during the interval that the returning bean was discarded because the pool was full. This field applies only to stateless and entity beans. (PMI: beanModule.returnsDiscarded; CountStatistic)	B (9,0)
WEPOOL	Current beans in pool. The number of beans in the pool at the time the data was sampled. This field applies only to stateless and entity beans. (PMI: beanModule.poolSize; RangeStatistic)	B (9,0)
WEMSG	Messages delivered. The total number of messages delivered to the bean onMessage method during the interval. This field applies only to message driven beans. (PMI: beanModule.messageCount; CountStatistic)	B (9,0)
WERES1	Reserved.	B (9,0)
WERES2	Reserved.	B (9,0)
WERES3	Reserved.	B (9,0)
WERES4	Reserved.	B (9,0)
WERES5	Reserved.	B (18,0)
WERES6	Reserved.	B (18,0)

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Related information:

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance database files.

WebSphere EJB counters
See WebSphere EJB counters for more information about WebSphere EJB counters data.

Collection Services data files: QAPMWASPRSC

This data includes information about pooled resources associated with an IBM WebSphere Application Server.

Each record represents one pooled resource per interval. The type of pooled resource can be a JDBC connection pool, a J2C connection pool, or a thread pool. Not all fields are applicable to each pooled resource type. If a resource exists but is not being used (nothing created, destroyed, allocated or returned), then no record will be written.

Much of the data comes from WebSphere Performance Monitoring Infrastructure (PMI) data and transaction counters. Where PMI data is used directly, the name of the PMI field is provided.

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DTETIM	Interval date (yymmdd) and time (hhmmss): The date and time of the sample interval	C (12)
INTSEC	Elapsed interval seconds: The number of seconds since the last sample interval.	PD (7,0)
DTECEN	Century digit. 0 indicates 19XX and 1 indicates 20XX.	C (1)
WSNAME	Job name of server job.	C (10)
WSUSER	User name of server job.	C (10)
WSNBR	Job number of server job.	C (6)
WSJKEY	Server job key.	H (16)
WPKEY	Pooled resource key.	H (8)
WPRSCNM	Pooled resource name. This field is in Unicode.	G (40)
WPTYPE	Type of pooled resource: '1' = JDBC '2' = J2C '3' = Thread pool	C (1)
WPCRT	Creates. The total number of connections or threads created during the interval. (PMI: JDBC: connectionPoolModule.numCreates; CountStatistic) (PMI: J2C: j2cModule.numManagedConnectionsCreated; CountStatistic) (PMI: Thread pool: threadPoolModule.threadCreates; CountStatistic)	B (9,0)
WPDST	Destroys. The total number of connections or threads destroyed during the interval. (PMI: JDBC: connectionPoolModule.numDestroys; CountStatistic) (PMI: J2C: j2cModule.numManagedConnectionsDestroyed; CountStatistic) (PMI: Thread pool: threadPoolModule.threadDestroys; CountStatistic)	B (9,0)

Field Name	Description	Attribute
WPALC	Allocates. The total number of connections allocated during the interval. Does not apply to thread pool. (PMI: JDBC: connectionPoolModule.numAllocates; CountStatistic) (PMI: J2C: j2cModule.numManagedConnectionsAllocated; CountStatistic) (PMI: Thread pool: Set to 0)	B (9,0)
WPRTN	Returns. The total number of connections returned to the pool during the interval. Does not apply to thread pool. (PMI: JDBC: connectionPoolModule.numReturns; CountStatistic) (PMI: J2C: j2cModule.numManagedConnectionsReleased; CountStatistic) (PMI: Thread pool: Set to 0)	B (9,0)
WPACT	Active Count. The number of active connections or threads at the time the data was sampled. (PMI: JDBC: Calculate from Allocates-Returns; CountStatistic) (PMI: J2C: Calculate from Allocates-Returns; CountStatistic) (PMI: Thread pool: threadPoolModule.activeThreads; RangeStatistic)	B (9,0)
WPWAITTM	Wait Time. The total accumulated time during the interval in milliseconds spent waiting until a connection is granted. Does not apply to thread pool. (PMI: JDBC: connectionPoolModule.avgWaitTime; TimeStatistic) (PMI: J2C: j2cModule.avgWait; TimeStatistic) (PMI: Thread pool: Set to 0)	B (18,0)
WPUSETM	Use Time. The total accumulated time during the interval in milliseconds during which a JDBC connection is used. Does not apply to J2C or thread pools. (PMI: JDBC: connectionPoolModule.avgUseTime; TimeStatistic) (PMI: J2C: j2cModule.useTime; TimeStatistic) (PMI: Thread: Set to 0)	B (18,0)
WPCONN	Number of managed connections. The total number of managed connections in use during the interval for JDBC and J2C pools. Does not apply to thread pool. (PMI: JDBC: connectionPoolModule.numManagedConnections; CountStatistic) (PMI: J2C: j2cModule.numManagedConnections; CountStatistic) (PMI: Thread: Set to 0)	B (9,0)

Field Name	Description	Attribute
WPSMTD	Prepared statement discards. The total number of statements discarded by the least recently used (LRU) algorithm of the statement cache during the interval. Does not apply to J2C or thread pools. (PMI: JDBC: connectionPoolModule.prepStmtCacheDiscards; CountStatistic) (PMI: J2C: Set to 0) (PMI: Thread: Set to 0)	B (9,0)
WPJDBC	JDBC Time. The total accumulated time in milliseconds spent running in the JDBC driver during the interval. This includes time spent in the JDBC driver, network, and database (apply to 5.0 DataSource only). Does not apply to J2C or thread pools. (PMI: JDBC: connectionPoolModule.jdbcOperationTimer; TimeStatistic) (PMI: J2C: Set to 0) (PMI: Thread: Set to 0)	B (9,0)
WPWAIT	Current Waiters. The number of JDBC or J2C threads that are waiting for a connection at the time the data was sampled. Does not apply to thread pool. (PMI: JDBC: connectionPoolModule.concurrentWaiters; RangeStatistic) (PMI: J2C: j2cModule.concurrentWaiters) (PMI: Thread: Set to 0)	B (9,0)
WPPCTU	Percent Used. The current average percent of the JDBC or J2C pool that is in use at the time the data was sampled. Does not apply to thread pool. (PMI: JDBC: connectionPoolModule.percentUsed; RangeStatistic) (PMI: J2C: j2cModule.percentUsed; RangeStatistic) (PMI: Thread: Set to 0)	B (5,0)
WPPCTM	Percent maxed. The current average percent of the time that all connections are in use at the time the data was sampled. (PMI: JDBC: connectionPoolModule.percentMaxed; RangeStatistic) (PMI: J2C: j2cModule.percentMaxed; RangeStatistic) (PMI: Thread: threadPoolModule.percentMaxed)	B (5,0)
WPTC	Thread count. The average number of connections or threads in the pool at the time the data was sampled. (PMI: JDBC: connectionPoolModule.poolSize; BoundedRangeStatistic) (PMI: J2C: j2cModule.freePoolSize) (PMI: Thread: threadPoolModule.poolSize; BoundedRangeStatistic)	B (9,0)
WPTHS	Thread hangs started. The total number of threads declared hung during the interval. Does not apply to JDBC or J2C pools. (PMI: JDBC: Set to 0) (PMI: J2C: Set to 0) (PMI: Thread: threadPoolModule.declaredThreadHung; CountStatistic)	B (9,0)

Field Name	Description	Attribute
WPTHE	Thread hangs ended. The total number of thread hangs cleared during the interval. Does not apply to JDBC or J2C pools. (PMI: JDBC: Set to 0) (PMI: J2C: Set to 0) (PMI: Thread: threadPoolModule.declaredThreadHangCleared; CountStatistic)	B (9,0)
WPCTH	Current thread hangs. The number of hung threads at the time the data was sampled. Does not apply to JDBC or J2C pools. (PMI: JDBC: Set to 0) (PMI: J2C: Set to 0) (PMI: Thread: threadPoolModule.concurrentlyHungThreads; RangeStatistic)	B (9,0)
WPRES1	Reserved.	B (9,0)
WPRES2	Reserved.	B (9,0)
WPRES3	Reserved.	B (9,0)
WPRES4	Reserved.	B (9,0)
WPRES5	Reserved.	B (18,0)
WPRES6	Reserved.	B (18,0)

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Related information:

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance database files.

WebSphere JDBC connection pool counters
See WebSphere JDBC connection pool counters for more information about WebSphere JDBC connection pool counters data.

WebSphere J2C connection pool counters
See WebSphere J2C connection pool counters for more information about WebSphere J2C connection pool counters data.

WebSphere thread pool counters
See WebSphere thread pool counters for more information about WebSphere thread pool counters data.

Collection Services data files: QAPMWASSVR

This data includes information about the server jobs running on the IBM WebSphere Application Server.

It contains one record for each server job per interval. Much of the data comes from WebSphere Performance Monitoring Infrastructure (PMI) data and transaction counters. Where PMI data is used directly, the name of the PMI field is provided.

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command.	PD (5,0)
DTETIM	Interval date (yymmdd) and time (hhmmss): The date and time of the sample interval.	C (12)
INTSEC	Elapsed interval seconds: The number of seconds since the last sample interval.	PD (7,0)
DTECEN	Century digit. 0 indicates 19XX and 1 indicates 20XX.	C (1)
WSDTIM	Date and time data was collected (YYYYMMDDhhmmss).	C (14)
WSNAME	Job name of server job.	C (10)
WSUSER	User name of server job.	C (10)
WSNBR	Job number of server job.	C (6)
WSJKEY	Server job key.	H (16)
WSIHP	Initial heap size in bytes.	B (18,0)
WSMHP	Maximum heap size in bytes. 0 = *NOMAX	B (18,0)
WSUMEM	Amount of memory used by the JVM in bytes at the time the data was sampled. (PMI: jvmRuntimeModule.usedMemory; CountStatistic)	B (18,0)
WSTMEM	Total memory in the JVM runtime in bytes at the time the data was sampled. (PMI: jvmRuntimeModule.totalMemory; BoundedRangeStatistic)	B (18,0)
WSMMEM	Maximum observed total memory in the JVM runtime in bytes (over the life of the server job) at the time the data was sampled. (PMI: jvmRuntimeModule.totalMemory; BoundedRangeStatistic)	B (18,0)
WSNHMU	Reserved	B (18,0)
WSNHMC	Reserved	B (18,0)
WSUPTM	Up time. The amount of time that the JVM was running in milliseconds during the interval. (PMI: jvmRuntimeModule.upTime; CountStatistic)	B (9,0)
WSGBG	Global transactions begun. The total number of global transactions started on the server during the interval. (PMI: transactionModule.globalTransBegun; CountStatistic)	B (9,0)
WSLBG	Local transactions begun. The total number of local transactions started on the server during the interval. (PMI: transactionModule.localTransBegun; CountStatistic)	B (9,0)
WSGTRT	Global transaction time. The accumulated time of global transactions in milliseconds during the interval. (PMI: transactionModule.globalTranDuration; TimeStatistic) To calulcate time per global transaction: WSGTRT / (WSGCMT + WSGRBK)	B (18,0)

Field Name	Description	Attribute
WSLTRT	Local transaction time. The accumulated time of local transactions in milliseconds during the interval. (PMI: transactionModule.localTranDuration; TimeStatistic) To calculate time per local transaction: WSLTRT / (WSLCMT + WSLRBK)	B (18,0)
WSGCMT	Global Transactions Committed. The total number of global transactions committed (completed) (PMI: transactionModule.globalTransCommitted; CountStatistic)	B (9,0)
WSLCMT	Local Transactions Committed. The total number of local transactions committed (completed) during the interval. (PMI: transactionModule.globalTransCommitted; ContStatistic)	B (9,0)
WSGRBK	Global Transactions Rolled Back. The total number of global transactions rolled back during the interval. (PMI: transactionModule.globalTransRolledBack; CountStatistic)	B (9,0)
WSLRBK	Local Transactions Rolled Back. The total number of local transactions rolled back during the interval. (PMI: transactionModule.globalTransRolledBack; CountStatistic)	B (9,0)
WSGTMO	Global Transactions Timed Out. The total number of global transactions timed out during the interval. (PMI: transactionModule.globalTransTimeout; CountStatistic)	B (9,0)
WSLTMO	Local Transactions Timed Out. The total number of local transactions timed out during the interval. (PMI: transactionModule.localTransTimeout; CountStatistic)	B (9,0)
WSGCC	Garbage collection count. Number of garbage collection events during the interval. JDK 5.0 only. (GarbageCollectorMXBean.getCollectionCount())	B (18,0)
WSGCT	Garbage collection time. The accumulated time of garbage collection events in milliseconds during the interval. JDK 5.0 only. (GarbageCollectorMXBean.getCollectionTime())	B (18,0)
WSRES1	Reserved.	B (9,0)
WSRES2	Reserved.	B (9,0)
WSRES3	Reserved.	B (9,0)
WSRES4	Reserved.	B (9,0)
WSRES5	Reserved.	B (18,0)
WSRES6	Reserved.	B (18,0)

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Related information:

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance database files.

WebSphere JVM data counters
See WebSphere JVM data counters for more information about WebSphere JVM data counters data.

WebSphere transaction counters
See WebSphere transaction counters for more information about WebSphere transaction counters data.

Collection Services data files: QAPMX25

This database file includes X.25 file entries and lists the fields in the X.25 file.

