IBM

Program Directory for

z/VM

Version 5 Release 1.0

Program Number 5741-A05

for Use with
z/VM 5.1.0

Document Date: September 2004

GI11-4796-00

┌─ **Note!** ───┐
│ │
│ Before using this information and the product it supports, be sure to read the general information under "Notices" on page 35. │
│ │
└──┘

This program directory, dated September 2004, applies to z/VM™ Version 5 Release 1.0 , Program Number 5741-A05.

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1.0 Introduction

This program directory is intended for the system programmer responsible for program installation and maintenance. It contains information concerning the material and procedures associated with the installation of z/VM Version 5 Release 1.0. You should read all of this program directory before installing the program and then keep it for future reference. The section 3.1, "Preventive Service Planning" on page 9, tells you how to find any updates to the information and procedures in this program directory.

The program directory contains the following sections:

- 2.0, "Program Materials" on page 2 identifies the basic and optional program materials and documentation for z/VM.

- 3.0, "Program Support" on page 9 describes the IBM support available for z/VM.

- 4.0, "Program and Service Level Information" on page 13 lists the program levels of the required licensed products and the service level of z/VM.

- 5.0, "Installation Requirements and Considerations" on page 14 identifies the resources and considerations for installing and using z/VM.

- 6.0, "Installation Instructions" on page 20 provides information regarding the installation process for z/VM.

- 7.0, "Service Instructions" on page 22 provides information regarding the service process for z/VM.

- Appendix A, "z/VM APARs Included From Previous Release" on page 23 lists the APARs and PTFs incorporated into z/VM.

- Appendix B, "z/VM Inclusion of FINs" on page 26 lists the FIN APARs and FIN PITS problem records incorporated into z/VM.

- Appendix C, "z/VM Object Code Only Modules" on page 27 lists the Object Code Only modules within z/VM.

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2.0 Program Materials

An IBM program is identified by a program number and a feature code. The program number for z/VM Version 5 is 5741-A05.

The program announcement material describes the features supported by z/VM Version 5 Release 1.0. Ask your IBM marketing representative for this information if you have not already received a copy.

The following sections identify:

- The basic and optional program materials available with this program

- National Language Support (NLS).

2.1 Basic Machine-Readable Material

Refer to the *IBM z/VM V5.1 Extends zSeries on demand capabilities with Linux®-related enhancements and introduces a new pricing model* Software Announcement, 204-057, for information about ordering z/VM Version 5 Release 1.0 and its features.

The distribution medium for the z/VM System Deliverable is 3480 tape cartridge, 3590 tape cartridge, CD-ROM or DVD. (The DVD format is a binary image and not DDR format.) The tapes, CD-ROM and DVD support install to 3390 DASD model 3 and model 9. The DVDs also support install to FCP-attached ESS SCSI or equivalent disks.

Note: The licensed products orderable through the z/VM 5.1 SDO are eligible for internet delivery. This does not include the z/VM operating system (z/VM System Deliverable).

Please refer to the Media Report, that comes with your order, for a description of the contents of each individual deliverable.

See 6.0, "Installation Instructions" on page 20 for more information about how to install the program.

2.2 National Language Support (NLS)

The distribution medium for NLS is 3480 tape cartridge, 3590 tape cartridge, CD-ROM or electronically, if ordering the z/VM SDO through ShopzSeries.

Note: The program machine-readable materials contain "Restricted Materials of IBM."

2.2.1 NLS Basic Machine-Readable Material

The NLS basic material that is available is DFSMS/VM Kanji. It is shipped as a separately orderable free feature of the z/VM V5.1 SDO (5741-A06). If you need DFSMS/VM Kanji you can order it when you order z/VM through the SDO. If you are installing on SCSI disks and you need DFSMS/VM Kanji then you need to order it electronically.

2.3 Optional Machine-Readable Material

The DFSMS feature of z/VM no longer comes as part of the z/VM deliverable. It is now an optionally orderable free feature of the z/VM V5.1 SDO.

The z/VM Restricted Source feature and the PL/X Source feature are no longer shipped with the z/VM deliverable. Both are available as no-charge downloads from IBM Resource Link™ at:

www.ibm.com/servers/resourcelink/

In order to download either of these features you need to:

- be registered with Resource Link

- have a license for z/VM V5R1

Entitlement will be verified when you request this source code. After your approval, you will receive instructions describing how to download the source code for these features.

Notes:

 1. The optional machine-readable source material contains "Restricted Materials of IBM."

2.4 Program Publications

The following sections identify the basic and optional publications for z/VM Version 5 Release 1.0.

2.4.1 Basic Program Publications

Figure 1 identifies the basic program publications for z/VM base. One copy of each of these publications is included when you order the basic materials for z/VM Version 5 Release 1.0. For additional copies, of any publication, visit the IBM Publications Center at their World Wide Web site:

   www.ibm.com/shop/publications/order

Figure 1. Basic Material: Unlicensed Publications - New Editions

Publication Title	Form Number
z/VM: Guide for Automated Installation and Service	GC24-6099
z/VM: License Information Document	GC24-6102
z/VM: Getting Started with Linux on zSeries	GC24-6096

Figure 2 identifies the informal documentation for z/VM. One copy of each publication is included with your z/VM Version 5 order.

Figure 2. Basic Material: Informal Documentation

Publication Title	Form Number
Program Directory for z/VM	GI11-4796
Program Directory for TCP/IP for z/VM	GI11-4799
Program Directory for Open Systems Adapter Support Facility Feature	GI10-4801
Program Directory for Hardware Configuration Definition and Hardware Configuration Manager for z/VM	GI10-4802
Program Directory for Environmental Record Editing and Printing (EREP)	GI10-8140
Program Directory for Device Support Facilities ICKDSF	GI10-4514
RSU Stacked Tape Memo	GI11-4797

2.4.2 Optional Base Program Publications

The following figures contain information on the optional publications available for z/VM.

Optional publications are supplied in PDF or BookManager® format with z/VM. Some of these publications have printed versions. They can be ordered separately for a fee using the specific publication number through the IBM Publications Center at:

   www.ibm.com/shop/publications/order

Also at this site, a large number of publications are available online in various file formats, which can be downloaded free of charge.

z/VM offers unlicensed publications for approximately 60 products that run on z/VM in softcopy displayable form. The *IBM eServer™ zSeries Online Library: VM Collection* CD-ROM contains all of the IBM libraries (unlicensed books only) that are available in IBM BookManager format for current VM system products and IBM licensed programs that run on z/VM. It also contains all of the z/VM base, additional facility and optional feature publications that are currently available in Adobe™ Portable Document Format (PDF). One copy of the CD-ROM Collection Kit is shipped automatically with the z/VM product at no additional charge. Figure 3 identifies the z/VM softcopy displayable form number for CD-ROM media. Use the feature and order number shown if you need to order additional copies.

Figure 3. Optional Material: Softcopy Displayable

Publication Title	Feature Number	Form Number
IBM eServer zSeries Online Library: VM Collection	7221	SK2T-2067

PDF and Bookmanager versions of the z/VM publications can also be be found at:

www.ibm.com/eserver/zseries/zvm/library/

For more information on the contents of the VM Collection CD-ROM and to find out which format each publication comes in, refer to the "z/VM Library Guide" chapter in the *z/VM General Information* manual.

Figure 4 identifies the optional unlicensed program publications for z/VM, that have new editions.

Figure 4 (Page 1 of 4). Optional Material: Publications for z/VM - New Editions

Publication Title	Form Number
z/VM: General Information	GC24-6095
z/VM: Service Guide	GC24-6117
z/VM: CMS Application Development Guide	SC24-6069
z/VM: CMS Application Multitasking	SC24-6071
z/VM: CMS User's Guide	SC24-6079
z/VM: CMS File Pool Planning, Administration, and Operation	SC24-6074
z/VM: CMS Callable Services Reference	SC24-6072
z/VM: CMS Macros and Functions Reference	SC24-6075
z/VM: CMS Commands and Utilities Reference	SC24-6073
z/VM: CMS Application Development Guide for Assembler	SC24-6070
z/VM: CMS Planning and Administration	SC24-6078
z/VM: Program Management Binder and Loader for CMS	SC24-6110
z/VM: CP Planning and Administration	SC24-6083

Figure 4 (Page 2 of 4). Optional Material: Publications for z/VM - New Editions

Publication Title	Form Number
z/VM: CP Commands and Utilities Reference	SC24-6081
z/VM: I/O Configuration	SC24-6100
z/VM: System Messages and Codes - CP	GC24-6119
z/VM: System Messages and Codes - CMS and REXX/VM	GC24-6118
z/VM: System Messages and Codes - Other Components	GC24-6120
z/VM: VMSES/E Introduction and Reference	GC24-6130
z/VM: Performance	SC24-6109
z/VM: Migration Guide	GC24-6103
z/VM: System Operation	SC24-6121
z/VM: Quick Reference	SC24-6111
z/VM: CP Programming Services	SC24-6084
z/VM: Glossary	GC24-6097
z/VM: Group Control System	SC24-6098
z/VM: Virtual Machine Operation	SC24-6128
z/VM: VM Dump Tool	GC24-6129
z/VM: Systems Management Application Programming	SC24-6112
z/VM OpenExtensions™ Callable Services Reference	SC24-6105
z/VM OpenExtensions User's Guide	SC24-6108
z/VM OpenExtensions POSIX Conformance Document	GC24-6107
z/VM OpenExtensions Advanced Application Programming Tools	SC24-6104
z/VM OpenExtensions Command Reference	SC24-6106
z/VM: Running Guest Operating Systems	SC24-6115
z/VM: Saved Segments Planning and Administration	SC24-6116
z/VM: CPI Communications User's Guide	SC24-6085
z/VM: Connectivity	SC24-6080
z/VM: CMS Primer	SC24-6137
z/VM: REXX/VM Reference	SC24-6113
z/VM Diagnosis Guide	GC24-6092
z/VM: CMS File Pool Planning, Administration, and Operation	SC24-6074
z/VM: CMS Pipelines Reference	SC24-6076
z/VM: CMS Pipelines User's Guide	SC24-6077
z/VM: CP Exit Customization	SC24-6082

