CS z/OS Miscellaneous VTAM Improvements

EE and SNA agenda

- Model definition of VTAM cross domain resources
- Subarea VTAM XCF support
- LOGAPPL enhancements
- VTAM start option to DISPLAY RSCVs
- VTAM command to remove Generic Resource from a Sysplex
- Unformatted System Services support for mixed-case passwords

Model definition of VTAM cross domain resources

CRDSC basics

- **Cross-domain resources are represented by RDTEs called CDRSCs.**
- **CDRSCs may be predefined as part of a CDRSC major node.**
- **CDRSCs may be dynamically defined as needed.**
  - Added to ISTCDRDY.
  - Dependent upon CDRDYN start option and CDRSC parameter on CDRM statement.
    - If CDRDYN=NO, then no dynamic CDRSCs will be created at this VTAM.
    - If CDRDYN=YES, then dynamic CDRSC creation depends on CDRM's CDRSC value.
      - CDRSC=REQ means CDRSCs are required to be predefined for resources owned by the SSCP represented by the CDRM.
      - CDRSC=OPT means CDRSCs may be dynamically created for resources owned by the SSCP represented by the CDRM.
- **This gives customers three options:**
  - Require predefinition of all CDRSCs.
  - Allow dynamic definition of CDRSCs for any requests.
  - Determine dynamic capabilities on a CDRM by CDRM basis.
- **With customers connecting to more and more networks, they are increasingly faced with the choice between security concerns and systems management concerns:**
  - If they do not allow dynamic CDRSCs to be created for the new network to which they are connecting, thousands of predefined CDRSCs may have to be created.
  - If they do allow dynamic CDRSCs to be created for the new network to which they are connecting, they forfeit some measure of control over access to their network or are required to deal with it in another way.

Model CDRSC

- **VTAM will now allow model CDRSCs to be defined in a CDRSC major node.**
  - The customer can create model CDRSC definitions, similar to the way model APPL definitions are created.
- **Using the appropriate model CDRSC definitions, VTAM will dynamically create CDRSCs as needed.**
  - CDRSCs created from model CDRSCs are called clone CDRSCs.
  - Unaffected by CDRDYN start option and CDRSC keyword.
- **Benefits**
  - Amount of definition reduced.
  - Control provided by knowledge of the new network's naming conventions.
  - More parameters can be specified for model CDRSCs than dynamic CDRSCs.
    - For example, DLOGMOD
  - Control provided for when clone CDRSCs are deleted.

Example of a model CDRSC major node

- **Model CDRSCs may be defined by specifying '?' or '*' within the name field of the CDRSC definition statement:**
  - '?' represents exactly one character and can be in any position in the name.
  - '*' represents zero or more characters and can be in any position but the first one.
  - The CDRSCs after the NETWORK statement are considered to be real CDRSCs.
  - The CDRSCs before the NETWORK statement are considered to be alias CDRSCs.
  - Make names unique enough to ensure that the right model definition is used.
- **New DELETE keyword for model CDRSC definitions only.**
  - DELETE=YES - the clone CDRSC is deleted when the sessions are ended. (Default)
  - DELETE=NO - the clone CDRSC is not deleted when the sessions are ended.

```
CDRSCMOD VBUILD TYPE=CDRSC
?APPL    CDRSC
APPL*    CDRSC
APPL?    CDRSC
         NETWORK NETID=NETA
APPL1*   CDRSC DELETE=NO
APPL1?   CDRSC
ABCD*    CDRSC DELETE=YES
EF?G*    CDRSC DELETE=NO
```