The label designations for the field names are as follows:

- XH prefix in the label refers to HDLC counters
- XL refers to X.25 logical link control (LLC) counters
- XP refers to packet level control (PLC) counters

Field Name	Description	Attribute
INTNUM	Interval number: The nth sample database interval based on the start time specified in the Create Performance Data (CRTPFRDTA) command	PD (5,0)
DTETIM	Interval date (yymmdd) and time (hhmmss): The date and time of the sample interval.	C (12)
INTSEC	Elapsed interval seconds: The number of seconds since the last sample interval.	PD (7,0)
IOPRN	IOP resource name.	C(10)
XIOPID	Reserved.	C(1)
XITYPE	The resource type of the IOP or adapter represented by this record.	C (4)
XLLND	Line description: The name of the description for this line.	C (10)
XLLSP	Line speed: The speed of this line in bits per second (bps).	PD (11,0)
XHBTRN	Bytes transmitted: The number of bytes transmitted, including bytes transmitted again.	PD (11,0)
XHBRCV	Bytes received: The number of bytes received, including all bytes in frames that had any kind of error.	PD (11,0)
XHPRCL	Protocol type: X for X.25.	C (1)
XHFTRN	Frames transmitted: The number of frames transmitted (I, supervisory, and frames not numbered), excluding frames transmitted again.	PD (11,0)
XHIFTR	I-frames transmitted: The number of I-frames transmitted, excluding I-frames transmitted again.	PD (11,0)
XHIFRT	I-frames transmitted again: The number of I-frames transmitted again.	PD (11,0)
XHFRT	Frames transmitted again: The number of I, supervisory, and frames not numbered transmitted again.	PD (11,0)

Field Name	Description	Attribute
XHEFFR	Error-free frames received: The number of I, supervisory, and frames not numbered received without error (whether or not they were transmitted again from the remote side).	PD (11,0)
XHEFIR	Error-free I-frames received: The number of I-frames received without error (whether or not they were transmitted again from the remote side).	PD (11,0)
XHFRIE	Frames received in error: The number of I, supervisory, and frames not numbered received in error. There are three error possibilities: (1) a supervisory or I-frame was received with an Nr count that is requesting retransmission of a frame, (2) an I-frame was received with an Ns count that indicates that frames were missed, (3) a frame was received with one of the following errors: a frame check sequence error, an abnormal end, a receive overrun or a frame truncated error.	PD (11,0)
XHIFR	Frames received that are not valid: The number of not valid frames received. These are frames received with either: (1) a short frame error-frame is less than 32 bits, or (2) a residue error-frame is not on a byte boundary.	PD (11,0)
XHRRFT	Number of receive ready supervisory frames transmitted.	PD (11,0)
XHRRFR	Number of receive ready supervisory frames received.	PD (11,0)
XHRNRT	Number of receive-not-ready supervisory frames transmitted.	PD (11,0)
XHRNRR	Number of receive-not-ready supervisory frames received.	PD (11,0)
XHLNKR	Link resets: The number of times when a set normal response mode (SNRM) was received when the station was already in normal response mode.	PD (11,0)
XLITR	Interface protocol data units transmitted (LLC level).	PD (11,0)
XLIRC	Interface protocol data units received.	PD (11,0)
XLIRT	Interface protocol data units transmitted again.	PD (11,0)
XLIRE	Interface protocol data units received in error (checksum).	PD (11,0)
XLLXTR	Number of XIDs transmitted.	PD (11,0)
XLXRC	Number of XIDs received.	PD (11,0)
XLTT	Number of tests transmitted.	PD (11,0)
XLTR	Number of tests received.	PD (11,0)
XLLJT	Number of LLC rejects transmitted.	PD (11,0)
XLLJR	Number of LLC rejects received.	PD (11,0)
XLRLD	Number of received LLC protocol data units discarded.	PD (11,0)
XLTO	Number of time-outs.	PD (11,0)
XLCED	Checksum errors detected.	PD (11,0)
XLSRA	Successful recovery attempts.	PD (11,0)
XLRA	Recovery attempts.	PD (11,0)
XLRSI	Number of reset indications from packet-link control.	PD (11,0)

Field Name	Description	Attribute
XLCLS	Number of close station indications from packet-link control.	PD (11,0)
XLRNR	LLC receive-not-ready frames received.	PD (11,0)
XPTPT	Total packets transmitted.	PD (11,0)
XPTPR	Total packets received.	PD (11,0)
XPDPT	Data packets transmitted.	PD (11,0)
XPDPR	Data packets received.	PD (11,0)
XPRPT	Reset packets transmitted.	PD (11,0)
XPROR	Reset packets received.	PD (11,0)
XPRNR	Receive-not-ready packets received.	PD (11,0)

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Related information:

Create Performance Data (CRTPFRDTA) command
See the Create Performance Data (CRTPFRDTA) command for information on how to create performance database files.

Collection Services data files: Field data for configuration database files

Configuration data is collected once per session. You can find the QAPMCONF, QAPMHDWR, and QAPMSBSD files in the configuration data files.

The following performance data files show the file names, brief descriptions, and references to field data detail (when provided) for the system configuration data, subsystem data, and hardware configuration data.

Field Name	Description
QAPMCONF	System configuration data.
QAPMHDWR	System hardware configuration.
QAPMSBSD	Subsystem data. No field and byte data.

Related reference:

"Collection Services data files: System category and file relationships" on page 229
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

Related information:

Collection Services
Use Collection Services to collect performance data for later analysis.

Collection Services data files: QAPMCONF

This database file contains general information about the collection.

QAPMCONF includes information about collection options, characteristics of the database files generated, and information about the system on which the data was collected. One record is written to this file for each item reported (see the GKEY field). This file is not optional. Data in this file is generated for every database collection. This data is reported only at the beginning of the collection. Although most of the data in this file does not change during the collection, some data could change. Changes are not reported.

The GKEY fields B1-B5 apply to the disk response time bucket data in the QAPMDISK file. The GKEY fields G1-GA apply to the disk response time bucket data in the QAPMDISKRB file.

GRES Reserved.

Attributes: C (4)

GKEY Identifier to indicate what data is contained in the GDES field. See descriptions in the following table.

Attributes: C (2)

GDES Data for the associated GKEY value. See values in the following table. Unless otherwise noted, all system values pertain to the partition for which the data was collected. Unless otherwise indicated, all the data is left-justified in this field.

Attributes: C (10)

GKEY	GDES
1	Performance monitor or data start date. Data is reported as a C(7) value with the following format: (yymmddc).
2	Performance monitor or data start time. Time is reported as a C(6) value with the following format: (hhmmss).
3	A 4-character model number followed by a 4-character system type.
4	Memory for the partition (zoned (10,0)) in kilobytes (KB).
5	Communications data collected, which will be set to Y only if any communication files were created.
6	Machine serial number (character 10).
7	First response time boundary (zoned (10,0)) in milliseconds. The first response time monitor bracket is from 0 up to and including the first response time boundary.
8	Second response time boundary (zoned (10,0)) in milliseconds. The second response time monitor bracket is from the first response time boundary up to and including the second response time boundary.
9	Third response time boundary (zoned (10,0)) in milliseconds. The third response time monitor bracket is from the second response time boundary up to and including the third response time boundary.
10	Fourth response time boundary (zoned (10,0)) in milliseconds. The fourth response time monitor bracket is from the third response time boundary up to and including the fourth response time boundary. Responses greater than the fourth response time boundary fall under the fifth response time monitor bracket.
11	System ASP capacity (zoned (10,0)) in kilobytes (KB). This is the total number of kilobytes (KB) of auxiliary storage allocated to the system ASP for the storage of data. If this field is set to the largest number it can hold (9999999999), system ASP capacity is too large to fit in this record and the record with GKEY 21 should be used instead.
12	Checksum protection on (Y/N).
13	Number of logical processors assigned to the partition (PD (3,0)).
14	First remote response time boundary (zoned (10,0)) in milliseconds. The first response time monitor bracket is from 0 up to and including the first response time boundary. This data only appears when requested with the Start Performance Monitor (STRPFRMON) command.

GKEY	GDES
15	Second remote response time boundary (zoned (10,0)) in milliseconds. The second response time monitor bracket is from the first response time boundary up to and including the second response time boundary. This data only appears when requested with the Start Performance Monitor (STRPFRMON) command.
16	Third remote response time boundary (zoned (10,0)) in milliseconds. The third response time monitor bracket is from the second response time boundary up to and including the third response time boundary. This data only appears when requested with the STRPFRMON command.
17	Fourth remote response time boundary (zoned (10,0)) in milliseconds. The fourth response time monitor bracket is from the third response time boundary up to and including the fourth response time boundary. Responses greater than the fourth response time boundary fall under the fifth response time monitor bracket. This data only appears when requested with the STRPFRMON command.
21	System ASP capacity in kilobytes (KB). This is the total number of kilobytes (KB) of auxiliary storage allocated to the system ASP for the storage of data. This number is reported as an unsigned 8-byte binary value.
AP	Permanent 16 MB addresses that remain for the machine. This address is reported as an unsigned 8-byte binary value.
AT	Temporary 16 MB addresses that remain for the machine. This address is reported as an unsigned 8-byte binary value.
B1	The first disk response time boundary in milliseconds (B(9,0)). The first disk response time bucket is from 0 up to the first response time boundary.
B2	The second disk response time boundary in milliseconds ((B(9,0)). The second disk response time bucket is from and including the first response time boundary up to the second boundary.
B3	The third disk response time boundary in milliseconds ((B(9,0)). The third disk response time bucket is from and including the second response time boundary up to the third boundary.
B4	The fourth disk response time boundary in milliseconds ((B(9,0)). The fourth disk response time bucket is from and including the third response time boundary up to the fourth boundary.
B5	The fifth disk response time boundary in milliseconds ((B(9,0)). The fifth disk response time bucket is from and including the fourth response time boundary up to the fifth boundary. The sixth disk response time bucket includes everything above and including the fifth response time boundary.
CD	Collection data. Possible values are: • 0: This collection is consistent with files that are created by the traditional performance monitor *SYS collection. • 1: Collection data is not *SYS. The database files that are generated from the collection may not be sufficient for applications (such as Performance Tools reports or PM for IBM i) that depend on traditional performance monitor data.
CI	Collect internal data (Y/N).
CL	Collection library. The name of the library in which the management collection object resides.
CN	Collection name. The name of the management collection object.
DB	Database consistency. Possible values are: • 0: No problem detected in database files. • 1: Due to the interval size selected or to inconsistent collection intervals, the database files that are generated might contain missing intervals or other inconsistencies that might cause problems for applications that depend on traditional performance monitor data.
DL	Database limit is a B(4,1) value that is the percent of the total system CPU. For example, 125 means 12.5%.

GKEY	GDES
DM	On demand memory information. The total amount of on demand memory in gigabytes (GB) that exists on the machine (4-byte binary) followed by the amount of on demand memory in gigabytes (GB) still available to be allocated (4-byte binary). Memory that is activated by permanent, temporary, or metered capacity upgrades is not considered available. This record appears only on systems with on demand memory.
DP	On demand process information. This is the total number of on demand processors existing on the machine (2-byte binary) followed by the number of on demand processors still available to be allocated (2-byte binary). Processors that are activated by permanent, temporary, or metered capacity upgrades are not considered available. This record appears only on systems with on demand processors.
DT	Database threshold is a B(4,1) value that is the percent of the total system CPU. For example, 125 means 12.5%.
ED	End date. The date associated with the last interval in the collection. This date is reported as a left-adjusted CHAR(7) field. It appears in the following format: CYYMMDD.
ET	End time. The time associated with the last interval in the collection. This time is reported as a left adjusted CHAR(6) field. It appears in the following format: HHMMSS. **Note:** The following is a description of the contents of the End date and End time fields for both active and nonactive collections. • For a nonactive collection, the date/time come from the last interval that exists in the management collection object. • For an *ACTIVE collection, the date/time come from the last interval that was processed by CRTPFRDTA.
F	File level (PD(2,0)). This value specifies the level of the performance database files. The value is changed each time the format of any of the performance database files change.
FC	Processor feature code (character 4).
FI	Interactive feature (character 4). The Interactive feature field is blank for servers that have no interactive features.
FP	Processor feature (character 4).
FT	Partition processor firmware time attribute. A 1 byte character field that indicates if the partition accumulates processor firmware time. • '0' - partition does note accumulate processor firmware time • '1' - partition accumulates processor firmware time
F1	Threshold values used to control reporting of tasks and secondary threads that have short lifespans. Data format is an unsigned 4 byte binary task threshold followed by an unsigned 4 byte binary secondary thread threshold. Thresholds are reported in milliseconds. Tasks and secondary threads whose lifespan is shorter than the reporting threshold are not individually collected in the *JOBMI category data. Instead one entry per node is accumulated for tasks running on that node and one entry per job is accumulated for secondary threads of that job. See QAPMJOBMI field JBSLTCNT. The short lifespan reporting thresholds used during data collection can be overridden via system environment variables that specify the reporting threshold (number of milliseconds) to use. The following example will cause data for all tasks and secondary threads to be individually collected: ADDENVVAR ENVVAR(QPM_TASK_SL_THRESHOLD) VALUE(0) LEVEL(*SYS) ADDENVVAR ENVVAR(QPM_THREAD_SL_THRESHOLD) VALUE(0) LEVEL(*SYS)
G1	The first disk response time boundary in microseconds (B(9,0)). The first disk response time bucket is from 0 up to the first response time boundary.
G2	The second disk response time boundary in microseconds (B(9,0)). The second disk response time bucket is from and including the first response time boundary up to the second boundary.
G3	The third disk response time boundary in microseconds (B(9,0)). The third disk response time bucket is from and including the second response time boundary up to the third boundary.

GKEY	GDES
G4	The fourth disk response time boundary in microseconds (B(9,0)). The fourth disk response time bucket is from and including the third response time boundary up to the fourth boundary.
G5	The fifth disk response time boundary in microseconds (B(9,0)). The fifth disk response time bucket is from and including the fourth response time boundary up to the fifth boundary.
G6	The sixth disk response time boundary in microseconds (B(9,0)). The sixth disk response time bucket is from and including the fifth response time boundary up to the sixth boundary.
G7	The seventh disk response time boundary in microseconds (B(9,0)). The seventh disk response time bucket is from and including the sixth response time boundary up to the seventh boundary.
G8	The eighth disk response time boundary in microseconds (B(9,0)). The eighth disk response time bucket is from and including the seventh response time boundary up to the eighth boundary.
G9	The ninth disk response time boundary in microseconds (B(9,0)). The ninth disk response time bucket is from and including the eighth response time boundary up to the ninth boundary.
GA	The tenth disk response time boundary in microseconds (B(9,0)). The tenth disk response time bucket is from and including the ninth response time boundary up to the tenth boundary. The eleventh disk response time bucket includes everything above and including the tenth response time boundary.
HM	Hypervisor memory. This is the total amount of memory, in megabytes, used by the hypervisor. This is physical machine memory and is not associated with the partition's memory allocation. The amount of memory is determined by the number of partitions and attributes of each partition. The value is reported as an unsigned 4-byte binary.
HT	SMT hardware threads. The current maximum number of SMT hardware threads on this IPL. Reported as a two byte binary field. '0' - no maximum.
I	Interval (PD(2,0)). The time interval (in minutes) between each collection of system performance data.
IL	Interactive limit as a percent of the configured processor units (seeProcessor units allocated to the partition (PU)). The value is reported in two different formats: a 2-byte binary B(4,1) value followed by a 4-byte binary B(5,2) value. For example, in the second format, a value of 1250 means 12.50%. For the most accurate data, the second value should be used.
IS	Interval seconds (PD(4,0)). The time interval (in seconds) between each collection of system performance data.
IT	Interactive threshold as a percent of the configured processor units (see Processor units allocated to the partition (PU)). The value is reported in two different formats: a 2-byte binary B(4,1) value followed by a 4-byte binary B(5,2) value. For example, in the second format, a value of 1250 means 12.50%. For the most accurate data, the second value should be used.
MT	Processor multi-tasking. A 1 byte character field that indicates the multi-tasking capability for the current IPL. • '0' - Processor multi-tasking capability is currently disabled. • '1' - Processor multi-tasking capability is currently enabled. • '2' - Processor multi-tasking capability is currently system controlled.
OS	Output file system (character 8). This value represents the system where the database files are generated.
PC	Partition count. The value is reported in two different formats: a zoned (2,0) value that is capped at 99 followed by an unsigned 4-byte binary value. For the most accurate data, the second value should be used.
PF	Processor folding support. A 1 byte character field that indicates if processor folding is supported on the IPL. • '0' - Processor folding is not supported • '1' - Processor folding is supported
PN	Partition identifier. The value is reported in two different formats: a character 1 followed by an unsigned 4-byte binary value.

