z/OS Version 1 Release 2
Installation Planning Checklist

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Installation Plan Checklist

January 2002

This checklist should be used as a **supplement** to available publications. It is not intended to replace publications for planning your installation and migration.

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Planning

__ Understand coexistence and fallback policy for z/OS

- See the *z/OS Planning for Installation, Chapter 5*
- Coexistence of MVS releases with OS/390 releases is no longer supported as of OS/390 Release 9.
- The migration forward and back out should be made within four consecutive releases.

Starting with z/OS 1.1 IBM will converge on a consistent migration and coexistence design policy applicable to all customer configurations. This policy will be applicable to all single system/single image configurations and all multisystem configurations, regardless of whether resource sharing is present.

This consistent migration and coexistence policy is planned to be based on the current OS/390 coexistence policy of four consecutive OS/390 releases. When you migrate from z/OS V1R1 (or from any subsequent release made available after this release), the release you migrate to should be within four consecutive releases to be fully supported.

OS/390 and z/OS Coexistence Levels and Service Support Dates			
OS/390 z/OS Release	**General Availability of OS/390 Release Identified in column 1**	**Service Support of OS/390 and z/OS Release Identified in Column 1 is Available Through**	**OS/390 Releases which can coexist with the OS/390 Release and z/OS release Identified in Column 1**
R1 - R6	**Out of support**		
R7	March 1999	March 2002	R7, R6, R5, R4
R8	September 1999	September 2002	R8, R7, R6, R5
R9	March 2000	March 2003	R9, R8, R7, R6
R10	September 2000	September 2003	R10, R9, R8, R7, R6
z/OS V1R1	March 2001	March 2004	z/OS V1R1, OS/390 R10, R9, R8, R7, R6 (1)
z/OS V1R2	October 26, 2001	October 2004	z/OS V1R1,OS/390 R10, R9, R8
Table Notes: *1*. z/OS V1R1 and OS/390 R10 are treated as one coexistence release.			

__ Understand integration test, as performed by IBM.
Notes:

1. Customers must still test their applications.
2. Quarterly test reports are produced. They are available on the Internet.
   IBM Integration Test home page ⇨ http://www.ibm.com/servers/eserver/zseries/zos/integtst/

__ Read *z/OS V1R2.0 Introduction and Release Guide*, *GA22-7502*

__ Planning and Migration Assistant (PMA)
Use this tool to create reports of what's currently installed on your s/390 system and

what changes you can expect when you go to a new release.
http://www.ibm.com/servers/eserver/zseries/zos/smpe/pma/

__ Read *z/OS Planning for Installation*, *GA22-7504*.
- ♦ Optionally, create an interactive edition of this book to create a tailored installation checklist at: http://www.ibm.com/s390/os390/wizards
  - __ Review summary of changes.
  - __ Review base elements and optional features (figures 1 and 2) in Chapter 1. *These figures provide indicators for:*
    a.) whether an element is exclusive or non-exclusive
    b.) identifies the last release the element changed
  - __ Review software requirements in Appendix B.

__ Read ServerPac: *Using the Installation Dialog,* SA22-7815. Applicable to ServerPac users.

__ Understand z/OS system replacement delivery vehicles:
- ♦ ServerPac (entitled)
- ♦ SystemPac (fee) (http://www.can.ibm.com/custompac) .

__ Understand *Software Upgrade* install path via the ServerPac.

__ Understand enable/disable support for elements in z/OS.
- __ Ensure IEASYSxx used for IPL points to the proper IFAPRDxx for z/OS and reflect the program number for z/OS
- __ Make appropriate changes for Infoprint Server for z/OS V1R2

Note: When IBM License Manager is production ready - enable/disable is specified in the product certificate for the products which are ILM enabled.

__ Understand terms and conditions when enabling elements/features of z/OS.

__ Understand service integration levels.
Note: Documented in *z/OS Planning for Installation*, Chapter 1.
Service integration levels are identified by a unique SOURCEID assigned to each PTF. The Integration-tested service level is tagged with a SOURCEID of ZOSV1Rn. Where "n" is the z/OS release.

__ Understand Recommended Service Upgrade (RSU).
An RSU is a regular service upgrade (++ASSIGN statements with a sourceid=RSUyymm) IBM recommends for installation.

__ Plan and schedule z/OS education.
IBM courses are available for z/OS. The existing curriculum is updated as needed. For schedules and enrollments:
- ♦ Call 1-800-IBM-TEACH, extension ESA.
- ♦ World Wide Web - IBM Global Campus URL: http://www.ibm.com/training/ibmedu

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__ Identify product library requirements:

- *The z/OS V1R2 Information Roadmap, SA22-7500*, contains titles and order numbers for books, for all elements and products, which are part of z/OS.
- Books are available in softcopy on CD-ROM and through the Internet at http://www.ibm.com/servers/eserver/zseries/zos/bkserv/
- Unpriced publications no longer available on tape

__ Review planning books:

- *z/OS V1R2 Migration, GA22-7580*, (formerly *MVS Conversion Notebook*)
- Applicable element/feature specific planning and migration books, as pointed to in the *z/OS Planning for Installation*.
- *ServerPac: Using the Installation Dialog, SA22-7815*:

__ Identify non-IBM (ISV) product requirements.

__ Contact Vendors

Notes:

1.) Review ISV product support with z/OS

- ISV Developer Solution
  http://www.ibm.com/servers/eserver/zseries/solutions/s390da/applications/index.html
- Vendor Product Compatibility with z/OS
  http://www.ibm.com/servers/eserver/zseries/solutions/s390da/osnp.html
- Global Solution Directory of ISVs
  http://www.ibm.com/servers/eserver/zseries/solutions/s390da/applications/guide.html

2.) Fee offerings (SystemPac) include some ISV product(s) integration via the product checklist

__ Identify toleration and coexistence service.

__ See *z/OS Planning for Installation*, *Chapter 5*

Note: Some service requires installation prior to IPL.

