



VM/ESA Version 2 Release 3.0 and Network Computing Availability

Overview

Network Computing and VM

Network computing can help leverage your systems and skills to enhance your business success. Your VM system has consistently delivered the benefits of robust, centralized computing to your organization. Now this flexible, high-performance server platform is being enhanced to enable more network-based computing solutions with VM/ESA® Version 2 Release 3.0.

An integrated TCP/IP suite, Network File System (NFS) access to VM files, Java™ Virtual Machine capability, and Message Queueing Interface (MQI) support further strengthen VM/ESA's role as a platform for business solution deployment in networked environments. VM/ESA Version 2 Release 3.0 is a Year 2000 ready base for your existing applications; it is the right platform for your business today and into the next century.

In addition to expanded network computing support, VM/ESA Version 2 Release 3.0 will provide:

- OS/390™ Parallel Sysplex™ Testing support, enabling customers to test entire OS/390 Sysplex clusters as a set of guest virtual machines on selected processors
- Integrated IBM Language Environment® (LE), at no additional charge, and additional UNIX® interfaces to simplify application enablement and porting
- The RSCS product, pre-installed in the VM/ESA base DDR as a priced program
- Support for IBM's newest S/390® Server hardware

- Extensions to the support for the year 2000 and beyond that was initially delivered in VM/ESA Version 2 Release 2

Additional information regarding VM's current capabilities, applications, customer uses, and support for the year 2000 and beyond is available on the Internet:

<http://www.vm.ibm.com>

You can also obtain additional information from your IBM representative or IBM Business Partner™.

Note: As of March 24, 1998, VM/ESA Version 2 Release 2.0 and RSCS Version 3 Release 1.1 will be withdrawn from marketing.

Refer to:

- Software Announcement 296-336, dated September 10, 1996
- Software Announcement 296-320, dated September 10, 1996
- Software Announcement 297-409, dated October 7, 1997

Planned Availability Date

March 27, 1998

At a Glance

VM/ESA Version 2 Release 3.0 provides:

- Integrated TCP/IP as an optional, priced feature of VM/ESA base
- TCP/IP support for high-bandwidth networks
- TCP/IP performance monitoring
- Simplified support for multiple Web home pages on a single network
- Improved Simple Mail Transfer Protocol (SMTP) server performance
- Network File System access to Shared File System and Byte File System
- Java Virtual Machine, JDK 1.1.1, and NetRexx
- Message Queueing client interface
- A total of more than 700 UNIX programming interfaces
- Integration of CMS Pipelines PRPQ
- Integrated IBM Language Environment (LE)
- The RSCS product, pre-installed in the VM/ESA base DDR
- OS/390 Parallel Sysplex test support for S/390 guests
- Additional support for IBM G3, G4, and Multiprise 2000 servers
- Extensions to support for Year 2000

EXTRA! EXTRA! . . .

Subscribe to IBM iSource, your electronic source for customized IBM information!

Go to our web site at

<http://www.ibm.com/isource>

or send an e-mail to

info@isource.ibm.com

with the word SUBSCRIBE in the body.

This announcement is provided for your information only. For additional information, contact your IBM representative, call 800-IBM-4YOU, or visit the IBM home page at: <http://www.ibm.com>.

Description

Intended Customers

To get the most from network computing and e-business, customers need access to key technologies for communications (for example, TCP/IP and MQ™); application development and deployment (for example, Java, NetRexx, UNIX interfaces, and LE); and systems management and control (for example, IBM Network Station Manager). VM/ESA Version 2 Release 3.0 offers additional support required by VM customers who want a Year 2000 ready VM platform for network computing and e-business that builds on their investments in VM-based enterprise applications and data.

Keeping shared data and application logic centralized and secure, but accessible, maximizes the value of IT investments. This release of VM combines 25 years of proven value as a flexible, secure, and easily managed system with the best of today's emerging technologies. The new functions in VM/ESA Version 2 Release 3.0 complement customers' existing applications and data structures and open new possibilities for true enterprise integration. Also, by adding a World Wide Web server, customers can enable the delivery of new information, products, and services to larger and more diverse audiences with more ease than ever before.

VM/ESA Version 2 Release 3.0 has the support required by VM customers who need to enable their applications for the year 2000 and beyond and for those who require a Year 2000 ready VM system prior to the next century. Industry consultants and analysts have identified the changing of applications and subsequent testing to be the areas of Year 2000 readiness that require the most time and resource. The first step for most customers is to update their processor and operating system, establishing a base upon which to build and test their applications. For the VM environment, this means moving to VM/ESA Version 2 Release 2 or Release 3.

In addition, VM/ESA Version 2 Release 3.0 is intended for VM customers who desire to reduce their total cost of computing by exploiting:

- VM's unique ability to support guest operating system environments, extended in this release to include OS/390 Parallel Sysplex testing
- New S/390 Multiprise™ 2000 or S/390 Enterprise Servers — Generation 3 or Generation 4
- VM support for UNIX, to enable the porting and consolidation of UNIX applications onto a VM enterprise server
- The VM Graphical User Interface facility to modernize end-user access to CMS applications

Easy Access to Data and Applications

Providing easy user access to enterprise data, applications, and information is one of VM's key roles in many organizations. VM/ESA Version 2 Release 3 helps you extend your use of VM by providing integrated functions and network computing-related interfaces that make it easy to interconnect users and systems to get the most out of each platform. IBM has also extended VM's support for OS/390 guest systems and the newest models of the affordable S/390 Multiprise 2000 and Parallel Enterprise Server — Generation 3 and 4 processors.

TCP/IP: VM/ESA Version 2 Release 3.0 includes an integrated TCP/IP product suite that offers many of the

key enablers required to access the Internet and build a functionally rich network computing environment that exploits the strengths of the S/390 architecture. VM/ESA Version 2 Release 3.0's TCP/IP suite includes the function available in TCP/IP for VM Version 2 Release 4, plus these additional enhancements:

- Improved performance of the Simple Mail Transfer Protocol (SMTP) server. Laboratory tests have shown up to a 3.4-fold increase in throughput for sample configurations.
- Support for high-bandwidth networks via Request for Comments (RFC) 1323.
- Instrumentation for comprehensive performance measurement.
- Simplified support for multiple World Wide Web Home Pages on a single network via "virtual hosting."
- Improved print (LPR/LPD) server support, including TN3270e.
- Network File System (NFS) support for files stored in the Shared File System and VM's native UNIX file system (the Byte File System).
- Integration of TCP/IP and CMS mail functions, making communication between all your users easier.
- Improved performance through exploitation of the S/390 CHECKSUM instruction.
- Simplified "cloning" of TCP/IP servers.
- Servers to support the booting and management of IBM Network Stations (BOOTP, TFTP, DHCP).
- Improved storage and processor utilization.

Because an increasing number of VM customers are interested in using TCP/IP, IBM has changed the packaging of TCP/IP for VM. With this release, TCP/IP and the NFS feature of TCP/IP become optional priced features of VM/ESA and will be the basis upon which all future enhancements to TCP/IP will be built. Both features will be installed as part of installation of VM/ESA Version 2 Release 3.0, but will require customer activation. Customers who order (and therefore receive a license to use) a TCP/IP feature may easily enable TCP/IP for use in their network. The TCP/IP Source feature is also shipped with VM/ESA Version 2 Release 3.0, remains a priced feature, and is optionally installed. The new TCP/IP features of VM/ESA cannot be run on previous releases of VM.

Java: Using VM/ESA as a network computing platform is a natural extension of the way many companies use VM today. Deploying key enterprise applications is now easier with new support for Sun Microsystems' Java Virtual Machine. The object-oriented Java programming language permits object code and skills portability across heterogeneous platforms and provides other facilities that aid in developing and distributing network computing solutions. Java application deployment on VM/ESA is particularly attractive given VM/ESA's inherent server-oriented virtual machine architecture and its robustness for large scale, interactive, and server-centric computing solutions. VM/ESA Version 2 Release 3.0 Java support is at the Java Developer's Kit (JDK) level 1.1.1. Java support is provided as an optionally installed element of the system. The JDK will be delivered as corrective service, available through the regular IBM service channels and downloadable from the VM home page at the following URL:

<http://www.vm.ibm.com/>

The use of Java on VM requires the Shell and Utilities Feature of VM/ESA (#6059).

NetRexx: To make it even easier for VM users to take advantage of Java, IBM is providing NetRexx, object-oriented extensions to the popular REXX language, as part of VM/ESA Version 2 Release 3.0. NetRexx programs, which are usually shorter and simpler to write than equivalent Java programs, are translated into Java source code by a no-charge reference compiler, accelerating application development and maintaining the other benefits of standard Java. Many existing REXX programs are valid NetRexx programs (and therefore can become Java applications immediately). As with Java, the installation of NetRexx is optional.

Customers interested in more information on NetRexx should visit the IBM NetRexx site at

<http://www2.hursley.ibm.com/netrex/>

on the World Wide Web.

Message Queuing (MQSeries™): The Message Queuing (MQ) Interface is a popular network computing technology that enables applications on different systems and architectures to work together. The MQ application-to-application communication protocol is simple, yet powerful. The use of a queue manager (MQ server) somewhere in the enterprise enables applications to communicate asynchronously without requiring the requester (client) and server to be connected.

VM/ESA Version 2 Release 3.0 support for MQ enables client or server applications in the network to connect to applications on VM that have implemented the MQ communication protocol. Use of the MQ APIs on VM requires the deployment of an MQ server somewhere in the network.

Customers interested in more information on MQSeries should ask their IBM representative or visit the IBM MQSeries site at

<http://www.software.ibm.com/ts/mqseries/>

on the World Wide Web.

UNIX Applications on VM: UNIX application support is enhanced in VM/ESA Version 2 Release 3.0 with the addition of more application programming interfaces and accommodation of certain uses of the UNIX fork() function. One hundred and sixty-five additional UNIX APIs are supported. These interfaces are a subset of the XPG4.2 (X/Open Portability Guide) specification and were selected based on the input of customers and solution providers interested in porting applications from UNIX systems to VM/ESA. In combination with VM/ESA's pre-existing POSIX API support, application developers and solution providers have a functionally rich UNIX environment on VM for their development and porting efforts.

VM/ESA Version 2 Release 3.0 includes an implementation of the fork() function that is intended to facilitate the porting of UNIX applications to VM/ESA. Applications will be able to use the fork() function on VM/ESA in cases where an exec() function invocation follows the fork(). This accommodation of the fork() function will be a selectable option and enables a more-rapid port of many UNIX applications to VM/ESA.

VM's support for UNIX is the foundation for other technologies such as Java and the IBM Network Station. All of the facilities needed to install such programs will be included in the base of CMS.

Customers interested in more information on VM's support for porting and running UNIX applications should visit

<http://www.vm.ibm.com/openedition/>

on the World Wide Web.

CMS Pipelines: The popular CMS Pipelines programming language is significantly enhanced with VM/ESA Version 2 Release 3.0. VM/ESA now includes the functionally richer Pipelines PRPQ as a standard part of the system. New support includes toleration for Pipelines program execution in a multitasking environment, TCP connectivity, and documentation of more Pipelines stages, including the popular Author's Help (AHELP).

Simplified Application Enablement and Deployment: This release includes several enhancements that simplify the deployment of new applications. Language Environment for MVS® and VM Version 1.8.0 has been integrated with this release and is immediately available to support C, PL/I, and COBOL applications. Current LE/370 Version 1 customers moving to VM/ESA Version 2 Release 3.0 will not need a separate LE/370 license for applications running in this new environment.

The VM Graphical User Interface, previously a separate facility of VM/ESA and shipped on its own tape, is now included in the standard base of CMS. Application developers can now rely on the presence of the VM GUI whenever their programs run on a VM/ESA Version 2 Release 3.0 system.

IBM has effectively eliminated the limit on the number of logical devices managed by virtual machines. The new limit is 32,768 (up from 4K) and will help enable customers to roll out higher capacity servers. VM Pass-Through (PVM) and Telnet are two examples of facilities that will benefit from this change.

RSCS: The proven and popular Remote Spooling Communications Subsystem (RSCS) Version 3 Release 2.0 has been packaged as an automatically installed, optional, priced product. Portions of RSCS related to support for TCP/IP printers (via LPR/LPD) are available for use by any VM/ESA Version 2 Release 3.0 customer in conjunction with the TCP/IP feature described above. The rest of RSCS is installed "disabled." To use full RSCS function, customers must order the RSCS product and enable the program by following the instructions shipped with VM/ESA.

Enhancements to Classic VM Capabilities

Guest Coupling: VM has 25 years of experience providing leading-edge hypervisor support for guest operating systems. VM/ESA Version 2 Release 3.0 extends this unique capability with new guest support for Parallel Sysplex. OS/390 customers can now exploit the advantages of S/390 virtual machines in testing their Parallel Sysplex environments. VM/ESA now provides the Coupling Facility and Coupling Links support required to run one or more OS/390 Parallel Sysplex environments on one VM/ESA image. This capability will be available on the IBM G3, G4, and Multiprise 2000 servers at appropriate engineering change (EC) levels.

Processor Support: IBM continues to deliver increasingly cost-effective servers as the base for S/390 computing. VM/ESA Version 2 Release 3.0 is ready to run on any S/390 processor, including all models of the S/390 Multiprise 2000 and S/390 Generation 4 and 3 Parallel Enterprise Servers. Advanced features like Internal Battery backup, Internal Disk with automatic mirroring,

and the Open Systems Adapter communications adapter make these servers particularly good choices for expanding VM/ESA or mixed environment workloads or as replacements for less energy efficient systems.

Customers of older versions of VM or guest operating systems should note that VM does NOT provide support for 370Mode Virtual Machines when running on a Generation 4 Parallel Enterprise Server. This is consistent with the architecture of the G4 processor family.

Performance Improvements: For each release of VM, IBM develops numerous performance improvements that address specific customer situations or have a general positive affect on overall system throughput. In addition to the TCP/IP improvements noted above, VM now has the ability to cache disk data at the record level. This will especially benefit customers whose applications make reference to "widely scattered" data in very large files. VM's pre-existing caching support at the track level is well suited to most situations. More detail regarding the performance characteristics of this release is in the VM/ESA 2.3.0 Performance Report available on the VM Performance Web site at:

<http://www.vm.ibm.com/perf/>

Year 2000 Readiness: The IBM VM and Related Products Development Organization in Endicott, NY, has received ITAA*2000 certification from the Information Technology Association of America (ITAA). ITAA*2000 is the industry's century date change certification program, which examines the processes and methods used by organizations to perform their Year 2000 software conversions.

VM/ESA Version 2.2.0 is a Year 2000 ready system which included changes to many system interfaces, enabling customers to make their applications Year 2000 ready. VM/ESA Version 2 Release 3.0 contains additional enhancements to assist customers in making their applications Year 2000 ready, including a new CMS Pipelines stage that provides date format conversion and validation. Additional Year 2000 conversion functions in VM/ESA Version 2 Release 3.0 include a utility to correct the century indicators for CMS files and four-digit year support in the user NETLOG file.

