

# IBM CICS Transaction Server for z/OS, V5.4 is enhanced using the continuous delivery model and the CICS Transaction Server for z/OS, V5.5 open beta offering is introduced

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## Overview

IBM<sup>(R)</sup> CICS<sup>(R)</sup> Transaction Server for z/OS<sup>(R)</sup> (CICS TS), a powerful, mixed-language application server, is capable of processing hundreds of thousands of business transactions every second. The continuous delivery model for CICS TS now further extends the capabilities with innovative new functions and additional enhancements. The following key features are part of this continuous delivery release of CICS TS V5.4:

- Increased support in CICS TS for multi-factor authentication, for CICS management client interface (CMCI) and CICS Explorer<sup>(R)</sup>
- Added support for static data in CICS policy events

Additionally, the following capabilities are introduced into prior CICS TS releases:

- Policy system rules are introduced as the strategic replacement for the CICS system event technology on CICS TS V5.1 and later, by using APAR PI83667.
- Support for static data in all CICS policy events is delivered on all releases of CICS TS V5, by using APAR PI88500.
- Java™ EE 7 Full Platform in integrated-mode Liberty is made available on CICS TS V5.3, by using APAR PI77502.

### Availability of the CICS TS V5.5 open beta offering

The CICS TS V5.5 open beta offering is available for clients who want to explore potential new CICS capability and assess the value to their business. It can be downloaded, at no charge, from the [IBM CICS open beta offering](#) website.

## Key prerequisites

### CICS TS for z/OS, V5.4 (includes CICS TS Value Unit Edition V5.4 and CICS TS Developer Trial V5.4)

- The minimum required hardware prerequisite is IBM System z10<sup>(R)</sup> or subsequent 64-bit z/Architecture<sup>(R)</sup> processors.
- The minimum required level of operating system is IBM z/OS<sup>(R)</sup>, V2.1 (5650-ZOS).
- The minimum required level of Java is:

- IBM 64-bit SDK for z/OS, Java Technology Edition, V7.0, at Service Refresh 10 Fix Pack 1, or later, or
- IBM 64-bit SDK for z/OS, Java Technology Edition, V7.1, at Service Refresh 4 Fix Pack 1, or later, or
- IBM 64-bit SDK for z/OS, Java Technology Edition, V8.0, at Service Refresh 4 Fix Pack 1, or later.

See the [CICS Transaction Server for z/OS 5.4 detailed system requirements](#) website for more details.

### **CICS TS for z/OS, V5.5 open beta offering**

- The minimum required hardware prerequisite is IBM System z196 or subsequent 64-bit z/Architecture processors.
- The minimum required level of operating system is IBM z/OS, V2.2 (5650-ZOS).
- The minimum required level of Java is:
  - IBM 64-bit SDK for z/OS, Java Technology Edition, V7.0, at Service Refresh 10 Fix Pack 1, or later, or
  - IBM 64-bit SDK for z/OS, Java Technology Edition, V7.1, at Service Refresh 4 Fix Pack 1, or later, or
  - IBM 64-bit SDK for z/OS, Java Technology Edition, V8.0, at Service Refresh 4 Fix Pack 1, or later.

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### **Planned availability date**

- January 9, 2018: The majority of CICS TS V5.4 continuous delivery enhancements
- January 31, 2018: The CICS TS V5.5 open beta offering
- March 31, 2018: The remainder of the CICS TS V5.4 continuous delivery enhancements

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### **Description**

#### **CICS TS V5.4 enhancements using the continuous delivery model**

CICS TS for z/OS, V5.4 was generally available on June 16, 2017. With this release, CICS TS V5.4 is updated to deliver a number of new and enhanced capabilities that are delivered by using the standard CICS TS service channel and the continuous delivery model. For details of related Software Announcements for continuous delivery models and general availability of products, see the [Reference information](#) section.

#### ***CICS TS support for multi-factor authentication in CMCI and CICS Explorer***

Security and data protection regulations, such as Payment Card Industry (PCI) Data Security Standard (DSS) 3.2 and the European Union's General Data Protection Regulation (GDPR), require higher levels of user authentication for some or all users. Multi-factor authentication (MFA) is provided for sign-on interfaces for all supported CICS TS releases since MFA was introduced. For more information, refer to the Software Announcement for IBM Multi-Factor Authentication for z/OS, in the [Reference information](#) section.