GKEY	GDES
PP	Primary partition. The value is reported in two different formats: a character 1 followed by an unsigned 4-byte binary value.
PU	Processor units allocated to the partition. The value is reported as a 4-byte binary B(5,2). For example, 175 means 1.75 processor units.
R	Version number (PD(2,0)), followed by release number (PD(3,1)).
S	System name (character 8).
SJ	The Select job (SLTJOB) parameter value (character 10). This value may be *ALL or *ACTIVE. This parameter applies to the performance monitor. Collection Services does not use the SJ parameter.
SP	Shared processor/pool attributes. This record contains partition attributes related to shared processor pools. The first item identifies if the partition uses a shared pool. The rest of the data applies if sharing is in effect: Byte 1: CHAR(1) - Processor sharing • '0' = Partition does not share physical processors. • '1' = Partition shares physical processors. Byte 2: CHAR(1) - capped/uncapped • '0' = Partition is capped. • '1' = Partition is uncapped.
S1	Value (character 1) of the QPFRADJ system value.
S2	Value (character 1) of the QDYNPTYSCD system value.
S3	Value (character 1) of the QDYNPTYADJ system value.
T	Trace type (character 5). Specifies the type of internal trace that was started with the Start Performance Monitor command (*ALL or *NONE). Collection Services always reports *NONE.
UP	Partition usage counts. This record is present on systems supporting 5770-SS1 feature 5052 (user entitlement key). One metric will be returned as a 4 byte binary value: Usage count – the number of named users that are enabled in this partition.
US	System usage counts. This record is present on systems supporting 5770-SS1 feature 5052 (user entitlement key). Two metrics will be returned as 4 byte binary values: • Usage Limit – the number of named users allowed. This limit is system based not partition based. Accurate reporting depends on license key information that must be entered by the customer on the reporting partition. • Usage count – the number of named users that are enabled in the system. This value is system based not partition based.
XP	PM Agent data obtained. Indicates if this collection was processed for PM Agent data requirements. Applies to the originating system only. This is a 1 byte character field with a value of 1. This record will not be present unless PM Agent data was obtained.
XS	Summary data created. Indicates if summary data was created with this collection. This is a 1 byte character field with a value of 1. This record will not be present unless summary data was created.

Related concepts:

Shared processor pools
See the Shared processors topic for information about processors whose processing capacity is shared among multiple logical partitions.

Related information:

i5/OS licensing
See the i5/OS licensing topic for information about feature 5052 (user entitlement key).

Collection Services data files: QAPMHDWR

This file is an output file that is produced by the Display Hardware Resources (DSPHDWRSC) command.

This file contains one record for each hardware component in the partition.

The format of the output file is the same as that of the physical file model, QARZALLF, and its associated record format model, QRZALL.

When Collect Services starts, it issues the DSPHDWRSC command with the following parameters:

```
DSPHDWRSC TYPE(*AHW) OUTPUT(*OUTFILE)
OUTFILE(myperformance_lib/QAPMHDWR)
OUTMBR(myperformance_mbr *REPLACE)
OUTFILFMT (*type2)
```

myperformance_lib is the library of the output file.

myperformance_mbr is the name of the database file member.

Field Name	Description	Attribute
DORCEN	Century of retrieval: 0=19xx, 1=20xx	C (1)
DORDAT	Date of retrieval: year/month/day	C (6)
DORTIM	Time of retrieval: hour/minute/second	C (6)
DOSNAM	System name	C (8)
DOSTYP	System hardware type	C (4)
DOSMOD	System model number	C (3)
DOSSER	System serial number	C (10)
DORECF	Record format identifier	C (1)
DOSVRM	Operating system level	C (6)
DORSVD	Reserved	C (36)
DORSVF	Reserved	C (2)
DOCRPF	Cryptographic function: 0=No, 1=Yes	C (1)
DOCSAF	Coupled system adapter function: 0=No, 1=Yes	C (1)
DOCMNF	Communications function: 0=No, 1=Yes	C (1)
DOLWSF	Local workstation function: 0=No, 1=Yes	C (1)
DOSTGF	Storage function: 0=No, 1=Yes	C (1)
DOPRCF	Processor function: 0=No, 1=Yes	C (1)
DORLVL	Resource level	C (1)
DORDSC	Resource description	C (2)
DORNAM	System-defined resource name	C (10)
DORPAR	System-defined previous level resource name	C (10)
DORTYP	Resource type	C (4)
DORMOD	Resource model number	C (3)
DORPRT	Resource part number	C (12)
DORSER	Resource serial number	C (10)
DORDSA	Resource direct select address	C (4)
DORUAA	Resource unit address	C (8)
DORSTS	Resource status	C (1)

Field Name	Description	Attribute
DORRID	Resource frame identification	C (2)
DOREIA	Resource EIA location	C (2)
DORCSL	Resource card position	C (3)
DORDSL	Resource device position	C (4)
DOCFGO	Configuration object name	C (10)
DOCFGP	Previous level configuration object name	C (10)
DOREDS	Resource extended description	C (2)
DORSVC	Reserved	C (8)
DOSYTM	Coupled system name	C (8)
DOSMTP	Coupled system type	C (4)
DOSMDL	Coupled system model	C (3)
DOSSRN	Coupled system serial number	C (10)
DORSVA	Reserved	C (8)
DORKBD	Keyboard country or region code	C (3)
DORCOL	Color-capable display: 0=No, 1=Yes	C (1)
DORSWD	Screen width: 0=Standard, 1=Wide	C (1)
DORIWS	Programmable workstation: 0=No, 1=Yes	C (1)
DORPOR	Port number: 00-06	C (2)
DORSWT	Switch setting: 00-06	C (2)
DORSVL	Reserved	C (8)
DORMSZ	Main storage card capacity in MB	PD (10,0)
DORSVP	Reserved	C (8)
DORAFI	Alternate frame identification	C (4)
DORACP	Alternate card position	C (5)
DORADP	Alternate device position	C (5)
DORTTY	Transport type definition	C (2)
DORTF1	Transport location field 1	C (4)
DORTF2	Transport location field 2	C (4)
DORTF3	Transport location field 3	C (4)
DORTFR	Reserved	C (8)
DORUAT	Unit address type	C (2)
DORUA1	Unit address field 1	C (4)
DORUA2	Unit address field 2	C (4)
DORUA3	Unit address field 3	C (4)
DORUA4	Unit address field 4	C (4)
DORUA5	Unit address field 5	C (4)
PRCFCD	Processor feature code	C (4)
PRCFD	Processor feature	C (4)
PRCIFD	Interactive feature	C (4)
LOCCOD	Location code	C (79)

Related reference:

"Collection Services data files: System category and file relationships"
When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

"Data files: File abbreviations" on page 244
The database files use abbreviations in the field and byte data tables.

Collection Services database files: Field data for trace database files

Trace data is collected only when you choose to do so. You can find the QAPMDMPT file in the trace data files.

Trace data includes internal system trace data. This is detailed data that you collect to gain additional information about specific jobs and transactions. This type of data should not be collected unless you use the Performance Tools licensed program to analyze it. The system supports the following performance data file when using the Start Performance Trace (STRPFRTRC) command.

File Name	Description
QAPMDMPT	System trace data (no field or byte detail).

Collection Services data files: System category and file relationships

When you collect performance data using Collection Services, the data is stored in a management collection (*MGTCOL) object.

The Create Performance Data (CRTPFRDTA) command exports data from that management collection object and then writes the data to the performance data files. Each type of data that can be independently controlled and collected by Collection Services is represented by a data category. Each data category contains or provides data that is written to one or more performance data files. For a database file or member to be created, the category (or group of categories) that the file or member is dependent on must exist and be processed by CRTPFRDTA. The following table identifies the category-to-file relationships. There are three types of relationships.

Relationship	Description
Primary files	These files are related to and generated from the category.
Compatibility files	These files are logical files that join primary files to provide performance database compatibility with the previous file structure. If the system generates all participating files (primary categories), compatibility files are also generated.
Secondary files	These files are related to and contain some data that is derived from data contained in the category or in the primary file. However, they are not controlled by that category.

Users should note the following:

1. The CRTPFRDTA command generates a database file only when that file is a primary file for the selected category.
2. If a primary file is listed for multiple categories, you must select each of those categories to generate the file.

3. If a primary file for one category is listed as a secondary file for another category, you must select the second category to ensure complete information in your generated database file. For example, as shown in the table below, to generate a complete database file for QAPMECL, you must select both *CMNBASE and *CMNSTN.
4. The system generates compatibility files only when it generates all associated primary files.

The following table illustrates the relationships between system categories and performance database files.

Category	Primary files	Compatibility files	Secondary files
*APPN	QAPMAPPN		
*CMNBASE	QAPMASYN QAPMBSC QAPMDDI QAPMECL QAPMETH QAPMFRLY QAPMHDLC QAPMIDLC QAPMLAPD QAPMPPP QAPMX25		
*CMNSAP	QAPMSAP		
*CMNSTN	QAPMSTND QAPMSTNE QAPMSTNL QAPMSTNY none		QAPMDDI QAPMETH QAPMECL QAPMFRLY QAPMX25
*DISK	QAPMDISK QAPMDISKRB QAPMXSTGV		QAPMSYSTEM
*DOMINO	QAPMDOMINO		
*DPS	QAPMDPS		
*EACACHE	none		QAPMDISK See Note.
*EXTSTG	QAPMXSTGD		
*HDWCFG	QAPMHDWR		
*HTTP	QAPMHTTPB QAPMHTTPD		
*IOPBASE	QAPMIOPD QAPMLIOP QAPMDIOP QAPMCIOP QAPMMIOP		
*IPCS	QAPMIOPD QAPMTSK		
*JAVA	QAPMJVM		
*JOBMI	QAPMJOBMI QAPMJOBWT QAPMJOBWTD QAPMJOBWTG QAPMJSUM	QAPMJOBL QAPMSYSL	QAPMSYSTEM

Category	Primary files	Compatibility files	Secondary files
*JOBOS	QAPMJOBOS QAPMJSUM QAPMJOBSR	QAPMJOBL QAPMSYSL	QAPMSYSTEM
*LCLRSP	QAPMRESP		
*LPAR	QAPMLPARH		
*POOL	QAPMPOOLB	QAPMPOOLL	
*POOLTUNE	QAPMPOOLT	QAPMPOOLL	
*RMVSTG	QAPMTAPE		
*SNA	QAPMSNA		
*SNADS	QAPMSNADS		
*SUBSYSTEM	QAPMSBSD		
*SYSBUS	QAPMBUS QAPMBUSINT		
*SYSCPU	QAPMSYSCPU QAPMSYSPRC QAPMSYSAFN	QAPMSYSL	
*SYSINT	QAPMSYSINT		
*SYSLVL	QAPMSYSTEM QAPMSHRMP QAPMSYSWLC	QAPMSYSL	
*TCPBASE	QAPMTCP		
*TCPIFC	QAPMTCPIFC		
*USRTNS	QAPMUSRTNS		QAPMARMTRT
Note: This category is not selectable by CRTPFRDTA. However, it causes additional data to be reported by the *DISK category.			

Related concepts:

"Collection Services data files: Field data for configuration database files" on page 221
Configuration data is collected once per session. You can find the QAPMCONF, QAPMHDWR, and QAPMSBSD files in the configuration data files.

Related information:

Collection Services
Use Collection Services to collect performance data for later analysis.

Collection Services data files: Task type extender

A task type extender identifies the area of functional support provided by the task.

The task type extender field is used to logically group together tasks that perform similar operations. This field is used primarily for performance monitoring. The table below lists the task type extender as two EBCDIC characters followed by the task type extender description.

Performance tasks ('A' through 'A9')	
Field Name	**Description**
AP	Performance Collection Services probe
Bus transport tasks ('B' through 'B9')	
Field Name	**Description**

Performance tasks ('A' through 'A9')	
Field Name	**Description**
BB	Transport bus
BC	Transport cluster
BI	Transport SPD IOBU
BL	Transport log
BM	Transport SPD maintenance data
BR	Transport remote storage
BT	Transport twin optical
Client server tasks ('C' through 'C9')	
Field Name	**Description**
CS	Shared folder
Device Driver Tasks ('D' through 'D9')	
Field Name	**Description**
DA	Work station IOM
DB	PU2 station IOM
DC	Open station IOM
DD	Ethernet LAN IOM
DE	Bisynchronous 3270 IOM
DF	5294 station IOM
DG	X25 station IOM
DI	FDDI IOM
DJ	ISDN IOM
DK	Diskette IOM
DL	IDLC IOM
DO	Optical IOM
DP	PPP data link driver
DR	Cryptography driver
DS	DASD IOM
DT	IOP driver
DU	LAN driver
DV	Virtual terminal LUD IOM
DW	Wireless line IOM
DX	FAX line IOM
DY	Frame relay IOM
DZ	ILAN line IOM
D0	Service processor IOM
D1	Asynchronous station IOM
D2	Asynchronous line IOM
D3	Token-ring IOM
D4	Tape IOM
D5	Work station IOM

Performance tasks ('A' through 'A9')	
Field Name	**Description**
D6	Twinax IOM
D7	SDLC line IOM
D8	Bisynchronous IOM
D9	MTAM IOM
Other tasks ('E' through 'E9')	
Field Name	**Description**
EH	Maintain hardware resource information
EI	Miscellaneous I/O
EL	Error log
ES	Cryptography seed management
EV	Authority management extension verify
Integrated xSeries Server I/O management tasks ('F' through 'F9')	
Field Name	**Description**
F0	Integrated xSeries Server IOM
FP	AIX® IOP IOM
FS	Integrated xSeries Server storage management IOM
IPCF tasks ('I' through 'I9')	
Field Name	**Description**
IR	IPCF router
IS	IPCF server
Streams kernel tasks ('K' through 'K9')	
Field Name	**Description**
KO	Streams server
Save and restore, load and dump tasks ('L' through 'L9')	
Field Name	**Description**
LM	Main load and dump
LP	Load and dump pipeline
MSCP tasks ('M' through 'M9')	
Field Name	**Description**
M0	MSCP
M1	Answer manager
M2	SNAP
Pass-through tasks ('P' through 'P9')	
Field Name	**Description**
PS	Source display pass-through
PT	Target display pass-through
Resource management task ('R' through 'R9')	
Field Name	**Description**
RC	Resource management machine data collector
RM	Resource management service

Performance tasks ('A' through 'A9')	
Field Name	**Description**
RP	Process
Storage management I/O tasks ('S' through 'S9')	
Field Name	**Description**
SA	Storage management asynchronous
SD	Storage management DASD server
SP	Page Out
SW	Save while active
SX	Expert cache
Database task ('T' through 'T9')	
Field Name	**Description**
TD	Database server
TX	Transaction management timer
Service function ('V' through 'V9')	
Service Function	**Description**
Server message block tasks ('W' through 'W9')	
Field Name	**Description**
WB	NetBIOS on TCP/IP
WS	Server message block
Other tasks ('Z' through 'Z9')	
Field Name	**Description**
ZF	Byte stream file asynchronous
ZI	Interrupt task class
ZR	Recovery
Advanced/36 tasks ('3' through '39')	
Field Name	**Description**
3A	Advanced/36 disk
3C	Advanced/36 workstation controller
3I	Advanced/36 diskette
3L	Advanced/36 communications line
3T	Advanced/36 tape
3W	Advanced/36 workstation/printer
36	Advanced/36 emulator main task

Disk Watcher data files

Use this topic to find the names, descriptions and attributes of the Disk Watcher database files.

