

# HMC (Hardware Management Console) & SE (Support Element) 2.13.0 available with IBM z13 GA1

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*SHARE in Orlando*

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# Topics

## ■ Backup

### ▶ Additional IBM z13 HMC/SE Features

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# IBM z13

## HMC 2.13.0 System support

- The new HMC Version 2.13.0 will support the systems/SE (Support Element) versions shown in the table
  - ▶ This HMC 2.13.0 Release will support z13, zBX Node, & Legacy systems
  - ▶ z900/z800 (Driver 3G, SE version 1.7.3) & z990/z890 (Driver 55, SE version 1.8.2) systems are no longer supported.

Machine Family	Machine Type	Firmware Driver	SE Version	Ensemble Node Potential
z13	2964	22	2.13.0	Yes
zBX Node	2458 Mod 004	22	2.13.0	Required
zBC12	2828	15	2.12.1	Yes
zEC12	2827	15	2.12.1	Yes
z114	2818	93	2.11.1	Yes
z196	2817	93	2.11.1	Yes
z10 BC	2098	79	2.10.2	No
z10 EC	2097	79	2.10.2	No
z9 BC	2096	67	2.9.2	No
z9 EC	2094	67	2.9.2	No

## General HMC/SE Support for IBM z13

- ▶ **More partitions:**
  - **Max 85 Partitions**
  - **85 partitions possible with more CSSes (from 4 to 6) supported**
  
- ▶ **More Physical Memory: 10 TB**
  - **The partition memory limit**
    - **10 TB – no Feature Code 4008 I/O drawers**
      - ◆ **using FC 4012 PCIe I/O drawers and/or Coupling I/O wo FC 4008**
    - **1 TB – if FC 4008 I/O drawer exists**
  - **Partition memory granularity updated for up to 10 TB**
    - **see next chart**
  
- ▶ **More Processors: 168 PUs; up to 141 CPs**
  
- ▶ **zAAP processor type is no longer supported**
  - **zIIP processor assumes workload usage for zAAP**

# IBM z13 Storage Granularity

- If a **user specified origin** is defined for a logical partition's **central storage**,
  - ▶ the **origin, initial**, and optional **reserved** (additional) central storage values for the logical partition must all use at least **2 GB (2048 MB) granularity**. It may be larger, refer to the table below.
- If a user specified origin is **not** defined for a logical partition's central storage (system determined),
  - ▶ following **table defines the granularity requirement** for the logical partition's initial and optional reserved central storage values. This is driven off the larger of the initial and reserved values: (LCSA in the table):
- **Note: Expanded Storage granularity always 512 MB**

Largest Central Storage Amount Specified (Initial and Reserved)	Storage Granularity Required
LCSA $\leq$ 256 GB	512 MB
256 GB < LCSA $\leq$ 512 GB	1,024 MB (1 GB)
512 GB < LCSA $\leq$ 1,024 GB	2,048 MB (2 GB)
1,024 GB < LCSA $\leq$ 2,048 GB	4,096 MB (4 GB)
2,048 GB < LCSA $\leq$ 4,096 GB	8,192 MB (8 GB)
4,096 GB < LCSA $\leq$ 8,192 GB	16,384 MB (16 GB)
8,192 GB < LCSA $\leq$ 10,240 GB	32,768 MB (32 GB)

# 1U HMC



# HMC 1U Server Hardware Option for IBM z'

## ► Approach

- Use same 1U server hardware as IBM z13 SE
- Additional hardware
  - 1U Slideout Keyboard/Display
  - Customer supplied rack and power solution

## ► Rack Mounted HW – additional option

## ► MiniTower Hardware continue to be provided as default z Systems HMC HW



## ► Availability

- Order 1U HMC & keyboard/display through z Systems
- Order 1U HMC as a feature of zBX Node or IBM z13
  - Cannot be ordered as a feature code of any legacy system
    - ◆ I.e., unavailable as feature of a zEC12

## IBM z13 GA1 HMC Supported Hardware

<b><i>Feature Code</i></b>	<b><i>System Name</i></b>	<b><i>Machine Type/Model Number</i></b>	<b><i>Form Factor</i></b>
0091	x3200 M3	7327-PAA	MiniTower
0092	x3300 M4	7382-PBC	MiniTower
0094	x3550 M4	7914-PKG	1U Server

# Alternative to USB Flash Drive

# Introducing an Alternative to USB Flash Memory

- **USB Flash Memory Drives used on HMC/SE**
  - ▶ Backup Critical Data
  - ▶ Import/Export Data
  - ▶ Offload Security and Audit Data
  - ▶ etc.
- **Most customers will continue to allow USB usage**
- **Some customers have policies of no R/W media**
  - ▶ Introducing Alternatives to USB for those customers
  - ▶ USB no longer needed once Code 20 complete for IBM z13
  - ▶ **Feature Code: 0845 'Read-Only Media Option'**
    - Will be option on certain eConfig selections
    - Will Drive R/O media to be shipped rather than USB
  - ▶ Alternative Options such as FTP Servers, Using Remote Browser from Workstation for Import/Export, etc.
    - Customer Publications will include table with all USB Alternatives per task
- **Legacy systems will still have USB requirement**
  - ▶ ie., Backup Critical Data

# HMC Data Replication Versioning

## Overview

- **Data replication...**
  - ▶ **Is an HMC task and underlying communication framework**
  - ▶ **Allows the exchange of configuration data between linked machines**
    - **'customer information'**
    - **'user profile data'**
    - **etc**
  - ▶ **Can be disabled preventing this exchange**
  - ▶ **Exchanges of data (inbound and outbound) are logged**

# Configure Data Replication task

haw: Configure Data Replication - Mozilla Firefox

127.0.0.1:8080/hmc/wcl/T9a

## Configure Data Replication

One or more problems exist. Click Status for details.