In this release of CICS TS V5.4, support is increased for MFA by providing support for CMCI and CICS Explorer. Users now have a choice of basic authentication, MFA, or smartcard when logging in to CICS Explorer. This support is introduced in CICS TS 5.4 with APAR PI87691 and CICS Explorer V5.4.0.4.

#### ***Support for system rules in CICS policies across CICS TS V5 releases***

System rules support, which was first introduced in CICS TS 5.4, is now available on all CICS TS V5 releases. Clients who want to monitor the state of system resources

or the overall health of a CICS system can define system rules in CICS policies. System rules define an automated action to be performed, such as issue a message or emit a CICS event, when a particular event happens in a CICS system, such as where a resource state changes, or a threshold is crossed, or an unusual system state or action occurs. System rules provide equivalent function to the earlier system events function and are now supported by:

- CICS TS V5.1, CICS TS V5.2, and CICS TS V5.3 with APAR PI83667
- CICS Explorer V5.4.0.4, or later

### **Support for static data on CICS policy events across CICS TS V5 releases**

CICS policy support is enhanced in all releases of CICS TS V5, with the addition of support which allows users to define items of static data to be emitted with a policy event for both task and system rules. Policy system rules support is now functionally equivalent to the CICS system events technology it replaces. Static data on policy events is now supported by:

- CICS TS V5.1, or later, with APAR PI88500
- CICS Explorer V5.4.0.6

The following table provides details on the new capabilities that are made available:

<b>Capability</b>	<b>Availability method</b>
Support for system rules in CICS policies across CICS TS V5 releases	Use CICS TS V5.1, CICS TS V5.2, and CICS TS V5.3 APAR <a href="#">PI83667</a>
Introduce CICS TS V5.4 MFA support for CICS Explorer	Use CICS TS V5.4 APAR <a href="#">PI87691</a>
Support for static data on CICS policy events across CICS TS V5 releases	Use CICS TS V5.1, CICS TS V5.2, CICS TS V5.3, and CICS TS V5.4 APAR <a href="#">PI88500</a>

### **Introducing the CICS TS V5.5 open beta offering**

The CICS TS V5.5 open beta offering delivers updated capability to allow clients to assess and provide feedback on further, potential future CICS TS capabilities. The following enhanced features are provided:

- New GraphQL API for system management
 

A new HTTP API for CICS TS is introduced to allow the querying of a CICS system using the GraphQL paradigm. This new API allows execution of expressive queries with inherent relationships and reduced latency.
- Enhanced CICS Explorer workflow with aggregation support
 

CICS Explorer is enhanced to allow resource query results to be aggregated. This allows commonalities and disparities between resources to be highlighted quickly. Aggregated results can be grouped by one or more attributes, and the aggregate function changed to show different analyses. These groups can then be expanded to show the underlying resources.
- Enhanced CICS-MQ alert monitor CKAM
 

If CICS TS encounters a maximum task (MXT) condition, then transaction CKAM calculates the maximum number of MQGET calls that an MQMONITOR can issue per second when this condition exists. This imposes a restriction on the number of tasks being started by MQMONITORS while CICS is at MXT.
- Changes in CICS handling of UNIX<sup>(R)</sup> Systems Services with Task Control Blocks (TCBs)
 

CICS TS now manages the releasing of UNIX Systems Services (USS) processes from X8, X9, L8, and L9 TCBs. This management occurs when the TCB is released from the CICS task and returned to the relevant CICS dispatcher pool of open TCBs.
- Enhanced replication logging for VSAM files

A new CICS TS system transaction CFCT and associated program DFHFCLJ1 are introduced to provide tie-up records for VSAM files, which includes non-recoverable VSAM files to a replication log at specified intervals.