__ Program directories for all elements and products are included in both ServerPac and CBPDO orders. They are located in data set hlq.PGMDIR. Member $INDEXPD is an index pointer to locating the correct program directory for each element/product.

- Some are available from internet at:
  http://www.ibm.com/servers/eserver/zseries/zos/installation/#resource

__ Ensure correct levels of IBM non-z/OS products

__ See *Appendix C* in *z/OS Planning for Installation* for a list of minimum levels of product which run with z/OS.

__ Identify software requirements for z/OS elements and features. Review *Appendix B* in *z/OS Planning for Installation*

__ Identify usermods and user exits to be installed.
See *z/OS MVS Installation Exits, SA22-7593*

__ Identify user SVCs to be installed.

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__ Obtain PSP upgrades:
UPGRADE=ZOSV1R2 SUBSET=exclusive element name by FMID, or
=FMID/yymm, or
=descriptive name

UPGRADE=ZOSV1Rx SUBSET=ZOSGEN Note: x = Release of z/OS

ServerPac dialogs: UPGRADE=ZOSV1Rx SUBSET=SERVERPAC

Non-exclusive elements: Located in product specific program directory.

__ Review hardware configuration:
__ Ensure that the planned hardware configuration is reflected in the IODF and IOCP

__ Ensure any hardware requisites are satisfied.
__ Configure LPARs to use only central storage. z/OS on a z900 server does not support expanded storage.
__ 2105 Enterprise Storage Server requires EC level F22584 or later

__ Review the z900 PSP bucket for latest information and service related to z/Architecture (64-bit). UPGRADE=2064DEVICE

__ Identify system software parameter and procedural updates:
- SYS1.PARMLIB (OS/390 R2 supports PARMLIB concatenation)
- SYS1.PROCLIB
- SYS1.VTAMLST
- JESPARMS

__ Identify required updates to program language options.
Note: IBM-supplied default language options will be used.

__ Identify changes to system commands

__ Identify changes to messages
Note: See *z/OS Summary of Message Changes, SA22-7505*. Contains new, changed and deleted.

__ Identify changes to macros

__ Identify changes to SMF records

__ Identify changes to Callable Services

__ Identify changes to MVS control blocks

__ Identify changes to IPCS commands

__ Identify required updates to operational procedures.

__ Identify required updates to system automated operations.

__ Identify Custom-Built FCBs to be installed.

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__ Identify required updates to administrative procedures.
Some areas you should examine are:
- Security procedures
- Procedures for adding, deleting, and changing user IDs
- Application implementation procedures
- Problem management procedures
- Change management procedures
- Test procedures
- Recovery procedures
- Data management procedures.

__ Identify subsystem migration requirements.
- Identify any hardware/software changes required to accommodate existing subsystems such as CICS, IMS, DB2, and JES on the new z/OS system.

__ Run an SMP/E REPORT CROSSZONES command and review the resulting report to ensure that subsystem service dependencies are met.

__ Determine how source-maintained products will handle macro level incompatibilities.
Note: SPLEVEL=6. (SPLEVEL has not changed since OS/390 R2.)

__ Identify changes affecting applications.

__ Review or establish backup and recovery procedures.

__ Review or establish testing environment.

__ Review or establish service procedures.

__ Obtain DASD volumes for installation.
- Total DASD space is documented in *z/OS Planning for Installation*, GC28-1726
- Root HFS size increased significantly
- 3350 device not supported

__ Satisfy driving system requirements:
- See *z/OS Planning for Installation*
  - HFS unload from the Target System is no longer supported or provided for
  - HFS unload from Driving System (Release 7 and higher)
- A Customized Offerings Driver, 5665-343, is available when you cannot meet driving system requirements. This driver is entitled for z/OS customers.
  - Not available for HFS unload from target system

__ Review and update existing standards based on new or changed functions, interfaces

__ Identify variables required for ServerPac Installation Dialogs
Note: Description of variables is located in Using the Installation Dialog, SA22-7815

__ Develop plans for exploiting new z/OS functions.

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__ Create an installation and migration plan.
- Use the *z/OS Installation Planning Wizard*. It will guide you through the z/OS installation planning tasks. http://www.ibm.com/servers/eserver/zseries/zos/wizards/ipw/ipwv1r1/

__ Identify product/element customization tasks.

__ Obtain a product checklist for the chosen delivery vehicle.
Note: The product checklist is available at:
http://www.ibm.com/servers/eserver/zseries/software/swinfo/os390.htm

__ Identify additional required IBM products not on the checklist for reinstallation when selecting ServerPac.

__ Determine the JES level to bring forward.
Notes for ServerPac:
1. Both JES2 and JES3 are installed.
2. Both JES2 and JES3 are installed into separate target and distribution libraries from the BCP.
3. JES2 and SDSF are installed in a separate zone from the other MVS products.
4. JES3 is installed in its own zone.
5. Job is provided to remove the JES not being used.

__ Create an installation migration plan
There is an Installation Plan Skeleton in Appendix A of the z/*OS Planning for Installation*. Use this if you do not have a tool to create an installation / migration plan for z/OS V1R2.

Ordering

A web-based ordering tool is available from **ShopzSeries.** The web site is: https://www14.software.ibm.com/ShopzSeries or off the z/OS "How to Buy" home page: http://www.ibm.com/servers/eserver/zseries/zos/buy.html under the z/OS Ordering Information section.

__ Place an order for z/OS.
- Strong encryption features available outside North America
- Features still requiring US Export regulations are: IBM HTTP Server NA Secure, OCSF Security Level 3, SecureWay Communications Server Security Level 3 and System SSL Security Level 3.

__ Track software order via the internet: http://service.boulder.ibm.com/software_order_status

__ Order all non-priced optional features
- Cannot order separately, must reorder z/OS to receive if needed later

Note: OS/390 R10 is orderable until December 17, 2002.

Prepare for System Replacement

There are several tasks that can be done to establish an environment for easing in a new system. They are:

__ Separate IBM code from user code. This includes:
- Non-IBM products
- IBM products not available in checklist
- User modifications
- User exits.