Publication Title	Form Number
z/VM: REXX/VM User's Guide	SC24-6114
z/VM: Dump Viewing Facility	GC24-6093
z/VM: Reusable Server Kernel Programmer's Guide and Reference	SC24-6112
z/VM: XEDIT User's Guide	SC24-6132
z/VM: XEDIT Command and Macro Reference	SC24-6131
z/VM: Enterprise Systems Architecture/Extended Configuration Principles of Operation	SC24-6094
z/VM: Language Environment® User's Guide	SC24-6101
z/OS: Language Environment Concepts Guide	SA22-7567
z/OS: Language Environment Programming Guide	SA22-7561
z/OS: Language Environment Programming Reference	SA22-7562
z/OS: Language Environment Writing Interlanguage Communication Applications	SA22-7563
z/OS: Language Environment Debugging Guide	SA22-7560
z/OS: Language Environment Run-Time Messages	SA22-7566
z/VM: TCP/IP Level 510 Planning and Customization	SC24-6125
z/VM: TCP/IP Level 510 User's Guide	SC24-6127
z/VM: TCP/IP Level 510 Messages and Codes	GC24-6124
z/VM: TCP/IP Level 510 Programmer's Reference	SC24-6126
z/VM: TCP/IP Level 510 Diagnosis Guide	GC24-6123

Figure 5 identifies the optional unlicensed program publications for z/VM, that do not have new editions.

Figure 5. Optional Material: Publications for z/VM - Not New Editions

Publication Title	Form Number
CMS/TSO Pipelines: Author's Edition	SL26-0018
Common Programming Interface Communications Reference	SC26-4399
Common Programming Interface Resource Recovery Reference	SC31-6821
OS/390®: DFSFS Program Management	SC27-0806
z/OS and z/VM: Hardware Configuration Manager User's Guide	SC33-7989
z/OS and z/VM: Hardware Configuration Definition Messages	SC33-7986

Note: The CP and CMS control block information is no longer provided in book form. This information is available on the z/VM home page (**www.**ibm.com/eserver/zseries/zvm/library/) or you can use the BLOCKDEF utility against control blocks on your system to get the most current data.

Figure 6 on page 8 and Figure 7 on page 8 identify the optional unlicensed program publications for OSA/SF for VM.

Figure 6. Optional Material: OSA/SF Publications - New Editions

Publication Title	Form Number
eServer zSeries 990: Open Systems Adapter-Express Customer's Guide and Reference	SA22-7935
eServer zSeries: Open Systems Adapter-Express Customer's Guide and Reference	SA22-7476

Figure 7. Optional Material: OSA/SF Publications - Not New Editions

Publication Title	Form Number
Planning for the System/390® Open Systems Adapter (OSA-1, OSA-2) Feature	GC23-3870
VM/ESA: Open Systems Adapter Support Facility User's Guide	SC28-1992
S/390: Open Systems Adapter-Express Customer's Guide and Reference	SA22-7403
zSeries 900: Planning for Open Systems Adapter-2 Feature	GA22-7477

Figure 8 identifies the optional unlicensed program publications for DFSMS/VM FL221.

Figure 8. Optional Material: DFSMS/VM Publications - New Editions

Publication Title	Form Number
Program Directory for DFSMS/VM	GI10-4804
z/VM: DFSMS/VM Function Level 221 Planning Guide	SC24-6089
z/VM: DFSMS/VM Function Level 221 Customization	GC24-6086
Z/VM: DFSMS/VM Function Level 221 Messages and Codes	GC24-6088
z/VM: DFSMS/VM Function Level 221 Removable Media Services	SC24-6090
z/VM: DFSMS/VM Function Level 221 Storage Administration	SC24-6091
z/VM: DFSMS/VM Function Level 221 Diagnosis Guide	GC24-6087

The publications provided by the other priced features of z/VM can be found in the feature's Program Directory.

2.5 Program Source Materials

Customers with access to View Program Listings (VPL) can use the VPL facility for online viewing of available program listings. Those customers without access to VPL can contact their IBM representative.

3.0 Program Support

This section describes the IBM support available for z/VM.

3.1 Preventive Service Planning

Use the appropriate product Service Procedures to apply any service recommendations in the PSP Bucket AFTER installation has been completed.

Before installing z/VM, check with your IBM Support Center or use IBMLink™ (ServiceLink) to see whether there is additional Preventive Service Planning (PSP) information that you should know. You should request the PSP information for the z/VM components and z/VM features that you are using. Refer to Figure 9 for PSP Upgrade and Subset information.

Note: You should check to see what the latest available Stacked RSU level is. If it is higher than the one you received with your z/VM order, or if you did not receive one with your order and now there is one, you should order it and apply it when you install z/VM.

Be aware that there is a Stacked RSU package level which includes products at their individual RSU level. These levels are different. When checking for the current level you would check the current individual product RSU level. If you are not at the current product RSU level then you would order the z/VM Stacked RSU, UM97510. Refer to following z/VM RSU internet site at url:

  www.ibm.com/eserver/zseries/zvm/service/rsu/stk510.html

to see information about the Stacked RSU package level and corresponding product individual RSU level. You can also find information about ordering z/VM service, preventive (RSU) or CORrective, at the z/VM service internet web site.

Note: You can click on the 'Notify me' in the left navigation area of the VM home page and then set it up so you get notified whenever the stk510.html file gets changed. A change to this file is an indication that a new RSU is available.

To obtain the PSP information specify the UPGRADE and SUBSET values from Figure 9.

The features are shown after the double line in the figure.

Figure 9 (Page 1 of 2). PSP Upgrade and Subset ID - z/VM

Upgrade	Subset	RETAIN® Release
ZVM510	CP	510
ZVM510	DVF	510
ZVM510	GCS	510

Figure 9 (Page 2 of 2). PSP Upgrade and Subset ID - z/VM

Upgrade	Subset	RETAIN® Release
ZVM510	CMS	510
ZVM510	TSAF	510
ZVM510	VMSES	510
ZVM510	REXX	510
ZVM510	AVS	510
ZVM510	LE	440
ZVM510	yynnRSU	510
TCPIP510	VM510	510
TCPIP510	yynnRSU	RSU
VMOSASF440	OSASF	440
VMOSASF440	yynnRSU	RSU
ZVMHCD440	ZVMHCD/440	440
ZVMHCD440	yynnRSU	RSU
DFSMSVM221	SMS221	221
VMPTK510	PTK/510	440
VMPTK510	yynnRSU	RSU
DIRM510	DIRM/510	510
DIRM510	yynnRSU	RSU
RACFVM1100	RACF110	1A0
RACFVM1100	yynnRSU	RSU
RSCSV32	RSCSV32/320	320
RSCSV32	yynnRSU	RSU

3.2 Additional Preventive Service Planning

3.2.1 EURO Currency Readiness

z/VM 5.1.0, its features and pre-installed products are EURO ready by base level or service.

Other Licensed Products of VM may still require a new release or additional service for itself to be EURO ready.

3.3 Statement of Support Procedures

Note: With z/VM you are entitled to support under the basic warranty for z/VM. Also, note that the z/VM Software Subscription and Support (5741-SNS) is *automatically* added when you order z/VM - this provides zSeries service to which you are likely accustomed. If you do not want the z/VM Software Subscription and Support for z/VM then you must take specific action to decline it when ordering z/VM.

Report any difficulties you have using this program to your IBM Support Center. If an APAR is required, the Support Center will provide the address to which any needed documentation is to be sent.

Figure 10 identifies the component IDs (COMPID), Retain Release and Field Engineering Service Numbers (FESN) for z/VM.

Figure 10 (Page 1 of 2). Component IDs and Field Engineering Numbers

| | Retain | | | |
COMPID	Release	Component Name	PRODID	FESN
568411201	510	CMS	5VMCMS10	0460181
568411202	510	CP	5VMCPR10	0460647
568411204	510	AVS	5VMAVS10	0460648
568411205	510	REXX	5VMREX10	0460185
568411206	510	TSAF	5VMTSA10	0460186
568411208	510	DVF	5VMDVF10	0460188
568411209	510	VMSES/E	5VMSES10	0460646
568411211	510	GCS	5VMGCS10	0460191
568411220	440	LE	4VMVMQ40	0410741
568819802	440	LE COBOL RTL	4VMVMQ40	0562227
568819803	440	LE PL/I RTL	4VMVMQ40	0562228
568411201	A51	CMS JAPANESE KANJI	5VMCMS10	0460181
568411201	E51	CMS GERMAN	5VMCMS10	0460181
568411202	A51	CP JAPANESE KANJI	5VMCPR10	0460647
568411202	E51	CP GERMAN	5VMCPR10	0460647
568411204	A51	AVS JAPANESE KANJI	5VMAVS10	0460648
568411204	E51	AVS GERMAN	5VMAVS10	0460648
568411205	A51	REXX JAPANESE KANJI	5VMREX10	0460185
568411205	E51	REXX GERMAN	5VMREX10	0460185
568411206	A51	TSAF JAPANESE KANJI	5VMTSA10	0460186
568411206	E51	TSAF GERMAN	5VMTSA10	0460186
568411208	A51	DVF JAPANESE KANJI	5VMDVF10	0460188

Figure 10 (Page 2 of 2). Component IDs and Field Engineering Numbers

Retain				
COMPID	**Release**	**Component Name**	**PRODID**	**FESN**
568411208	E51	DVF GERMAN	5VMDVF10	0460188
568411209	A51	VMSES/E JAPANESE KANJI	5VMSES10	0460646
568411209	E51	VMSES/E GERMAN	5VMSES10	0460646
568411211	A51	GCS JAPANESE KANJI	5VMGCS10	0460191
568411211	E51	GCS GERMAN	5VMGCS10	0460191
568411220	A44	LE JAPENESE KANJI	4VMVMQ40	0410741
568819802	A44	LE COBOL RTL JAPANESE KANJI	4VMVMQ40	0562227
568819803	A44	LE PL/I RTL JAPANESE KANJI	4VMVMQ40	0562228

4.0 Program and Service Level Information

This section identifies the program and any relevant service levels of z/VM. The program level refers to the APAR fixes incorporated into the program. The service level refers to the PTFs integrated.

