IBM Software Group

CICS And Security

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AGENDA

- SIT Parameters
- EXEC CICS SIGNON and SIGNOFF Change
- MRO Security
- LU62 Security
- US Domain
- Sample Traces

SIT Parameters

- SECURITY=(YES|NO)
- CMDSEC=(ASIS|ALWAYS)
- DFLTUSER=(CICSUSER|userid)
- EJBROLEPRFX=ejbrole-prefix
- ENCRYPTION=(STRONG|WEAK|MEDIUM)
- ESMEXITS=(NOINSTLN|INSTLN)
- KEYRING=key ring name in ESM
- PLTPISEC=(NONE|CMDSEC|RESSEC|ALL)
- PLTPIUSR=userid
- PSBCHK=(NO|YES)

SIT Parameters

SIT Parameter descriptions:

SECURITY : ON|OFF switch for security.
CMSSEC : Specifies whether or not you want CICS to honor the CMDSEC option specified on a transaction's resource definition.
DFLTUSER : Specifies the RACF userid of the default user.
EJBROLEPRFX : Specifies a prefix that is used to qualify the security role defined in an enterprise bean's deployment descriptor.
ENCRYPTION : Specifies the cipher suites that CICS uses for secure TCP/IP connections.
ESMEXITS : Specifies whether installation data is to be passed through the RACROUTE interface to the external security manager (ESM) for use in exits written for the ESM.
KEYRING : Specifies the fully qualified name of the key ring, within the external security manager's database, that contains the keys and X.509 certificates used by CICS support for the secure sockets layer (SSL).
PLTPISEC : Specifies whether or not you want CICS to perform command security or resource security checking for PLT programs during CICS initialization.
PLTPIUSR : Specifies the userid that CICS is to use for security checking for PLT programs that run during CICS initialization.
PSBCHK : Specifies whether CICS is to perform PSB authorization checks for remote terminal users who use transaction routing to initiate a transaction in this CICS region (to access an attached IMS system).

SIT Parameters

- RESSEC=(ASIS|ALWAYS)
- SECPRFX=(NO|YES|prefix)
- SECURITYCLASS =(FCICSFCT|class)
- SECURITYPREFIX=(NO|YES)
- SECURITYPREFIXID=identifier
- SNSCOPE=(NONE|CICS|MVSIMAGE|SYSPLEX)
- USRDELAY=(30|number)
- XAPPC=(NO|YES)
- XCMD=(YES|name|NO)
- XDB2=(NO|name)
- XDCT=({YES|name|NO)

SIT Parameters

SIT Parameter descriptions:

RESSEC : Specifies whether you want CICS to honor the RESSEC option specified on a transaction's resource definition.

SECURITYCLASS : Specifies the name of the RACF general resource class that the server is to use for security checks on coupling facility data table access by CICS regions.

SECPREFIX : Specifies whether CICS is to prefix the resource names in any authorization requests to the external security manager.

SECPREFIXID : Specifies an alternative prefix that the server is to use for security checks on coupling facility data table access by CICS regions, instead of the server region user ID.

SNSCOPE : Specifies whether a userid can be signed on to CICS more than once, within the scope of:
- **A single CICS region**
- **A single MVS image**
- **A sysplex**

USRDELAY : Specifies the maximum time, in the range 0 through 10080 minutes (up to 7 days), that an eligible userid and its associated attributes are to be retained in the user table if the userid is unused.

XAPPC : Specifies whether RACF session security can be used when establishing APPC sessions.

XCMD : Specifies whether you want CICS to perform command security checking, and optionally the RACF resource class name in which you have defined the command security profiles.

XDB2 : Specifies whether you want CICS to perform DB2ENTRY security checking.

XDCT : Specifies whether you want CICS to perform transient data resource security checking.

SIT Parameters

- **XEJB=(YES|NO)**
- **XFCT=(YES|name|NO)**
- **XJCT=(YES|name|NO)**
- **XPCT={YES|name|NO**
- **XPPT=(YES|name|NO)**
- **XPSB=(YES|name|NO)**
- **XTRAN=(YES|name|NO)**
- **XTST=(YES|name|NO)**
- **XUSER=(YES|NO)**

SIT Parameters

SIT Parameter descriptions:

XEJB : Specifies whether support of security roles is enabled.
XFCT : Specifies whether you want CICS to perform file resource security checking, and optionally specifies the RACF resource class name in which you have defined the file resource security profiles.
XJCT : Specifies whether you want CICS to perform journal resource security checking.
XPCT : Specifies whether you want CICS to perform started transaction resource security checking, and optionally specifies the name of the RACF resource class name in which you have defined the started task security profiles.
XPPT : Specifies that CICS is to perform application program resource security checks, and optionally specifies the RACF resource class name in which you have defined the program resource security profiles.
XPSB : Specifies whether you want CICS to perform program specification block (PSB) security checking, and optionally specifies the RACF resource class name in which you have defined the PSB security profiles.
XTRAN : Specifies whether you want CICS to perform transaction-attach security checking, and optionally specifies the RACF resource class name in which you have defined the transaction security profiles.
XTST : Specifies whether you want CICS to perform temporary storage security checking, and optionally specifies the RACF resource class name in which you have defined the temporary storage security profiles.
XUSER : Specifies whether you want CICS to perform surrogate user checks.

SIT Parameters

SIT parameter notes:

The following parameters have abbreviations as follows:

PARAMETER	ABBREVIATION
SECURITY	SEC
SECURITYCLASS	SECCLASS
SECURITYPREFIX	SECPREFIX or SECPRFX
SECURITYPREFIXID	SECPREFIXID

EXEC CICS SIGNON and SIGNOFF

- CICS TS 1.3 and earlier
  - Signon and Signoff were recognized immediately.
  - Userid allowed to be changed mid-flight.
  - Unpredictable whether invoked resource managers are able to recognize a change.
    - IMS
    - DB2
    - VSAM
- CICS TS 2.1 and higher
  - Signon and Signoff operations are considered terminal related only.
  - State of principal facility is modified to reflect correct signon extension (SNEX).
  - Current userid and security capabilities are not affected for the transaction issuing the command.
  - DFH$SNEX and DFH$SNPI can be used to revert to behavior prior to CICS TS 2.1

EXEC CICS SIGNON and SIGNOFF

Notes:

The SIGNON command enables your application program to associate a new user ID with the current terminal, and SIGNOFF signs off a user ID from a terminal. However, in earlier releases there are some potential inconsistencies in the way the SIGNON and SIGNOFF requests are handled. In CICS TS 1.3 and earlier, CICS recognizes the sign-on immediately, and establishes the specified user's security and operating attributes for the terminal. The transaction (and any associated task-related user exits, function shipping, or distributed transaction processing) may have invoked other resource managers (for example, IMS, DB2, or VSAM). It is unpredictable whether these other RMs recognize the sign-on before the transaction terminates, and thus you can only be sure that the new user attributes apply for all resource managers invoked by subsequent transactions at the terminal. The unpredictability applies equally to SIGNOFF. To remove this inconsistency, CICS now processes a SIGNON and SIGNOFF command in way that does *not* affect the current transaction issuing the command.

When you use the SIGNON and SIGNOFF command, the following rules now apply:

The signon and sign off operations are terminal related only. Signon and signoff continue to have no meaning if the transaction does not have a terminal as its principal facility.

When you issue an EXEC CICS SIGNON or SIGNOFF command, CICS modifies the state of the terminal that is the principal facility of the transaction that issues the command.

Signon and signoff do not affect the user ID and security capabilities currently in effect for the transaction issuing the command. This is because:

- **A transaction's user ID and security capabilities are established at transaction-attach time. It is not possible to modify these subsequently during the life of the transaction.**
- **All actions performed by a transaction (whether to a local or remote resource, or to a connected system) take place in the security context established at the time the transaction was attached.**

MRO Security

- Bind-time security with MRO
  - Not optional
- Performed in two phases:
  - Logon time
    - Performed whenever a CICS region logs on to the CICS-supplied interregion communication (IRC) program, DFHIRP.
    - Each CICS region userid must have UPDATE access to its own DFHAPPL.*applid* profile.
  - Connect time
    - Performed when connecting to partner region.
    - Each CICS region userid must have READ access to its partner's DFHAPPL.applid profile.

DFHAPPL profile notes:

These security checks, via RACROUTE calls to the SAF interface, are always performed, regardless of whether the or not MRO partner regions are running with external security active (that is, for both SEC=YES and SEC=NO). In order for a MRO connection to be established between two regions, both the logon and connect security checks in both systems must be completed successfully.

IRC rejects the logon or connect request if:

A security manager was installed, but is either temporarily inactive or inoperative for the duration of the MVS image. This is a fail-safe action, on the grounds that, if the security manager was active, it might retrieve a profile that does not permit access.

IRC allows the logon or connect request if:

There is no security manager installed, or there is an active security manager, but the FACILITY class is inactive, or there is no profile in the FACILITY class. The logon is allowed in this case because there is no evidence that you want to control access to the CICS APPLID.

Link Security with MRO

- Restricts the resources a remote user can access depending on the remote system from which they are accessed.
- Each link between systems is given access authority defined by a link userid.
- Link userid is assigned as the TOR region userid if not specifically defined.
  - Link userid specifically defined on Sessions definition:
    - Known as Preset Security
    - SECURITYNAME on Connection definition is ignored in MRO.
- Transaction routing and/or function shipping will always have at least one security check made.

Link Security with MRO

- Terms to understand:
  - ATTACHSEC=(LOCAL|IDENTIFY)
    - Coded on Connection definition of the receiving side.
      - LOCAL = No userid is passed by connected region.
      - IDENTIFY = Incoming attach requests must supply a userid within Attach FMH 5.
  - Equivalent Systems
    - Link userid, coded on Sessions definition, matches local region userid.
      - Known as Preset Security.
    - Connected region runs with same region userid as local region.

Link Security with MRO

- ATTACHSEC=LOCAL
- Because no end user userid is passed by the connected region, the authority granted to the end user is that of the link itself.
- USERID= not coded on Sessions definition.
  - Region userid of TOR is used to make link security checks.
- USERID= specifically coded on Sessions definition and matches the local region userid.
  - Preset Security
  - Equivalent Systems
  - Default userid of local region is used to make link security checks.
- USERID= specifically coded on Sessions definition but does not match local region userid.
  - Preset userid is used to make link security checks.

Link Security with MRO

- ATTACHSEC=IDENTIFY
- An end user userid is required to be sent by the connected region.
- USERID= not coded on Sessions definition:
  - Region userid of TOR is used to make the link security check.
  - A second security check is made against the userid passed in Attach FMH 5.
- USERID= specifically coded on Sessions definition and matches local region userid.
  - Equivalent Systems
  - Link security check is bypassed.
    - Reduces the number of RACROUT calls to security manger by half.
    - Rely on security check made against the userid passed by TOR.
- USERID= specifically coded on local Sessions definition but does not match local region userid.
  - Preset userid is used to make link security check.
  - A second security check is made against the userid passed by TOR.

Link Security notes:

Link security restricts the resources that a user can access, depending on the remote system from which they are accessed. The practical effect of link security is to prevent a remote user from attaching a transaction or accessing a resource for which the link userid has no authority.

Each link between systems is given an access authority defined by a link userid. A link userid for MRO is a userid defined on your local sessions definition for this connection. Note that for MRO, unlike LU6.2, you can have only one sessions definition per connection, and there can be only one link userid per connection. If there is no preset session userid, the link userid is taken to be the region userid of the TOR region. The SECURITYNAME field on the connection definition is ignored for MRO.

You can never transaction route or function ship to CICS without having at least one security check, but the security checks done are minimized if the link userid matches the local region's userid.

If the userids match, you will always only have one security check. This will be made either against the local region's default user (for ATTACHSEC=LOCAL) or against the userid in the received FMH-5 attach request (ATTACHSEC=IDENTIFY). If the userids do not match, then for ATTACHSEC=LOCAL, resource checks are done only against the link userid. For ATTACHSEC=IDENTIFY you will always have two resource checks. One check is against the link userid, and the other is against the userid received from the remote user in the attach request. If a failure occurs in establishing link security, the link is given the same security authorization as defined for the local region's default user. This would happen, for example, if the preset session userid had been revoked.

User Security with MRO

- Applies only if ATTACHSEC=IDENTIFY is coded on Connection definition.
- Security check is made against the userid passed in Attach FMH-5.
  - Additional to the Link security check if applicable (not bypassed due to Equivalent Systems).
- Sign-on status:
  - Remote user will remain signed-on after the first attach request is complete.
  - Attach requests from the same user are accepted without a new sign-on until either of the following occurs:
    - USRDELAY time period elapses after the last transaction associated with user completes.
    - The CICS system is terminated.

User Security with MRO

User Security notes:

With MRO links, information about the user can be transmitted with the attach request from the remote system. This means that you can protect your resources not only on the basis of which remote system is making the request, but also on the basis of which actual user at the remote system is making the request.

CICS sends userids on ATTACHSEC(IDENTIFY) conversations.