*Customizable Data Replication*

Enable  Disable

*Data Source(s)*

mjhtp

New

Delete

*Customizable Data Types*

Select	Data Types
<input checked="" type="checkbox"/>	Customer Information Data
<input type="checkbox"/>	Group Data
<input type="checkbox"/>	Remote Service Data
<input type="checkbox"/>	User Profile Data
<input type="checkbox"/>	Monitor System Events Data

*Local Customizable Data Change Warnings*

Select the customizable data types that should generate warnings when that type of data is manually changed on this Hardware Management Console and are also configured to be replicated from one or more data sources.

Select	Data Warning Types
<input type="checkbox"/>	Customer Information Data
<input type="checkbox"/>	Group Data
<input type="checkbox"/>	Remote Service Data
<input type="checkbox"/>	User Profile Data
<input type="checkbox"/>	Monitor System Events Data

OK Apply Cancel Push to Slaves Sync from Master Status Help

## IBM z13 GA1 => Versioning Implications

- **Data Replication versioning introduced for different data types**
  
- **If Data Replication used:**
  - ▶ **All HMCs to be included in DataRep must be upgraded to HMC 2.13.0 level (IBM z13 HMC level)!!!**
    - **No data will be replicated if not at 2.13.0**
    - **z13 HMC Upgrade order:**
      - **Recommend doing an existing HMC MES first**
      - **See next chart**
  - ▶ **Prior to 2.13.0, can have mixed HMC levels**
  - ▶ **Future 2.13.0 plus levels can also have mixed levels**
    - **Only if versioning changed, would need to update to certain HMC levels**
      - **Expect this to be somewhat an exception**
  
- **General recommendation to upgrade HMCs to newest**
  - ▶ **With understanding of potential change to HMC hardware in some cases**



# IBM z13 GA1 => Versioning Implications

## ■ HMC 2.13.0 Upgrade Considerations:

### ▶ Assuming Redundant Master HMCs on 2.12.1 or earlier

#### 1) MES Upgrade one existing HMC Master to 2.13.0

- Will carry forward User Information, Grouping Data, etc.

#### 2) Maintain the other 2.12.1/earlier Master at current level

#### 3) Install any new 2.13.0 HMCs

- point them to replicate from 2.13.0 Master

#### 4) MES upgrade remaining 2.12.1/earlier HMCs (not the Master) to 2.13.0

- They will replicate from 2.13.0 Master automatically

#### 5) Lastly update 2.12.1/earlier Master to 2.13.0

#### 6) Point new footprint HMCs to replicate from second Master (last upgrade)

### ▶ Shouldn't have to change definitions other than for new footprint HMCs

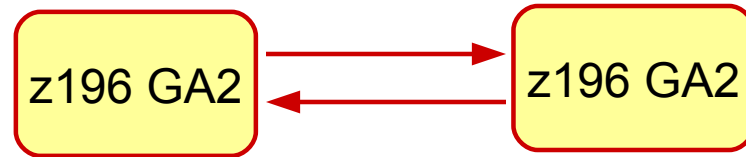
### ▶ Two HMC Groups stay in sync until all are on 2.13.0

- 2.13.0
- 2.12.1/earlier
- All eventually replicate/get any updated data from 2.13.0 Master

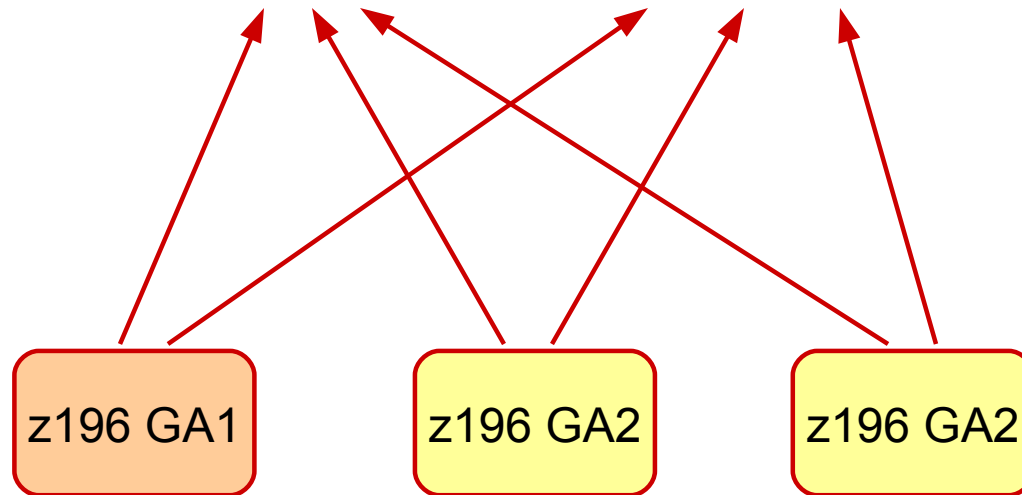
An arrow 'points at' a master...

