

z/OS.e



Overview

z/OS.e



Overview

Note

Before using this information and the product it supports, be sure to read the general information under "Notices" on page 17.

Second Edition, September 2002

This edition applies to Version 1 Release 4 of z/OS.e (5655-G52) and to all subsequent releases and modifications until otherwise indicated in new editions.

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About this book

z/OS.e V1R4 is a specially priced offering of z/OS V1R4 providing select function at an attractive price. z/OS.e is available only on the IBM eServer zSeries 800 (z800), or a comparable non-IBM server. z/OS.e V1R4 is intended to help customers exploit the fast growing world of next generation e-business by making the deployment of new applications on the IBM eServer zSeries 800 (z800) very attractively priced.

This book explains z/OS.e from the perspective of its purpose, uses, and value. In addition to overview information, this book also includes information typically provided in books that are more oriented to giving reference information, such as message manuals. The intent is, for the first release of z/OS.e, to provide the reader with everything there is to know about z/OS.e in one place, except for planning and installation information, which is provided in:

- *z/OS and z/OS.e Planning for Installation*, GA22-7504-04

z/OS.e has the same code base as the z/OS operating system, customized with new system parameters. This means that most of the z/OS element and feature books that support z/OS also support z/OS.e. This book and *z/OS and z/OS.e Planning for Installation* deal with how z/OS.e differs from z/OS from a cost, value, and purpose point of view.

Both these books are available on the Internet at <http://www.ibm.com/servers/eserver/zseries/zose/bkserv/> as well as in hardcopy.

Note that *Licensed Program Specification for z/OS.e* (GA22-7868) is also important reading, if you need to understand the terms and conditions under which z/OS.e is warranted.

z/OS™.e Overview

z/OS.e V1R4 is a specially priced offering of z/OS V1R4 providing select function. z/OS.e is only available on the IBM eServer zSeries™ (z800), or a comparable non-IBM server. z/OS.e V1R4 is intended to help customers exploit the fast growing world of next generation e-business by making the deployment of new applications on the z800 very attractively priced.

z/OS.e V1R4 uses the same code base as z/OS V1R4, customized with new system parameters, and invokes an operating environment that is comparable to z/OS in qualities of service, management, and reporting. In addition, z/OS.e invokes zSeries hardware functionality just as z/OS does—technology that allows the platform to adapt to your business priorities. No new z/OS skills and service structure are required for z/OS.e.

z/OS.e V1R4 is specifically for Java™, Enterprise Java (J2EE), C/C++, and Web-based data transaction processing applications for new workload environments—giving these workloads a price performance customers expect. This product will not support certain workloads described later in this publication.

At only a fraction of the cost of z/OS V1R4 in a traditional workload environment, z/OS.e makes the decision to run new workloads on the mainframe easy due to its reduced total cost of ownership and exceptional robustness and functionality. z/OS.e and z800 together may reduce the total cost of ownership of hardware, software, people, and environmental—making the combination very cost-effective for deploying new applications or integrating existing ones.

New kinds of workloads

The Internet age has spawned totally new kinds of computer workloads. That's because more and more of the world's data transaction processing is Web-based. A business that does not participate in e-business risks losing business. Web-based processing is now perceived, correctly, as a major contributing factor to achieving a competitive and successful business. This is true whether the business is a small, medium-sized, or large enterprise. Furthermore, for many the entire length of the value chain from procurement to fulfillment is assisted by Web-use, involving suppliers at the beginning and satisfying customers at the end. Workloads such as supply chain management (SCM), enterprise resource planning (ERP), customer relationship management (CRM), and business intelligence (BI) all increasingly depend on Web-use. These workloads not only benefit from tight integration to Web-based data transaction processing, but also benefit from tight integration between each other and the back end data.

The best platform

The absolutely very best platform for integrating Web-based transaction processing, e-business, and enterprise applications and data base serving is z/OS on zSeries, the premier platform for enterprise-scale workloads. Its qualities of service in terms of reliability, scalability, security, availability are undisputed and unrivalled in the industry. The value is two-fold, for z/OS is not only the most robust and reliable enterprise platform, it also has a history of managing a large percentage of the world's business data and transactions. The finance industry, the transportation

industry, health, government—all rely on z/OS to store, manage, and use their data efficiently and securely. Offering the same value as this technology, IBM introduces z/OS.e.

A total platform solution

IBM introduces z/OS.e as a cost-effective way to harness the power, value, and qualities of service of z/OS on zSeries for (and to extend it to) new applications—for example, to drive your business into the Web space with an application server such as Websphere and access to your DB2® data. z/OS.e opens up the possibility for that data to be available for all kinds of new Web applications. This data is a huge, still largely untapped resource for all kinds of new and exciting Web applications. The potential is tremendous.

Please note that z/OS.e is only available on the z800 processor. The new z800 processor puts the adoption of advanced zSeries mainframe technologies within reach for a wider audience. Those who always wanted to install more mainframe technological capabilities and capacity, but thought it was out of reach, too complex, or overkill for their situation, will find that the z800 machine can help make the transition easier.

At only a fraction of the cost of z/OS, z/OS.e makes the decision to run new workloads on the mainframe easy due to its reduced total cost of ownership and exceptional robustness and functionality. z/OS.e and z800 together may reduce the total cost of ownership of hardware, software, people, and environmental—making the combination very cost-effective for deploying new applications or integrating existing ones.

The extraordinary software pricing is applicable to all engines licensed to run z/OS.e. In addition, the pricing is maintained even when z/OS.e is part of a Parallel Sysplex®. Please note that this pricing is valid only on z/OS.e. All other IBM products will follow normal MLC, IMLC, annual and subscription, and OTC pricing structures.