4.1 Program Level Information

z/VM Version 4 Release 4.0 APARs, which are fixed in z/VM Version 5 Release 1.0, are listed in Appendix A, "z/VM APARs Included From Previous Release" on page 23 of this document.

4.2 Service Level Information

EREP 3.5.0 is at SDO service level available 9/2004 and ICKDSF 1.17.0 is at the SDO service level available 7/2004.

When you complete installation, the following products will be at the Service Level provided on the GA System Deliverables, unless an RSU was installed at z/VM installation time.

Figure 11. Feature/Product RSU Levels GA System Deliverable

Product Name	Release Level	RSU Level
Language Environment	4.4.0	0401 (plus PTFs UM31054 UM31151 UM31152)
HCD/HCM for z/VM	FL 440	0401 (plus PTF UM31044)
OSA/SF for VM	FL 440	0000 (plus PTFs UA10955 UA10588 UA08459 UA04756)
RSCS	3.2.0	0201 (plus PTF UV60716 UV60739)
RACF	1.10.0	0301 (plus PTF UV60847)

Notes:

1. The optional RACF feature for z/VM V5R1M0 is equivalent to RACF V1R10M0 (5740-XXH) base plus RSU service.

2. Products not listed are at base level (or RSU level 0000).

4.3 Cumulative Service

The Recommended Service Upgrade (RSU) for z/VM Version 5 Release 1.0 is cumulative.

The RSU is used to provide service updates for all z/VM components, features or products, in VMSES/E format, that are pre-installed on the z/VM System Deliverables. It is referred to as a stacked RSU.

The RSU can be ordered using the PTF number **UM97510**.

5.0 Installation Requirements and Considerations

The following sections identify the system requirements for installing z/VM.

5.1.1 Programming Requirements

A license for the following products is required to order z/VM Version 5 Release 1.0. These products are already installed on the z/VM System Deliverables.

Figure 12. Products Required for z/VM Version 5 Release 1.0.

Product Name	Product Level	Product Number
EREP	3.5.0	5654-260
ICKDSF*	1.17.0	5747-DS1
ICKDSF/VM*	1.17.0	5684-042

Note: *Only one ICKDSF product license (ICKDSF or ICKDSF/VM) is required.

A license for the following products is required in order to run them. These products are already installed on the z/VM System Deliverables disabled. Refer to the z/VM Software Announcement for information on obtaining a license for these products.

Figure 13. Products Requiring a License

Product Name	Product Level	Product Number
Performance Toolkit for VM	510	5741-A05
DirMaint™	510	5741-A05
RACF	1.10.0	5741-A05
RSCS	3.2.0	5684-096

5.1.2 DASD Storage Requirements

Figure 14 and Figure 15 on page 15 identify the DASD required to install z/VM Version 5 Release 1.0. The total amount of DASD you will need is what you choose from both figures.

Figure 14. DASD Requirements for System Residence and Work

DASD Type	Number of DASD	Reason
3390-Mod 3 (3339 cylinders)	3	if you select to load any products to minidisk
	2	if you select to load all products to SFS file pool
3390-Mod 9 (10017 cylinders)	1	if you select to load to minidisk or SFS
FBA (DVD install only)	2 - 3.5GB SCSI DISKs (6839560 blks each)	if you select to install all to either SFS or minidisk
	2 - 3.5GB SCSI Disks (6839560 blks each)	if you select to load all to a mixture of SFS and minidisk and you will install more than 275000 blocks to SFS
	3 - 3.5GB SCSI Disks	if you select to load all to a mixture of SFS and minidisk and you will install less than 275000 blocks to SFS

Figure 15. DASD Requirements for SPOOL and PAGE

DASD Type	Number of DASD	Reason
Any Model 3390 install	2	the 3390-mod 3 DASD is suggested
FBA (DVD SCSI install only)	2 - 1 GB SCSI DISKs (1963152 blks each)	can only use these if doing a DVD install

5.1.3 Media/Tape Drive Requirements

The following devices are supported:

    3480 (XF only)
    3490
    3490E
    3590
    CD-ROM (emulating a 3422 tape drive)
    DVD (format is binary images, not z/VM DDR format)

5.1.4 Hardware Requirements

Make sure you review the appropriate 'Understand the Requirements' section in the *Z/VM: Guide for Automated Installation and Service*. This is especially important if you will be installing from DVD.

5.1.5 Programming and Migration Considerations

5.1.5.1 Packaging Changes for z/VM V5R1

The following items reflect changes that occurred in the packaging of z/VM V5R1:

- Installation to 3390-1 and 3390-2 DASD is no longer supported. However, you can now install onto 3390-9 as well as 3390-3 DASD.

- Spool and paging space has been removed from the System Residence volume and separate volumes for spooling and paging are now required during z/VM installation.

- The 3270 PC File Transfer product (5664-281) is now available as part of the z/VM V5R1 product.   Its module, IND$FILE MODULE, is shipped as a sample tool on the system 'S' disk (190).

- DFSMS/VM is no longer included in your z/VM order. It can be ordered as a no-charge feature with the z/VM V5R1 SDO.   DFSMS/VM Kanji can also be ordered the same way.

- The Restricted Source and PL/X Source features are no longer shipped with z/VM V5R1 but they are available as no-charge downloads from IBM Resource Link. See section 6.1.1.1, "(Optional) Restricted and PL/X Source Installation" on page 20 for more information.

- Tivoli® Storage Manager (TSM) for VM in no longer provided on the z/VM V5R1 System Deliverables. It can still be ordered as a standalone product. Refer to the z/VM V5R1 announcement letter for more information.

- The RealTime Monitor (RTM) and Performance Reporting Facility (PRF) features are no longer provided on the z/VM V5R1 System deliverables, nor can they be licensed with z/VM V5R1. (Note that the Performance Toolkit for VM is provided.)

- z/VM V5R1 only includes a 64-bit CP module and it is called CPLOAD MODULE. The 32-bit and dual-mode modules are no longer provided.

5.1.5.2 Migration Considerations

The *z/VM:General Information* and *z/VM:Migration Guide* manuals **should be reviewed** as they contain migration information.

The rest of the information in this section can be found in more detail in the *z/VM:Migration Guide*, but is important enough to mention here.

5.1.5.2.1 Product Parameter File (PPF) Information New for z/VM V5R1:

The VMSES/E PRODIDs for the z/VM base components and features, which are used as the file name for the component's $PPF file, have been in the format of *v*VMVM*arm*, where *vrm* was the version, release and modification level of z/VM and *a* was a letter associated with the component. In z/VM V5R1 the PRODIDs are in the format of *v***VM***aaarm*, where *vrm* is still the z/VM version, release and modification and *aaa* is a new identifier for the component. The following table shows the new file names (PRODIDs) for the $PPF files for the z/VM components and features.

Figure 16. New $PPF File Names

Componet/Feature	$PPF file name and file type
AVS	5VMAVS10 $PPF
CMS	5VMCMS10 $PPF
CP	5VMCPR10 $PPF
Dump Viewing Facility	5VMDVF10 $PPF
GCS	5VMGCS10 $PPF
REXX	5VMREX10 $PPF
TSAF	5VMTSA10 $PPF
VMSES/E	5VMSES10 $PPF
TCPIP	5VMTCP10 $PPF
DirMaint	5VMDIR10 $PPF
Performance Toolkit for VM	5VMPTK10 $PPF

Note: The product parameter file (or PRODID) for Language Environment has not changed; it is still 4VMVMQ40 $PPF. This is because Language Environment did not change in z/VM V5R1; it is still at the 4.4.0 level. Also, HCD/HCM and OSA are both at FL 440 level and their PRODIDs are still 4VMHCD40 and 4OSASF40, respectfully.

5.1.5.2.2 Changes from previous z/VM releases:

If you are coming from a VM version or release prior to z/VM V4R4.0 then you should take note of the what is in this section.

Due to some changes to defaults and inclusion of new levels of products you **definitely need to review** the *z/VM:Migration Guide*.

A couple of items that you need to be aware of are:

1. For TCP/IP, **RESTRICTLOWPORTS** is now active by default in the PROFILE TCPIP, therefore, if appropriate port authorizations have not been provided, applications that rely upon well-known ports (for example, VM-based web servers or remote printing functions such as **lpr**, like with RSCS) are likely to report "Unable to open port(s)" or "Permission denied" conditions.

2. For Language Environment, there is a new level installed, therefore you **should not** migrate your existing Language Environment to the new z/VM system. If you end up with a mismatch of Language Environment code levels between the minidisks and segments your applications will fail with various errors.

3. z/VM Language Environment 4.4.0 has changed the default values for the runtime options **STACK** and **ALL31**. The new defaults are **STACK=(128K,128K,ANYWHERE,KEEP,512K,128K)** and **ALL31=(ON)** (prior release defaults were STACK=(128K,128K,BELOW,KEEP) and ALL31=(OFF)). This was done in z/OS Language Environment V1R4, which the new z/VM Language Environment is based off of, in the

belief that most, if not all, application programs have been updated to run in AMODE 31. If your application set is predominantly running AMODE 24, then it is recommended you run the CUSTLE EXEC to change the value of the STACK option to BELOW and the value of the ALL31 option to OFF. If you have a small number of application programs running AMODE 24, you can create a local copy of CEEUOPT ASSEMBLE and TEXT with these options changed to their previous defaults and then relink the application programs and include the CEEUOPT TEXT.