Cloned CDRSCs

- **Clone CDRSCs may be created:**
  - During session setup.
  - During DSRLIST processing.
  - During MODIFY ALSLIST,ACTION=CREATE processing.
- **Clone CDRSCs are built based on the active model CDRSC that is a best match:**
  - Character by character comparison, left to right.
  - Actual character is better than '?', '?' is better than '*'.
  - NQNMODE considerations.
- **Name the model used to create the following clone CDRSCs:**
  - APPL1
  - APPL2
  - APPL1A
  - APPL2A
- **In general, operator commands that work against predefined CDRSCs work the same when issued against clone CDRSCs.**
- **Most operator commands issued against model CDRSCs do not affect the already created clone CDRSCs, but they will affect any future clone CDRSCs created from the model CDRSC.**
  - An exception: when SCOPE=ALL is specified on Modify TRACE and Modify NOTRACE against a model CDRSC, current clone CDRSCs are affected as well as future clone CDRSCs.
  - Note that the DELETE parameter of the model CDRSC is a characteristic of the model CDRSC, not the clone CDRSC.

Clone CDRSC creation - notes

NOTES

- If no appropriate active model CDRSC is found to build a clone CDRSC and dynamic CDRSCs are allowed, then a dynamic CDRSC will be built.
- If no appropriate active model CDRSC is found to build a clone CDRSC and dynamics are not allowed, then no CDRSC will be created and the operation the CDRSC was needed for will fail.
- NQNMODE considerations:
  - If the input netid for this clone CDRSC request is not the local host netid, but there is another RDTE known by the local host netid:
    - If an alias CDRSC is being requested, no model is eligible because a clone CDRSC would collide with this RDTE, so only a dynamic CDRSC will be allowed.
    - If a real CDRSC is being requested, a model is eligible if the model is a real CDRSC and the model's netid matches the input netid and the model has NQNMODE=NQNAME, whether by start option or coded on the model CDRSC.
  - If the input netid for this clone CDRSC request is the local host netid or there is no other RDTE known by the local host netid and the input netid for this request is not the local host netid:
    - If an alias CDRSC is being requested, a model is eligible if the model is an alias CDRSC or the model's netid is the local host netid or the model has NQNMODE=NAME, whether by start option or coded on the model CDRSC.
    - If a real CDRSC is being requested, a model is eligible if the model is an alias CDRSC or the model's netid matches the input netid.
- The answers:
  - Clone APPL1 would be created from APPL1*
  - Clone APPL2 would be created from APPL?
  - Clone APPL1A would be created from APPL1?
  - Clone APPL2A would be created from APPL*

Activation/Inactivation of model CDRSCs

- **Model CDRSCs are activated when their major node is activated if ISTATUS=ACTIVE.**
- **If a model CDRSC is inactive, it can be activated via the VARY NET,ACT command.**
- **A model CDRSC can be inactivated via the VARY NET,INACT command.**
- **A model CDRSC must be active for it to be used to create clone CDRSCs.**
- **V NET,ACT,SCOPE=ALL can be used to activate a model CDRSC and all the clone CDRSCs that have been built from that model CDRSC.**
- **V NET,INACT,SCOPE=ALL can be used to inactivate a model CDRSC and all the clone CDRSCs that have been built from that model CDRSC.**
- **Clone CDRSCs can also be specified in the V NET,ACT and V NET,INACT commands.**
  - Specifying the DELETE operand on the VARY INACT command against a clone CDRSC will override the value of the DELETE parameter specified on the model CDRSC definition.

Display of CDRSC major node

```
D NET,ID=CDRSCMOD,E
IST097I DISPLAY ACCEPTED
IST075I NAME = CDRSCMOD, TYPE = CDRSC SEGMENT
IST486I STATUS= ACTIV, DESIRED STATE= ACTIV
IST478I CDRSCS:
IST1276I ?APPL              ACTIV      CDRM = ***NA***
IST1276I APPL*              ACTIV      CDRM = ***NA***
IST1276I APPL?              ACTIV      CDRM = ***NA***
IST1276I NETA.APPL2         ACT/S      CDRM = SSCP2A
IST1276I NETA.APPL1*        ACTIV      CDRM = ***NA***
IST1276I NETA.APPL1         ACT/S      CDRM = SSCP2A
IST1276I NETA.APPL1?        ACTIV      CDRM = ***NA***
IST1276I NETA.ABCD*         ACTIV      CDRM = ***NA***
IST1276I NETA.EF?G*         ACTIV      CDRM = ***NA***
IST1500I STATE TRACE = OFF
IST314I END
```