For information about pricing, see the *z800 Software Pricing Configuration White Paper, GM13-0121*

Target customers

Available only on z800, z/OS.e is for those customers who require the qualities of service that the mainframe has to offer for their new workloads and growth applications. z/OS.e provides the robustness of z/OS with a price that makes adoption of new workloads and applications easier and more affordable. Traditional strengths of the zSeries platform are upheld. Sophistication such as Intelligent Resource Director, which allows customers to handle unexpected e-business workload spikes by dynamically moving resources to their defined and most important work, is maintained.

The z/OS.e alternative may be very attractive to you if own a G4/G5/G6, a Multiprise® 3000, or a large Multiprise 2000 processor, and:

- Have existing new workload like ERP, CRM, SCM, BI, Web-based data transaction processing and other such applications written exclusively in C/C++ and Java and are considering re-hosting on the mainframe.
- Do not have these new workloads running yet on any platform, but plan to do so in the future.

- Are considering the purchase of a z/800 processor, and have z/OS, OS/390®, or MVS™ skills in house (or plan to outsource these skills).

z/OS.e is for next-generation workloads

z/OS.e is for new next generation enterprise, e-business and Web-based data transaction processing applications. Specifically, z/OS.e is for applications written in the object-oriented programming languages of Java, Enterprise Java (J2EE), and C/C++—giving these workloads excellent price performance.

z/OS.e V1R4 uses the same code base as z/OS V1R4, customized with new system parameters, and invokes an operating environment that is comparable to z/OS in qualities of service, management, and reporting. In addition, z/OS.e invokes zSeries hardware functionality just as z/OS does – technology that allows the platform to adapt to your business priorities. No new z/OS skills and service structure are required for z/OS.e.

This product will not support certain traditional workloads. It supports new workloads. They include:

- WebSphere® Application Server, IBM Developer Kit for the Java Platform (includes J2EE), DB2 V7, V6, V5, C/C++
- WebSphere Commerce (WC), DB2 database serving, Domino™, and financial applications

z/OS.e also supports MQSeries®, MQSeries Integrator, Host on Demand, Host Studio, VisualAge® Java, and WebSphere Studio, and many more e-business related IBM and Independent Software Vendor (ISV) applications, middleware, and tools. z/OS.e is manageable by many traditional independent software utility software vendor system management toolsets. In short, z/OS.e is an ideal way to enter, exploit, and profit from the world of next-generation applications.

z/OS.e is not for traditional workloads

Customers who choose z/OS.e are not licensed for the traditional workloads. z/OS.e disables traditional workloads. z/OS.e will not execute CICS®, IMS™, COBOL, or FORTRAN applications. However, precompiled COBOL stored procedures and other precompiled COBOL applications using the Language Environment® preinitialization interface CEEPIPI are supported. You cannot use the following compilers: COBOL, PL/I, VisualAge PL/I, and FORTRAN. However, z/OS.e supports execution of precompiled PL/I and VisualAge PL/I applications. Regarding IBM programs, only supported IBM programs are licensed to run on z/OS.e. Please see the minimum releases of IBM software products that run with z/OS and z/OS.e in *z/OS and z/OS.e Planning for Installation*.

Also not licensed and not functional are selected z/OS base elements and optional features, as well as certain selected functions within those elements and features that support traditional workloads. In addition, selective applications and certain DB2 features will not be available to you when using z/OS.e. This includes QMF™ (host and HPO).

Not functional and not licensed elements, features, and functions include:

- BookManager® READ/BUILD
If you want to upload BookManager softcopy and create softcopy repositories to support BookManager BookServer on your z/OS.e host, the SoftCopy Librarian is

the strategic tool for uploading and managing BookManager files on z/OS and z/OS.e and on LANs and workstations.

- GDDM®
- GDDM PGF feature
- GDDM REXX feature
- DCE Application Support
- BDT File to File
- Language Environment cannot use:
 - Run-time Library Services
 - Library Routine Retention

Also not licensed in the z/OS.e environment are:

- Encina® Toolkit Executive
- MICR/OCR
- Language Environment Compatibility Preinitialization for C and PL/I

Please note, non-IBM ISV and custom-written applications, which use the base elements, features, products, and are written in these programming languages above, may not be supported. Consult your ISV for more details.

For minimum releases of IBM software products that run with z/OS and z/OS.e, see Appendix C in *z/OS and z/OS.e Planning for Installation*.

Restrictions

A restriction of z/OS.e is that only eight concurrent TSO sessions will be allowed. These are intended to support system programmers and administrators.

You cannot use a prior Language Environment, JES2 or JES3 level with the current level of z/OS.e.

z/OS.e can run as a VM guest, but only under z/VM™. Linux can also run as a guest under z/VM in this environment.

You must ensure that your automation policies do not try to use a z/OS.e image to start products that z/OS does not support. For example, do not identify a z/OS.e image as a restart target in a Parallel Sysplex containing a mix of z/OS.e and z/OS images with the z/OS images running IMS, CICS, or DB2 having a requirement for CICS. CICS, IMS, or DB2 using CICS cannot restart on a z/OS.e image, but must restart on a z/OS image.

When using BookServer, vector graphics in IBM and non-IBM product documentation may not display correctly. If you experience this problem, convert the book using the Transmogripher Utility, which is available free of charge as a download from the BookManager Website at:
<http://booksrv2.raleigh.ibm.com/homepage/transerv.html>. Converted books have no dependency on GDDM.

