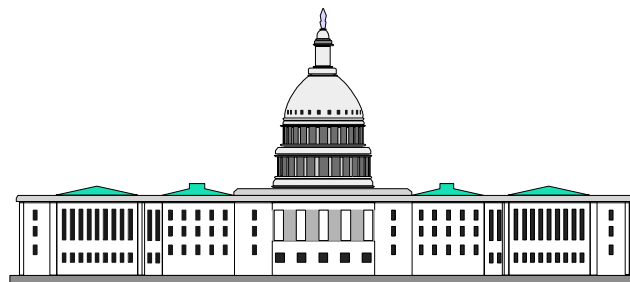


LPAR Advanced Topics

S H A R E

SHARE 98, Nashville, March 7, 2002, Session 2867

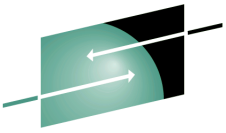


Harv Emery
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Notes:

Performance is in Internal Throughput Rate (ITR) ratio based on measurements and projections using standard IBM benchmarks in a controlled environment. The actual throughput that any user will experience will vary depending upon considerations such as the amount of multiprogramming in the user's job stream, the I/O configuration, the storage configuration, and the workload processed. Therefore, no assurance can be given that an individual user will achieve throughput improvements equivalent to the performance ratios stated here.

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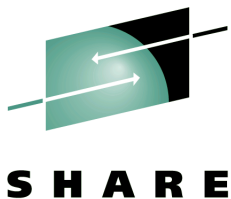
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LPAR Advanced Topics

Introduction to z800 and Running z/OS.e

zSeries PR/SM Workload Pricing Support

zSeries PR/SM IRD Support

- CPU Management
- CSS I/O Priority Queuing
- Dynamic Channel Path Management

HiperSockets (z/OS V1.2 & up)

zSeries Coupling Facility Support

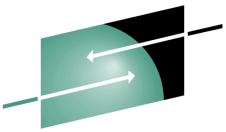
Capacity Upgrade on Demand (G5/6 and zSeries)

- Concurrent Memory Upgrade (z900 Dr 3C)
- Nondisruptive CBU CP Downgrade (z900 Dr 3C and z800)

Memory Configuration and Reconfiguration

- Fast Synchronous Data Mover Facility (G5/6 and zSeries)
- MVS Storage Reconfiguration

Linux Support (G5/6 and zSeries)



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IBM zSeries 800

Complete z/Architecture (64 bit)

- OS/390 V2.8 & up, z/OS all, z/OS.e
- VM/ESA V2.4 & up, z/VM all
- VSE/ESA V2.4 & up, TPF 4.1
- Linux Kernel 2.2 & 2.4 (31 and 64 bit)

Flexible Model Structure

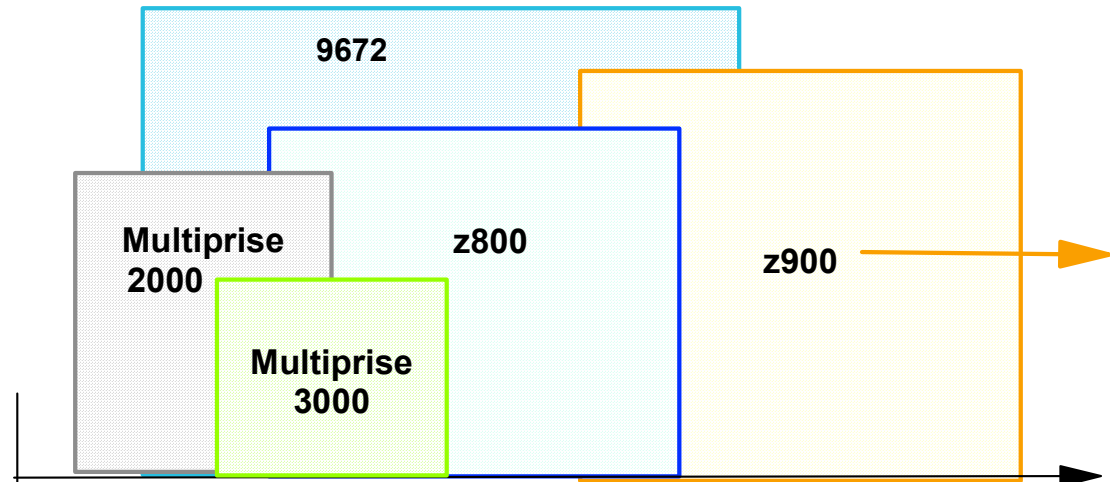
- 1 to 4-way
- z800-001 ITRR close to G6-X17
- 3 sub-uni, 1 sub-dyadic
- CUoD and CBU
- Linux Model 0LF, CF Model 0CF
- z800-004 upgrades to z900-104

8, 16, 24 or 32 GB memory

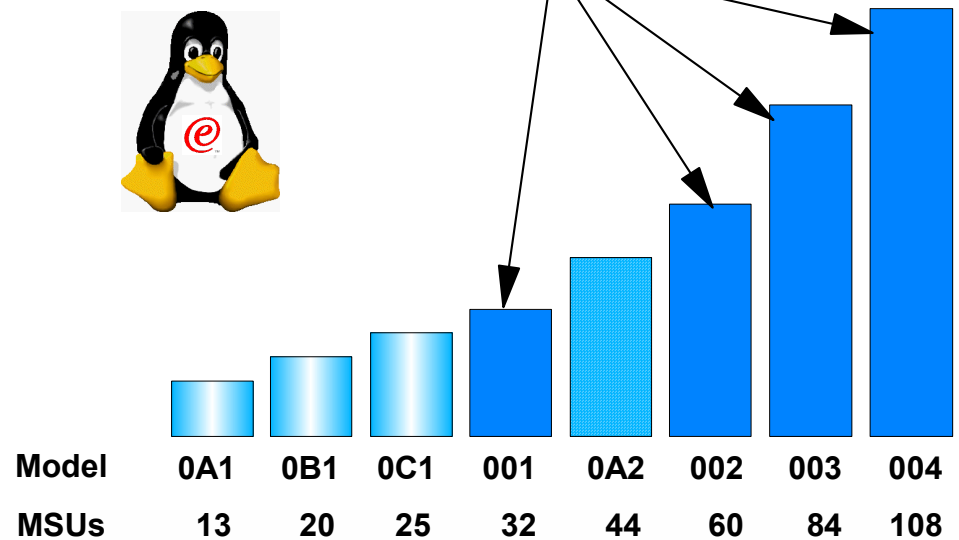
- ▶ No concurrent upgrade

zSeries I/O Subsystem supports

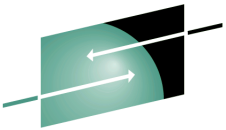
- All zSeries I/O cards (16 max)
 - Up to 240 Escon
 - ▶ No Parallel, OSA-2 FDDI, or ICB-2
- SOD: Linux FCP support



Models 0LF and 0CF
1 to 4-way



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z800 LPAR Mode Exclusive: z/OS.e

z/OS.e Machine Support

- z/Architecture required - 64-bit only
- z800 - **YES**
- z900 - **No!** Will detect and fail.

z/OS.e Operating Mode

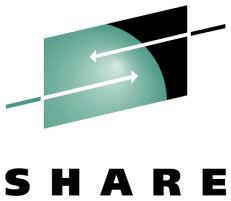
- LPAR Mode - **YES**
- Basic Mode - **No!** Will detect and fail.

z/OS.e LPAR Requirements

- Name in IOCDS must start with **"ZOSE"**
- **"ZOSE"** named LPAR on z800:
 - z/OS.e and z/OS.e under z/VM will run
 - z/OS and OS/390 will **NOT** run, even under z/VM
- **"ZOSE"** named LPAR on S/390 or z900:
 - Name has **NO** effect, z/OS or OS/390 will run
- Shared CP - OK, Requires WLM "Defined Capacity"
- Dedicated CP - OK

