



Licensed Program Specifications

Virtual Machine/Enterprise Systems Architecture Version 2 Release 4.0 Program Number 5654-030

IBM® Virtual Machine/Systems Enterprise Architecture (VM/ESA®) Version 2 Release 4.0 is a high-performance, interactive, multiple-access operating system for IBM S/390® servers. It consists of a set of functions and services in support of interactive users, client/server environments, and the capability to run full-function operating systems such as OS/390®, VSE/ESA™, or VM/ESA itself as programs. In addition, optional features are available with VM/ESA.

VM/ESA Version 2 Release 4.0 contains the following elements:

- VM/ESA base components
 - Control Program (CP)
 - Conversational Monitor System (CMS), which includes the VM/ESA Graphical User Interface (GUI) Facility
 - REXX/VM
 - Group Control System (GCS)
 - Transparent Services Access Facility (TSAF)
 - APPC/VM VTAM® Support (AVS)
 - Virtual Machine Serviceability Enhancements Staged/Extended (VMSES/E)
 - Dump Viewing Facility
- OpenEdition® for VM/ESA
- DFSMS/VM®
- Language Environment®
- IBM Open Systems Adapter/Support Facility (OSA/SF) for VM/ESA
- REXX/EXEC Migration Tool for VM/ESA
- DASD Dump Restore (DDR) Program
- 3800 Printer Image Library (object and source)
- Translated CP and CMS message repositories
- Programming Language/Cross Systems for System/370™ PL/X-370 Source Feature
- VM/ESA online books

- Translated HELP files

VM/ESA Version 2 Release 4.0 offers the following optional features:

- CMS Utilities Feature
- TCP/IP Feature for VM/ESA
- OpenEdition Shell and Utilities Feature for VM/ESA
- LANRES/VM
- LAN File Services/ESA
- OpenEdition DCE Feature for VM/ESA, Base Services Feature
- OpenEdition DCE Feature for VM/ESA, User Data Privacy Feature (available only in USA)
- Restricted Source
- TCP/IP Source Feature
- TCP/IP Kerberos (DES) for VM/ESA (available only in USA)
- TCP/IP Offload Feature

Specified Operating Environment

Year 2000 Readiness

This IBM Program, when used in accordance with its associated documentation, is capable of correctly processing, providing and/or receiving date data within and between the twentieth and twenty-first centuries, provided that all products (for example, hardware, software, and firmware) used with this IBM Program properly exchange accurate date data with it.

Machine Requirements

VM/ESA Version 2 Release 4.0 runs in ESA/390™ mode on the following IBM processors:

- S/390 Parallel Enterprise Server™ series
- S/390 Multiprise® 2000
- ES/9000® series

VM/ESA Version 2 Release 4.0 runs in ESA/370 mode on the following IBM processors:

- ES/3090™
- ES/4381™ Models 90, 91, and 92

Support for VM Data Spaces requires an ESA/390 processor. The IBM S/390 Parallel Enterprise Server - Generation 4 and later do not support 370-mode virtual machines on VM/ESA.

The minimum hardware configuration supported is:

- A processor capable of running in ESA/390 mode or ESA/370 mode

The processor must have:

- At least 8MB of real storage
 - One processor unit
 - One processor controller or support processor
 - One channel subsystem
- One system console (to control the hardware processor)
 - One operator console (to control the operating system; depending on the processor type, this may be the same physical device as the system console)
 - Direct access storage devices:
 - Seven 3380 single-density or
 - Four 3380 double-density or
 - Three 3380 triple-density or
 - Five 3390 single-density or
 - Three 3390 double-density or
 - Two 3390 triple-density or
 - Four 9345 Model 1s or
 - Three 9345 Model 2s or
 - Nine 9335 single-density or
 - Eight 9336 Model-10s or
 - Four 9336 Model-20s

Notes:

1. Although the 3370 and 9332 FBA DASD are supported natively, they are not supported as installation devices. Also, the 3390 Model 9 is not supported for installation.
2. If you choose not to install some optional components and other items, your DASD requirements may be less than indicated above. For more information, see the *VM/ESA: Installation Guide*.

- One of the following input devices:
 - 6250-bpi 9-track magnetic tape unit
 - 3480 tape subsystem
 - 3490 tape subsystem
 - 3490E tape subsystem
 - 4mm variable-block tape cartridge unit
 - CD-ROM

For information on additional machine requirements of specific elements or features of VM/ESA, see the *VM/ESA: General Information* manual.

Programming Requirements

VM/ESA Version 2 Release 4.0 requires the following IBM licensed programs:

- Environmental Error Record Editing and Printing Program for VM (EREP/VM) Version 3 (5654-260) Release 5 with APAR VM61870
- Device Support Facilities: ICKDSF for VM (5684-042) Release 16 or later

EREP/VM and ICKDSF for VM are preinstalled on VM/ESA. Therefore, when ordering VM/ESA, you must already be licensed for these programs or you must place a separate order for each program to establish a license. Both the CMS version of ICKDSF and an IPLable standalone version (5747-DS1) are supplied with VM/ESA.

Installing VM/ESA from CD-ROM requires:

- IBM Optical Media Attach/2 Enabler Kit (5622-138), which contains the Optical Media Attach/2 Program (5621-264)

Although not a prerequisite, the IBM High Level Assembler for MVS & VM & VSE Version 1 (5696-234) Release 1.0 or Release 2.0 is required for various tasks and functions. In a few cases, the IBM High Level Assembler for MVS & VM & VSE Version 1 (5696-234) Release 3.0 is required. See the *VM/ESA: General Information* manual for more information.

If a security product (external security manager) is needed:

- Resource Access Control Facility (RACF®) for VM Version 1 (5740-XXH) Release 10.0 or its equivalent

Note: RACF APAR VM60657 is required for Year 2000 support.

DFSMS/VM APAR VM61214 is required for Year 2000 support.

To view online books in IBM BookManager® format, BookManager READ/VM (5684-062) Release 3 or later is required. This program has the following prerequisite licensed programs:

- GDDM®/VMXA Version 2 (5684-007) Release 3 or later
- C/370™ Version 2 (5688-188) Release 2 or later
- IBM Compiler and Library for REXX/370 (5695-013) or IBM Library for REXX/370 (5695-014)

For information on additional programming requirements of specific elements or features of VM/ESA, see the *VM/ESA: General Information* manual.

Licensed Program Materials Availability

This licensed program is available with source licensed program materials for some modules designated as “RESTRICTED MATERIALS OF IBM.” In addition, some modules are available without source licensed program materials. These modules are available in object code.

Supplemental Terms

Designated Machine Identification

Designated Machine Identification Required: Yes

Testing Period

Basic License: 2 months

Distributed Systems License Option (DSLO)
License: None

Use-Based Charges/Usage Restriction

Charges for this Program are based on the Machine Group we specify for the Designated Machine. If you change (including upgrade or downgrade) the Designated Machine to a Machine in another group, you may incur a group upgrade charge or a changed recurring charge.

Type/Duration of Program Services

Program Service is provided, including an IBM Support Center, until discontinued by IBM with a minimum of six months written notice.

Authorization for Copy and Use on Home/Portable Computer

Not Applicable for this Program.

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