RMF™ Monitor III supports only tabular ISPF report displays on z/OS.e. Graphic mode is not available. For graphical online monitoring, use the RMF Performance Monitor (RMF PM Java Edition) on your workstation.

z/OS.e is intended for new workloads

z/OS.e is not a new operating system, and doesn't replace z/OS. z/OS.e has the same code base as z/OS, customized, with new system parameters, and therefore has the same Qualities of Service (availability, scalability, reliability, security, and so forth) as z/OS. Having the same code base has another benefit. System programmers can use the same maintenance and cloning procedures for z/OS.e as they do for z/OS. Customers with existing z/OS or OS/390 skills do not have to worry about acquiring new skills or learning new maintenance and service policies. Additional code in z/OS V1R4 invokes an operating environment for z/OS.e that is meant for new e-business transaction processing or database serving workloads. Function not directly supporting the next generation workloads is not licensed, not functional, or both. This allows z/OS.e to be used for next generation workloads.

The mechanisms that achieve this goal involve a new system parameter that states whether the system is an IBM z/OS.e operating system or a z/OS system. The new system parameter is LICENSE=z/OS.e in the IEASYSxx Parmlib member. z/OS.e must also be run in an LPAR whose name begins with the four characters ZOSE. z/OS.e cannot be run in 'basic' (no LPARs) mode. Several checks determine if z/OS.e can run. Is this a 64-bit processor? Is there an LPAR named ZOSExxxx? Does LICENSE=z/OS.e? And, is this a z/800 processor? z/OS.e operates only on the new mid-range z/800 processor, a type 2066, in z/Architecture™. If any of these checks fail, the the IPL of z/OS.e will be terminated.

Error messages IFA200W and IFA201W alert you to these conditions. See Appendix A, "Messages" on page 11.

The best solution

z/OS.e is the best solution for customers looking to re-host Web-based transactional processing structure to the mainframe, and for those looking for an enterprise application, database management application for customer relationship management, supply chain management, enterprise resource planning, and business intelligence DB2-based solutions that are written in C/C++ and Java.

z/OS.e's value proposition is:

- z/OS.e on z800 is economical. It may reduce the total cost of ownership of hardware, software, people, and environmentals. The combination of z/OS.e and z800 means that acquisition costs (that is, hardware, hardware maintenance, and the IBM provided software solution stack) is very cost-competitive with alternate non-mainframe platforms when consolidating workload from other alternate non-IBM platforms.
- z/OS.e invokes an operating environment that is comparable to z/OS in service, management, reporting, and reliability. In addition, z/OS.e invokes zSeries hardware functionality just as z/OS does. You get the full value of z/OS qualities of service for these new workloads on the z800 processors at a cost that is very competitive, while delivering the highest Qualities of Service in the industry. These Qualities of Service apply not only to z/OS but to WebSphere Application Server (WAS), DB2, and other applications as well. You do not need to acquire new skills and new knowledge about maintenance and service, if you already have those skills in-house.
- z/OS.e and z800 can enhance e-business solutions. z/OS.e is specifically intended for today's hot applications like WebSphere, IBM Developer Kit for the Java Platform, C/C++, WebSphere Commerce, DB2 database serving, Domino, and so forth.

- Also, on z/OS.e, applications can connect to traditional CICS and IMS applications on z/OS, leveraging your existing transaction processing investment. Furthermore, z/OS.e on z800 means that sophistication such as Intelligent Resource Director—the function that allows customers to handle unexpected e-business workload spikes by dynamically moving resources to their defined and most important work—is maintained.
- Lastly, z/OS.e is attractive to those customers who want to run Linux applications. For example, z/OS.e can act as a low cost database server for LINUX application servers that can either run on zSeries z800s, z900s (and so forth), or other eSeries processors.

Typical configurations

One approach for deploying z/OS.e is to use it on a single engine or multiple engines of a midrange z800 processor to connect to production environments in LPARs on Engine 2 via HiperSockets. Note that references to V1R3 of z.OS.e and z/OS in the following figures are intended also to refer to subsequent releases.

Figure 1 shows such a configuration.

