Summary of Changes, VSE/POWER 7.1

The following summarizes changes made to VSE/POWER 7.1.

Extension of Functional Support

This section summarizes the changes made to provide enhanced functionality.

Reducing System Down Time

Now finally with VSE/POWER 7.1 existing functions have been improved and new functions have been added to close all known gaps where a cold start[1] of the VSE/POWER spool files has been required in the past, and where costly time had to be spent in offloading of queues, reformatting spool files extents and in reloading the queues. Instead, during a VSE/POWER **warmstart** the following functions can be performed without a noticeable loss in system-up time:

- "**Release Migration During Warmstart**" for VSE/POWER 6.7 (and later) spool files. For details see "Upward Migration to VSE/POWER 7.1" on page 18.
- "Extending the Data File During Warmstart" — introduced with Version 6.6 for for one extent, expanded in Version 7.1 to "any" number of data file extents. For details see "Extending a Queue or Data File During Warm Start" on page 38.
- "Re-Allocate Queue File During Warmstart" — introduced with Version 6.7. For details see "Re-Allocate Queue File During Warm Start" on page 41.
- "Change Local Node Name During Warmstart" — introduced with Version 6.7. For details see *VSE/POWER Networking*.

At the same time, switching the spool file processing mode from shared to non-shared, or vice versa, during a VSE/POWER warmstart has been readdressed by improved operator guidance via messages 1QB3A/1QB3D and 1QBGD. Even a defensive coding technique of anticipating an incorrect operator response has been provided to terminate "shared spooling" operation as soon as concurrent "non-shared" operation has been detected that would eventually corrupt the spool files.

These steps may be invoked individually at separate warmstarts or combined during one warmstart incident, with the exception of "Release Migration" which cannot be combined with "Re-Allocation" of the queue file.

General Functional Enhancements

Automatic Journal Creation for Offload BACKUP/PICKUP/SAVE

When requesting the POFFLOAD BACKUP/PICKUP/SAVE command to write VSE/POWER entries to tape, the POFFLOAD Journal function automatically creates a journal list queue entry named $OFJnnnn, which records:

- all entries saved successfully to tape and individually numbered
- the offload command format with start and end time stamps
- tape attributes and volumes required

---

1. One last situation may occur where a cold start formatting of the data file can occur, but is generally less important and not requiring immediate attention, namely when the system administrator wishes to alter the DBLK or DBLKGP size to modify spooling utilization.

- most important console messages accompanying the offload process, relieving the operator's effort to search the hardcopy in case problems are noticed later

Thus the journal reflects the tape contents and increases the operator's productivity when later producing individual tape reports using the PDISPLAY command:

- the report already exists in the LST queue for all tapes used in the process
- the re-mounting of individual tapes for each report is no longer required

For details about the Journal function and for samples of the journal layout, refer to "POFFLOAD Journaling" on page 339.

Delayed Deletion of Queue Entries

When VSE/POWER queue entries are to be deleted, they are no longer processed immediately by the given task, for example a command processor task or an execution reader. Instead these tasks merely remove the queue entries from the RDR/LST/PUN/XMT queue and flag them "to be deleted", meaning that they are put in the DELetion queue. Then the termination task is posted to finally free the entries, that is, delete them from the DEL queue individually, return the queue record to the free queue record chain, write its DBLK groups free on the data file (a function of DBLK group tracing) and add these groups to a free DBLK group subchain.

When a sizable number of queue entries (for example, all of a given class) or a big queue entry has to be deleted, the 2–stage deletion process has great performance advantages:

- The deleting task is immediately able to continue — callers need not wait unexpectedly long
- "final deletion" is done with the lowest priority by the termination task which need not lock spooling resources during deletion of chained queue entries or during writing of DBLK groups to the free DBLK group subchain.

Consequently, when deleting a large spool entry, the default DBLK group tracing does no longer reduce VSE/POWER responsiveness. Hence DBLK group tracing will no longer be an option controlled by the PSTOP DBLKTR command and will always be available for the sake of spool data integrity. See also "Life Cycle of VSE/POWER Queue Entries" on page 30

Additional Improvements Implemented by Field APARs

The following changes have been implemented by field APARs:

- Suppress frequently occurring informational VSE/POWER messages on console

  When the console is flooded by unimportant messages, you can use the PVARY MSG command to disable them for display on the console, but have them available on the hardcopy console file for review purposes. See "Format 4: Varying VSE/POWER Messages" on page 391 for disabling, displaying and re-enabling of such messages.