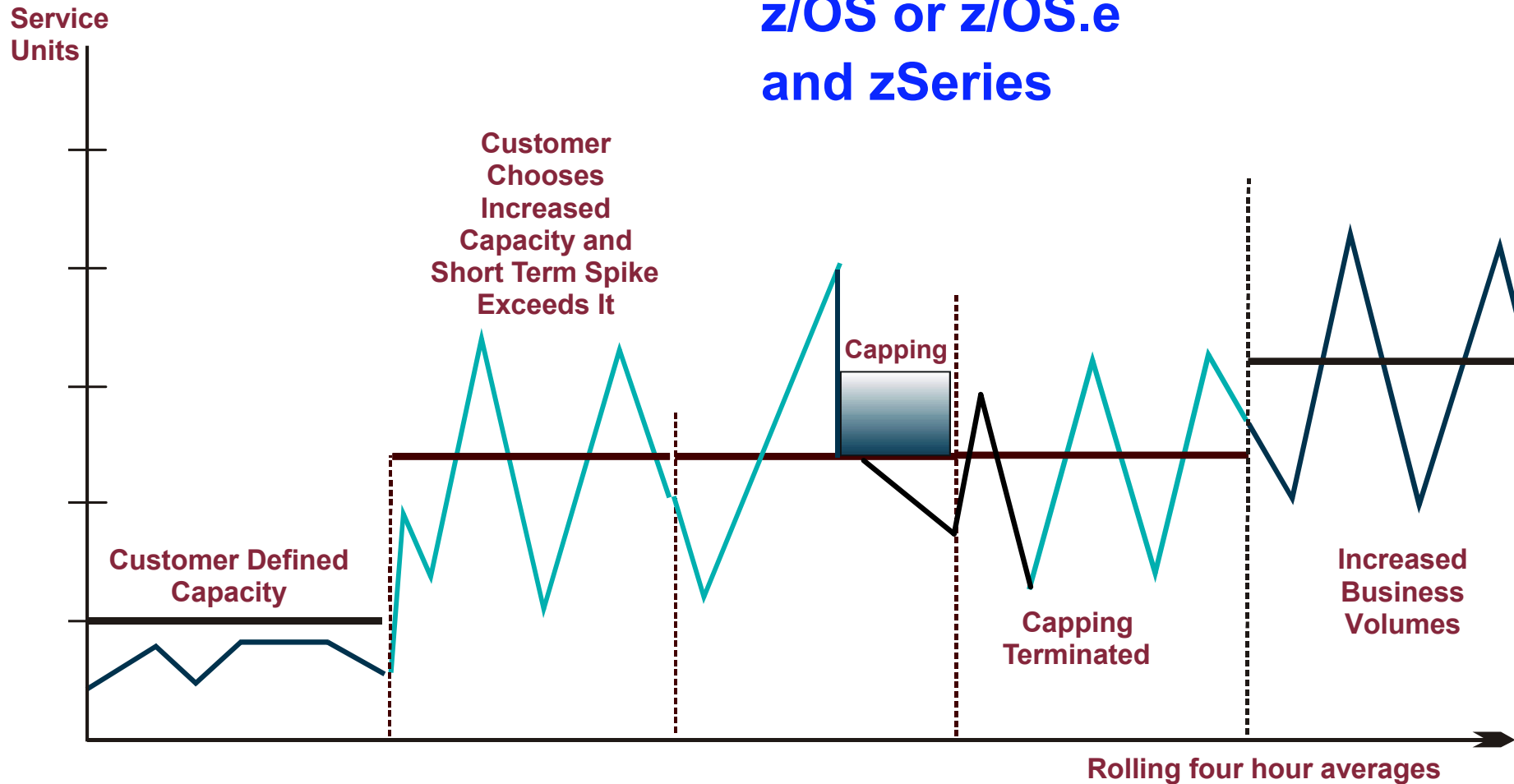


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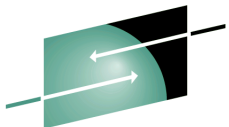
Variable Workload License Charge PR/SM Managment to Defined Capacity

z/OS or z/OS.e
and zSeries



Pay for what you define!

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Image Profile Options Tab

Customize Activation Profiles : KSYS

Image options

Minimum input/output (I/O) priority	10
Maximum input/output (I/O) priority	3
Defined capacity	75
CP management cluster name	TESTPLEX

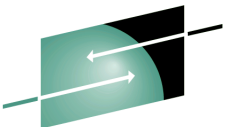
MSUs - WLC

- KSYS
- KSYS:CF01
- KSYS:CF02
- KSYS:CF03
- KSYS:CF04
- KSYS:OSP1
- KSYS:OSP2
- KSYS:OSP3
- KSYS:OSP4
- KSYS:OSP7
- KSYS:OSP8
- KSYS:OSP9
- KSYS:OSPA
- KSYS:OSPB
- KSYS:OSPC
- KSYS:OSPD

General Processor Security Storage Options Load

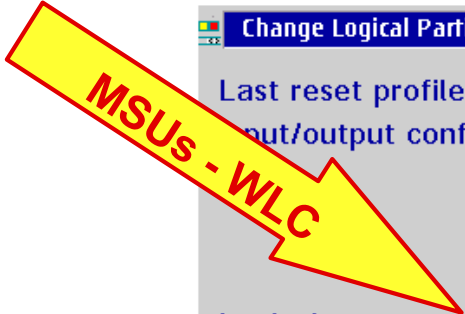
Save Copy notebook Paste notebook Assign profile Cancel Help

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HMC/SE Change Controls (Left)

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Change Logical Partition Controls

Last reset profile attempted: ZSYSRESET0308
 Input/output configuration data set (IOCDS): A0 03.27.01

Logical Partition	Active	Defined Capacity	Current Weight	WLM Managed	Initial Processing Weight	Minimum Processing Weight	Maximum Processing Weight	Initial Capping	Current Capping	Number of Processors
OSP1	Yes	0	333	<input type="checkbox"/>	333	1	666	<input type="checkbox"/>	No	0
OSP2	Yes	0	333	<input type="checkbox"/>	333	1	666	<input type="checkbox"/>	No	0
OSP3	No	0	0	<input checked="" type="checkbox"/>	333	10	400	<input type="checkbox"/>	No	0
OSP4	Yes	0	333	<input type="checkbox"/>	333	10	400	<input type="checkbox"/>	No	0
CF01	Yes	0	0	<input type="checkbox"/>	0	0	0	<input type="checkbox"/>	No	1
CF02	Yes	0	0	<input type="checkbox"/>	0	0	0	<input type="checkbox"/>	No	1
OSPX	Yes	0	333	<input checked="" type="checkbox"/>	333	10	500	<input type="checkbox"/>	No	0

Processor running time

Warning: It is recommended that you select 'Dynamically determined by the system.'
 Selecting 'Determined by the user' risks suboptimal use of processor resources.

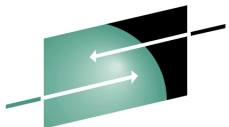
Dynamically determined by the system
 Determined by the user

Running time: 1 to 100 milliseconds

Do not end the timeslice if a partition enters a wait state

Save to profiles Change running system Save and change Reset Cancel Help

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HMC/SE Change Controls (Right)

Change Logical Partition Controls

ZSYSRESET0308

S): A0 03.27.01

Soft cap - WLC

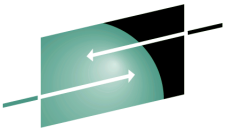
ent	WLM	Initial Processing Weight	Minimum Processing Weight	Maximum Processing Weight	Initial Capping	Current Capping	Number of Dedicated Central Processors	Number of Non-dedicated Central Processors	Logical Partition
<input type="checkbox"/>		333	1	666	<input type="checkbox"/>	No	0	4	OSP1
<input type="checkbox"/>		333	1	666	<input type="checkbox"/>	No	0	4	OSP2
<input checked="" type="checkbox"/>		333	10	400	<input type="checkbox"/>	No	0	4	OSP3
<input type="checkbox"/>		333	10	400	<input type="checkbox"/>	No	0	4	OSP4
<input type="checkbox"/>		0	0	0	<input type="checkbox"/>	No	1	0	CF01
<input type="checkbox"/>		0	0	0	<input type="checkbox"/>	No	1	0	CF02
<input checked="" type="checkbox"/>		333	10	500	<input type="checkbox"/>	No	0	6	OSPX

Select 'Dynamically determined by the system.'
user' risks suboptimal use of processor resources.