Transaction Security with MRO

- The link must have sufficient authority to initiate the transaction.
- ATTACHSEC(IDENTIFY)
  - The "user" making the request must have sufficient authority to access the system and to initiate the transaction.

Resource and Command Security with MRO

- Performed only if the installed transaction definition specifies that they are required.
  - RESSEC(YES)
  - CMDSEC(YES)
    - Both can be overridden using SIT parameters RESSEC=ALWAYS and CMDSEC=ALWAYS
- Associated SIT parameter must also be turned on.
  - XCMD=(YES|name)
  - XFCT=(YES|name)
  - XJCT=(YES|name)
  - Xaaa=(YES|name)
- ATTACHSEC(LOCAL)
  - Link userid must have sufficient authority to resources the attached transaction accesses.
  - Link userid must have sufficient authority to commands the attached transaction issues.
- ATTACHSEC(IDENTIFY)
  - Both the link userid and the userid passed in via FMH-5 must have sufficient authority to the resources the attached transaction accesses.
  - Both the link userid and the userid passed in via FMH-5 must have sufficient authority to the commands the attached transaction issues.

Transaction Routing Security with MRO

- TOR
  - Security check is made to ensure the user has access to the transaction defined as remote.
  - Determines whether the user is allowed to run the relay program.
- AOR
  - Transaction's principal facility is a surrogate terminal representing the "real" terminal in the TOR.
  - Definition of the remote terminal affects how user security is applied..

Transaction Routing Security with MRO

- Remote terminal definition exists in AOR but does not specify the USERID parameter:
  - Not Preset
  - ATTACHSEC(LOCAL)
    - Transaction, Command and Resource security are limited by the authority of the link userid.
  - ATTACHSEC(IDENTIFY)
    - Transaction and Resource security of the user are established when the remote user is signed on.
    - Signed on userid has security capability assigned in remote region.
- Remote terminal exists in AOR and does specify the USERID parameter:
  - Preset userid will be signed on and used for user security checks.
  - ATTACHSEC will have same affect as above.
- No remote terminal exists in AOR:
  - Preset-security characteristics of the surrogate terminal are determined from the terminal definition shipped from the TOR.
  - ATTACHSEC will have same affect as above.

Transaction Routing Security with MRO

Preset-security notes:

Preset-security for a terminal is determined by the specification of the USERID parameter.

When considering the security aspects of transaction routing from a preset-security terminal, remember that preset-security is an attribute of the terminal rather than of the user who is performing the transaction routing request.

During transaction routing, CICS creates a surrogate terminal in the AOR to represent the terminal at which the transaction routing request was issued. Whether the surrogate terminal has preset-security or not depends upon a number of factors:

If a remote terminal definition exists in the AOR for the terminal in the TOR, and specifies the USERID parameter, the surrogate terminal is preset with this userid. If the USERID parameter is not coded, the surrogate terminal does not have preset-security.

If a remote terminal definition does not exist in the AOR, the preset-security characteristics of the surrogate terminal are determined from the terminal definition shipped from the TOR. If the shipped terminal definition has preset security, the surrogate also has preset security, unless the connection to the AOR is defined with ATTACHSEC=LOCAL, in which case any preset security information shipped to the AOR is ignored.

Security checking done in AOR with MRO ATTACHSEC(LOCAL)

Region userid for AOR	Userid in Sessions definition in AOR	Region userid for TOR	Checking in AOR
USERIDA	Not specified	USERIDA	Check against AOR DFLTUSER (Equivalent Systems)
USERIDA	USERIDA	Anything	Check against AOR DFLTUSER (Equivalent Systems)
USERIDA	Not specified	USERIDB	Check against USERIDB
USERIDA	USERIDB	Anything	Check against USERIDB

Security checking done in AOR with MRO ATTACHSEC(IDENTIFY)

Region userid for AOR	Userid in Sessions definition in AOR	Region userid for TOR	Checking in AOR
USERIDA	Not specified	USERIDA	FMH-5 ATTACH check only (Equivalent Systems)
USERIDA	USERIDA	Anything	FMH-5 ATTACH check only (Equivalent Systems)
USERIDA	Not specified	USERIDB	FMH-5 ATTACH check and USERIDB
USERIDA	USERIDB	Anything	FMH-5 ATTACH check and USERIDB

LU6.2 Security

- **Bind-time Security**
  - **Optional with LU62.**
  - **Prevents unauthorized system from binding a Session to CICS.**
- **Both sides of Connection must support bind-time security.**
- **Implementation:**
  - **SEC=YES in the SIT (both sides).**
  - **XAPPC=YES in the SIT (both sides).**
  - **BINDSECURITY=YES on Connection definition (both sides).**
- **Both sides must contain the same session key.**
  - **SESSKEY defined within profile defined in APPCLU general resource class in RACF.**

LU6.2 Security

Bind-time Security notes:

**The partner system initiating the bind generates a random value known as the seed.
An extract is performed to retrieve the SESSKEY from the APPCLU profile in RACF. The seed is then encrypted with the SESSKEY value to result a new value. The seed is passed to the receiving partner within the bind.**

The receiving partner extracts the SESSKEY from its associated APPCLU profile in RACF and performs the same encryption to result a value.

This resulting value is passed back to the initiating partner where it is compared to determine if the resulting values are equal. If equal, bind-time security succeeds.

LU6.2 Security

Bind-time Security notes:

For each pair of session partners, create two profiles in the APPCLU general resource class. On one system, enter the following RDEFINE command:

RDEFINE APPCLU netid1.luid1.luid2 UACC(NONE) SESSION(SESSKEY(password))

On the other system, enter the following RDEFINE command:

RDEFINE APPCLU netid2.luid2.luid1 UACC(NONE) SESSION(SESSKEY(password))

where:

netid1 and netid2:
are the network IDs (NETID) of the partners. These IDs are specified on the VTAM start option NETID, which is in the ATCSTRxx member of SYS1.VTAMLST.

luid1 and luid2:
are the LU names of the partners. In each case, the first LU name specified is the local LU name and the second is the remote LU name.

session-key
is the 16-hexadecimal-digit or 8-character password that matches the session key of the remote system. Enclose hexadecimal digits in quotes; for example, SESSKEY(X'0123456789ABCDEF').

You should specify the same session key in both systems: if the session keys do not match, the session cannot be established.

Although RACF does not require that you specify a session key, CICS will reject the bind if no session key is specified.

Link Security with LU6.2

- Restricts the resources a remote user can access depending on the remote system from which they are accessed.
- Each link between systems is given access authority defined by a link userid.
- Link userid defined by:
  - SECURITYNAME coded on Connection definition.
  - USERID coded on Sessions definition.
    - Overrides SECURITYNAME if both are coded
  - Mixture of the two (LU62 allows multiple Sessions definitions).
- If no Preset userid is coded:
  - The link userid is taken to be the local region's default userid.
- Transaction routing and/or function shipping will always have at least one security check made.

Link Security with LU6.2

Link Security notes:

To specify all sessions of a connection should have the same link userid, specify the SECURITYNAME attribute of the CONNECTION definition. If you do not specify a value for this attribute, CICS uses the default user ID.

To specify different link userids for individual groups of sessions within a connection, specify the USERID attribute of the SESSIONS definition. For each group of sessions, the value specified overrides the SECURITYNAME attribute of the CONNECTION definition.

User Security with LU6.2

- **Applies only if ATTACHSEC=*non-local* is coded on Connection definition.**
- **Causes a second check to be made against a user signed on to a terminal.**

User Security with LU6.2

- **ATTACHSEC=*non-local***
  - **Remote user will remain signed-on after the first attach request is complete.**
  - **Attach requests from the same user and from the same point of entry are accepted without a new sign-on until either of the following occurs:**
    - **USRDELAY time period elapses after the last transaction associated with user completes.**
    - **The CICS system is terminated.**

Transaction Security with LU6.2

- **ATTACHSEC(LOCAL)**
  - **The link must have sufficient authority to initiate the transaction.**
- **ATTACHSEC(*non-local*)**
  - **The link must have sufficient authority to initiate the transaction.**
  - **The "user" making the request must have sufficient authority to initiate the transaction.**

Resource and Command Security with LU6.2

- Performed only if the installed transaction definition specifies that they are required.
  - RESSEC(YES)
  - CMDSEC(YES)
    - Both can be overridden using SIT parameters RESSEC=ALWAYS and CMDSEC=ALWAYS
- Associated SIT parameter must also be turned on.
  - XCMD=(YES|name)
  - XFCT=(YES|name)
  - XJCT=(YES|name)
  - Xxxx=(YES|name)
- ATTACHSEC(LOCAL)
  - Link must have sufficient authority to resources the attached transaction accesses.
  - Link must have sufficient authority to commands the attached transaction issues.
- ATTACHSEC(*non-local*)
  - Both the link and the user must have sufficient authority to the resources the attached transaction accesses.
  - Both the link and the user must have sufficient authority to the commands the attached transaction issues.

Transaction Routing Security with LU6.2

- TOR
  - Security check is made to ensure the user has access to the transaction defined as remote.
  - Determines whether the user is allowed to run the relay program.
- AOR
  - Transaction's principal facility is a surrogate terminal representing the "real" terminal in the TOR.
  - Definition of the remote terminal affects how user security is applied..

Transaction Routing Security with LU6.2

- **Remote terminal definition exists in AOR but does not specify the USERID parameter:**
  - **Not Preset**
  - **ATTACHSEC(LOCAL)**
    - **Transaction, Command and Resource security are limited by the authority of the link userid.**
  - **ATTACHSEC(IDENTIFY)**
    - **Transaction and Resource security of the user are established when the remote user is signed on.**
    - **Signed on userid has security capability assigned in remote region.**
- **Remote terminal exists in AOR and does specify the USERID parameter:**
  - **Preset userid will be signed on and used for user security checks.**
  - **ATTACHSEC will have same affect as above.**
- **No remote terminal exists in AOR:**
  - **Preset-security characteristics of the surrogate terminal are determined from the terminal definition shipped from the TOR.**
  - **ATTACHSEC will have same affect as above.**

Transaction Routing Security with LU6.2

Preset-security notes:

Preset-security for a terminal is determined by the specification of the USERID parameter.

When considering the security aspects of transaction routing from a preset-security terminal, remember that preset-security is an attribute of the terminal rather than of the user who is performing the transaction routing request.

During transaction routing, CICS creates a surrogate terminal in the AOR to represent the terminal at which the transaction routing request was issued. Whether the surrogate terminal has preset-security or not depends upon a number of factors:

If a remote terminal definition exists in the AOR for the terminal at the TOR, and specifies the USERID parameter, the surrogate terminal is preset with this userid. If the USERID parameter is not coded, the surrogate terminal does not have preset-security.

If a remote terminal definition does not exist in the AOR, the preset-security characteristics of the surrogate terminal are determined from the terminal definition shipped from the TOR. If the shipped terminal definition has preset security, the surrogate also has preset security, unless the connection to the AOR is defined with ATTACHSEC=LOCAL, in which case any preset security information shipped to the AOR is ignored.

Security checking done in AOR with LU6.2 (ATTACHSEC=LOCAL)

Region userid for AOR	SECURITYNAME in Connection definition	USERID in SESSIONS definition	Checking in AOR
USERIDA	Not specified	Not specified	Check against AOR DFLTUSER
USERIDA	Not specified	USERIDA (Equivalent Systems)	Check against AOR DFLTUSER
USERIDA	Not specified	USERIDB	Check against USERIDB
USERIDA	USERIDA	Not specified	Check against AOR DFLTUSER
USERIDA	USERIDB	Not specified	Check against USERIDB
USERIDA	USERIDA	USERIDA (Equivalent Systems)	Check against AOR DFLTUSER
USERIDA	USERIDA	USERIDB	Check against USERIDB
USERIDA	USERIDB	USERIDA (Equivalent Systems)	Check against AOR DFLTUSER
USERIDA	USERIDB	USERIDB	Check against USERIDB
USERIDA	USERIDB	USERIDC	Check against USERIDC

Security checking done in AOR with LU6.2 (ATTACHSEC=*non-local*)

Region userid for AOR	SECURITYNAME in Connection definition	USERID in SESSIONS definition	Checking in AOR
USERIDA	Not specified	Not specified	Transmitted userid and AOR DFLTUSER
USERIDA	Not specified	USERIDA (Equivalent Systems)	Transmitted userid only
USERIDA	Not specified	USERIDB	Transmitted userid and USERIDB
USERIDA	USERIDA	Not specified	Transmitted userid only
USERIDA	USERIDA	USERIDA (Equivalent Systems)	Transmitted userid only
USERIDA	USERIDA	USERIDB	Transmitted userid and USERIDB
USERIDA	USERIDB	Not specified	Transmitted userid and USERIDB
USERIDA	USERIDB	USERIDC	Transmitted userid and USERIDC

US DOMAIN

VERBX DFHPD630 'US=3'

```
===US: USER DOMAIN - SUMMARY

==US: USXD SUMMARY
TRAN    PRINCIPAL SESSION    EDF
NUM     TOKEN     TOKEN      TOKEN
_____________________________________
00090   00000006


=US: USUD SUMMARY

  Key for USUD summary table:
    ADDCOUNT : Adduser use count
    TRNCOUNT : Transaction use count
    CLASSES  : Operator classes bitmap, ordered 24 to 1
    PRTY     : Operator priority
    XRFSOFF  : XRF user signon.  Either NOFORCE or FORCE
    TIMEOUT  : Timeout interval in hours and minutes
 TIMEOUT  : Timeout interval in hours and minutes

 TOKEN    USERID     GROUPID    ADDCOUNT TRNCOUNT OPID CLASSES PRTY TIMEOUT XRFSOFF ACEE USERNAME
_____________________________________________________________________________________________
_

00000001 CICSUSER   CICSIDS          1        1      000001    0    0:00  NOFORCE 7F72BA28 BABEY, SHANE
00000006 USASSC2    TSOUSER          1        1      000001    0    0:00  NOFORCE 7F72B368 ED ADDISON
00000002 USASSC5    TSOUSER          1        1      000001    0    0:00  NOFORCE 7F72B640 ED ADDISON
00000005 USASSC6    TSOUSER          1        0      000001    0    0:00  NOFORCE 7F72B598 ADDISON, EDWARD A.
```

Note: Token 1 is always the region default userid and token 2 is always the region userid.