## Example

Cooperating, redundant  
masters



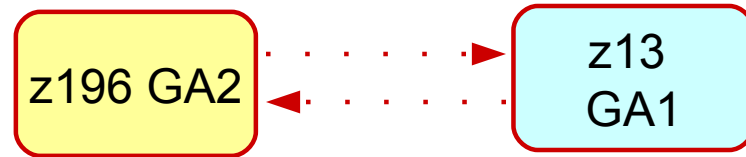
Slaves



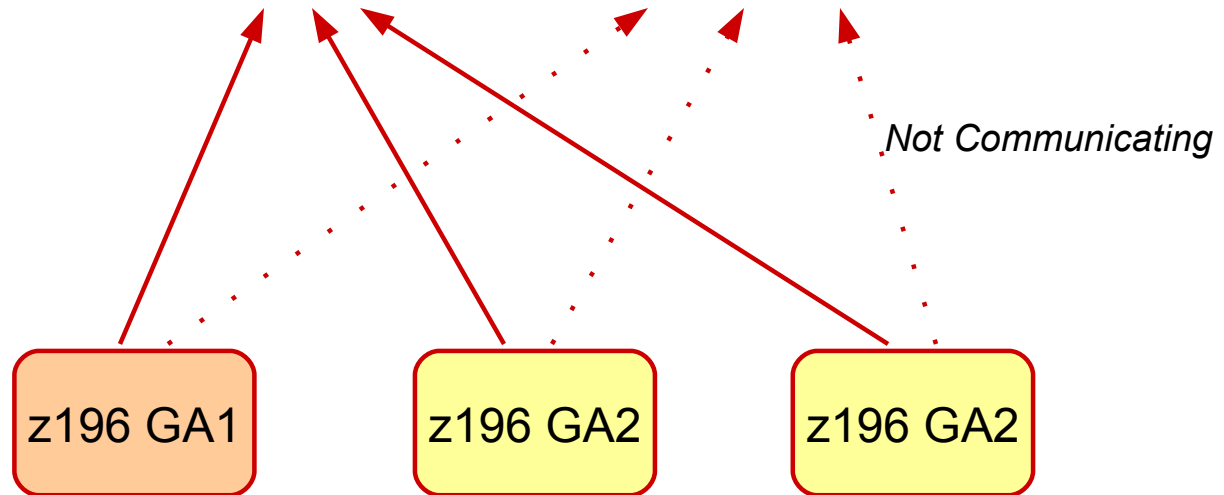
An arrow 'points at' a master...

# Example...

Masters...



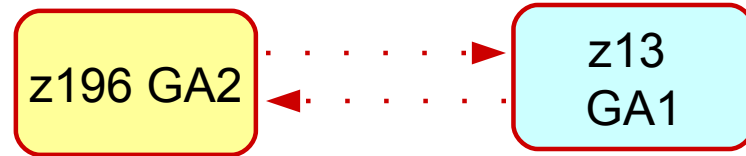
Slaves



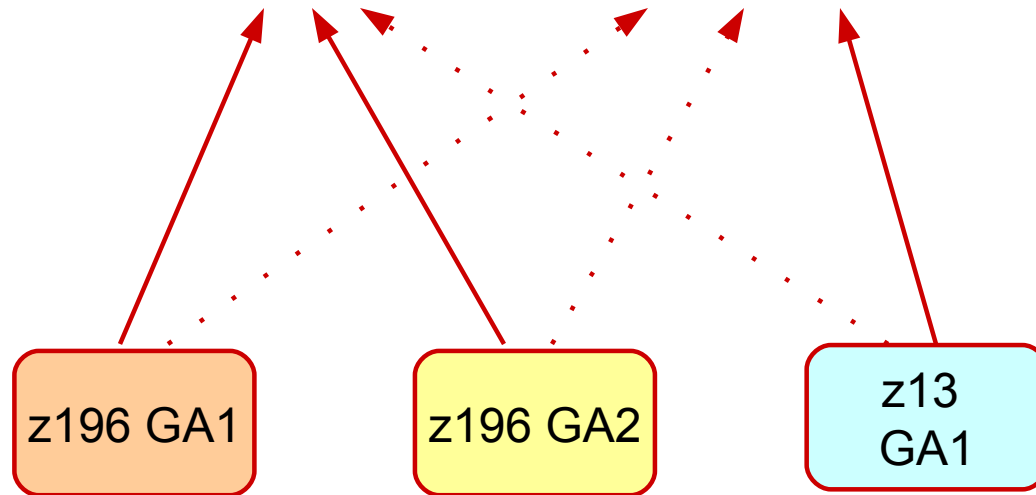
An arrow 'points at' a master...

# Example...

Masters...



Slaves



# Potential IBM z13 GA2/beyond Simulated Conflict

hawk: Configure Data Replication - Mozilla Firefox  
127.0.0.1:8080/hmc/wcl/T8f

## Data Replication Status

Data Types

Name	Local Level	Bound to a Master	Updated Since Console Start	Status
Customer Information Data	31	Yes	No	OK
Group Data	0	No	No	OK
Remote Service Data	0	No	No	OK
User Profile Data	0	No	No	Conflict
Monitor System Events Data	0	No	No	OK
Acceptable Status Settings	0	No	No	OK
Outbound Connectivity Data	0	No	No	OK
Object Locking Data	0	No	No	OK
Associated Activation Profiles	0	No	No	OK

Data Type Conflicts

Data Source	Data Type	Local Version	Available Version	Status
mjhttp	User Profile Data	7	1	Version Conflict

Slaved HMC Violations  
All known slave HMCs are at appropriate levels.

ACT05012

Close

# HMC Time Synchronization

## Prior HMC time source configuration

- HMCs had two choices for a time source:
  - ▶ 1) NTP enabled on HMC
    - Configured on Customize Date and Time panel
    - HMC's clock in synch with NTP time source's clock
    - Preferred method of setting HMC time when running STP

Customize Console Date and Time - Mozilla Firefox: IBM Edition

https://9.60.15.40/hmc/wcl/T2a5d

**Customize Console Date and Time**

Customize Date and Time | **Configure NTP Settings**

NTP servers :

Select	Server	Stratum	Source	Status	Authentication
<input type="checkbox"/>	1.us.pool.ntp.org	2	147.84.59.145	Success	none
<input type="checkbox"/>	0.us.pool.ntp.org	2	209.51.161.238	Success	none
<input type="checkbox"/>	9.60.15.64			Timeout failure	none
<input type="checkbox"/>	209.51.161.238	1	CDMA	Success	none
<input type="checkbox"/>	69.36.224.15	1	GPS	Success	none
<input type="checkbox"/>	clock.nyc.he.net	1	CDMA	Success	none

Total: 6 Filtered: 6 Selected: 0

The Network Time Protocol service is currently enabled and this console is currently a Network Time Protocol server.