__ Install additional required IBM products into their own set of target distribution libraries.
- Install required IBM products which are not available in the ServerPac checklist into their own set of libraries, if at all possible. These libraries should not reside on the IPL volume.

  Note: Use the BUILDMCS command to copy products from one pair of target and distribution libraries into another pair of target and distribution libraries. See z/OS SMP/E Commands, SA22-7771, for a full description of BUILDMCS.

__ (**R10)** AFP Fonts no longer shipped with OS/390

__ (**R9)** BTAM no longer shipped with OS/390. Service withdrawn for BTAM/SP (5665-279) and BTAM ES (5746-RC5) on March 31, 2002[1]. Both products are withdrawn from Marketing

__ Install non-IBM products in their own set of libraries, excluding the nucleus.

__ Use an alternate LPA libraries for non-ServerPac products.

Notes:
1. These non-ServerPac products should use alternate LPALIB through the LPALSTxx parmlib member.
2. Dynamic LPALST is available with OS/390 R4. It requires conversion to PROGxx parmlib member.

__ Use an alternate LINKLIB for non-ServerPac products.

Notes:
1. Linklist libraries can be added to parmlib member LNKLSTxx or PROGxx.
2. Dynamic Linklist is available with OS/390 R3. It requires conversion to PROGxx parmlib member.

__ Consider using dynamic exit service for user exits.

__ Standardize data set names and placement.

__ Review current procedures and processes for system installation to determine applicability.

__ Determine SYS1.PARMLIB usage.

[1] Announcement Letter 900-040.

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ServerPac Installation

Note: ServerPac ships recommended data set layout as the default

__ Install CustomPac Installation dialogs.

__ Invoke CustomPac Installation Dialogs.

__ Run installation jobs and check output.
Note: These jobs are documented in the ServerPac: Installing Your Order and are submitted via the CustomPac Dialogs.

__ Use the following recommended blocksizes:
- non-RECFM=U: use system determined blocksize (BLKSIZE=0)
- RECFM=U: use BLKSIZE=32760

__ Review integrated SYSTEM HOLDs for possible required actions.

Note: HOLDDATA information is located on the RIM tape. The customized installation guide will provide a pointer to the appropriate data set.

SYSTEM HOLD Information

To get a complete view of the system HOLDDATA incorporated into a ServerPac, the following must be reviewed:

> Unresolved SYSTEMHOLD Report
> Pre-Analyzed SYSTEMHOLD Report
> SYSTEMHOLD Analysis Report

__ Run required post-installation jobs from dialogs.

__ Identify regressed service, if applicable.
The CustomPac dialogs provide an SMP/E Report SYSMODS job and IFREQ checker.

__ Download code to other platforms, if applicable.

CBPDO Installation

__ Read the Program Directory for z/OS and other program directories.

__ Clone all applicable volumes/data sets (includes HFS)

__ Review PSP buckets
- UPGRADE: ZOSV1R2
- Subset: ZOSGEN and one for each element

__ Follow the steps in the program directories to prepare for installation; to SMP/E RECEIVE, APPLY, and ACCEPT the z/OS FMIDs and service; to run installation and post-installation jobs; and to verify installation.

Notes:

1. Elements are grouped together based on driving and target system requirements, element dependencies, and natural separation points, called waves and ripples. **Ripples must be processed in the order specified, with all FMIDs in a ripple installed.**
   - Wave 0: FMIDs which should be available on driving system for subsequent wave installs.
     - SMP/E and HLASM
   - Wave 1: All FMIDs, except JES2 and JES3, and FMIDs providing full function mode and connectivity for Wave 2 install.
     - UNIX System Services Application Services and IBM Communication Server's HFS FMID is moved to Wave 1.
     - Requires OS/390 R7 SMP/E or higher and OS/390 R10 HLASM
   - Wave 2: FMIDs installing into a HFS which may need to use shell and utility commands.
     - Wave 2 **must** be separate from Wave 1 if the driving system, the system being used to install the waves or elements, doesn't meet the requirements listed in *z/OS Planning for Installatio*n. In this case, once Wave 1 is completed, that system can be IPLed and used as the driving system for Wave 2.
   - Wave 3: JES2 and/or JES3
     - May be combined with Wave 1 or Wave 2, but cannot occur prior to Wave 1.

1. When HFS files are already present, you must ensure these HFS files are available for Wave 1 processing.
1. OS/390 R10 DFSMS must be installed before IPL. Failure to do so will result in a disabled Wait State.
2. The optional dummy function delete job for OS/390 Release 10 DFSMS is mandatory in Release 10.
   - BCP is shipping loader code and if DFSMS is not completely deleted prior to the install, the ACCEPT will fail. A sample job is provided.

__ Use the following recommended blocksizes:
- non-RECFM=U: use system determined blocksize (BLKSIZE=0)
- RECFM=U: BLKSIZE=32760

__ Download code to other platforms (for example, onto workstations).

Perform Pre-IPL Customization

This includes performing migration actions which must be completed prior to IPLing the target system.

ServerPac Installation

The following jobs are documented in the *ServerPac: Installing Your Order* and can be run from the CustomPac Installation Dialogs:

__ Create IPL text.

__ Build stand-alone dump text.

__ Set up a new IPCS environment.

__ Set up an ISPF environment.
- ♦ Ensure that proper libraries are concatenated.
- ♦ Modify ISPF libraries to enable products and elements to be invoked.

__ Perform initial customization for individual elements.

__ Rework any usermods and user exits required to IPL z/OS.

CBPDO Installation

The following tasks are documented in Program Directory for z/OS and other program directories:

__ Create IPL text.

__ Build stand-alone dump text.

__ Set up a new IPCS environment.

__ Set up an ISPF environment.
- ◆ Ensure that proper libraries are concatenated.
- ◆ Modify ISPF libraries to enable products and elements to be invoked.

__ Perform initial customization for individual elements.

__ Update the master catalog (CBPDO).

__ Rework any usermods required to IPL z/OS.

Perform Migration Actions

The required migration actions depend on what software levels you are coming from and whether you plan to exploit new function.