The list above is by no means all inclusive, therefore, you still need to review the *z/VM:Migration Guide*.

5.1.5.2.3 Product Parameter File (PPF) Changes in Previous Releases

5.1.5.2.3.1 Changes in z/VM 4.4.0

- New z/VM Base Component

  Language Environment for z/VM 4.4.0 is now a base component of z/VM. Its product parameter file is 4VMVMQ40 $PPF. It is included in the ZVM $PPF file. It is serviced using the MAINT user ID. The code resides on MAINT disks that have an address that begins with 4, for example 4B2. It's production build (code) disk is MAINT 19E.

- Shared File System (SFS) Component Names for z/VM Base Components

  All of the base components of z/VM now allow their service disks, apply, delta, local and base, to be in SFS. Each z/VM component $PPF file now has a component override for SFS.

- z/VM Base Component Source Disks

  The source disks 5B4, 394 and 393, for VMSES/E, CP/DV and CMS/REXX, respectfully, have been combined with the component's base disk and therefore, deleted from the component's $PPF file.

5.1.5.2.3.2 Changes in z/VM 4.1.0

- PPF name used for Automated Service since z/VM 4.1.0

  The default PPF used by the automated service commands, SERVICE and PUT2PROD, is SERVP2P. In this $PPF there is a set of component overrides for the SERVICE command and a set for the PUT2PROD command. If you create a PPF override for the SERVP2P $PPF, you can update the VM SYSSUF file to reflect your PPF override name by issuing the VMFUPDAT SYSSUF command. You want to do this so that your PPF override will be used by the SERVICE and PUT2PROD commands.

  This PPF overrides the base component in the product's original PPF. This means for the components of z/VM V5R1 that the 5VM*aaa*10 PPF file is overridden and not the ZVM PPF.

5.1.5.2.3.3 Changes in z/VM 3.1.0

- IBM Supplied Override PPF Name

  If you are migrating from a VM/ESA system then you need to know that the **esa** PPF has been renamed to **zvm** PPF. The new ZVM PPF (and $PPF) is to be used to install and service z/VM. This is documented in the *z/VM:Migration Guide, Service Guide* and *VMSES/E Introduction and Reference* manuals.

If you have your own PPFs that override the ESA PPF then you will need to change them to override the new ZVM PPF.

6.0 Installation Instructions

6.1 z/VM Base Installation

Installation instructions are contained in the *z/VM: Guide for Automated Installation and Service* or the *z/VM Summary for Automated Installation and Service* included in your z/VM product shipment.

Note: z/VM System Deliverable is received as part of your SDO (System Delivery Option) Package order. You should review Chapters 1 and 2 in the SDO Program Directory to get an overview of the SDO package. Chapter 2 in the SDO Program Directory will point you to the *z/VM: Guide for Automated Installation and Service* in order to install the z/VM System Deliverable, any z/VM optional features and stacked RSU.

6.1.1.1 (Optional) Restricted and PL/X Source Installation

If you have a need for the z/VM Restricted or PL/X source code you can download it from Resource Link on the internet at:

   www.ibm.com/servers/resourcelink/

You need to have a license for z/VM V5R1 in order to access this source code.

Note: All of the source code needs approximately 157,500 4K blocks (875 cyls on 3390) on the VM host. You also need approximately another 198,000 4K blocks (1100 cyls 3390) to hold the compacted and de-compacted envelope files.

You will need to register with Resource Link so you can sign in to it. If you are a new user to Resource Link then you need to use your IBM ID to sign in to Resource Link. If you do not have an IBM ID you can register for one at:

   www.ibm.com/account/profile

If you are an exiting Resource Link user then you can use your Resource Link user ID until told to use your IBM ID.

Once signed in to Resource Link you need to:

- click on *Tools* on the left navigation
- click on *z/VM and VM/ESA* under the **Software** heading
- click on *Restricted and PL/X Source* under the **z/VM and VM/ESA** heading
- click on *Register for the Restricted and PL/X Source*

First you will be asked to sign in to another server. Use the same user ID and password that you signed on to Resource Link with.

Next you will be asked to fill out the Restricted and PL/X Source Registration form so that your entitlement to z/VM V5R1 can be verified. This form will ask for your customer number, which **has to be the same customer number you used when you ordered z/VM V5R1**. You will also need to provide a phone number that you can be reached at in case IBM needs to contact you about your entitlement. Once the form is filled out, click on the submit button. You will receive a confirmation screen with a control identification number. You should make a note of this number, in case you need to call IBM about your registration.

Once you have submitted the registration you should be provided with access within two business days. Once you receive confirmation that you are registered to access the Restricted and PL/X source, you will see a new link on the z/VM V5 Restricted and PL/X Source web page (the page where you originally clicked on *Register for the Restricted and PL/X Source*). This link says "**If you are already registered and authorized** *access the restricted and PL/X source*. You can click on the *access the restricted and PL/X source* part of that sentence.

The next web page will display the files that can be downloaded and a pointer to the installation instructions. You may want to review the installation instructions before downloading the files. The installation instructions have information on how to upload the envelope files to the z/VM host including detailed information on the resources you need to increase on z/VM, how to de-compact the envelope files and how to install them on z/VM.

When you click on any one of the downloadable files you will be asked to to review the License Agreement and select either "I Agree" or "I Disagree". If you select "I Agree" you will be able to begin to download the source code, which is stored on the server as tersed (compacted) servlink envelope files. (If you are asked to sign in again then use your same user ID and password.) On the File Download window you should click on the Save button to save the files to your workstation. After the files are on your workstation you need to follow the installation instructions.

7.0 Service Instructions

The **preferred** method for installing service, preventive (RSU) and CORrective, to z/VM is to use the z/VM automated service procedure (use of the **SERVICE** and **PUT2PROD** commands). The automated service procedure is documented in Part 3 'Service Procedure' in the *z/VM: Guide for Automated Installation and Service* manual. If you choose, you can still use the traditional service procedure documented in the *z/VM: Service Guide*.

Notes:

1. VMSES/E uses the A-disk as a work disk. You should not reduce the size of the A-disk to save space.

2. The Memo to Users for each component on an RSU contains information about the service applied to that component; such as APAR/PTF numbers, additional disk requirements, etc.

3. If you are running a SCSI only system, meaning you have no tape drives, then you will need to order service on CD-ROM or electronically from ServiceLink in IBMLink or zSeries Technical Support web site at:

    www.ibm.com/servers/eserver/support/zseries

Appendix A. z/VM APARs Included From Previous Release

A.1 z/VM Version 4 Release 4.0 APARs for the VMSES/E component

The following z/VM Version 4 Release 4.0 VMSES/E APARs have been included in the z/VM Version 5 Release 1.0 base code.

Figure 17. z/VM Version 4 Release 4.0 VMSES/E APARs included in z/VM Version 5 Release 1.0 Base

VM63370	VM63458	VM63469

A.2 z/VM Version 4 Release 4.0 APARs for the CP component

The following z/VM Version 4 Release 4.0 CP APARs have been included in the z/VM Version 5 Release 1.0 base code.

Figure 18. z/VM Version 4 Release 4.0 CP APARs included in z/VM Version 5 Release 1.0 Base

VM63397	VM63351	VM63279	VM63411	VM63385	VM63416	VM63282
VM63329	VM63326	VM63327	VM63330	VM63339	VM63320	VM63289
VM63191	VM63343	VM63374	VM63376	VM63362	VM63274	VM63382
VM63349	VM63283	VM63348	VM63235	VM63368	VM63410	VM63325
VM63294	VM63341	VM63415	VM63413	VM63321	VM63393	VM63437
VM63377	VM63421	VM63429	VM63440	VM63444	VM63438	VM63063
VM63455	VM63453	VM63449	VM63075	VM63473	VM63486	VM63472
VM63468	VM63441	VM63405	VM63426	VM63479	VM63499	VM63462
VM63445	VM63461	VM63498	VM63488	VM63408	VM63489	VM63478
VM63512	VM63484	VM63047	VM63523	VM63392	VM63500	VM63480
VM63427	VM63470					

A.3 z/VM Version 4 Release 4.0 APARs for the DVF component

There are no z/VM Version 4 Release 4.0 APARs for DVF included in the z/VM Version 5 Release 1.0 base code.

A.4 z/VM Version 4 Release 4.0 APARs for the CMS component

The following z/VM Version 4 Release 4.0 CMS APARs have been included in the z/VM Version 5
Release 1.0 base code.

Figure 19. z/VM Version 4 Release 4.0 CMS APARs included in z/VM Version 5 Release 1.0 Base

VM63391	VM63387	VM63396	VM63394	VM63399	VM63336	VM63344
VM63335	VM63365	VM63366	VM63350	VM63352	VM63369	VM63316
VM63371	VM63384	VM63375	VM63354	VM63389	VM63400	VM63388
VM63355	VM63407	VM63435	VM63443	VM63490	VM63431	VM63503
VM63508	VM63514					

A.5 z/VM Version 4 Release 4.0 APARs for the VM/REXX component

There are no z/VM Version 4 Release 4.0 APARs for REXX included in the z/VM Version 5 Release 1.0
base code.

A.6 z/VM Version 4 Release 4.0 APARs for the GCS component

There are no z/VM Version 4 Release 4.0 APARs for GCS included in the z/VM Version 5 Release 1.0
base code.

A.7 z/VM Version 4 Release 4.0 APARs for the TSAF component

There are no z/VM Version 4 Release 4.0 APARs for TSAF included in the z/VM Version 5 Release 1.0
base code.