Customers who have not moved to a Year 2000 ready release of any of their platforms should do so as soon as possible to enable the updating of applications that are sensitive to the century change. VM/ESA Version 2 Release 3.0 is the right base upon which to build your complete Year 2000 ready VM environment.

Customers who are setting up Year 2000 test systems for S/390 platforms should consider a VM/ESA guest environment. VM/ESA's guest support provides a unique environment for Year 2000 testing of OS/390, MVS, TPF, VSE, and VM systems. Guest systems running under VM/ESA may run with their system clocks set to a different date and time than the host VM/ESA system without affecting the date and time of the host system. Multiple guests may be run simultaneously, each with a different date and time setting.

More information on the complete range of VM support for the year 2000 and beyond is available on the Internet at

<http://www.vm.ibm.com/year2000/>

and

<http://www.ibm.com/ibm/year2000/>

provides more general IBM information and access to lists of supported products.

Product Positioning

VM/ESA Version 2 provides a multi-faceted System/390® platform consisting of network computing, guest operating system support, client/server, and interactive processing. VM/ESA Version 2 Release 3.0 and the new S/390 Multiprise 2000 and S/390 Enterprise Servers continue the tradition of VM providing the services customers need to operate their enterprises and the tools to successfully respond to changing requirements.

VM/ESA Version 2 provides customers with the facilities to prepare and position themselves for the year 2000 and beyond. VM/ESA Version 2 Release 2.0 or VM/ESA Version 2 Release 3.0 is the target platform for anyone planning to operate a VM system in the year 2000 and beyond, or requiring a Year 2000-supported VM system prior to the year 2000.

With VM, enterprise information can be easily shared, people skills preserved and leveraged, and application development costs reduced. VM/ESA contains support for POSIX and DCE, enabling customers' UNIX applications to be ported from and to interoperate with other open platforms. This can potentially reduce support and administration costs, which industry analysts have identified as the largest and most variable component of overall cost of ownership. Similarly, VM's inclusion of Java support means that programmers implementing new applications will find VM a comfortable place to develop and deploy these applications, making them truly enterprise-wide.

Many VM users are exploiting HTML and Web technologies to provide graphical user interfaces to heritage applications. The recently added VM Graphical User Interface facility (GUI) also enables the modernization of VM interactive work by enabling CMS applications to use workstation graphical environments. Both technologies respond to today's access requirements but avoid disruptive, total re-engineering of critical processes. At the same time, this approach preserves the reliable management characteristics of your mainframe-based environment, which easily scales to meet changing needs.

In combination with S/390 processors, VM/ESA Version 2 Release 3.0 has been designed to address the following customer situations:

- Customers with VM/ESA Version 1 or 2, VM/XA™, VM/SP™-HPO, or VM/SP who need to replace System/370™, 370-XA, or plug-compatible systems with new technology
- Any customer interested in the benefits of combining network computing and e-business technologies with the work traditionally done in their S/390 environment
- Small- and medium-sized customers with VM/ESA Version 1 or 2 and S/390 servers who desire to reduce their total cost of computing and update their systems to the latest technology
- Intermediate-sized customers with VM/ESA Version 1 or 2 and S/390 servers who have substantial growth requirements
- Large enterprises that require multiple systems where selected work may be distributed across the enterprise

- Large enterprises that desire multiple operating system images on a single physical processor, perhaps as an aid in migration or to test new Parallel Sysplex implementations
- New customers and Business Partners who require low-cost solutions based on S/390 technology

VM is the IBM platform on which many customers have built enterprise-wide automation and infrastructure enhancements. VM/ESA Version 2 Release 3.0 enhances the ability of VM to integrate applications such as office, database management, and open distributed client/server and network computing.

A continuing IBM focus on quality ensures that VM/ESA Version 2 Release 3.0 is a high quality, reliable product. Most up-to-date VM customers never experience an operating system outage. Service process improvements and the enabling of most popular licensed products to use the standard VM installation and service tool, VMSES/E, make migration to this new release even easier than to previous VM/ESA releases.

Reference Information

Below is a list of IBM licensed products for VM/ESA that have been announced or made available since January 1997. Following that is a list of products developed by IBM Business Partners for VM/ESA, and available from IBM. For additional information on products from IBM visit the IBM Announcement Web site, available from the IBM News Web site at:

<http://www.ibm.com/News/>

IBM Licensed Products

Program Name	Release Level	Program Number	Availability Date
ACF/NCP for MVS, VM, and VSE	7.6.0	5648-063	09/26/97
ACF/SSP for MVS, VM, and VSE	4.6.0	5654-009	09/26/97
COBOL for OS/390 & VM	2.1.0	5648-A25	05/23/97
COBOL Workstation Feature for IBM COBOL for OS/390 & VM	2.1.0	Feature of 5648-A25*	05/23/97
Datajoiner	2.1.0	See 297-363	10/31/97
DB2® for VSE & VM	5.1.0	5648-158	05/30/97
DB2 WWW Connection for VM	1.1.0	**	09/25/97
File Exchange/VM User Interface	1.3.0	5785-EEY	08/26/97
IBM PL/I Workstation Feature for IBM PL/I for MVS and VM	1.1.0	Feature of 5688-235***	05/16/97
NTuneMON™ for MVS and VM	2.4.0	5648-141	09/26/97
OfficeVision/VM™	1.4.0	5684-084	12/19/97
OV/VM Support for Lotus Notes® Clients	1.1.0	5648-A20	04/25/97
OV/VM Support for Lotus Notes Clients	1.2.0	5648-A20	01/23/98
OV/VM to Notes™ Migration Tools	1.1.0	5639-B79	05/02/97
QMF™	3.3.0	5706-255	06/13/97
QMF for Windows® Feature	3.3.0	Feature of 5706-255	12/19/97
RAMAC™ SnapShot for VM/ESA	1.1.0	5654-A03	02/14/97

* IBM COBOL Workstation feature is also available as an MES for IBM COBOL for MVS and VM Version 1.

** Product is available for download at URL: <http://www.software.ibm.com/data/db2/www>

*** IBM PL/I Workstation feature is also available as an MES for OS PL/I Version 2.

IBM Business Partner Products

Product Name	IBM Product Number	Business Partner/Contact
ASTRAC AS Version 5	Not Available	ASTRAC (+44) 0113-258-5288
Enterprise View	5758-BY1	Beyond Software, Inc.
EnterpriseWeb Calendar	5758-BY0	Beyond Software, Inc.
EnterpriseWeb/VM	5758-BYA	Beyond Software, Inc. Contact: (408) 436-5900
VM Timing Facility Monitors	5758-MT0*	MiraSoft, Inc. Contact: (617) 825-9121
VM:Webserver	5758-SLY	Sterling Software, Inc.
VM:Webserver for OfficeVision/VM	5758-SL8	Sterling Software, Inc.
VM:Webserver Gateway	5758-SL7	Sterling Software, Inc. Contact: (703) 264-8000

* There are six product numbers associated with this product. Refer to Software Announcement 297-391, dated September 23, 1997, for details.

Note: Additional products are also available from these software vendors. Call or visit their Web sites for additional information.

Trademarks

OS/390, Parallel Sysplex, Business Partner, MQ, Multiprise, MQSeries, SP, VM/XA, System/370, NTuneMON, OfficeVision/VM, QMF, and RAMAC are trademarks of International Business Machines Corporation in the United States or other countries or both. VM/ESA, Language Environment, S/390, MVS, System/390, DFSMS/VM, and DB2 are registered trademarks of International Business Machines Corporation in the United States or other countries or both.

Windows is a registered trademark of Microsoft Corporation.

Java is a trademark of Sun Microsystems, Inc.

UNIX is a registered trademark in the United States and other countries exclusively through X/Open Company Limited.

Notes is a trademark of Lotus Development Corporation.

Lotus Notes is a registered trademark of Lotus Development Corporation.

Other company, product, and service names may be trademarks or service marks of others.



IBM US Announcement Supplemental Information

March 24, 1998

Education Support

For a list of related VM/ESA education courses updated for this release, call 800-IBM-TEACH (426-8322). To request information via FAX, call 800-IBM-4FAX (426-4329) and request document #0007.

You may also visit the IBM Education Web site at:

<http://www.training.ibm.com/ibmedu>

Contact IBM Education and Training at the toll-free number 800-IBM-TEACH (426-8322) or at

<http://www.training.ibm.com/usedu/>

for VM education schedules and enrollments.

Technical Information

Specified Operating Environment

Hardware Requirements: VM/ESA Version 2 Release 3.0 requires an IBM S/390 ESA-capable processor. Refer to the *ESA General Information Manual* for more information. Testing of MVS® or OS/390™ Parallel Sysplex under VM/ESA requires a G3, a G4, or a Multiprise™ 2000 processor.

TCP/IP Feature for VM/ESA Hardware Requirements: The TCP/IP Feature for VM/ESA requires one of the following network processors:

- IBM 3172 Interconnect Controller with the Interconnect Controller Program (ICP) Version 3 (5621-425) or the TCP/IP Offload Feature for VM/ESA
- IBM Open Systems Adapter (OSA)

TCP/IP Feature for VM/ESA support of the OSA is equivalent to the IBM 3172 Interconnect Controller Model 1 and 2.

- IBM 8232 LAN Channel Station Model 1 or 2
- HYPERchannel A220 Processor Adapter 42990007

TCP/IP Feature for VM/ESA supports the HYPERchannel Series A devices (and HYPERchannel Series DX devices that are functioning as Series A devices). For additional information, refer to the appropriate Network Systems Corporation documentation.

- IBM ES/9000® or IBM 9370 with the Integrated Communication Processor

The IBM ES/9000 and 9370 configurations are supported by the TCP/IP Feature for VM/ESA when configured for Token-Ring LANs, Ethernet LANs, or X.25 subsystems, depending on the adapters installed.

- IBM RISC System/6000® Channel Attachment using the Block Multiplexer Channel or ESCON® Adapter

- IBM 3088 Multi-system Channel Communication Unit

IBM 37xx communications controller using X.25 or SNA connections. Native attachment of the IBM 3745 to TCP/IP and associated dynamic IP routing within the 3745 is not supported.

TCP/IP Feature for VM/ESA supports direct connection to another TCP/IP for VM or MVS using the IBM 3088.

Software Requirements

VM/ESA Version 2.3.0

Prerequisite Requirements

- EREP VM (5654-260) V3.R5.0.
- Device Support Facilities — ICKDSF VM (5684-042) V1 R16.0; both the CMS version of ICKDSF and an IPLable stand-alone version of ICKDSF (5747-DS1) V1 R16.0 are supplied with VM/ESA Version 2.3.0. Any fixes requested for ICKDSF should specify the PTF number of the VMSES/E formatted update. VMSES/E installable PTFs have the release number G14. "G" indicates Release 16 of ICKDSF and "14" indicates VMSES/E format.

For VM/ESA orders, the above prerequisite products are pre-installed. Therefore, when ordering the VM/ESA System DDR, the customer must already be licensed for these products or a separate order must be placed for each of these products.

VM/ESA GUI Facility Now Installed in Base

The VM/ESA GUI Facility has the following software requirements for the host system and the workstation. In VM/ESA Version 2 Release 3.0 VM/GUI is integrated into the base. The previous release of VM/ESA will still require VM/GUI Facility tape.

- Host System

In order for the VM GUI Facility to communicate properly with the workstation agent, you need the following software installed and operational on your host system.

Base Operating System of VM/ESA Version 2 Release 3.0

-- TCP/IP Environment

If your host is operating in a TCP/IP environment, you need any supported release of IBM TCP/IP for VM.

-- APPC Environment

If your host is operating in an APPC environment, you need:

-- AVS and GCS components of VM/ESA

This announcement is provided for your information only. For additional information, contact your IBM representative, call 800-IBM-4YOU, or visit the IBM home page at: <http://www.ibm.com>.

- Any supported release of IBM ACF/VTAM® for VM/ESA (5654-010)

- Programming Environment

To write host GUI programs, one or more of the following host and workstation language products are required:

- IBM High Level Assembler Version 1 (5696-234) Release 1
- IBM C for VM/ESA Version 3 (5654-033) Release 1
- SAS C/C++ 5.50K (available from SAS Corporation)
- REXX/VM component of VM/ESA

• Workstation

In order for the VM/ESA GUI Facility Workstation Agent to communicate properly with the host, you need the following software installed and running on your workstation.

For TCP/IP environments, supported workstation environments and TCP/IP products for VM/ESA:

Operating System (Minimum Level)	Connectivity Product (Minimum Level)
IBM OS/2® 2.1 or OS/2 Warp	One of the following: — IBM TCP/IP for OS/2 V2.0 — IBM TCP/IP for OS/2 V3.0 — Novell LAN Workplace™ for OS/2 V3.0
Microsoft® Windows® 3.1 and DOS 6.0	One of the following: — IBM TCP/IP for DOS V2.1.1 — Novell LAN Workplace for DOS V4.1 — FTP Software PC/TCP V2.3.1 — Wollongong Pathway Run-time V2 — NetManage Chameleon V4.01.4
Microsoft Windows 3.1 running on OS/2 2.1 or OS/2 Warp	— IBM TCP/IP for OS/2 V2.0 or 3.0 with the TCP/IP for DOS Box Access component
Microsoft Windows for WorkGroups V3.11	— Microsoft's TCP/IP-32 for Windows WorkGroups
Windows 95	— TCP/IP connectivity included in Windows 95
Windows NT™	— TCP/IP included in Windows NT
AIX® V3 R2.5 or AIX V4 R1.4 with AIX Windows	— TCP/IP connectivity included in AIX

For APPC environments, supported workstation environments and APPC products for VM/ESA:

Operating System (Minimum Level)	Connectivity Product (Minimum Level)
IBM OS/2 2.1 or OS/2 Warp	— IBM Communications Manager/2 V1.11 — Communications Server/2 (CS/2) V4.0 Access feature for OS/2 Warp

Operating System (Minimum Level)	Connectivity Product (Minimum Level)
Microsoft Windows 3.1 and DOS 6.0	— APPC Networking Services for Windows V1.00.02 (Corrective Service Diskette 2 (CSD2))

Host to Workstation Download Capability

In order to install the Workstation Agent, you need to download files from the host to your workstation. You can use FTP to complete the file transfer, or any other appropriate download utility.