- **Note that the clone CDRSCs are displayed following the model CDRSC with which they were created.**
- **Note that the model CDRSCs that were defined after the NETWORK statement have the netid in the IST1276I message.**
- **Note that both clone CDRSCs are displayed with their netid in IST1276I.**

Display of model CDRSC

```
D NET,ID=APPL?,E
IST097I DISPLAY ACCEPTED
IST075I NAME = APPL?, TYPE = MODEL CDRSC
IST486I STATUS= ACTIV, DESIRED STATE= ACTIV
IST599I REAL NAME = ***NA***
IST1447I REGISTRATION TYPE = NO
IST977I MDLTAB=***NA*** ASLTAB=***NA***
IST1333I ADJLIST = ***NA***
IST861I MODETAB=***NA*** USSTAB=***NA*** LOGTAB=***NA***
IST934I DLOGMOD=***NA*** USS LANGTAB=***NA***
IST597I CAPABILITY-PLU ENABLED  ,SLU ENABLED  ,SESSION LIMIT NONE
IST231I CDRSC MAJOR NODE = CDRSCMOD
IST2095I MODEL CDRSC DELETE = YES
IST479I CDRM NAME = ***NA***, VERIFY OWNER = NO
IST1131I DEVICE = CDRSC
IST654I I/O TRACE = OFF, BUFFER TRACE = OFF
IST1500I STATE TRACE = OFF
IST228I ENCRYPTION = NONE , TYPE = DES
IST1563I CKEYNAME = APPL? CKEY = PRIMARY CERTIFY = NO
IST1552I MAC = NONE MACTYPE = NONE
IST2088I CDRSCS DEFINED USING THIS MODEL:
IST1276I NETA.APPL2        ACT/S      CDRM = SSCP2A
IST314I END
```

Subarea VTAM XCF support

Dynamic XCF support prior to z/OS V1R7

- **Current VTAM support for dynamic XCF connectivity:**
  - Allows dynamically
    - Joining ISTXCF Sysplex group
    - Building APPN and TRLE definitions
    - Connecting to the other VTAM APPN nodes in the Sysplex
  - Based on XCFINIT start option (YES or NO)
  - For VTAM APPN nodes only
- **Current TCP/IP support for dynamic XCF connectivity:**
  - Allows dynamically
    - Using VTAM XCF connections
    - Building TCP/IP devices and interfaces
    - Connecting to the other TCP/IP stacks in the Sexplex
  - Based on IPCONFIG and IPCONFIG6 DYNAMICXCF parameters
  - Requires running on a VTAM APPN node
  - Requires VTAM APPN XCF connectivity

z/OS V1R7 new dynamic XCF support

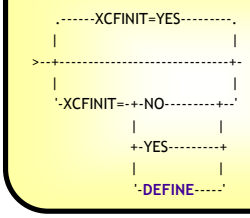
- **With this release, z/OS Communications Server will allow:**
  - TCP/IP connectivity through XCF on APPN nodes without having to first establish APPN connections
  - TCP/IP connectivity through XCF from pure subarea nodes
  - This allows users to utilize the full range of TCP/IP Sysplex functions without having to redefine the SNA network to use APPN communications
- **For APPN nodes:**
  - A new value for the XCFINIT start parameter, DEFINE, is now allowed
  - If XCFINIT = DEFINE:
    - VTAM will join the ISTXCF Sysplex group
    - VTAM will build the definitions necessary for XCF connectivity between this node and other nodes in the Sysplex
      - The XCF APPN PU and XCF TRLE definitions will be built
    - VTAM will not activate those connections
    - TCP/IP connectivity is allowed, using either static or dynamic XCF definitions
  - XCFINIT=YES will remain the default for APPN nodes

z/OS V1R7 new dynamic XCF support (continued)