__ Create or migrate IODF, if necessary.

__ Modify system control files:
- ◆ SYS1.PARMLIB
- ◆ SYS1.PROCLIB
- ◆ SYS1.VTAMLST
- ◆ JES initialization deck

__ Review *z/OS UNIX System Services Planning*

__ Set up the proper UNIX System Services environment for z/OS.

Notes:
1. The OMVS address space starts automatically since OS/390 R3.
2. Must run full function mode

Verify the New System

__ IPL the system as the target system and log on.
Note: This system is not customized beyond what was required to IPL the system and does not exploit any of the new function.

__ Run the Installation Verification procedures
- See *ServerPac: Installing Your Order for information* on how the jobs can be run from the CustomPac Installation Dialogs.
- See Program Directory for z/OS and other program directories for information on how to run these jobs, if using CBPDO to install.

Customize the System

__ Redo customization (update and merge system control files).
Note: See conversion notebooks and migration guides in product libraries.

__ Set up the security environment.

__ Reinstall user exits and usermods, if required.

__ Install any new required products and service (including ISV products).

Verify the Customized New System

__ IPL the target system.
Note: This system is customized but does not exploit any of the new function.

__ Perform function and stress test.
Note: IBM's comprehensive system testing does not replace the need for this testing in your own environment.

Testing might include:
- Initializing the system.
- Initializing JES.
- Logging on to TSO/E.
- Running the installation verification programs (IVPs), if supplied with the element or feature. The IVP jobs are listed in *z/OS Planning for Installation*.
- Submitting a job.
- Checking the job's output.
- Starting customizing z/OS.

- If CICS or IMS is installed, initializing a region and signing on to a terminal.
- Bringing your independent software vendor products (ISVs) into the test environment.
- Running critical production jobs.
- Supporting a representative interactive workload.
- Communicating with all networks.
- Testing critical functions in applications.
- Checking some of the paths not often taken.
- Checking for completeness of accounting records.
- Testing all non-IBM product functions.
- Bringing your applications into the test environment.
- Ensuring that performance goals stated in service level agreements can be met.

Migrate to Production

__ Cut the first system image to Production.

__ Prepare to clone the system (unit and volser on DDDEFs).

__ Roll the IPL across remaining system images, if applicable.

Exploit New Function

__ Determine functions to exploit.

__ Create a plan for exploiting new function.
Note: See conversion notebooks and migration guides in product libraries.

__ Execute the plan.

Maintenance after Installation

__ Understand Recommended Service Update (RSU)

__ Service information - S/390 Software Support http://service.software.ibm.com/390

Note: From this site you can submit problems, review problems, search APARS and link to other sites to download fixes and enhanced holddata.

__ S/390 Service Update Facility (SUF). http://www.ibm.com/s390/products/suf
An internet based S/390 software service tool to obtain preventive and corrective maintenance.

__ Retrieve current holddata. May be obtained from internet. Enhanced HOLDDATA

improves the content of HOLDDATA by providing ERROR ++HOLDs for PE APARs and for HIPER (High Impact and Pervasive) APARs. The ++HOLD includes the fixing PTF number, when available, and any HIPER reason flags such as:

- IPL
- data loss
- major function loss
- performance
- pervasive

Enhanced HOLDDATA: http://service.boulder.ibm.com/s390holddata.html

New or Changed Elements in z/OS V1R2

This section identifies new, changed or deleted elements in z/OS V1R2.

Changed Base Elements

__ BCP
__ BookManager BookServer
__ C/C++ IBM Open Class Library
__ Communications Server
__ Cryptographic Services
__ Distributed File Service
__ IBM License Manager
__ ISPF
__ JES2
__ Language Environment
__ msys for Operations
__ msys for Setup
__ SMP/E for z/OS and OS/390 V3R1 (5655-G44)
__ z/OS UNIX System Services

Changed Optional Elements

__ C/C++ IBM with Debug Tool
__ C/C++ IBM without Debug Tool
__ Communications Server NPF
__ Communications Server Security Level 3
__ DFSORT
__ Infoprint Server
__ JES3
__ RMF
__ SDSF
__ Secure Way Security Server
__ Secure Way Security Server Network Authentication Service Level 3
__ System SSL Security Level 3

Removed Elements

__ Communications Server Security Level 1
__ Communications Server Security Level 2
__ InfoPrint Server Spanish
__ LAN Server
__ LMF function of ISPF
__ Pre-compiled header files (PCH) support in the C/C++ Compiler
__ RMF Monitor II Local 3270 Display Sessions support in RMF
__ SOMobjects ADE
__ SOMobjects RTL
__ Tivoli Management Framework

Virtual Storage Information

The following libraries, identified by DDDEF name and element or feature name, contain RMODE(24) LPA-eligible modules

- ISAMPLA (DFSMSdfp)
- SEZALPA (Communications Server)
- SIATLPA (JES3)
- SICELPA (DFSOR)
- SISFLPA (SDSF)
- SISPLPA (ISPF)
- SORTPLA (DFSORT)

The impact on virtual storage varies and needs to be understood based upon what exists on the system now and what will be the net product increase. For more information see the *z/OS MVS Initilization and Tuning Guide*.

Performance Information

SOFTCAP is a PC-based tool that will evaluate the effect on z/Architecture and S/390 processor capacity when migrating to newer levels of software, including z/OS or OS/390, CICS and IMS. In addition, SOFTCAP can assess the effect on capacity when converting from 31-bit to 64-bit addressing, which is supported on zSeries processors by z/OS and OS/390 V2R10. Results are presented in the form of tables.

___ Obtain SOFTCAP tool http://www-1.ibm.com/support/techdocs/atsmastr.nsf/PubAllNum/PRS268

Element Migration Information

Communications Server

Communications Server – TCP/IP (z/OS V1R2)

Although z/OS V1R2 Communications Server is part of the z/OS V1R2 base and is installed together with that base, the VTAM and TCP/IP for z/OS system programmer will want to develop his own planning, implementation and testing plan for the Communications Server components.

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The following checklist will be of use in creating and carrying out these plans.