- Avoid immediate processing of dispatchable entries reloaded from tape

  Using POFFLOAD LOAD/SELECT you may introduce dispatchable queue entries which are executed/processed unwillingly unless you // PAUSE the partition, disable dynamic classes, or stop processing tasks. Specifying the new HOLD=YES operand you can introduce dispatchable entries from tape with their disposition set to the corresponding "hold" value (disposition 'D' is set to 'H', and 'K' is set to 'L'). See "Format 3: Loading All or Selected Entries from Tape" on page 326.

- Recording of printed/punched output entries on the console

For PNET any transmitted queue entry is recorded on the console by the
message 1RA0I, but for local LST/PUN tasks (especially with the' VM' option)
there exists no automatic recording message for individually processed queue
entries. With the LOG=YES operand, the "successfully processed" message
1Q8KI can be requested and, using the PVARY MSG facility, this message may
even be disabled for the console, but appears in the hardcopy file. See "Format
1: Processing Disk-Spooled Output" on page 359.

- Establish operator confirmation for critical commands

  Inadvertently entering a PDELETE LST,ALL (for example using the short form L
  LST,ALL) command may have drastic unwanted effects. By default, a new SET
  statement SET CONFIRM=PDELETE,QUEUE,ALL has been established
  requesting an initial confirmation with the message

  ```
  1QZ3D  PROCESS 'L LST,ALL'? CONFIRM WITH 'YES', ELSE 'NO'
  ```

  Similarly, to protect against unwanted bulk execution, you may now provide the
  SET CONFIRM=PRELEASE,QUEUE,ALL autostart statement within your
  VSE/POWER startup procedure. See "SET: Setting VSE/POWER Startup Control
  Values" on page 473.

- Support for IBM 3592 WORM (Write Once Read Multiple) tape unit

  All VSE/POWER tape writing functions (POFFLOAD BACKUP/SAVE/PICKUP
  and DISP=T spooling) support the new archiving IBM 3592 tape unit, which
  cannot "backout" incomplete user data already written at tape end, forcing
  VSE/POWER to create "invalid" trailing queue entries on tape instead. The tape
  reading functions (POFFLOAD LOAD/SELECT and tape PDISPLAY) can
  identify "invalid" entries and ignore them. The tape writer task reading from a
  D/3592 is rejected by message 1Q7FI because of the possible presence of
  "invalid" data whose eventual presence could only be detected after the data
  had been processed. See "Layout of VSE/POWER Tapes" on page 527 for a
  description of "invalid" queue entries on spool tapes.

- Execution pausing for dynamic partitions

  Following abnormal termination with SET NORUN=YES:
  – active jobs are held with DISP=X, and
  – static partitions enter the // PAUSE mode

  but dynamic partitions simply start to execute the next job. With the SET
  NORUN=YES,DYN1=PAUSE autostart statement, VSE/POWER handles static
  partitions and dynamic classes with **MAX ACTIVE=1** equally, that is, it modifies
  the dynamic partition behavior of such class(es) to cause the partition to enter
  the // PAUSE mode and allows for rearrangement of jobs to be executed in
  such class(es). See "SET: Setting VSE/POWER Startup Control Values" on page
  473 for defaults on the improved NORUN= operand.

- Adapt single sheet separator pages for Spool Access tasks

  Customizing separator pages by the SET ISEP= or the SET DLSEP= and SET
  xxLINE= autostart statements for adapted single sheet printing until now has
  been effective only for local printing, not as, for example, AUTOLPR printing via
  Spool Access Support (SAS) tasks or Device Service Tasks (DST). This gap is
  now closed by the SET DLSEPSAS=YES|FORCE and the
  SET ISEPSAS=YES|FORCE autostart statements. For details see "SET: Setting
  VSE/POWER Startup Control Values" on page 473.

- Protection against unexpected number of Spool Access Support (SAS) task

  Failing XPCC applications (that CONNECT but don't DISCONNECT) may loop
  on connecting to VSE/POWER by ever increasing numbers of SAS tasks until all
  VSE/POWER partition Getvis or SETPFX storage is exhausted and spooling
  comes to a halt. Now a default threshold number of 250 current SAS tasks has

been introduced. When exceeded, the XPCC application fails during CONNECT with XPCC RETC/REAS=X'19/40' accompanied by VSE/POWER's RETCD/FBKCD=X'10/07', and the operator is informed by message 1Q3JA. She may then check the failing XPCC application and/or modify the threshold via the PVARY MAXSAS,nnn command. See "Format 5: Varying the Maximum Number of SAS Tasks" on page 393 for further information.