Enable NTP service

Enable as time server

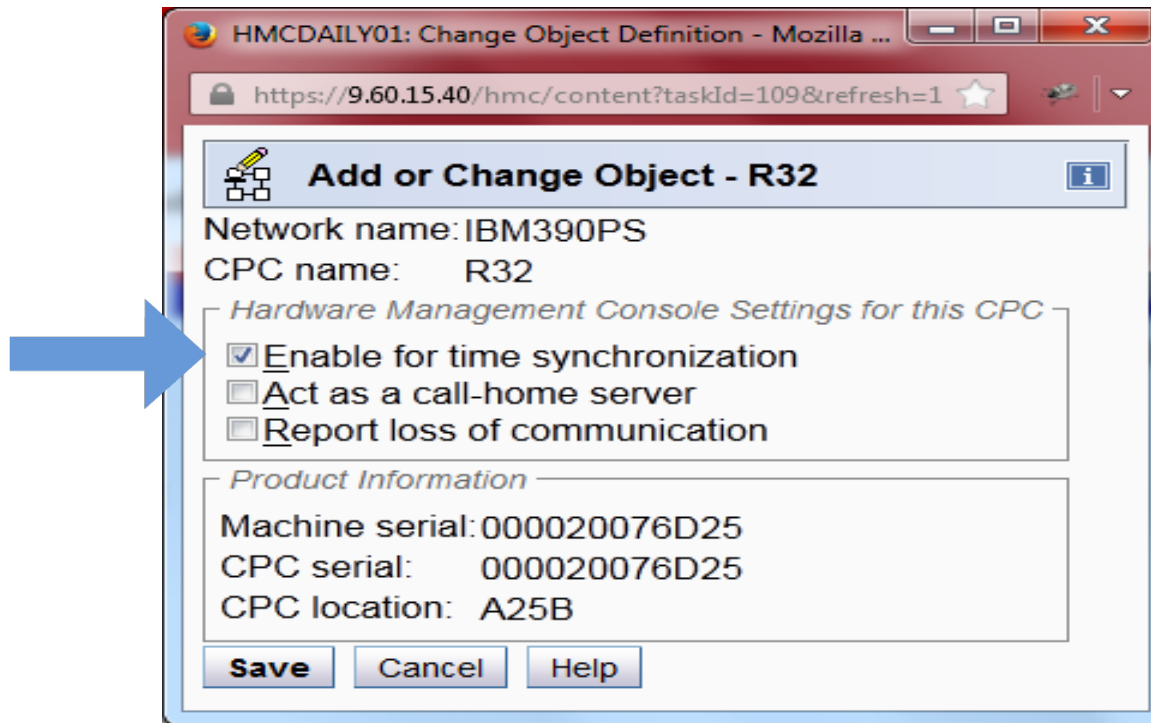
If NTP servers cannot be reached, contact the IBM Service Support System

Manage Symmetric Keys ... | Configure Autokey ... | Issue NTP Commands ...

OK | Cancel | Help

## Prior HMC time source configuration (cont'd)

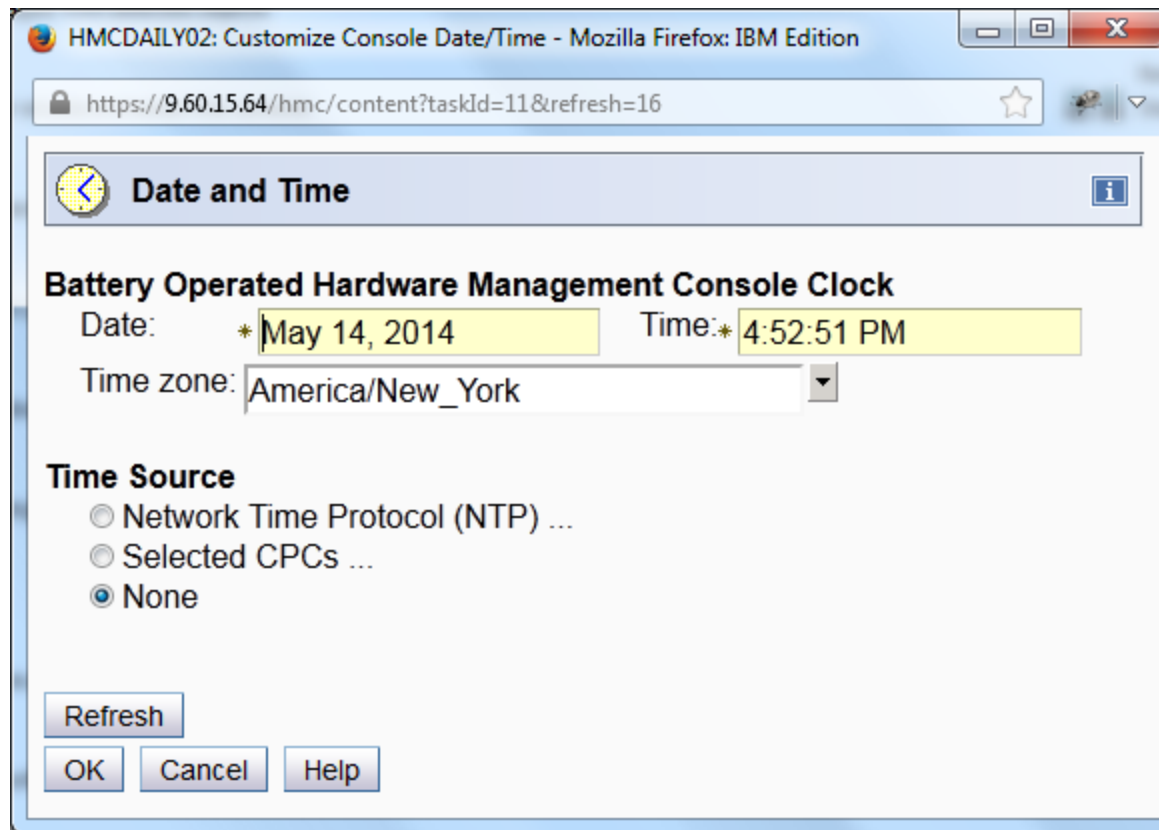
- ▶ 2) NTP not enabled on HMC - time retrieval from selected CPCs
  - Selection of CPC time sources only done when adding or changing CPC objects on the HMC
  - Verification of CPC time sources through change CPC object panel
  - HMC time synchronized once per day