For the IP Services Component of Communications Server:

1. Obtain the "Planning and Migration Checklist" from Appendix B of the *Communications Server IP Migration V1R2, GC31-8773-01.* Follow all steps in this planning checklist, including obtaining a copy of the "Program Directory for z/OS V1R2" and a copy of the Preventive Service Planning (PSP) bucket for the VTAM and/or TCP/IP components.

2. Review at a minimum the following sections of the *Communications Server IP Migration V1R2, GC31-8773-01.*

Chapter 1: Overview of Communications Server
Chapter 2: Migration Roadmap (List of changes and reference pages)
Chapter 3: New and Changed Interfaces

Take into special account the changes made to the **System Resolver** (a Common Resolver) and those made to setting aside ECSA and private storage (GLOBALCONFIG ECSALIMIT and POOLLIMIT) for TCP/IP usage and decide to what extent you wish to take advantage of these in your migration path.

Other Chapters:
All chapters dealing with Release Summaries for releases of Communications Server that are newer than the release from which you are migrating. For example, if you are migrating from V2R7, read the Release Summary information for V2R8, V2R10, z/OS V1R1, and z/OS V1R2 as described in chapters 4, 5, 6, and 7.

Other Considerations:
Read any chapters dealing with specific IP servers to which you will be migrating.

3. Keep at hand Appendix D of the *IP Migration manual*, which lists SNA and IP Information APARs relating to the implementation documentation that will be crucial to your successful migration.

4. Obtain or know where to find the IP manuals important to your implementation of V1R2. These are documented in the *IP Migration Manual, GC31-8773-01*.

5. Develop an education plan, using as a basis the information from Appendix B of the *Communications Server IP Migration V1R2, GC31-8773-01*: "Learning about Implementation of TCP/IP and z/OS Communications Server V1R2."

6. The installation process for z/OS V1R2 includes an Installation Verification Procedure (IVP) for Communications Server. You may want to review what was verified and how it was verified by consulting the appropriate pages of the "Program Directory for z/OS V1R2."

For the SNA Services Component of Communications Server:

1. Review at a minimum the following sections of the *Communications Server SNA Migration V1R2, GC31-8774-01*

Chapter 1: z/OS V1R2 Communications Server Release Summary
Other Chapters: The chapter on Upgrading from your current release to z/OS V1R2

Communications Server. For example, if you are migrating from V2R7, read Chapter 5: "Upgrading from Communications Server for OS/390 V2R7 to z/OS V1R2 Communications Server."

Chapter 7: Post-Installation Considerations for z/OS V1R2 Communications Server

2 . Keep at hand Appendix C of the SNA Migration manual, which lists SNA and IP Information APARs relating to the implementation documentation that will be crucial to your successful migration.

3. Obtain or know where to find the SNA manuals important to your implementation of V1R2. These are documented in the SNA Migration Manual, GC31-8774-01.

DFSMS (R10)

- Exclusive element beginning with OS/390 R10
- OS/390 DFSMS R10 must be installed prior to first IPL
  - IPL checks DFSMS level – WAIT STATE if not the correct level
- DFSMS DADSM enhancement to allow rename of duplicate named system data sets across different volumes.
  - Requires authorization to RACF Facility Class profile STGADMIN.DPDSRN.xxx
    - xxx is the partial qualifier of the data set to be renamed.
- Migration publication: *OS/390 V2R10 DFSMS Migration*, SC26-7337
- **DFSMSrmm**
  - Do not use RETAINBY(SET) or MOVEBY(SET) until all systems sharing CDS are the same level
  - Toleration required – ensure OW35716 is installed on all systems using DFSMSrmm control data set before installing this release
- **VSAM Striping**
  - Toleration for DFSMSdss to prevent processing of striped VSAM data sets
  - DFSMSdss will not provide conversion utilities
    - Striped data sets can be converted back by using copy or logical data set restore
- **>32K Blocksize**
  - Toleration PTFs must be applied to lower DFSMS levels

BCP

BCP (z/OS V1R2)

- Review the z900 PSP bucket for latest information and service related to z/Architecture (64-bit). UPGRADE=2064DEVICE
- IRD - Intelligent resource Director requires WLM goal mode
  __ See PSP bucket UPGRADE: 2064DEVICE Subset: 2064/IRD for service recommendations
  __ Microcode level required is Driver 38
  __ Prior to implementing send a note to: IRD@us.ibm.com or call 845-435-8844
- Coupling Facility Duplexing
  - Detailed information regarding CF levels can be found in "Coupling Facility Level (CFLevel) Consideration" at http://s390.ibm.com/products/pso/cftable.html

- Disabled at z/OS 1.2 General Availability. Enabling APAR OW41617
- __ Requires CFCC Level 10

- WLM - Last release to support compatibility mode.
  - LPAR CPU Management for Linux - shipped disabled in z/OS 1.2 . Enabling APAR, OW50221, available December 2001.

SYS1.PARMLIB Changes

See *z/OS MVS Migration, GA22-7580*, Appendix A for a complete description of change.

z/OS SYS1.PARMLIB Member Changes		
BPXPRMxx	z/OS 1.2 z/OS 1.1	For specific information see *z/OS UNIX System Services Planning*
GRSRNLxx	Z/OS 1.2	Changed
SMFPRMxx	z/OS 1.2	New parameter added, MEMLIMIT
CONFIGxx	z/OS 1.1	Changed. New parameters on the CHP statement
CONSOLxx	z/OS 1.1	New parameters
IEAOPTxx	z/OS 1.1	New statement VARYCPU
IEASYSxx	z/OS 1.1	New parameters: ILMLIB and ILMMODE

System Command Changes

See *z/OS MVS Migration, GA22-7580*, Appendix A for a complete description of change.

z/OS System Command Changes		
CMDS	z/OS 1.2	New. Displays executing and waiting MVS commands
DUMP	z/OS 1.2	Changed options
DUMPDS	z/OS 1.2	New function
SLIP	z/OS 1.2	New Options: ACTION=STOPGTF: and MSGID=:
VARY	z/OS 1.2	New Option: REFRESH|QUIESCE on vary wlm,applenv=applenv_name
CONFIG	z/OS 1.1	config chp(xx),offline has changes associated with SMCS consoles
CONTROL	z/OS 1.1	New options and changed information
DISPLAY	z/OS 1.1	New options
LOGOFF	z/OS 1.1	Additional information
LOGON	z/OS 1.1	Additional information
RESET	z/OS 1.1	New options
SETIOS	z/OS 1.1	New option
SWITCH	z/OS 1.1	Additional information
VARY	z/OS 1.1	New options

SMF Record Changes - z/OS 1.2

See *z/OS MVS Migration, GA22-7580*, Appendix A for a complete description of change.