US DOMAIN

```
==US: USER DOMAIN ANCHOR BLOCK

 USA 13D24000
    0000  00A86EC4 C6C8E4E2 C1D5C3C8 D6D94040  *.y>DFHUSANCHOR  *    13D24000
    0010  02010000 00000008 C3C9C3E2 E4E2C5D9  *........CICSUSER*    13D24010
    0020  40400000 000006B4 C9E8D5E7 D8404040  *  ......IYNXQ   *    13D24020
    0030  13C9F3A4 00000032 13C9F50C 00000034  *.I3u.....I5.....*    13D24030
    0040  13C9F458 00000033 33139020 0000006F  *.I4.....3.....?*    13D24040
    0050  00000000 00000000 13D25080 13D240B0  *.........K&..K .*    13D24050
    0060  13D00FB0 13D0BB20 00000000 00000000  *.}...}.........*    13D24060
    0070  13D2511F 13D27030 00000001 00000006  *.K...K.........*    13D24070
    0080  13BFFC48 13BFFC78 00000000 00000000  *................*    13D24080
    0090  00000000 0000002A 00000002 BC89EEB3  *.............i..*    13D24090
    00A0  524F1988 00000000                    *.|.h....        *    13D240A0

==US: USXD TRANSACTION DATA FOR TASK 00090
 USXD 13D27070

    0000  13D25200 13D25200 00000000 00000000  *.K...K.........*    13D27070
    0010  00000006 00000000 00000000 80        *.............   *    13D27080

=US: USUD USER DATA                        Pointer to default userid's USUD
 USUD 13D25080

    0000  00000001 00000000 13CE8530 00000001  *.........e.....*    13D25080
    0010  00000001 00000001 7F72BA28 00000108  *........".......*    13D25090
    0020  C3C9C3E2 E4E2C5D9 40400000 00000000  *CICSUSER  ......*    13D250A0
    0030  00000000 00000007 C3C9C3E2 C9C4E240  *........CICSIDS *    13D250B0
    0040  40400000 00000000 00000000 00000000  *  ..............*    13D250C0
    0050  C9E8D5E7 D8404040 00404040 00000100  *IYNXQ   .   ....*    13D250D0
    0060  C2C1C2C5 E86B40E2 C8C1D5C5 40404040  *BABEY, SHANE    *    13D250E0
    0070  40404040 00404040                    *    .           *    13D250F0

Note: CICSUSER = region default userid
      CICSIDS  = RACF group a userid is associated with
      IYNXQ    = SYSID of region
      USXD     = Pointed to by second word of US TOKEN in XM domain
```

US DOMAIN

```
USUD 13D25200

   0000  00000006 00000000 13CE85F0 00000006  *.........e0....*    13D25200
   0010  00000001 00000001 7F72B368 00000107  *........".......*    13D25210
   0020  E4E2C1E2 E2C3F240 40400000 00000000  *USASSC2   ......*    13D25220
   0030  00000000 00000007 E3E2D6E4 E2C5D940  *........TSOUSER *    13D25230
   0040  40400001 C9E8C3D5 E3C3F3F5 00000000  *  ..IYCNTC35....*    13D25240
   0050  C9E8D5E7 D8404040 00404040 00000100  *IYNXQ   .   ....*    13D25250
   0060  C5C440C1 C4C4C9E2 D6D54040 40404040  *ED ADDISON      *    13D25260
   0070  40404040 00404040                    *    .           *    13D25270

USUD 13D25100

   0000  00000002 00000000 13CE8570 00000002  *.........e.....*    13D25100
   0010  00000001 00000001 7F72B640 00000107  *........".. ....*    13D25110
   0020  E4E2C1E2 E2C3F540 40400007 E3E2D6E4  *USASSC5   ..TSOU*    13D25120
   0030  E2C5D940 40400007 E3E2D6E4 E2C5D940  *SER   ..TSOUSER *    13D25130
   0040  40400000 00000000 00000000 00000000  *  ..............*    13D25140
   0050  C9E8D5E7 D8404040 00404040 00000100  *IYNXQ   .   ....*    13D25150
   0060  C5C440C1 C4C4C9E2 D6D54040 40404040  *ED ADDISON      *    13D25160
   0070  40404040 00404040                    *    .           *    13D25170

USUD 13D25180

   0000  00000005 00000000 13CE85B0 00000005  *.........e.....*    13D25180
   0010  00000001 00000000 7F72B598 00000107  *........"..q....*    13D25190
   0020  E4E2C1E2 E2C3F640 40400000 00000000  *USASSC6   ......*    13D251A0
   0030  00000000 00000007 E3E2D6E4 E2C5D940  *........TSOUSER *    13D251B0
   0040  40400001 C9E8C3D5 E3C3F3F4 00000000  *  ..IYCNTC34....*    13D251C0
   0050  C9E8D5E7 D8404040 00404040 00000100  *IYNXQ   .   ....*    13D251D0
   0060  C1C4C4C9 E2D6D56B 40C5C4E6 C1D9C440  *ADDISON, EDWARD *    13D251E0
   0070  C14B4040 00404040                    *A.  .           *    13D251F0

Note: USUD at 13D25200 is pointed to by USXD on previous page.
```

XM DOMAIN

VERBX DFHPD630 'XM'

==XM: TRANSACTION SUMMARY

Tran id	Tran num	TxnAddr TxdAddr	Start code	Sys Tran	Stat	DS token	Facility type	Facility token	AP token	PG token	XS token	US token	RM token	SM token	MN token
CSNC	00021	13D09030	C	Yes	ACT	020A0003	None		0005D680	00000000	00000000	00000000	148AD648	13CE0290	FF69F700
		14A1B5E0							01000000	13DF93D8	00000000	00000000	148AD770	00000000	00000000
CSHQ	00023	13D09340	C	Yes	ACT	000E0003	None		13DB4680	00000000	00000000	00000000	13DFC648	13CE0020	FF69EF00
		13DD89F0							00000000	13DF9078	00000000	00000000	13DFC770	00000000	00000000
CSNE	00024	13D09960	C	Yes	ACT	00880003	None		13DB5080	00000000	00000000	00000000	1489D030	13CE00F0	FF69F000
		14A24440							01000000	13DF9198	00000000	00000000	1489D158	00000000	00000000
CEMT	00090	13D0A650	T	No	ACT	0404005D	Terminal	148EB6F0	0005B680	00000000	13D82068	13D2521F	14896648	13CE0124	FF69F400
		14A1BB90							00000000	13DF91E0	C0000000	13D27070	14896770	00000000	00000000

NOTE: First word of US token points to the actual user data portion of the USUD and second word points to the USXD.

Using the AP Trace Component

- Use AP=1-2 tracing to capture SNEX before and after entries.
- Turned on via CETR (PF4 for components from main panel).

```
AP 2048 SNUS  DATA  - SNEX_BEFORE TCTTE(148EB6F0)

        TASK-00048 KE_NUM-0047 TCB-QR   /008CB630 RET-94556D86 TIME-20:03:03.8044056569 INTERVAL-00.0000033750       =000688=
          1-0000  148EB6F0                                                              *...0                           *
          2-0000  00000000 00000000 00000000 00000000  00000000 00000000 00000000 00000000  *................................*
            0020  00000000 00000000 00000000 00000000  00000000 00000000                  *........................        *
```

```
AP 2049 SNUS  DATA  - SNEX_AFTER TCTTE(148EB6F0)

       TASK-00048 KE_NUM-0047 TCB-QR   /008CB630 RET-94556D86 TIME-20:03:03.8269035937 INTERVAL-00.0000035625       =000747=
         1-0000  148EB6F0                                                              *...0                           *
         2-0000  00000004 00000000 00000000 00000000  00000000 00800000 00000004 00000000  *................................*
           0020  00000000 00000000 00000000 00000000  00000000 00000000                  *........................        *
```

SNEX Notes

SNEX notes page:

The Signon Extension (SNEX) has three important offsets. Offsets x'0', x'4' and x'20'. Offset x'0' is the SNEX_PRINCIPAL_USER_TOKEN. Offset x'4' is the SNEX_SESSION_USER_TOKEN. Offset x'20' are various flag settings to indicate the presence of a session user token, whether or not preset security is being used and the session signon status.

```
(20)    CHARACTER        1    SNEX_FLAGS
          1...  ....          SNEX_PRESET_
                              SECURITY
          .1..  ....          SNEX_SESSION_
                              SIGNED_ON
          ..1.  ....          SNEX_PRESET_
                              USERID_PRESENT
          ...1  ....          SNEX_SESSION_
                              SIGNED_
                              ON_AS_DEFAULT
          ....  1...          SNEX_SESSION_
                              USER_TOKEN_X
          ....  .1..          SNEX_LUIT_
                              TABLE_UPDATED
          ....  ..1.          SNEX_EQUIVALENT_
                              SYSTEMS
          ....  ...1          *                Reserved
```

EXEC CICS SIGNON Trace

Sample trace showing EXEC CICS SIGNON:

```
AP 00E1 EIP    ENTRY SIGNON                                    REQ(0004) FIELD-A(14B4E0B8 ..\.) FIELD-B(08007402 ....)
                                                                         RET-946F97BE 20:03:03.8031392500 00.0000024062 =000678=
AP E110 EISR   ENTRY TRACE_ENTRY PARM_ADDRESS(14B4E2A4)                  RET-8008244A 20:03:03.8031403437 00.0000010937 =000679=
AP E160 EXEC   ENTRY SIGNON USERID('USASSC4 ' AT X'14B4E4F3') PASSWORD( AT X'14B4E7B8') NEWPASSWORD( AT X'14B4E7C0')
                            OIDCARD('.....................................................................' AT X'14B4E51B')
                            ESMRESP( AT X'14B4E384') LANGUAGECODE(X'000000' AT X'14B4E55C') LANGINUSE( AT X'14B4E7B5')
                            GROUPID('........' AT X'94B4E4FB') NOHANDLE PLX STMT_#(42990000)
                                                                         RET-8008244A 20:03:03.8031534531 00.0000131093 =000680=
AP E111 EISR   EXIT  TRACE_ENTRY/OK                                      RET-8008244A 20:03:03.8031560156 00.0000025625 =000681=
.
.
AP 2040 SNUS   ENTRY SIGNON_TERMINAL_USER USERID(USASSC4) USERID_LENGTH(7) PASSWORD(.........) PASSWORD_LENGTH(0)
                            SCOPE_CHECK(YES)                             RET-9454924A 20:03:03.8043834694 00.0011987663 =000684=
AP 2080 SNTU   ENTRY SIGNON_TERMINAL_USER USERID(USASSC4) USERID_LENGTH(7) PASSWORD(.........) PASSWORD_LENGTH(0)
                            SCOPE_CHECK(YES)                             RET-94556D86 20:03:03.8043917194 00.0000082500 =000685=
.
.
AP 2048 SNUS   DATA  - SNEX_BEFORE TCTTE(148EB6F0)

          TASK-00048 KE_NUM-0047 TCB-QR   /008CB630 RET-94556D86 TIME-20:03:03.8044056569 INTERVAL-00.0000033750       =000688=
            1-0000  148EB6F0                                                              *...0                          *
            2-0000  00000000 00000000 00000000 00000000  00000000 00000000 00000000 00000000  *.............................*
              0020  00000000 00000000 00000000 00000000  00000000 00000000                    *........................     *

US 0301 USAD   ENTRY ADD_USER_WITH_PASSWORD SIGNON_TYPE(USER_SIGN_ON) USERID_LENGTH(7) USERID(USASSC4) PASSWORD_LENGTH
                            (0) PASSWORD(.........) SCOPE_CHECK(YES) ENTRY_PORT_TYPE(TERMINAL) ENTRY_PORT_NAME
                 (IYCNTC31)                                  RET-9455AECA 20:03:03.8044322819 00.0000266250 =000689=
DD 0301 DDLO   ENTRY LOCATE DIRECTORY_TOKEN(13D00FB0) ENTRY_NAME(1486BBB8) DIRECTORY_NAME(USD1) NAME(USASSC4 )
                                                                         RET-9407C0E6 20:03:03.8044395163 00.0000072343 =000690=
DD 0302 DDLO   EXIT  LOCATE/EXCEPTION REASON(NOT_FOUND) DATA_TOKEN(13D0A650 , 0000047C)
                                                                         RET-9407C0E6 20:03:03.8044420476 00.0000025312 =000691=
XS 0201 XSAD   ENTRY ADD_USER_WITH_PASSWORD SIGNON_TYPE(USER_SIGN_ON) USERID_LENGTH(7) USERID(USASSC4) PASSWORD_LENGTH
                            (0) PASSWORD() ENTRY_PORT_TYPE(TERMINAL) ENTRY_PORT_NAME(IYCNTC31) APPLID(IYNXQ)       =000692=
                                                                         RET-9407A6EC 20:03:03.8044453288 00.0000032812
XS FE01 XSSA   ENTRY ADD_USER_WITH_PASSWORD USERID_LENGTH(7) USERID(USASSC4) PASSWORD_LENGTH(0) PASSWORD(.........)
                    ENTRY_PORT_TYPE(TERMINAL) ENTRY_PORT_NAME(IYCNTC31) APPLID(IYNXQ)
                                                                         RET-9407A6EC 20:03:03.8045027194 00.0000573906 =000693=
XS FE02 XSSA   EXIT  ADD_USER_WITH_PASSWORD/OK SAF_RESPONSE(0) SAF_REASON(0) ESM_RESPONSE(0) ESM_REASON(0)
                    SECURITY_TOKEN(13CE85F0 , 00000004)                  RET-9407A6EC 20:03:03.8243193293 00.0198166098*=000694=
```