Disk Watcher data files: QAPYDWINTI

This file contains information about each sample taken in a Disk Watcher session.

One record is created per interval.

Field Name	Description	Attribute
INTERVAL	Interval number.	B (8)
IISTARTTOD	Interval start time of day. The time of day data collection began for this interval.	Timestamp
IIENDTOD	Interval end time of day. The time of day data collection ended for this interval.	Timestamp
IIASPCNT	Auxiliary storage pool count. the number of ASPs for which disk I/O information was collected in this interval.	B (4)
IIPATHCNT	Disk unit path count. The number of disk unit paths for which disk I/O information was collected in this interval.	B (4)
IIDATAMISS	Data missed. Indicates whether data was missed in this interval. Data may be missed if the collection interval is too large because the data collection buffer could wrap it can be collected. 0 = data was not missed in this interval 1 = data was missed in this interval	C (1)
IICONDSTS	Condition status. For a conditional collection, indicates whether the condition was satisfied during this interval 0 = the condition was not satisfied in this interval or no condition exists 1 = the condition was satisfied	C (1)
IIRESERVE1	Reserved.	B (8)
IIRESERVE2	Reserved.	B (8)

Disk Watcher data files: QAPYDWOBJR

This file contains object resolution information.

Note: Resolution data may not be available for every object. There is a chance that the data could have been unavailable at the time collection was attempted.

This file includes object information associated with the records in the QAPYDWTRC file. One record is created per object on which an I/O operation was performed.

Field Name	Description	Attribute
SEGKEY	Segment key. The identifier of the base segment for this object.	H (8)
ORSEGTYPE	Segment type. The machine defined segment type.	C (2)
OROBJTYPE	Object type.	C (1)
OROBJSTYPE	Object subtype	C (1)
OROBJPATR	Object performance attributes. The object performance attribute field. Values for this field are documented under the Create Space (CRTS) MI instruction.	C (4)
OROBJNAME	Object name.	C (30)
OROBJASP	Object ASP. The auxiliary storage pool (ASP) in which this object resides.	B (4)

Field Name	Description	Attribute
ORIFSPATH	IFS path name. If this is an IFS object, this value is the IFS path of the object. If this is not an IFS object, this field will be blank.	Varchar (256) Dft (16)

Disk Watcher data files: QAPYDWPGMR

This file contains program or procedure resolution information.

Note: Resolution data may not be available for every program or procedure. There is a chance that the data could have been unavailable at the time collection was attempted.

This file includes program or procedure information associated with the records in the QAPYDWTRC file. One record is created per program or procedure initiating an I/O operation.

Field Name	Description	Attribute
PROCKEY	Procedure key. The identifier of the program or procedure.	H (8)
PRMPGMLIB	MI program library name. The name of the library where the program resides.	C (10)
PRMPGMNAME	MI program name. The name of the program which initiated an I/O operation.	C (30)
PRMOBJTYP	MI object type. The object type of the program.	B (4)
PRMOBJSTYP	MI object subtype. The object subtype of the program.	B (4)
PRMODNAME	Module name. The ILE module name.	Varchar (256) Dft (32)
PRFRMTYPE	Frame type. The type of stack frame generated by this program: 0 = SLIC frame 1 = NMI frame 2 = OMI frame 3 = Java frame 4 = PASE frame	B (2)
PRSTRHDL	Procedure start handle. The start handle of this procedure.	H (8)
PRENDHDL	Procedure end handle. The end handle of this procedure.	H (8)
PRNAME	Procedure name. The name of this procedure.	Varchar (256) Dft (64)

Disk Watcher data files: QAPYDWRUNI

This file contains information about the Disk Watcher session.

One record is created per Disk Watcher session. This record is overwritten with current data each time a new interval is collected.

Field Name	Description	Attribute
RIINTERVAL	Interval number. The last interval collected.	B (4)
RISTARTTOD	Start time of day.The start time of the collection.	Timestamp
RIENDTOD	End time of day. The end time of the collection.	Timestamp

Field Name	Description	Attribute
RIFILELVL	Database file level. The level of the database files.	B (4)
RICOLLSIZE	Data written to file size. The amount of data written to the database files in kilobytes.	B (8)
RIENDRSN	Collection end reason. The reason data collection ended. Possible values are: I = Interval limit reached T = Time limit reached S = Storage limit reached C = Condition met	C (1)
RITRCCOND	Trace data condition flag. Indicates whether trace data will be limited by a condition in this collection 0 = trace data is not limited by a condition in this collection 1 = trace data is limited by a condition in this collection	C (1)
RISYSNAME	System name. The name of the system on which the collection took place.	C (8)
RISYSSRL	System serial number. The serial number of the system on which the collection took place.	C (15)
RISYSTYPE	System type. The machine type of the system on which the collection took place.	C (4)
RISYSMODEL	System model. The model of the system on which the collection took place.	C (4)
RINUMPPROC	Number of physical processors. The number of physical processors on the system where the collection took place.	B (4)
RINUMVPROC	Number of virtual processors. The number of virtual processors on the system where the collection took place.	B (4)
RIOSVRM	Operating system VRM. The operation system release on the system where the collection took place.	C (6)
RICALLJOB	Calling job name. The name of the job which initiated the Disk Watcher collection.	C (26)
RICURRUSER	Calling job current user. The current user of the calling job at the time Disk Watcher was started.	C (6)
RICOLLNAME	Collection name. The member name for this collection.	C (10)
RICOLLDESC	Collection description. A text description given to the collection.	C (50)
RISTRCMD	STRDW command string. The command string used to create this collection.	C (1000)
RIDFNCM	ADDDWDFN command string. The command string used to create the definition for this collection.	C (5000)

Disk Watcher data files: QAPYDWSTAT

This file provides summarized statistics for the specified disk units.

One record is created per sample per disk unit path.

Note: The path to a disk unit can be uniquely identified by either the device resource name or the 16 byte combination of the fields STBUSNUM, STBOARDNUM, STCARDNUM, STIOAADDR, STIOBUSNUM, STIOCTLADR, STIODEVADR, and STUNITNUM.

Field Name	Description	Attribute
INTERVAL	Interval number.	B (8)
DEVRNAME	Device resource name associated with this disk unit path.	C (10)
STBUSNUM	System bus number. The system bus number of the I/O device.	B (2)
STBOARDNUM	System board number. The system board number of the I/O device.	B (2)
STCARDNUM	System card number. The system card number of the I/O device.	B (2)
STIOAADDR	I/O adapter address. The adapter address of the I/O device.	B (2)
STIOBUSNUM	I/O bus number. The bus number of the I/O device.	B (2)
STIOCTLADR	I/O controller address. The controller address of the I/O device.	B (2)
STIODEVADR	I/O device address. The device address of the I/O device.	B (2)
STUNITNUM	Unit number. The unit number for which I/O statistics are being returned.	B (2)
STASPNUM	ASP number. The ASP number associated with this disk unit path.	B (2)
STFIRSTIO	First I/O time. The time the first I/O occurred (in microseconds) from the session creation time.	B (8)
STLASTIO	Last I/O time. The time the last I/O occurred (in microseconds) from the session creation time.	B (8)
STWRTTOTAL	Total write time. The total time spent performing write operations (in microseconds).	B (8)
STWRTDQ	Deferred queue write time. The total amount of time the write request waited on the deferred queue (in microseconds).	B (8)
STWRTCNT	Write count. The total number of write operations.	B (8)
STWRTPGCNT	Write page count. The total number of pages written.	B (8)
STWRTMIN	Minimum write time. The minimum amount of time used to perform a write operation (in microseconds).	B (8)
STWRTMINDQ	Minimum deferred queue write time. the minimum amount of time the write request waited on the deferred queue (in microseconds).	B (8)
STWRTMAX	Maximum write time. The maximum amount of time used to perform a write operation (in microseconds).	B (8)
STWRTMAXDQ	Maximum deferred queue write time. The maximum amount of time the write request waited on the deferred queue (in microseconds).	B (8)
STRDTOTAL	Total read time. The total time spent performing read operations (in microseconds).	B (8)

Field Name	Description	Attribute
STRDDQ	Deferred queue read time. The total amount of time the read request waited on the deferred queue (in microseconds).	B (8)
STRDCNT	Read count. The total number of read operations.	B (8)
STRDPGCNT	Read page count. The total number of pages read.	B (8)
STRDMIN	Minimum read time. The minimum amount of time used to perform a read operation (in microseconds)	B (8)
STRDMINDQ	Minimum deferred queue read time. The minimum amount of time the read request waited on the deferred queue (in microseconds).	B (8)
STRDMAX	Maximum read time. The maximum amount of time used to perform a read operation (in microseconds).	B (8)
STRDMAXDQ	Maximum deferred queue read time. The maximum amount of time the read request waited on the deferred queue (in microseconds).	B (8)
STOTHTOTAL	Total other I/O time. The total time spent performing other I/O operations (in microseconds).	B (8)
STOTHDQ	Deferred queue other I/O time. The total amount of time an other I/O operation waited on the deferred queue (in microseconds).	B (8)
STOTHCNT	Other I/O count. The total number of other I/O operations.	B (8)
STOTHPGCNT	Other I/O pages count. The total number of pages involved in other I/O operations.	B (8)
STOTHMIN	Minimum other I/O time. The minimum amount of time used to perform an other I/O operation (in microseconds).	B (8)
STOTHMINDQ	Minimum deferred queue other I/O time. The minimum amount of time an other I/O operation waited on the deferred queue (in microseconds).	B (8)
STOTHMAX	Maximum other I/O time. The maximum amount of time used to perform an other I/O operation (in microseconds).	B (8)
STOTHMAXDQ	Maximum deferred queue other I/O time. The maximum amount of time an other I/O operation waited on the deferred queue (in microseconds).	B (8)
STDATAMISS	I/O data missed. Indicates that some I/O data for this disk unit was missed because the collection buffer wrapped during the interval. Reducing the amount of time between intervals may prevent this missed data. 0 = no data missed. 1 = data missed for this disk unit.	C (1)
STRESERVE1	Reserved	B (8)
STRESERVE2	Reserved	B (8)
STRESERVE3	Reserved	B (8)

Disk Watcher data files: QAPYDWTDER

This file provides task dispatching element (TDE) resolution information.

Note: Resolution data may not be available for every TDE. There is a chance that the data could have been unavailable at the time collection was attempted.

This file includes TDE information for the records in the QAPYDWTRC file. One record is created per unique taskcount in the QAPYJWTRC file.

Field Name	Description	Attribute
TSKCNT	Task count. The task count of the TDE.	B (8)
TRPTSKCNT	Primary thread task count. The task count of the primary thread. If this thread is the primary thread this value will be the same as the field TSKCNT.	B (8)
TRTHREADID	Thread ID. The thread identifier for this TDE.	B (8)
TRTDETYPE	TDE type. Indicates what type of TDE this entry refers to. T = Task. P = Primary thread. S = Secondary thread. L = Licensed Internal Code (LIC) thread.	C (1)
TRTDENAME	Job or task name. The job or task name associated with this TDE. For jobs this will be the fully qualified job name which is made up of the job name, user name, and job number.	C (26)
TRCURRUSER	Current user. The current user associated with this TDE. This is the user associated with the job when the TDE information was initially collected. This value will not be updated if the user associated with the job changes.	C (10)
TRJVTHD	Java thread name. If this is a Java thread, this value is the Java thread name. If this is not a Java thread, this value will be blank.	Varchar (256) Dft (16)

Disk Watcher data files: QAPYDWTRC

This file provides specific trace info for each input/output (I/O) operation that occurred for the specified ASP.

One record is created per I/O operation.

Field Name	Description	Attribute
TCDEVRNAME	Device Resource name. The resource name associated with this disk unit path.	C (10)
TCASPNUM	ASP number. The number of the ASP where this I/O operation occurred.	B (2)
TCUNITNUM	Unit number. The unit number for which the I/O occurred.	B (2)
TCRESERVE1	Reserved	C (2)
TCSEGKEY	Segment key. Identifier for the base segment where the I/O operation occurred.	H (8)
TCPROCKEY	Program or procedure key. Identifier for the program or procedure that requested or caused the I/O to occur.	H (8)
TCTASKCNT	Task count. The task count of the TDE that caused the I/O to occur.	B (8)

Field Name	Description	Attribute
TCDQDEPTH	Deferred queue depth. If this I/O request was placed on the deferred queue, this is the number of I/O operations in the queue. If the I/O request was not placed on the deferred queue, this value will be 0.	B (4)
TCSYNCIO	Synchronous I/O. Indicates whether this I/O was addressed as synchronous: 0 = this I/O was not addressed as synchronous 1 = this I/O was addressed as synchronous	C (1)
TCRSYNCIO	Requested synchronous I/O. Indicates whether this I/O was requested as synchronous: 0 = this I/O was not addressed as synchronous 1 = this I/O was addressed as synchronous	C (1)
TCMLTPTHIO	Multipath I/O. Indicates whether this I/O was to a fiver attached device that supports multi-path I/O operations: 0 = this I/O was to a device that does not support multi-path 1 = this I/O was to a device that does support multi-path	C (1)
TCIOTYPE	I/O Type. Indicates what type of I/O this is: R = I/O was a read W = I/O was a write O = I/O was a type other than a read or write	C (1)
TCSUBUNIT	Disk subunit. The mirroring subunit for which the I/O was performed: '-' = Not part of a mirrored unit 'A' = The primary mirrored unit of a pair 'B' = The alternate mirrored unit of a pair	C (1)

Field Name	Description	Attribute
TCSMIOTYPE	Storage Management I/O type. The storage management I/O type (this is the type of I/O from the perspective of the requester) : SFt = Segment address range fault SC1 = Segment address range clear SRd = Segment address range read SWt = Segment address range write SRv = Segment address range remove SUp = Segment address range unpin SWp = Page out task write STv = Segment address range trivial request GRf = Access group read GPg = Access group purge SRP= Segment address range remove request IOP SCP = Segment address range clear request IOP GCP = Segment address range clear request POW SUP = Segment address range unpin request IOP SRQ = Segment address range read request IOP GRQ = Segment address range read request POW SFP = Segment address range fault request IOP GFP = Segment address range fault request POW SRR = Access group read IOP GRR = Access group read POW SWP = Segment address range write request IOP GWP = Segment address range write request POW GPP = Access group purge request IOP SPw = Segment address range page out wait request	C (3)
TCRESERVE2	Reserved	C (4)
TCCACHEHNT	Cache hint. Provides hint to the cache about whether cache is needed or not: 0 = No cache hint 1 = Accelerated LRU cache hint 2 = Unmodified write cache hint	B (1)
TCIOOPRTY	Reserved	B (1)
TCPOOLNUM	Pool number. The main storage management pool number for which the I/O occurred. This value will be zero if the pool number could not be retrieved.	B (2)

Field Name	Description	Attribute
TCIOFUNCTN	I/O function. The I/O operation command number: 0 = Other I/O function 2 = Report status 3 = Continuation 4 = Device reset 5 = Format DASD 6 = Write buffer 7 = Reallocate 15 = Special function 16 = Read 17 = Read DASD parameters 18 = Verify 20 = Skip read 22 = Read buffer 32 = Write 33 = Write pattern byte 36 = Skip write 37 = Inquiry 119 = Query command status 131 = Start reorganization 132 = Allocate 133 = Deallocate 134 = Write directory 135 = Scan read 136 = Read directory 137 = Query compression metrics 138 = Discard temporary data	B (4)
TCSECTNUM	Sector number. Sector number whether the I/O operation began.	B (8)
TCPAGECNT	Page count. Number of pages in the I/O request.	B (8)
TCIOHNDL	I/O handle. The location on which the I/O operation is being performed.	H (8)
TCDQTIME	Deferred queue time. The time this operation request spent on the deferred I/O queue (in microseconds).	B (8)
TCIOSTART	I/O start time. The start time of the I/O operation (in microseconds from the creation of the session). **Note:** If the Deferred queue time is greater than zero, then this is also the time that the operation was placed on the deferred queue.	B (8)
TCIOEND	I/O end time. The end time of the I/O operation (in microseconds from the creation of the session).	B (8)
TCPGMOFSET	Program offset. The offset of the program that requested or caused the I/O.	B (8)
TCRESERVE3	Reserved	B (8)
TCRESERVE4	Reserved	B (8)
TCRESERVE5	Reserved	B (8)
TCRESERVE6	Reserved	B (8)

Data files: File abbreviations

The database files use abbreviations in the field and byte data tables.