- Identify all possible segment attributes at IPWSEGM request

  Upon invocation of the IPWSEGM macro to establish the spooling attributes of a new segment and thereby overwriting the attributes of the previous segment, it may be necessary to re-establish the attributes of the old segment. Until now the program needed to remember the attributes of the old segment. With the previous IPW$MXD macro version "VS10" (see field $MXVRS) there was no complete support for this. When recompiling with VSE/POWER 7.1.0 the new IPW$MXD macro (version "VS20") an extension area provides 14 additional segment attributes which give information about previous segment characteristics. See *VSE/POWER Application Programming* "IPW$MXD Mapping Macro" for extended segment attributes.

  Note: The user must reassemble his application code with the new PNODE macro to benefit from these performance improvements.

- Allow PNET exploitation of "external-IP-address" with firewall

  For TCP/IP networking, when the local node resides behind a firewall (known externally by an "external-IP-address" but internally by an "internal-IP-address", the local node will return its "internal-IP-address" in the OPEN CONTROL record to remote node, which fail with the message:

  ```
  1RT3I ... UNKNOWN ... IP-ADDR  (=internal-IP-address of local node)
  ```

  Now the PNODE macro provides a new operand IPEXTRAD=external-IP-address (of local node) for PNODE entries of remote nodes to ensure successful session establishment. For details refer to:

  – PNODE macro. See "Format 4: Defining a Directly Linked TCP Node" on page 84
  – display of external address. See "Format 9: PDISPLAY PNET" on page 275.
  – VSE/POWER Networking. See *VSE/POWER Networking* "Change Local Node Name During Warm Start".

- Accelerate PNET TCP and SSL connections

  The previous PNODE macro established the standard number of two receiver buffers for communication with a remote TCP or SSL node. As soon as the TCP/SSL layer provided data to PNET receiver tasks (which have to spool the data to disk), the two receiver buffers may not have been sufficient and led to a "wait-a-bit" indicator to be returned to the transmitting node, slowing performance. This is now avoided by the extended PNODE macro, which defines a default MAXBUF=(4,4) operand, namely 4 receiver and 4 transmitter buffers, and which allows to specify a maximum MAXBUF=(16,16) configuration.

  Note: The user must reassemble his NDT with the new PNODE macro to benefit from these performance improvements.

Summary of Changes, VSE/POWER 6.7

The following summary of changes for the previous VSE/POWER 6.7 is included to help those readers that did not install that release to keep informed of functional changes.

Extension of Functional Support

This section summarizes the changes made to provide enhanced functionality.

Relief for High End Spooling Systems

Number of Spool Entries Increased to 100,000:   The number of spooling entries has been extended from 32,768 (32,766 usable) to 100,000 (99,998 usable). The externally visible highest wrap-around job number of 65,535 has not been changed[2]. The structure of the increased queue file IJQFILE on disk remains unchanged, however the following internal changes should be considered with respect to user exit or OEM code:

- the disk management block (DMB), as mapped by the macro IPW$DQC, has had a major rearrangement and code references will require a recompile
- the 2–byte pairs of class anchors of the DMB for the queue classes (RDR/LST/PUN/XMT), as mapped by the macro IPW$DCT, have been extended to 4–bytes pairs, possibly requiring code changes by non-standard interfaces
- the internal macro IPW$WFQ (wait for class posting) no longer checks the standard ECB bit 16 (0,1,2...) for class anchor activity, and instead checks bit 32, possibly requiring code changes by non-standard interfaces
- the spool environment header record (SEH), as mapped by the macro IPW$DSP SEH=YES, and spool environment trailer record (SER), as mapped by the macro IPW$DSP SER=YES, have been extended in size from X'70' to X'C0' bytes as indicated by their internal 4–byte length field. These records precede the first, respectively last, data block (DBLK) of every data block group (DBLKGP) of the VSE/POWER data file (see "Analyzing Queue File and Data File in Dumps" on page 523 for the record layouts). Code of non-standard interfaces referring to these records may require verification

For details on the external specifications of a standard size or large queue file, refer to "The Size of the Queue File" on page 33.

New Internal Validity Checking "Data Ownership Test": With this release VSE/POWER has activated the "data ownership test", whereby all queue entries being fetched from a RDR/LST/PUN/XMT queue are verified whether spool data contained in the individual data block groups (DBLKGP) are correctly chained to the owning spool entry queue record. In an incorrect case, the entry is flagged by the message 1Q6UA, isolated by the message 1Q6JI, and finally the processing task is terminated. The checking is very fast with no visible effect on system performance, and can help greatly to reveal the presence of data corruption, especially in large spooling systems. See "Data Ownership Tracing" on page 527.

