Licensed Program Specifications

Virtual Machine Remote Spooling Communications Subsystem Networking Version 3 Release 2 Program Number 5684-096

Virtual Machine Remote Spooling Communications Subsystem Networking Version 3 Release 2 (RSCS 3.2) is a VM networking program that provides data transfer services. RSCS 3.2 contains the functions provided by RSCS Version 3 Release 1.1 (RSCS 3.1.1). In addition, RSCS 3.2 provides the following new functions and enhancements.

- 31-bit Addressing Support

  RSCS 3.2 has been enabled to use 31-bit addressing, which allows RSCS to use storage above the 16MB line. This support relieves storage constraints and enables more links to be defined to the RSCS virtual machine. The sample exit routines supplied with RSCS 3.2 are also 31-bit enabled.

- Transmission Control Protocol/Internet Protcol (TCP/IP) Support

  RSCS 3.2 provides the following enhancements to enable interaction with hosts or connections within a TCP/IP network.

  - LPR (line printer router) line drivers allow RSCS to send files to a TCP/IP line printer daemon within a TCP/IP network.

    RSCS 3.2 also adds LPR exits, which are used to send, and customize, data streams that are sent to a specific device within a TCP/IP network.

  - TCPASCII line drivers allow RSCS to send output to ASCII printers that are attached to terminal servers within a TCP/IP network. This enhancement enables RSCS to support workstation printers that use TCP/IP as the transport medium.

    Except for a small difference in the data passed to the Attention interrupt processing exit, the TCPASCII-type links have been designed to support the current ASCII printer and plotter exits.

  - TCPNJE line drivers enable RSCS to send data to another peer NJE node within a TCP/IP network.

  - LPD (line printer daemon) line driver support is also planned and will be available through APAR VM59347. The LPD line driver allows RSCS to accept files from an IP network and distribute them on the local system or route them to a remote node in the RSCS network.

  - RSCS 3.2 also provides a socket interface that enables customers to create other RSCS TCP/IP line drivers.

- Exit Facility Enhancements

  The following IBM-defined exit points have been added to RSCS 3.2:

Exit 44	Link Termination
Exit 45	Output Page Accounting
Exit 46	Verification of Page Accounting
Exit 47	Driver Initialization
Exit 48	Verification of Output Page Error

- Enhanced VMSES/E Support

  The sample exit routines supplied with RSCS 3.2 have been enabled to the use the Virtual Machine Serviceability Enhancements/Staged (VMSES/E) component of VM/ESA. This support simplifies the installation and service of these sample exit routines.

- RJE-Type Link Enhancements

  The POLL, MSG, and OPR options have been added for RJE-type links. These options provide greater flexibility for communicating with various types of remote workstations.

- MRJE-Type Link Enhancements

  The TPASS parameter has been added to the MRJE-type links to enhance security when the remote node signs on the host system.

- Additional Enhancements

  Other enhancements to RSCS 3.2 include:

  - 5-digit origin spool ID support
  - Support for virtual addresses up to X'FFFF'
  - Forms control support for autostart links

- VM RSCS Data Interchange Manager (RSCS Interchange) Enhancements
  - RSCS Interchange has also been enabled to use 31-bit addressing.
  - Support has been added to enable customers to specify, and query, the format of the From: header of files that are sent to remote domains.

Connectivity Support

RSCS 3.2 supports connections to the following devices and environments:

- Various types of ASCII printers and plotters
- TCP/IP print servers
- Multileaving Remote Job Entry (MRJE)
- Network Job Entry (NJE), including peer nodes in a TCP/IP network or SNA network
- Remote Job Entry (RJE)
- SNA RJE System/36 LU-T1
- 3270 and SNA 3270 Information Display System Printers.

Specified Operating Environment

Machine Requirements

RSCS 3.2 does not have any processor-dependent code. It relies on the underlying operating system to provide processor-dependent functions. RSCS 3.2 runs on those processors that are supported by the following Virtual Machine/Enterprise Systems Architecture* (VM/ESA*) releases:

- Version 1 Release 2.1 (5684-112)
- Version 1 Release 2.2 (5684-112)
- Version 2 Release 1.0 (5654-030)

The following table lists the approximate amount of DASD space, in cylinders or blocks, needed to store the required and optional files for RSCS 3.2.

Table 1. Approximate RSCS 3.2 DASD Requirements

Device Type	Storage Requirements	
	Required Files	Optional Files
9345, 3380	120	85
3390	105	75
3375	188	138
3350	152	115
FB-512 blocks	133830	106200
SFS 4K blocks	14250	12775

Programming Requirements

The following IBM* licensed programs are required for RSCS 3.2:

- VM/ESA Version 1 Release 2.1
- VM/ESA Version 1 Release 2.2
- VM/ESA Version 2 Release 1.0

For connections to a Systems Network Architecture (SNA) network, one of the following releases of ACF/VTAM* must also be installed on your VM/ESA system:

- ACF/VTAM Version 3 Release 4.1 for VM/ESA (5664-280)
- ACF/VTAM Version 4 Release 2 for VM/ESA (5654-010), or later

For TCP/IP connections, TCP/IP Version 2 Release 2 for VM (5735-FAL) (and APAR PN40284, PTF UN42195), or later, is also required.

Note: If RSCS 3.2 is installed on a VM/ESA Version 2 Release 1.0 system and TCP/IP connections will be used, TCP/IP Version 2 Release 3 for VM is required.

Compatibility
RSCS 3.2 is compatible with RSCS 3.1.1. All functions in RSCS 3.1.1 exist within RSCS 3.2.

However, all customer-written exit routines must be written to be 31-bit enabled. Also, any exit routines used with previous releases of RSCS must be recompiled with the macro library supplied by RSCS 3.2.

System Integrity
For RSCS 3.2, IBM accepts APARs that describe exposures to system integrity or that describe problems encountered when a program running in a virtual machine not authorized by a mechanism under the customer's control introduces an exposure to system integrity.

Licensed Program Materials Availability

This licensed program is available with source licensed program materials for some modules designated as "RESTRICTED MATERIALS OF IBM."

RSCS 3.2 is coded entirely in assembler language except for the following items:

- Message Compiler
- Message Conversion Exec
- RSCS Interchange Server
- Various control files

Supplemental Terms

Designated Machine Identification
Designated Machine Identification Required: Yes

Testing period
Basic License: 2 months

Distributed Systems License Option (DSLO) License: None

Installation/Location License

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Usage Restriction

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Type/Duration of Program Services
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