These abbreviations include.

Abbreviation	Description
Primary files	These files are related to and generated from the category.
C	Character in the Attributes column.
H	Hexadecimal in the Attributes column.
PD	Packed decimal in the Attributes column.
Z	Zoned decimal in the Attributes column.
IOP	Input/output processor or I/O processor. The processors that control the activity between the host system and other devices, such as disks, display stations, and communication lines.
DCE	Data circuit-terminating equipment.
MAC	Medium-access control. An entity in the communications IOP.
LLC	Logical link control. An entity in the communications IOP.
Beacon frame	A frame that is sent when the ring is inoperable.
Type II frame	A connection-oriented frame (information frame) used by Systems Network Architecture (SNA).
I-frame	An information frame.
B	The DDS binary data type of 4 digits, which is 2 bytes, in the Attributes column.
G	Graphic - used to hold double-byte Unicode data.

CL commands for performance

The operating system includes several CL commands to help you manage and maintain system performance.

CL commands contained in the base operating system

These tables provide a list of most of the performance related CL commands that are a part of the base operating system.

Table 2. Real-time monitoring CL commands

Command	Function
Work with Active Jobs (WRKACTJOB)	Allows you to review and change the attributes and resource utilization of the jobs running on your system.
Work with Disk Status (WRKDSKSTS)	Displays the performance information and attributes for system disk units.
Work with System Status (WRKSYSSTS)	Provides an overview of current system activity. Specifically, it displays the number of jobs on the system and storage pool utilization information.
Work with System Activity (WRKSYSACT)	Allows you to work with jobs and tasks on your system.

Table 2. Real-time monitoring CL commands (continued)

Command	Function
Work with Object Locks (WRKOBJLCK)	Allows you to work with and display locks on a specified object, including locks waiting to be applied.
Work with Shared Storage Pools (WRKSHRPOOL)	Display the utilization information and change attributes of shared storage pools, including machine and base pool.

Table 3. Miscellaneous performance CL commands

Command	Function
Analyze Command Performance (ANZCMDPFR)	Measures the performance of a single CL command or a set of CL commands.
Configure PM Agent (CFGPMAGT)	Configures PM Agent to send and receive PM Agent performance data.
Start Performance Trace (STRPFRTRC)	Starts the collection of multiprogramming level and transaction trace data.
End Performance Trace (ENDPFRTRC)	Ends the collection of multiprogramming level and transaction trace data.
Delete Performance Collection (DLTPFRCOL)	Deletes a performance collection from the system.
Copy Performance Collection (CPYPFRCOL)	Creates a copy of a performance collection.
Convert Performance Collection (CVTPFRCOL)	Converts performance data from a previous release to the format needed for processing by the current release.
Save Performance Collection (SAVPFRCOL)	Saves a copy of a single performance collection or a group of performance collections located in the same library.
Restore Performance Collection (RSTPFRCOL)	Restores a performance collection or a group of performance collections in a single library.

Table 4. Collection Services CL commands

Command	Function
Create Performance Data (CRTPFRDTA)	Creates a set of database files from performance information stored in a management collection (*MGTCOL) object.
Create Performance Summary (CRTPFRSUM)	Creates additional database files containing summary information for an existing Collection Services collection.
Change Management Collection (CHGMGTCOL)	Changes the attributes of the specified management collection.
Delete Management Collection (DLTMGTCOL)	Deletes a management collection from the system.
Start Performance Collection (STRPFRCOL)	Starts the system-level collection of performance data by Collection Services.
End Performance Collection (ENDPFRCOL)	Stops the system-level collection.
Check Performance Collection (CHKPFRCOL)	Determines the current status of the Collection Services server job (QYPSPFRCOL).
Configure Performance Collection (CFGPFRCOL)	Changes certain collection attributes and determines how Collection Services will manage data collection.

Table 5. Disk Watcher CL commands

Command	Function
Add Disk Watcher Definition (ADDDWDFN)	Allows you to specify the performance data that is to be collected during a Disk Watcher collection.
End Disk Watcher (ENDDW)	Ends a Disk Watcher collection.
Remove Disk Watcher Definition (RMVDWDFN)	Removes one or more Disk Watcher definitions from the system.
Start Disk Watcher (STRDW)	Starts the collection of disk performance data.

Table 6. Job Watcher CL commands

Command	Function
Add Job Watcher Definition (ADDJWDFN)	Allows you to specify the performance data that is to be collected during a Job Watcher collection.
End Job Watcher (ENDJW)	Ends the Job Watcher collector.
Remove Job Watcher Definition (RMVJWDFN)	Allows you to remove one or more Job Watcher definitions from the system.
Start Job Watcher (STRJW)	Starts the Job Watcher collector.

Table 7. Performance explorer (PEX) CL commands

Command	Function
Add PEX filter (ADDPEXFTR)	Adds a new Performance Explorer (PEX) filter to the system.
Print Performance Explorer Report (PRTPEXRPT)	Prints a formatted listing of the data that was collected by the performance explorer.
Start Performance Explorer (STRPEX)	Starts a new Performance Explorer session or resumes a suspended Performance Explorer session.
End Performance Explorer (ENDPEX)	Stops thePerformance Explorer session from collecting data.
Add Performance Explorer Definition (ADDPEXDFN)	Adds a new Performance Explorer definition to the system.
Change Performance Explorer Definition (CHGPEXDFN)	Changes an existing Performance Explorer definition.
Create Performance Explorer Data (CRTPEXDTA)	Creates the Performance Explorer database files based on the data in a Performance Explorer management collection object.
Delete Performance Explorer Data (DLTPEXDTA)	Deletes data that was collected by the Performance Explorer tool and was saved across a set of physical files in a particular library.
Remove Performance Explorer Definition (RMVPEXDFN)	Removes one or more Performance Explorer definitions from the system.
Remove Performance Explorer Filter (RMVPEXFTR)	Rmoves one or more Performance Explorer filters from the system.
Work with Performance Explorer Definitions (WRKPEXDFN)	Shows you the list of existing Performance Explorer (PEX) definitions. You can add new definitions or display, remove, or change existing definitions.
Work with Performance Explorer Filters (WRKPEXFTR)	Shows you a list of existing Performance Explorer filters. You can add new filters or display, remove, or change existing filters.

CL commands contained in IBM Performance Tools for i (5770-PT1)

This table provides a list of some CL commands that are a part of IBM Performance Tools for i. For more commands, see the Performance Tools for i Commands topic in the Programming topic collection.

Table 8. General CL commands

Command	Function
Analyze Performance Data (ANZPFRDTA)	Produces recommendations to improve the performance of your system.
Display Performance Data (DSPPFRDTA)	Displays performance data collected by Collection Services.
Print Activity Report (PRTACTRPT)	Prints the activity report.
Print Component Report (PRTCPTRPT)	Prints the component report.
Print Job Interval Report (PRTJOBRPT)	Prints the job interval report.
Print Job Trace Report (PRTTRCRPT)	Prints the job trace report.
Print Lock Report (PRTLCKRPT)	Prints the lock report.
Print Pool Report (PRTPOLRPT)	Prints the pool report.
Print Resource Report (PRTRSCRPT)	Prints the resource report.
Print System Report (PRTSYSRPT)	Prints the system report.
Print Transaction Report (PRTTNSRPT)	Prints the transaction report.
Start Performance Tools (STRPFRT)	Calls the performance tools menu interface.

Related information:

System i Navigator monitors

Performance Tools for i5/OS commands
See the Performance Tools for i5/OS commands topic for a list of Performance Tools for i5/OS commands.

Intelligent Agents

The Intelligent Agents console for System i Navigator provides system administrators with an easy way to manage one or more Agent Building and Learning Environment (ABLE) agents running on a single system or across different systems.

Intelligent agents are Java-based software components that are capable of learning certain behaviors over time through complex autonomic algorithms. Intelligent agents can have many different capabilities, from simply monitoring for certain events to more complex actions like analyzing network problems, preventing unplanned system restarts, or managing storage. Although the goal of using agents is to simplify the system administrators tasks through autonomic computing, system administrators still need a way of starting, stopping, responding to, and monitoring the actions of their agents.

The Intelligent Agents console for System i Navigator provides system administrators with an easy way to manage one or more ABLE agents running on a single system or across different systems. After the agent console connects to the agent services that exist across your domain, you can monitor and work with any number of preconfigured agents on any of the systems in your domain.

Intelligent Agent concepts

The Intelligent Agents console uses ABLE agents running on or across a distributed agent platform. Find out more about ABLE agents, and the agent services that make up the distributed platform.

ABLE agents

The Intelligent Agents console for System i Navigator works with Agent Building and Learning Environment (ABLE) agents.

ABLE agents are Java objects capable of automating tasks through the use of rule-based reasoning and learning certain behaviors over time by using data mining algorithms contained in the ABLE component library. ABLE is a Java framework and toolkit used for building multiagent intelligent autonomic systems, and provides specific support for developing agents that work with the System i Navigator Intelligent Agent platform and console. Intelligent agents developed using ABLE can have the following capabilities:

- Learn from experience and predict future states
- Analyze metric data using classification and clustering algorithms to detect complex states and diagnose problems
- Interface with other autonomic components via web services
- Reason using domain-specific Java application objects
- Use powerful machine reasoning, including: Boolean forward and backward chaining, predicate logic (Prolog), Rete'-based pattern match, and fuzzy systems
- Have autonomous (proactive) behavior and goals
- Correlate events into situations, reason, and take actions

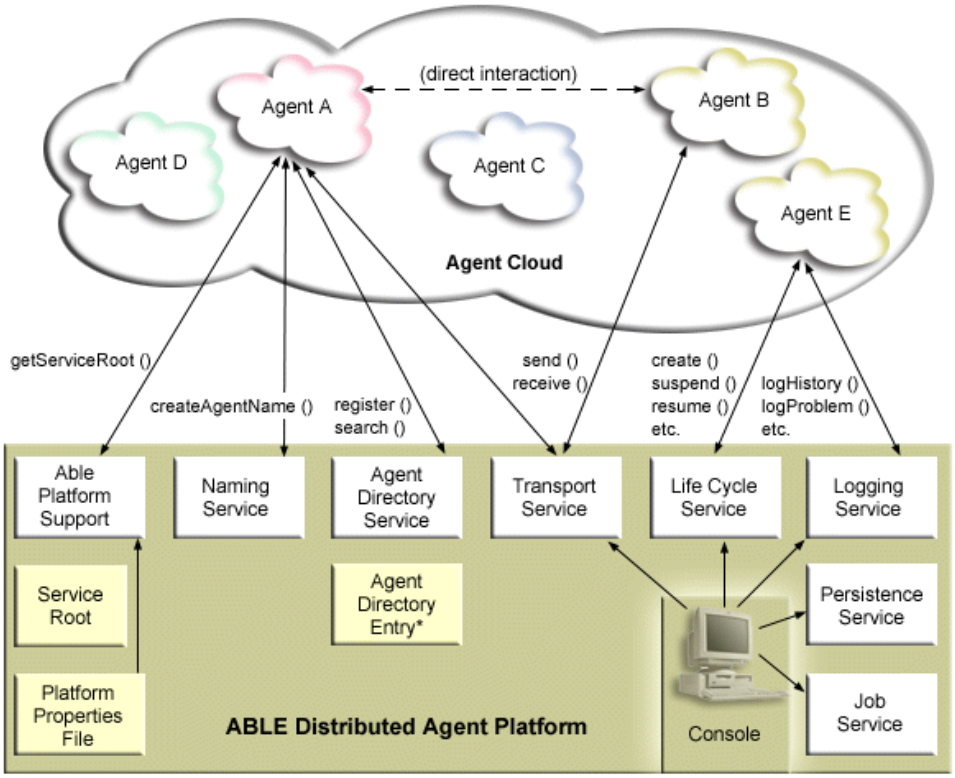
The ABLE toolkit contains several examples of how to design your own agent, and a template agent is included that you can use as a model when developing your own agent. To create an agent that can be fully managed from the console, the agent should extend the AbleEServerDefaultAgent example.

Agent platform

Agent Services live on your system or across your distributed platform, and are responsible for the life cycle, security, and behavior of your agent.

The Intelligent Agents console in System i Navigator requires that an agent platform be configured on your system, or across a distributed network. An agent platform is nothing more than a set of Java Virtual Machines, or agent pools, that run the services and agents of the platform. The platform is defined by a preferences file called ableplatform.preferences. This file lists the location (system and port) of each agent pool (JVM), the services that will run on or across the platform, and the agents that are allowed to run in the platform. If security is configured, the preferences file also lists the Kerberos user and service principals used to authenticate each service, agent, and user that is part of the platform.

Agent services, which can exist on any of the systems across your distributed platform, are responsible for the life cycle, security, and behavior of your agent. Agents running on the same system or distributed agents running across different systems use the defined set of platform services for different tasks such as getting a unique name, looking up other agents in a directory, logging, and passing messages to another agent.



The following services are made available to the agents running on or across a platform and to the users connected to the platform:

- **Naming service**

  This service provides the creation of a globally unique name among all other pieces in the distributed platform. The naming service also provides security for the platform when security is turned on. Kerberos is used when starting the platform to authenticate all services, pools, and users. Throughout the life of the platform, this service also acts as the trusted third party to secure all interactions between the platform's agents, services, and users.

- **Directory service**

  When an agent wants to make itself known to other services and agents across the platform, it creates an agent description and registers this description to the directory service. After the agent is registered, descriptions can be modified and removed.