---

2. Although the highest job number remains unchanged and wraps around to the job number 00001, as in previous VSE/POWER releases, commands using both the job name and job number to identify a spool entry to be processed, will for all practicable purposes be adequate. Otherwise a spool entry can be uniquely identified by the internal queue entry number QNUM (see "Format 1-4: PDISPLAY LST,FULL=YES" on page 257

Display List of Largest Spool Entries

In dealing with the problem of insufficient spooling capacity, VSE/POWER supports new commands and operands to identify those spool entities consuming the greatest spooling space, for example:

- PDISPLAY LST,CPAGES>nnnnn or PDISPLAY PUN,CCARDS>nnnnn search the RDR/LST/PUN/XMT queues for the spool entries larger than the specified page or card count. These "C"-type search operands may also be specified for the queue manipulation commands (PALTER, PDELETE, PHOLD and PRELEASE). For a complete list of "C"-type operands, see the section "Keyword Search Operands" of the specified command.

- PDISPLAY BIGGEST,LIMIT=nn searches the complete VSE/POWER spool space queues CRE/RDR/LST/PUN/XMT/DEL for the 'nn' largest queue entries and presents them in the descending order of DBLK groups used. For details on the command format, see "Format 6: Displaying Information for the 'nn' Largest Entries" on page 237 and details on the display format, see "Format 6: PDISPLAY BIGGEST,LIMIT=7" on page 267.

Reducing System-Down Time

Although the VSE/POWER 6.6 function "Data File Extension During Warm Start" helped customers to avoid a perhaps lengthy system cold start, there remained two further important cases where a spooling system needed modification(s) requiring formatting (queue file and all data file extents) and a perhaps lengthy down time, namely when 1) the queue file has to be enlarged, or 2) when the local PNET node name must be changed. The consequence is that the operator must offload/backup the spool file, format the queue/data files via cold start, and reload the offloaded spool entries, perhaps costing several hours. Now both of the above cases can be performed by a much faster warm start.

Re-allocate Queue File During Warm Start: To further minimize system down-time, VSE/POWER can now re-allocate the queue file, that is, relocate it to **another** disk position, and further **extend** the file size at the same time. This transition during warm start requires only a short formatting step for the new queue file since already existing queue records of the old queue file are transported to the new queue file, thus leaving the linkage between a spool entry queue record and its spool data untouched. The queue file re-allocation is triggered when the STDLABEL.PROC and DTRPOWR.PROC have been changed as follows for the subsequent VSE/POWER warm start:

- the existing queue file is named IJQFOLD and assigned to the logical unit SYS034

- the newly extended queue file is named IJQFILE and assigned to the logical unit SYS001

Following operator prompting and extent verification the extended IJQFILE is formatted and is primed with all queue records of IJQFOLD. Finally the VTOC entry of IJQFOLD is overwritten by a work file named "VSE.POWER.DUMMY.FILE". For details see "Extending Existing VSE/POWER Spool Files" on page 38.

PNET Node Name Change during Warm Start: The local PNET node name is not only contained in the spool entry queue record, but also in spool entry control records (job header and data set header records) within the spool data on the data file. Converting the spool entry node name previously could only be achieved by performing a cold start as described in *VSE/POWER Networking* under "Changing the Name of the Local Node".

This conversion process can now be requested during a VSE/POWER warm start, whenever a different local node name is introduced via the network definition table (NDT) as specified by the PNET= operand of the POWER macro generation, or by the SET PNET autostart override statement. After operator confirmation, the conversion process is started for all existing queue entries. "Work-in-progress" messages will accompany the processing as the VSE/POWER initialization is possibly delayed due to this new function, until finally the dynamic conversion of the spool files has completed. For details see *VSE/POWER Networking*.

General Functional Extensions

SLI Member JECL Statement Continuation Enablement
Source Statement Library Inclusion (SLI) for a member originating from a VSE/AF or VSE/ICCF library had previously never allowed continuation of a * $$ LST or * $$ PUN from one statement to another according to VSE/POWER JECL continuation rules. Instead the * $$ LST or * $$ PUN JECL statement was rejected by message 1Q49I INVALID DELIMITER followed by 1R33D CORRECT FULL STATEMENT, due to the reason that VSE/POWER disallowed continuation and required that the last operand value not end with a delimiting comma.