Optional Product/Feature Requirements

- IBM High Level Assembler (5696-234) 1.1.0 or 1.2.0
 - Due to customer requests, the High Level Assembler has been removed as a hard prerequisite product as of VM/ESA Version 2 Release 2.0. The High Level Assembler is required to:
 - Add devices that cannot be sensed when using HCPRIO ASSEMBLE
 - Perform local modifications to modules written in Assembler
 - Service the CP Loader (HCPLDR) — creating the text deck to build the loader module
 - Create a new DMSTRT for system languages (NLS)
 - Create image libraries for system printers (FCBs)
 - Create GCS application segments (CONTENTS macro)
 - Access major CMS application interfaces (CMSCALL)
 - Access most CP application interfaces (diagnose)
 - Create the Stand-Alone Dump Utility for a customer's configuration (HCPSADMP EXEC)
 - Use AVS tuning control module (AGWTUN)
 - Use RAS tools (such as MDCHECK, FS2SFSE, AFTCHAIN, PRINTBLK, PRINTFST, and so on)
 - Use the new API for data compression
 - Use the new CMS Pipelines Assemble macros interface
 - Use the Assemble interface to GUI
- Products such as DirMaint™ and RSCS also have some exit routines in Assembler. RTM/ESA needs an Assembler to install and service.
- RACF™ Requirements
 - RACF Version 1 (5740-XXH) Release 10.0 (or its equivalent), if a security product is needed
- POSIX Requirements
 - Application Development Requirement: IBM C Compiler for VM/ESA Version 3 Release 1.0 (5654-033)
- OpenEdition® Shell and Utilities
 - OpenEdition Shell and Utilities feature for VM/ESA — Function Level 2.3.0 (5654-030)
- Distributed Computing Environment (DCE) for VM/ESA Requirements
 - Transaction Control Protocol/Internet Protocol (TCP/IP) Version 2 Release 3.0 or later (5735-FAL)

- Application Development Requirement: IBM C Compiler for VM/ESA Version 3 Release 1.0 (5654-033)
- VM/ESA Version 2.3.0 DFSMS/VM® Function Level 221 Requirements
 - ISPF Version 3 (5684-043) Release 2.0 or subsequent release for installation and during DFSMS/VM usage. ISPF is not required if the customer is using only the 3495 Tape Library Dataserver support of FL221.
 - IBM Directory Maintenance Version 1 (DirMaint) Release 5.0 (5748-XE4) if the minidisk management function is needed.
 - RACF Version 1 (5740-XXH) Release 10.0 (or its equivalent) if a security product is needed.
 - ADSTAR® Distributed Storage Manager (5648-020) if the Migration Level 2 (ML2) function of DFSMS/VM is needed.
 - TCP/IP Version 2 (5735-FAL) Release 3.0 or later to access the IBM 3495 Tape Library Dataserver for processors capable of 3490/3490E tape I/O, but incapable of 3495 Tape Library Data Server control.
 - Program Development Facility (PDF) Version 3 (5684-123) Release 2.0 or CMS Utilities feature to use the BROWSE and EDIT functions.
 - Remote Spooling Communications Subsystem Networking (RSCS) (5684-096) Version 3 Release 1.0 or later for remote operations.
 - IBM Compiler for REXX/370 (5695-013) and IBM Library for REXX/370 (5695-014) if the compiled REXX installation-wide exit or a compiled ACS REXX exit is desired.
- CMS Utilities Requirements
 - If you have CMS Utilities and use DIRMAP, and have the following POSIX statements (POSIXOPT, POSIXINFO, POSIXGLIST, POSIXGROUP) in your directory, you need APAR VM58937. However this function is now provided in DirMaint Version 1 Release 5.0 (5748-XE4).
- CD-ROM Installation Requirements
 - Optical Media Attach/2 Program (5621-264)
- Online Displayable Publications Requirements
 - VM/ESA publications received via the online-displayable require a BookManager® READ licensed program to view. Online books shipped on CD-ROM may also be viewed by the IBM Library Reader™ licensed programs for DOS and OS/2, which are shipped, at no additional charge, on the publications CD-ROM. APAR GCO5366 for BookManager/VM READ is required for READ/VM 1.3 Public Library to run in a non-370 mode. BookManager products also have prerequisite product requirements. Specific details are available in the BookManager announcement documentation.

OSA and OSA/SF Program Requirements

OSA/SF (Open Systems Adaptor/Support Facility) for VM/ESA is provided with and supported on VM/ESA Version 2 Release 3.0. OSA/SF for VM/ESA can be accessed by CMS user ID, by a REXX call to OSA/SF API, and at the OSA/SF OS/2 (GUI) interface.

Access at the OSA/SF OS/2 (GUI) interface requires IBM OS/2 3.0 (Warp), or higher, and one of the following communications protocols:

- EHLAPI (3270), which requires Communications Manager/2 1.1 on the workstation being used
- TCP/IP, which requires TCP/IP 2.0 for OS/2 on the workstation
- APPC (CPI-C), which requires Communications Manager/2 1.1

OSA/SF for MVS/ESA™ or OSA/SF as a base, nonexclusive element of OS/390 can also be used in the VM/ESA environment, starting with VM/ESA Version 1 Release 2.1. Note that:

- Until VM/ESA V1.R2.1, the OSA device type is listed or displayed as a CTCA, and OSA/SF must be running on MVS/ESA or OS/390 in LPAR mode in the same system complex as the VM/ESA partition to which the OSA is defined.
- Starting with VM/ESA V1.R2.1, the OSA is recognized as TYPE=OSA, and OSA/SF can be running either in an LPAR in the same system complex or as a guest in the VM/ESA environment. (In the latter case, VM/ESA must be authorized to put OSA/SF in the VM guest's directory.)

To support an OSA in its TCP/IP Passthru mode in a VM/ESA V2 R3 environment, OSA/SF requires TCP/IP for VM Version 2 (5735-FAL) Release 4 or later. OSA/SF support is required in this mode only if access to one of the OSA's ports is being shared by more than one host program or if an ATM OSA-2 is being used as a LAN emulation client (LEC).

Software Requirements for TCP/IP Feature for VM/ESA

The TCP/IP Feature for VM/ESA has the following additional program requirements:

- If a primary or secondary domain name server is to be run (not a caching-only name server), or the Network Data Base server is to be run:
 - IBM DB2® Server for VSE & VM Version 5 (5648-158) Release 1.0 (5684-095), or later
- For SNAlink LU0 interface support:
 - ACF/VTAM® for VM/ESA Version 3 (5684-095) or Version 4 (5654-010)
- For X.25 interface support:
 - X.25 NCP Packet Switching Interface (NPSI) Version 3 (5688-035) Release 4 or later for 3745 or 3720
 - X.25 NPSI Version 2 (5668-719) Release 1 for 3725
 - Corresponding levels of ACF/VTAM and ACF/NCP that support NPSI
- If programs are developed in C:
 - IBM C for VM/ESA Version 3 (5654-033) Release 1
 - Language Environment® (supplied with VM/ESA)
- If programs are developed in Pascal:
 - IBM VS Pascal Version 1 (5668-767) Release 2 Compiler and Library

- To use the SNMP (monitor) client support with NetView®:
 - NetView for VM/ESA Version 2 (5756-051) Release 3

Other VM-Related Information

The following VM-related products require the listed APAR fix to run on VM/ESA V2 R3:

- DirMaint V1 R5.0 (5748-XE4) —#VM61371.
- Pass Through Facility V2 R1.1 (5684-100) —#VM61373.
- RSCS V3 R2 (5684-096) —#VM61374.
- RTM VM/ESA V1 R5.2 (5798-DWD) —#GC05430.
- CUF (Feature Number 6021) — #VM61389 is not required to run on VM/ESA V2 R3, but offers support for four-digit years in FLIST, DIRMAP, USERID (all modules), and LASTIPL EXEC.

System Delivery Offering (SDO)

The VM/ESA System Delivery Offering Version 2 Release 2.0 (5654-026) will continue to be an entitled offering and will be available concurrently with the general availability of VM/ESA Version 2 Release 3.0 on March 27, 1998. The SDO for VM/ESA Version 2 Release 3 will replace VM/ESA Version 2 Release 2.0. Additional products are now in the VMSES/E format. The SDO content will be dynamically updated as new program products, versions, and releases become available.

Progress in increasing the number of products exploiting VMSES/E make the VM/ESA Version 2 Release 3.0 SDO a more integrated and dynamic IBM software package. Key benefits of this SDO are:

- An increase in the number of products available in VMSES/E format. This coupled with delivering a large percentage of non-VMSES/E products in VMSES/E Parameter Driven Installation (PDI) format allows VMSES/E to be the single installation vehicle for most products. INSTFPP will still be used to install a minimal number of non-VMSES/E products.
- The ability to dynamically update the content of the SDO at any time. This includes service updating a product, adding new products or new versions or releases of already provided products, or deleting products. This capability will make the SDO a more effective solution for the VM/ESA customer.

At general availability of VM/ESA Version 2 Release 3.0 IBM will update only those products in the SDO supporting the VM/ESA Version 2 Release 3.0 environment. Refer to the VM/ESA SDO News Information within your configurator for the most up-to-date SDO News. Updates will be made in the SDO News Information at VM/ESA Version 2 Release 3.0 general availability.

A tool to help determine DASD requirements for installing an SDO will continue to be available on MKTTOOLS as SDOPLAN.

New VM/ESA Licensed Products in VMSES/E Format

DATABASE 2™ for VSE and VM	5648-158	5.1.0
Data Propagator Relational Capture for VM	5648-158	5.1.0
IBM File Exchange	5785-EEY	1.3.0

Compatibility: The current release of TCP/IP for VM (Version 2 Release 4.0 — 5735-FAL), which is Year 2000 compliant, IS upward compatible to VM/ESA Version 2 Release 3.0. However, for customers to realize the

enhanced functional level of TCP/IP they must move to VM/ESA Version 2 Release 3.0, where TCP/IP is integrated in the VM/ESA base code. TCP/IP Version 2 Release 4.0 will remain available to the customers and will receive full service, but there are no current plans to enhance this release, and IBM intends to make this release the last stand-alone release of TCP/IP (5735-FAL). For a more detailed review of integrating TCP/IP with the base code of VM/ESA, refer to the **Ordering Information** section under Current or New Licensees.

User Group Requirements: Customer user requirements satisfied in this release:

REQ No.	Title
REQ5277	XEDIT Power input
REQ6135	NFS and Unmounting of VM Disks

User Group requirements satisfied in this release:

REQ No.	Title
REQ57309	Provide more granular master process info
REQ57435	Report in VM/ESA performance data the base for ATOD values
REQ66217	CP auditability of TCP/IP connected users
REQ58074	Move monitor data to help detect disconnected and disabled users
REQ58075	Same as 58074
REQ64296	Escape sequences w/RSCS
REQ60142	VM guest supt. to test Parallel Sysplex™ & Coupling Facility
REQ60155	Report concurrent/UCV connections

Printing

06203	Provide output owner ID on LPD BANNER pages
06204	Need RSCS connected printers to print USERID on banner pg
06433	LPD needs internet address/name on output banner pgs
06479	LPD needs internet address/name on output banner pgs
07066	LPD needs internet address/name on output banner pgs
08319	Allow for Translation Table selection for VM LPR
08741	Allow for Translation Table selection for VM LPR
11869	Provide ability to set a wait time for LPD connection
14329	LPSERVE does not start if one print name is not resolved
14684	Provide linesizes greater than 150 for LPD
22760	Provide consistency in optional syntax specifications
58402	VM TCP/IP LPR client must provide CR and LF

Stack Changes

L60121	Multiple IP Addresses and Host Names
60124	Telnet support for TN3270 Enhancements (RFC 1647)
63167	Support for RFC1323 for TCP/IP for VM/ESA
64225	Support high-speed networks in TCP/IP for VM (RFC 1323)
64236	VM TCP/IP Config file Extensions
66217	CP Auditability of TCP/IP connected users
66823	ARP Cache in TCP/IP

Mail

21350	TCP @ sign scanning anomaly
41842	SMTP mail to MX record of 255.255.255.255 causes loop
60119	Improve SMTP Performance

REQ No. Title

NFS

- 8270 Add Record =CRLF to Mount Command for TCPIP VM Server
- 21021 Need TCP/IP FTP and NFS Mount to support SFS of VM/ESA

Servers

- 60132 Provide DHCP (RFC 1541) server support
- 60136 Provide TFTP (RFC 1350, 1782, 1783, 1784 & 1785) server support

VM/ESA Platform Update

IBM is committed to supporting solutions to your business problems on VM/ESA. To that end, the VM/ESA platform has been enhanced by the availability of new and improved products that address your business needs in the following areas:

• **Business Intelligence**

Your ability to access and use your information assets stored on VM and other platforms is a key competitive advantage in today's business world. IBM understands this and that is why we are continuously enhancing the products that support your business intelligence needs.

Some examples of new and enhanced Business Intelligence products are:

- With IBM DATABASE 2 Server for VSE & VM V5 R1 you have improved data availability through its Data Restore feature and through improved connections to other database solutions via industry-standard interfaces...for example, the Distributed Relational Database Architecture™ (DRDA®) protocol and the Open Database Connectivity (ODBC) for Windows client systems interface from Microsoft Corp.
- The DRDA Application Server (AS) capability of IBM DB2 DataJoiner® Version 2.1 allows DB2 for VSE & VM applications (or any other application that implements the DRDA Application Requestor functionality) to easily access data located in any of the supported data sources (refer to Software Announcement 297-363, dated September 16, 1997, for a complete list of data sources).
- The DB2 WWW Connection for VM provides access to your SQL/DS™ and DB2 data from your intranet or Internet applications. This access will let you deliver the data directly to the decision makers through an easy-to-use browser interface.
- A new release of Query Management Facility (QMF™), Version 3 Release 3, has improved its performance and usability and has added new features to enhance your ability to access, manipulate, and analyze data. QMF will now allow you to generate reports using Hypertext Markup Language (HTML) for report formatting. This allows reports to be viewed via a network browser interface with an easy point and click interface and allows customers to link relevant reports together, making the decision process flow naturally. The QMF for Windows feature (formerly known as QMF/HPO Shuttle) allows you to access data in DB2 databases on all platforms, including VM/ESA, and, when coupled with DataJoiner, to access data in non-IBM and non-relational databases as well. As

a Windows application, it provides the benefits of a point and click environment for developing new database queries, while still retaining access to all the stored queries on your VM system. The QMF Approach® 97 client allows you to display the results of queries and procedures in Lotus® Approach 97 forms and worksheets. The QMF Approach 97 client is available in Lotus Approach 97 and Lotus SmartSuite® 97.

- Application System Version 5 from ASTRAC, an IBM Business Partner™, replaces IBM AS Version 4.2. ASTRAC AS Version 5 provides enhancements to your client server capabilities through its support of ActiveX standards and through new support in the Command Client that allows AS output to be written to your workstation in CSV or HTML format, or via an ODBC driver. Access performance for DB2 databases has been improved through the exploitation of DB2's "for fetch only" feature and your ability to query and report on your data is improved via the many enhancements to the Information Center/Enhanced (IC/E) feature. You can find more details about ASTRAC AS Version 5 at URL:

<http://www.astrac.com/as/as51.html>

• **Office Support**

Office Support on VM continues to undergo a transformation that allows you the flexibility to integrate your consolidated host office system with net.compute office solutions, such as Lotus Notes® and the Internet and intranets, and support your ever more mobile workforce.