EXEC CICS SIGNON Trace

```
XS 0202 XSAD  EXIT  ADD_USER_WITH_PASSWORD/OK SAF_RESPONSE(0) SAF_REASON(0) ESM_RESPONSE(0) ESM_REASON(0)
                    SECURITY_TOKEN(13CE85F0 , 00000004)                RET-9407A6EC 20:03:03.8243812043 00.0000618750 =000695=
XS 0201 XSAD  ENTRY INQUIRE_USER_ATTRIBUTES SECURITY_TOKEN(13CE85F0 , 00000004)
                                                                       RET-9407BF06 20:03:03.8243864074 00.0000052031 =000696=
XS FE01 XSSB  ENTRY INQUIRE_USER_ATTRIBUTES SECURITY_TOKEN(13CE85F0 , 00000004)
                                                                       RET-9407BF06 20:03:03.8244213762 00.0000349687 =000697=
XS FE04 XSSB  *EXC* INQUIRE_USER_ATTRIBUTES/EXCEPTION REASON(PROFILE_UNKNOWN)
                                                                       RET-9407BF06 20:03:03.8250285012 00.0006071250 =000698=
.
.
XS 0202 XSAD  EXIT  INQUIRE_USER_ATTRIBUTES/EXCEPTION REASON(PROFILE_UNKNOWN) SAF_RESPONSE(4) SAF_REASON(8)
                    ESM_RESPONSE(8) ESM_REASON(8) USERID_LENGTH(7) USERID(USASSC4) USERNAME(ED ADDISON)
                    NATIONAL_LANGUAGE() CURRENT_GROUPID_LENGTH(7) CURRENT_GROUPID(TSOUSER) XRFSOFF() OPIDENT
                    (...) OPPRTY(0) OPCLASS(000000) TIMEOUT(0) ACEE_PTR(7F72B338)
                                                                       RET-9407BF06 20:03:03.8252124074 00.0000039218 =000703=
.
.
DD 0201 DDDI  ENTRY ADD_ENTRY DATA_TOKEN(13D25200 , 0000047C) ENTRY_NAME(1486BBB8) DIRECTORY_TOKEN(13D00FB0) SUSPEND
                    (YES) DIRECTORY_NAME(USD1) NAME(USASSC4 )           RET-94079A62 20:03:03.8252287043 00.0000064843 =000706=
.
.
DD 0202 DDDI  EXIT  ADD_ENTRY/OK                                       RET-94079A62 20:03:03.8252529543 00.0000014531 =000711=
DD 0201 DDDI  ENTRY ADD_ENTRY DATA_TOKEN(13D25200 , 13BFF4D8) ENTRY_NAME(13D2407C) DIRECTORY_TOKEN(13D0BB20) SUSPEND
                    (YES) DIRECTORY_NAME(USD2) NAME(....)               RET-94079A62 20:03:03.8252558137 00.0000028593 =000712=
.
.
DD 0202 DDDI  EXIT  ADD_ENTRY/OK                                       RET-94079A62 20:03:03.8252683293 00.0000013750 =000717=
US 0302 USAD  EXIT  ADD_USER_WITH_PASSWORD/OK SAF_RESPONSE(4) SAF_REASON(8) ESM_RESPONSE(8) ESM_REASON(8) USER_TOKEN
                    (00000004)                                         RET-9455AECA 20:03:03.8252710793 00.0000027500 =000718=
US 0301 USAD  ENTRY INQUIRE_USER USER_TOKEN(00000004)                  RET-9455B984 20:03:03.8252775637 00.0000064843 =000719=
DD 0301 DDLO  ENTRY LOCATE DIRECTORY_TOKEN(13D0BB20) ENTRY_NAME(1486B930) DIRECTORY_NAME(USD2) NAME(....)
                                                                       RET-9407C0E6 20:03:03.8252818293 00.0000042656 =000720=
DD 0302 DDLO  EXIT  LOCATE/OK DATA_TOKEN(13D25200 , 13BFF4D8)          RET-9407C0E6 20:03:03.8252839699 00.0000021406 =000721=
US 0302 USAD  EXIT  INQUIRE_USER/OK USERID_LENGTH(7) USERID(USASSC4) NATIONAL_LANGUAGE() ENTRY_PORT_TYPE(TERMINAL)
                    ENTRY_PORT_NAME(IYCNTC31) OPERATOR_PRIORITY(0) OPERATOR_IDENT() OPERATOR_CLASSES(000001)
                    CURRENT_GROUPID_LENGTH(7) CURRENT_GROUPID(TSOUSER) XRF_REFLECTABLE(YES) TIMEOUT(0)
                                                                       RET-9455B984 20:03:03.8252854074 00.0000014375 =000722=
.
.
ME 0301 MEME  ENTRY SEND_MESSAGE MESSAGE_NUMBER(44C) INSERT1(1486B07B , 00000001) INSERT2(1486B448 , 00000008) INSERT3
                    (00049152 , 00000007) INSERT4(1486B440 , 00000007) COMPONENT_ID(SN)
                                                                       RET-9455EB90 20:03:03.8267016562 00.0000130468 =000727=
```

EXEC CICS SIGNON Trace

```
.
.
.
DU 0500 DUDT  ENTRY INQUIRE_SYSTEM_DUMPCODE SYSTEM_DUMPCODE(SN1100)
                                                          RET-93A18004 20:03:03.8267561250 00.0000035937 =000735=
.
.
.
ME 0302 MEME  EXIT  SEND_MESSAGE/OK                       RET-9455EB90 20:03:03.8269000312 00.0000010781 =000746=

AP 2049 SNUS  DATA  - SNEX_AFTER TCTTE(148EB6F0)

       TASK-00048 KE_NUM-0047 TCB-QR   /008CB630 RET-94556D86 TIME-20:03:03.8269035937 INTERVAL-00.0000035625       =000747=
         1-0000  148EB6F0                                                          *...0                            *
         2-0000  00000004 00000000 00000000 00000000  00000000 00800000 00000004 00000000  *.............................*
           0020  00000000 00000000 00000000 00000000  00000000 00000000                    *........................    *

AP 2081 SNTU  EXIT  SIGNON_TERMINAL_USER/OK SAF_RESPONSE(4) SAF_REASON(8) ESM_RESPONSE(8) ESM_REASON(8)
                                                          RET-94556D86 20:03:03.8269059375 00.0000023437 =000748=
AP 2041 SNUS  EXIT  SIGNON_TERMINAL_USER/OK SAF_RESPONSE(4) SAF_REASON(8) ESM_RESPONSE(8) ESM_REASON(8)
                                                          RET-9454924A 20:03:03.8269089687 00.0000030312 =000749=
AP E110 EISR  ENTRY TRACE_EXIT PARM_ADDRESS(14B4E2A4)     RET-800837FC 20:03:03.8269204531 00.0000114843 =000750=
AP E161 EXEC  EXIT  SIGNON USERID('USASSC4 ' AT X'14B4E4F3') PASSWORD( AT X'14B4E7B8') NEWPASSWORD( AT X'14B4E7C0')
                    OIDCARD('.............................................................' AT X'14B4E51B')
                    ESMRESP(0 AT X'14B4E384') LANGUAGECODE(X'000000' AT X'14B4E55C') LANGINUSE(X'C5D5E4' AT
                    X'14B4E7B5') GROUPID('........' AT X'94B4E4FB') RESP(0) RESP2(0) NOHANDLE PLX STMT_#
                    (42990000)                            RET-800837FC 20:03:03.8269370781 00.0000166250 =000751=
AP E111 EISR  EXIT  TRACE_EXIT/OK                         RET-800837FC 20:03:03.8269399687 00.0000028906 =000752=
AP 00E1 EIP   EXIT  SIGNON OK                  REQ(00F4) FIELD-A(00000000 ....) FIELD-B(00007402 ....)
                                                          RET-800837FC 20:03:03.8281644067 00.0012244379 =000753=
```

EXEC CICS Signon Trace

Supporting US Domain Summary:

```
=US: USUD SUMMARY

  Key for USUD summary table:
    ADDCOUNT : Adduser use count
    TRNCOUNT : Transaction use count
    CLASSES  : Operator classes bitmap, ordered 24 to 1
    PRTY     : Operator priority
    XRFSOFF  : XRF user signon.  Either NOFORCE or FORCE
    TIMEOUT  : Timeout interval in hours and minutes

TOKEN    USERID     GROUPID    ADDCOUNT TRNCOUNT OPID CLASSES PRTY TIMEOUT XRFSOFF ACEE     USERNAME
-------------------------------------------------------------------------------------------------------
00000001 CICSUSER   CICSIDS           1        1      000001    0    0:00  NOFORCE 7F729D08 BABEY, SHANE
00000004 USASSC4    TSOUSER           1        1      000001    0    0:00  NOFORCE 7F729648 ADDISON, EDWARD A.
00000005 USASSC3    TSOUSER           5        0      000001    0    0:00  NOFORCE 7F7293E8 ED ADDISON
00000003 USASSC6    TSOUSER           1        1      000001    0    0:00  NOFORCE 7F7298A8 ED ADDISON
00000002 USASSC5    TSOUSER           1        1      000001    0    0:00  NOFORCE 7F729B08 ED ADDISON
```

MRO Logon and Connect Trace

- The following trace shows userid USASSC3 issuing CEMT SET IRC OPEN
- Region IYNXQ is connecting to region IYNXL
- Region userid of IYNXQ is USASSC5
- Region userid of IYNXL is USASSC4