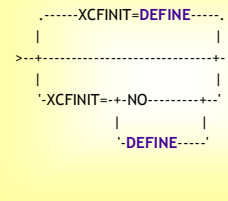
- **For pure subarea nodes:**
  - XCFINIT start parameter is now allowed
  - Allowed values are NO or DEFINE
  - If XCFINIT = DEFINE:
    - VTAM will join the ISTXCF Sysplex group
    - VTAM will build the definitions necessary for XCF connectivity between this node and other nodes in the Sysplex
      - The XCF TRLE definition will be built
    - No SNA XCF connectivity will be established between this node and other nodes in the Sysplex
    - TCP/IP connectivity is allowed, using either static or dynamic XCF definitions
  - XCFINIT=DEFINE is the default for pure subarea nodes

XCFINIT support in z/OS V1R7

- For APPN nodes:



- For pure Subarea nodes:



- **XCFINIT will now be accepted as a start option on a VTAM node that does not also specify the NODETYPE start option (pure subarea node).**
- **The only allowed values for XCFINIT on a pure subarea node are NO or DEFINE.**
- **The default value for XCFINIT at a pure subarea node is DEFINE. The default continues to be YES for a VTAM node that also specifies NODETYPE (APPN node).**
- **If an APPN node also specifies the HPR start option with a value other than RTP, the XCFINIT start option, if specified as or defaulted to YES, will be set to DEFINE.**

TRLE names

- **TRLE definitions created on a pure subarea node will use the default naming convention:**
  - ISTTxxyy, where xx is this node's Sysclone value, and yy is the partner's Sysclone value
- **The first 4 characters (ISTT) can be changed using the TRLE parameter on a model XCF PU definition within the model major node deck**
  - Specify TRLE=cccc* on the model XCF PU definition, where:
    - cccc must be from 1-4 characters.
    - The first character can be alphabetical (A-Z) or the national characters @, #, or $.
    - Any characters after the first character can be alphabetical (A-Z), numerical (0-9), or the national characters @, #, or $.
  - The generated TRLE name will be ccccxxyy, where xx is this node's Sysclone value, and yy is the partner's Sysclone value
- **An APPN PU will not be created from the model PU definition**

Things to think about

- **Since XCFINIT=DEFINE is the default for pure subarea nodes, any pure subarea nodes in the Sysplex will automatically join the ISTXCF group when they are upgraded to this release. Other nodes in the Sysplex will become aware of these nodes and may try to establish SNA XCF connectivity with them (see next bullet). If this behavior is not desired, specify XCFINIT=NO on these nodes.**
- **If a VTAM node with XCFINIT=DEFINE specified (or defaulted) is started in a Sysplex, and there are down-level VTAM APPN nodes in the Sysplex, the down-level nodes will attempt to activate an XCF PU to establish connectivity with the node specifying XCFINIT=DEFINE. Connectivity will not be established. The PU on the down-level node will remain in Pending Request Contact (PREQC) state.**
  - If the node specifying XCFINIT=DEFINE is an APPN node, connectivity can be established by issuing a Vary ACT for the XCF PU on that node.
  - If connectivity is not desired with the down-level APPN node, or the XCFINIT=DEFINE node is a subarea node, issue a Vary INACT for the XCF PU on the down-level node.
  - See the *SNA Network Implementation Guide* section on Dynamic Definition of VTAM-to-VTAM connections for more information.