Some recently announced Office Support products are:

- OfficeVision/VM™ Release 4 is now available to support your host office requirements into the next century and to provide more interconnections with other office products. Enhancements in this release include Year 2000 support, improved storage management via Shared File System (SFS) support and expanded use of storage above 16 megabytes, and enhancements to OV/VM's e-mail facilities. These include a user exit for text selection (such as processing for URLs or dates in notes), the ability to accept more types of Internet and MIME mail into your OV/VM in-basket, and improved note editing.
- OfficeVision® Support for Lotus Notes Clients (SLNC) Release 2 provides greater coupling between your OV/VM host system and your Lotus Notes clients. Improvements in data sharing for your in-basket, your host calendar, and your host address book enhance your productivity in Notes™ and eliminate duplication of effort.
- The OfficeVision to Notes Migration Tools provide you with tools to help you easily move critical files from your OV/VM system to you Lotus Notes server, without impacting your production work on either platform.
- To support your mobile employees, products like EnterpriseWeb Calendar from Beyond Software, Inc. and VM:Webserver for OfficeVision/VM from Sterling Software, Inc. provide easy access to OfficeVision calendars, and mail through Web browsers.

• **Network Computing and Internet/Intranet Support**

In our faster-paced, more mobile business environment, access to your computing resources

needs to be easy, flexible, and available from just about anywhere. Recent enhancements to VM/ESA and products that support VM/ESA help you get your business connected — to your employees and to your customers. Examples of some of the major enhancements are:

- Enhancements to TCP/IP (described earlier) enable more seamless communications between your VM system and the Internet/intranet environments. Reliability and performance have been improved and enhancements to the e-mail stack of software and integration with native VM/ESA mail functions (NOTE and SENDFILE) give you the confidence you need to rely on VM to keep your communications flowing quickly and smoothly.
- With the addition of support for the IBM Network Station, the Network Station Browser, and Network Station Manager software, you can significantly reduce the cost of enabling your employees' access to your computing systems. The Network Station Manager software allows your systems administrators a simple, consistent interface for managing all your IBM Network Stations, whether or not they are connected to VM. The Network Station Browser software allows your employees access to all Internet and intranet applications, including Java™-based applications — all with a low-cost, easy to manage IBM Network Station workstation.
- With Open Systems Adapter 2 (OSA-2) support on VM/ESA, your cost of connectivity to the networked world can also be lowered. Because of the direct LAN connections provided by OSA-2, hardware costs and complexity are reduced. And because your network connection is made through your S/390 host, your network will gain from S/390's proven strengths of security, integrity, and availability. Your system support staff will also benefit from the easy configurability made possible with the OSA/Support Facility software, which is included at no charge with VM/ESA Version 2 Release 3.
- Beyond Software, Inc. and Sterling Software Inc., both IBM Business Partners, provide suites of products to support your network computing needs. The EnterpriseWeb suite from Beyond Software and the VM:Webserver suite from Sterling Software provide secure access for your employees, customers, and partners to your intranet and e-commerce Web sites. These products enable you to conduct business — securely and more quickly — through easy to use Web browser-based applications.

- Application Development

Your ability to quickly provide the applications necessary to support your business is enriched by several new and enhanced products:

- The COBOL Workstation Feature for IBM COBOL for OS/390 and VM and the PL/I Workstation Feature for IBM PL/I for MVS and VM let you take advantage of your existing COBOL and PL/I skills and preserve your valuable program base while moving aggressively to utilize workstation development tools in mission-critical applications. Application development on new platforms and with emerging technologies can begin in a gradual manner without the need to retrain programmers and undertake a new language while letting you maintain your existing applications in a development environment geared for programmer productivity.

- DB2 WWW Connection for VM/ESA eases development of Internet/intranet applications and provides functions to help you build your Internet or intranet application using CGI scripts and HTML. When the Internet or VM based application is run, DB2 WWW Connection will translate your HTML forms into SQL requests, receive the data back from SQL, and translate the results into an HTML-based report suitable for viewing with any browser that supports HTML.
 - VM:Webserver Gateway from Sterling Software Inc. helps you enable your existing VM, VSE, and OS/390 or MVS applications for access via your intranet or the Internet without modification to the existing application, while maintaining the benefits of VM security and central administration.
 - The VM Timing Facility Monitors are a set of programs that assist you in identifying potential Year 2000 problem areas. The programs provide tools necessary to monitor and record information on VM time functions used by your applications and to help you analyze that usage for correction of problems.
- System Utilities

In order to manage an ever more complex computing environment, you need tools that evolve to support new technologies and are designed for ease of use. Some of the new products for VM that help you manage your system have already been mentioned: OSA/SF, to manage the OSA-2 facility, and the Network Station Manager software, to manage IBM Network Station configurations and authorizations. Additional products that assist you in managing your environment include:

- The RAMAC™ Snapshot for VM/ESA product allows you to create duplicate "views" of data that are stored in your IBM RAMAC Virtual Array storage system, for use as backups, "creating" test data, or "freezing" data for one application while another continues to process. This allows you greater flexibility in scheduling production jobs, test time, and data backup and improves the productivity of your employees.
- NTuneMON™ for MVS and VM Version 2 Release 4 is enhanced to provide increased network and NCP availability by providing monitoring for additional NCP internal resources, online analysis and diagnostic aids, and online interactive tuning for NCP parameters.
- The Control Center feature of DB2 for VSE and VM Version 5 Release 1 (formerly SQL Master™ for VSE & VM) provides tools that help automate DB2 database administration tasks. These tools include group authorization tools for groups of users or groups of database objects, package tools to aid in managing packages stored in your database and in migrating access modules from one server to another, and tools to monitor database performance on VSE.
- The IBM File Exchange User Interface Programs let VM users easily transfer data files to other users of the IBM File Transfer Services via a panel interface or interactive commands. Data files can be transferred within an enterprise or between enterprises using the managed store and forward facilities provided by the IBM File Transfer Services. Data files can also be transferred internationally.

**Recently Updated Products for VM/ESA from
Non-IBM Software Vendors**

The following tables contain information on software products from non-IBM software vendors that support the VM/ESA operating environment. The products are organized alphabetically within given solution areas and a single product may appear in more than one solution area table.

The information in these tables was obtained directly from the software vendors and is provided without independent evaluation or validation by IBM. IBM, therefore, cannot ensure the accuracy of statements about the functions, quality, or performance of the vendors' offerings, and makes no warranties, expressed or implied, concerning the offerings. All prices, as well as terms and conditions, are provided by the product vendors and set at their sole discretion. The appearance of a product in these tables does not imply that the product is available in all countries. You should contact the vendors directly for questions about non-IBM logo software, including those related to compatibility and warranty coverage.

Internet/Intranet/Extranet

PRODUCT NAME	CONTACT FOR ADDITIONAL INFORMATION
CORVU IBIS	CorVu Corporation +61 2 9959 3522 http://www.corvu.com
CORVU PERFORMANCE MEASUREMENT	CorVu Corporation +61 2 9959 3522 http://www.corvu.com
ESAMAP ENTERPRISEWEB/VM MEASUREMENTS	Velocity Software Inc. (650) 964-8867 http://www.velocity-software.com
ESATCP	Velocity Software Inc. (650) 964-8867 http://www.velocity-software.com
ENTERPRISE VIEW	Beyond Software, Inc. (408) 436-5974 http://www.beyond-software.com
ENTERPRISEWEB CALENDAR	Beyond Software, Inc. (408) 436-5974 http://www.beyond-software.com
ENTERPRISEWEB MAIL	Beyond Software, Inc. (408) 436-5974 http://www.beyond-software.com
ENTERPRISEWEB SECURE	Beyond Software, Inc. (408) 436-5974 http://www.beyond-software.com
ENTERPRISEWEB/VM 1.3	Beyond Software, Inc. (408) 436-5974 http://www.beyond-software.com
ENTERWEB	Macro 4 +44 1293 88 6060 http://www.macro4.com
MAILBOOK	MailBook (713) 657-7408 http://www.mailbooksoftware.com
MASTER PRINT SERVER	Praim Inc. (603) 431-0606 or (514) 688-2540 http://www.praim.com
TAO	Fischer International Systems Corp. (941) 643-1500 http://www.fisc.com

PRODUCT NAME	CONTACT FOR ADDITIONAL INFORMATION
VM: WEBSERVER	Sterling Software, Inc. (703) 264-8000 http://www.vm.sterling.com
VM: WEBSERVER FOR OV/VM	Sterling Software, Inc. (703) 264-8000 http://www.vm.sterling.com
VM: WEBSERVER GATEWAY	Sterling Software, Inc. (703) 264-8000 http://www.vm.sterling.com
VM: WEBSERVER SECURE	Sterling Software, Inc. (703) 264-8000 http://www.vm.sterling.com

Network Computing

PRODUCT NAME	CONTACT FOR ADDITIONAL INFORMATION
DGATEWAY: NJE GATEWAY FOR OV/VM TO LOTUS NOTES	DGA Ltd. +44 171-520-3000 http://www.dga.co.uk
ESAMAP ENTERPRISEWEB/VM MEASUREMENTS	Velocity Software Inc. (650) 964-8867 http://www.velocity-software.com
ESATCP	Velocity Software Inc. (650) 964-8867 http://www.velocity-software.com
IDA PSS VM	i-data international +45 4436 60 00 http://www.i-data.com
IDA RPPC *	i-data international +45 4436 60 00 http://www.i-data.com
RESQ!NET CLIENT *	Advanced Transition Technologies, Inc. (212) 293-4814 http://www.att-inc.com
RESQ!NET FOR WINDOWS *	Advanced Transition Technologies, Inc. (212) 293-4814 http://www.att-inc.com
* Product runs on workstation and connects to mainframe operating platform.	

Office

PRODUCT NAME	CONTACT FOR ADDITIONAL INFORMATION
CORVU IBIS	CorVu Corporation +61 2 9959 3522 http://www.corvu.com
DESKPAD	Macro 4 +44 1293 88 6060 http://www.macro4.com
DGATEWAY: NJE GATEWAY FOR OV/VM TO LOTUS NOTES	DGA Ltd. +44 171-520-3000 http://www.dga.co.uk
DOCSUITE	Praim Inc. (603) 431-0606 or (514) 688-2540 http://www.praim.com
ENTERPRISEWEB CALENDAR	Beyond Software, Inc. (408) 436-5974 http://www.beyond-software.com
ENTERPRISEWEB MAIL	Beyond Software, Inc. (408) 436-5974 http://www.beyond-software.com
IDA PSS VM	i-data international +45 4436 60 00 http://www.i-data.com
MAILBOOK	MailBook (713) 657-7408 http://www.mailbooksoftware.com
TAO	Fischer International Systems Corp. (941) 643-1500 http://www.fisc.com
VM: WEBSERVER FOR OV/VM 1.2	Sterling Software, Inc. (703) 264-8000 http://www.vm.sterling.com

Business Intelligence

PRODUCT NAME	CONTACT FOR ADDITIONAL INFORMATION
ADABASE C V6.2	Software AG +49 6151 921219 http://www.softwareag.com
ASTRAC AS	ASTRAC Ltd. +44 1926 623 061 http://www.astrac.com/as
CORVU IBIS	CorVu Corporation +61 2 9959 3522 http://www.corvu.com
CORVU PERFORMANCE MEASUREMENT	CorVu Corporation +61 2 9959 3522 http://www.corvu.com
SQLMAP	Sterling Software, Inc. (703) 264-8000 http://www.vm.sterling.com
VM: DB/DEVELOPER	Sterling Software, Inc. (703) 264-8000 http://www.vm.sterling.com
VM:DB/EDITOR	Sterling Software, Inc. (703) 264-8000 http://www.vm.sterling.com
VM: DB/REPORTER	Sterling Software, Inc. (703) 264-8000 http://www.vm.sterling.com
VM: DB/REXX	Sterling Software, Inc. (703) 264-8000 http://www.vm.sterling.com

Year 2000 Testing/Migration

PRODUCT NAME	CONTACT FOR ADDITIONAL INFORMATION
SOFTSPY FOR MODEL 204 V2.2	Information Technology Systems, Inc. (617) 964-6250, x18 http://www.softspy.com
TRANS2000 **	Transition Software Corp. (610) 337-2500 http://www.transition-software.com
VM TIMING FACILITY MONITORS	MiraSoft, Inc. (617) 825-9121 http://www.mirasoft.com
Y2K!ALERT	DBA Software (510) 658-9900 http://www.dbasoft.com
Y2K!VERIFY	DBA Software (510) 658-9900 http://www.dbasoft.com
** Product runs on MVS or OS/390 but can be used to help convert programs for VM/ESA. Company will also provide consulting and conversion assistance for VM/ESA customers.	

Application Development

PRODUCT NAME	CONTACT FOR ADDITIONAL INFORMATION
CMSTPF/ESA	TPF Software Inc. (919) 676-5501 http://www.tpf-software.com
CMSTPF/GI	TPF Software Inc. (919) 676-5501 http://www.tpf-software.com
CTFS/ESA	TPF Software Inc. (919) 676-5501 http://www.tpf-software.com
ESAMAP FOCUS MEASUREMENTS	Velocity Software Inc. (650) 964-8867 http://www.velocity-software.com
NATURAL V2.3	Software AG +49 6151 921219 http://www.softwareag.com
RESQ!NET CLIENT *	Advanced Transition Technologies, Inc. (212) 293-4814 http://www.att-inc.com
RESQ!NET FOR WINDOWS	Advanced Transition Technologies, Inc. (212) 293-4814 http://www.att-inc.com
SOURCE VIEW/ESA	TPF Software Inc. (919) 676-5501 http://www.tpf-software.com
SQLMAP	Sterling Software, Inc. (703) 264-8000 http://www.vm.sterling.com
SYNCSORT CMS 6.4	Syncsort Inc. (201) 930-8200 http://www.syncsort.com
VM: DB/DEVELOPER	Sterling Software, Inc. (703) 264-8000 http://www.vm.sterling.com
VM: DB/EDITOR	Sterling Software, Inc. (703) 264-8000 http://www.vm.sterling.com

PRODUCT NAME	CONTACT FOR ADDITIONAL INFORMATION
VM: DB/REPORTER	Sterling Software, Inc. (703) 264-8000 http://www.vm.sterling.com
VM: DB/REXX	Sterling Software, Inc. (703) 264-8000 http://www.vm.sterling.com
VM:WEBSERVER	Sterling Software, Inc. (703) 264-8000 http://www.vm.sterling.com
VM:WEBSERVER GATEWAY	Sterling Software, Inc. (703) 264-8000 http://www.vm.sterling.com
* Product runs on workstation and connects to mainframe operating platform.	