MRO Logon and Connect Trace

```
Group containing Connection and Sessions definition is already installed. Trace begins with CEMT SET IRC OPEN.

AP 00E1 EIP    ENTRY SET-IRC                                    REQ(0004) FIELD-A(14AF6D08 ..._.) FIELD-B(08006E04 ..>.)
                                                                   RET-9538EE00 19:05:23.6658679382 00.0000078906 =000156=
XS 0701 XSRC   ENTRY CHECK_CICS_COMMAND RESOURCE_TYPE(IRC) ACCESS(SET)
                                                                   RET-943FF036 19:05:23.6658754069 00.0000074687 =000157=
XS 0709 XSRC   EVENT CHECK IRC FUNCTION(CHECK_RESOURCE_ACCESS) SECURITY_TOKEN(13CE85F0 , 00000004)
                              CLASSNAME(CCICSCMD) ACCESS(UPDATE) LOGMESSAGE(YES) RESOURCE(1485EF7C , 00000003)
                                                                   RET-943FF036 19:05:23.6658960007 00.0000205937 =000158=
XS 070A XSRC   EVENT CHECK-COMPLETE IRC USASSC3 FUNCTION(CHECK_RESOURCE_ACCESS) RESPONSE(OK) SAF_RESPONSE(0)
                              SAF_REASON (0) ESM_RESPONSE(0) ESM_REASON(0)
                                                                   RET-943FF036 19:05:23.6659378913 00.0000418906 =000159=
XS 0702 XSRC   EXIT  CHECK_CICS_COMMAND/OK                         RET-943FF036 19:05:23.6659408444 00.0000029531 =000160=
PG 0B01 PGLK   ENTRY LINK PROGRAM_NAME(DFHCRSP) SYSTEM_AUTOINSTALL(NO) PARMLIST_PTR(00049138)
                                                                   RET-943FEC42 19:05:23.6659441257 00.0000032812 =000161=
.
.
AP DD00 CRSP   EVENT IRC LOGON APPLID (IYNXQ    ) : SVC ASSIGNED SLCB AT ADDRESS (7F662FF0)
                                                                   RET-800876B4 19:05:24.6147537663 00.9459396411*=000231=
XM 1101 XMAT   ENTRY ATTACH TRANSACTION_ID(CSNC) ATTACH_PARMS(148600B8 , 00000004) PRIORITY(0) FACILITY_TYPE(NONE)
                     START_CODE(C) SUSPEND(NO) SYSTEM_ATTACH(YES) RETURN_NOT_FOUND(NO) RESTART_COUNT(0)
                                                                   RET-940BA57A 19:05:24.6202513454 00.0030025312 =000238=
XM 0401 XMLD   ENTRY LOCATE_AND_LOCK_TRANDEF TRANSACTION_ID(CSNC)
                                                                   RET-9393CD26 19:05:24.6215733767 00.0013220312 =000239=
.
.
AP 00E1 EIP    EXIT  SET-IRC OK                                 REQ(00F4) FIELD-A(00000000 ....) FIELD-B(00006E04 ..>.)
                                                                   RET-80082A70 19:05:24.7623218913 00.0057161860 =000263=
.
.
Transaction CSNC is attached:

PG 0901 PGPG   ENTRY INITIAL_LINK PROGRAM_NAME(DFHCRNP)            RET-9393FD68 19:05:24.8408350166 00.0022282963 =000376=
.
.
AP DD17 CRNP   EVENT IRC CONNECT TO SYSTEM (IYNXL    ) ASSIGNED SCCB AT 7F662C30
                                                                   RET-800876B4 19:05:24.8546766875 00.0045408728 =000395=
```

MRO Logon and Connect Trace

```
PG 0B01 PGLK  ENTRY LINK PROGRAM_NAME(DFHCRR) SYSTEM_AUTOINSTALL(NO)
                                                    RET-946AE058 19:05:24.8705766879 00.0000053593 =000412=
.
.
AP 1940 APLI  ENTRY START_PROGRAM PROGRAM(DFHCRR) CEDF_STATUS(NOCEDF) EXECUTION_SET(FULLAPI)
                                                    RET-93FBA62E 19:05:24.8722773925 00.0016821889 =000417=
AP DD32 CRR   EVENT IRC BIND FOR SECONDARY SESSION >AAA AT (14A4E9E0), SEQNUMS(0, 0, 0, 0), BIND CONVERSATION LEG
                    NUMBER ONE, SESSION LOGNAME UNDEFINED   RET-800876B4 19:05:24.8746031413 00.0023257487 =000418=
.
.
AP FD02 ZLOC  ENTRY LOCATE ID(>AAA) LOC_REQ ID_SYSTEM       RET-94178DE4 19:05:24.8815398134 00.0000050937 =000430=
.
.
AP DD17 CRNP  EVENT IRC CONNECT TO SYSTEM (IYNXL   ) ASSIGNED SCCB AT 7F662C90
                                                    RET-800876B4 19:05:24.8886390161 00.0000189843 =000457=
.
.
AP DD32 CRR   EVENT IRC BIND FOR SECONDARY SESSION >AAB AT (14A4EBD0), SEQNUMS(0, 0, 0, 0), BIND CONVERSATION LEG
                    NUMBER ONE, SESSION LOGNAME UNDEFINED   RET-800876B4 19:05:24.8887673129 00.0000058437 =000464=
.
.
AP DD32 CRR   EVENT IRC BIND FOR PRIMARY SESSION <AAF AT(14A4E410),SEQNUMS(0, 0, 0, 0),BIND CONVERSATION LEG NUMBER
                    ONE, SESSION LOGNAME UNDEFINED          RET-800876B4 19:05:24.9757734689 00.0000078437 =000770=
AP FC01 ZARQ  EVENT MRO/LU6.1 STATE SETTING TO RECEIVE       RET-9467E97E 19:05:24.9758418283 00.0000025625 =000781=
XS 0301 XSIS  ENTRY INQUIRE_REGION_USERID                    RET-946AD008 19:05:24.9775659387 00.0000071562 =000810=
XS 0302 XSIS  EXIT  INQUIRE_REGION_USERID/OK REGION_USERID_LENGTH(7) REGION_USERID(USASSC5)
                                                    RET-946AD008 19:05:24.9775683293 00.0000023906 =000811=
AP 2040 SNUS  ENTRY SIGNON_SESSION_USERID USERID(USASSC4) USERID_LENGTH(7) SESSION_TCTTE_PTR(14A4E600)
                                                    RET-946AD08E 19:05:24.9775733762 00.0000050468 =000812=
AP 2060 SNSU  ENTRY SIGNON_SESSION_USERID USERID(USASSC4) USERID_LENGTH(7) SESSION_TCTTE_PTR(14A4E600)
                                                    RET-94557B4A 19:05:24.9788107827 00.0012374064 =000813=
```

Note: Userid USASSC5 is the local region userid.
Userid USASSC4 is the region userid of the remote region (IYNXL).

MRO Logon and Connect Trace

```
AP 2048 SNUS  DATA  - SNEX_BEFORE TCTTE(14A4E600)

     TASK-00066 KE_NUM-000D TCB-QR/008C6588 RET-94557B4A TIME-19:05:24.9788 INTERVAL-0.0000047031        =000814=
       1-0000  14A4E600                                                      *.uW.                      *
       2-0000  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000 *.......................*
         0020  00000000 00000000 00000000 00000000 00000000 00000000                   *.......................*


US 0301 USAD  ENTRY ADD_USER_WITHOUT_PASSWORD SIGNON_TYPE(IRC_SIGN_ON) USERID_LENGTH(7) USERID(USASSC4)
                                                    RET-94562722 19:05:24.9788223139 00.0000068281 =000815=
DD 0301 DDLO  ENTRY LOCATE DIRECTORY_TOKEN(13D00FB0) ENTRY_NAME(14B52988) DIRECTORY_NAME(USD1) NAME(USASSC4 )
                                                    RET-9407C0E6 19:05:24.9788288452 00.0000065312 =000816=
DD 0302 DDLO  EXIT  LOCATE/OK DATA_TOKEN(13D25280,00000000) RET-9407C0E6 19:05:24.9788316577 .0000028125 =000817=
US 0302 USAD  EXIT  ADD_USER_WITHOUT_PASSWORD/OK SAF_RESPONSE(0) SAF_REASON(0) ESM_RESPONSE(0) ESM_REASON(0)
                    USER_TOKEN (00000005)           RET-94562722 19:05:24.9788347670 00.0000031093 =000818=
.
.
ME 0301 MEME  ENTRY SEND_MESSAGE MESSAGE_NUMBER(578) INSERT1(14A4E600 , 00000004) INSERT2(14B51EFC , 00000007)
                    COMPONENT_ID(SN)                RET-94562C92 19:05:24.9788488295 00.0000027031 =000823=
.
.
DU 0500 DUDT  ENTRY INQUIRE_SYSTEM_DUMPCODE SYSTEM_DUMPCODE(SN1400)
                                                    RET-9398486A 19:05:24.9788969389 00.0000104687 =000828=
.
.
AP 2049 SNUS  DATA  - SNEX_AFTER TCTTE(14A4E600)

     TASK-00066 KE_NUM-000D TCB-QR/008C6588 RET-94557B4A TIME-19:05:24.9802 INTERVAL-0.0000032500        =000839=
       1-0000  14A4E600                                                      *.uW.                      *
       2-0000  00000000 00000005 00000000 00000000 00000000 00000000 00000000 00000000 *.......................*
         0020  48000000 00000000 00000000 00000000 00000000 00000000                   *.......................*


AP 2061 SNSU  EXIT  SIGNON_SESSION_USERID/OK         RET-94557B4A 19:05:24.9802278920 00.0000017656 =000840=
AP 2041 SNUS  EXIT  SIGNON_SESSION_USERID/OK         RET-946AD08E 19:05:24.9802302514 00.0000023593 =000841=
AP DD15 CRNP  EVENT IRC INBOUND REQUEST HEADER: FMH RQE BB CD , SEQNUM(0)
                                                    RET-800876B4 19:05:24.9802338764 00.0000036250 =000842=
```

MRO Logon and Connect Trace

Supporting US Domain Summary:

```
=US: USUD SUMMARY

  Key for USUD summary table:
    ADDCOUNT : Adduser use count
    TRNCOUNT : Transaction use count
    CLASSES  : Operator classes bitmap, ordered 24 to 1
    PRTY     : Operator priority
    XRFSOFF  : XRF user signon.  Either NOFORCE or FORCE
    TIMEOUT  : Timeout interval in hours and minutes

TOKEN    USERID     GROUPID    ADDCOUNT TRNCOUNT OPID CLASSES PRTY TIMEOUT XRFSOFF ACEE     USERNAME
00000001 CICSUSER   CICSIDS           1        1      000001    0    0:00  NOFORCE 7F729D08 BABEY, SHANE
00000004 USASSC3    TSOUSER           1        1      000001    0    0:00  NOFORCE 7F729648 ADDISON, EDWARD A.
00000005 USASSC4    TSOUSER           5        0      000001    0    0:00  NOFORCE 7F7293E8 ED ADDISON
00000003 USASSC5    TSOUSER           1        1      000001    0    0:00  NOFORCE 7F7298A8 ED ADDISON
00000002 USASSC5    TSOUSER           1        1      000001    0    0:00  NOFORCE 7F729B08 ED ADDISON
```

Transaction Route Trace with MRO

- The following trace shows a transaction route of transaction id REMT from the perspective of the receiving region, IYNXQ. Connection definition name is QTOL.
- Transaction REMT was entered on terminal TC26. The terminal was logged on to region IYNXL and signed on by userid USASSC3.
- Region userid of IYNXL is USASSC4
- Region userid of IYNXQ is USASSC5
- Sessions are not preset (USERID on Sessions definition is blank)
- ATTACHSEC=IDENTIFY

Transaction Route Trace with MRO

CSNC task receives transaction attach request for transaction REMT from region IYNXL.

```
AP DD16 CRNP  EVENT - IRC INBOUND RU; 289 BYTES TRACED
 TASK-00066 KE_NUM-000D TCB-QR/008C6588 RET-800876B4 TIME-17:15:17.8517168923 INTERVAL-00.00000131        =000130=
  1-000 0121                                                                *..                            *
  2-000 518502FF C0000000 00002608 02E4E2C1 E2E2C3F3 09FDC9E8 D5E7D340 404009FB *.e..{........USASSC3..IYNXL    ..*
    020 C9E8C3D5 E3C3F2F6 02FC0005 FF024080 001A11C7 C2C9C2D4 C9E8C14B C9E8C3D5 *IYCNTC26..... ....GBIBMIYA.IYCN*
    040 E3C3F2F6 93A3296D E2770001 046EC1C1 C1288502 02000200 0004D9C5 D4E30004 *TC26lt._S....>AAA.e.......REMT..*

AP FD11 ZATT  ENTRY ATTACH ID(<AAF)                          RET-946AC968 17:15:17.8517214704 00.0000045781 =000131=
.  Transaction REMT, task #232 is attached as result
AP FD09 ZTSP  ENTRY TRANS_ROUTING TCTTE(14A4E410) ATTACH     RET-94600436 17:15:17.8519802673 00.0000075000 =000157=
AP FD02 ZLOC  ENTRY LOCATE ID(TC26) LOC_REQ UNIQUE_REMOTE    RET-943E5C68 17:15:17.8519853923 00.0000051250 =000158=
AP EA00 TMP   ENTRY LOCATE TABLE(TCTN) KEY(IYNXL    .TC26)   RET-943DBD7A 17:15:17.8519906110 00.0000052187 =000159=
AP EA01 TMP   EXIT  LOCATE TABLE(TCTN) KEY(IYNXL    .TC26) RESPONSE(NOT_FOUND)
                                                             RET-943DBD7A 17:15:17.8519930017 00.0000023906 =000160=
AP FD82 ZLOC  EXIT  LOCATE TCTTE(FFFFFFFF) INVALID_ID        RET-943E5C68 17:15:17.8519946423 00.0000016406 =000161=
AP DB00 XTP   ENTRY TRANSFORMER_3 TCTTE(00000000) PLIST_ADDR(14855130) TRANSFORM_STATUS(40)
                                                             RET-943E7226 17:15:17.8519986579 00.0000040156 =000162=
SM 0C01 SMMG  ENTRY GETMAIN GET_LENGTH(2E) TCTTE_ADDRESS(14A4E410) SUSPEND(YES) INITIAL_IMAGE(00) STORAGE_CLASS
                    (TERMINAL) CALLER(SYSTEM)                RET-943F8A68 17:15:17.8520042673 00.0000056093 =000163=
SM 0C02 SMMG  EXIT  GETMAIN/OK ADDRESS(148C9860)             RET-943F8A68 17:15:17.8520111892 00.0000069218 =000164=
AP DB01 XTP   EXIT  TRANSFORMER_3 TCTTE(00000000) PLIST_ADDR(14855130) TRANSFORM_STATUS(40)
                                                             RET-943E7226 17:15:17.8520130329 00.0000018437 =000165=
AP FD01 ZARQ  ENTRY APPL_REQ TCTTE(14A4E410) WRITE READ WAIT COND FMH
                                                             RET-943E730E 17:15:17.8520150642 00.0000020312 =000166=
AP FD0D ZIS2  ENTRY IRC TCTTE(14A4E410)IOR WRITE WAIT READ   RET-941756E2 17:15:17.8520199079 00.0000048437 =000167=
AP DD21 ZIS2  EVENT IRC SWITCH SUBSEQUENT TO SYSTEM (IYNXL    ) - RETURN CODE WAS 00000000
                                                             RET-941756E2 17:15:17.8520404392 00.0000205312 =000168=
AP DD22 ZIS2  EVENT IRC OUTBOUND REQUEST HEADER: FMH RQE CD , SEQNUM(7)
                                                             RET-941756E2 17:15:17.8520430642 00.0000026250 =000169=
AP DD23 ZIS2  EVENT IRC OUTBOUND RU; 46 BYTES TRACED         RET-941756E2 17:15:17.8520442360 00.0000011718 =000170=
DS 0004 DSSR  ENTRY WAIT_MVS RESOURCE_TYPE(IRLINK) ECB_ADDRESS(7F662E10) PURGEABLE(YES) DEADLOCK_ACTION(INHIBIT)
                    BATCH (YES) WLM_WAIT_TYPE(CONV) RESOURCE_NAME(QTOL<AAF)
                                                             RET-943DF7EC 17:15:17.8520487673 00.0000045312 =000171=
DS 0005 DSSR  EXIT  WAIT_MVS/OK                              RET-943DF7EC 17:15:17.8522883454 00.0002395781 =000172=
```