- **Lifecycle service**

  This service is used to manage agents. Agents can be created, started, suspended, resumed, and destroyed through this service.

- **Transport service**

  This service provides locators for parts of the platform. Interagent communication is also made available by this service.

- **Logging service**

  A running agent may encounter a problem that requires outside intervention. The logging service creates and logs requests, and handles the corresponding answers that are sent back to it from the request. The progress of an agent can also be logged to this service for others to view.

- **Job service**

  The different services and jobs of the platform register their job entry to this service. This service provides critical information about the platform when the platform is running in the IBM i operating system.

- **Persistence service**

Services and agents may use this service to save valuable information. The naming, directory, lifecycle, logging and job services can be backed up and stored in a database when the persistence service is configured.

Developing agents

Create and customize your own agent to perform the tasks that you want. The Agent Building and Learning Environment (ABLE) toolkit and its associated documentation provide a working development environment and a template agent that can be used as a guide for developing your own agents.

ABLE is a Java framework, component library, and productivity tool kit for building intelligent agents using machine learning and reasoning.

You can use the ABLE toolkit to develop your own hybrid intelligent agents. This Java framework has its own rule language called ABLE rule language (ARL) and its own GUI-based interactive development environment, the ABLE Agent Editor; both are provided to assist in the construction of ABLE agents.

ABLE 2.0
Both the ABLE toolkit and complete ABLE documentation are available to download in .zip packages.

The System i Navigator Intelligent Agents console is included with a template agent that you can use as a guideline for developing agents to work with the console. The source code for AbleEserverTemplateAgent is stored in ableplatform.jar, located in `QIBM/ProdData/OS400/Able`.

AbleEserverTemplateAgent makes use of many of the features available when developing agents using the ABLE framework. It demonstrates how an agent would create a set of capabilities that could be managed through the console. It includes a Customize panel that can be used to alter agent settings and an About panel that is used to display information about the agent. It also shows how an agent uses the logging service to log requests and history entries that can be displayed and responded to through the console.

Agent capabilities

The EServerTemplateAgent agent has the following capabilities:

- **Time monitor**

  The agent watches for minute and hour changing events and take action. There are four different situations that the agent follow depending on what the capability is set to, or how the user responds to a request if one is logged:

  1. Log the change without telling the time.
  2. Log the change including the time as a long.
  3. Log the change including the time in MM/DD/YY format
  4. Do nothing

- **Duplicate request**

  The agent watches for multiple hour and minute change requests. There are two different situations that the agent follows with this capability if a duplicate is found.

  1. Create a duplicate request
  2. Do not create a duplicate request

Customization panel

The agent supplies a customization panel that allows you to adjust the interval at which the agent checks if the minute or hour has changed.

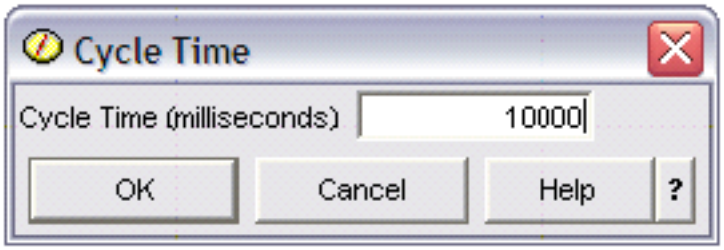


Figure 1. An example use of the Customization panel

About panel

The agent supplies an about panel that allows you to provide detailed information about the agent.

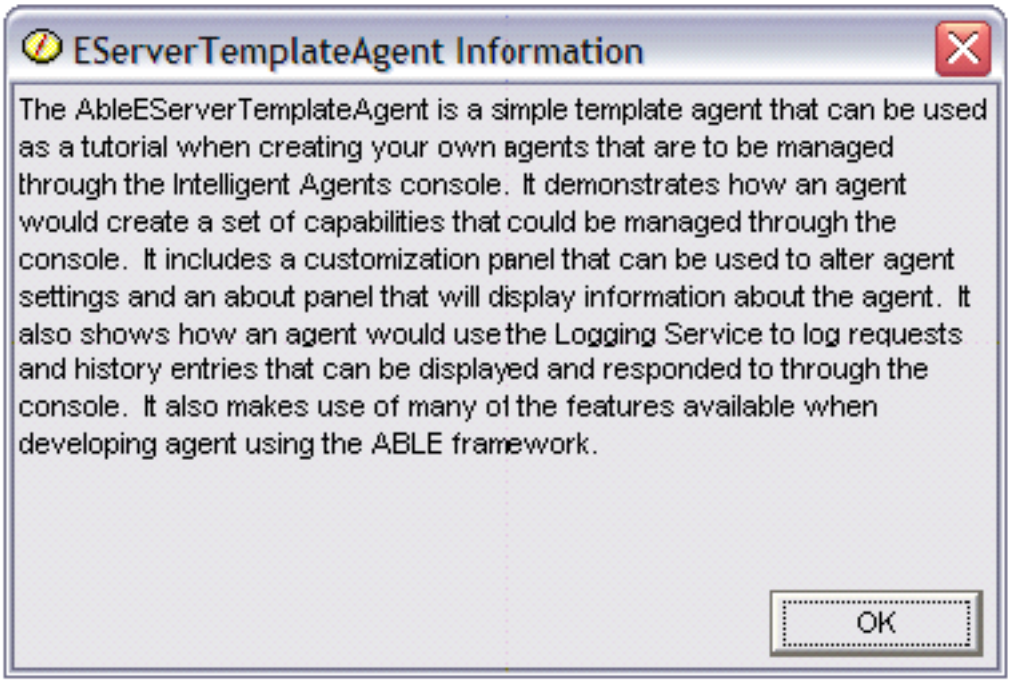


Figure 2. Viewing the template agent's about panel

Agent Learning and Building Environment 2.0

Agent Learning and Building Environment (ABLE) is a Java framework, component library, and productivity tool kit for building intelligent agents using machine learning and reasoning.

Both the ABLE 2.0 Toolkit and the ABLE Documentation bundle are available to download as .zip packages:

- ABLE 2.0 Toolkit: AbleAll_2.0.0.zip

  This 6 MB zipped package contains the ABLE Java framework, component library, and tool kit.
- ABLE Documentation: doc.zip

  This 12 MB zipped package contains complete ABLE documentation, including an FAQ, the README, license agreement, JavaDoc, and more. Also included in doc.zip is a second zipped package (Able-Class.zip) that contains several exercises and presentations designed to help you develop ABLE agents.

Set up your agent environment

Before you can begin managing your agents with the Intelligent Agents console, you will need to configure your agents and agent services (the agent platform) to run on or across the systems in your environment. A secure environment requires Kerberos and additional platform configuration.

The System i Navigator Intelligent Agents console functions by connecting to an agent platform running on your system, or across a distributed network. The agent platform defines the agent pools (JVMs) that your agent services and agents will run in. Before you begin setting up your agent platform, you need to determine your security preferences. A secure platform requires that you configure Kerberos.

Configuring your agent platform

This topic provides a brief overview of the agent platform and also provides detailed configuration steps for modifying the platform preferences file. Before you begin using the Intelligent Agents console in System i Navigator, you first need to configure the agent platform.

About this task

Agent platform overview

To manage agents using the intelligent agents console, you must first define, secure, and start an agent platform that the console will connect to. An agent platform is nothing more than a set of Java Virtual Machines, or agent pools, that run the services and agents of the platform. The ableplatform.preferences and able.preferences files are used to define a platform.

In its simplest form, with security turned off, ableplatform.preferences defines:

- The location (system and port) of each Pool.
- The services that will run in the platform.
- The agents that are allowed to run in the platform.

Once the agent platform is set up, the services that run on or across the platform allow an agent to receive a unique name, look up other agents in a directory, log history or requests, pass messages to one another, or control the state of an agent.

Defining the agent platform

To begin configuring your platform, you must define your agent pools, agent services, permitted agents, and add Kerberos security principals by modifying the ableplatform.preferences file.

The default location of ableplatform.preferences is `QIBM/ProdData/OS400/Able`.

Notes:

1. Multiple platforms can be configured, and you need to ensure that your platform does not reside at the same location as an existing platform using the same port. See the Start the agent platform topic for more details.
2. When you open the file and begin making changes to the content, understand that small errors and misspellings will cause the agent platform to fail, and there is currently no easy way to debug your mistakes. Avoid commenting out properties that are unused, commenting out an unused property can cause the platform to fail. For example, if you choose to run the platform with security turned off, do not comment out the principal properties through the file.

The following code samples taken from ableplatform.preferences provide examples of how to modify the platform preferences. To configure your platform, follow these steps:

Procedure

1. Define agent pools.

   A platform is nothing more than a set of distributed Java Virtual Machines. Each JVM is called an agent pool, and each JVM or pool can host multiple services and agents (an agent pool does not have to host services, it could be used to run just agents). You must define the location of each of your Java Virtual Machines (agent pools) in the preferences file by specifying the IP address (fully qualified system name) and port. Also, specify an alias (any unique name) for each agent pool. When security is turned on, you must associate a service principal with each agent pool. For more information about using Kerberos service principals, see "Securing your agent environment" on page 255. The following is an example of how a set of agent pools could be defined:

   ```
   #--------------------------------------------------------------------
   # Java Virtual Machines
   #--------------------------------------------------------------------
   AgentPool.1.Alias     = Pool1
   AgentPool.1.IpAddress = systemname.ibm.com
   AgentPool.1.Port      = 55551
   AgentPool.1.Principal = servicePrincipal1

   AgentPool.2.Alias     = Pool2
   AgentPool.2.IpAddress = systemname.ibm.com
   AgentPool.2.Port      = 55552
   AgentPool.2.Principal = servicePrincipal1

   AgentPool.3.Alias     = Pool3
   AgentPool.3.IpAddress = systemname.ibm.com
   AgentPool.3.Port      = 55553
   AgentPool.3.Principal = servicePrincipal2
   #--------------------------------------------------------------------
   ```

2. Define agent services.

   Define the agent services that you want to run on the platform, and specify the alias of the agent pool you want them to run in. Each agent service must point to a factory. The *factory* is a Java Class that creates the agent service. The Persistence service is used to restart a platform to its previous state. Specify to turn persistence on or off. If you turn persistence on, you must specify a Database, Table, and Schema so that persistence has a location to store backed up data on. You can also specify a value for the PersistenceRetry property. If the persistence service fails and you specified a value of 5000 for the PersistenceRetry property, it will attempt to retry every 5000 milliseconds. The following code example shows how three different services, Directory, Logging, and Persistence, could be defined:

   ```
   Services=Agent-Directory-Service,Agent-Logging-Service,
   Persistence-Service

   Agent-Directory-Service.AgentPool         = Pool1
   Agent-Directory-Service.Factory =
   com.ibm.able.platform.RMIVerifiableDirectoryServiceFactory
   Agent-Directory-Service.Persistence       = off
   Agent-Directory-Service.PersistenceDatabase = *LOCAL
   Agent-Directory-Service.PersistenceTable  = qahadir
   Agent-Directory-Service.PersistenceSchema = QUSRSYS
   Agent-Directory-Service.PersistenceRetry  = 5000

   Agent-Logging-Service.AgentPool           = Pool1
   Agent-Logging-Service.Factory =
   com.ibm.able.platform.RmiAgentLoggingServiceFactory
   Agent-Logging-Service.Persistence         = off
   Agent-Logging-Service.PersistenceDatabase = *LOCAL
   Agent-Logging-Service.PersistenceTable    = qahalog
   Agent-Logging-Service.PersistenceSchema   = QUSRSYS
   Agent-Logging-Service.PersistenceRetry    = 5000
   Agent-Logging-Service.Properties          = history-log-max : 100
   ```

Note: You can specify to control performance by adding a history-log-max property to the Logging service. If you specify history-log-max=100, each agent keeps only its 100 most current history logs.

```
Persistence-Service.AgentPool    = Pool1
Persistence-Service.Factory =
com.ibm.able.platform.RmiPlatformPersistenceServiceFactory
Persistence-Service.Properties   =
persistence-driver : com.ibm.db2.jdbc.app.DB2Driver,
persistence-protocol : jdbc,
persistence-subProtocol : db2,
blob-type : BLOB,
persistence-dbFlushTime : 1000,
persistence-dbResetAll : off
```

The Persistence service provides backup and recovery for your agent platform. To use persistence with agent services running on or across your platform, you need to define several Persistence-Service.Properties:

- **persistence-driver**

  Defines the JDBC driver that the persistence service will use. By default the persistence-driver is set to use the integrated DB2® driver.

- **persistence-protocol and subProtocol**

  Defines the database protocol that the persistence service will use. By default the protocol is set to jdbc and the subProtocol is set to db2.

- **blob-type**

  Defines the BLOB type associated with the JDBC driver you are using. The default for DB2 is set to BLOB, but if you choose to use a different database, like CloudScape for example, you would define BLOB type as blob-type : LONG VARBINARY.

- **persistence-dbFlushTime**

  Specifies the rate at which you want the persistence service to flush data to the database in milliseconds.

- **persistence-dbResetAll**

  Specifies if all previously persisted data will be cleared from the database when you restart the platform.

3. Defining permitted agents.

   You must define all of the agents that you want to allow access to the platform and the agent services running on or across the platform. The following is an example of how an agent could be defined. More details about each agent property are listed after the following example:

```
Agent.1.Alias=Agent1
Agent.1.AutonomyLevel=Medium
Agent.1.ClassName=
com.ibm.able.platform.examples.EServerTemplateAgent
Agent.1.ConstructorArgs=String:agentName
Agent.1.EligiblePrincipals=principalAlias1, principalAlias2
Agent.1.EligibleAgentPools=pool1, pool2, pool3
Agent.1.InitArgs=
Agent.1.LastChangedDate=January 11, 2003 11:11am
Agent.1.Type=Tester1
Agent.1.Vendor=IBM1
Agent.1.Version=1.1
```

   - **Alias**

     Provide a unique name for your agent. This name will be used by the agent console.

   - **AutonomyLevel**

     Specify the agents initial autonomy level. A user can change this setting from the console. Determine the level of independence you want to associate with your agent, and set the automation level accordingly. The higher you set the automation level, the less your agent will request permission to take an action. If you set an agent to High automation, it will perform most actions

without requesting a response first. If you are concerned about an agent's behavior, you may want to lower the automation level (increasing the frequency by which the agent requests permission to take action), by changing the setting to Medium automation.

- **ClassName**

  Specifies the the actual agent Java Class.
- **ConstructorArgs**

  Allows you to provide arguments in the properties file that you want to pass to your agent.
- **EligiblePrincipals**

  When security is turned on, you must define who has authority to start an instance of your agent by associating one or more user principal aliases with each agent. For more information about using Kerberos service principals, see "Securing your agent environment."
- **EligibleAgentPools**

  Specify the alias of one or more agent pools that you want to use to run your agents on the platform.
- **InitArgs**

  Allows you to pass in any Init arguments to your agent from the preferences file.

4. Secure your agent platform.

   After you have defined your agent pools, agent services, and permitted agents, you may want to configure security on the platform. For more information on Kerberos principals, trust levels, and how they are used and defined to secure the agent platform, see"Securing your agent environment."