LOGAPPL enhancements

New VARY NET,AUTOLOG command

- **Automatic logons**
  - Coding LOGAPPL on an LU or by issuing a VARY LOGON (or VARY ACT,LOGON) to an LU enables the LU to do an automatic logon to a specified application when the LU becomes session capable.
- **Pending autolog request**
  - Should the automatic session attempt fail, a pending autolog request is established in the LU host. The reallocation of a pending autolog request is attempted when a notification of the application's availability is received or when the conditions defined on the AUTOTI and AUTORTRY VTAM start option are met.
- **The reallocation of pending autolog requests can now be driven with the new VARY AUTOLOG operator command.**
- **The new VARY AUTOLOG command will allow customers to immediately drive pending autologon requests into session if the controlling application is located and is session capable.**
- **The VARY AUTOLOG command has an option of acting upon a selected PLU name or all PLUs for which there is a pending autolog request.**

```
>>__VARY NET,AUTOLOG___ ___,ID=*_____________________><
                        |                             |
                        |__,ID=controlling_appl_____|
```

New pending autolog request

- **Effective in z/OS V1R7 a pending autolog request is established when an LU normally terminates its session with the controlling (automatic logon) application.**
- **V1R7 includes message IST2100I in the DISPLAY AUTOLOGON command to show the pending autolog requests that were created as a result of a normal termination of an LU with its controlling application.**

```
D net,autolog,scope=all

IST350I  DISPLAY TYPE = AUTOLOG
IST1990I PENDING AUTOLOGON REQUESTS FOR:
IST1992I NETA.APPL1 - WAITING FOR AUTOTI TIMER
IST1997I  NETA.LU1
IST2100I NETA.APPL1 - NORMALLY LOGGED OFF LUS
IST1997I  NET1.LU4
IST314I  END
```

Note: The pending autolog request for NET.LU4 was created when an LU-to-LU session between NETA.APPL1 and NETA.LU4 terminated normally.

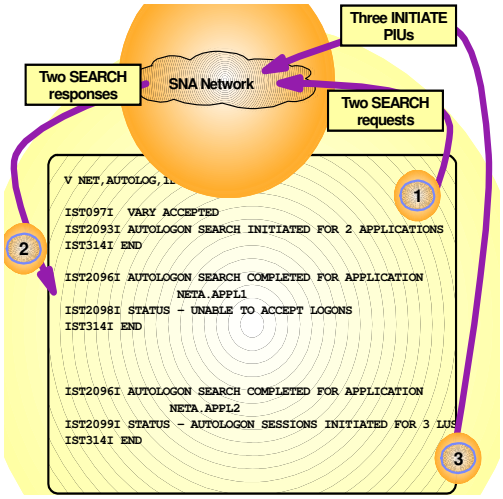
V NET,AUTOLOG,ID=* command processing example

1) Upon processing the VARY AUTOLOG operator command, external search PIUs are sent into the network to locate applications NETA.APPL1 and NETA.APPL2

3) The search response indicates whether the application could be located. If the application is located the status of the application is included.

- Each search response generates an IST2096I message group.
  - **NOTE**: In this example both NETA.APPL1 and NETA.APPL2 were located. The status of NETA.APPL1 shows that it is not session capable. The status of NETA.APPL2 shows that it is session capable.

3) Since NETA.APPL2 is capable of LU-LU sessions, the SLU host generates an initiation for each LU with a pending autologon request for application NETA.APPL2.