A.8 z/VM Version 4 Release 4.0 APARs for the AVS component

The following z/VM Version 4 Release 4.0 APARs have been included in z/VM Version 5 Release 1.0
base code.

Figure 20. z/VM Version 4 Release 4.0 AVS APARs included in z/VM Version 5 Release 1.0 Base

VM63398	VM63412

A.9 APARS for the Language Environment component

A.9.1 Language Environment for z/VM V4R4 APARs

Language Environment V4R4 as shipped on z/VM Version 5 Release 1.0 is at the RSU 0401 service level plus PTFs UM31054, UM31151, and UM31152.

A.9.2 Language Environment V1R8 APARS

All the APARS thru January 2002 for z/OS Language Environment Version 1 Release 4.0 and VM Language Environment Version 1 Release 8.0 APARs, have been included in the Language Environment z/VM V4R4 base code.

Appendix B. z/VM Inclusion of FINs

In addition to the APARs identified in Appendix A, "z/VM APARs Included From Previous Release," z/VM Version 5 Release 1.0 includes the following FINs (Fixed In Next Release) that were reported against previous releases. In some cases, an APAR was opened and closed with a closing code of FIN.

B.1 VM FINs or Requirements for all components

The following VM FINs or Requirements have been included in the z/VM Version 5 Release 1.0 base code.

Figure 21. VM FINs included in z/VM Version 5 Release 1.0 Base

Internal Problem ID	FIN APAR or Requirement	Description
Base code	MR1201033216	Use the Hardware Management Console DVD for installation of z/VM
Base code	MR0929034546	Allow installation of z/VM on device type 3390-9
Base code	MR0805032753	Provide Peer-to-Peer Remote Copy (PPRC) warning messages when one or more paths have been removed or established between the PPRC pair
Base code	MR060800444	Allow MAKESTATE to support names longer than 24 characters
Base code	MR0719025939	Provide PCICC/PCICA support for z/OS guest under z/VM
Base code	MR1021033547	Enhance AUTORESTART processing for OSD and HIPERS devices under TCP/IP
2T0N401	N/A	$VMFUTL$ $EXEC uses a REXX BIF as a label
2T0N316	N/A	PUT2PROD segment build failures
2T0N542	N/A	GENCPBLS names local mod IBM level and should not
2T0N543	N/A	Service Guide local mod CP load list needs more on multiple mdlat
2T0O003	N/A	SERVICE and PUT2PROD EXECs fail with EMSG set to TEXT
2T0N039	N/A	Remove the MCKWINDO calls from the DMSPHA phantom table update code
2T0N108	VM63346	INDICATE USER shows zero for working set (WS=) of non-base virt CPU
2T0N111	N/A	ISODATE format incorrect in LISTFILE and FILELIST
2T0N047	N/A	SET LANG xxx command return rc=0 when lang value unknown
2T0N193	N/A	ABEND 778 on freemain in GCTFSV during SVC 78 processing
2T0N234	N/A	OSLOAD does not recognize page boundary
2T0N322	N/A	doc change - max size of control mdisk not documented
2T0N339	N/A	VMDPFUNC points to PFUNC control block, not list of GSDBKs
2T0N413	N/A	DMS639E Error loading module xxxxx rc 712 for DMSRLD
2T0N576	N/A	doc change - HCPTRANS output has changed with respect to real addresses
2T0N831	N/A	docs change - under SENDFILE state UFT link must be named UFT
2T0N944	N/A	Error with RXSOCKET() and compiled REXX addresses
2T0O007	N/A	doc change - Update to MXW001 message description addresses

Appendix C. z/VM Object Code Only Modules

Object Code Only modules are distributed only in object code form. No source program materials are available for these modules.

C.1 VMSES/E Object Code Only Modules

There are no OCO modules for VMSES/E in z/VM Version 5 Release 1.0 base.

C.2 CP Object Code Only Modules

The following CP Object Code Only modules are ASSEMBLE source files.

Figure 22. CP OCO Assemble Modules

HCPACL	HCPAIS	HCPALC	HCPALE	HCPALM	HCPAPJ	HCPASI
HCPASM	HCPASN	HCPBIE	HCPBOT	HCPCBI	HCPCCG	HCPCCM
HCPCCN	HCPCCO	HCPCCY	HCPCWB	HCPDGE	HCPDMV	HCPDMW
HCPGDT	HCPGLP	HCPGMC	HCPHTT	HCPIDX	HCPIOT	HCPIOX
HCPIPM	HCPIPN	HCPIPP	HCPIPX	HCPIPY	HCPIQD	HCPIQE
HCPIQQ	HCPIQR	HCPKAE	HCPKAI	HCPKAP	HCPKAQ	HCPKAR
HCPKAU	HCPKFC	HCPKFF	HCPKFK	HCPKFL	HCPKFR	HCPKFV
HCPKII	HCPLDF	HCPLLN	HCPLFP	HCPLFS	HCPLLT	HCPLLX
HCPMCB	HCPMCH	HCPMCI	HCPMEO	HCPMEP	HCPMFA	HCPMFB
HCPMFC	HCPMFE	HCPMFF	HCPMFG	HCPMFH	HCPMFI	HCPMFJ
HCPMFK	HCPMFL	HCPMFM	HCPMFN	HCPMFO	HCPMFP	HCPMFQ
HCPMFR	HCPMFT	HCPMFU	HCPMFV	HCPMFW	HCPMFX	HCPMFY
HCPMFZ	HCPMF1	HCPMF2	HCPMIX	HCPMPA	HCPMPC	HCPMPX
HCPMVP	HCPOFI	HCPPAB	HCPPCB	HCPPCD	HCPPCM	HCPPCR
HCPPCS	HCPPCV	HCPPCW	HCPPCX	HCPPTZ	HCPRFG	HCPRFI
HCPRID	HCPRQU	HCPSAS	HCPSDU	HCPSDV	HCPSED	HCPSEI
HCPSEW	HCPSGF	HCPSIT	HCPSWC	HCPSWI	HCPSWR	HCPSWS
HCPSWU	HCPTER	HCPTES	HCPTGD	HCPTGF	HCPTGR	HCPTPO
HCPTPS	HCPTPT	HCPTPX	HCPTRD	HCPTRF	HCPTRI	HCPTRP
HCPTRR	HCPTRW	HCPTRX	HCPTZI	HCPVAI	HCPVAP	HCPVAQ
HCPVAT	HCPVLC	HCPVNS	HCPVOP	HCPVOU	HCPVPD	HCPVQO
HCPVQP	HCPVQR	HCPVQS	HCPVQT	HCPWAT	HCPWAU	HCPWCI
HCPWED	HCPWIS	HCPWKY	HCPWLB	HCPWLG	HCPWPR	HCPWRU
HCPWRW	HCPWSA	HCPWSI	HCPWVS	HCPWZD	HCPXDS	HCPXPG
HCPXSC	HCPXSM	HCPYCI	HCPZMG	HCPZMI	HCPZMX	HCPZSI

The following CP Object Code Only modules are PL/X source files.

Figure 23 (Page 1 of 2). CP OCO PL/X Modules

HCPADQ	HCPAMR	HCPAST	HCPA2F	HCPCCS	HCPCDM	HCPCDR

Figure 23 (Page 2 of 2). CP OCO PL/X Modules

HCPCDT	HCPCIO	HCPCM2	HCPCM3	HCPCM4	HCPCM5	HCPCUP
HCPDDP	HCPDDQ	HCPDD1	HCPDEX	HCPDMC	HCPDUF	HCPDUP
HCPGIS	HCPGRB	HCPHCD	HCPHDS	HCPHSE	HCPHSR	HCPICP
HCPIDF	HCPIGA	HCPKFM	HCPMDF	HCPMDP	HCPMD1	HCPMD2
HCPMD3	HCPMD4	HCPMD5	HCPMXD	HCPMXW	HCPMXX	HCPMXY
HCPNFC	HCPQDD	HCPQDE	HCPQED	HCPQTZ	HCPQVO	HCPQVW
HCPSTR	HCPSVI	HCPTAM	HCPTTR	HCPTZF	HCPTZO	HCPTZS
HCPTZT	HCPVAR	HCPVDU				

The following CP Object Code Only modules are C source files.

Figure 24. CP OCO C Modules

HCPCRR	HCPSZB	HCPSZD	HCPSZE	HCPSZG	HCPSZJ	HCPSZK
HCPSZL	HCPSZM	HCPSZN	HCPSZO	HCPSZQ	HCPSZR	HCPSZT
HCPSZW	HCPSZX	HCPSZY	HCPSZZ	HCWAIX	HCWAI1	HCWAI2
HCWAI3	HCWAI4	HCWAI5	HCWAI6	HCWAI7	HCWAI8	HCWAI9
HCWA10	HCWA11	HCWA12	HCWA13	HCWA14	HCWA15	HCWA16
HCWA17	HCWA18	HCWA19	HCWA20	HCWCSP	HCWCS1	HCWCS2
HCWCS4	HCWEFS	HCWEF1	HCWIOS	HCWIO1	HCWIO2	HCWMPI
HCWPAI	HCWPA1	HCWPA2	HCWPA3	HCWPA4	HCWPA5	HCWPER
HCWPSI	HCWPS1	HCWSCS	HCWSC1			

C.3 DVF Object Code Only Modules

The following DVF Object Code Only modules are ASSEMBLE source files.

Figure 25. DVF OCO Assemble Modules

HCSAMP	HCSCLR	HCSCVT	HCSDMR	HCSDTA	HCSFRD	HCSFRI
HCSHEX	HCSIDT	HCSINT	HCSLOC	HCSMPA	HCSMPN	HCSMTA
HCSPMA	HCSUPA	HCSUPAA	HCSUPAB	HCSUPAE	HCSUME	HCSUMEA
HCSUMEB	HCSUMEE					

The following DVF Object Code Only modules are PL/X source files.