00 milliseconds
partition enters a wait state

to profiles | Change running system | Save and change | Reset | Cancel | Help

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S H A R E

Intelligent Resource Director

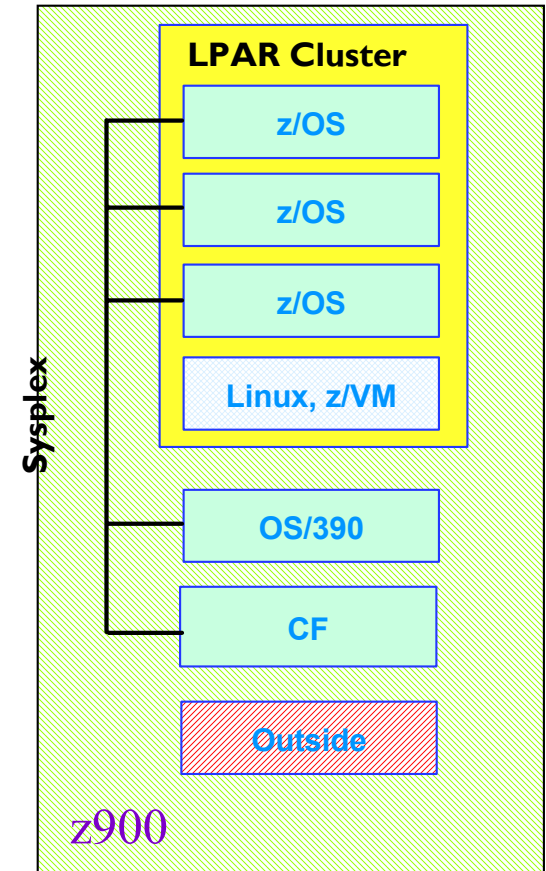
Leverage platform strengths through integration

- Workload Manager
- Parallel Sysplex
- PR/SM
- Channel Subsystem

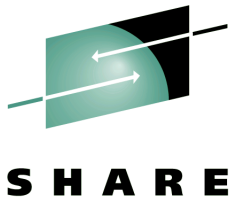
View a cluster of LPs on a zSeries as single pool of computing resource

- Move physical resource to priority workloads in an LPAR cluster
- Extend goal oriented resource management across logical partitions transparently to application subsystems
- Initial resources managed: CPU and I/O
- Requires Parallel Sysplex, WLM Goal Mode, WLM Structure and Level 9 Coupling Facility
- z/OS V1.2 adds z/VM and Linux for zSeries support for LPAR weight management

zSeries IRD Scope



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Intelligent Resource Director

LPAR CPU Management

Description

- **LPAR Weight Management - z/OS, z/VM and Linux for zSeries**
 - Dynamically manages a partition's CPU access based on workload demands and goals (z/VM and Linux on shared CPs only)
- **Vary Logical CPU Management - z/OS Only**
 - Optimizes number of logical CPs based on partition's current weight and CPU consumption

Benefits

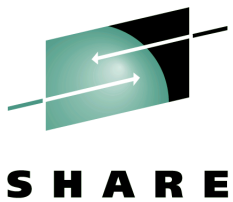
- **Provides flexibility in managing CPU resources across logical partitions in accordance with workload goals.**
 - Dynamic change of LPAR weights
 - Manage tradeoffs between meeting service goals for work and making efficient use of a system's resource
 - Prevent or mitigate possible problems
 - Provides the fastest Uniprocessor speed for single tasking workloads
 - Reduces LPAR overhead



zSeries Image Profile Control CPU Management

A screenshot of the 'Customize Activation Profiles : KSYS' dialog box. The 'Image options' section contains four input fields: 'Minimum input/output (I/O) priority' with value 10, 'Maximum input/output (I/O) priority' with value 3, 'Defined capacity' with value 75, and 'CP management cluster name' with value TESTPLEX. A yellow arrow with the text 'Cluster Name' points to the 'TESTPLEX' text. On the right side, a vertical list of profile names is shown, including KSYS, KSYS:CF01-04, KSYS:OSP1-9, KSYS:OSPA, KSYS:OSPB, KSYS:OSPC, and KSYS:OSPD. At the bottom, there are tabs for 'General', 'Processor', 'Security', 'Storage', 'Options', and 'Load', and a row of buttons: 'Save', 'Copy notebook', 'Paste notebook', 'Assign profile', 'Cancel', and 'Help'.

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zSeries Image Profile Control CPU Management

Customize Activation Profiles : KSYS

Logical processor assignment

Dedicated central processors

Not dedicated central processors

Not dedicated central processor details

Initial processing weight 1 to 999 Initial capping

Enable WorkLoad Manager

Minimum processing weight

Maximum processing weight

Number of processors - Initial Reserved

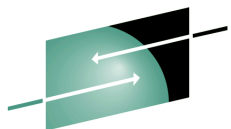
Cryptographic coprocessors

- Cryptographic coprocessor 0
- Cryptographic coprocessor 1

General Processor Security Storage Options Load

Save Copy notebook Paste notebook Assign profile Cancel Help

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zSeries Change Logical Partition Controls CPU Management

SHARE

MSUs - WLC

Change Logical Partition Controls

Last reset profile attempted: ZSYSRESET0308
 Input/output configuration data set (IOCDs): A0 03.27.01

Logical Partition	Active	Defined Capacity	Current Weight	WLM Managed	Initial Processing Weight	Minimum Processing Weight	Maximum Processing Weight	Initial Capping	Current Capping	Processor
OSP1	Yes	0	333	<input type="checkbox"/>	333	1	666	<input type="checkbox"/>	No	0
OSP2	Yes	0	333	<input type="checkbox"/>	333	1	666	<input type="checkbox"/>	No	0
OSP3	No	0	0	<input checked="" type="checkbox"/>	333	10	400	<input type="checkbox"/>	No	0
OSP4	Yes	0	333	<input type="checkbox"/>	333	10	400	<input type="checkbox"/>	No	0
CF01	Yes	0	0	<input type="checkbox"/>	0	0	0	<input type="checkbox"/>	No	1
CF02	Yes	0	0	<input type="checkbox"/>	0	0	0	<input type="checkbox"/>	No	1
OSPX	Yes	0	333	<input checked="" type="checkbox"/>	333	10	500	<input type="checkbox"/>	No	0

Processor running time

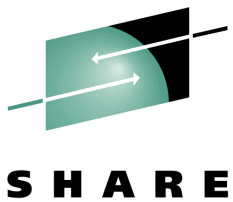
Warning: It is recommended that you select 'Dynamically determined by the system.'
 Selecting 'Determined by the user' risks suboptimal use of processor resources.

Dynamically determined by the system
 Determined by the user

Running time: 1 to 100 milliseconds
 Do not end the timeslice if a partition enters a wait state

Save to profiles Change running system Save and change Reset Cancel Help

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zSeries Change Logical Partition Controls CPU Management

Change Logical Partition Controls

ZSYSRESET0308
S): A0 03.27.01

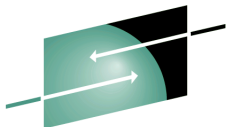
Initial	Minimum	Maximum	Initial	Current	Number of	Number of	Logical	
Processing	Processing	Processing	Capping	Capping	Dedicated	Non-	Partition	
Weight	Weight	Weight			Central	dedicated		
					Processors	Central		
						Processors		
<input type="checkbox"/>	333	1	666	<input type="checkbox"/>	No	0	4	OSP1
<input type="checkbox"/>	333	1	666	<input type="checkbox"/>	No	0	4	OSP2
<input checked="" type="checkbox"/>	333	10	400	<input type="checkbox"/>	No	0	4	OSP3
<input type="checkbox"/>	333	10	400	<input type="checkbox"/>	No	0	4	OSP4
<input type="checkbox"/>	0	0	0	<input type="checkbox"/>	No	1	0	CF01
<input type="checkbox"/>	0	0	0	<input type="checkbox"/>	No	1	0	CF02
<input checked="" type="checkbox"/>	333	10	500	<input type="checkbox"/>	No	0	6	OSPX

Select 'Dynamically determined by the system.'
user' risks suboptimal use of processor resources.

00 milliseconds
partition enters a wait state

to profiles Change running system Save and change Reset Cancel Help

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Intelligent Resource Director