Normal termination pending autologon requests

- **The pending autologon requests generated by the normal termination of a session between an LU and its controlling application (as displayed in message IST2100I) are only acted upon by the VARY AUTOLOG command.**
  - They are not driven by the AUTOTI or AUTORTRY events, nor by PLU notification.
- **Once the VARY AUTOLOG command is issued:**
  - If the application is session capable
    - A session will be initiated for the LU of the pending autolog request
  - If the application is not session capable or not found
    - The pending autologon request type is changed to a request that can also be driven by the setting of the AUTORTRY and AUTOTI start options or by PLU notification.

```
D NET,AUTOLOG,SCOPE=ALL
IST097I DISPLAY ACCEPTED
IST350I DISPLAY TYPE = AUTOLOG
IST1990I PENDING AUTOLOGON REQUESTS FOR:
IST2100I NETB.APPL1 - NORMALLY LOGGED OFF LUS
IST1997I    NETA.LU1
IST314I END
```

```
V NET,AUTOLOG,ID=*
IST097I VARY ACCEPTED
IST2093I AUTOLOGON SEARCH INITIATED FOR 1 APPLICATIONS
IST314I END
IST2096I AUTOLOGON SEARCH COMPLETED FOR APPLICATION
NETB.APPL1
IST2098I STATUS = UNABLE TO ACCEPT LOGONS
IST314I END
```

```
D NET,AUTOLOG,SCOPE=ALL
IST097I DISPLAY ACCEPTED
IST350I DISPLAY TYPE = AUTOLOG
IST1990I PENDING AUTOLOGON REQUESTS FOR:
IST1991I NETB.APPL1 - WAITING FOR PLU NOTIFICATION
IST1997I    NETA.LU1
IST314I END
```

VTAM start option to display RSCVs

Route Selection Control Vector (RSCV)

- **Sessions through APPN use a Route Selection Control Vector**
  - Called RSCV
  - Series of hops, each of which describes a link to the next APPN Node
- **RSCVs between two APPN nodes can vary**
  - Different logmodes and classes of service
  - Multiple equal weight routes between APPN nodes
  - Multiple Border Node connections between APPN networks
- **RSCV not available after session failure**
  - Diagnosis aid if RSCV displayed
    - Help diagnose network problems
    - Help determine correct APPN nodes to gather documentation
  - IST663I message group issued today for session failures
    - Does not display RSCV
- **New start option - RSIRFMSG**
  - Controls displaying of RSCV on session setup failure
  - Can be changed by MODIFY VTAMOPTS
  - Included in the SIRFMSG and DSIRFMSG message groups
  - Must code SIRFMSG and/or DSIRFMSG as ALLSSCP or OLUSSCP to receive the RSIRFMSG messages (such as ASIRFMSG, ESIRFMSG, and FSIRFMSG)

New RSIRFMSG start option

- **The RSIRFMSG start option can be coded with the following values:**
  - ALLSSCP (default) - specifies that this SSCP will always issue messages
  - OLUSSCP - specifies that this SSCP will only issue messages when it owns the originating logical unit (OLU)
  - NONE - specifies that this SSCP will never issue messages
- **The modify VTAMOPTS command can be used to change the value of the RSIRFMSG start option**
  - F procname,VTAMOPTS,RSIRFMSG=ALLSSCP
  - F procname,VTAMOPTS,RSIRFMSG=OLUSSCP
  - F procname,VTAMOPTS,RSIRFMSG=NONE
- **New messages are issued as part of the IST663I message group to display the RSCV**

```
IST663I CINIT REQUEST FAILED, SENSE=08010000
IST664I REAL  OLU=NETB.APPLBA1        REAL  DLU=NETA.APPLAA1
IST889I SID = F6AF18D8B39E92EF
IST2103I RSCV TOWARDS SLU
IST1460I TGN  CPNAME             TG TYPE      HPR
IST1461I  21  NETA.SSCP1A        APPN         RTP
IST1461I  21  NETB.SSCP2A        ISL          RTP
IST1461I  21  NETB.SSCPBA        APPN         RTP
IST314I END
```