Industry Applications

PRODUCT NAME	CONTACT FOR ADDITIONAL INFORMATION
CLCS III	Data Slect Systems Financial Industry (805) 446-2020
CMSTPF/ESA	TPF Software Inc. Transportation and Financial Industries (919) 676-5501 http://www.tpf-software.com
CMSTPF/GI	TPF Software Inc. Transportation and Financial Industries (919) 676-5501 http://www.tpf-software.com
CTFS/ESA	TPF Software Inc. Transportation and Financial Industries (919) 676-5501 http://www.tpf-software.com
DEBIT CARD SYSTEM *	Flight Data Management, Inc. Education Industry (561) 369-0033 http://www.fdminc.net
SOURCE VIEW/ESA	TPF Software Inc. Transportation and Financial Industries (919) 676-5501 http://www.tpf-software.com
THE AIRLINE ACCOUNTING SYSTEM *	Flight Data Management, Inc. Transportation Industry (561) 369-0033 http://www.fdminc.net
THE AIRLINE CARGO SYSTEM *	Flight Data Management, Inc. Transportation Industry (561) 369-0033 http://www.fdminc.net
THE AIRLINE RESERVA- TION SYSTEM *	Flight Data Management, Inc. Transportation Industry (561) 369-0033 http://www.fdminc.net
* Product runs on workstation and connects to mainframe operating platform.	

System Utilities

PRODUCT NAME	CONTACT FOR ADDITIONAL INFORMATION
BEST/1-VISUALIZER FOR VM	BGS Systems Inc. (617) 891-0000 best1@bgs.com
BEST/1-VM	BGS Systems Inc. (617) 891-0000 best1@bgs.com
CAPTURE/VM-ESA	BGS Systems Inc. (617) 891-0000 best1@bgs.com
CMAP	Macro 4 +44 1293 88 6060 http://www.macro4.com
CSAR	Software Engineering of America (516) 328-7000 http://www.seasoft.com
DATACO-OP	Targetfour Ltd. +44 118 9364321 http://www.target4.com Ascent Solutions Inc. (ASi) (937) 847-2374 http://www.asizip.com
ENTIRE NET-WORK V5.4	Software AG +49 6151 921219 http://www.softwareag.com
EPILOG FOR VM	Candle Corp. (212) 705-6209 http://www.candle.com
ESAMAP ENTERPRISEWEB/ VM MEASUREMENTS	Velocity Software Inc. (650) 964-8867 http://www.velocity-software.com
ESAMAP FOCUS MEASUREMENTS	Velocity Software Inc. (650) 964-8867 http://www.velocity-software.com
ESATCP	Velocity Software Inc. (650) 964-8867 http://www.velocity-software.com
LOCKMASTER	Macro 4 +44 1293 88 6060 http://www.macro4.com
OMEGAMON FOR VM	Candle Corp. (212) 705-6209 http://www.candle.com
PASSPORT TN3270E CLIENT FOR WINDOWS 95/NT *	Zephyr Development Corp. (713) 623-0089, x102 http://www.zephyrcorp.com
PKZIP FOR VM/ESA	Targetfour Ltd. +44 118 9364321 http://www.target4.com Ascent Solutions Inc. (ASi) (937) 847-2374 http://www.asizip.com
REFLECT	Macro 4 +44 1293 88 6060 http://www.macro4.com
SYNCSORT CMS 6.4	Syncsort Inc. (201) 930-8200 http://www.syncsort.com
TUBES	Macro 4 +44 1293 88 6060 http://www.macro4.com
VM/PLANNER	BGS Systems Inc. (617) 891-0000 best1@bgs.com

PRODUCT NAME	CONTACT FOR ADDITIONAL INFORMATION
VPAC	Macro 4 +44 1293 88 6060 http://www.macro4.com CONTACT FOR
VM: DBA	Sterling Software, Inc. (703) 264-8000 http://www.vm.sterling.com
VM: DB/ADMIN	Sterling Software, Inc. (703) 264-8000 http://www.vm.sterling.com
VM: DB/Monitor	Sterling Software, Inc. (703) 264-8000 http://www.vm.sterling.com
VM: DB/REORGANIZER	Sterling Software, Inc. (703) 264-8000 http://www.vm.sterling.com
VM: DB/RESTORE	Sterling Software, Inc. (703) 264-8000 http://www.vm.sterling.com
VTAMPRINT	Macro 4 +44 1293 88 6060 http://www.macro4.com
3270 PASSPORT FOR WINDOWS *	Zephyr Development Corp. (713) 623-0089, x102 http://www.zephyrcorp.com
* Product runs on workstation and connects to mainframe operating platform.	

S/390 Service Update Facility

S/390 Service Update Facility (SUF) is an Internet-based S/390 software service tool that makes ordering and receiving OS/390, VM, and VSE software service quick and easy. SUF allows systems programmers to order both corrective and preventive service via the Internet. OS/390 and VM service, both corrective and preventive, can be delivered via the Internet or via standard physical media delivery. Where available, Advanced Digital Delivery (satellite) delivery is also an option. Currently, VSE corrective service may also be delivered via the Internet or physical delivery. However, VSE preventive service (that is, system refresh) can be delivered only via physical delivery. A common "GUI" interface is provided via the SUF "Customer Application Server." This workstation server may support multiple systems programmers supporting multiple S/390 servers. OS/390, VM, and VSE servers can be attached to a single workstation server simultaneously. For details regarding prerequisites, entitlement, and how to obtain SUF, refer to the S/390 SUF Home Page at:

<http://www.s390.ibm.com/suf>

S/390 Service Update Facility Version 2 Release 1 will be available March 1998.

Enhancements beyond Version 1 Release 1 announced function include:

- Additional server platforms support, including OS/390 OE and Windows/NT
- Additional Web browser support, Microsoft Internet Explorer
- Support for proxy and socks firewall servers
- Hyperlink access to enhanced holddata

For additional details refer to our Internet Home Page at URL:

<http://www.s390.ibm.com/suf>

Version 1 will no longer be available once Version 2 becomes available.

Planning Information

Customer Responsibilities: With the availability of VM/ESA Version 2 Release 3, TCP/IP, Remote Spooling Communication System (RSCS), and Language Environment for VM (LE) will be automatically shipped and pre-installed in the VM/ESA Version 2 Release base product DDR. Both TCP/IP and RSCS are optionally priced features. Additional information concerning this new packaging method can be found in the **Ordering Information** section under Current or New Licensees. For more specific information/instructions, customers should review the latest Program Directory for VM/ESA or RSCS. The RSCS Program Directory will be automatically shipped with VM/ESA Version 2 Release 3.0.

CMS Migration Utility Feature: Beginning with VM/ESA Version 2.1.0, which became generally available in December 1995, CMS no longer runs in 370 mode virtual machines. To simplify the migration of older applications and facilitate the running of 370 mode-only CMS applications in non-370 mode virtual machines (that is, XA or XC mode), IBM provides the *370 Accommodation* function. This function originally shipped with VM/ESA 1.2.1 (available July 1993) and has since been enhanced as the result of customer experience and input. 370 Accommodation handles the vast majority of inconsistencies between 370 mode and either XA or XC mode, eliminating the need to change these applications to exploit the new architectures.

IBM also provided the 370-capable level of CMS which shipped with VM/ESA Version 1.2.2 (known as CMS 11) as a no-charge feature for customers with specialized applications that 370 Accommodation could not support. Few VM customers have needed this CMS Migration Utility Feature and IBM has not updated it. Most importantly, the CMS Migration Utility Feature has not been made Year 2000 ready and IBM recommends that customers using it modify their applications to run on a Year 2000 ready level of CMS (Version 2.2.0 or 2.3.0) and stop using the Migration Utility as an application environment. Customers should not rely upon the Migration Utility as a production environment. Also, IBM has announced the discontinuance of service for VM/ESA 1.2.2 (including CMS 11) and the CMS Migration Utility Feature as of April 30, 1999.

Consistent with IBM's policy of delivering only Year 2000 ready products to customers in 1998 and beyond, the CMS Migration Utility Feature will no longer be available as part of VM/ESA. Customers who find their applications cannot run under the current level of CMS should use the 370 Accommodation function or modify their applications if possible. If problems persist, customers should call IBM Service for assistance.

IBM Withdraws from Marketing Non-Year 2000 Ready Programs: As of December 31, 1997, IBM withdrew all S/370™-S/390 programs from marketing that were not Year 2000 ready. This is consistent with IBM's previously announced plans to offer only Year 2000 ready products by year end 1997. Customers are encouraged to migrate to Year 2000 ready products to help ready their systems. Refer to Withdrawal Announcement 997-358, dated December 31, 1997, for additional information.

Further information about IBM and the Year 2000 is available at IBM's Web site:

<http://www.ibm.com/year2000/>

IBM Network Station: The IBM Network Station is an affordable solution for companies striving to enable all their users for traditional applications and intranet or Web access. Network Stations are centrally managed and supported by a "boot server," which downloads a pre-selected set of software. Administrators control what applications and versions are in service, while users can customize some elements of their environment. VM/ESA Version 2 Release 3.0 supports both the boot server and management elements for this increasingly popular desktop platform replacement.

While some of the functions needed to support IBM Network Stations are included in VM/ESA Version 2 Release 3.0, others must be downloaded. Customers interested in more information on the IBM Network Station should ask their IBM representative or visit the VM Network Station page at

<http://www.vm.ibm.com/networkstation/>

on the World Wide Web.

Security, Auditability, and Control

The announced program uses the security and auditability features inherent in the virtual machine and the System/370™, ESA/370™, and ESA/390™ architectures. The security and auditability of VM/ESA is the same for ESA/390 and ESA/370 architectures.

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

Ordering Information

Current Licensees

Current licensees of VM/ESA must order this release via MES. Ordering instructions are scheduled to be mailed from IBM Software Manufacturing Solutions (SMS) to all current licensees by two weeks after the general availability of VM/ESA Version 2 Release 3.0.

The CD-ROM product package will be available on March 27, 1998.

Withdrawal From Marketing: VM/ESA Version 2 Release 2.0 and RSCS Version 3 Release 1.1 will be withdrawn from marketing effective March 24, 1998. As of this date, all orders placed for VM/ESA will be fulfilled with VM/ESA Version 2 Release 3.0 and those placed for RSCS will be fulfilled with RSCS Version 3 Release 2.0. The following feature numbers will no longer be orderable:

VM/ESA V2 R2.0 (5654-030)

Base Product	Unlicensed Pubs	Licensed Pubs	Kanji	Simplified Chinese	German
6037 6038	7208	7207	6108	6107	6106
6039 6040	7209	8080			
6041 6042	7210	8081			
6043 6044	8089	8082	LFS/ESA		
6045 6046		8083	Kanji		
6047 6048		8084			
6049 6080		8085	6109		
6081		8086			
		8087			
		8088			

RSCS V3 R1.1 (5684-096)

Base Product: 5851, 5852, 5854, 5861, 5862, 5850, 7118, 7119, 7203, 7204, 7205, 8184
 French: 5618, 5619, 5620, 5696, 7201
 German: 5630, 5631, 5632, 5780, 7202
 Japanese: 5252, 5253, 5254, 5258, 7200

Important Notice

RSCS: RSCS (5684-096) is an optional priced product that will be automatically shipped and pre-installed in a disabled state in the VM/ESA Version 2 Release 3 base product DDR. This product will require specific customer actions to enable it. These actions include ensuring that the required IBM product license is in place as well as completing the enabling process as documented in the RSCS Version 3 (5684-096) Product Program Directory.

Customers with VM/ESA Version 2 Release 3 installed who do not have a license for RSCS Version 3 (5684-096), and who elect to use RSCS at a later date, must, prior to enabling RSCS Version 3, order RSCS Version 3 (5684-096) for the purposes of licensing, billing, and shipment of publications. The appropriate Customization Option Feature number should be included on the order to ensure that the media does not ship (the RSCS Version 3 code is included in the media shipment for VM/ESA Version 2 Release 3). After the customer has licensed RSCS Version 3 (5684-096), he may complete the enabling process as documented in the RSCS Version 3 Product Program Directory.

TCP/IP: Prior to VM/ESA Version 2 Release 3, TCP/IP and the TCP/IP Network File System (NFS) feature were separately orderable via the IBM program product number 5735-FAL. With the availability of VM/ESA Version 2 Release 3 the TCP/IP base product and the TCP/IP NFS feature will be automatically shipped and pre-installed in a disabled state, as optionally priced features in the VM/ESA Version 2 Release 3 base product DDR. This code will require specific actions by the customer to enable it. These actions include ensuring that the required IBM feature license is in place as well as completing the enabling process as documented in the TCP/IP Feature Program Directory.

Functionally, this new feature's level of TCP/IP is the equivalent of TCP/IP Version 2 Release 4 plus additional enhancements (refer to the **Description** section of this announcement for details).

All customers ordering VM/ESA Version 2 Release 3 who elect to use the new TCP/IP features are required to order the appropriate MLC, OTC, DSLO, or MOSP charge feature numbers under VM/ESA Version 2 Release 3, program number 5654-030 .

Existing TCP/IP customers moving to VM/ESA Version 2 Release 3 and ordering the TCP/IP features will be eligible for Version-to-Version Upgrade Credit and/or Single Version Charging as appropriate.

TCP/IP Version 2 Release 4 (5735-FAL) will be still be orderable and will be upwardly compatible to VM/ESA Version 2 Release 3. This release will be the final release of TCP/IP as a stand-alone product.

Language Environment OS/390 for VM: With the availability of VM/ESA Version 2 Release 3, Language Environment for VM (5688-198) will be integrated into the base product and shipped automatically with every order of VM/ESA Version 2 Release 3 at no additional charge to the customer. There are no orderable feature numbers associated with this enhancement; thus, customers are not required to take any action regarding Language Environment (LE) when ordering VM/ESA Version 2 Release 3. VM/ESA Version 2 Release 3 will satisfy the requirement many IBM and non-IBM products have for LE, so customers need not order it separately.

Language Environment Version 1 Release 6 (5688-198) will continue to be a separately orderable product, but will be the last release of LE as a stand-alone product. Any application written on LE Version 1 Release 6 will be upwardly compatible to the level of LE (Version 1 Release 8 plus enhancements) integrated into VM/ESA Version 2 Release 3.

Java: Using Java (JDK 1.1.1) on VM requires the VM Shell and Utilities Feature (#6059). Customers interested in Java should order the Shell and Utilities Feature as part of their VM/ESA V2 R3.0 order.

New Licensees

Orders for new licenses will be accepted now.

Shipment will begin on the planned availability date.

New users of VM/ESA Version 2 should specify:

Type	Model
5654	030

Important Notice

RSCS: RSCS (5684-096) will be automatically shipped and pre-installed in a disabled state in the VM/ESA Version 2 Release 3 base product DDR. This product will require specific customer actions to enable it. These actions include ensuring that the required IBM product license is in place as well as completing the enabling process as documented in the RSCS Version 3 (5684-096) Product Program Directory.