- Type 30
- Type 70, 71, 72, 73, 74, 78, 79
- Type 82

SMF Record Changes - z/OS 1.1

See *z/OS MVS Migration, GA22-7580*, Appendix A for a complete description of change.

- Type 70, 71, 72, 73, 74, 78, 79
- Type 99

z/OS Version 1 Release 2
Installation Planning Checklist

Exit Changes - z/OS 1.2

- Installation exit ISGGREX0 is deleted and replaced by new dynamic exit ISGNQXIT
- IEFUSI updated to support MEMLIMIT

BCP (R10)

- LOADxx contains new parameter ARCHLVL identifying the nucleus extension IEANUCax
  - Used to determine the architecture level of the system
  - a=1 for 31-bit mode (ESA/390); a=2 for 64-bit mode (ESAME)
    - default is ESA/390 mode
  - Hardware must support requested architecture. If not a wait state of 088-10 results.
- New system symbol &SYSALVL (Value from ARCHLVL in LOADxx)
  - Change in maximum amount of symbols. IBM defines 5.
  - Limit is set by space. Can define as many symbols which fit in an area holding 103 maximum-size symbols (name and value)
- PARMLIB support increased to 16 data sets
- New IPL text
- New standalone dump program
  - Provides support for 64 bit architecture mode
  - SYS1.PAGEDUMP data set renamed to SYS1.PAGEDUMP.Vvolser
    - The volser must be specified in the data set name. If the volume changes then the data set must be renamed to match
  - Changes in generation process
  - See *OS/390 Diagnosis: Tools and Service Aids*, SY28-1085
- Expanded storage not supported running in 64-bit capable mode
- Dropped support for:
  - Virtual Fetch
    - Use LLA instead
  - Duplexing of PLPA and Common page data sets
  - Swap data sets
    - Add local page data sets instead
- Several keywords removed in IEAOPTxx PARMLIB member
- RSU system parameter modified for old and new architecture
- Commands no longer accept DUPLEX or swap REQUESTS

SMP/E

- First change in function since OS/390 Release 7
- No longer exclusive to z/OS. See *SMP/E V3R1.0 Licensed Program Specifications*, *GI10-0681*
  - No charge product - requires a software license for OS/390 or z/OS
- Must convert the SMPLTS to a PDSE data set. Required due to LE shipping a PDSE target library.
- Check COMPAT binder level in SMP/E Utility Options for the correct PM level.
- Crypto and ISCF required when using RECEIVE from Network function
- New data sets
  - CLIENT

- SERVER
- SMPDIR
- SMPNTS
- SYSIN

- NUCID subentry has been deleted from OPTIONS Entry
- New REASONIDs added - See Appendix A in *SMP/E Reference*,

Language Environment

Language Environment (z/OS V1R2)

- New data sets
  - SCEEBND2
  - SCEEH
  - SCEEH.T

__ Review *Language Environment Customization, SA22-7564*

Language Environment (R10)

- Provides downward compatibility support
  - No roll-back of function to lower LE release levels
  - Toleration PTFs required – *Note some of the PTFs listed are PE. A superceded PTF is not available at time of publishing.*
    - APARs: PQ33358, PQ33359, PQ33588, PQ30805, PQ35954, PQ35367, PQ19082
    - Review PSP bucket for additional service information

OS/390 LE Coexistence/Toleration PTFs							
OS/390 R1 LE	**OS/390 R2 LE**	**OS/390 R3 LE**	**OS/390 R4/R5 LE**	**OS/390 R6 LE**	**OS/390 R7 LE**	**OS/390 R8 LE**	**OS/390 R9 LE**
UQ39557	UQ39558	UQ39559	UQ39560	UQ39562	UQ39538	UQ39339	UQ39540
UQ40405	UQ40406	UQ40407	UQ39536	UQ39537	UQ39533	UQ39534	UQ39535
UQ40462	UQ40468	UQ40465	UQ39541	UQ39542	UQ40402	UQ40403	UQ40404
			UQ40408	UQ40409	UQ39548	UQ39549	UQ39550
			UQ41305	UQ41306	UQ41302	UQ41303	UQ41304
			UQ40466	UQ40467	UQ40463	UQ40464	
			UQ23645	UQ23646	UQ23644		

- Shipping a PDSE data set.
  - Requires the SMPLTS data set to be a PDSE.
- Ensure PROCs CLISTs and JCL used for compiling and link-editing are using the correct levels of the compiler.
- Delete all prior levels of LE libraries

LDAP

LDAP (z/OS V1R2)

- Configuation Utility to configure the LDAP Server (ldapcnf)
  - Generates JCL - output members of a PDS
  - PTF to OS/390 R10 (OW47594)
- AFP authorized
  - Libraries dynamically loaded by LDAP Server

  - LDAP Server programs and libraries
  - LDAP Server
- Userid performing installation must have AFP facility class defined and authority to it
- Frontend performance
  - Supports approximately 65500 concurrent client connection
    - Listens on multiple secure and non-secure ports
  - No longer use *maxThreads* and *waitingThreads* parameters in configuration file
  - New configuration parameters
    - commThreads
    - listen
    - IdleConnectionTimeout
  - Command line option changes due to listen
- SDBM Support (RACF data storage)
  - Additional user segments
    - LNOTES
    - NDS
    - KERB
- Documentation
  - z/OS SecureWay Security Server LDAP Server Administration and Use (SC24-5923)
  - z/OS SecureWay Security Server LDAP Client Programming (SC24-5924)