RSIRFMSG - notes

NOTES

- **Diagnosis of problems related to the new RSIRFMSG function can be done using existing trace and dump tools.**
  - In a subarea network, RSCVs are not used.
  - In an APPN network, the RSCV is calculated just prior to sending the BIND.
  - In a mixed subarea/ APPN network, the RSCV is precalculated by the ICN when the session request crosses from subarea to APPN or APPN to subarea.
  - The RSCV toward the DLUR is not learned until the DLUR sends a session started signal.
- **RSIRFMSG is a tool to aid in diagnosis of network-related problems.**
  - If the RSCV does not describe a path you expected, use your APPNCOS definitions, topology database, and/or directory database to determine why the incorrect path was used.
  - If the RSCV does describe a path you expected, use this path information to determine where to look for the cause of the failure. This can be done by examining the console logs or by capturing VTAM dumps, traces and console logs on all applicable hosts, if needed.
- **Customers who specify the SIRFMSG and/or DSIRFMSG start option as ALLSSCP or OLUSSCP may see an increase in the number of messages in the IST663I message groups displayed for session setup failures.**

VTAM command to remove generic resource from a Sysplex

When do you need to delete a generic resource?

- **A USERVAR cannot be created with the same name as a previously deleted generic resource**
  - USERVAR allows a single application to be known by another name (USERVAR).
  - Generic resources is similar, but allows multiple applications to be known by a generic name
  - A USERVAR and a generic resource cannot be defined with the same name on the same host
- **Typically customers migrate from USERVAR to generic resources**
  - There are times when a customer may want to go from generic resources to USERVAR
    - Most likely part of migration testing
  - Requires the deletion of the like-named generic resource
    - The current method to delete a generic resource does not fully delete all knowledge of a generic resource from both VTAM and the coupling facility
    - This prevents the creation of a USERVAR with the same name
- **Provide a MODIFY GR,GNAME=gname,OPTION=DELETE command**
  - Deletes generic resource information more completely:
  - Information local to the VTAM where the command is issued
  - Information in the generic resource coupling facility structure

New modify GR DELETE command

- **Issue the MODIFY GR DELETE command at every host in the Sysplex that has knowledge of the generic resource**
  - Real instance
  - Generic USERVAR
- **For command to complete successfully, every application instance of the generic resource must:**
  - Delete itself as an active instance of the generic resource
  - End all of its sessions
  - Delete all of its generic resource affinities
  - Close its ACB
- **To determine if a host has local knowledge of generic resources, issue the command:**
  - D NET,RSCLIST,ID=*,IDTYPE=GENERIC

```
d net,rsclist,id=*,idtype=generic
IST097I DISPLAY ACCEPTED
IST350I DISPLAY TYPE = RSCLIST
IST1417I NETID    NAME     STATUS     TYPE              MAJNODE
IST1418I NETA     GRAPPL   INACT      GENERIC RESOURCE  **NA**
IST1418I NETA     GRAPPL   INACT      GENERIC USERVAR   **NA**
IST1418I NETA     GRCICS   ACT/S      GENERIC RESOURCE  **NA**
IST1418I NETA     GRIMS    ACTIV      GENERIC RESOURCE  **NA**
IST1454I 3 RESOURCE(S) DISPLAYED FOR ID=*
IST314I END
```

GENERIC USERVAR indicates local generic resource data exists on this host.
GENERIC RESOURCE indicates generic resource data exists in the coupling facility.

Unformatted System Services support for mixed-case passwords

USS table support for mixed-case passwords

- **RACF Security Server now supports mixed-case passwords**
- **VTAM and TELNET Unformatted System Services (USS) currently translate input to upper case before processing**
- **A password can be included in the DATA USSPARM on a USS LOGON command**
  - appl1 user1/pw1 interact
  - LOGON APPLID(APPL1) DATA(USER1/PW1) LOGMODE(INTERACT)
- **A USS table can have USS LOGON commands for applications that support mixed-case passwords and for applications that do not support mixed-case password**
- **New operand on the USSPARM - TRANSLATE**
  - Controls translation of the specified USSPARM
  - TRANSLATE=YES (default) - USSPARM will be translated as it is today
  - TRANSLATE=NO - USSPARM will not be translated
  - Intention is that TRANSLATE=NO will only be coded on the USSPARM for DATA when a mixed-case password is supported by the destination application
  - The application must be able to translate a mixed- or lower-case user ID to upper-case if the data is entered in the format userid/password or the end user must enter the user ID in upper-case
  - Will require that the USS table be updated, assembled, link edited, and associated with the proper devices when RACF mixed-case passwords are enabled
  - New USS tables can be associated with resources while VTAM and TELNET are active
    - In VTAM, use a Modify Table command
    - In TELNET, use a Vary OBEY command