## HMC time source configuration for IBM z13

- HMC Customize Console Date and Time panel redesigned
  - ▶ Clear selection of HMC time source
  - ▶ Manual setting of date and time only when Time Source set to None



# HMC time source configuration for IBM z13 (cont'd)

## ► NTP still supported

**Date and Time**

**Battery Operated Hardware Management Console Clock**

Date: \*May 16, 2014 Time: \*10:03:16 AM

Time zone: America/New\_York

**Time Source**

- Network Time Protocol (NTP) ...
- Selected CPCs ...
- None

**Details for Network Time Protocol (NTP)**

NTP Servers

Select	Server	Str
<input type="checkbox"/>	2.us.pool.ntp.org	2

Total: 1

Enable as time server

Automatically contact IBM

Refresh

OK Cancel Help

--- Select Action ---

- Select Action ---
- Edit Server ...
- Remove Server
- Add Server ...
- Query Servers
- Manage Symmetric Keys ...
- Configure Autokey ...
- Issue NTP Commands ...
- **Table Actions** ---
- Select All

Authentication

one

source cannot be reached

## HMC time source configuration for IBM z13 (cont'd)

- ▶ **Added configuration support for time retrieval from selected CPCs**
  - **One location for configuration and checking all CPCs used as a time source**
  - **Additional checks added to promote homogenous time sources when using multiple CPCs as time sources (same STP CTN)**
    - **Warning if not same CTN (Coordinated Timing Network) sources selected**

HMCDAIY03: Customize Console Date/Time - Mozilla Firefox: IBM Edition

https://9.60.14.37/hmc/content?taskId=2198&refresh=334

**Date and Time**

**Battery Operated Hardware Management Console Clock**

Date: \* July 21, 2014 Time: \* 12:06:35 PM

Time zone: America/New\_York

**Time Source**

Network Time Protocol (NTP) ...  
 Selected CPCs ...  
 None

**Details for Selected CPCs**

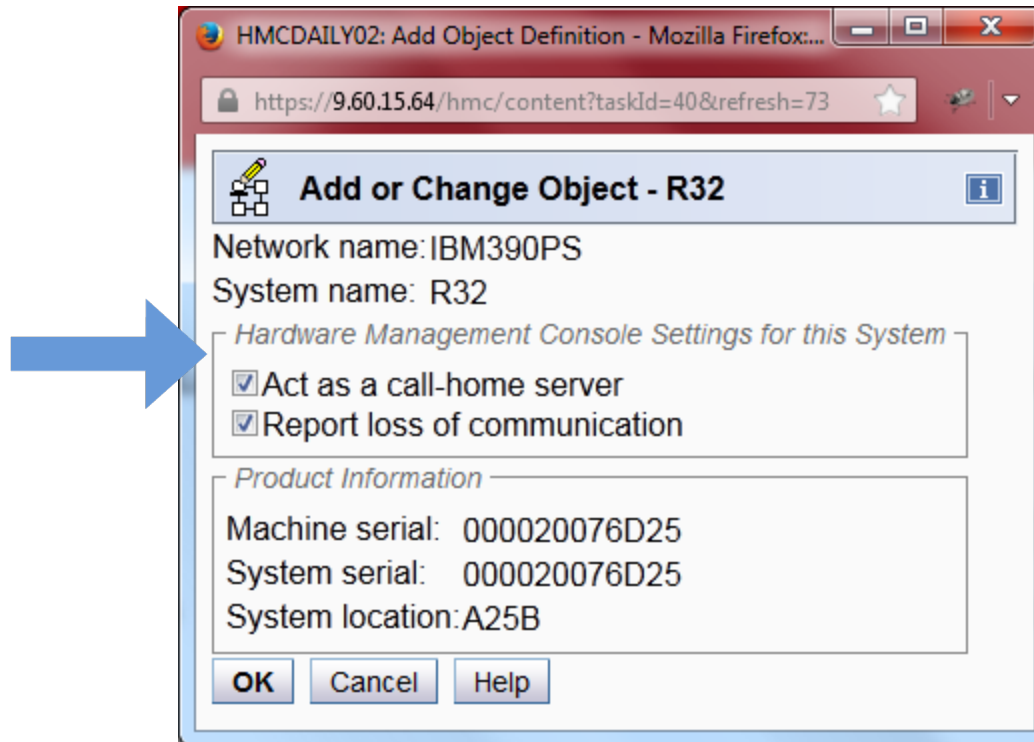
Select	Name	Coordinated Timing Network ID	Status
<input checked="" type="checkbox"/>	R32	01234567	Operating
<input checked="" type="checkbox"/>	S32	01234567	Service required
<input type="checkbox"/>	KATRINA		Not operating