- Introduction of new XPI to inquire the value of a feature toggle  
CICS TS now supplies a new parameter domain function DFHPAIQX INQUIRE\_TOGGLE that can be used to obtain the value of feature toggles.
- Introduction of new EXCI commands to query and browse containers on a channel  
The external CICS interface (EXCI) provides four new commands:
  - QUERY CHANNEL
  - STARTBROWSE CONTAINER
  - GETNEXT CONTAINER
  - ENDBROWSE CONTAINER.These new commands enable EXCI users to query the number of containers on a channel and to browse the names of the containers on a channel.
- User terminal access restricted when using a default user ID  
New options, EXIT or DISCONNECT, on the GMTRAN system initialization parameter, are provided for users who use the CICS-supplied sign-on transaction CESL or CESN for log-on. These new options allow users to control what happens if the sign-on fails to complete.
- Enhanced data management from pseudo conversations  
The GNTRAN system initialization parameter is introduced to specify the transaction that CICS is to invoke when a user's terminal-timeout period expires. This new parameter instructs CICS whether to keep a pseudo-conversation in use at a terminal that is the subject of a timeout sign-off.
- Increased minimum Transport Layer Security level  
The default value for the MINTLSLEVEL system initialization parameter, which specifies the minimum TLS protocol that CICS uses for secure TCP/IP connections, is changed to TLS12.
- Enhanced management of requests cancelled by another task  
The CICS command DELAY is enhanced so that a user can distinguish between a delay completing successfully and a delay completing because of a cancel request. If a DELAY command is cancelled by command CANCEL REQID from another task, the DELAY completes with RESP(NORMAL) and a RESP2 value of 23.
- Introduction of statistics for CICS policy rules  
Statistics are now available for CICS policy rules. CICS collects resource statistics for each rule that is defined in a policy, and supplies a summary report. Policy rule statistics are retrieved by using the EXEC CICS PERFORM STATISTICS RECORD POLICY system command.
- Changes to CICS translator and COBOL compiler options  
The CICS translator no longer inserts the COBOL LIB parameter into the CBL card when it compiles COBOL programs. This change does not affect the integrated translator.
- User ID changes for use with Kerberos service principle for a CICS region  
The new KERBEROSUSER system initialization parameter can be used to specify a user ID other than the CICS region user ID, to be associated with the Kerberos service principal for the CICS region.

### **Availability of the CICS TS V5.5 open beta offering**

The CICS TS V5.5 open beta offering is available for clients who want to explore potential new CICS capability and assess the value to their business. It can be downloaded, at no charge, from the [IBM CICS open beta offering](#) website.

Clients can register their interest in future, managed CICS TS beta programs by email, at [CICS Early Programs coordinator](#).

### ***IBM software beta programs overview***

IBM software beta programs allow clients to sign up for and acquire early releases of a product for the purposes of testing, before it is made commercially available. Open beta programs do not usually require clients to register before taking part in the program. Typically, product offerings that are provided by a beta program:

- Are free of charge.
- Are not warranted.
- Have no support of any kind.
- May not be used for productive purposes.
- Contain a disabling device that will prevent it from being used after the test period ends.

Details of the terms and conditions of the software beta program are found in the supplied license files for the offering.

Participants in the beta program gain insight into IBM strategy and direction. They may also afford earlier benefit and payback from new function, and may gain competitive edge and the opportunity for public recognition as a technology leader. Participants are encouraged to provide feedback and articulate their own requirements to IBM, with the potential to help influence and shape future IBM products.

### **Stabilization of support and discontinued functions**

#### ***CICS system events***

CICS system events are deprecated and might be removed in a future release of CICS TS. CICS policies are the strategic replacement for the CICS system events technology. All events emitted by a policy make use of the existing CICS events infrastructure. The underlying CICS events infrastructure and CICS application events remain strategic and are further enhanced in CICS TS V5.4.

### **Section 508 of the US Rehabilitation Act**

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CICS TS V5.4 is capable, when used in accordance with associated IBM documentation, of satisfying the applicable requirements of Section 508 of the Rehabilitation Act, provided that any assistive technology used with the product properly interoperates with it. A US Section 508 Voluntary [Product Accessibility Template \(VPAT\)](#) can be requested.

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## **Hardware and software support services**

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### ***SmoothStart/installation services***

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[IBM Services](#) has the breadth, depth, and reach to manage your services needs. You can leverage the deep technical skills of our [WebSphere<sup>®</sup> lab-based services](#) and the business consulting, project management, and infrastructure expertise of our IBM Global Services team. Also, IBM Services extends our reach through [IBM Business Partners](#) to provide an unmatched portfolio of capabilities. Together, IBM provides the global reach, intellectual capital, industry insight, and technology leadership to support any critical-business need. Further information about [CICS services](#) is also available.