LDAP (R10)

- New Relational Database Backend – TDBM
  - Uses entirely different set of DB2 database tables than the RDBM backend
  - Separate utilities for TDBM and RDBM
- New schema shipped
  - migration tool provided
- All message catalogs renamed to include product prefix “gld”

Security

RACF (z/OS 1.2)

- RACF accepts profile names in the case in which they are typed (upper and lower)
- Removed DNS Configuration Support

__ IRRMIN00 utility to update the production RACF databases with the database templates for the current release level

__ Check for duplicate class names

__ OW45152 required for RACF support for new DB2 V7 CONSTRUCTS

RACF Support for new DB2 V7 CONSTRUCTS - OW45152		
z/OS V1R1 OS/390 R10	HRF7703	UW77394
OS/390 Release 9	HRF2608	UW77393
OS/390 Release 8	HRF2608	UW77393
OS/390 Release 6	HRF2260	UW77392

- Support for Enterprise Java Beans includes two new classes - APAR OW46859

- **EJBROLE**
- **GEJBROLE**

RACF Support for Enterprise Java Beans - OW46859		
z/OS V1R1 OS/390 R10	HRF7703	UW78361
OS/390 Release 9	HRF2608	UW78360
OS/390 Release 8	HRF2608	UW78360

__ Ensure programs processing the output CLIST created by the SEARCH command properly handle the new statement

__ Install Compatibility APAR OW46269

RACF Compatibility APAR - OW46269		
z/OS V1R1 OS/390 R10	HRF7703	UW79593
OS/390 Release 9	HRF2608	UW79592
OS/390 Release 8	HRF2608	UW79592
OS/390 Release 6	HRF2260	UW79591

RACF – Application Identity Mapping (AIM) (R10)

- *RACF Migration and Planning, GC28-1920*
- Four stage enablement
  - Stage 0 - inactivation, prior support applies
  - Stage 1 – temporary stage allows new conversion utility to run, prior support applies
  - Stage 2 – use AIM, but if not found use prior support
  - Stage 3 – profiles for support removed, only AIM now used
    - To enter stage 3 all systems sharing the RACF database must be at OS/390 R10 RACF or higher
- Update templates
  - Existing databases IRRMIN00 PARM=UPDATE
  - New databases IRRMIN00 PARM=NEW
  - IPL

RACF – Support for Kerberos (R10)

- RACF commands/panels used for Kerberos administration
- Migration co-existence requires RRSF local node to be defined to allow for keys to be generated for user password application updates.
- *OS/390 SecureWay Security Server RACF Migration*, SC28-1920

JES2

JES2 z/OS V1R2

- Default middle level qualifier removed
- New **$ACTIVATE** level (LEVEL= R4 or z2)

- Two modes: Compatibility(R4) and Exploitation(z2)
  - Compatibility mode supports existing limits
  - Exploitation mode supports increased limits
  - Allows switching between modes
- JOE, JQE, JQA and JOT control blocks significantly changed for z2 mode

___ **Review Exits**

___ **Make appropriate changes**

- JQE fields moved
- JQE and JOE offsets converted to indexes
- Affected fields renamed to cause assembly errors
- Refer to JES2 Migration (GA22-7538)
- Command translation exit 5 moved to SHASSAMP
- Exits 14 and 49
  - PITCLASS and QGTCLST are changed

- JOBID format changed
- Dynamic PROCLIB

___ Review your JES2 startup PROC

___ Review/Update your JES2 initialization statements approprately

___ Review/Update any automation that affects JES2 startup

___ Understand how to use the initialization parm to use absolute or relative track addressing for the SPOOL

___ Take advantage of the PROCLIB and INCLUDE initialization statements to create dynamic PROCLIB concatenations and include initialization streams into your JES2 startup

- New Commands
- HASP443 message clarified

___ **Automation**

- Examine and change your automation with respect to commands, messages, and job numbers

___ **Support for large SPOOL**

- Rollback to OS/390 R10
- Understand how to use the SPOOLDEF initialization keyword, to specify use absolute or relative track addressing for the SPOOL.
- Understand how to use the new interface to read records from the JES2 SPOOL
- Examine your code to ensure that the code the reads the JES2 SPOOL consistent with this function

___ **MAS coexistence with HJE6607 - HJE7703**

___ Requires OW47328

PTF numbers for OW47328		
HJE6607	HJE6608	HJE7703
UW99361	UW99362	UW99363

- ALLLCOPY support is eliminated

JES2 (R10)

- Release 10 requires installation to be $ACTIVATEd prior to migration
- Support to run with OS/390 R10 and lower levels in a MAS requires OW42299

PTF numbers for OW42299			
HJE6604	HJE6605	HJE6607	HJE6608
UW69009	UW69010	UW69011	UW69012

- Default middle level qualifier is V2R10M0
- Does not support pre-release 4 mode.
- CKPT must be in Release 4 mode
  - $ACTIVATE prior to migration
- Cold start required from HJE6603 and prior
  - Migrate to HJE6604 or higher first to avoid cold start

SDSF

SDSF z/OS V1R2

- End user commands and syntax in HELP panels
  - SDSF Guide and Reference eliminated

SDSF (R10)

- Requires MQ Series 2.1 for sysplex systems management support
  - assuming that MQSeries® is installed and operational SYSPlex implementation requires NO additional MQ customization.
- Support for server registration with ARM
- New ISFPARMS statements to define communications configuration
  - Recommend ISFPARMS conversion utility ISFACP; SDSF server requires dynamic ISFPARMS statements
- New web based wizard assistant → http://www.ibm.com/s390/os390/wizards
  - SDSF Web based wizard implemented to assist with SYSPlex administration statements (ISFPARMS statements), SAF definitions, etc.
- Publications:
  - *SDSF Guide and Reference*, SC28-1622
  - *SDSF Customization and Security*, SC28-1623

JES3

JES3 (z/OS V1R2)