Automatically contact IBM Hardware Support if the time source cannot be reached

Refresh OK Cancel Help

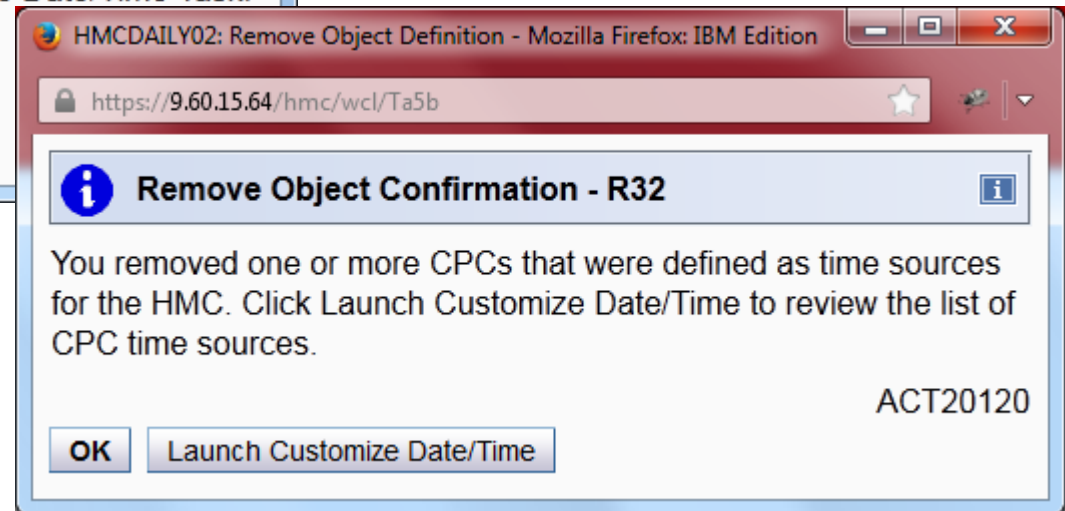
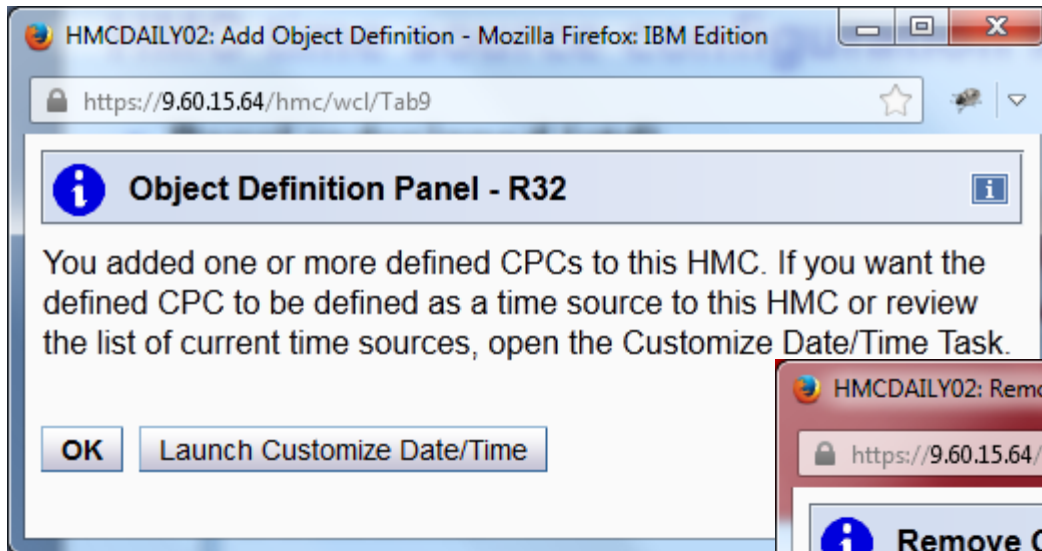
## HMC add/change CPC object

- **CPC selected for Add [Change] Object Definition task**
  - ▶ **“Enable for time synchronization” checkbox removed**
    - **Selection of CPC as a time source moved to Customize Console Date/Time task**



## HMC add/remove CPC object

- **CPC selected for Add [Remove] Object Definition task**
  - ▶ **After operation confirmation, panel displayed to allow configuration of CPC as a time source if HMC is not configured for NTP**



# Monitors Dashboard

## Monitors Dashboard Complete Functionality

- **Monitors Dashboard**
  - ▶ **Introduced for z196 as new and improved display of system activity**
- **For z13 drop support for classic SAD and SAD Profiles**
  - ▶ **Tasks can still be launched for older systems**
- **Monitors Dashboard enhanced**
  - ▶ **Logical partition activity by processor type**
    - **New fields for z13 system only**
  - ▶ **Processor activity by keys**
    - **Supervisor state and problem state for each key**
    - **New panel for z13 system only**

# Launching Classic SAD and Profiles

Monitors Dashboard

Pause Display   Open Workloads Report   Open Network Monitors Dashboard

Overview

Select	Name	Type	Machine Type - Model	Processor Usage (%)	I/O Usage (%)	Power Consumption (kW) (Btu/hr)	Ambient Temperature (°C) (°F)
<input type="checkbox"/>	R32	CPC	2817 - M15		1	0   10.598   36,162	23.5   74.3
<input type="checkbox"/>	S32	CPC	2965 - N10		0	0   4.079   13,918	28.1   82.58

Page 1 of 1   Max Page Size: 100   Total: 2   Filtered: 2   Displayed: 2   Selected: 0

Details

- zEC12 → R32
- z13 → S32
- SAD Profiles → R32
- Detailed Settings for Monitors Dashboard → S32

Close   Help



# Logical partition activity by processor type

Logical Partitions

-- Select Action --    Filter

Select ^	Name ^	All Processor Usage(%) ^	CP Processor Usage(%) ^	IFL Processor Usage(%) ^	ICF Processor Usage(%) ^	ZIIP Processor Usage(%) ^
<input type="checkbox"/>	CF01		30	0	0	0
<input type="checkbox"/>	LP01		5	0	5	0
<input type="checkbox"/>	LP02		26		20	0

Page 1 of 1    Max Page Size: 100    Total: 3    Filtered: 3    Displayed: 3    Selected: 0