Alternative solutions

- **Inform end user to not enter the password as part of the USS LOGON**
  - The USS LOGON command is displayed on the screen as it is typed, password may be seen
  - The data is passed to the application in an unprotected field
  - Default TRANSLATE=YES processes USS LOGON as it does today
  - The application will prompt the end user for the password - usually in a non-displayed field
- **Inform end user to enter the DATA parameter in single quotes as part of the USS LOGON**
  - This is an existing function that informs USS to not translate the data
  - The quotes are removed before the data is passed to the application
  - The application must be able to translate a mixed or lower case user ID to upper case or the end user must enter the user ID in upper case
  - logon applid(appl1) data('user1/pw1') logmode(interact)
  - appl1 'user1/pw1' interact
  - LOGON APPLID(APPL1) DATA(user1/pw1) LOGMODE(INTERACT)
- **Interpret Table can be used if end user only specifies APPLID and DATA**
  - Additional USSPARMs are passed to the application as data
  - REMOVE=Y on LOGCHAR macro can be used to remove the first string from the entered data
  - Interpret Routine could also be written to avoid USS data translation
  - The application must be able to translate a mixed or lower case user ID to upper case or the end user must enter the user ID in upper case
  - appl1 user1/pw1
  - LOGON APPLID(APPL1) DATA(user1/pw1)

Examples

USS table example

```
AUSSTAB  USSTAB
APPL1    USSCMD  CMD=APPL1,REP=LOGON,FORMAT=PL1
         USSPARM PARM=APPLID,REP=APPLID,DEFAULT=APPL1
         USSPARM PARM=P1,REP=DATA,TRANSLATE=NO
         USSPARM PARM=P2,REP=LOGMODE
LOGON    USSCMD  CMD=LOGON,FORMAT=PL1
         USSPARM PARM=P1,REP=APPLID
         USSPARM PARM=P2,REP=DATA
         USSPARM PARM=P3,REP=LOGMODE
         USSEND
```

Interpret table example

```
AINTAB   INTAB
         LOGCHAR  APPLID=(APPL1),SEQNCE='appl1',REMOVE=Y
         LOGCHAR  APPLID=(APPL1),SEQNCE='APPL1',REMOVE=Y
         ENDINTAB AINTAB
```

Things to think about

- **End user can stop entering the password as part of the USS LOGON at any time**
  - Before or after RACF mixed-case passwords are enabled
- **If the application can translate a mixed- or lower-case user ID to upper-case**
  - Entering the DATA parameter in single quotes, coding an Interpret table, or adding TRANSLATE=NO to the USSPARM can be done at any time
  - Before or after RACF mixed-case passwords are enabled
  - Most applications currently translate the user ID to upper-case
  - If the application has been updated to support mixed-case passwords, it can check to see if RACF mixed-case passwords are enabled before translating the password to upper-case
- **If the application cannot translate a mixed- or lower-case user ID to upper-case**
  - Do not enter the DATA parameter in single quotes, do not code an Interpret Table, and do not specify TRANSLATE=NO on the USSPARM for this application
  - If the application has been updated to support mixed-case passwords, have the end user stop entering the password on the USS LOGON once RACF mixed-case passwords are enabled
- **Can test to see if an application can translate a mixed- or lower-case user ID to upper-case by**
  - Entering the DATA parameter in single quotes, coding an Interpret table, or adding TRANSLATE=NO to the USSPARM

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