Now VSE/POWER provides support for processing of an "unlimited" number of JECL operands by enabling the continuation of the * $$ LST and * $$ PUN statements which appear within an SLI member. For details see "* $$ SLI: Including a Library Member into a Job Stream" on page 463, especially "Rules for Coding the SLI Statement" on page 463.

Display Spool Entry Number and Distribution
The PDISPLAY Q command has been enhanced to display the current status of spool entries with respect to number and distribution of used entries:

- the total number of current used spool entries (used queue records)
- the distribution of the spool entries among the logical in-creation (CRE) and deletion (DEL) queues
- the distribution of the spool entries among the physical queues (RDR/LST/PUN/XMT)

For an example see "Format 7: PDISPLAY Q" on page 268.

Additional Improvements Implemented by Field APARs
The following changes have been implemented by field APARs:

- Eliminate spooling bottle neck during console decision message 1Q55D reply period.

  When a VSE/POWER controlled partition was performing tape spooling or VSE/POWER was printing from tape, and the task did not provide a correct tape address (cuu), VSE/POWER previously requested the operator to specify a tape device via the decision message 1Q55D, and the VSE/POWER partition console support went into a wait state until the reply was entered, and spooling activity began to grind to a halt as tasks attempting to issue a console message had to wait. Now the message 1Q55A action message is issued prompting the operator to issue a PGO command response specifying the "cuu" device. This solution does not block the VSE/POWER console nor spooling activity. See "Format 5: Reactivating a Tape Spooling Task in 1Q55A Wait State" on page 302 and "Format 6: Reactivating a Tape WriterTask in 1Q55A Wait State" on page 302.
- Suppress segmentation of PDUMPS's when spooling to 3800 printer.

Segmentation caused by a 3800 printer SETPRT requests of the PDUMP macro may now be suppressed using the

```
SET PDUMP=NOSEGMENT
```

autostart statement. See "SET: Setting VSE/POWER Startup Control Values" on page 473
- Redisplay ignored startup statements.

Previously misplaced SET or DEFINE autostart statements were ignored during VSE/POWER startup as indicated by message 1Q06I. Now the command:

```
PDISPLAY AUSTMT
```

has been enhanced to display ignored autostart statements, which may have been overseen by the operator. Ignored statements are prefixed with the text:

```
>> IGN'D:
```

and erroneous statements are prefixed with the text:

```
>> ERROR:
```

See "Format 14: Displaying Information About Used Autostart Statements" on page 245
- Remove command length limitations of 72 bytes.

VSE/POWER commands submitted via the Attention Routine interface or via the Spool Access Support (SAS) CTL request previously were limited to 72 bytes. Now the maximum command length has been increased to 130 bytes, allowing for more operands or longer operand values.
- Preserve $LSTnnnn or $TAPnnnn entries in the LST queue.

The $LSTnnnn LST queue entry created by a

```
PDISPLAY ALL|TOTAL,LST
```

command, or similarly the

```
PDISPLAY entry,TAPE=cuu,OUT=LST
```

command has a default disposition 'D' and class 'A'. It may easily be selected for printing by a local list task before the operator can browse and view this entry. Now the

```
SET HOLDCL=class
```

autostart statement allows to pre-determine the default class of these entries, and at the same time keep them with disposition 'H' in the LST queue for browsing. See "SET: Setting VSE/POWER Startup Control Values" on page 473
- Allow the specification of the BLDG=, DEPT=, ROOM= and PROGR= operands in the * $$ LST or * $$ PUN statements and thereby override any * $$ JOB specification.

Summary of Changes, VSE/POWER 6.6

The following summary of changes for the previous VSE/POWER 6.6 is included to help those readers that did not install that release to keep informed of functional changes.

Extension of Functional Support

This section summarizes the changes made to provide enhanced functionality.

Data File Extension During Warm Start

To minimize the long system downtime (caused by formatting all extents of the data and queue files during a VSE/POWER cold start), VSE/POWER now offers extension of the data file during a warm start. The data file extension will not affect already spooled data and is triggered when VSE/POWER detects that one more extent has been appended to the existing IJDFILE DLBL/EXTENT statements in the label procedure (STDLABEL.PROC) of a VSE/POWER warm start. After operator prompting and file verification, the formatting of the additional extent is done in parallel with ongoing spooling. For details see "Extending Existing VSE/POWER Spool Files" on page 38.