Figure 26 (Page 1 of 2). DVF OCO Modules

HCSACC	HCSACF	HCSADD	HCSADI	HCSADM	HCSADP	HCSADV
HCSAMX	HCSASF	HCSASI	HCSASW	HCSBLC	HCSBLD	HCSBLE
HCSBLF	HCSBLI	HCSBLP	HCSBLS	HCSCDT	HCSCFP	HCSCMP
HCSCMS	HCSCOM	HCSCPA	HCSCPR	HCSCPU	HCSCSP	HCSCST
HCSCVP	HCSC2D	HCSDFP	HCSDFR	HCSDID	HCSDIR	HCSDIS
HCSDSA	HCSDSC	HCSDSG	HCSDSI	HCSDSM	HCSDSP	HCSDSR
HCSDSS	HCSDST	HCSDSX	HCSDVS	HCSDXC	HCSDXI	HCSDXT

Figure 26 (Page 2 of 2). DVF OCO Modules

HCSD2C	HCSEDA	HCSEDB	HCSEDE	HCSEDF	HCSEDH	HCSEDI
HCSEDJ	HCSEDS	HCSEQU	HCSEXR	HCSFDS	HCSFOR	HCSFRE
HCSFTV	HCSGET	HCSGPA	HCSGPP	HCSGPV	HCSGSO	HCSGTR
HCSHLP	HCSHSA	HCSHSB	HCSHSC	HCSHSD	HCSHSE	HCSHSF
HCSHSG	HCSLMOVE	HCSLMP	HCSLOD	HCSMAP	HCSMIM	HCSMLK
HCSMNP	HCSMOD	HCSMPP	HCSMPR	HCSMPS	HCSMPT	HCSMSG
HCSMSG2	HCSMSR	HCSMVS	HCSNMP	HCSNOT	HCSPAR	HCSPCM
HCSPFN	HCSPID	HCSPMP	HCSPOP	HCSPRC	HCSPRI	HCSPRN
HCSPRO	HCSPRP	HCSPRT	HCSPRY	HCSPUP	HCSPVD	HCSQUI
HCSRAB	HCSRCB	HCSRCM	HCSRDB	HCSRDM	HCSRDS	HCSRED
HCSRER	HCSRIB	HCSRIF	HCSRIG	HCSRIH	HCSRII	HCSRIJ
HCSRIK	HCSRIO	HCSRIT	HCSRIX	HCSRIZ	HCSRSR	HCSSAV
HCSSCD	HCSSCI	HCSSCQ	HCSSCR	HCSSDF	HCSSEL	HCSSHV
HCSSIO	HCSSNP	HCSSPF	HCSSPT	HCSSRC	HCSSRS	HCSSRU
HCSSTA	HCSSUB	HCSSYD	HCSSYM	HCSSYP	HCSS5U	HCSTBS
HCSTCD	HCSTES	HCSTOD	HCSTPF	HCSTRA	HCSTRC	HCSTRD
HCSTRM	HCSTRP	HCSTRR	HCSTRS	HCSTRT	HCSTSA	HCSTSC
HCSTSD	HCSTSF	HCSTSG	HCSTSK	HCSTSM	HCSTSO	HCSTSP
HCSTSS	HCSTST	HCSTSV	HCSTSX	HCSUPPER	HCSVCI	HCSVDF
HCSVFI	HCSVFT	HCSVLF	HCSVMD	HCSVMF	HCSVML	HCSVMT
HCSVMU	HCSVRG	HCSVRP	HCSVTE	HCSVUI	HCSVUT	HCSXED
HCSX2C						

C.4 CMS Object Code Only Modules

The following CMS Object Code Only modules are ASSEMBLE source files.

Figure 27. CMS OCO Assemble Modules

AMQERROR	DMSBAESW	DMSBXBLD	DMSBXBTC	DMSBXBVS	DMSBXPAL	DMSBXPCL
DMSBXPCS	DMSBXPDS	DMSBXPGM	DMSBXPIA	DMSBXPST	DMSBXSIS	DMSBXS18
DMSICP	DMSINV	NM_BIND	RXMQVCLT	RXMQVLIT	UAMQMSGT	

The following CMS Object Code Only modules are PL/X source files.

Figure 28 (Page 1 of 4). CMS OCO PL/X Modules

AMQZASMA	AMQZASM0	AMQZASM1	AMQZASM2	AMQZASM3	AMQZASM4	AMQZASM5
AMQZASM6	AMQZASM7	AMQZASM8	AMQZASM9	DMSBAEC1	DMSBAEJ1	DMSBAEO1
DMSBAET1	DMSBAIE1	DMSBAIE2	DMSBAIS0	DMSBAIX0	DMSBAI00	DMSBAXC1
DMSBAXI1	DMSBAXO1	DMSBAXP1	DMSBAXR1	DMSBAXSD	DMSBAXS1	DMSBAXS2
DMSBAXWD	DMSBCC00	DMSBCILK	DMSBCILS	DMSBCMEX	DMSBCOPC	DMSBCOPP
DMSBCOPS	DMSBCPLS	DMSBKEI0	DMSBKTIO	DMSBLCLX	DMSBLCL0	DMSBLCL9
DMSBLDRL	DMSBLINT	DMSBLMSG	DMSBLPOF	DMSBLRLC	DMSBLSV0	DMSBXBD0
DMSBXMSG	DMSBXNUC	DMSBXPDE	DMSBXPSC	DMSBXSHS	DMSBXS1B	DMSBXS13
DMSBXS14	DMSBXS28	DMSBXS40	DMSBXS63	DMSBX1CH	DMSBX1CL	DMSBX1FT
DMSBX1LN	DMSBX1OP	DMSBX1RE	DMSBX1ST	DMSBX1WR	DMSBX2WX	DMSJMD

Figure 28 (Page 2 of 4). CMS OCO PL/X Modules

DMSJSD	DMSRXR	DMSZCTRC	DMSZEDAT	DMSZEDCM	DMSZEDEX	DMSZEDFN
DMSZEDSK	DMSZEEHT	DMSZEFAI	DMSZEGAI	DMSZEGA2	DMSZEGHA	DMSZEGHC
DMSZEGHN	DMSZEGHT	DMSZEGH2	DMSZEGH3	DMSZEGNI	DMSZEGSN	DMSZEGSP
DMSZEOPN	DMSZERIN	DMSZERMQ	DMSZERQD	DMSZERQU	DMSZERSN	DMSZERSR
DMSZESHT	DMSZESMT	DMSZESRT	DMSZETRR	DMSZLOCK	DMSZPTON	DMSZSPRN
DMSZUNLO	DMS2AE	DMS2CA	DMS2CB	DMS2CC	DMS2CD	DMS2CE
DMS2LA	DMS2TA	DMS2TB	DMS2TC	DMS2TD	DMS2TE	DMS2TF
DMS2TG	DMS2TR	DMS2TX	DMS3AA	DMS3AB	DMS3AC	DMS3AD
DMS3AE	DMS3AF	DMS3AG	DMS3AH	DMS3AI	DMS3AJ	DMS3AK
DMS3AL	DMS3AM	DMS3AN	DMS3AO	DMS3AP	DMS3AQ	DMS3AR
DMS3AS	DMS3AT	DMS3AU	DMS3AV	DMS3AW	DMS3AX	DMS3AY
DMS3AZ	DMS3BA	DMS3BB	DMS3BC	DMS3BD	DMS3BE	DMS3BF
DMS3BG	DMS3BH	DMS3BI	DMS3BJ	DMS3BK	DMS3BL	DMS3BM
DMS3BN	DMS3BO	DMS3BP	DMS3BQ	DMS3BR	DMS3BS	DMS3BT
DMS3BU	DMS3BV	DMS3BW	DMS3BX	DMS3BY	DMS3BZ	DMS3CA
DMS3CB	DMS3CC	DMS3CD	DMS3CE	DMS3CF	DMS3CG	DMS3CH
DMS3CI	DMS3CJ	DMS3CK	DMS3CL	DMS3CM	DMS3CN	DMS3CS
DMS3CZ	DMS3DA	DMS3DB	DMS3DC	DMS3DD	DMS3DE	DMS3DF
DMS3DW	DMS3DX	DMS3EZ	DMS3GL	DMS3GM	DMS3LA	DMS3LB
DMS3LC	DMS3LF	DMS3MF	DMS3NA	DMS3NB	DMS3NC	DMS3ND
DMS3NE	DMS3NF	DMS3N1	DMS3N2	DMS3N3	DMS3N4	DMS3N5
DMS3N6	DMS3N7	DMS3N8	DMS3N9	DMS3OF	DMS3ON	DMS3OR
DMS3RA	DMS3RB	DMS3RC	DMS3RD	DMS3RE	DMS3RF	DMS3RU
DMS3RV	DMS3RW	DMS3SB	DMS3SC	DMS3SM	DMS3SN	DMS3SP
DMS3SR	DMS3TA	DMS3TB	DMS3TC	DMS3TD	DMS3TE	DMS3TF
DMS3TG	DMS3TH	DMS3TI	DMS3TO	DMS3TP	DMS3TQ	DMS3TR
DMS3UP	DMS3VA	DMS3VB	DMS3VC	DMS3VD	DMS3VE	DMS3WM
DMS3WR	DMS3XG	DMS3XH	DMS3XL	DMS3XM	DMS3XP	DMS3XU
DMS3XX	DMS3XZ	DMS4AA	DMS4AB	DMS4AC	DMS4AD	DMS4AE
DMS4AF	DMS4AG	DMS4AH	DMS4AI	DMS4AJ	DMS4AK	DMS4AL
DMS4AM	DMS4AN	DMS4AO	DMS4AP	DMS4AQ	DMS4AR	DMS4AS
DMS4AT	DMS4AU	DMS4AV	DMS4AW	DMS4AX	DMS4AY	DMS4AZ
DMS4BA	DMS4BB	DMS4BC	DMS4BD	DMS4BE	DMS4BF	DMS4BG
DMS4BH	DMS4BI	DMS4BJ	DMS4BK	DMS4BL	DMS4BM	DMS4BN
DMS4BO	DMS4BP	DMS4BQ	DMS4BR	DMS4BS	DMS4BT	DMS4BU
DMS4BV	DMS4BW	DMS4BX	DMS4BY	DMS4CI	DMS4CJ	DMS4CK
DMS4CL	DMS4CN	DMS4DB	DMS4DC	DMS4DD	DMS4DE	DMS4DF
DMS4DH	DMS4DI	DMS4DJ	DMS4DK	DMS4DL	DMS4DM	DMS4DN
DMS4DO	DMS4DP	DMS4DQ	DMS4DR	DMS4DS	DMS4DT	DMS4DU
DMS4DV	DMS4DW	DMS4DX	DMS4DY	DMS4DZ	DMS4EA	DMS4EB
DMS4EC	DMS4ED	DMS4EE	DMS4EF	DMS4EG	DMS4EH	DMS4EX
DMS4EY	DMS4EZ	DMS4FA	DMS4FB	DMS4FD	DMS4FE	DMS4FG
DMS4FH	DMS4FI	DMS4FJ	DMS4FK	DMS4FL	DMS4FM	DMS4FO
DMS4FP	DMS4FR	DMS4GA	DMS4GB	DMS4GD	DMS4GE	DMS4GH
DMS4GI	DMS4GJ	DMS4GK	DMS4GL	DMS4GM	DMS4GN	DMS4GO
DMS4GP	DMS4GQ	DMS4GR	DMS4GS	DMS4GT	DMS4GW	DMS4GY
DMS4GZ	DMS4HA	DMS4HC	DMS4HZ	DMS4JA	DMS4JB	DMS4JC
DMS4JD	DMS4JE	DMS4JF	DMS4JG	DMS4JH	DMS4JI	DMS4JJ
DMS4JK	DMS4JL	DMS4JS	DMS4KA	DMS4KB	DMS4KC	DMS4KD