Results

After you have defined your agent pools, agent services, and permitted agents, and optionally set up security, you need to start the agent platform.

Securing your agent environment

It is strongly recommended that you use Kerberos user and service principals to authenticate users, agent pools, and agent services to one another on or across a secure platform or distributed platform.

About this task

Platform security can be turned on or off. If you choose to run on or across a platform that has security turned off, anyone can deregister or modify another person's agent descriptions. Anyone can change the capabilities or state of any agent. Anyone can remove or answer any requests, even if they are not their own. Agents can potentially take destructive actions when being used incorrectly or by the wrong user. To ensure that agents are used the way they were intended, security features have been added to the infrastructure of the platform.

When security is turned on, agents and services can authenticate and authorize every action that is taken on or across the platform. An agent can only deregister or alter its own agent description. An agent must authorize all answered requests and capability changes. A certain authority level is required to alter the state of an agent. The use of an agent can be limited to certain users and locations. When security is turned on, every action that occurs can be traced back to a known user so that platform authentication and authorization can occur.

If you choose to secure your agent platform, you can turn security on by changing the Security property to Security=on in the able.preferences file that defines your platform.

Configuring your platform to use Kerberos:

The intelligent agent platform uses Kerberos principals to authenticate users and services throughout the agent platform. Kerberos protocol, developed by Massachusetts Institute of Technology, allows a principal (a user or service) to prove its identity to another service within an insecure network.

About this task

Authentication of principals is completed through a centralized server called a key distribution center (KDC). The KDC authenticates a user with a Kerberos ticket. These tickets prove the principal's identity to other services in a network. After a principal is authenticated by these tickets, they can exchange encrypted data with a target service.

The platform uses Kerberos to authenticate user sign on and initial platform startup. To use Kerberos to secure your platform, you must either find an existing KDC, or create a working KDC that all parts of the platform use. Every system running a piece of the platform and every PC running a console that connects to this platform must be configured to use this KDC. You need to list all Kerberos principals in the ableplatform.preferences file that are used by the platform to authenticate users and services. Each platform Java Virtual Machine (agent pool) has a service principal associated with it, and each user logging onto the platform from a console needs a user principal. All of these principals need to be added to the KDC.

Procedure

1. Find or create a usable Kerberos key distribution center (KDC).

   The agent platform does not require a KDC on IBM i. A KDC running on any platform will work. If you cannot find an existing KDC to use, you can create your own. In V5R3 or later, IBM i supports a Kerberos server in IBM i PASE. You can configure and manage a Kerberos server from your system. To configure a Kerberos server in IBM i PASE, complete the following steps:

   a. In a character-based interface, type `call QP2TERM`. This command opens an interactive shell environment that allows you to work with IBM i PASE applications.
   b. At the command line, enter `export PATH=$PATH:/usr/krb5/sbin`. This command points to the Kerberos scripts that are necessary to run the executable files.
   c. At the command line, enter `config.krb5 -S -d iseriesa.myco.com -r MYCO.COM`. This command updates the krb5.config file with the domain name and realm for the Kerberos server, creates the Kerberos database within the integrated file system, and configures the Kerberos server in IBM i PASE. You are prompted to add a database master password and a password for the admin/admin principal, which is used to administer the Kerberos server.
   d. At the command line, enter `/usr/krb5/sbin/start.krb5` to start the servers.

2. Configure systems in your agent environment to use Kerberos.

   After you create a Kerberos server (KDC), you need to individually configure each client PC that will attempt to connect to the secure platform, and each system in your agent platform to point to your Kerberos server (KDC).

   - **Configure your client PC**

     To configure a client PC, you need to create a text file called krb5.conf in the security folder of the JVM that runs your System i Navigator intelligent agents console located here (where C: is the drive where your System i Access driver is installed):

     C:\Program Files\IBM\Client Access\JRE\Lib\Security

     The krb5.conf file tells all JVMs started from this JRE which KDC to use when dealing with Kerberos. The following is an example of what a generic krb5.conf file might look like if the KDC realm is KDC_REALM.PASE.COM and is found on system1.ibm.com:

```
[libdefaults]
 default_realm           = KDC_REALM.PASE.COM
 default_tkt_enctypes    = des-cbc-crc
 default_tgs_enctypes    = des-cbc-crc

[realms]
 KDC_REALM.PASE.COM = {
         kdc = system1.rchland.ibm.com:88
}

[domain_realm]
 .rchland.ibm.com = KDC_REALM.PASE.COM
```

- **Configure your system**

  To point your system to your KDC, you need to modify the following file:

  /QIBM/userdata/OS400/networkauthentication/ krb5.conf

  The krb5.conf file tells all JVMs started from this JRE which KDC to use when dealing with Kerberos. The following is an example of what a generic krb5.conf file might look like on the server if the KDC realm is KDC_REALM.PASE.COM and is found on system1.ibm.com:

```
??(libdefaults??)
  default_realm = KDC_REALM.PASE.COM
??(appdefaults??)
??(realms??)
  KDC_REALM.PASE.COM = {
    kdc = system1.rchland.ibm.com:88
  }
??(domain_realm??)
 system1.rchland.ibm.com = KDC_REALM.PASE.COM
```

3. Acquire Kerberos user and service principals.

   After you configure a KDC, you need to create the user and service principals you plan to use to secure the platform, and register these principals to the KDC:

   Service principals:
   Each agent pool (JVM) defined in the ableplatform.preferences file must have a service principal associated with it. Service principals are specific to the system that they run on, so they must include that system name and be in the following format: `ServicePrincipalName/systemName@KDCRealm`. Each of the agent pools on the platform can use the same service principal, or you can specify that each pool use its own service principal. If each of your agent pools has different authority levels, then different principals should be used for each different authority level.

   User principals:
   Each user that you want to allow to connect to the secure platform through the console needs a user principal. User principals can be associated with each agent definition listed in the ableplatform.preferences file. A user principal can connect to a platform from the console, regardless of the system the console is running on. Because of this, a user principal only needs to include the principal name and the KDC realm that the principal belongs to: `UserPrincipalName@KDCRealm`.

   You need to add a principal to the KDC for each service and user principal that your platform uses. To add your principals to your KDC if you are using the integrated KDC on the server, follow these steps:

   a. In a character-based interface, type `call QP2TERM`.
   b. At the command line, enter `export PATH=$PATH:/usr/krb5/sbin`. This command points to the Kerberos scripts that are necessary to run the executable files.
   c. At the command line, type `kadmin -p admin/admin`, and press **Enter**.
   d. Sign in with administrator's password.
   e. Enter the following at a command line:

- To add service principals for pools running on a system:

  `addprinc -pw secret servicePrincipalName/fully qualified host name@REALM`
- To add user principals:

  `addprinc -pw secret jonesm`. This creates a principal for a user to log in from a console.
- To add service principals for pools running on a PC:

  `addprinc -requires_preauth -e des-cbc-crc:normal -pw host/pc1.myco.com.`

If you are using the integrated KDC, see the following topics for more information on how to add principals to your KDC:

- If you are adding service principals for pools that run on a system, see Add IBM i principals to the Kerberos server.
- If you are adding user principals or service principals for pools that run on a PC, see Create Host principals for Windows 2000 workstations and users

4. Add service principals to each keytab file.

   When you start up a secure platform, each agent pool uses the principal that it was defined to start with, and uses it to authenticate itself. This requires each pool JVM to have access to valid Kerberos credentials for the principal it is using. The IBM i Start Agent Services (STRAGTSRV) command handles this, as long as there is an entry in the keytab file for the principal that is being used.

   To add an entry to the keytab file for each service principal when you are running the integrated KDC on a system, do the following:

   a. In a character-based interface, type `STRQSH`. This command starts the qsh shell interpreter.
   b. Enter the following command (where *ServicePrincipal* is the name of the service principal you want to add, *system@KDCRealm* is the fully qualified system name and Kerberos realm, and *thePassword* is the password associated with your service principal): `keytab add ServicePrincipal/system@KDCRealm -p thePassword`

Results

After you set up your KDC and create your user and service principals, you need to configure security in your ableplatform.preferences file.

Configuring platform security:

Before you begin, ensure that you have configured your Kerberos key distribution center (KDC).

About this task

When security is turned on, ableplatform.preferences acts as a policy file for the security of the platform it defines. The following steps provide examples for how principals, trust levels, and permissions could be configured:

Procedure

1. Define user and service principals.

   After you acquire user and service principals, and register them with your KDC, you need to add these principals to the ableplatform.preferences file. When security is turned on, a user must be defined with a valid Kerberos user principal to gain access to the platform, and all agent services and agent pools must have a valid Kerberos service principal assigned to them. Add the user or service principals you have registered with your KDC, and specify an alias for each principal (the alias can be any unique name you want to use).

```
#-------------------------------------------------------------------
# Principals
#-------------------------------------------------------------------
Principal.1.Alias     = servicePrincipal1
Principal.1.Principal = name1/systemName@REALM
```

```
Principal.2.Alias     = servicePrincipal2
Principal.2.Principal = name2/systemName@REALM

Principal.3.Alias     = userPrincipal1
Principal.3.Principal = name1@REALM

Principal.4.Alias     = userPrincipal2
Principal.4.Principal = name2@REALM
```

2. Define trust levels.

   After you add user and service principals, you need to define the trust level associated with each principal. A trust level is associated with a principal to help define the capabilities of a user or service on the platform. Associating a trust level with a principal is also a way to group principals. The same trust level can be associated with multiple user and service principals. Add the principal alias you assigned to your service and user principals in step 1 (comma delineated), to the trust level you want to associate it with, and provide a unique name for trust level alias.

```
#---------------------------------------------------------------------
# Trust Levels
#---------------------------------------------------------------------
TrustLevel.1.Alias      = HighlyTrusted
TrustLevel.1.Principals = servicePrincipal1,userPrincipal1

TrustLevel.2.Alias      = SomewhatTrusted
TrustLevel.2.Principals = servicePrincipal2,userPrincipal2
```

3. Associate service principals with agent pools.

   A distributed platform can span multiple ports on multiple systems. Each agent pool defines where one part (JVM) or the platform will run. Each agent pool entry contains an alias, an IP address, a port, and a service principal alias. The principal alias specifies what service principal this pool is associated with. Add the service principal alias that you defined above to associate it with your agent pool.

```
#---------------------------------------------------------------------
# Agent Pools (Java Virtual Machines)
#---------------------------------------------------------------------
AgentPool.1.Alias     = Pool1
AgentPool.1.IpAddress = systemname.ibm.com
AgentPool.1.Port      = 55551
AgentPool.1.Principal = servicePrincipal1

AgentPool.2.Alias     = Pool2
AgentPool.2.IpAddress = systemname.ibm.com
AgentPool.2.Port      = 55552
AgentPool.2.Principal = servicePrincipal1

AgentPool.3.Alias     = Pool3
AgentPool.3.IpAddress = systemname.ibm.com
AgentPool.3.Port      = 55553
AgentPool.3.Principal = servicePrincipal2
```

4. Define agent startup authority.

   Define which users have the capability to start each of the agents defined on your secure platform. Add one or more user principal aliases to the EligiblePrincipal parameter.

```
#---------------------------------------------------------------------
# Permitted Agents
#---------------------------------------------------------------------
Agent.1.Alias=Agent1
Agent.1.AutonomyLevel=Medium
Agent.1.ClassName=com.ibm.able.platform.examples.EServerTemplateAgent
Agent.1.ConstructorArgs=String:AgentName1
Agent.1.EligiblePrincipals=userPrincipal1,userPrincipal2
Agent.1.EligibleAgentPools=Pool2,Pool3
Agent.1.InitArgs=
```

```
Agent.1.LastChangedDate=January 11, 2003 11:11am
Agent.1.Type=Tester1
Agent.1.Vendor=IBM1
Agent.1.Version=1.1
```

5. Define the algorithm and provider.

   You need to define the algorithm and provider of the KeyPairs the platform will use. By default, the preferences file will contain the following setting:

```
#------------------------------------------------------------------------
# Cryptography parameters
#------------------------------------------------------------------------
CryptographyAlgorithm = DSA
CryptographyProvider  = IBMJCE
```

Results

After you add the necessary security data to the ableplatform.preferences file, save your changes. Turning on security for the platform once it is correctly configured is as simple as opening the able.preferences file that defines your platform, and changing the Security property to Security=on. If you are running an unsecured platform, you need to end and restart the agent platform for security changes to take effect.

Starting the agent platform

After you define the agent platform and optionally secure your platform, you need to start all the Java Virtual Machines associated with your agent services using IBM i CL commands.

About this task

Because the platform is made up of one or more Java Virtual Machines, to start the platform you need to start all of the JVMs that make up the platform.

Procedure

1. Use the Start Agent Services (STRAGTSRV) command to start the agent platform.
2. Use the End Agent Services (ENDAGTSRV) command to stop the agent platform.

What to do next

Note: If you have trouble starting or ending the agent platform, you can turn on tracing for the startup programs by adding or setting the QAHA_TRACE system environment variable to '1'. This will create log files in QUSRSYS/QAAHALOG. Files named QSBR<job number>, QSBE<job number, and QEND<job number> will be created for each QAHASBMTER, QAHASBMTEE, and QAHAPLTEND job that has run.

Managing agents

Use the agent console to connect to your domain and begin managing your agents. Find out how to control the level of automation associated with your agents, and how to easily respond to requests and track agent history.

The Intelligent Agents console is a powerful management tool that allows you to work with your agents, and ensure that they are behaving in a manner that meets your expectations. To display the Intelligent Agents node in System i Navigator, select **View** > **Intelligent Agents** from the main menu.

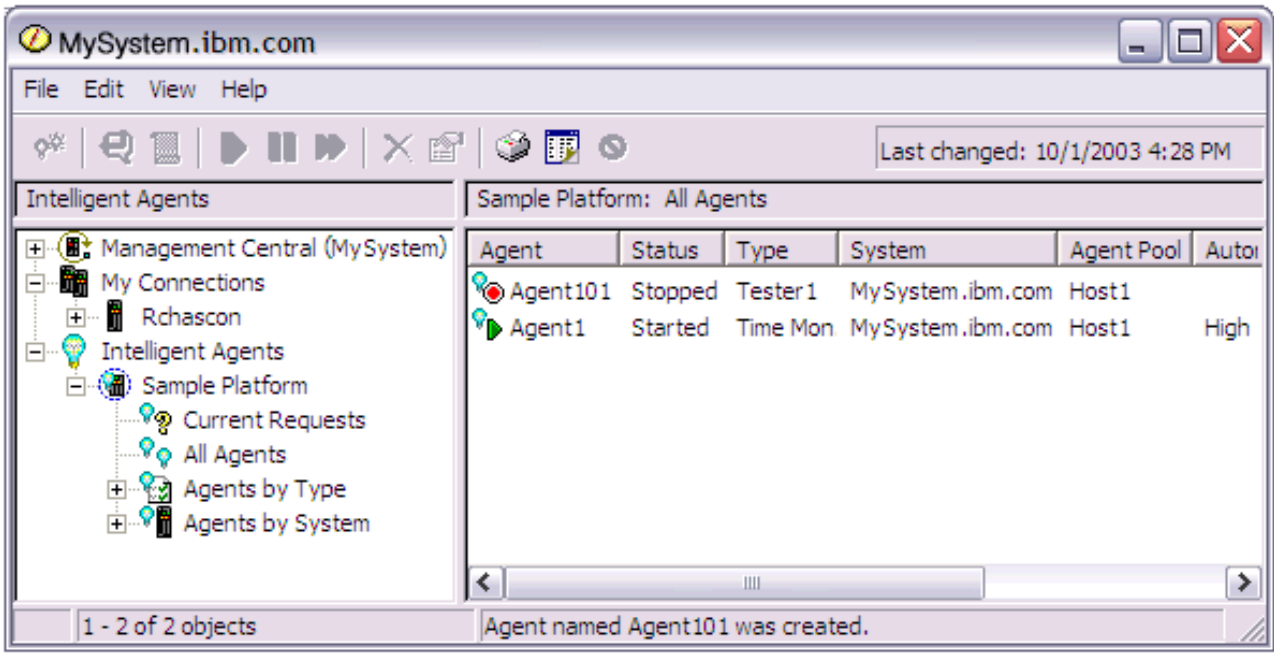


Figure 3. Working with agents in System i Navigator

After you set up your agent environment, you can begin working with the agent console by connecting to your host system (or systems) and creating an instance of an agent to run on that system. Use the console to start, stop, suspend, delete, respond to, and view the history of the agents running on your system or systems. You can also use the console to set up limitations on what actions an agent can perform automatically and what actions require permission.