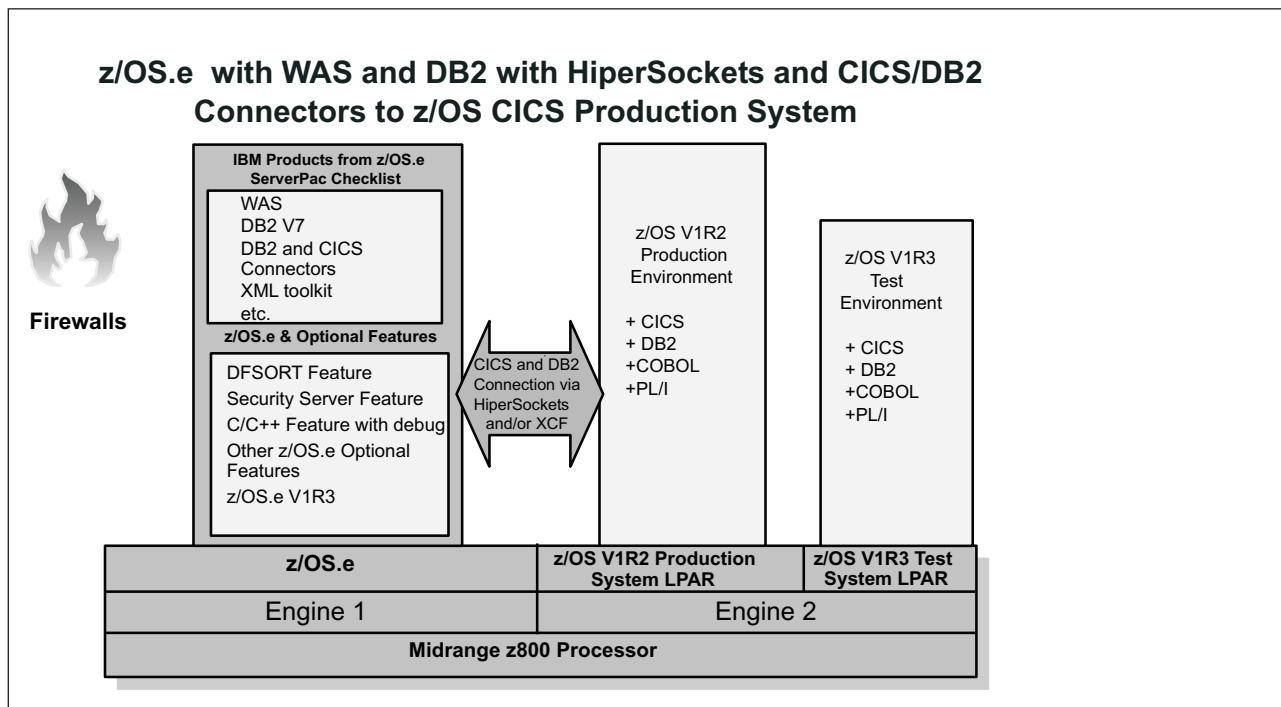


Figure 1. z/OS.e with WAS and DB2

Figure 2 shows another possible configuration.

Engine 1 contains z/OS.e. Engine 2 contains a z/VM Linux guest machine (or more, in additional LPARs) with WebSphere Commerce Suite Application Server. The connection is with HiperSockets and/or XCF.

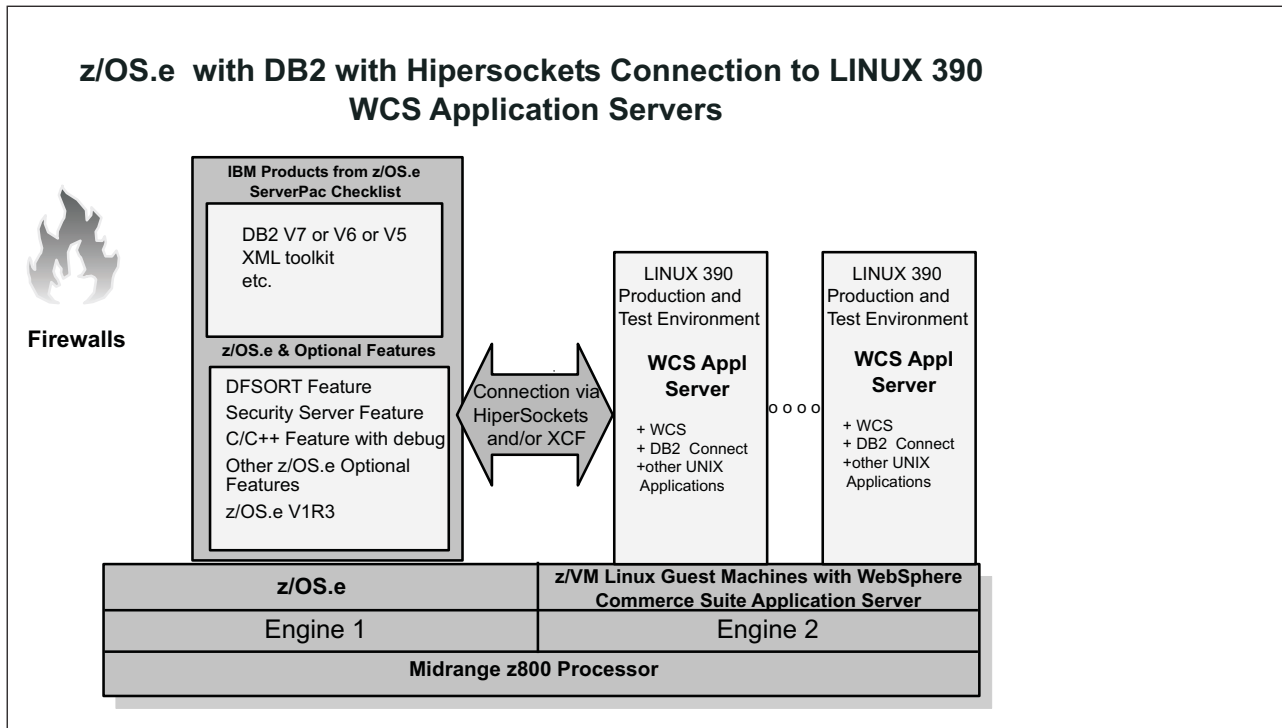


Figure 2. z/OS.e with DB2 and connection to WCS Application Servers

Figure 3 shows a configuration that exploits Parallel Sysplex and DB2 data sharing between production z/OS systems and z/OS.e to get at mission-critical production DB2 data on z/OS. This approach is somewhat more difficult to implement and takes longer to deploy.