Customers with VM/ESA Version 2 Release 3 installed who do not have a license for RSCS Version 3 (5684-096), and who elect to use RSCS at a later date, must, prior to enabling RSCS Version 3, order RSCS Version 3 (5684-096) for the purposes of licensing, billing, and shipment of publications. The appropriate Customization Option Feature number should be included on the order to ensure that the media does not ship (the RSCS Version 3 code is included in the media shipment for VM/ESA Version 2 Release 3). After the customer has

licensed RSCS Version 3 (5684-096) he may complete the enabling process as documented in the RSCS Version 3 Product Program Directory.

TCP/IP: Prior to VM/ESA Version 2 Release 3, TCP/IP and the TCP/IP Network File System (NFS) feature were separately orderable via the IBM program product number 5735-FAL. With the availability of VM/ESA Version 2 Release 3 the TCP/IP base product and the TCP/IP NFS feature will be automatically shipped and pre-installed in a disabled state, in the VM/ESA Version 2 Release 3 base product DDR. This code will require specific actions by the customer to enable it. These actions include ensuring that the required IBM Feature license is in place as well as completing the enabling process as documented in the TCP/IP Feature Program Directory.

Functionally, this new feature's level of TCP/IP is the equivalent of TCP/IP Version 2 Release 4 plus additional enhancements (see the **Description** section of this announcement for details).

All customers ordering VM/ESA Version 2 Release 3 who elect to use the new TCP/IP features are required to order the appropriate MLC, OTC, DSLO, or MOSP charge feature numbers under VM/ESA Version 2 Release 3, program number 5654-030.

Existing TCP/IP customers moving to VM/ESA Version 2 Release 3 and ordering the TCP/IP features will be eligible for Version-to-Version Upgrade Credit and/or Single Version Charging as appropriate.

TCP/IP Version 2 Release 4 (5735-FAL) will be still be orderable and will be upwardly compatible to VM/ESA Version 2 Release 3. This release will be the final release of TCP/IP as a stand-alone product.

Language Environment OS/390 for VM: With the availability of VM/ESA Version 2 Release 3, Language Environment for VM (5688-198) will be integrated into the base product and shipped automatically with every order of VM/ESA Version 2 Release 3 at no additional charge to the customer. There are no orderable feature numbers associated with this enhancement; thus, customers are not required to take any action regarding Language Environment (LE) when ordering VM/ESA Version 2 Release 3.

Language Environment Version 1 Release 6 (5688-198) will continue to be a separately orderable product, but will be the last release of LE as a stand-alone product. Any application written on LE Version 1 Release 6 will be upwardly compatible to the level of LE (Version 1 Release 8 plus enhancements) integrated into VM/ESA Version 2 Release 3.

Java: Using Java (JDK 1.1.1) on VM requires the VM Shell and Utilities Feature (#6059). Customers interested in Java should order the Shell and Utilities Feature as part of their VM/ESA V2 R3.0 order.

Basic License: To order a basic license, specify the program number and feature number 9001 for asset registration. For a graduated one-time charge or graduated monthly license charge, specify one of the following feature numbers as applicable and corresponding to the group that contains the designated machine.

Also, specify the feature number of the desired distribution medium.

Group	VM/ESA Base Basic Graduated One-Time Charge Feature Number	VM/ESA Base Basic Graduated Monthly License Charge Feature Number
18	0919	0902
20	0920	0903
25	0921	0904
28	0922	0905
29	0923	0906
30	0924	0907
31	0925	0908
32	0926	0909
35	0927	0910
38	0928	0911
40	0929	0912
50	0930	0913
60	0931	0914
70	0932	0915
80	0933	0916

Multiple Operating System — PR/SM™ (MOSP): For a graduated one-time charge or graduated monthly license charge, specify the following feature numbers, corresponding to the group that contains the designated machine.

Group	VM/ESA Base MOSP Basic Graduated One-Time Charge Feature Number	VM/ESA Base MOSP Basic Graduated Monthly License Charge Feature Number
18	0953	0936
20	0954	0937
25	0955	0938
28	0956	0939
29	0957	0940
30	0958	0941
31	0959	0942
32	0960	0943
35	0961	0944
38	0962	0945
40	0963	0946
50	0964	0947
60	0965	0948
70	0966	0949
80	0967	0950

To order the OpenEdition Shell and Utilities feature for VM/ESA, specify the optional material feature number 6059. For a graduated one-time charge or graduated monthly license charge, specify one of the following feature numbers as applicable and corresponding to the group that contains the designated machine.

Group	OpenEdition Shell & Utilities Feature Basic Graduated One-Time Charge Feature Number	OpenEdition Shell & Utilities Feature Basic Graduated Monthly License Charge Feature Number
18	0987	0970
20	0988	0971
25	0989	0972
28	0990	0973
29	0991	0974
30	0992	0975
31	0993	0976
32	0994	0977
35	0995	0978
38	0996	0979
40	0997	0980
50	0998	0981
60	0999	0982
70	1080	0983

Multiple Operating System — PR/SM (MOSP): For a graduated one-time charge or graduated monthly license charge, specify the following feature numbers, corresponding to the group that contains the designated machine.

Group	OpenEdition Shell & Utilities Feature MOSP Basic Graduated One-Time Charge Feature Number	OpenEdition Shell & Utilities Feature MOSP Basic Graduated Monthly License Charge Feature Number
18	1303	1084
20	1304	1085
25	1305	1086
28	1306	1087
29	1307	1088
30	1308	1089
31	1309	1090
32	1310	1091
35	1311	1092
38	1312	1093
40	1314	1094
50	1315	1095
60	1316	1096
70	1317	1097
80	1318	1098

To order the CMS Utilities feature, specify optional material feature number 6055. For a graduated one-time charge or graduated monthly license charge, specify one of the following feature numbers as applicable and corresponding to the group that contains the designated machine.

Group	CMS Utilities Feature Basic		Group	TCP/IP Feature Basic	
	Graduated One-Time Charge Feature Number	Graduated Monthly License Charge Feature Number		Graduated One-Time Charge Feature Number	Graduated Monthly License Charge Feature Number
18	1338	1321	20	2036	2022
20	1339	1322	25	2037	2023
25	1340	1323	28	2038	2024
28	1341	1324	29	2039	2025
29	1342	1325	30	2040	2026
30	1343	1326	31	2042	2027
31	1344	1327	32	2043	2028
32	1345	1328	35	2044	2029
35	1346	1329	38	2045	2030
38	1347	1330	40	2046	2031
40	1348	1331	50	2048	2032
50	1349	1332	60	2049	2033
60	1350	1333	70	2050	2034
70	1351	1334	80	2051	2035
80	1352	1335			

Multiple Operating System — PR/SM (MOSP): For a graduated one-time charge or graduated monthly license charge, specify the following feature numbers, corresponding to the group that contains the designated machine.

Multiple Operating System — PR/SM (MOSP): For a graduated one-time charge or graduated monthly license charge, specify the following feature numbers, corresponding to the group that contains the designated machine.

Group	CMS Utilities Feature MOSP Basic		Group	TCP/IP Feature MOSP Basic	
	Graduated One-Time Charge Feature Number	Graduated Monthly License Charge Feature Number		Graduated One-Time Charge Feature Number	Graduated Monthly License Charge Feature Number
18	1370	1355	20	2066	2052
20	1371	1356	25	2067	2053
25	1372	1357	28	2068	2054
28	1373	1358	29	2069	2055
29	1374	1359	30	2070	2056
30	1375	1360	31	2071	2057
31	1376	1361	32	2072	2058
32	1377	1362	35	2073	2059
35	1378	1363	38	2074	2060
38	1379	1364	40	2075	2061
40	1380	1365	50	2076	2062
50	1381	1366	60	2077	2063
60	1382	1367	70	2078	2064
70	1384	1383	80	2079	2065
80	1386	1385			

TCP/IP Base is automatically shipped and pre-installed in a disabled state on the VM/ESA Version 2 Release 3.0 base product DDR. In addition to enabling the TCP/IP code, order feature number 7216 which will result in shipment of the accompanying TCP/IP publications. For a graduated one-time charge or graduated monthly charge, specify one of the following feature numbers as applicable and corresponding to the group that contains the designated machine.

The TCP/IP NFS feature is automatically shipped and pre-installed in a disabled state on the VM/ESA Version 2 Release 3.0 base product DDR. In addition to enabling the TCP/IP code, specify the appropriate charge feature number. For a graduated one-time charge or graduated monthly license charge, specify one of the following feature numbers as applicable and corresponding to the group that contains the designated machine.

Group	TCP/IP NFS Feature Basic Graduated One-Time Charge Feature Number	TCP/IP NFS Feature Basic Graduated Monthly License Charge Feature Number
20	2094	2080
25	2095	2081
28	2096	2082
29	2097	2083
30	2098	2084
31	2099	2085
32	2100	2086
35	2101	2087
38	2102	2088
40	2103	2089
50	2104	2090
60	2105	2091
70	2106	2092
80	2107	2093

Multiple Operating System — PR/SM (MOSP): For a graduated one-time charge or graduated monthly license charge, specify the following feature numbers, corresponding to the group that contains the designated machine.

Group	TCP/IP NFS Feature MOSP Basic Graduated One-Time Charge Feature Number	TCP/IP NFS Feature MOSP Basic Graduated Monthly License Charge Feature Number
20	2122	2108
25	2123	2109
28	2124	2110
29	2125	2111
30	2126	2112
31	2127	2113
32	2128	2114
35	2129	2115
38	2130	2116
40	2131	2117
50	2132	2118
60	2133	2119
70	2134	2120
80	2135	2121

When selecting the following TCP/IP options, specify the appropriate basic, one-time charge feature number:

	TCP/IP Basic One-Time Charge Feature Number
TCP/IP Source Code	0891
TCP/IP Offload Feature	0892
TCP/IP Offload/Preload	0893

Note: The group can be determined by referring to the Exhibit for IBM System/370 and System/390® Machines (Z125-3901) or the Exhibit for Non-IBM Machines (Z125-3902) associated with the IBM Customer Agreement (Z125-4575).

Higher Education Software Consortium: VM/ESA Version 2 (5654-030) is a supported program product in the Higher Education Software Consortium (HESC).

Feature Number	Feature Description	Charge
1900	HESC Software	NC

Entry Support License (ESL): To order an ESL, specify the program number, feature number 9001 for asset registration, and the applicable ESL OTC feature number. Also specify the feature number of the desired distribution medium.

Program Number/Description	ESL One-Time Charge Feature Number
5654-030 — VM/ESA Base V2.3.0	0036
5654-030 — VM/ESA Shell & Utilities Feature V2.3.0	0038
5654-030 — VM/ESA CMS Utilities Feature V2.3.0	0037
5654-030 — TCP/IP Base Feature V2.3.0	0039
5654-030 — TCP/IP NFS Feature V2.3.0	0059

Note: ESL machines can be determined by referring to the IBM Entry End User/390 Attachment (Z125-4379).

Single Version Charging: To elect single version charging, the customer must notify IBM and identify the prior program and replacement program and the designated machine the programs are operating on.

Version-to-Version Upgrade Credit: To upgrade from a prior program acquired for a one-time charge to a replacement program using a version-to-version upgrade credit, the customer must notify IBM and identify the applicable prior program and replacement program participating in the upgrade credit.

Basic Machine-Readable Material: To order, select the feature number of the desired distribution medium:

VM/ESA Version 2 Release 3.0 is installed via the VM/ESA System DDR and is available on either 6250 tape, 3480 cartridge, 4-mm DAT cartridge, or CD-ROM. This can be ordered through the VM/ESA base product (5654-030) or via the VM/System Delivery Offering (SDO). (For more information regarding SDO, refer to **Software Delivery Offering** in the **Technical Information** section.) The VM/ESA Version 2 Release 3.0 deliverable is the VM/ESA System DDR. It is refreshed as needed.

For all VM/ESA Version 2 Release 3.0 orders, the following no-charge prerequisite products are pre-installed on the System DDRs:

- EREP (5654-260)
- ICKDSF (5684-042)

Therefore, when ordering VM/ESA Version 2 Release 3.0 the customer must be licensed for these products or a separate order must be placed for these products.

Note: The High Level Assembler (HLASM) is no longer shipped on the DDR. If you would like HLASM, it must be ordered separately. Refer to **Software Requirements** in the **Technical Information** section for information on when HLASM is required.

To order the VM/ESA Version 2 Release 3.0 System DDR, select the feature number of the desired distribution medium:

Feature Number	Distribution Medium
3401	6250 Mag Tape
3404	3480 Tape Cartridge
3410	CD-ROM
3431	4-mm Tape Cartridge

Also, select the feature number of the desired pre-built System DDR:

Environment	Feature Number
3380 SysDDR V2.3.0	6050
3390 SysDDR V2.3.0	6051
9345 SysDDR V2.3.0	6052
FBA SysDDR V2.3.0	6053
CD-ROM SysDDR V2.3.0	6054

Note:

1. With the availability of VM/ESA Version 2 Release 3.0, 3800 Imag Libs is shipped in the System DDR and does not have to be ordered separately.
2. The following optional tapes are included with the base DDR:
 - ESA Migration Tool
 - PLX Source Code
 - DFSMS™
 - Japanese DFSMS
 - Stacked RSU
3. The CD-ROM contains all four system DDRs, all unpriced features (excluding DCE feature) of VM/ESA, and national language translation files.

Installation via CD-ROM requires the IBM Optical Media Attach/2 program (5621-264).

National Language Translation: When you order VM/ESA Version 2 Release 3.0, the National Language Translation files for message repositories, HELP files, and other panels or files are included with the system.

The following components/features are the ones supported by VM/ESA in the listed language:

- German — CP, CMS, REXX, Pipes, CMS Utilities feature, Graphical User Interface facility
- Japanese Kanji — CP, CMS, REXX, Pipes, CMS Utilities feature, Graphical User Interface facility
- French — Graphical User Interface facility
- Canadian French — Graphical User Interface facility

If you would like LFS/ESA translated in Kanji or DFSMS/VM Kanji, order feature number:

Feature	Description
6082	V2.3.0 DFSMS/VM Kanji
6083	V2.3.0 LFS/ESA Kanji

Customization Options: Select the appropriate feature numbers to customize your order to specify the delivery options desired. These features can be specified on the initial or MES orders.

Example: If publications are not desired for the initial order and for future updates, specify feature numbers 3470 to ship media only, and 3480 to ship media updates only. In the future if publication updates are required, order an MES to remove feature number 3480, and the publications will ship with the next release for the program.

Description	Feature Number
Initial Shipments	
Serial Number Only (suppresses shipment of media and documentation)	3444
Ship Media Only (suppresses initial shipment of documentation)	3470
Ship Documentation Only (suppresses initial shipment of media)	3471
Update Shipments	
Ship Media Updates Only (suppresses update shipment of documentation)	3480
Ship Documentation Only (suppresses update shipment of media)	3481
Suppress Updates (suppresses update shipment of media and documentation)	3482
Expedite Shipments	
Local IBM Office Expedite (for IBM use only)	3445
Customer Expedite Process Charge (\$30 charge for each product)	3446
Expedite shipments will be processed to receive 72-hour delivery from the time SMS receives the order. SMS will then ship the order via overnight air transportation.	