Transaction Route Trace with MRO

```
AP DD20 ZIS2  EVENT IRC PULL - DATA FROM SYSTEM (IYNXL   ) - RETURN CODE WAS 00000000
                                                          RET-941756E2 17:15:17.8533550009 00.0000169375 =000177=
AP DD24 ZIS2  EVENT IRC INBOUND REQUEST HEADER: FMH RQE CD , SEQNUM(9)
                                                          RET-941756E2 17:15:17.8533593603 00.0000043593 =000178=
AP DD25 ZIS2  EVENT IRC INBOUND RU; 353 BYTES TRACED      RET-941756E2 17:15:17.8533605166 00.0000011562 =000179=
AP FD8D ZIS2  EXIT  IRC TCTTE(14A4E410) NORMAL            RET-941756E2 17:15:17.8533626259 00.0000021093 =000180=
AP FC01 ZARQ  EVENT MRO/LU6.1 STATE SETTING TO SEND       RET-943E730E 17:15:17.8533662197 00.0000035937 =000181=
AP FD81 ZARQ  EXIT  APPL_REQ                              RET-943E730E 17:15:17.8533696259 00.0000034062 =000182=
AP DB00 XTP   ENTRY TRANSFORMER_2 TCTTE(00000000) PLIST_ADDR(14855130) TRANSFORM_STATUS(40)
                                                          RET-943E7504 17:15:17.8533733291 00.0000037031 =000183=
SM 0C01 SMMG  ENTRY GETMAIN GET_LENGTH(14D) SUSPEND(YES) INITIAL_IMAGE(00) STORAGE_CLASS(CICS24_SAA)
CALLER(SYSTEM)
                                                          RET-943F8A68 17:15:17.8533784541 00.0000051250 =000184=
SM 0C02 SMMG  EXIT  GETMAIN/OK ADDRESS(00049478)          RET-943F8A68 17:15:17.8533835947 00.0000051406 =000185=
AP DB01 XTP   EXIT  TRANSFORMER_2 TCTTE(00049480) PLIST_ADDR(14855130) TRANSFORM_STATUS(40)
                                                          RET-943E7504 17:15:17.8533854697 00.0000018750 =000186=
SM 0C01 SMMG  ENTRY GETMAIN REMARK(ZTSP_RWE) GET_LENGTH(38) SUSPEND(YES) INITIAL_IMAGE(00)
                    STORAGE_CLASS(SHARED_CICS)            RET-943E75A2 17:15:17.8533870634 00.0000015937 =000187=
SM 0C02 SMMG  EXIT  GETMAIN/OK ADDRESS(13D48120           RET-943E75A2 17:15:17.8533916259 00.0000045625 =000188=
AP F000 XCP   ENTRY ATTACH                                RET-943E76A0 17:15:17.8533963916 00.0000047656 =000189=
XM 1101 XMAT  ENTRY ATTACH TRANSACTION_ID(CITS) ATTACH_PARMS(14855730 , 00000004) PRIORITY(0) FACILITY_TYPE(NONE)
                    START_CODE(C) SUSPEND(NO) SYSTEM_ATTACH(YES) RETURN_NOT_FOUND(NO) RESTART_COUNT(0)
                                                          RET-940BA57A 17:15:17.8533990009 00.0000026093 =000190=
.
.   CITS runs and to install remote terminal TC26.
AP FCB1 ZCQIS EXIT  INSTALL TC26 NODE(148E1930) RESPONSE(00000000)
                                                          RET-946F0A86 17:15:17.8658529843 00.0000021406 =000454=
AP FC8C ZATS  EXIT  REMOTE_INSTALL REMOTE_SYSID(QTOL) TERMID(TC26) TCTTE(148E1930)
                                                          RET-93F94AF8 17:15:17.8914977041 00.0000023906 =000680=
.
.   REMT task # 232 resumes.
DS 0005 DSSR  EXIT  SUSPEND/OK                            RET-940A8E7A 17:15:17.8945346577 00.0000120000 =000729=
AP FD02 ZLOC  ENTRY LOCATE ID(TC26) LOC_REQ UNIQUE_REMOTE RET-943E6086 17:15:17.8945529077 00.0000039062 =000733=
AP EA00 TMP   ENTRY LOCATE TABLE(TCTN) KEY(IYNXL    .TC26) RET-943DBD7A 17:15:17.8945574389 00.0000045312 =000734=
AP EA01 TMP   EXIT  LOCATE TABLE(TCTN) KEY(IYNXL    .TC26) ENTRY_ADDRESS(14A320B0) RESPONSE(NORMAL)
                                                          RET-943DBD7A 17:15:17.8945617045 00.0000042656 =000735=
```

Transaction Route Trace with MRO

```
XM 1001 XMIQ  ENTRY SET_TRANSACTION START_CODE(T)          RET-943FA154 17:15:17.8945792202 00.0000039062 =000740=
XM 1002 XMIQ  EXIT  SET_TRANSACTION/OK                     RET-943FA154 17:15:17.8945840639 00.0000048437 =000741=
AP DB01 XTP   EXIT  TRANSFORMER_2 TCTTE(148E1930) PLIST_ADDR(14855130) TRANSFORM_STATUS(40)
                                                           RET-943E62B0 17:15:17.8945975795 00.0000135156 =000742=
XM 1001 XMIQ  ENTRY SET_TRANSACT FACILITY_TOKEN(148E1930)  RET-943E6362 17:15:17.8945994389 00.0000018593 =000743=
XM 1002 XMIQ  EXIT  SET_TRANSACTION/OK                     RET-943E6362 17:15:17.8958066250 00.0012071860 =000744=

AP 20C0 SNSG  DATA  - SNEX_BEFORE_SIGNON_SURROGATE SURROGATE_TCTTE(148E1930) SESSION_TCTTE(14A4E410)

    TASK-00232 KE_NUM-0044 TCB-QR/008C6588 RET-94600436 TIME-17:15:17.8958132187 INTERVAL-0.00000659      =000745=
      1-000 148E1930                                                                *....                    *
      2-000 00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000 *........................*
        020 00000000 00000000 00000000 00000000 00000000 00000000                    *......................  *
      3-000 14A4E410                                                                *.uU.                    *
      4-000 00000000 00000009 00000000 00000000 00000000 00000000 00000000 00000000 *........................*
        020 48000000 00000000 00000000 00000000 00000000 00000000                    *......................  *


AP 20C1 SNSG  DATA  - SNEX_AFTER_SIGNON_SURROGATE SURROGATE_TCTTE(148E1930) SESSION_TCTTE(14A4E410)

    TASK-00232 KE_NUM-0044 TCB-QR/008C6588 RET-94600436 TIME-17:15:17.8958157812 INTERVAL-0.00000256      =000746=
      1-000 148E1930                                                                *....                    *
      2-000 00000000 00000009 00000000 00000000 00000000 00000000 00000000 00000000 *........................*
        020 48000000 00000000 00000000 00000000 00000000 00000000                    *......................  *
      3-000 14A4E410                                                                *.uU.                    *
      4-000 00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000 *........................*
        020 00000000 00000000 00000000 00000000 00000000 00000000                    *......................  *
```

SNEX for Surrogate, before signon, has session token of zero (default userid). SNEX for Session, before signon, has a session token of 9 (equates to USASSC4 which is region userid of IYNXL).

Signon of the Surrogate causes the Session token to be propagated from the SNEX of the Session to the SNEX of the Surrogate.

Transaction Route Trace with MRO

```
AP FD89 ZTSP  EXIT  TRANS_ROUTING SURROGATE(148E1930)      RET-94600436 17:15:17.8958189062 00.0000031250 =000747=
DS 0002 DSAT  ENTRY SET_PRIORITY PRIORITY(FF)              RET-946004CE 17:15:17.8958249687 00.0000060625 =000748=
DS 0003 DSAT  EXIT  SET_PRIORITY/OK                        RET-946004CE 17:15:17.8958276718 00.0000027031 =000749=
AP 2040 SNUS  ENTRY SIGNON_ATTACH_HEADER USERID(USASSC3...) USERID_LENGTH(7) TCTTE_PTR(148E1930) APPLID(IYNXL)
                    ENTRY_PORT_NAME(IYCNTC26) ENTRY_PORT_TYPE(TERMINAL) ATTACHSEC_TYPE(NON_LOCAL)
                    ALREADY_VERIFIED(YES) PERSISTENT_VERIFY(NO) PERSISTENT_SIGNON(NO)
                                                           RET-94602136 17:15:17.8958323750 00.0000047031 =000750=
AP 2048 SNUS  DATA  - SNEX_BEFORE TCTTE(148E1930)
   TASK-00232 KE_NUM-0044 TCB-QR/008C6588 RET-94602136 TIME-17:15:17.8958350781 INTERVAL-0.0000027       =000751=
     1-000 148E1930                                                          *....                          *
     2-000 00000000 00000009 00000000 00000000 00000000 00000000 00000000 00000000  *.............................*
       020 48000000 00000000 00000000 00000000 00000000 00000000                     *.........................   *
DD 0301 DDLO  ENTRY LOCATE DIRECTORY_TOKEN(13D00FB0) ENTRY_NAME(14855768) DIRECTORY_NAME(USD1) NAME(USASSC3 )
                                                           RET-9407C0E6 17:15:17.8958438281 00.0000052812 =000753=
DD 0302 DDLO  EXIT  LOCATE/EXCEPTION REASON(NOT_FOUND) DATA_TOKEN(4CC1C1C6 , 40404040)
                                                           RET-9407C0E6 17:15:17.8958465312 00.0000027031 =000754=
XS 0201 XSAD  ENTRY ADD_USER_WITHOUT_PASSWORD SIGNON_TYPE(ATTACH_SIGN_ON) USERID_LENGTH(7) USERID(USASSC3...)
                    ENTRY_PORT_TYPE(TERMINAL) ENTRY_PORT_NAME(IYCNTC26) APPLID(IYNXL)
                                                           RET-94079B4A 17:15:17.8958497812 00.0000032500 =000755=
XS FE01 XSSA  ENTRY ADD_USER_WITHOUT_PASSWORD USERID_LENGTH(7) USERID(USASSC3...) ENTRY_PORT_TYPE(TERMINAL)
                    ENTRY_PORT_NAME(IYCNTC26) APPLID(IYNXL) RET-94079B4A 17:15:17.8959001718 00.000050390 =000756=
XS FE02 XSSA  EXIT  ADD_USER_WITHOUT_PASSWORD/OK SAF_RESPONSE(0) SAF_REASON(0) ESM_RESPONSE(0) ESM_REASON(0)
                    SECURITY_TOKEN(13CE8678 , 0000000B)    RET-94079B4A 17:15:17.9013970795 00.0054969077 =000757=
XS 0202 XSAD  EXIT  ADD_USER_WITHOUT_PASSWORD/OK SAF_RESPONSE(0) SAF_REASON(0) ESM_RESPONSE(0) ESM_REASON(0)
                    SECURITY_TOKEN(13CE8678 , 0000000B)    RET-94079B4A 17:15:17.9014510327 00.0000539531 =000758=
DD 0201 DDDI  ENTRY ADD_ENTRY DATA_TOKEN(13D25300 , 40404040) ENTRY_NAME(14855768) DIRECTORY_TOKEN(13D00FB0)
                    DIRECTORY_NAME(USD1) NAME(USASSC3 )    RET-94079A62 17:15:17.9024175009 00.0000059843 =000769=
LM 0003 LMLM  ENTRY LOCK LOCK_TOKEN(13BFFB88) MODE(EXCL)   RET-93906DD2 17:15:17.9024264697 00.0000089687 =000770=
LM 0004 LMLM  EXIT  LOCK/OK                                RET-93906DD2 17:15:17.9024294384 00.0000029687 =000771=
LM 0003 LMLM  ENTRY UNLOCK LOCK_TOKEN(13BFFB88) MODE(EXCLUSIVE)
                                                           RET-93907018 17:15:17.9024381884 00.0000087500 =000772=
LM 0004 LMLM  EXIT  UNLOCK/OK                              RET-93907018 17:15:17.9024405947 00.0000024062 =000773=
DD 0202 DDDI  EXIT  ADD_ENTRY/OK                           RET-94079A62 17:15:17.9024420009 00.0000014062 =000774=
DD 0201 DDDI  ENTRY ADD_ENTRY DATA_TOKEN(13D25300 , 00000000) ENTRY_NAME(13D2407C) DIRECTORY_TOKEN(13D0BB20)
                    DIRECTORY_NAME(USD2) NAME(....)        RET-94079A62 17:15:17.9024448759 00.0000028750 =000775=
LM 0003 LMLM  ENTRY LOCK LOCK_TOKEN(13BFFBE8) MODE(EXCL)   RET-93906DD2 17:15:17.9024479072 00.0000030312 =000776=
```