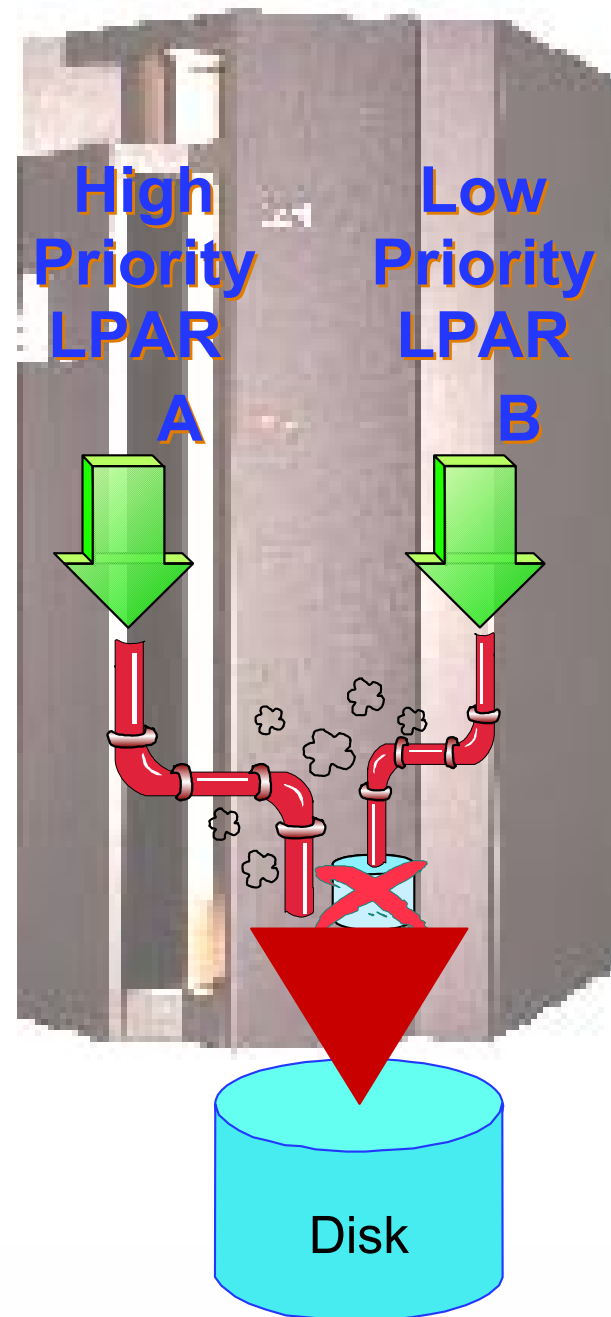
Channel Subsystem Priority Queuing

Description

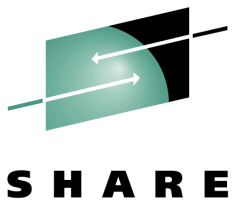
- I/O Priority Queuing prioritizes I/O within an LPAR across workloads
 - Available since OS/390 V1.3
- Channel Subsystem Priority Queuing prioritizes I/O within an LPAR cluster
 - LPAR priorities based on workload goals
 - Exclusive to zSeries
- z/VM and Linux for zSeries - static only

Benefits

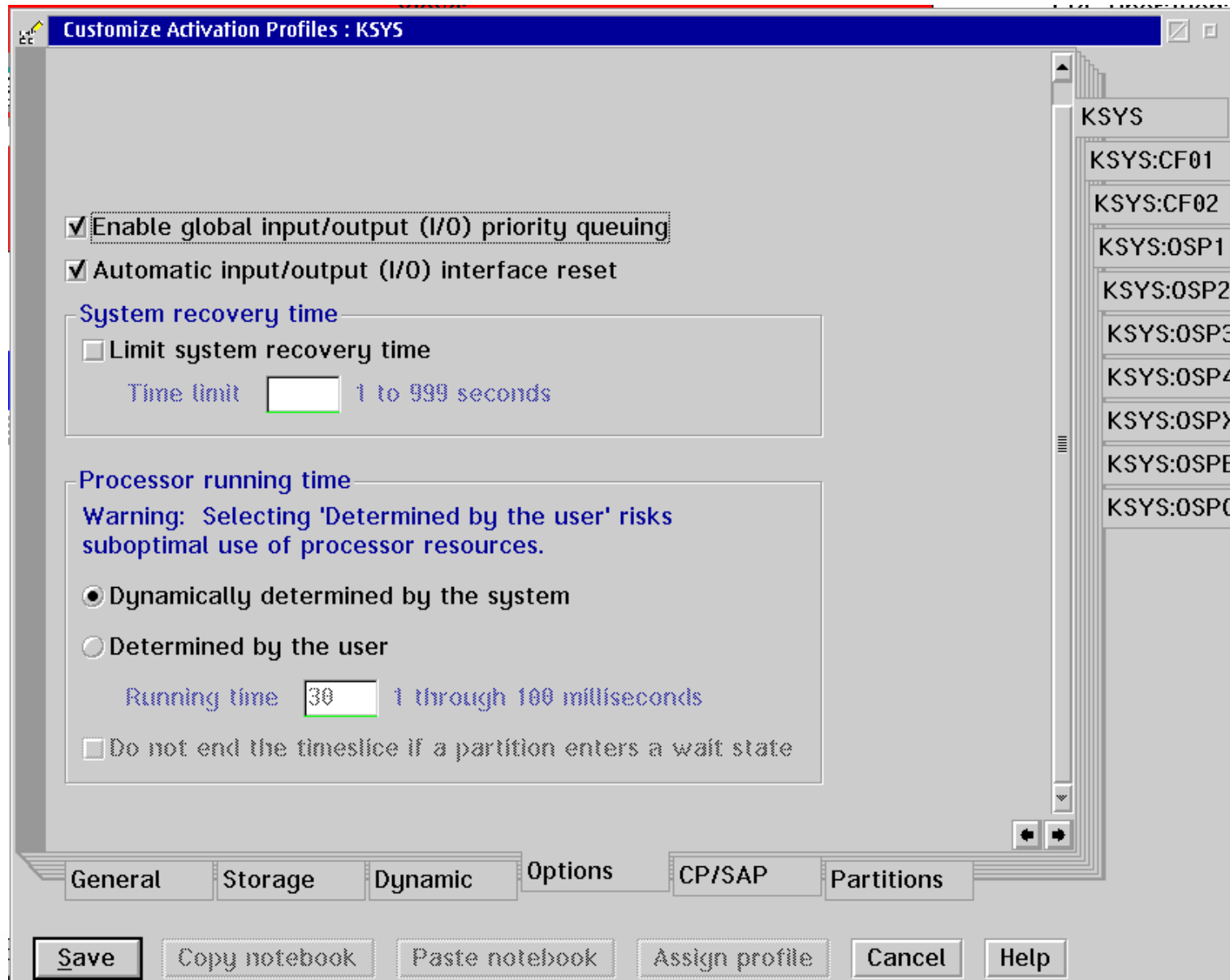
- Allows better channel resource management with EMIF
 - Low priority work will not preempt high priority work from other LPARs



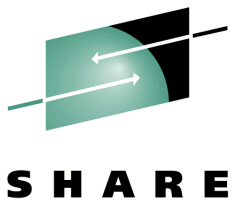
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zSeries Reset Profile Control CSS I/O Priority Queuing



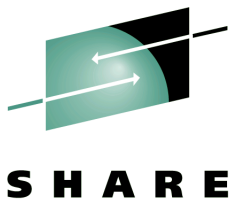
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zSeries System-wide Control CSS I/O Priority Queuing

The screenshot shows the 'KSYS - State Active - Keystrokes remote' application window. The top menu bar includes 'Keystrokes', 'Session', 'Services', and 'Help'. Below the menu is a red toolbar with icons for 'Groups', 'Exceptions', 'Active Tasks', 'Console Actions', 'Task List', and 'Books'. The main area is a 'Groups Work Area' containing icons for 'CPC' and 'Images'. A dialog box titled 'Enable Input/Output (I/O) Priority Queuing' is open, showing the 'Global input/output (I/O) priority queuing' section with two radio buttons: 'Enable' and 'Disable'. The 'Disable' option is selected. A yellow arrow with the text 'Enable/Disable' points to the 'Disable' radio button. The right side of the window shows a list of system management tasks, including 'Change LPAR Cryptographic Controls', 'Change LPAR Sysplex Test Datesource', 'Export/Import Profile Data', 'Enable I/O Priority Queuing', and 'Change LPAR I/O Priority Queuing'. The status bar at the bottom reads: 'Use CPC Operational Customization tasks to customize CPC operational characteristics.'

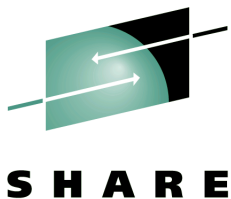
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zSeries Image Profile Control CSS I/O Priority Queuing

A screenshot of the 'Customize Activation Profiles : KSYS' dialog box. The 'Image options' section contains four fields: 'Minimum input/output (I/O) priority' with a value of 10, 'Maximum input/output (I/O) priority' with a value of 3, 'Defined capacity' with a value of 75, and 'CP management cluster name' with the value 'TESTPLEX'. A yellow arrow with the text 'Priority Range' points to the first two fields. On the right side, there is a list of profile names: KSYS, KSYS:CF01, KSYS:CF02, KSYS:CF03, KSYS:CF04, KSYS:OSP1, KSYS:OSP2, KSYS:OSP3, KSYS:OSP4, KSYS:OSP7, KSYS:OSP8, KSYS:OSP9, KSYS:OSPA, KSYS:OSPB, KSYS:OSPC, and KSYS:OSPD. At the bottom, there are tabs for 'General', 'Processor', 'Security', 'Storage', 'Options', and 'Load'. Below the tabs are buttons for 'Save', 'Copy notebook', 'Paste notebook', 'Assign profile', 'Cancel', and 'Help'.