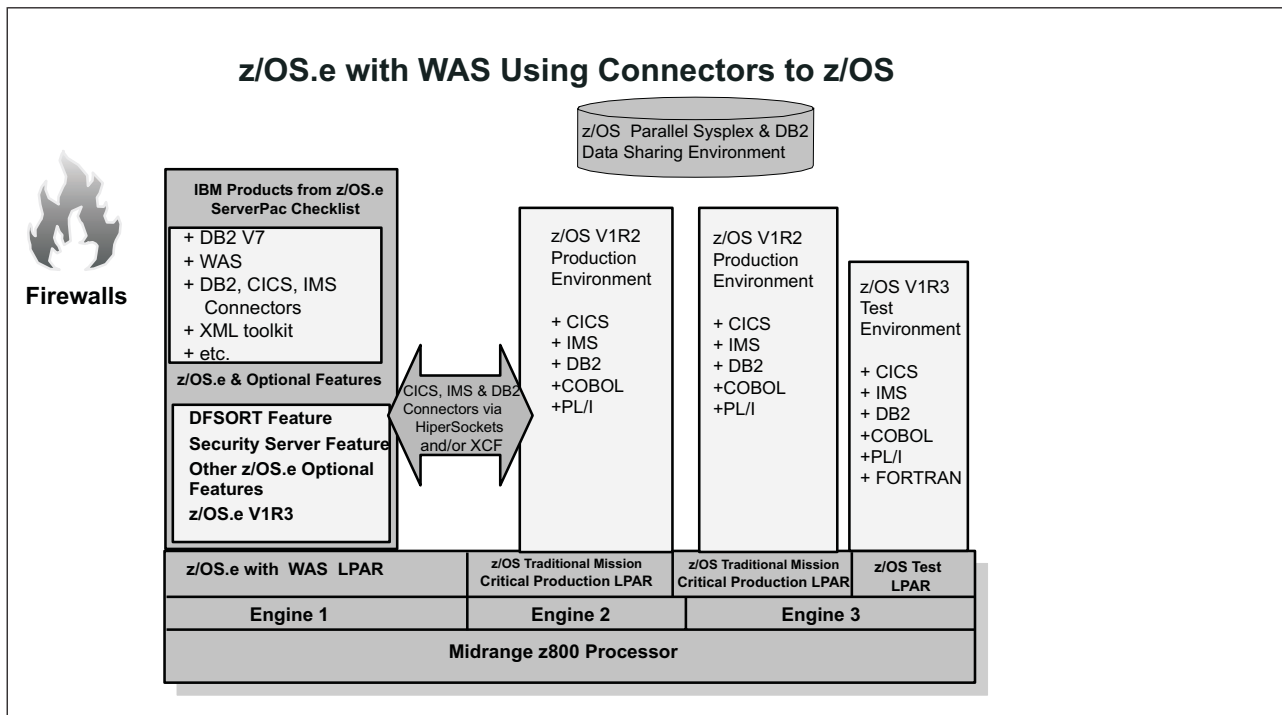


Figure 3. z/OS.e with WAS using connectors to z/OS

Figure 4 shows z/OS.e and WebSphere Application Server in a Parallel Sysplex and DB2 data sharing on a 4-way midrange z800 processor communicating over TCP/IP with z/OS on a traditional mission critical production zSeries 900 processor. Data sharing can occur both within the z/OS production environment and between z/OS.e and z/OS.