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## Reference information

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### IBM Software Announcements

For information on the June 2017 general availability of CICS TS V5.4, CICS TS Developer Trial V5.4, and CICS TS Value Unit Edition (VUE) V5.4, see Software Announcement [217-113](#), dated May 16, 2017.

For information on IBM z/OS Provisioning Toolkit, V1.0, see Software Announcement [217-020](#), dated January 10, 2017.

For information about CICS Configuration Manager for z/OS, V5.4, see Software Announcement [217-333](#), dated October 24, 2017.

For information about CICS Performance Analyzer for z/OS, V5.4, see Software Announcement [217-115](#), dated May 16, 2017.

The following Software Announcement is relevant to CICS Tools products, at Version 5.3:

- CICS Configuration Manager for z/OS (CICS CM), V5.3
- CICS Deployment Assistant for z/OS (CICS DA), V5.3
- CICS Interdependency Analyzer for z/OS (CICS IA), V5.3

For details, see Software Announcement [215-364](#), dated October 5, 2015.

For information on CICS TG V9.2, see Software Announcement [216-035](#), dated March 8, 2016.

For information on IBM Explorer for z/OS, V3.1, see Software Announcement [217-296](#), dated June 13, 2017.

For information on IBM Multi-Factor Authentication for z/OS, see Software Announcement [216-069](#), dated February 16, 2016.

### CICS web pages

For up-to-date information on CICS family products, see the [CICS](#) home page.

The [CICS support](#) web page can be used to search for terms, phrases, error codes, and APAR numbers.

### CICS SupportPacs

[CICS SupportPacs](#) are available, at no charge, and are designed to complement and extend the capabilities of CICS TS.

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## Program number

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Program number	VRM	Program name
5655-Y04	5.4.0	CICS Transaction Server for z/OS
5722-DFJ	5.4.0	CICS Transaction Server for z/OS Value Unit Edition
5722-DFK	1.1.0	CICS Transaction Server for z/OS Value Unit Edition S&S
5655-Y30	5.4.0	CICS Transaction Server for z/OS Developer Trial
5655-Y15	1.1.0	CICS Transaction Server for z/OS Developer Trial S&S

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## Business Partner information

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If you are a Direct Reseller - System Reseller acquiring products from IBM, you may link directly to [BP Attachment for Announcement Letter 218-003](#) for this announcement. A PartnerWorld ID and password are required (use IBMid).

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## Technical information

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### Specified operating environment

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#### **Hardware requirements**

CICS TS V5.4 runs on any machine that supports the required z/OS operating system. For example, the minimum required hardware prerequisite for CICS TS for z/OS, V5.4 is IBM System z10 or subsequent 64-bit z/Architecture processors.

Further details of supported hardware are available in the general availability Software Announcement for CICS TS V5.4, in the [Reference information](#) section.

#### **Software requirements**

- CICS TS for z/OS, V5.4 (includes CICS TS Value Unit Edition V5.4 and CICS TS Developer Trial V5.4)
  - Operating environment. The minimum required level of operating system for CICS TS V5.4 is IBM z/OS V2.1 (5650-ZOS).
  - Java Runtime Environment. The minimum required level of Java is:
    - IBM 64-bit SDK for z/OS, Java Technology Edition, V7.0, at Service Refresh 10 Fix Pack 1, or later, or
    - IBM 64-bit SDK for z/OS, Java Technology Edition, V7.1, at Service Refresh 4 Fix Pack 1, or later, or
    - IBM 64-bit SDK for z/OS, Java Technology Edition, V8.0, at Service Refresh 4 Fix Pack 1, or later.

The IBM 64-bit SDK for z/OS, Java Technology Edition<sup>1</sup> is required if using:

- Java application programs
- SAML support
- JSON web services
- The CICS Web Services Assistant
- The CICS XML Assistant

<sup>1</sup> [IBM SDK for z/OS, Java Technology Edition](#) is available, without charge, on tape or by download.

Detailed system requirements are available at the [CICS Transaction Server for z/OS 5.4 detailed system requirements](#) website.