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zSeries Change Logical Partition CSS I/O Priority Queuing

Change Logical Partition Input/Output (I/O) Priority Queuing

Input/output configuration data set (IOCDs): A2

Global input/output (I/O) priority queuing: Disabled

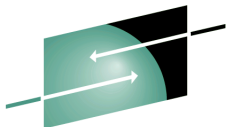
Maximum global input/output (I/O) priority queuing value: 15

Logical Partition	Active	Minimum input/output (I/O) priority	Maximum input/output (I/O) priority
OSP1	Yes	06	14
OSP2	Yes	06	10
OSP3	Yes	00	00
OSP4	Yes	00	00
CF01	Yes	00	00
CF02	Yes	00	00
OSPX	No	00	00
OSPB	Yes	00	00
OSPC	Yes	00	00

Buttons: Save to profiles, Change running system, Save and change, Reset, Cancel, Help

Use CPC Operational Customization tasks to customize CPC operational characteristics.

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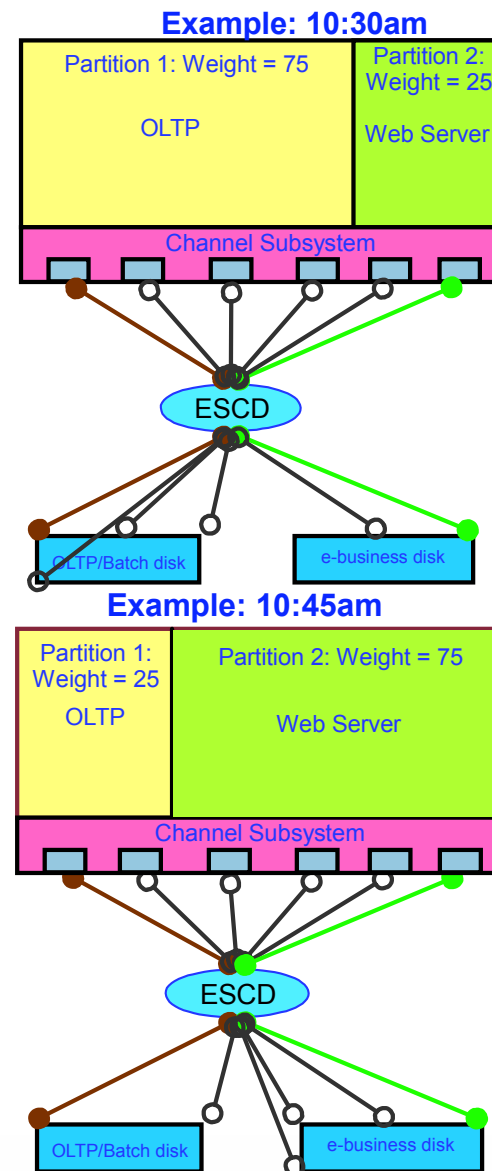
Dynamic Channel Path Management

Description

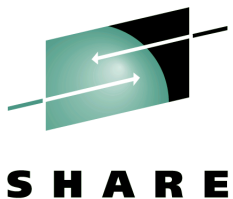
- Allows the system to dynamically manage channel paths in response to changing workload demands
- Moves channel capacity (bandwidth) to the disk subsystem(s) experiencing need based on workload requirements
- Optimized with Channel Subsystem Priority Queuing
- Exclusive to zSeries and z/OS

Benefits

- More efficient use of hardware resource
- Reduces channel requirements
- Simplifies I/O configuration planning and definition
- Dynamically balances I/O connectivity based on workload demand



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HiperSockets - The Network in the Box

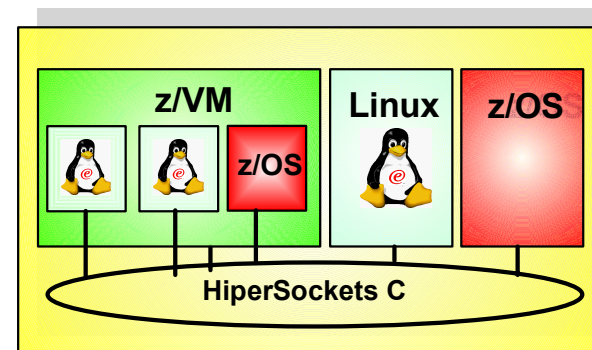
IP networking among virtual servers in a zSeries

- Improved response time due to low latency
 - High Speed connectivity via memory bus
- Highly Secure
 - Data never flows outside the server
- Highly available
 - Integrated zSeries hardware, no external parts
- Cost savings
 - No external network, attachment, or cables
- Flexible
 - Combinations of z/OS, Linux, and z/VM
- Simple to install, operate, maintain
 - Transparent to applications

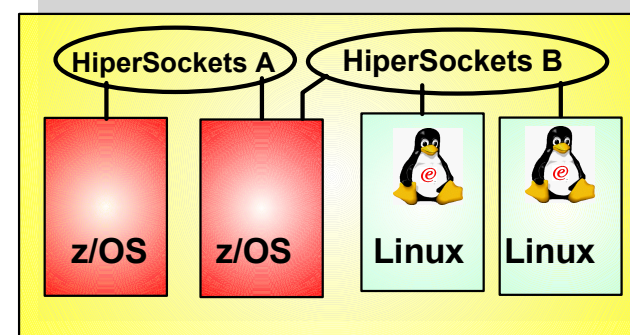
Pre-requisites

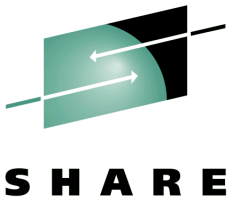
- z/OS 1.2 & up or z/OS.e (z800 only)
- z/VM 4.2
- Linux kernel 2.4 (64- and 31-bit)
- z900 (Driver 3C) or z800

z900



z900





HiperSockets Configuration

Fast data movement between LPARs

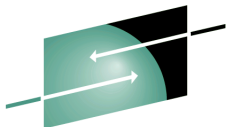
- Provides up to four "internal LANs" HiperSockets accessible by all LPARs
- Up to 1,024 TCP/IP stacks across all four HiperSockets
- Up to 4,000 IP addresses
- Similar to cross-address-space memory move using memory bus
- Does not use CPU cache, thus no effect on other activity

I/O configuration with new CHPID type = IQD

- Controlled like regular CHPID
- Each OS image configures its own usage of available HiperSockets CHPIDs
- Uses iQDIO similar to OSA/Express

Works with both standard and IFL CPs

No physical media constraint, no physical cabling



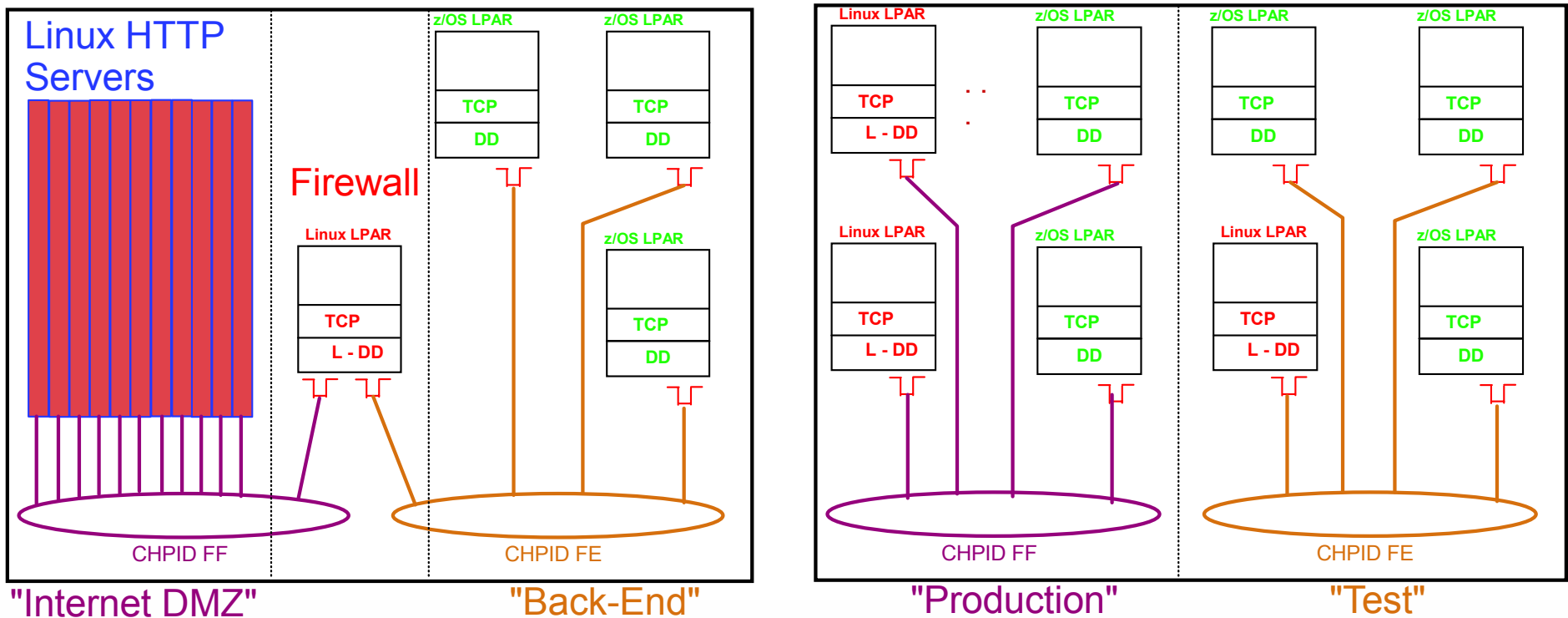
SHARE

HiperSockets: Multiple "LANs"