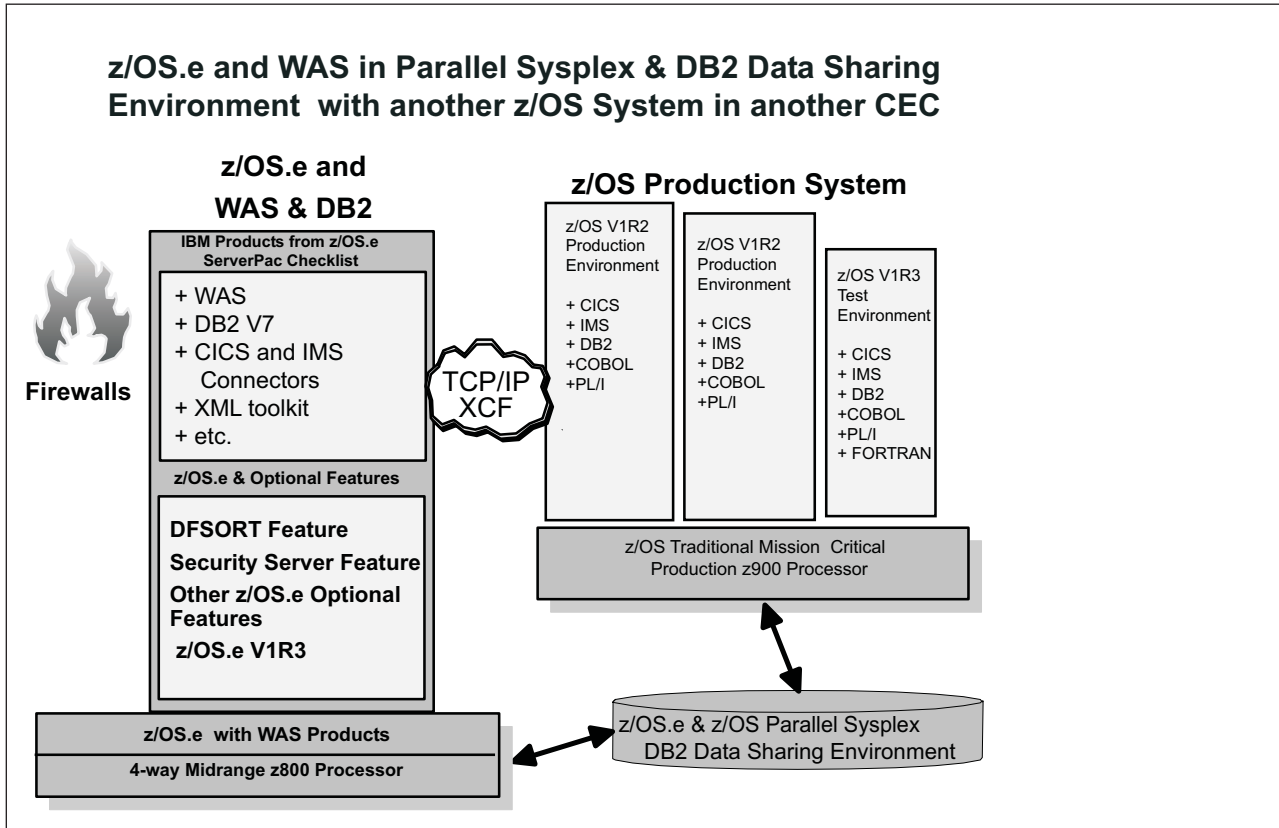


Figure 4. z/OS.e in a Parallel Sysplex

Delivery

ServerPac is the only entitled delivery vehicle for z/OS.e. It is also supported via fee-based SystemPac[®]. General availability of releases of the product will be coincident with releases of z/OS.

Submitting Transmit System Availability Data (TSAD) to IBM

In a z/OS.e environment, IBM requires that you submit TSAD data for a machine with z/OS.e license (z800 only) or a machine with both a z/OS.e license and sub-capacity Workload License Charges (z800 only). You can submit TSAD using the IBM Remote Support Facility (RSF) available on the z800 or by mailing a diskette or DVD cartridge to IBM.

If you are using RSF, an IBM service representative can enable it for you when your z800 is installed. If RSF is not enabled, contact your IBM service representative.

If you are mailing a diskette or DVD cartridge to IBM, see the procedure described in the 'Transmit Service Data' task for the support element in the *Hardware Management Console Operations Guide*. When you are performing this task, select

the system availability button. Once you have copied the data to the diskette or DVD, label whichever you are using with the CPC type, model number, and serial number, and send it to:

Server Group zSeries RAS Engineering
B64A/707-2B86 (MS-P317)
2455 South Road
Poughkeepsie, NY 12601

z/OS.e messages

z/OS.e, Language Environment, and some other elements and features of z/OS.e may issue messages when you are IPLing or running z/OS.e. See Appendix A, “Messages” on page 11 for these messages.

Note that z/OS.e messages may mention z/OS, not z/OS.e. and note that BookManager help is not available for SDSF SYSLOG messages in z/OS.e.

Wait state code 07B

Wait state code 07B has two new reason codes to support z/OS.e. They are:

- 17—LICENSE=z/OSe was specified, but you were not on a 2066 machine type on a ZOSExxxx LPAR
- 18—LICENSE=z/OSe was not specified, but you were on a 2066 machine on a ZOSExxxx LPAR

Language Environment considerations

Programming Interface information

ABEND U4093 has a new reason code: x'DC' (220) to indicate an error in Language Environment when running under z/OS.e.

It is issued when unsupported languages are found during the setup of these initialization routines:

- Batch/UNIX initialization
- PIPI init_main (function code 1)
- PIPI init_sub (function code 3)
- PIPI init_sub_dp (function code 9)
- PICl (pre-init compatibility interface)

If an unsupported language is found during the setup of:

- PIPI add_entry (function code 6), it will return code 44

Additionally, implicit DLL reference to a DLL containing an unsupported language will result in condition CEE38V being signaled. Unhandled, message CEE3359E is issued and the application will be terminated.

Also, the USRHDLR run-time option must not specify routines containing unsupported languages. This is not validated until the USRHDLR is actually needed. When the time comes, condition CEE38V will be signaled. Unhandled, message CEE3359E is issued and the application will be terminated.

ABEND U4093 DC will also be issued when Run-time Library Services (RTLS) is invoked.

Library Routine Retention (LRR) is not supported in the z/OS.e environment. A return code of 44 will be returned from LRR initialization (CEELRR ACTION=INIT).

If CICS is trying to be initialized in a z/OS.e environment, Language Environment CEECCICS will return code 16 and reason code 11060 to CICS. Language Environment will not be initialized.

Language Environment Callable Services

The callable services CEEFETCH and CEELOAD will return feedback code CEE38V when the routine being loaded contains one of the unsupported languages.

C/C++ Run-Time Library functions

dllload(): The loading of a DLL that contains one of the unsupported languages will result in a NULL pointer being returned. The errno is ELEFENCE.

fetch(): The fetch of a module that contains one of the unsupported languages will result in a NULL pointer being returned. The errno is ELEFENCE.

system(): Use of the ANSI system() to execute a program (PGM=style) that contains one of the unsupported languages will result in ABEND U4093 DC during initialization of the nested enclave.

C/C++ functions considerations

The C/C++ functions `__osname()` and `uname()` will not return z/OS.e as the operating system name or sysname value. If you are running on a z/OS.e Version 1 Release 3 system: The `__osname()` function will return "z/OS" as the sysname value, version "01" and release "03.00". The `uname()` function will return "OS/390" as the sysname value, version "03" and release "13.00".

Operators can use the DISPLAY IPLINFO command to find out if a z/OS.e system is running. Programmers can check the z/OS.e CVT bit to find out if a z/OS.e system is running.

The C/C++ functions `__osname()` and `uname()` are documented in z/OS z/OS *C/C++ Run-Time Library Reference*.

_____ **End of Programming Interface information** _____

Appendix A. Messages

ADM0015E GDDM IS NOT SUPPORTED IN THIS ENVIRONMENT

Explanation: A program is trying to access a function of GDDM, which is not functional and not licensed when the z/OS.e operating system is running.

System Action: GDDM rejects the request, and the system continues processing.

Operator Response:

- If this message is expected on this system, do nothing.
- If this message is not expected on the system from which it was issued, make sure the system was IPLed correctly.
- If the system was IPLed correctly, contact the system programmer.