Along with this new function, the PDISPLAY Q command (see sample under "Format 7: PDISPLAY Q" on page 268) has been enhanced to present all currently used extents of the queue, data, and account files and their detailed physical locations.

Extension of Networking Capabilities

VSE/POWER networking has been enhanced to use the Secure Sockets Layer (SSL) feature for TCP/IP connections. Data (jobs, list and punch output, messages and commands) which is sent between two VSE/POWER nodes via a TCP/IP connection is encrypted according the private key of the customer. Network control records, which contain for example a node password, are encrypted as well. This support is referred to as 'PNET SSL'. The usage of the SSL feature is optional and is selected for each node separately, which means that there are henceforth
- SSL nodes using a TCP/IP connection with the SSL feature
- TCP nodes using a TCP/IP connection without the SSL feature.

For this purpose, VSE/POWER initiates an application interface to the local TCP/IP host partition and communicates via Assembler asynchronous EZASMI SOCKET requests that enter the LE environment for C-SOCKET calls to the 'TCP/IP for VSE/ESA' host partition. This application interface is established in addition to an application interface used for TCP nodes.

The following enhancements, changes, and rules accompany this networking enhancement:
- The PNODE macro offers new operands to define an SSL node by specifying the dotted decimal IP address or the symbolic IP address of the remote node, and optionally a port number. In addition, new operands are available to specify the private key of the customer.
- A Network Definition Table (NDT) is generated from PNODE assemblies. PLOADing an NDT with at least one SSL node will immediately open VSE/POWER's TCP/IP interface, so that any incoming CONNECT request can be responded to, although no PSTART command was given for the connecting node.
- The new PNODE macro generates a Version 06.0 NDT, which is incompatible with NDTs (Version 05.0) generated by previous VSE/POWER releases.

   Note: Existing NDTs must be re-assembled under VSE/POWER 6.6.
- The display of a Version 06.0 NDT has a new arrangement.
- The PSTART PNET command for an SSL node has the same format as used for TCP nodes. All other PSTOP, PDRAIN, PACT, PFLUSH, and PINQUIRE networking commands are independent of the node type and therefore transparent.
- The PINQUIRE command has been enhanced for

- subselection via PNETSSL
- new display of local node attributes
- improved display of remote nodes
- The so-called PNET Console trace of BSC/CTC/TCP/SSL communications has been extended for
  - subselection of PNETSSL
  - comprehensive trace information for SSL nodes

Additional Improvements Implemented by Field APARs

The following changes have been implemented by field APARs:

- Request confirmation for critical VSE/POWER commands

  Use the new SET CONFIRM=power-command to request confirmation of the command. For example, SET CONFIRM=PEND will then prompt the operator with the new message 1QZ3D. See "SET: Setting VSE/POWER Startup Control Values" on page 473.

- Request identical separator pages

  Use the new SET DLSEP=YES|FORCE command to force identical separator pages and drop the 'last' separator page for *all* list tasks to be started.

  This is similar to the existing 'DLSEP' operand of the PSTART LST command. See "SET: Setting VSE/POWER Startup Control Values" on page 473. For the differences between 'YES' and 'FORCE', see Table 7 on page 185.

- Ignore SET NORUN=YES for selected jobs

  For CICS and VTAM startup jobs, which should come up in any case, it may not be desirable to enter DISP=X at VSE/POWER recovery due to SET NORUN=YES. The new * $$ JOB operand NORUN=IGN allows ignoring such general SET NORUN processing. This special job attribute is reflected
  - during PDISPLAY RDR,...,FULL=YES by NORUN=IGN
  - via Spool Access GET-OPEN reply SPL by SPLDFLG.SPLDFRUN X'08'
  - via Spool Access CTL (Fixed Format) Display Request by PXFMFLG2.PXFM2RUN X'01'

- Search for U='user_information'

  The user information as specified by the UINF= (or USER=) operand of a * $$ JOB/LST/PUN statement or of the PALTER command is displayed (with FULL=YES) via the U='   16 bytes   ' field. It is used by TCP/IP for VSE to contain the dotted decimal or symbolic IP address of the IP host owning the target printer or the name of a script file. Use the new CUINF='...' search operand of the queue manipulation or display commands to select queue entries according to Current User Information content.

- Verify successful command processing

  Existing message 1R88I OK, issued for completed central operator queue manipulation commands (PALTER, PDELETE, PHOLD, PRELEASE), has been extended to identify the number of processed queue entries together with the repeated command, e.g.

```
1R88I  OK : 6 ENTRIES PROCESSED BY PALTER,LST,*SSL,DISP=K
```