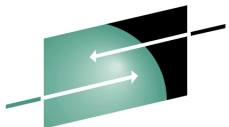
Up to 4 "simulated virtual LANs" per CEC

- Each LAN has its own CHPID. New type (IQD) controlled like regular CHPID
 - Can be shared by all defined LPARs
- Each OS image configures its own usage of available HiperSockets CHPIDs
- Each CHPID has configurable IQD frame size (16K, 24K, 40K, 64K)
 - Allows optimization per HiperSocket for small packets versus large streams by setting Maximum Transmission Unit (MTU) size to 8K, 16K, 32K, 56K

zSeries CEC



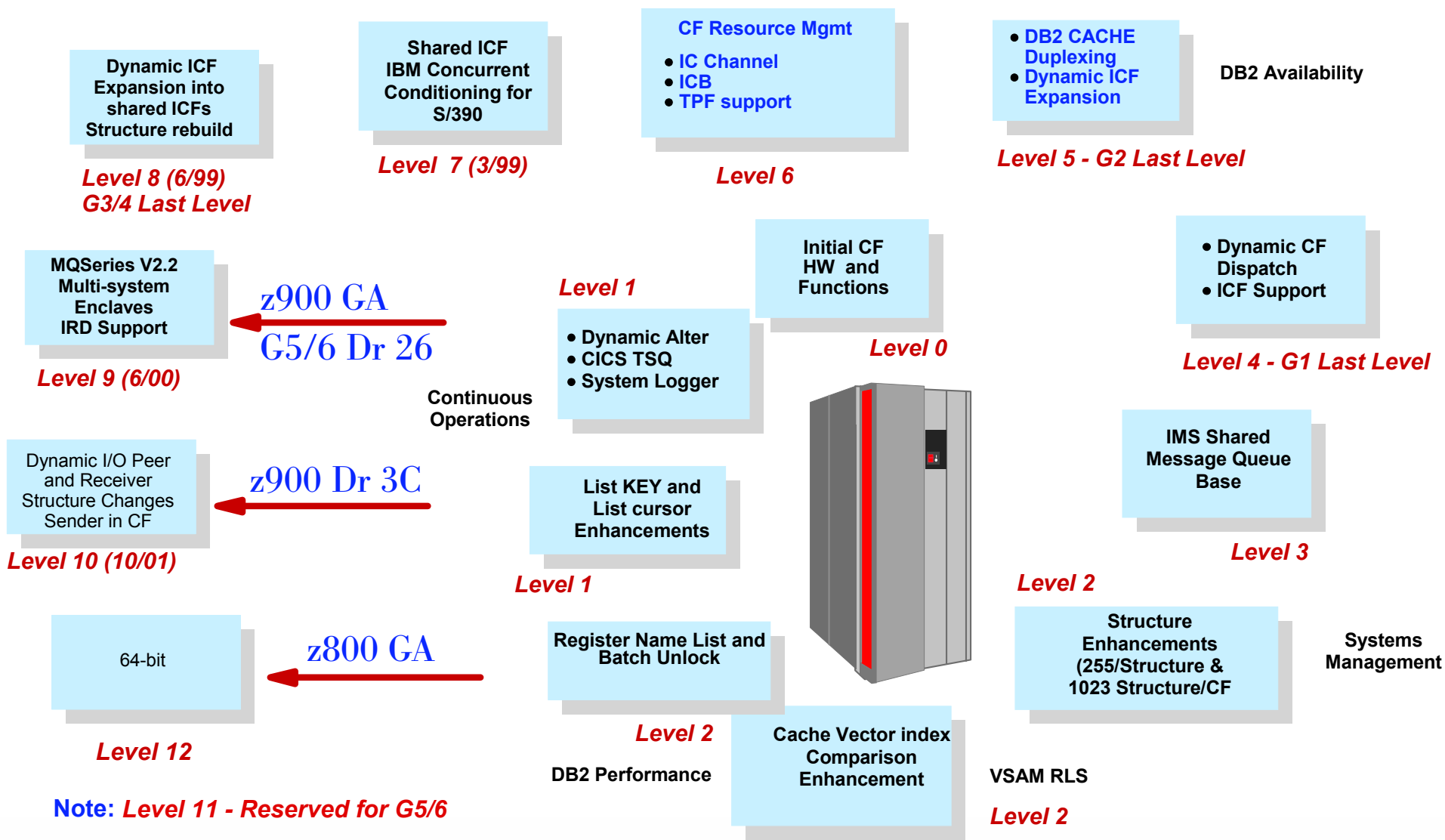
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IBM Coupling Facility Control Code

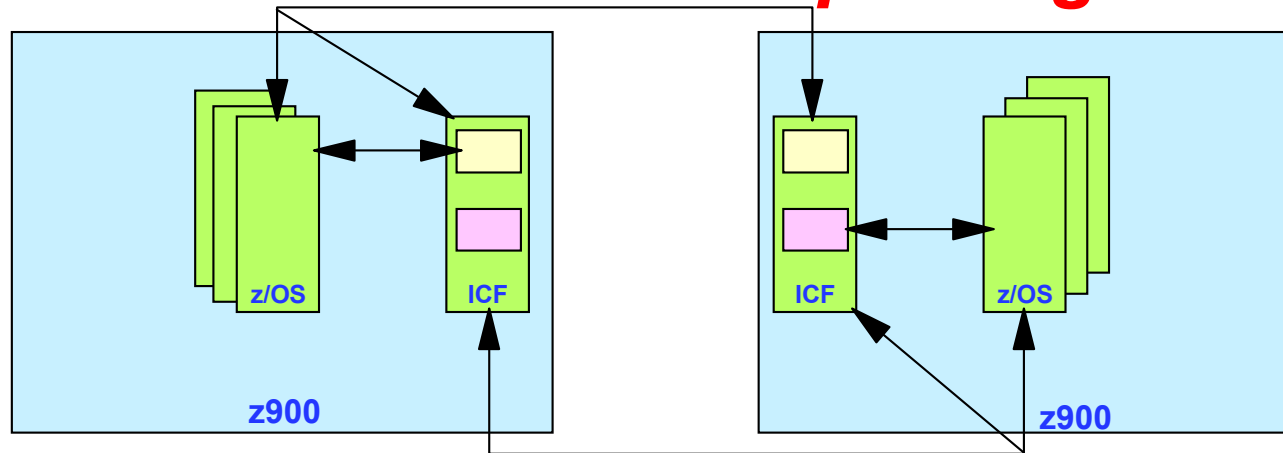
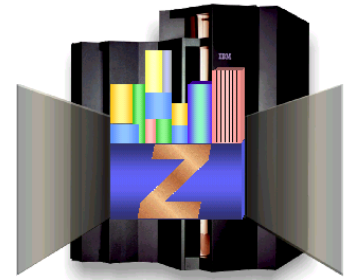
World's Leading and Unrivalled Coupling Technology



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Parallel Sysplex Enhancement

System Managed CF Structure Duplexing



A robust failure recovery capability

BENEFITS:

- Ease of middleware and ISVs to use CF for high availability
- May eliminate the need for standalone CF in some situations

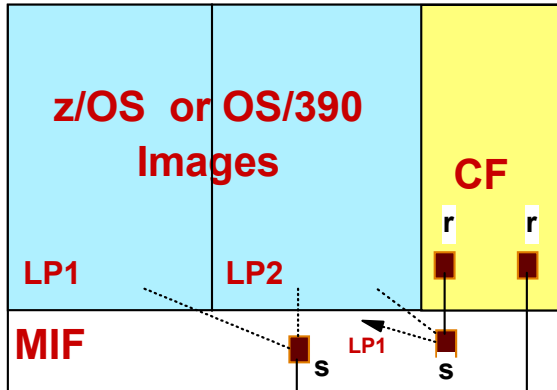
Requirements:

- z/OS v1.2 + PTFs
- zSeries
 - CFCC Level TBD
 - CF: ICF or Model 100
- S/390 G5/6
 - CFCC Level TBD
 - CF: ICF or Model R06

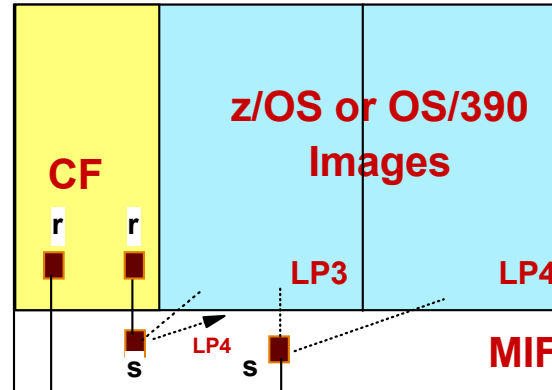


zSeries Peer Link Sharing CHPID Saving

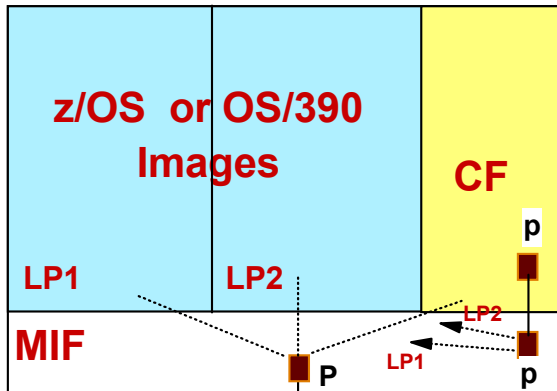
S/390 or zSeries



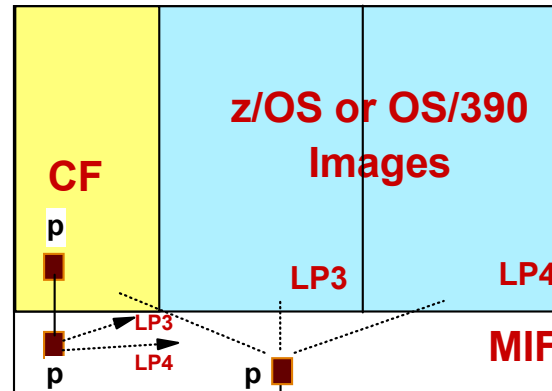
S/390 or zSeries



Send/Receive Mode



zSeries



zSeries

Peer Mode

Send/Receive Links

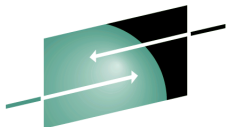
- zSeries to 9672 (or zSeries)
- ISC-3 and ICB-2 (z900)
- Sender to Receiver
- Sender - MIF shared
- Receiver - No sharing
- 8 CHPIDs

Peer Mode Links

- zSeries to zSeries only
- ISC-3, ICB-3, and ICP
- Peer to Peer
- Peer - One CF; multiple z/OS, OS/390 MIF shared
- 6 CHPIDs - Saves 2 with internal Coupling Facility

Note: Minimum connectivity illustrated, duplicate links are recommended for availability.

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S H A R E

Capacity Upgrade on Demand

Driver 22 (6/1999) provides CUoD

- "Plan Ahead" and order of upgrade MES required
- Engines added to shared pools (CP and ICF) without disruption
- Permanent addition, no removal
- Changing maximum number(s) of engines in an LP requires deactivate and profile change

Driver 26 (6/2000) adds *initial* and *reserved* engine support for LPAR mode

- Define initial and reserved engines in profile
- Configure ON reserved engines after CUoD occurs without deactivation

zSeries

- z900 GA: Same support as G5/6 at Driver 26
- z900 - Memory Upgrade on Demand - Driver 3C (10/31/2001)
- z800 - Concurrent sub-uni upgrade - (Available - 9/30/2002)

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LPAR Support for CUoD and CBU zSeries and G5/6

Nondisruptive CUoD/ CBU Upgrade

- Add physical CPs to shared CP Pool
- Add physical ICFs to shared ICF Pool (CUoD only)
- Added physical engines become available and visible (STSI and event)

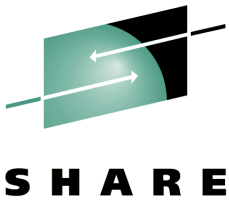
LP Profile: Initial and Reserved Processors (G5/6 Dr 26 6/2000)

- Support for S/390 and CF LPs - CP and ICF
- Initial - On at Activation
- Reserved - Can be configured on if resource is available
- Initial + Reserved can equal CUoD maximum

Nondisruptive CBU CP Downgrade (z900 Dr 3C and z800)

LP Activation and Processor Config Rules

- Can't activate LP with more initial shared logicals than shared pool contains.
- Can't activate LP with initial dedicated logicals if physicals taken from shared pool would "starve" an active LP with shared logicals.
- z900 nondisruptive CBU CP downgrade takes CPs ONLY from the shared CP pool, will not take the last CP.



Initial and Reserved Support

zSeries at GA
S/390 G5 or G6 (Dr 26w)

Customize Activation Profiles : KSYS

Logical processor assignment

Dedicated central processors

Not dedicated central processors

Not dedicated central processor details

Initial processing weight 333 1 to 999 Initial capping

Enable WorkLoad Manager

Minimum processing weight 1

Maximum processing weight 666

Number of processors - Initial 6 Reserved 4

Cryptographic coprocessors

- Cryptographic coprocessor 0
- Cryptographic coprocessor 1

Reserved CPs

General Processor Security Storage Options Load

Save Copy notebook Paste notebook Assign profile Cancel Help

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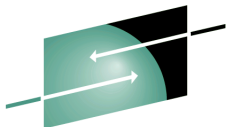
Fast Synchronous Data Mover Facility Replacement for ADMF

DB2 FSDMF APAR - PQ38174

- zSeries - Required
- G5/6 - Desirable



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SHARE

Image Profile, Storage

Expanded Storage

- Supported by z/Architecture
- Not used - zSeries CFCC, 64-bit OS/390 R10, z/OS, and z/OS.e

Customize Activation Profiles : KSYS

Central storage

Amount (in megabytes)

Initial

Reserved

Storage origin

Determined by the system

Determined by the user

Origin

Expanded storage

Amount (in megabytes)

Initial

Reserved

Storage origin

Determined by the system

Determined by the user

Origin

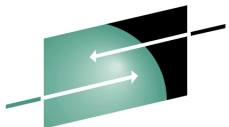
128 MB Storage Granularity (allows up to 65536 MB total storage)

General Processor Security Storage Options Load

Save Copy notebook Paste notebook Assign profile Cancel Help

KSYS
KSYS:CF01
KSYS:CF02
KSYS:CF03
KSYS:CF04
KSYS:OSP1
KSYS:OSP2
KSYS:OSP3
KSYS:OSP4
KSYS:OSP7
KSYS:OSP8
KSYS:OSP9
KSYS:OSPA
KSYS:OSPB
KSYS:OSPC
KSYS:OSPD

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S H A R E

z900 Concurrent Memory Upgrade

Memory Card Size and Number

Concurrent Memory Upgrade

- LIC CC memory activation
- From current size to any size supported by cards installed (card change is disruptive)
- Add to partition using DSR/2 (MVS only) - Central or Expanded

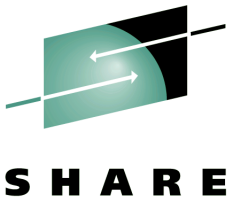
Pre-Requisites

- z900 Server, LPAR Mode
- Predefine additional storage to partitions - Reserved Storage
- Predefine storage granularity if it would change

Note: No CBU for memory

Storage	Models 100-109	Models 110-116	Models 1C1-1C9
5 6 7 8	4 GB x 2	Not Offered	Not Offered
10 12 14 16	8 GB x 2	4 GB x 4	4 GB x 4
18 20 24 28 32	16 GB x 2	8 GB x 4	8 GB x 4
40 48 56 64	Not Offered	16 GB x 4	16 GB x 4

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zSeries Storage Granularity

zSeries and G5/6 (Dr 22e and later)