User Response: Make sure you are using the right application on the right system. If you are, contact the application programmer.

Application Programmer Response: Make sure you are using only those functions that are intended to work on the operating system on which the application runs, and that the application was run on the correct system. If this function should be available on the system on which the application was run, contact the system programmer.

System Programmer Response:

- If this message is expected on this system, do nothing (except perhaps educate the person reporting the problem).
- If the message was not expected, make sure the right operating system was IPLed.
- If the correct operating system was IPLed and it was not z/OS.e, contact the support center.
- If the operating system is z/OS.e and the message is received for a function that should work, then contact the support center.

Source: GDDM

AUSV00200A DCE APPLICATION SUPPORT IS NOT SUPPORTED IN THIS ENVIRONMENT

Explanation: A program is trying to access a function of DCE Application Support, which is not functional and not licensed when the z/OS.e operating system is running.

System Action: DCE Application Support rejects the request, and the system continues processing.

Operator Response:

- If this message is expected on this system, do nothing.

- If this message is not expected on the system from which it was issued, make sure the system was IPLed correctly.
- If the system was IPLed correctly, contact the system programmer.

User Response: Make sure you are using the right application on the right system. If you are, contact the application programmer.

Application Programmer Response: Make sure you are using only those functions that are intended to work on the operating system on which the application runs, and that the application was run on the correct system. If this function should be available on the system on which the application was run, contact the system programmer.

System Programmer Response:

- If this message is expected on this system, do nothing (except perhaps educate the person reporting the problem).
- If the message was not expected, make sure the right operating system was IPLed.
- If the correct operating system was IPLed and it was not z/OS.e, contact the support center.
- If the operating system is z/OS.e and the message is received for a function that should work, then contact the support center.

Source: DCE Application Support

CEE3359E The module or language list is not supported in this environment.

Explanation: The module or language list is not supported in this environment.

System Action: Use a supported module or language list for this service when running on this version of the operating system.

Application Programmer Response: Use a supported module or language list for this service when running on this version of the operating system.

System feedback code: CEE38V

EDC5244I The program, module or DLL is not supported in this environment.

Explanation: The program, module or DLL specified on this C/C++ function call contains one or more languages that are not supported on this version of the operating system. FORTRAN and COBOL, with the exception of precompiled COBOL DB2 stored procedures, and other precompiled COBOL applications, using the Language Environment preinitialization interface (CEEPIPI), are not supported.

EOYBLD478I • EWXCM9005S

System Action: Use a supported program, module or DLL for this function when running on this version of the operating system.

Application Programmer Response: The function is not performed.

EOYBLD478I BOOKMANAGER BUILD/MVS IS NOT SUPPORTED IN THIS ENVIRONMENT

Explanation: A program is trying to access a function of BookManager BUILD, which is not functional and not licensed when the z/OS.e operating system is running.

System Action: BookManager BUILD rejects the request, and the system continues processing.

Operator Response:

- If this message is expected on this system, do nothing.
- If this message is not expected on the system from which it was issued, make sure the system was IPLed correctly.
- If the system was IPLed correctly, contact the system programmer.

User Response: Make sure you are using the right application on the right system. If you are, contact the application programmer.

Application Programmer Response: Make sure you are using only those functions that are intended to work on the operating system on which the application runs, and that the application was run on the correct system. If this function should be available on the system on which the application was run, contact the system programmer.

System Programmer Response:

- If this message is expected on this system, do nothing (except perhaps educate the person reporting the problem).
- If the message was not expected, make sure the right operating system was IPLed.
- If the correct operating system was IPLed and it was not z/OS.e, contact the support center.
- If the operating system is z/OS.e and the message is received for a function that should work, then contact the support center.

Source: BookManager BUILD

EOYIND478I BOOKMANAGER INDEX UTILITY IS NOT SUPPORTED IN THIS ENVIRONMENT

Explanation: A program is trying to access the BookManager Index Utility, which is not functional and not licensed when the z/OS.e operating system is running.

System Action: BookManager Index Utility rejects the request, and the system continues processing.

Operator Response:

- If this message is expected on this system, do nothing.
- If this message is not expected on the system from which it was issued, make sure the system was IPLed correctly.
- If the system was IPLed correctly, contact the system programmer.

User Response: Make sure you are using the right application on the right system. If you are, contact the application programmer.

Application Programmer Response: Make sure you are using only those functions that are intended to work on the operating system on which the application runs, and that the application was run on the correct system. If this function should be available on the system on which the application was run, contact the system programmer.

System Programmer Response:

- If this message is expected on this system, do nothing (except perhaps educate the person reporting the problem).
- If the message was not expected, make sure the right operating system was IPLed.
- If the correct operating system was IPLed and it was not z/OS.e, contact the support center.
- If the operating system is z/OS.e and the message is received for a function that should work, then contact the support center.

Source: BookManager Index Utility

EWXCM9005S LANRES IS NOT SUPPORTED IN THIS ENVIRONMENT

Explanation: A program is trying to access a function of LANRES, which is not functional and not licensed when the z/OS.e operating system is running.

System Action: LANRES rejects the request, and the system continues processing.

Operator Response:

- If this message is expected on this system, do nothing.
- If this message is not expected on the system from which it was issued, make sure the system was IPLed correctly.
- If the system was IPLed correctly, contact the system programmer.

User Response: Make sure you are using the right application on the right system. If you are, contact the application programmer.

Application Programmer Response: Make sure you are using only those functions that are intended to work on the operating system on which the application runs, and that the application was run on the correct system.

If this function should be available on the system on which the application was run, contact the system programmer.