Transaction Route Trace with MRO

```
LM 0004 LMLM  EXIT  LOCK/OK                                    RET-93906DD2 17:15:17.9024496416 00.0000017343 =000777=
LM 0003 LMLM  ENTRY UNLOCK LOCK_TOKEN(13BFFBE8) MODE(EXCLUSIVE)
                                                              RET-93907018 17:15:17.9024548759 00.0000052343 =000778=
LM 0004 LMLM  EXIT  UNLOCK/OK                                 RET-93907018 17:15:17.9024565634 00.0000016875 =000779=
DD 0202 DDDI  EXIT  ADD_ENTRY/OK                              RET-94079A62 17:15:17.9024578759 00.0000013125 =000780=
.
.
.
AP 2049 SNUS  DATA  - SNEX_AFTER TCTTE(148E1930)

   TASK-00232 KE_NUM-0044 TCB-QR/008C6588 RET-94602136 TIME-17:15:17.903777657 INTERVAL-0.00000423       =000790=
     1-000 148E1930                                                          *....                        *
     2-000 0000000B 00000009 00000000 00000000 00000000 00000000 00000000 00000000  *.............................*
       020 48000000 00000000 00000000 00000000 00000000 00000000                    *.........................   *
.
.
AP 17B1 MRXM  EXIT  INIT_XM_CLIENT/OK USER_TOKEN(0000000B) SESSION_USER_TOKEN(00000009) SET_USER_TOKEN(YES)
                    SET_SESSION_USER_TOKEN(YES)               RET-9393F384 17:15:17.9037993449 00.0000030937 =000798=
US 0401 USXM  ENTRY INIT_TRANSACTION_USER PRINCIPAL_USER_TOKEN(0000000B) SESSION_USER_TOKEN(00000009)
                    XMAT_CALL(YES)                            RET-9393F428 17:15:17.9038033137 00.0000039687 =000799=
DD 0301 DDLO  ENTRY LOCATE DIRECTORY_TOKEN(13D0BB20) ENTRY_NAME(14854A5C) DIRECTORY_NAME(USD2) NAME(....)
                                                              RET-94078930 17:15:17.9038072199 00.0000039062 =000800=
.
.
XS 0401 XSXM  ENTRY ADD_TRANSACTION_SECURITY PRINCIPAL_SECURITY_TOKEN(13CE8678 , 0000000B) SESSION_SECURITY_TOKEN
                    (13CE85F0 , 00000009)                     RET-94078C34 17:15:17.9038171418 00.0000045468 =000804=
XS 0402 XSXM  EXIT  ADD_TRANSACTION_SECURITY/OK               RET-94078C34 17:15:17.9038215168 00.0000043750 =000805=
US 0402 USXM  EXIT  INIT_TRANSACTION_USER/OK USDOM_TRANSACTION_TOKEN(13D2531F , 13D27050) PRIORITY(0)
                                                              RET-9393F428 17:15:17.9038229074 00.0000013906 =000806=
.
.
```

Transaction Route Trace with MRO

```
.
.
XS 0701 XSRC  ENTRY CHECK_CICS_RESOURCE RESOURCE(REMT) RESOURCE_TYPE(TRANSATTACH) ACCESS(EXECUTE)
                                                      RET-9393F922 17:15:17.9051553293 00.0000030625 =000819=
XS 0709 XSRC  EVENT CHECK REMT FUNCTION(CHECK_RESOURCE_ACCESS) SECURITY_TOKEN(13CE8678 , 0000000B)
              CLASSNAME(TCICSTRN) ACCESS(READ) LOGMESSAGE(YES) RESOURCE(14854D6C , 00000004)
                                                      RET-9393F922 17:15:17.9051655949 00.0000102656 =000820=
XS 070A XSRC  EVENT CHECK-COMPLETE REMT USASSC3 FUNCTION(CHECK_RESOURCE_ACCESS) RESPONSE(OK) SAF_RESPONSE(0)
              SAF_REASON (0) ESM_RESPONSE(0) ESM_REASON(0) RET-9393F922 17:15:17.9052089699 00.0000433750 =000821=
XS 0709 XSRC  EVENT CHECK REMT FUNCTION(CHECK_RESOURCE_ACCESS) SECURITY_TOKEN(13CE85F0 , 00000009)
CLASSNAME(TCICSTRN) ACCESS(READ) LOGMESSAGE(YES) RESOURCE(14854D6C , 00000004)
                                                      RET-9393F922 17:15:17.9052107512 00.0000017812 =000822=
XS 070A XSRC  EVENT CHECK-COMPLETE REMT USASSC4 FUNCTION(CHECK_RESOURCE_ACCESS) RESPONSE(OK) SAF_RESPONSE(0)
              SAF_REASON (0) ESM_RESPONSE(0) ESM_REASON(0) RET-9393F922 17:15:17.9052288449 00.0000180937 =000823=
XS 0702 XSRC  EXIT  CHECK_CICS_RESOURCE/OK FAILING_USERID()RET-9393F922 17:15:17.9052317512 00.0000029062 =000824=
AP 0590 APXM  ENTRY BIND_XM_CLIENT                    RET-9393F966 17:15:17.9052340793 00.0000023281 =000825=
.
.
.
.
.
.Transaction continues to run
```

Transaction Route Trace with MRO

Supporting US Domain Summary:

```
=US: USUD SUMMARY

  Key for USUD summary table:
    ADDCOUNT : Adduser use count
    TRNCOUNT : Transaction use count
    CLASSES  : Operator classes bitmap, ordered 24 to 1
    PRTY     : Operator priority
    XRFSOFF  : XRF user signon.  Either NOFORCE or FORCE
    TIMEOUT  : Timeout interval in hours and minutes

TOKEN    USERID     GROUPID    ADDCOUNT TRNCOUNT OPID CLASSES PRTY TIMEOUT XRFSOFF ACEE     USERNAME
-------------------------------------------------------------------------------------------------------
00000001 CICSUSER   CICSIDS           1        1      000001    0    0:00  NOFORCE 7F729D08 BABEY, SHANE
00000008 USASSC3    TSOUSER           1        1      000001    0    0:00  NOFORCE 7F7298A8 ADDISON, EDWARD A.
0000000B USASSC3    TSOUSER           1        1      000001    0    0:00  NOFORCE 7F65EDA0 ADDISON, EDWARD A.
00000009 USASSC4    TSOUSER           5        1      000001    0    0:00  NOFORCE 7F729648 ED ADDISON
00000002 USASSC5    TSOUSER           1        1      000001    0    0:00  NOFORCE 7F729B08 ED ADDISON
```

Transaction Route Trace with LU62

- The following trace shows a transaction route of transaction id REMT from the perspective of the receiving region, IYNXQ. Connection definition name is TOL.
- Transaction REMT was entered on terminal TC20. The terminal was logged on to region IYNXL and signed on by userid USASSC2.
- Region userid of IYNXL is USASSC4
- Region userid of IYNXQ is USASSC5
- Sessions are not preset
  - USERID on Sessions definition is blank and SECURITYNAME on Connection is blank.
- ATTACHSEC=IDENTIFY

Transaction Route Trace with LU62

```
TCP receives request from IYNXL to run transaction REMT


AP FC90 VIO   EVENT TCTTE(148A0DB0) NETNAME(IYNXL    ) RPLSEQNO(0009) RECEIVE DATA RQE1 OIC BB CD FMH
                                                       RET-941F0C62 17:59:55.9995792663 00.0000690000 =000144=
AP FD11 ZATT  ENTRY ATTACH TCTTE(148A0DB0) ID(-AAD)    RET-941E9F3E 17:59:55.9996104538 00.0000311875 =000145=
XM 1101 XMAT  ENTRY ATTACH TRANSACTION_ID(REMT) EXTERNAL_UOW_ID(33133EDC , 0000001B) PRIORITY(0) START_CODE(DF)
                    RETURN_NOT_FOUND(NO) USE_DTRTRAN(YES) PRIMARY_CLIENT_TYPE(APPC_SESSION)
                    PRIMARY_CLIENT_REQ_BLOCK(148A0DB0 , 02280000)
.
.
XM 1102 XMAT  EXIT  ATTACH/OK TRANSACTION_TOKEN(13D0A1B8 , 0000062C) TRANNUM(0000062C)
                                                       RET-9414117A 17:59:55.9996568288 00.0000015156 =000153=
AP FD91 ZATT  EXIT  ATTACH                             RET-941E9F3E 17:59:55.9996580319 00.0000012031 =000154=
.
.   REMT begins as task number 62
.
AP EA00 TMP   ENTRY LOCATE TABLE(PFT ) KEY(DFHCICST)   RET-800880CA 17:59:56.0009884533 00.0000072343 =000169=
AP EA01 TMP   EXIT  LOCATE TABLE(PFT ) KEY(DFHCICST) ENTRY_ADDRESS(13DADB20) RESPONSE(NORMAL)
                                                       RET-800880CA 17:59:56.0009948908 00.0000064375 =000170=
AP 0591 APXM  EXIT  INIT_XM_CLIENT/OK                  RET-9393F2EC 17:59:56.0009981408 00.0000032500 =000171=
AP 17C0 62XM  ENTRY INIT_XM_CLIENT CLIENT_REQUEST_BLOCK(148A0DB0 , 02280000)
                                                       RET-9393F3B4 17:59:56.0010031408 00.0000050000 =000172=
.
.
AP FD02 ZLOC  ENTRY LOCATE ID(TC20) LOC_REQ UNIQUE_REMOTE  RET-943D8FF8 17:59:56.0025851875 00.0000042968 =000226=
AP EA00 TMP   ENTRY LOCATE TABLE(TCTN) KEY(IYNXL    .TC20)  RET-943D09CA 17:59:56.0025920000 00.0000068125 =000227=
AP EA01 TMP   EXIT  LOCATE TABLE(TCTN) KEY(IYNXL    .TC20) ENTRY_ADDRESS(14A24070) RESPONSE(NORMAL)
                                                       RET-943D09CA 17:59:56.0025964687 00.0000044687 =000228=
AP FD82 ZLOC  EXIT  LOCATE TCTTE(14AFD030) NORMAL      RET-943D8FF8 17:59:56.0063079694 00.0037115007 =000229=
.
.
```

Transaction Route Trace with LU62

```
AP 20C0 SNSG  DATA  - SNEX_BEFORE_SIGNON_SURROGATE SURROGATE_TCTTE(14AFD270) SESSION_TCTTE(148A0DB0)

   TASK-00062 KE_NUM-0043 TCB-QR   /008CB630 RET-946033D6 TIME-17:59:56.0063676 INTERVAL-00.00000125      =000238=
     1-0000  14AFD270                                                          *..K.                       *
     2-0000  00000000 00000000 00000000 00000000  00000000 00000000 00000000 00000000 *.....................*
       0020  00000000 00000000 00000000 00000000  00000000 00000000           *................            *
     3-0000  148A0DB0                                                          *....                       *
     4-0000  00000000 00000000 00000000 00000000  00000000 00000000 00000000 00000000 *.....................*
       0020  58000000 00000000 00000000 00000000  00000000 00000000           *....................       *

AP 20C1 SNSG  DATA  - SNEX_AFTER_SIGNON_SURROGATE SURROGATE_TCTTE(14AFD270) SESSION_TCTTE(148A0DB0)

   TASK-00062 KE_NUM-0043 TCB-QR   /008CB630 RET-946033D6 TIME-17:59:56.0063697 INTERVAL-00.00000207      =000239=
     1-0000  14AFD270                                                          *..K.                       *
     2-0000  00000000 00000000 00000000 00000000  00000000 00000000 00000000 00000000 *.....................*
       0020  48000000 00000000 00000000 00000000  00000000 00000000           *....................       *
     3-0000  148A0DB0                                                          *....                       *
     4-0000  00000000 00000000 00000000 00000000  00000000 00000000 00000000 00000000 *.....................*
       0020  10000000 00000000 00000000 00000000  00000000 00000000           *....................       *
.
.
```