Optional Machine-Readable Material: To order, select the feature number for the desired distribution medium:

Feature Number	Distribution Medium	Group	VM/ESA Base DSLO Graduated One-Time Charge Feature Number	VM/ESA Base DSLO Graduated Monthly License Charge Feature Number
3401	6250 Mag Tape	18	1388	1387
3404	3480 Tape Cartridge	20	1391	1390
3410	CD-ROM	25	1393	1392
3431	4-mm Tape Cartridge	28	1395	1394
		29	1397	1396
		30	1399	1398
		31	1401	1400
		32	1403	1402
		35	1405	1404
		38	1407	1406
		40	1409	1408
		50	1411	1410
		60	1413	1412
		70	1415	1414
		80	1417	1416
Optional Material	Tape or Cartridge Feature Number	CD-ROM Feature Number		
CMS Utilities Feat V2.3.0	6055	6055		
Shell & Utilities Feat V2.3.0	6059	6059		
DCE Base Svcs Feat V2.3.0	6060	6060		
LFS/ESA Feat w/Disk V2.3.0	6063	6054		
includes Workstation 3-½ inch Diskettes				
LANRES/VM Feat w/Disk V2.3.0	6062	6054		
includes Workstation 3-½ inch Diskettes				
Restricted Source V2.3.0	6064	6054		
P/390 Preconfigured Sys V2.3.0	—	6056		
TCP/IP Source Feature V2.3.0	6065	6065		
TCP/IP Base Feature V2.3.0	7216	7216		
TCP/IP NFS Feature V2.3.0	—	—		

Multiple Operating System — PR/SM (MOSP): For a graduated one-time charge or graduated monthly license charge, specify the following feature numbers corresponding to the group that contains the designated machine.

The DCE User Data Privacy feature requires the OpenEdition DCE Base Services feature (#6060) to be installed first. Customers outside the U.S. must have proper clearance from the U.S. Department of Defense before they can be shipped the OpenEdition DCE User Data Privacy feature. The OpenEdition DCE User Data Privacy feature is a no charge feature used for controlling the export of the DES algorithm. When installed, this feature enables data encryption using the DES algorithm. Because this feature enables the support of DES, it is subject to U.S. Government import/export laws and regulations regarding "full" DES products.

The TCP/IP Kerberos Data Encryption Standard (DES) for VM/ESA feature provides 64-bit encryption/decryption services for the Kerberos authentication server as well as APIs for application programs. The distribution of this feature is subject to U.S. Government import/export laws and regulations.

Group	VM/ESA Base MOSP DSLO Graduated One-Time Charge Feature Number	VM/ESA Base MOSP DSLO Graduated Monthly License Charge Feature Number
18	1419	1418
20	1421	1420
25	1423	1422
28	1425	1424
29	1427	1426
30	1429	1428
31	1431	1430
32	1433	1432
35	1435	1434
38	1437	1436
40	1439	1438
50	1441	1440
60	1443	1442
70	1445	1444
80	1447	1446

To order a DSLO license for the OpenEdition Shell and Utilities feature, specify feature number 6059 and the feature number for a graduated one-time charge or graduated monthly license charge that corresponds to the group containing the designated machine.

Optional Material	Tape or Cartridge Feature Number	CD-ROM Feature Number
DCE UserDataPriv Feature V2.3.0	6061	6061
TCP/IP Kerberos (DES) for VM/ESA V2.3.0	6066	6066

DSLO License: To order a DSLO license, specify the program number, feature number 9901 for asset registration, and the feature number for a graduated one-time charge or graduated monthly license charge that corresponds to the group containing the designated machine.

Group	OpenEdition Shell & Utilities Feature DSLO	OpenEdition Shell & Utilities Feature DSLO	Group	CMS Utilities Feature DSLO	CMS Utilities Feature DSLO
	Graduated One-Time Charge Feature Number	Graduated Monthly License Charge Feature Number		Graduated One-Time Charge Feature Number	Monthly Graduated License Charge Feature Number
18	1449	1448	18	1509	1508
20	1451	1450	20	1511	1510
25	1453	1452	25	1513	1512
28	1455	1454	28	1515	1514
29	1457	1456	29	1517	1516
30	1459	1458	30	1519	1518
31	1461	1460	31	1521	1520
32	1463	1462	32	1523	1522
35	1465	1464	35	1525	1524
38	1467	1466	38	1527	1526
40	1469	1468	40	1529	1528
50	1471	1470	50	1531	1530
60	1473	1472	60	1533	1532
70	1475	1474	70	1535	1534
80	1477	1476	80	1537	1536

Multiple Operating System — PR/SM (MOSP): For a graduated one-time charge or graduated monthly license charge, specify the following feature numbers for the OpenEdition Shell and Utilities feature corresponding to the group that contains the designated machine.

Multiple Operating System — PR/SM (MOSP): For a graduated one-time charge or graduated monthly license charge, specify the following feature numbers for the CMS Utilities feature corresponding to the group that contains the designated machine.

Group	OpenEdition Shell & Utilities Feature MOSP DSLO	OpenEdition Shell & Utilities Feature MOSP DSLO	Group	CMS Utilities Feature MOSP DSLO	CMS Utilities Feature MOSP DSLO
	Graduated One-Time Charge Feature Number	Graduated Monthly License Charge Feature Number		Graduated One-Time Charge Feature Number	Graduated Monthly License Charge Feature Number
18	1479	1478	18	1539	1538
20	1481	1480	20	1541	1540
25	1483	1482	25	1543	1542
28	1485	1484	28	1545	1544
29	1487	1486	29	1547	1546
30	1489	1488	30	1549	1548
31	1491	1490	31	1551	1550
32	1493	1492	32	1553	1552
35	1495	1494	35	1555	1554
38	1497	1496	38	1557	1556
40	1499	1498	40	1559	1558
50	1501	1500	50	1561	1560
60	1503	1502	60	1563	1562
70	1505	1504	70	1565	1564
80	1507	1506	80	1567	1566

To order a DSLO license for the CMS Utilities feature, specify feature number 6055 and the feature number for a graduated one-time charge or graduated monthly license charge that corresponds to the group containing the designated machine.

TCP/IP Base is automatically shipped and pre-installed in a disabled state on the VM/ESA Version 2 Release 3.0 base product DDR. In addition to enabling the TCP/IP code, order feature number 7216 which will result in shipment of the accompanying TCP/IP publications. For a graduated one-time charge or graduated monthly charge, specify one of the following feature numbers as applicable and corresponding to the group that contains the designated machine.

Group	TCP/IP Base Feature DSLO	TCP/IP Base Feature DSLO	Group	TCP/IP NFS Feature DSLO	TCP/IP NFS Feature DSLO
	Graduated One-Time Charge Feature Number	Monthly Graduated License Charge Feature Number		Graduated One-Time Charge Feature Number	Graduated Monthly License Charge Feature Number
20	2150	2136	20	2206	2192
25	2151	2137	25	2207	2193
28	2152	2138	28	2208	2194
29	2153	2139	29	2209	2195
30	2154	2140	30	2210	2196
31	2155	2141	31	2211	2197
32	2156	2142	32	2212	2198
35	2157	2143	35	2213	2199
38	2158	2144	38	2214	2200
40	2159	2145	40	2215	2201
50	2160	2146	50	2216	2202
60	2161	2147	60	2217	2203
70	2162	2148	70	2218	2204
80	2163	2149	80	2219	2205

Multiple Operating System — PR/SM (MOSP): For a graduated one-time charge or graduated monthly license charge, specify the following feature numbers for TCP/IP Base Feature corresponding to the group that contains the designated machine.

Multiple Operating System — PR/SM (MOSP): For a graduated one-time charge or graduated monthly license charge, specify the following feature numbers for the TCP/IP NFS feature corresponding to the group that contains the designated machine.

Group	TCP/IP Base Feature MOSP DSLO	TCP/IP Base Feature MOSP DSLO	Group	TCP/IP NFS Feature MOSP DSLO	TCP/IP NFS Feature MOSP DSLO
	Graduated One-Time Charge Feature Number	Graduated Monthly License Charge Feature Number		Graduated One-Time Charge Feature Number	Graduated Monthly License Charge Feature Number
20	2178	2164	20	2234	2220
25	2179	2165	25	2235	2221
28	2180	2166	28	2236	2222
29	2181	2167	29	2237	2223
30	2182	2168	30	2238	2224
31	2183	2169	31	2239	2225
32	2184	2170	32	2240	2226
35	2185	2171	35	2241	2227
38	2186	2172	38	2242	2228
40	2187	2173	40	2243	2229
50	2188	2174	50	2244	2230
60	2189	2175	60	2245	2231
70	2190	2176	70	2246	2232
80	2191	2177	80	2247	2233

The TCP/IP NFS feature is automatically shipped and pre-installed in a disabled state on the VM/ESA Version 2 Release 3.0 base product DDR. In addition to enabling the TCP/IP code, specify the appropriate charge feature number. For a graduated one-time charge or graduated monthly license charge, specify one of the following feature numbers as applicable and corresponding to the group that contains the designated machine.

Ordering a DSLO feature will result in IBM maintaining a record of this customer location as a DSLO user only. All material for the DSLO license will be provided through the basic license location. If a user selects DSLO, no other feature numbers are valid for this order and no program materials or updates will be shipped.

Unlicensed Documentation: A program directory, one copy of the following printed publications, and one copy of VM/ESA online publications on CD-ROM are supplied automatically with the basic machine-readable material.

Title	Publication Number
VM/ESA: Licensed Program Specifications	GC24-5744
VM/ESA: General Information	GC24-5745
VM/ESA: Planning and Administration	SC24-5750
VM/ESA: Conversion Guide and Notebook	GC24-5839
VM/ESA: VMSES/E Introduction and Reference	GC24-5837
VM/ESA: Installation Guide	GC24-5836
VM/ESA: Service Guide	GC24-5838
VM/ESA: Quick Reference	SX24-5290
VM/ESA: System Messages and Codes	GC24-5841

Title	Publication Number	Feature Number:
VM/ESA: TCP/IP Function Level 310 Planning and Customization	SC24-5847	
VM/ESA: TCP/IP Function Level 310 User's Guide	SC24-5848	
VM/ESA: TCP/IP Function Level 310 Messages and Codes	GC24-5850	
The following publications are optional for this release and are available at no charge, but the feature number must be specified.		
	Feature Number:	
VM/ESA Base Books	7211	
VM/ESA: CMS File Pool Planning, Administrative and Operation	SC24-5751	
VM/ESA: REXX/EXEC Migration Tool for VM/ESA	GC24-5752	
VM/ESA: Running Guest Operating Systems	SC24-5755	
VM/ESA: Connectivity Planning, Administrative and Operation	SC24-5756	
VM/ESA: Group Control System	SC24-5757	
VM/ESA: Performance	SC24-5782	
IBM VM/ESA: CP Exit Customization	SC24-5672	
VM/ESA: System Operation	SC24-5758	
VM/ESA: Virtual Machine Operation	SC24-5759	
VM/ESA: CP Programming Services	SC24-5760	
VM/ESA: CMS Application Development Guide	SC24-5761	
VM/ESA: CMS Application Development Reference	SC24-5762	
VM/ESA: CMS Application Development Guide for Assembler	SC24-5763	
VM/ESA: CMS Application Development Reference for Assembler	SC24-5764	
VM/ESA: CMS Application Multitasking	SC24-5766	
VM/ESA: REXX/VM Primer	SC24-5598	
VM/ESA: REXX/VM User's Guide	SC24-5465	
VM/ESA: REXX/VM Reference	SC24-5770	
IBM VM/ESA: Distributed Graphical User Interface Toolkit	SC24-5724	
VM/ESA: Enterprise Systems Architecture/ Extended Configuration Principles of Operation	SC24-5594	
VM/ESA: Programmer's Guide to the Server-Requester Programming Interface for VM	SC24-5455	
VM/ESA: CPI Communications User's Guide	SC24-5595	
SAA® Common Programming Interface Communications Reference	SC26-4399	
SAA Common Programming Interface Resource Recovery Reference	SC31-6821	
External Security Interface (RACROUTE) Macro Reference for MVS and VM	GC28-1366	
VM/ESA: CP Command and Utility Reference	SC24-5773	
VM/ESA: CMS Primer	SC24-5458	
VM/ESA: CMS User's Guide	SC24-5775	
VM/ESA: CMS Command Reference	SC24-5776	
VM/ESA: XEDIT User's Guide	SC24-5779	
VM/ESA: XEDIT Command and Macro Reference	SC24-5780	
IBM VM/ESA: Graphical User Interface Facility	SC24-5789	
VM/ESA: CMS Pipelines User's Guide	SC24-5777	
VM/ESA: CMS Pipelines Reference	SC24-5778	
CMS/TSO Pipelines: Author's Edition	SL26-0018	
VM/ESA: Dump Viewing Facility	GC24-5853	
VM/ESA: Diagnosis Guide	GC24-5854	
VM/ESA: CP Diagnosis Reference	SC24-5855	
VM/ESA: CP Diagnosis Reference Summary	SX24-5292	
VM/ESA: CMS Diagnosis Reference	SC24-5857	
VM/ESA: CP Data Areas and Control Blocks	SC24-5856	
VM/ESA: CMS Data Areas and Control Blocks	SC24-5858	
OpenEdition for VM/ESA and Related Books		
IBM OpenEdition for VM/ESA: POSIX Conformance Document		GC24-5842
IBM OpenEdition for VM/ESA: Callable Services Reference		SC24-5726
IBM OpenEdition for VM/ESA: User's Guide		SC24-5727
IBM OpenEdition for VM/ESA: Command Reference		SC24-5728
IBM OpenEdition for VM/ESA: Advanced Application Programming Tools		SC24-5729
IBM OpenEdition for VM/ESA: Sockets Reference		SC24-5741
IBM C for VM/ESA: Library Reference		SC23-3908
IBM Debug Tool User's Guide and Reference		SC09-2137
DFSMS/VM Books		
VM/ESA: DFSMS/VM Function Level 221 Overview		GH35-0112
VM/ESA: DFSMS/VM Function Level 221 Planning Guide		GC35-0121
VM/ESA: DFSMS/VM FL221 Installation and Customization		SC26-4704
VM/ESA: DFSMS/VM Function Level 221 Storage Administration Guide and Reference		SH35-0111
VM/ESA: DFSMS/VM Function Level 221 Removable Media Services User's Guide and Reference		SC35-0141
VM/ESA: DFSMS/VM FL221 Messages and Codes		SC26-4707
VM/ESA: DFSMS/VM Function Level 221 Diagnosis		LY27-9589
OSA/SF for VM/ESA Books		
Planning for the System/390 Open Systems Adapter Feature		GC23-3870
IBM VM/ESA: Open Systems Adapter Support Facility User's Guide		SC28-1992
Language Environment for OS/390 & VM Books		
Language Environment for OS/390 & VM: Concepts Guide		GC28-1945
Language Environment for OS/390 & VM: Migration Guide		SC28-1944
Language Environment for OS/390 & VM: Programming Guide		SC28-1939
Language Environment for OS/390 & VM: Programming Reference		SC28-1940
Language Environment for OS/390 & VM: Writing Interlanguage Communication Applications		SC28-1943
Language Environment for OS/390 & VM: Debugging Guide and Run-Time Messages		SC28-1942
CMS Utilities Feature Book		
VM/ESA: CMS Utilities Feature		SC24-5535