- CICS TS for z/OS, V5.5 open beta offering
  - Operating environment. The minimum required level of operating system is IBM z/OS V2.2 (5650-ZOS).
  - The minimum required level of Java is:
    - IBM 64-bit SDK for z/OS, Java Technology Edition, V7.0, at Service Refresh 10 Fix Pack 1, or later, or
    - IBM 64-bit SDK for z/OS, Java Technology Edition, V7.1, at Service Refresh 4 Fix Pack 1, or later, or
    - IBM 64-bit SDK for z/OS, Java Technology Edition, V8.0, at Service Refresh 4 Fix Pack 1, or later.

- CICS Explorer
  - CICS Explorer V5.4 requires CICS TS V5.4 to make use of the latest functionality provided. Details of other [system requirements](#) for both the CICS Explorer and CICS Explorer SDK are available online.
  - [Details relating to service and support](#) for CICS Explorer are also available online.

For additional information on software requirements, see the relevant *Program Directory*. For online information, click on *Detailed system requirements for CICS TS for z/OS, V5.4* topic from document [Detailed System Requirements for CICS Transaction Server](#).

## **Compatibility**

### **Product documentation**

Details are provided in the **Publications** section.

### **Application programming summary**

The high-level programming languages and compilers that are in service on z/OS and have CICS translator support are detailed in the **High-level language support** topic in the CICS TS V5.4 product documentation.

### **Performance considerations**

At general availability, performance information is available in the online product documentation for CICS TS V5.4 in the [IBM Knowledge Center](#).

### **User group requirements**

Requirements for CICS TS can be created, viewed, and voted for in the [IBM Request For Enhancement \(RFE\)](#) community.

## **Planning information**

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### **Packaging**

For details of packaging, physical delivery, and electronic delivery, refer to the general availability Software Announcement for CICS TS V5.4, in the [Reference information](#) section.

### **Security, auditability, and control**

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CICS TS V5.4 uses the security and auditability features of the operating system under which it is running.

The customer is responsible for evaluation, selection, and implementation of security features, administrative procedures, and appropriate controls in application systems and communication facilities.

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## **Ordering information**

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### **Unlicensed documentation**

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#### **CICS TS V5.4 product documentation**

Product documentation for CICS TS V5.4 is refreshed regularly to reflect feedback from users and includes changes that result from IBM Service and continuous



delivery releases. Detailed information is provided in IBM Knowledge Center, in section [What documentation is available?](#)

For CICS TS V5.4, online documentation is available, in [IBM Knowledge Center](#).

PDF format documentation is also provided for download, in [IBM Knowledge Center](#).

Further information on product documentation is available in the CICS TS V5.4 general availability Software Announcement, see the [Reference information](#) section.

### **CICS TS V5.5 open beta offering product documentation**

For the CICS TS V5.5 open beta offering, online documentation will be available from [IBM Knowledge Center](#) on January 31, 2018.

PDF format documentation is also provided for download and will be available from [IBM Knowledge Center](#) on January 31, 2018.

Subsequent updates (technical newsletters or revisions between releases) to the publications shipped with the product will be distributed to the user of record for as long as a license for this software remains in effect. A separate publication order or subscription is not needed.

### **Customized Offerings**

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Product deliverables are shipped only through CBPDO and ServerPac. These customized offerings are offered for internet delivery from Shopz. Internet delivery reduces software delivery time and allows you to install software without the need to handle tapes. For more details on internet delivery, go to the Help section on the [Shopz](#) website.

You choose the delivery method when you order the software. IBM recommends internet delivery. In addition to internet and DVD, the supported tape delivery options include:

- 3590
- 3592

Most products can be ordered in ServerPac the month following their availability in CBPDO. z/OS can be ordered through CBPDO and ServerPac at general availability. Many products will also be orderable in a Product ServerPac without also having to order the z/OS operating system or subsystem.

Shopz and CFSW will determine the eligibility based on product requisite checking. For more details on the product ServerPac, go to the Help section on the [Shopz](#) website.

For additional information on the Product ServerPac option, refer to Software Announcement [212-272](#), dated July 31, 2012.

Production of software product orders will begin on the planned general availability date.

- CBPDO shipments will begin one week after general availability.
- ServerPac shipments will begin two weeks after general availability.

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## **Statement of good security practices**

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IT system security involves protecting systems and information through prevention, detection, and response to improper access from within and outside your enterprise. Improper access can result in information being altered, destroyed, or misappropriated or can result in misuse of your systems to attack others. Without a comprehensive approach to security, no IT system or product should be considered completely secure and no single product or security measure can be completely

effective in preventing improper access. IBM systems and products are designed to be part of a lawful, comprehensive security approach, which will necessarily involve additional operational procedures, and may require other systems, products, or services to be most effective.