System Programmer Response:

- If this message is expected on this system, do nothing (except perhaps educate the person reporting the problem).
- If the message was not expected, make sure the right operating system was IPLed.
- If the correct operating system was IPLed and it was not z/OS.e, contact the support center.
- If the operating system is z/OS.e and the message is received for a function that should work, then contact the support center.

Source: LANRES

IEE254I *hh.mm.ss* **IPLINFO DISPLAY**

text

Explanation: Where *text* is:

```
SYSTEM IPLed AT hh.mm.ss ON mm/dd/yyyy
RELEASE fmid
USED LOADxx IN loadxxdsname ON devx
ARCHLVL = n MTLSHARE = Y|N
IEASYM LIST = s1|NONE
IEASYS LIST = s2{(OP)}
IODF DEVICE iodefdec
IPL DEVICE ipldev VOLUME iplvol
LICENSE = system
```

Displays IPL information when a DISPLAY IPLINFO command is issued.

In the message text:

<i>hh.mm.ss</i>	The current time. The time format is in hours (00-23), minutes (00-59) and seconds (00-59).
<i>hh.mm.ss</i>	The time of the IPL. The time format is in hours (00-23), minutes (00-59) and seconds (00-59).
<i>mm/dd/yyyy</i>	The date of the IPL. That date format is in month (01-12), day (01-31) and year (0000-9999).
<i>rrrrrrrr</i>	The release level of the system being IPLed.
<i>xx</i>	The LOADxx member used to IPL the system.
<i>loadxxdsname</i>	The data set where the LOADxx originated. The data set name will be either: SYSn.IPLPARM (where <i>n</i> can be 0-9) SYS1.PARMLIB
<i>devx</i>	The device address where the LOADxx member originated.

MTLSHARE = Y|N

MTL tape devices are treated as regular standalone drives (**Y**), as compared to MTL resident drives (**N**).

n

Either 1 indicating ESA/390 or 2 indicating z/Architecture. The value displayed is the value specified (or defaulted) by the ARCHLVL statement of the LOADxx parmlib member.

s1

The IEASYMxx member or members used by the IPLed system. *s1* can be either a single member name, a list of members (specified in parenthesis) or by NONE. The default value is NONE.

s2

The IEASYSxx member or members used by the IPLed system. *s2* can be either a single member name, a list of members (specified in parentheses).

OP

The IEASYSxx values were specified in LOADxx SYSPARM statements or from the reply to the IEA101A system parameters prompt.

iodfdev

The device number of the volume where the I/O configuration resides.

ipldev.

The IPL device.

iplvol

The IPL volume serial.

system

The IPLed system, either z/OS or z/OSe (for z/OS.e).

System Action: The system continues processing.

Source: Master scheduler

Module: IEECB985

IFA200W **LICENSE=z/OSe WAS SPECIFIED BUT IS NOT ALLOWED.**

Explanation: LICENSE=z/OSe coded in IEASYSxx or specified in response to message IEA101A indicates that the z/OS.e operating system is attempting to run. This system can run only on a z800 machine type 2066, and in an LPAR named ZOSExxxx. Any other machine and LPAR combination does not allow z/OS.e.

System Action: The system enters a non-restartable wait state of 07B, with reason code 17.

Operator Response: Notify the system programmer.

System Programmer Response: Make sure the correct operating system was IPLed.

- If z/OS.e is the correct operating system, check the machine and LPAR combination. If you are not running on a z800 2066 machine type in a ZOSExxxx LPAR, correct the problem and re-IPL z/OS.e. If the machine type and LPAR combination is correct, contact the support center.

IFA201W

- If some other operating system should be running, update the IEASYSxx LICENSE parameter, check that the LPAR name is not ZOSExxxx, and re-IPL using the correct operating system.

Source: IEAVNPED

Module: IEAVNPED

IFA201W LICENSE=z/OSe IS REQUIRED BUT WAS NOT SPECIFIED.

Explanation: LICENSE=z/OSe coded in IEASYSxx or specified in response to message IEA101A is required because this system is running on a z800 machine type 2066 in an LPAR named ZOSExxxx. However the LICENSE parameter of IEASYSxx indicates an operating system other than z/OS.e.

System Action: The system enters a non-restartable wait state of 07B, with reason code 18.

Operator Response: Notify the system programmer.

System Programmer Response: Make sure the correct operating system was IPLed.

- If z/OS.e is the correct operating system, update the IEASYSxx parameter to indicate that LICENSE=z/OSe, and re-IPL z/OS.e.
- If some other operating system should be running, correct the LPAR name making sure it is not ZOSExxxx, and re-IPL using the correct operating system.

Source: IEAVNPED

Module: IEAVNPED

Appendix B. Appendix A. Accessibility

Accessibility features help a user who has physical disabilities, such as restricted mobility or limited vision, to use software products successfully. The major accessibility features in Z/OS enable users to:

- Use assistive technologies such as screen-readers and screen magnifier software
- Operate specific or equivalent features using only the keyboard
- Customize display attributes such as color, contrast, and font size

Using assistive technologies

Assistive technology products, such as screen-readers, function with the user interfaces found in z/OS. Consult the assistive technology documentation for specific information when using it to access z/OS interfaces.

Keyboard navigation of the user interface

Users can access z/OS user interfaces using TSO/E or ISPF. Refer to *z/OS TSO/E Primer*, *z/OS TSO/E User's Guide*, and *z/OS ISPF User's Guide Volume I* for information about accessing TSO/E and ISPF interfaces, including the use of keyboard shortcuts or function keys (PF keys). Each guide includes the default settings for the PF keys and explains how to handle their functions.

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