__ Review *JES3 Migration, GA22-7553*

- Default middle level qualifier removed
- New, changed and deleted messages

- Entire complex must be z/OS 1.2 prior to implementing job numbers > 64K
- Migration APAR OW47435 required
- BDT APAR OW47953

APAR	PTF	FMID	Compatibility/Migration
OW47953	UW79524 UW79523	JBD6202 HBD6602	BDT
OW47435	UW90713 UW90714 UW90715	HJS6608 HJS6609 HJS7703	JES3 2.8 JES3 2.9 JES3 2.10

JES3 (R10)

- UNIT=AFF Support requires OW43086 be installed prior to IPL.
- Default middle level qualifier is V2R10M0

WLM Goal Mode (R10)

- Goal Mode Migration Tool available at: http://www.ibm.com/servers/eserver/zseries/zos/wlm/
- Compatibility mode supported until March 2002
- Exploitation of any new function causes a new functionality level in the service definition
  - Compatibility PTF coming
- Do not use classification by scheduling environment name and/or subsystem collection name until all systems are both OS/390 R10 and JESx R10

GRS

- Wildcard support
  ___ Toleration support required
  - ++APARs available end of July
    - Releases: OS/390 R8, R9, R10 and z/OS V1R1
  - Do not define wildcard RNLs without PTF installed on all systems in the sysplex
    - result is waitstate 0A3
- Publications
  - *MVS Planning: Global Resource Serialization* (SA22-7600)

Reminders

- Exploiting functions in some areas may require an implementation plan of their own.
- z/OS licensed documentation in PDF format is available on the IBM Resource Link Web site: http://www.ibm.com/servers/resourelink
- IBM License Manager is still restricted from production use.

Internet sites

http://www.ibm.com/servers/eserver/zseries/zos	IBM z/OS home page
http://www.ibm.com/s390/os390/	IBM OS/390 home page
http://www.ibm.com/s390/os390/support/os390tst	OS/390 Integration Test web page
http://www.can.ibm.com/custompac or http://www.ibm.com/ca/custompac	CustomPac (including SystemPac) web page
http://www.ibm.com/servers/eserver/zseries/zos/bkserv/	zZ/OS Library
http://www.ibm.com/s390/os390/plug1.html	Architectural Enhancements
http://www.ibm.com/servers/eserver/zseries/zos/ilm/	IBM License Manager (ILM) web page
http://www.ibm.com/servers/eserver/zseries/wlc_lm	Workload License Charges web page
http://www.ibm.com/servers/eserver/zseries/wlc_lm/products.html	IBM Product exploitation of ILM web page
http://www.ibm.com/support/techdocs	IBM Systems Center Flashes
http://www.ibm.com/s390/support/	System/390 Technical Support
http://www.ibm.com/servers/eserver/zseries/zos/bkserv/wizards.html	z/OS Wizards
http://www.listserv.uga.edu/cgi-bin/wa?SUBED1=ibmlm-l&A=1	ILM LISTSERVer (Discussion Group)
http://www.ibm.com.servers/eserver/zseries/rmf	RMF home web page

z/OS Version 1 Release 2
Installation Planning Checklist

z/OS V1R2 New Function Rollback Apars

Element	Description	Apar #	PTF #	Release	RSU
BCP - WLM	Temporal Affinity	OW45238	UW87425, UW87427	OS/390 R8	0109
			UW78428, UW78429	OS/390 R9	"
			UW78430, UW78431,	OS/390 R10	"
			UW78426		"
			UW78432	z/OS 1.1	"
BCP - WLM	WLM Enclaves for DB2	OW46363	UW78918	OS/390 R7	0109
			UW78916	OS/390 R8	"
			UW78919	OS/390 R9	"
			UW78917	OS/390 R10	"
			UW78920	z/OS 1.1	"
BCP - Parallel	FICON CTC	OW41615	OPEN		
BCP - IOS	IOS support	OW48283	OPEN	OS/390 R6	
		OW47875	OPEN	OS/390 R10	
		OW48394	UW79169	OS/390 R10	0109
			UW79170	z/OS 1.1	"
BCP - IOS	Functional Dependency	OW44428	UW77889 - PE	Escon Director	0102
BCP	Large Volume Support:	OW48394	UW79169	OS/390 R10	0109
			UW79190	Z/OS 1.1	"
RACF	EJBROLES Support for WAS and CICS	OW46859	UW78360- PE	OS/390 R8	0103
			UW78361- PE	OS/390 R10	"
USS	Soft Shutdown of Mounted File System	OW48199	UW79568	OS/390 R7	0105
			UW79566	OS/390 R8	"
			UW79569	OS/390 R9	"
			UW79567	OS/390 R10	"
USS	dbx C++ Enhancements	OW45774	UW76301	OS/380 R7	0109
			UW76320	OS/390 R8	"
			UW76321	OS/390 R9	"
			UW76322	OS/390 R10	"
USS	_osname	OW47447	UW77700	OS/390 R10	0102
USS	set dub default to protect CICS	OW47673		OS/390 R10	
LE	Storage Leak Diagnostic Support	PQ43408		OS/390 R10	
		PQ43409			
LE	Ability to format individual LE control blocks	PQ39635	UQ48165	OS/390 R8	0011
			UQ48166	OS/390 R9	"
			UQ48167	OS/390 R10	"
LE	RAS Support - LE / CICS Trace of AP Daemon	PQ42311	UQ49830	CICS 4.1	0109
			UQ49834	CICS V4	"
		PQ42470	UQ49841	CICS TS V5	"
LE	__osname	PQ44370	UQ51618	OS/390 R10	0109
			UQ51619	z/OS 1.1	"
LE	Chinese Code Conversion	PQ44807	UQ59364	OS/390 R10	
			UQ59365	z/OS V1R2	
ICSF	Security Compliance Support	OW46382	UW76290	OS/390 R10	0012
ICSF	for CS/390	OW48132	UW78515	OS/390 R10	0103
ICSF	PKDS Reencipher and caching	OW48568	UW80571	OS/390 R10	0106