**Important:** IBM does not warrant that any systems, products, or services are immune from, or will make your enterprise immune from, the malicious or illegal conduct of any party.

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## IBM Electronic Services

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Electronic Service Agent™ and the IBM Electronic Support web portal are dedicated to providing fast, exceptional support to IBM Systems customers. The IBM Electronic Service Agent tool is a no-additional-charge tool that proactively monitors and reports hardware events, such as system errors, performance issues, and inventory. The Electronic Service Agent tool can help you stay focused on your company's strategic business initiatives, save time, and spend less effort managing day-to-day IT maintenance issues. Servers enabled with this tool can be monitored remotely around the clock by IBM Support, all at no additional cost to you.

Now integrated into the base operating system of AIX® V5.3, AIX V6.1, and AIX V7.1, Electronic Service Agent is designed to automatically and electronically report system failures and utilization issues to IBM, which can result in faster problem resolution and increased availability. System configuration and inventory information collected by the Electronic Service Agent tool also can be viewed on the secure Electronic Support web portal, and used to improve problem determination and resolution by you and the IBM support team. To access the tool main menu, simply type `smitty esa_main`, and select Configure Electronic Service Agent. In addition, ESA now includes a powerful web user interface, giving the administrator easy access to status, tool settings, problem information, and filters. For more information and documentation on how to configure and use Electronic Service Agent, go to the [IBM Electronic Support](#) website.

The IBM Electronic Support portal is a single internet entry point that replaces the multiple entry points traditionally used to access IBM internet services and support. This portal enables you to gain easier access to IBM resources for assistance in resolving technical problems. The My Systems and Premium Search functions make it even easier for Electronic Service Agent tool-enabled customers to track system inventory and find pertinent fixes.

### Benefits

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**Increased uptime:** The Electronic Service Agent™ tool is designed to enhance the Warranty or Maintenance Agreement by providing faster hardware error reporting and uploading system information to IBM Support. This can translate to less wasted time monitoring the symptoms, diagnosing the error, and manually calling IBM Support to open a problem record. Its 24 x 7 monitoring and reporting mean intervention is not required to report errors.

**Security:** The Electronic Service Agent tool is designed to be secure in monitoring, reporting, and storing the data at IBM. The Electronic Service Agent tool is designed to securely transmit either through the internet (HTTPS or VPN) or modem to provide customers a single point of exit from their site. Communication is one way. Activating Electronic Service Agent does not enable IBM to call into a customer's system.

For additional information, go to the [IBM Electronic Service Agent](#) website.

**More accurate reporting:** Because system information and error logs are automatically uploaded to the IBM Support Center in conjunction with the service request, you are not required to find and send system information, decreasing the risk of misreported or misdiagnosed errors. Once inside IBM, problem error data

is run through a data knowledge management system and knowledge articles are appended to the problem record.

**Customized support:** Using the IBMid entered during activation, you can view system and support information in the *My Systems and Premium Search* sections of the [IBM Electronic Support](#) page.

My Systems provides valuable reports of installed hardware and software using information collected from the systems by Electronic Service Agent. Reports are available for any system associated with your IBMid. Premium Search combines the function of search and the value of Electronic Service Agent information, providing advanced search of the technical support knowledgebase. Using Premium search and the Electronic Service Agent information that has been collected from your system, you are able to see search results that apply specifically to your systems.

For more information on how to utilize the power of IBM Electronic Services, contact your IBM Systems Services Representative, or go to the [IBM Electronic Support](#) website.

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Phone: 800-IBM-CALL (426-2255)

Fax: 800-2IBM-FAX (242-6329)

For IBM representative: [askibm@ca.ibm.com](mailto:askibm@ca.ibm.com)

For IBM Business Partner: [pwcs@us.ibm.com](mailto:pwcs@us.ibm.com)

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The IBM Digital Sales Center, our national direct marketing organization, can add your name to the mailing list for catalogs of IBM products.

**Note:** Shipments will begin after the planned availability date.

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## Corrections

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**(Corrected on January 9, 2018)**

The Program number section is revised.