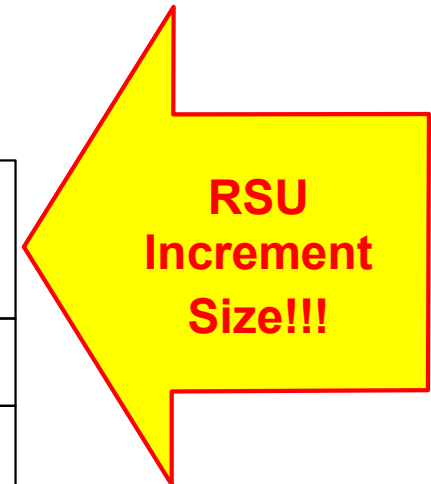
- Single Storage Pool - All central storage
- ES configured as needed from central

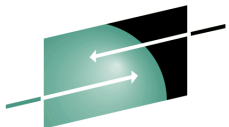
Earlier Machines

- CS/ES split occurs at CEC activate (POR)

Granularity: (Was 1 MB prior to G3 Dr 88)

Total Storage G5/6 or zSeries	Granularity CS & ES
5 - 8 GB	16 MB
10 - 16 GB	32 MB
18 - 32 GB	64 MB
40 - 64 GB	128 MB





S H A R E

MVS RSU Parameter

In IEASYSxx. Specifies the number of central storage **increments** to be made available for central storage reconfiguration

- MVS attempts to keep this area free of long term fixed pages

$$\text{RSU} = \frac{\text{CS amount to be reconfigured}}{\text{storage increment size}}$$

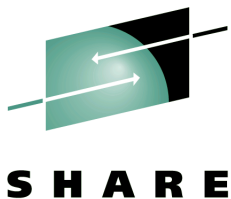
Or: Storage to be kept free = RSU * **increment**

- If memory is upgraded, **check the RSU parameter!**

OS/390 V2.10 and z/OS - Better RSU Options

- All OFFLINE storage (Reserved Storage)
- An amount (% , MB or GB) - System calculates increments

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Linux Mode Partition Selection

Customize Activation Profiles : KSYS

Description: LINUX for zSeries

Partition identifier: 1

Mode: ESA/390, ESA/390 TPF, Coupling facility, **LINUX Only**

Clock type assignment:
 Standard time of day
 Logical partition sysplex timer offset
 Participate in the sysplex test datesource group

Profiles list:
KSYS
KSYS:CF01
KSYS:CF02
KSYS:OSP1
KSYS:OSP2
KSYS:OSP3
KSYS:OSP4
KSYS:OSPX
KSYS:OSPB
KSYS:OSPC

General | Processor | Security | Storage | Options | Load

Save | Copy notebook | Paste notebook | Assign profile | Cancel | Help

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Linux Mode Processor Assignment

Note: To PR/SM IFL = ICF

Customize Image Profiles: BSYS

Logical processor assignment

- Dedicated central processors
- Dedicated integrated coupling facility processors
- Not dedicated central processors
- Not dedicated integrated coupling facility processors

Not dedicated central processor details

Initial processing weight 1 to 999 Initial capping

Number of processors - Initial Reserved

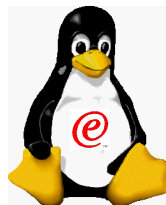
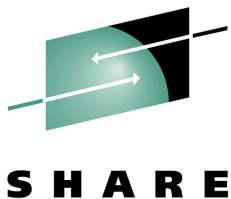
Cryptographic coprocessors

- Cryptographic coprocessor 1
- Cryptographic coprocessor 0

Enable asynchronous data mover (ADM) facility

General Processor Security Storage Load

Save Copy notebook Paste notebook Cancel Help



Load from CD-ROM or Server

KSYS: Primary Support Element Workplace (Version 1.7.1)

Views

- Groups
- Exceptions
- Active Tasks
- Console Actions
- Task List
- Books

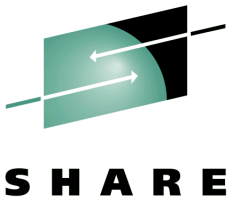
Images Work Area

- CF01
- CF02
- OSP1 (WSCZPLEX:SYSA)
- OSP2 (WSCZPLEX:SYSB)
- OSP3
- OSP4
- OSPB (ZVMV3R10)
- OSPC (ZVMV3R10)
- OSPX

CPC Recovery

- Hardware Messages
- Operating System Messages
- Start all
- Stop all
- Reset Normal
- Reset Clear
- Load
- Power-on Reset
- Load from CD-ROM or Server
- Help

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Load from CD-ROM or Server

KSYS: Primary Support Element Workplace (Version 1.7.1)

Load from CD-ROM or Server Task Confirmation

Load from CD-ROM or server will cause jobs to be cancelled.
Do you want to continue with this task?

Object names

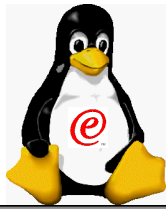
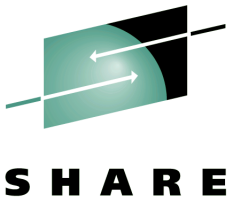
OSPC

Yes No Help

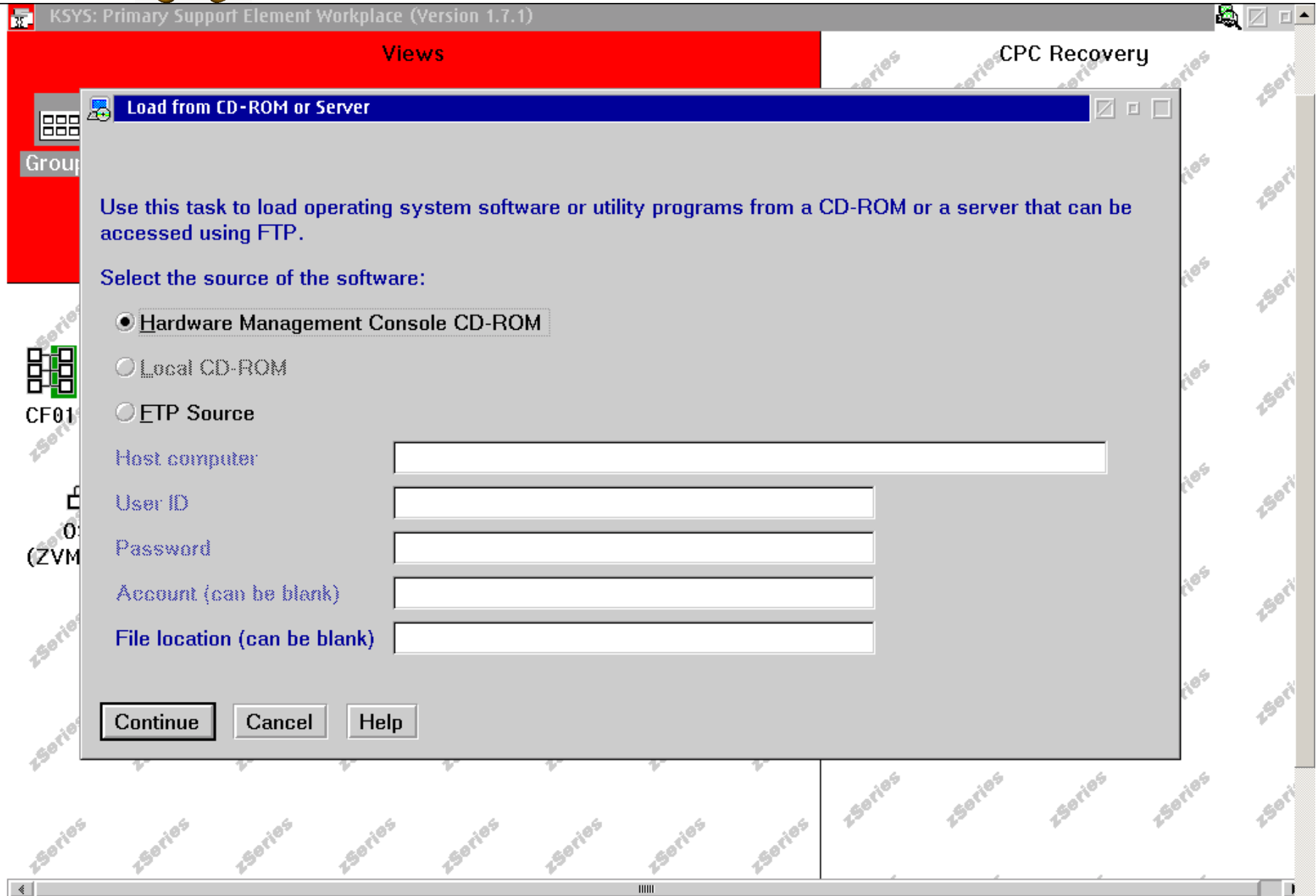
CPC Recovery

- Hardware Messages
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Load from CD-ROM or Server



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