## Processor activity by keys

lavinjr: Monitors Dashboard - Mozilla Firefox: IBM Edition

9.60.73.65:8080/hmc/content?taskId=6&refresh=14

### Processor Usage by Key - S32:IFP48

Key	Total Usage (%)	Supervisor State Usage (%)	Problem State Usage (%)
0	2	1	1
1	0	0	0
2	0	0	0
3	0	0	0
4	0	0	0
5	0	0	0
6	0	0	0
7	0	0	0
8	1	1	0
9	0	0	0
A	0	0	0
B	0	0	0
C	0	0	0
D	0	0	0
E	0	0	0
F	0	0	0

Total: 16

Close Help

# Trusting Computing Boot from Media Protection

## Trusted Computing – Boot from Media Protection

- **z Systems Firmware protected on delivery – Digital Signatures**
- **Trusted Computing – protection against subsequent tampering**
- **Boot from removable media disabled on the HMC/SE consoles**
  - ▶ **can be changed via uEFI/BIOS configuration change (IBM SSR action)**
    - **necessary for tasks that require booting from removable media**
      - Engineering Change (EC) Upgrade; Restore of Save/Restore data
      - Hard Disk Restore (including Restore Critical Data)
      - Hard Disk Repair during a Repair and Verify procedure
      - Alternate HMC Preload (HMC only)
    - **must be changed back to the default when finished**
    - **documented in “z Systems Service Guide for HMCs and SEs”**
    - **helps protect against unauthorized booting from an OS on a bootable removable media device**
      - **for additional protection, customer can set an admin PW for the uEFI/BIOS**
        - ◆ **If done, SSR will need customer input for above service actions where boot from media needs to be enabled**

# Remote Browser Support

# Remote Browser Support

<b><u>Remote Browser</u></b>	<b>HMC 2.13.0</b>	<b>HMC 2.12.1</b>	<b>HMC 2.12.0</b>
<b>IE (Internet Explorer)</b>	Version 10 & 11	Version 8, 9, & 10	Version 8 & 9
<b>Firefox</b>	Version 24.8 & 33	Version 17.5 & 21	Version 10
<b>Google Chrome</b>	Version 38	Version 26	Version 20

- Remote Browser Workstation with JAVA 7.x or 8.x to HMC 2.13.0

## Remote Browser Support (cont.)

- **Using Java 8.x on remote workstation**
  - ▶ **If connecting to [HMC 2.13.0](#),**
    - **If using IP addresses in HMC url**
      - **Remote Browser connection will work**
        - ◆ **no customization required**
    - **If using Hostname in HMC url**
      - **Create Custom Java Policy on workstation**
        - ◆ **See next chart**
  - ▶ **If connection to [HMC 2.12.1/earlier](#),**
    - **Create Custom Java Policy on workstation**
      - **See next chart**

## Remote Browser Support (cont.)

### ■ Customization for Java 8.x on remote workstation to HMC 2.12.1

#### 1) Create a custom java policy file in the users home directory

- **Windows:** Save as C:\Users\\.java.policy
- **Linux:** Save as /home/<username>/.java.policy
- **Replace <address>** with the IP address or hostname of each HMC
- **Contents**
  - grant codeBase "https://<address>/-" {
  - permission java.awt.AWTPermission "accessClipboard";
  - permission java.net.SocketPermission "<address>:9960", "connect,resolve";
  - };

#### 2) Add the following line to the Java deployment preferences file

- deployment.security.use.user.home.java.policy=true
- **Windows:**
  - C:\Users\
- **Linux:** /home/<username>/.java/deployment/deployment.properties

#### 3) Close/restart the browser

- ▶ **Note:** “accessClipboard” line for “Copy” on Operating System Messages
  - **Regardless of Java level on workstation**



# Task User Experience Direction

# User Experience What's New – Design for Details Tasks

- No more tabs. All fields available in a single scrollable window
- Quickly jump from section to section with the navigation area links
- Collapse or expand sections

Role	Description
<input type="checkbox"/> All zCPC Managed Objects	All zCPC Managed Objects
<input type="checkbox"/> Access Administrator Tasks	Access Administrator Tasks

# User Experience What's New – Immediate Validation

- Where possible, validation will happen immediately as the user moves from field to field
- Immediate validation notifications will be non-intrusive
- Allows for faster feedback and smoother experience

Element Group Details - Front End Web Servers

General

Name: Front End Web Servers &

Description: Highest availability element group

Category: High Availability

Objectives

Default element group redundancy objectives for virtual servers:

When the number of available virtual servers falls below the minimum available, element group availability status will be 'Critical'

Minimum available virtual servers: 3

When the number of available virtual servers falls below the preferred available, element group availability status will be 'Exposed'

Preferred available virtual servers: 3

OK Apply Cancel Help

Element Group Details - Front End Web Servers

General

Name: Front End Web Servers

Description: Highest availability element group

Category: High Availability

Objectives

Default element group redundancy objectives for virtual servers:

When the number of available virtual servers falls below the minimum available, element group availability status will be 'Critical'

Minimum available virtual servers: 3

When the number of available virtual servers falls below the preferred available, element group availability status will be 'Exposed'

Preferred available virtual servers: 2

Preferred available virtual servers must be equal to or greater than minimum available.