Automating agents

The agent console gives you the capability to control and customize an agent's behavior by associating a level of automation with that agent.

About this task

The Intelligent Agents console provides a way for you to control the automated actions an agent can take.

To view an agent's capabilities, and change an agent's automation setting in System i Navigator, follow these steps:

Procedure

1. Expand **Intelligent Agents**.
2. Expand your intelligent agent's platform.
3. Select **All Agents**.
4. Right-click the agent you want to work with and select **Properties**.
5. Select the **Automation** tab to display the agent's currently configured automation level.
6. Click **Capabilities** to display a list of the actions this agent can take, and the automation level associated with these capabilities.

Results

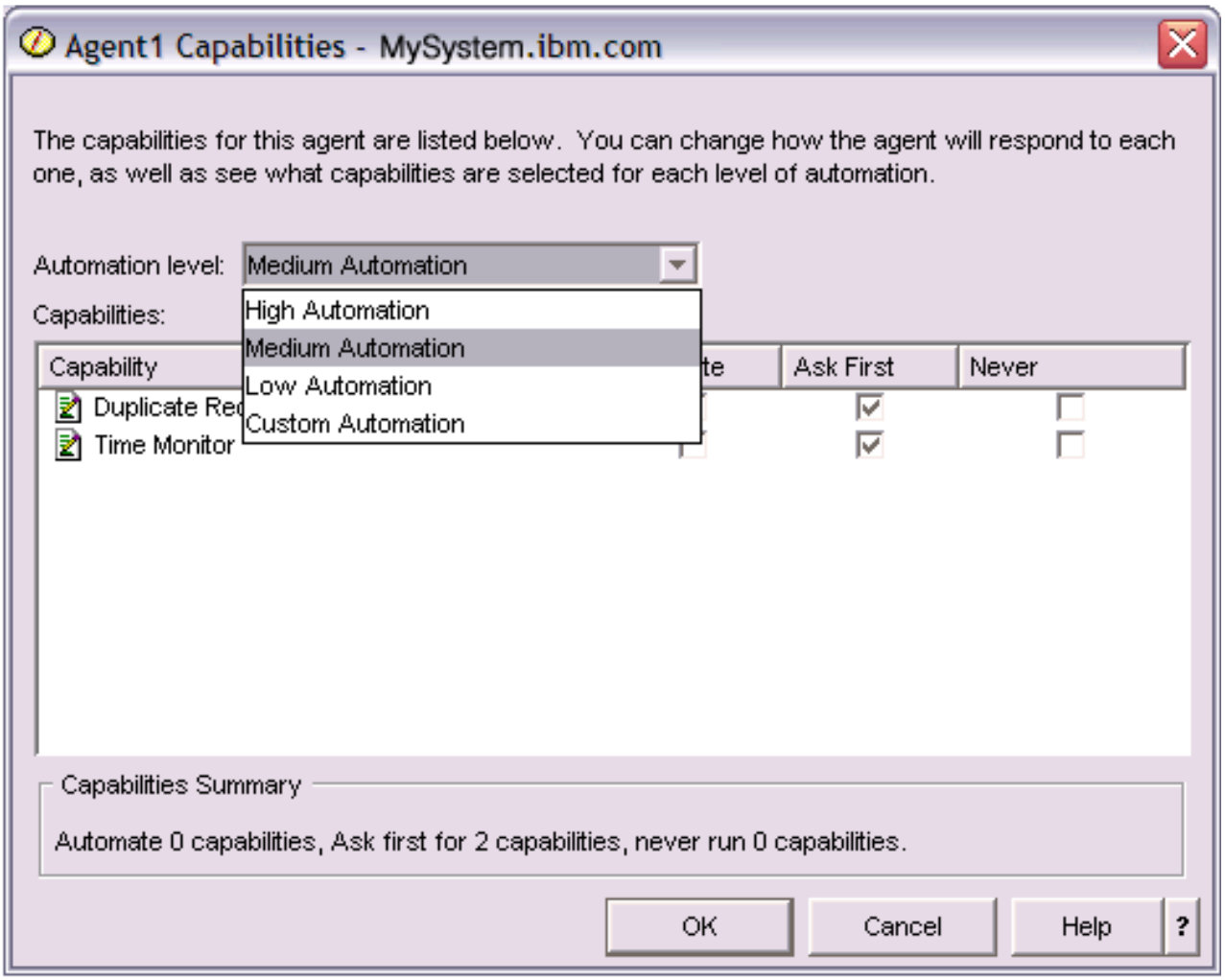


Figure 4. Viewing the automation level associated with the capabilities of a TimeMonitor agent

Every agent has a set of capabilities that define what kinds of actions that agent can perform. The agent console displays an agent's available capabilities associated with the agent's corresponding automation level. Each automation level setting (High automation, Medium automation, Low automation, and Custom automation) will change the states (Automate, Ask first, Never ask) of the available capabilities for the agent.

For example, if an agent has the capability to clear log files when full, when you change the level of automation from **High automation** to **Medium automation**, the agent's capability changes from a state of **Automate** to a state of **Ask first**. The agent now requests permission before it deletes a log file.

Specifying an agent's automation level will determine if an agent automatically performs an action, asks before performing an action, or never performs an action. The possible automation values are:

- **High automation**

  The agent will perform most actions automatically, but will ask before performing certain destructive actions. Depending on the agent, certain actions may require that the agent always request outside intervention before it performs that action, even when set to **High automation**.
- **Medium automation**

The agent will perform some actions automatically, and will ask before performing some actions. Depending on the agent, certain actions may require that the agent always request outside intervention before it performs that action, even when set to **Medium automation**.

- **Low automation**

  The agent will rarely perform any actions automatically. The agent will almost always request outside intervention before it performs any action.

- **Custom automation**

  The agent will automate, ask first, or never perform actions according to how the capabilities are manually configured.

Communicating with an agent

Easily track and respond to agents that are requesting confirmation or permission to take action.

About this task

If the automation setting associated with an agent's capability is set to **Ask first**, before an agent performs an action, the agent will request a response from a user. Some agents will always request a response, regardless of their current automation setting. When an agent requests a response or is waiting to perform an action, the agent's Status field displays **Needs response**.

To respond to an agent in System i Navigator:

Procedure

1. Expand **Intelligent Agents**.
2. Expand your intelligent agents platform.
3. Select **All Agents**.
4. Right-click the agent and select **Respond**.
5. Select the response you want to work with and click the **Respond** button. The agent will display the problem it is currently seeking a response for.
6. Select a response from the list of possible responses in the **Response** field, and click **OK**.

Example

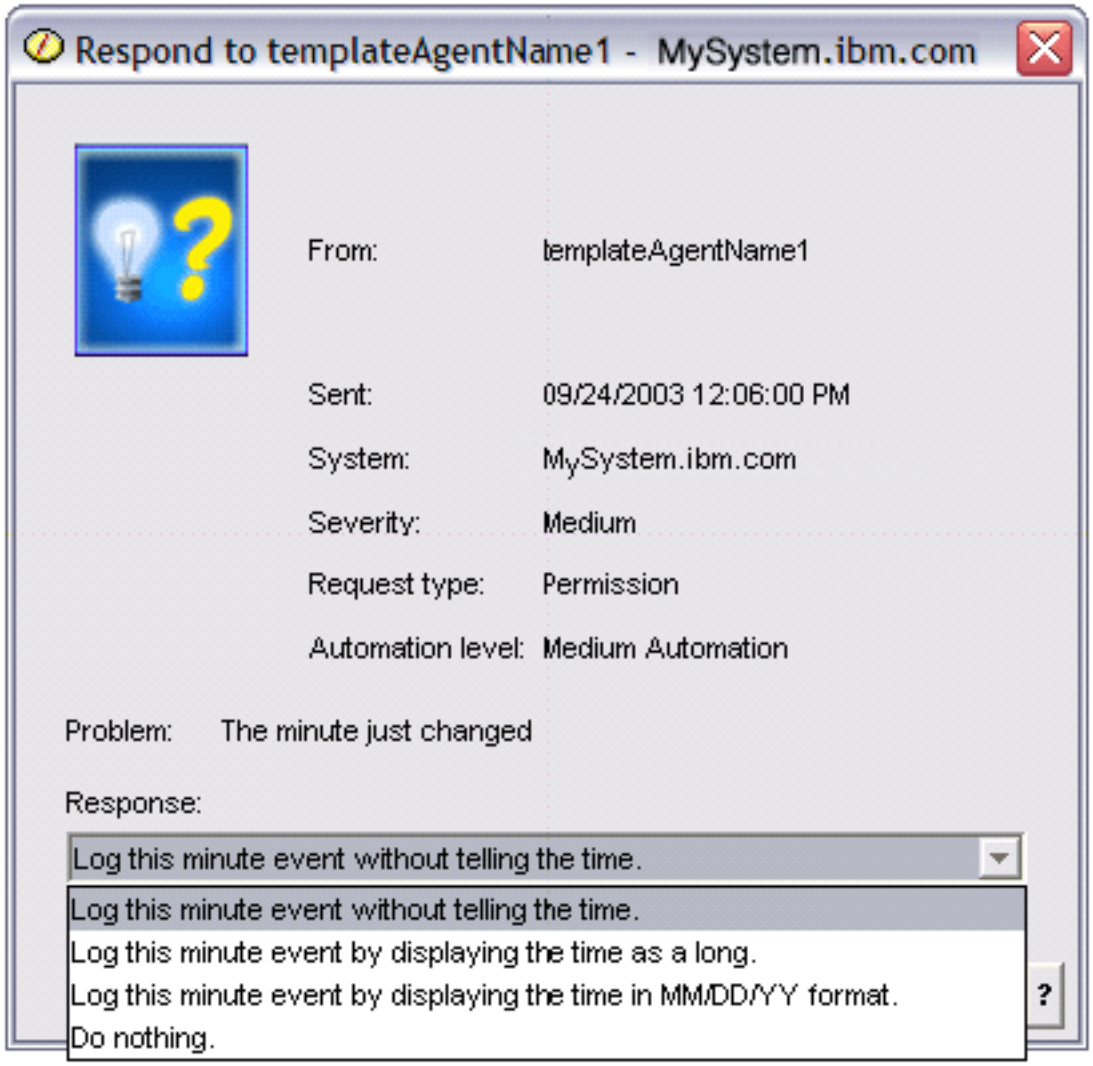


Figure 5. Responding to your agent's request

You can also view a list of all current requests by selecting **Current Requests** under the main **Intelligent Agents** menu.

Viewing agent history

The agent console logs a history of all your agent's actions.

About this task

The agent console allows you to view the history of an agent's requests and actions. The history does not display current requests, only requests and actions that have been responded to. The history log is limited to 1000 entries, and will clear the oldest entry for each new entry that exceeds 1000.

To view an agent's history in System i Navigator, follow these steps:

Procedure

1. Expand **Intelligent Agents**.
2. Expand your intelligent agents platform.

3. Select **All Agents**.
4. Right-click the agent that you want to view the history of, and select **History**.

Results

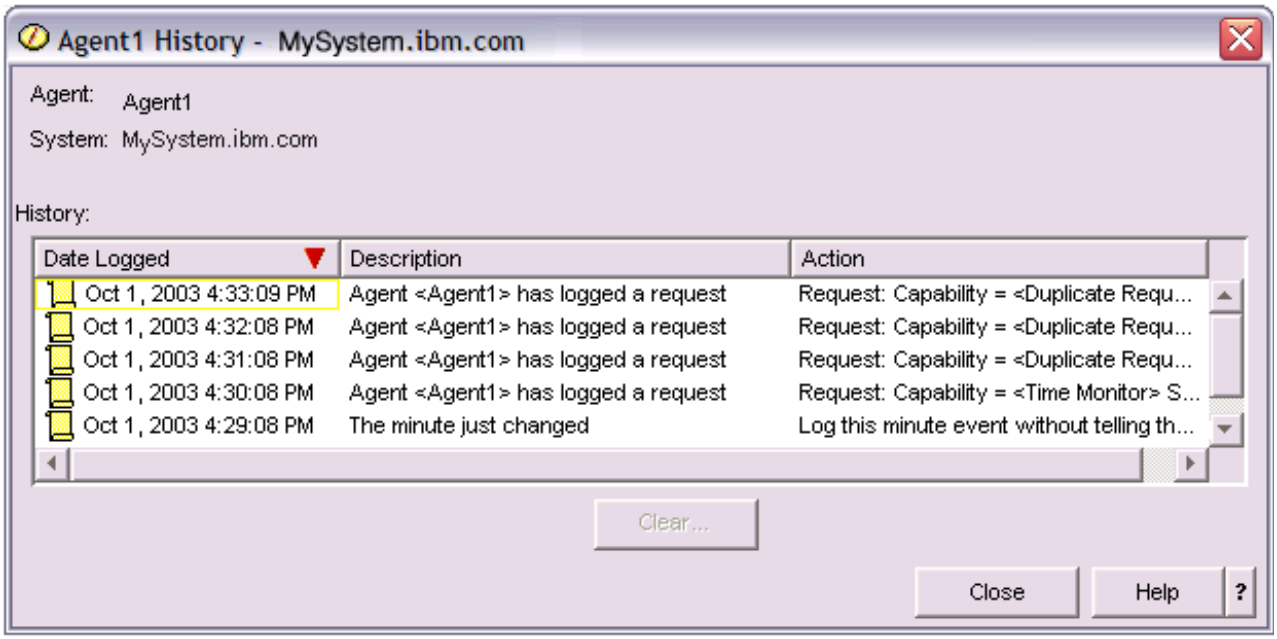


Figure 6. Viewing the history of an agent's requests and actions

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