NOTE: SNEX for Surrogate and Session, before signon, both have zero Session tokens (default userid being used). As in MRO, signon of the Surrogate causes the Session token to be propagated from the SNEX of the Session to the SNEX of the Surrogate. This is not easily seen as the Session is not signed on with the TOR region userid as in MRO and the Session is not preset with a userid. However, you can see the x'48' from offset x'20' did move from Session SNEX to Surrogate SNEX. The x'40' bit indicates Session signed on and the x'08' bit indicates Session user token exists. The x'10' left in the Session SNEX indicates the Session is signed on with the default userid.

```
.
.
AP 2040 SNUS  ENTRY SIGNON_ATTACH_HEADER USERID(USASSC2...) USERID_LENGTH(7) TCTTE_PTR(14AFD270) ATTACHSEC_TYPE
                    (NON_LOCAL) ALREADY_VERIFIED(YES) PERSISTENT_VERIFY(NO) PERSISTENT_SIGNON(NO)
                                                      RET-9460368A 17:59:56.0063867194 00.0000044375 =000243=
```

Transaction Route Trace with LU62

```
AP 2048 SNUS  DATA  - SNEX_BEFORE TCTTE(14AFD270)

    TASK-00062 KE_NUM-0043 TCB-QR /008CB630 RET-9460368A TIME-17:59:56.006389406 INTERVAL-00.000002687    =000244=
      1-0000  14AFD270                                                          *..K.                      *
      2-0000  00000000 00000000 00000000 00000000  00000000 00000000 00000000 00000000  *........................*
        0020  48000000 00000000 00000000 00000000  00000000 00000000                    *........................*

US 0301 USAD  ENTRY ADD_USER_WITHOUT_PASSWORD SIGNON_TYPE(ATTACH_SIGN_ON) USERID_LENGTH(7) USERID(USASSC2...)
                    SCOPE_CHECK(NO)                          RET-94557252 17:59:56.0063939538 00.0000045468 =000245=
.
.
US 0302 USAD  EXIT  ADD_USER_WITHOUT_PASSWORD/OK SAF_RESPONSE(0) SAF_REASON(0) ESM_RESPONSE(0) ESM_REASON(0)
                    USER_TOKEN (00000004)                    RET-94557252 17:59:56.0076404851 00.0012132968 =000254=
.
AP 2049 SNUS  DATA  - SNEX_AFTER TCTTE(14AFD270)

    TASK-00062 KE_NUM-0043 TCB-QR /008CB630 RET-9460368A TIME-17:59:56.00766606 INTERVAL-00.000002312     =000263=
      1-0000  14AFD270                                                          *..K.
*
      2-0000  00000004 00000000 00000000 00000000  00000000 00000000 00000000 00000000  *........................*
        0020  48000000 00000000 00000000 00000000  00000000 00000000                    *........................*

AP 2041 SNUS  EXIT  SIGNON_ATTACH_HEADER/OK                  RET-9460368A 17:59:56.0076677194 00.0000016562 =000264=
AP 17C1 62XM  EXIT  INIT_XM_CLIENT/OK USER_TOKEN(00000004) SESSION_USER_TOKEN(00000000) SET_USER_TOKEN(YES)
                    SET_SESSION_USER_TOKEN(YES)              RET-9393F3B4 17:59:56.0076742507 00.0000065312 =000265=
US 0401 USXM  ENTRY INIT_TRANSACTION_USER PRINCIPAL_USER_TOKEN(00000004) SESSION_USER_TOKEN(00000000)
XMAT_CALL(YES)
                                                             RET-9393F458 17:59:56.0076778288 00.0000035781 =000266=
DD 0301 DDLO  ENTRY LOCATE DIRECTORY_TOKEN(13D0BB20) ENTRY_NAME(1484DA5C) DIRECTORY_NAME(USD2) NAME(....)
                                                             RET-94078930 17:59:56.0076802038 00.0000023750 =000267=
DD 0302 DDLO  EXIT  LOCATE/OK DATA_TOKEN(13D25200,00000000)RET-94078930 17:59:56.0076820319 00.0000018281 =000268=
XS 0401 XSXM  ENTRY ADD_TRANSACTION_SECURITY PRINCIPAL_SECURITY_TOKEN(13CE85F0 , 00000004) SESSION_SECURITY_TOKEN
                    (13CE8530 , 00000001)                    RET-94078C34 17:59:56.0076860944 00.0000040625 =000269=
XS 0402 XSXM  EXIT  ADD_TRANSACTION_SECURITY/OK              RET-94078C34 17:59:56.0076900319 00.0000039375 =000270=
US 0402 USXM  EXIT  INIT_TRANSACTION_USER/OK USDOM_TRANSACTION_TOKEN(13D2521F , 13D27070) PRIORITY(0)
                                                             RET-9393F458 17:59:56.0076916569 00.0000016250 =000271=
```

Transaction Route Trace with LU62

```
.
.
.
XS 0701 XSRC  ENTRY CHECK_CICS_RESOURCE RESOURCE(REMT) RESOURCE_TYPE(TRANSATTACH) ACCESS(EXECUTE)
                                                      RET-9393F952 17:59:56.0093820947 00.0000037812 =000284=
XS 0709 XSRC  EVENT CHECK REMT FUNCTION(CHECK_RESOURCE_ACCESS) SECURITY_TOKEN(13CE85F0 , 00000004)
              CLASSNAME(TCICSTRN) ACCESS(READ) LOGMESSAGE(YES) RESOURCE(1484DD6C , 00000004)
                                                      RET-9393F952 17:59:56.0093939697 00.0000118750 =000285=
XS 070A XSRC  EVENT CHECK-COMPLETE REMT USASSC2 FUNCTION(CHECK_RESOURCE_ACCESS) RESPONSE(OK) SAF_RESPONSE(0)
                    SAF_REASON (0) ESM_RESPONSE(0) ESM_REASON(0)
                                                      RET-9393F952 17:59:56.0094368134 00.0000428437 =000286=
XS 0709 XSRC  EVENT CHECK REMT FUNCTION(CHECK_RESOURCE_ACCESS) SECURITY_TOKEN(13CE8530 , 00000001)
              CLASSNAME(TCICSTRN) ACCESS(READ) LOGMESSAGE(YES) RESOURCE(1484DD6C , 00000004)
                                                      RET-9393F952 17:59:56.0094386572 00.0000018437 =000287=
XS 070A XSRC  EVENT CHECK-COMPLETE REMT CICSUSER FUNCTION(CHECK_RESOURCE_ACCESS) RESPONSE(OK) SAF_RESPONSE(0)
                    SAF_REASON(0) ESM_RESPONSE(0) ESM_REASON(0)
                                                      RET-9393F952 17:59:56.0094558291 00.0000171718 =000288=
XS 0702 XSRC  EXIT CHECK_CICS_RESOURCE/OK FAILING_USERID() RET-9393F952 17:59:56.0094585322 00.0000027031 =000289=
AP 0590 APXM  ENTRY BIND_XM_CLIENT                    RET-9393F996 17:59:56.0094608759 00.0000023437 =000290=
AP 0591 APXM  EXIT  BIND_XM_CLIENT/OK                 RET-9393F996 17:59:56.0094622041 00.0000013281 =000291=
.
.
.    Transaction continues to run.
```

Transaction Route Trace with LU62

Supporting US Domain Summary:

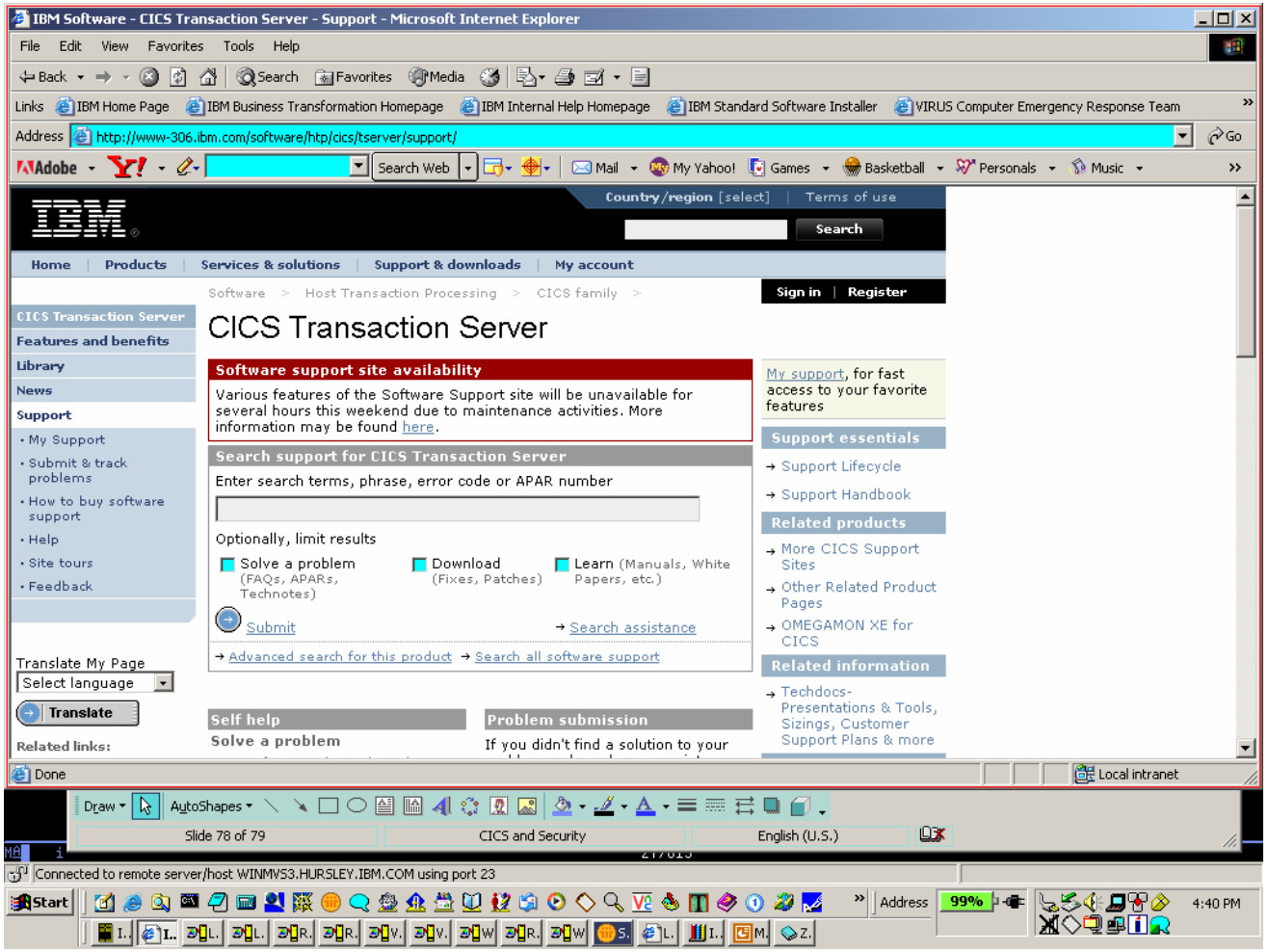
```
=US: USUD SUMMARY

  Key for USUD summary table:
    ADDCOUNT : Adduser use count
    TRNCOUNT : Transaction use count
    CLASSES  : Operator classes bitmap, ordered 24 to 1
    PRTY     : Operator priority
    XRFSOFF  : XRF user signon.  Either NOFORCE or FORCE
    TIMEOUT  : Timeout interval in hours and minutes

TOKEN    USERID     GROUPID    ADDCOUNT TRNCOUNT OPID CLASSES PRTY TIMEOUT XRFSOFF ACEE     USERNAME
-------------------------------------------------------------------------------------------------------
00000001 CICSUSER   CICSIDS           1        2      000001    0    0:00  NOFORCE 7F72BD08 BABEY, SHANE
00000004 USASSC2    TSOUSER           1        1      000001    0    0:00  NOFORCE 7F72B648 ED ADDISON
00000003 USASSC5    TSOUSER           1        1      000001    0    0:00  NOFORCE 7F72B8A8 ED ADDISON
00000002 USASSC5    TSOUSER           1        1      000001    0    0:00  NOFORCE 7F72BB08 ED ADDISON
```

CICS Support Web Site

http://www-306.ibm.com/software/htp/cics/tserver/support/



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CICS Intercommunication Guide
Document Number: SC34-6243-01
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CICS System Definition Guide
Document Number: SC34-6226-01
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Q and A