TCP/IP Feature for VM/ESA Books	Feature Number: 7216	<ul style="list-style-type: none"> - VM/ESA: CMS Application Multitasking, SC24-5766-02 - VM/ESA: REXX/VM Primer, SC24-5598-01 - VM/ESA: REXX/VM User's Guide, SC24-5465-03 - VM/ESA: REXX/VM Reference, SC24-5770-02 - IBM VM/ESA: Distributed Graphical User Interface Toolkit, SC24-5724-02 - VM/ESA: Enterprise Systems Architecture/Extended Configuration Principles of Operation, SC24-5594-02 - VM/ESA: Programmer's Guide to the Server-Requester Programming Interface for VM, SC24-5455-01 - VM/ESA: CPI Communications User's Guide SC24-5595-01 - SAA Common Programming Interface Communications Reference, SC26-4399-08 - SAA Common Programming Interface Resource Recovery Reference, SC31-6821-01 - External Security Interface (RACROUTE) Macro Reference for MVS and VM, GC28-1366-07
VM/ESA: TCP/IP Function Level 310 Programmer's Reference	SC24-5849	
VM/ESA: TCP/IP Function Level 310 Diagnosis Guide	GC24-5851	
OpenEdition DCE for VM/ESA Books	Feature Number: 6060	<ul style="list-style-type: none"> • SBOF-8520-00 — VM/ESA base end-use books: <ul style="list-style-type: none"> - VM/ESA: CP Command and Utility Reference, SC24-5773-02 - VM/ESA: CMS Primer, SC24-5458-02 - VM/ESA: CMS User's Guide, SC24-5775-00 - VM/ESA: CMS Command Reference, SC24-5776-02 - VM/ESA: XEDIT User's Guide, SC24-5779-00 - VM/ESA: XEDIT Command and Macro Reference, SC24-5780-01 - IBM VM/ESA: Graphical User Interface Facility, SC24-5789-02 - VM/ESA: CMS Pipelines User's Guide, SC24-5777-01 - VM/ESA: CMS Pipelines Reference, SC24-5778-02 - CMS/TSP Pipelines: Author's Edition, SL26-0018-03 • SBOF-8521-00 — VM/ESA base books for diagnosing system problems: <ul style="list-style-type: none"> - VM/ESA: CP Command and Utility Reference SC24-5773-02 - VM/ESA: CP Diagnosis Reference, SC24-5855-00 - VM/ESA: CMS Command Reference, SC24-5776-02 - VM/ESA: CMS Diagnosis Reference, SC24-5857-00 - VM/ESA: CP Programming Services, SC24-5760-02 - VM/ESA: Diagnosis Guide, GC24-5854-00 - VM/ESA: Dump Viewing Facility, GC24-5853-00 - VM/ESA: Planning and Administration, SC24-5750-02 - VM/ESA: Service Guide, GC24-5838-00 - VM/ESA: System Messages and Codes, GC24-5841-00
IBM OpenEdition DCE for VM/ESA: Administration Guide	SC24-5730	
IBM OpenEdition DCE for VM/ESA: Administration Reference	SC24-5731	
IBM OpenEdition DCE for VM/ESA: Application Development Guide	SC24-5732	
IBM OpenEdition DCE for VM/ESA: Application Development Reference	SC24-5733	
IBM OpenEdition DCE for VM/ESA: Configuring and Getting Started	SC24-5734	
IBM OpenEdition DCE for VM/ESA: Introducing the OpenEdition Distributed Computing Environment	SC24-5735	
IBM OpenEdition DCE for VM/ESA: Messages and Codes	SC24-5736	
IBM OpenEdition DCE for VM/ESA: Planning	SC24-5737	
IBM OpenEdition DCE for VM/ESA: User's Guide	SC24-5738	
LAN File Services/ESA Books	Feature Number: 6063	
Discovering LAN File Services (CD-ROM)	GK2T-5762	
Introducing LAN File Services/ESA	GH24-5259	
LAN File Services/ESA Licensed Program Specification	GH24-5260	
LAN File Services/ESA VM Guide and Reference	SH24-5264	
LAN Resource Extension and Services/VM Books	Feature Number: 6062	
LANRES/VM Licensed Program Specification	GC24-5617	
LANRES/VM General Information	GC24-5618	
LANRES/VM Guide and Reference	SC24-5622	
Bill-of-Forms Numbers		
<ul style="list-style-type: none"> • SBOF-8518-00 — All VM/ESA base books (except VM/ESA: Licensed Program Specifications, VM/ESA: Installation Guide, and VM/ESA: REXX/EXEC Migration Tool for VM/ESA) plus the books for OpenEdition for VM/ESA and the CMS Utilities feature • SBOF-8519-00 — VM/ESA base application programming books: <ul style="list-style-type: none"> - VM/ESA: CP Programming Services, SC24-5760-02 - VM/ESA: CMS Application Development Guide, SC24-5761-02 - VM/ESA: CMS Application Development Reference, SC24-5762-02 - VM/ESA: CMS Application Development Guide for Assembler, SC24-5763-00 - VM/ESA: CMS Application Development Reference for Assembler, SC24-5764-01 		

- SBOF-8522-00 — OpenEdition application programming books:
 - IBM OpenEdition for VM/ESA: POSIX Conformance Document, GC24-5842-00
 - IBM OpenEdition for VM/ESA: Callable Services Reference, SC24-5726-02
 - IBM OpenEdition for VM/ESA: User's Guide, SC24-5727-01
 - IBM OpenEdition for VM/ESA: Command Reference, SC24-5728-01
 - IBM OpenEdition for VM/ESA: Advanced Application Programming Tools, SC24-5729-00
 - IBM OpenEdition for VM/ESA: Sockets Reference SC24-5741-00
 - IBM C for VM/ESA: Library Reference, SC23-3908-01
 - IBM Debug Tool User's Guide and Reference, SC09-2137-02
 - Language Environment for OS/390 & VM: Concepts Guide, GC28-1945-04
 - Language Environment for OS/390 & VM: Migration Guide, SC28-1944-04
 - Language Environment for OS/390 & VM: Programming Guide, SC28-1939-04
 - Language Environment for OS/390 & VM: Programming Reference, SC28-1940-04
 - Language Environment for OS/390 & VM: Writing Interlanguage Communication Applications, SC28-1943-04
 - Language Environment for OS/390 & VM: Debugging Guide and Run-Time Messages, SC28-1942-04

Displayable Softcopy Publications: The VM/ESA books (licensed and unlicensed) are offered in online displayable book format on the product media and shipped automatically, on tape only.

All unlicensed online books are also available on CD-ROM SK2T-2067, the *IBM Online Library Omnibus Edition: VM Collection*. The VM Collection also contains libraries for approximately 60 products that run on VM/ESA. This will be generally available in the United States at general availability of the VM/ESA Version 2 Release 3.0 product and 30 days after general availability in the other world trade countries. For a list of kit contents, see your IBM representative.

One copy of the CD-ROM Collection Kit will be shipped automatically with the product at no additional charge.

	Feature Number	Order Number
CD-ROM Collection Kit	7217	SK2T-2067

The online books can be used with the BookManager READ licensed programs in any of the READ-supported environments. They can also be used with the IBM Library Readers in DOS and OS/2 environments. The IBM Library Readers have the same functions as the BookManager READ/DOS and READ/2 licensed programs except the Library Readers can only be used to view IBM-produced online books. Both IBM Library Readers are supplied at no additional charge with online books on CD-ROM.

Online books CD-ROMs also contain programs that allow you to upload the displayable books to a VM or MVS host for viewing with IBM BookManager READ/VM or READ/MVS (the VM and MVS READ programs are not included on online books CD-ROMs but can be licensed from IBM).

Terms and conditions for use of the displayable book files and the IBM Library Readers are described in a document included with all online documentation.

Source File Publications: VM/ESA Version 2 Release 3.0 manuals are not offered in source file form.

Licensed Documentation: Beginning with VM/ESA Version 2 Release 3.0 there will no longer be any licensed documentation.

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

Terms and Conditions

The terms for VM/ESA, as previously announced (Software Announcement 296-336, dated September 10, 1996) licensed under the IBM Customer Agreement are unaffected by this announcement.

Charges

Program Number 5654-030

Group	TCP/IP	TCP/IP	TCP/IP	TCP/IP
	Base Basic	Base DSLO	Base Basic	Base DSLO
	Graduated	Graduated	Graduated	Graduated
	One-Time	One-Time	Monthly	Monthly
	Charge	Charge	License	License
			Charge	Charge
20	\$12,460	\$ 9,340	\$260	\$194
25	13,700	10,270	286	213
28	15,910	11,930	332	248
29	17,500	13,120	365	273
30	19,250	14,430	401	300
31	21,180	15,870	441	330
32	24,520	18,380	511	382
35	26,980	20,230	561	421
38	29,670	22,240	618	463
40	32,650	24,480	679	509
50	35,910	26,930	747	560
60	39,510	29,630	823	617
70	43,480	32,600	906	678
80	47,820	35,860	996	746

Group	TCP/IP NFS Basic Graduated One-Time Charge	TCP/IP NFS DSLO Graduated One-Time Charge	TCP/IP NFS Basic Graduated Monthly License Charge	TCP/IP NFS DSLO Graduated Monthly License Charge
20	\$2,490	\$1,865	\$ 51	\$ 39
25	2,740	2,055	56	42
28	3,180	2,385	66	49
29	3,495	2,625	72	54
30	3,845	2,885	79	60
31	4,230	3,175	87	66
32	4,900	3,675	101	76
35	5,390	4,040	112	82
38	5,930	4,445	122	92
40	6,530	4,890	135	101
50	7,180	5,380	149	112
60	7,895	5,920	163	122
70	8,670	6,500	180	135
80	9,535	7,155	198	148

One-Time Charge	
TCP/IP One-Time-Charge Features	
TCP/IP for VM/ESA Source Feature (#0891)	1,300
TCP/IP for VM/ESA Offload Feature (#0892)	3,150
TCP/IP for VM/ESA Offload/Preload (#0893)	3,150

One-Time Charge: Customers who pay a one-time charge for a licensed program receive enhancements and future releases, if any, at no additional charge. Significant new function may be offered as an optional feature and charged for separately. If a replacement program is announced and the customer elects to license the replacement program, a time-based upgrade credit may apply.

Variable Charges: The applicable graduated one-time license charge or graduated monthly license charge will be based on the group of the designated machine on which the licensed program is licensed for use. If the program is designated to a processor in a group for which no charge is listed above, the charge of the next higher group listed applies.

For upgrades of one-time charge licenses to a machine in a higher group, the upgrade charge will be the difference in the then current charges between the two groups. For the downgrades of one-time charge licenses to a machine in a lower group, there will be no adjustment or refund of one-time charges paid.

For upgrades or downgrades of monthly license charge licenses, the monthly license charge applicable to the higher or lower group will apply.

Entry Support License One-Time Charge: A one-time charge authorizes use only on IBM Entry End User/390 Machines.

For additional product information, refer to:

- Software Announcement 296-336, dated September 10, 1996
- Software Announcement 296-320, dated September 10, 1996
- Software Announcement 297-409, dated October 7, 1997

Charges for the VM/ESA Base, OpenEdition Shell and Utilities feature, and CMS Utilities feature are unaffected by this announcement.

Trademarks

Global Network, RS/6000, OS/390, Multiprise, Workplace, DirMaint, RACF, Library Reader, MVS/ESA, DATABASE 2, Parallel Sysplex, Distributed Relational Database Architecture, SQL/DS, QMF, Business Partner, OfficeVision/VM, RAMAC, NTuneMON, SQL Master, S/370, System/370, ESA/370, ESA/390, PR/SM, and DFSMS are trademarks of International Business Machines Corporation in the United States or other countries or both.

VM/ESA, S/390, MVS, ES/9000, RISC System/6000, ESCON, ACF/VTAM, OS/2, AIX, OpenEdition, DFSMS/VM, ADSTAR, BookManager, DB2, VTAM, Language Environment, NetView, DRDA, DataJoiner, OfficeVision, System/390, and SAA are registered trademarks of International Business Machines Corporation in the United States or other countries or both.

Windows NT is a trademark of Microsoft Corporation. Microsoft and Windows are registered trademarks of Microsoft Corporation.

Java is a trademark of Sun Microsystems, Inc. Notes is a trademark of Lotus Development Corporation. Lotus, Approach, Lotus SmartSuite, and Lotus Notes are registered trademarks of Lotus Development Corporation. Other company, product, and service names may be trademarks or service marks of others.

Group	TCP/IP Base MOSP Basic Graduated One-Time Charge	TCP/IP Base MOSP DSLO Graduated One-Time Charge	TCP/IP Base MOSP Basic Graduated Monthly License Charge	TCP/IP Base MOSP DSLO Graduated Monthly License Charge
20	\$12,460	\$ 9,340	\$260	\$194
25	12,460	9,340	260	194
28	13,810	10,350	288	215
29	15,190	11,380	316	237
30	16,710	12,520	348	260
31	18,380	13,770	383	286
32	21,280	15,950	443	331
35	24,520	18,380	511	382
38	25,750	19,300	536	402
40	28,320	21,240	590	442
50	31,160	23,370	648	486
60	34,280	25,710	714	535
70	37,710	28,280	785	589
80	41,490	31,120	865	647

Group	TCP/IP NFS MOSP Basic Graduated One-Time Charge	TCP/IP NFS MOSP DSLO Graduated One-Time Charge	TCP/IP NFS MOSP Basic Graduated Monthly License Charge	TCP/IP NFS MOSP DSLO Graduated Monthly License Charge
20	\$2,490	\$1,865	\$ 51	\$ 39
25	2,490	1,865	51	39
28	2,760	2,070	57	43
29	3,035	2,275	63	47
30	3,340	2,505	69	52
31	3,670	2,755	76	57
32	4,250	3,190	88	66
35	4,900	3,675	101	76
38	5,150	3,855	107	79
40	5,660	4,245	117	88
50	6,230	4,670	129	97
60	6,855	5,135	142	107
70	7,535	5,650	156	117
80	8,280	6,215	172	129

One-Time Charge

Entry End User/390
 Entry Support License:
 ESL — TCP/IP Base Feature \$1,290
 ESL — TCP/IP NFS Feature 258