Figure 28 (Page 3 of 4). CMS OCO PL/X Modules

DMS4KE	DMS4KF	DMS4KH	DMS4KI	DMS4KJ	DMS4KK	DMS4KM
DMS4KO	DMS4KP	DMS4KR	DMS4LA	DMS4LB	DMS4LC	DMS4LD
DMS4LE	DMS4LF	DMS4LG	DMS4LH	DMS4LI	DMS4LJ	DMS4LK
DMS4LL	DMS4LM	DMS4LN	DMS4LO	DMS4LP	DMS4LQ	DMS4LR
DMS4LS	DMS4LT	DMS4LU	DMS4LV	DMS4LW	DMS4LX	DMS4LY
DMS4NA	DMS4NB	DMS4NC	DMS4ND	DMS4NE	DMS4NF	DMS4NG
DMS4NH	DMS4NI	DMS4NJ	DMS4NK	DMS4NL	DMS4NM	DMS4NO
DMS4NP	DMS4NQ	DMS4NR	DMS4NS	DMS4NT	DMS4NU	DMS4NV
DMS4NW	DMS4NX	DMS4ON	DMS4OP	DMS4OQ	DMS4OR	DMS4OS
DMS4OT	DMS4OU	DMS4PA	DMS4PB	DMS4PC	DMS4PD	DMS4PF
DMS4PG	DMS4PI	DMS4QA	DMS4QB	DMS4QC	DMS4QD	DMS4QE
DMS4QF	DMS4QG	DMS4QH	DMS4QJ	DMS4QK	DMS4QL	DMS4QM
DMS4QN	DMS4QO	DMS4QP	DMS4QQ	DMS4QR	DMS4QS	DMS4QX
DMS4QY	DMS4QZ	DMS4RA	DMS4RB	DMS4RC	DMS4RD	DMS4RE
DMS4RF	DMS4RG	DMS4RH	DMS4RI	DMS4RJ	DMS4RL	DMS4RM
DMS4RN	DMS4RX	DMS4RY	DMS4RZ	DMS4SB	DMS4SR	DMS4SS
DMS4SU	DMS4UA	DMS4UB	DMS4UE	DMS5AA	DMS5BA	DMS5BB
DMS5BC	DMS5BD	DMS5BE	DMS5BF	DMS5BG	DMS5BH	DMS5BI
DMS5BJ	DMS5BK	DMS5BM	DMS5BT	DMS5CA	DMS5CB	DMS5CC
DMS5CD	DMS5CE	DMS5CF	DMS5CP	DMS5CS	DMS5CV	DMS5CX
DMS5DA	DMS5DB	DMS5DC	DMS5DD	DMS5DE	DMS5DF	DMS5DG
DMS5DH	DMS5DI	DMS5DK	DMS5DS	DMS5DT	DMS5DU	DMS5FA
DMS5FB	DMS5FC	DMS5FD	DMS5FE	DMS5FF	DMS5GA	DMS5GB
DMS5GC	DMS5GD	DMS5GM	DMS5GN	DMS5GO	DMS5GR	DMS5HA
DMS5HB	DMS5HC	DMS5HE	DMS5IA	DMS5IB	DMS5IC	DMS5ID
DMS5IE	DMS5IF	DMS5IG	DMS5IL	DMS5IN	DMS5IP	DMS5JE
DMS5MA	DMS5MB	DMS5MT	DMS5MU	DMS5MV	DMS5NA	DMS5NB
DMS5NC	DMS5ND	DMS5NE	DMS5NF	DMS5PQ	DMS5PR	DMS5PS
DMS5PT	DMS5PW	DMS5PX	DMS5PY	DMS5PZ	DMS5QA	DMS5QB
DMS5QE	DMS5SB	DMS5SC	DMS5SD	DMS5SE	DMS5SF	DMS5SH
DMS5SI	DMS6LA	DMS6LB	DMS6LC	DMS6LD	DMS6LE	DMS6LF
DMS6LG	DMS6LH	DMS6LI	DMS6LJ	DMS6LK	DMS6LL	DMS6LM
DMS6LN	DMS6LO	DMS6LP	DMS6LQ	DMS6SA	DMS6SB	DMS6SC
DMS6SD	DMS6SE	DMS6SF	DMS6SG	DMS6SH	DMS6SI	DMS6SJ
DMS6SK	DMS6SL	DMS6SM	DMS6SN	DMS6SO	DMS6SP	DMS6SQ
DMS6SR	DMS6SS	DMS6ST	DMS6SU	DMS6SV	DMS7AA	DMS7AB
DMS7AC	DMS7AD	DMS7AE	DMS7AF	DMS7AG	DMS7AH	DMS7AI
DMS7AJ	DMS7AK	DMS7AL	DMS7AM	DMS7AN	DMS7AO	DMS7AP
DMS7AQ	DMS7AS	DMS7AT	DMS7AU	DMS7AV	DMS7AW	DMS7AX
DMS7BA	DMS7BB	DMS7BC	DMS7BD	DMS7BE	DMS7BI	DMS7BJ
DMS7BK	DMS7BR	DMS7BS	DMS7BX	DMS7BY	DMS7CC	DMS7CD
DMS7CE	DMS7CF	DMS7CG	DMS7CH	DMS7CI	DMS7CL	DMS7CP
DMS7CR	DMS7CS	DMS7CT	DMS7CU	DMS7CW	DMS7CX	DMS7CY
DMS7CZ	DMS7DA	DMS7DB	DMS7DC	DMS7DD	DMS7DE	DMS7DF
DMS7DG	DMS7DH	DMS7DI	DMS7LF	DMS7MC	DMS7MF	DMS7NH
DMS7RA	DMS7RB	DMS7RC	DMS7RD	DMS7RE	DMS7SI	DMS7SM
DMS7TA	DMS7TC	DMS7TD	DMS7TE	DMS7TF	DMS7TG	DMS7TI
DMS7TJ	DMS7TN	DMS7TP	DMS7TQ	DMS7TR	DMS7TS	DMS7TU
DMS7TV	DMS7TW	DMS7TX	DMS7TY	DMS7TZ	DMS7VC	DMS7WC

DMS7WU	DMS8BA	DMS8BB	DMS8BC	DMS8BD	DMS8BE	DMS8BF
DMS8BG	DMS8BH	DMS8BI	DMS8BJ	DMS8BK	DMS8BL	DMS8BM
DMS8BN	DMS8BO	DMS8BP	DMS8BQ	DMS8BR	DMS8BS	DMS8BT
DMS8BU	DMS8BV	DMS8BW	DMS8BX	DMS8BY	DMS8BZ	DMS8CC
DMS8CE	DMS8CF	DMS8CG	DMS8CH	DMS8CI	DMS8CJ	DMS8CL
DMS8CR	DMS8CS	DMS8CU	DMS8CW	DMS8CX	DMS8CY	DMS8CZ
DMS8C1	DMS8C2	DMS8C3	DMS8C4	DMS8DA	DMS8DB	DMS8DC
DMS8DD	DMS8DE	DMS8FX	DMS8GC	DMS8GD	DMS8GG	DMS8GM
DMS8GZ	DMS8G9	DMS8LI	DMS8LM	DMS8LS	DMS8LU	DMS8LX
DMS8LY	DMS8LZ	DMS8L1	DMS8L2	DMS8L3	DMS8L4	DMS8L5
DMS8L6	DMS8L7	DMS8L8	DMS8OV	DMS8VU	IEWBODEF	RXMQVBAK
RXMQVBDL	RXMQVBGO	RXMQVBMD	RXMQVBOD	RXMQVBPO	RXMQVBRO	RXMQVBXH
RXMQVEPA	RXMQVEVT	RXMQVGET	RXMQVHXT	RXMQVINQ	RXMQVMGO	RXMQVMMD
RXMQVMOD	RXMQVMPO	RXMQVPUT	RXMQVQSI	RXMQVSET	RXMQVSYC	RXMQVTMM

The following CMS Object Code Only modules are C source files.

Figure 29 (Page 1 of 2). CMS OCO C Modules

ALLOCENV	AMQCCCXA	AMQCCITA	AMQCCI6A	AMQCCMXA	AMQCDLLA	AMQCERRA
AMQCLIBA	AMQCMEMA	AMQCPRSA	AMQRAFNA	AMQRCDFA	AMQRCMSV	AMQRERRA
AMQREXTA	AMQRFILA	AMQRFPTA	AMQRMSSA	AMQRREQA	AMQRREQB	AMQRSCFA
AMQZSIA0	AMQZSJBX	AMQZUTR0	AR	AWK	AWK0	AWK1
AWK2	AWK3	AWK4	BASE	BASENAME	BC	BC_EXEC
BC_LEX	BC_MAIN	BCXMEM	BUFF	C_CMS	C_MALLOC	C_TEST
CATCLOSE	CATGETS	CATOPEN	CHGRP	CHMOD	CHOWN	CKSUM
CMP	CMSFILE	COMM	COMPRESS	CONFSTR	COPYRITE	CP
CPIO	CPIOFNS	CRCCCITT	CRC16	DAG	DATE	DC
DC_ADD	DC_ARRAY	DC_COM	DC_DIV	DC_ELT	DC_EXP	DC_INPUT
DC_MUL	DC_N	DC_NUM	DC_OP	DC_PARSE	DC_PRINT	DC_REL
DC_SQRT	DC_STACK	DD	DIFF	DIFFH	DIFF1	DIRNAME
DMAKE	DUMP	ECHO	ED0	ED1	ED2	ED3
ENV	EPRINTF	EXPR	FALSE	FEXECVE	FEXECVP	FNMATCH
FNS	FOLD	FSPEC	FUNCS	GENCAT	GETCONF	GETINP
GETOPT	GETPASS	GETUT	GLOB	GREP	GSUCAT	GSUCUT
GSUCXX	GSUC89	GSUFIND	GSUJOIN	GSULINK	GSUPARSE	GSUPASTE
GSUPRNTF	GSUSORT	GSUTIME	HEAD	ICONV	ID	INFER
ISABSNAM	ISWABSNA	ISYES	L_BASE	L_DFA	L_MAIN	L_OUT
LDCONV	LEX	LN	LOCALE	LOGGER	LOGGER2	LOGNAME
LP	LP2	LS	M_ARCOPY	M_ARLOOK	M_ARMEMB	M_ARNEXT
M_ARTOUC	M_AUDMOD	M_BINSRC	M_CESCAP	M_CMDNAM	M_COMP	M_CONFST
M_CRCPOS	M_CUSERI	M_DEC	M_DIRNAM	M_ERROR	M_ERRORR	M_ERRORX
M_ESCAPE	M_FGETS	M_FGETWS	M_FPUTMB	M_FSOPEN	M_FTW	M_FWOPEN
M_GETAUD	M_GROUPL	M_LLOXOP	M_LLOXSE	M_LLOXTY	M_LL0XCL	M_LOCK
M_LOXCLO	M_LOXOPE	M_LOXSEC	M_LOXSTR	M_LOXTYP	M_MALLOC	M_MBSCHR
M_MBSPBR	M_MBSRCH	M_MBSTOW	M_MBSWID	M_MKPARD	M_NAMEMA	M_NLSPAT
M_ORD	M_PATHCA	M_PATHMA	M_PSREAD	M_READDA	M_READMO	M_READNU

Figure 29 (Page 2 of 2). CMS OCO C Modules

M_REALLO	M_SIG	M_STRDUP	M_STRMOD	M_STRMSG	M_SYMBOL	M_TEXT
M_TMPNAM	M_TOPRIN	M_VARIAN	M_WALLOW	M_WCSDUP	M_WCSSET	M_WCSTOM
M_WINSIZ	MACPARSE	MAILDATE	MAIL0	MAIL1	MAIL2	MAIL3
MAIL4	MAIL5	MAIN	MAKE	MAKE_EXP	MKDIR	MKFIFO
MKNOD	MKTEMP	MV	NEWGRP	NM	NMEXESYM	NOHUP
OD	PATH	PATHCHK	PAX	PAXFNS	PERCENT	POPEN
PORT	PR	PS	PUTENV	PWD	QUIT	REG
REGCOMP	REGDOSBA	REGDOSUB	REGERROR	REGEX	REGEXEC	RM
RMDIR	RULES	RULETAB	RULPARSE	SED0	SED1	SED2
SH	SHBLTIN	SHBUF	SHDATE	SHFORK	SHMVS	SHSTAT
SH1	SH2	SH3	SH4	SH5	SH6	SH7
SH8	SH9	SLEEP	SNASTUBS	SSIGNAL	STAT	STRBTOK
STRDSTR	STRDUP	STRING	STRIP	STRSAN	STRTOCOL	STTY
STUBS	SU	SUFFIX	SWAB	SWAW	SYM	SYSINTF
SYSTEM	TAIL	TAR	TARFNS	TEE	TEMPNAM	TOUCH
TR	TRUE	TSMAIL	TTY	ULIMIT	UNAME	UNCOMPRE
UNIQ	UPDATE	VAR	WC	WORDEXP	XARGS	XMEM
Y_CLOSE	Y_CONF	Y_COPYP	Y_ECHO	Y_EPRED	Y_ERROR	Y_EXTERN
Y_GOTO	Y_GRAM	Y_INIT	Y_ITEM	Y_LALIST	Y_LALR	Y_LEX
Y_LLIST	Y_MAIN	Y_MEM	Y_NEWR	Y_NEWSYM	Y_NULL	Y_PRED
Y_PUTD	Y_SET	Y_SETI	Y_SETP	Y_SGEN	Y_SIG	Y_SQUEEZ
Y_STATE	Y_TAB	Y_TGEN	Y_TOPT	Y_TWRITE	Y_USELES	Y_WRAPUP
YYCOMMNT	YYERROR	YYMAIN	YYMAPCH	YYWRAP		

C.5 VM/REXX Object Code Only Modules

There are no OCO modules for VM/REXX in z/VM Version 5 Release 1.0 base.

C.6 GCS Object Code Only Modules

There are no OCO modules for GCS in z/VM Version 5 Release 1.0 base.

C.7 TSAF Object Code Only Modules

There are no OCO modules for TSAF in z/VM Version 5 Release 1.0 base.

C.8 AVS Object Code Only Modules

The following AVS Object Code Only modules are PL/X source files.

Figure 30. AVS OCO PL/X Modules

AGWACF	AGWACS	AGWACT	AGWCMC	AGWCMD	AGWCMF	AGWCMH
AGWCMJ	AGWCMQ	AGWCTR	AGWDGW	AGWDSP	AGWEOT	AGWFAS
AGWGAB	AGWGGW	AGWGMD	AGWGSP	AGWIIS	AGWINI	AGWIOM
AGWIUE	AGWMGM	AGWOLM	AGWPGT	AGWSET	AGWTIM	AGWTRM
AGWTRS	AGWUSM	AGWVAF	AGWVBC	AGWVCB	AGWVCC	AGWVCP
AGWVDA	AGWVFD	AGWVGB	AGWVIP	AGWVMC	AGWVME	AGWVMF
AGWVMP	AGWVMR	AGWVMS	AGWVMX	AGWVMY	AGWVPS	AGWVRA
AGWVRC	AGWVRM	AGWVRS	AGWVRT	AGWVRX	AGWVTA	AGWVTB
AGWVTC	AGWVTD	AGWVTE	AGWVTF	AGWVTP	AGWVTS	AGWVTT
AGWVTX	AGWZAM	AGWZCV	AGWZDS	AGWZEN	AGWZEX	AGWZGC
AGWZGW	AGWZMA	AGWZMN	AGWZMO	AGWZRS	AGWZSG	AGWZTD
AGWZTE	AGWZTF	AGWZTO	AGWZTR	AGWZTS	CSIYTXEB	

C.9 Language Environment Object Code Only Modules

All of Language Environment is Object Code Only, except for the supplied sample files.

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│    very                             very         not         │
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│      1        2       3       4       5            N          │
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```

	Satisfaction					
Ease of product installation	1	2	3	4	5	N
Contents of program directory	1	2	3	4	5	N
Installation Verification Programs	1	2	3	4	5	N
Time to install the product	1	2	3	4	5	N
Readability and organization of program directory tasks	1	2	3	4	5	N
Necessity of all installation tasks	1	2	3	4	5	N
Accuracy of the definition of the installation tasks	1	2	3	4	5	N
Technical level of the installation tasks	1	2	3	4	5	N
Ease of getting the system into production after installation	1	2	3	4	5	N

If this product was ordered as part of a package, what type of package was ordered?

___   System Delivery Offering (SDO)

___   Other - Please specify type: . . . .

Is this the first time your organization has installed this product?

___   Yes

___   No

Were the people who did the installation experienced with the installation of VM products?

__ Yes
__ No

If yes, how many years? __

If you have any comments to make about your ratings above, or any other aspect of the product installation, please list them below:

_____

_____

_____

_____

_____

Please provide the following contact information:

_____
Name and Job Title

_____
Organization

_____

_____
Address

_____
Telephone

Thank you for your participation.

Please send the completed form to (or give to your IBM representative who will forward it to the z/VM Development group):

International Business Machines Corporation
Department G32, Building 250-2K011
1701 North Street
Endicott, New York 13760

ATTN: z/VM Quality Feedback

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