OK Apply Cancel Help

# User Management Dashboard

## IBM z13 task example – User Management

- **Re-engineered user related tasks:**
  - ▶ **Consolidated user related tasks into a new User Management dashboard task**
    - **Replaces the following tasks:**
      - **User Profiles**
      - **Customize User Controls**
      - **Password Profiles**
      - **Manage Enterprise Directory Server Definitions**
      - **User Templates**
      - **User ID Patterns**
    - **New “consolidation” views available**
      - **E.g. viewing all tasks and objects permitted for a user**
    - **Existing permissions to replaced tasks, in custom user roles, are migrated to allow permission to equivalent function within the User Management dashboard**

## Security Enhancements – User Management (cont.)

- **Custom User Role Enhancements**
  - ▶ **Permission to custom groups of objects allowed**
    - e.g. Put a subset of “partition” resource objects into a group named “production partitions” and add the group to a custom user role
    - In prior releases, permission to each “partition” resource object had to be added to a custom user role
  - ▶ **Permission to a class of resources/objects allowed**
    - e.g. All partitions via object type “LPAR Image”
  - ▶ **Permission to resources/objects and tasks in the same role allowed**
    - e.g. Putting the “Activate” task and a specific “partition” resource object in a single custom user role
- **Please reference “Getting Started” scenarios**
  - ▶ **Sample scenarios for the new User Management controls**
  - ▶ **Located**
    - **Online Helps:** User Management task Help, Select link to “Getting Started”
    - **IBM Knowledge Center:** z Systems, z13, HMC tasks, User Mgmt task, “Getting Started” link
    - **See Next Chart for list of scenarios**

## User Management – Getting Started Scenarios

- **Create a new user based on a system default user**
- **Create a single customized role containing all desired task and object permissions**
- **Create a user who authenticates using an LDAP server**
- **Authenticate all employees using an LDAP server**
- **Verify who has permission to a task (for example, the Activate task)**
- **Verify who has access to a specific object**
- **Ensure all users are following your security standards for passwords**
- **Separate system resources between users**
- **Assign the view only variant of a task to a user (for example, the Hardware Messages task)**
- **Modify a user to grant remote access to the console**
- **Create a customized managed object role (similar to the approach available in HMC version 2.12.1)**
- **Create a customized task role (similar to the approach available with HMC version 2.12.1)**

Selected navigation icon designation

Navigation icons

Currently selected navigation icon

Action items

Object summary

Object list

Collapsible summary sections

The screenshot displays the 'User Management' interface. At the top, a navigation bar shows 'User Management' with a selected icon. Below this is a sidebar with navigation icons for 'Users', 'Roles', 'Patterns', 'Templates', 'Passwords', and 'LDAP'. The main content area is titled 'Users' and contains a list of users: ACSADMIN, ADVANCED, ENSADMIN, ENSOPERATOR, OPERATOR, SERVICE, and SYSPROG. The 'ACSADMIN' user is selected, and their summary is displayed on the right. The summary is titled 'Summary for ACSADMIN' and includes sections for General, Authentication, Roles, Groups, and Tasks. The 'General' section shows 'Description: Access administrator level user', 'Last logon: Feb 2, 2015 6:06:06 AM EST', and 'Disabled: No'. The 'Authentication' section shows 'Authentication type: Local' and 'Password rule: Basic'. The 'Roles' section lists 'Access Administrator Tasks' and 'All System Managed Objects'. The 'Groups' and 'Tasks' sections are also visible. At the bottom of the window are 'Close' and 'Help' buttons.



# User Management – Create **New Role**: task(s) per object(s) Activate for LP01

**New icon**

**User Management**

**Roles** View by: Roles | Objects | Tasks

**Users**

**Roles**

**Patterns**

**Templates**

**Passwords**

**LDAP**

- Access Administrator Tasks
- Advanced Operator Tasks
- All Resources
- All System Managed Objects
- BladeCenter Objects
- CIM Actions
- Defined System Managed Objects
- DPXI50z Blade Objects
- Energy Administrator Tasks
- Ensemble Administrator Tasks
- Ensemble Object
- I/O Adapter Objects
- I/O Administrator Tasks
- IBM Blade Objects
- IBM Blade Virtual Server Objects
- Operator Tasks
- Policy Administrator Tasks

### Summary for Access Administrator Tasks

- General**  
Description: Security administrator tasks used to configure and control access to machine resources and tasks  
Include all hosted objects: No
- Users**  
ACSADMIN
- User Templates**
- Groups**
- Tasks**  
Activity  
Add Object Definition  
Archive Security Logs  
Audit and Log Management  
Block Automatic Licensed Internal Code Change Installation  
Certificate Management  
Change Object Definition  
Configure Backup Settings

Close Help

# User Management – New Role wizard

**Specify the role name**

**Select the Activate row in the list of tasks**

**New Role**

Welcome

Name

**Role Name**

Enter a name and a description for the new role.

**Create Option**

New:

New based on:

**Role Details**

**Name:** Activate LP01

**Description:**

Associated system defined user role: Operator Tasks

**New Role**

Welcome

Name

**Select Tasks**

Select the tasks to be included in the role.

Name	Permitted Object Types	System Defined Roles	Description
<input type="checkbox"/> Access Removable Media	LPAR Image	Service Representative Tasks, System Programmer Tasks	Access Removable Media
<input checked="" type="checkbox"/> Activate	BladeCenter, DataPower X150z, Defined CPC, Defined zBX Node, LPAR Image, POWER Blade, POWER Virtual Server, System x Blade, System x Virtual Server, z/VM Virtual Machine, zhyp.lpar.name	Advanced Operator Tasks, Operator Tasks, Service Representative Tasks, System Programmer Tasks, Virtual Server Administrator Tasks, Virtual Server Operator Tasks	Make selected objects operational
<input type="checkbox"/> Activate (CIM)	Defined CPC	CIM Actions	Activate a temporary capacity record
<input type="checkbox"/> Activate Availability Policy	Workload Resource Group	Policy Administrator Tasks, Policy Operator Tasks	Set the active availability policy for the workload
<input type="checkbox"/> Activate Performance Policy	Workload Resource Group	Policy Administrator Tasks, Policy Operator Tasks	Set the active performance policy for the workload
<input type="checkbox"/> Activate Policies	Workload Resource Group	Policy Administrator Tasks, Policy Operator Tasks, Workload Administrator Tasks	Set the active performance and availability policies for the workload resource group
<input type="checkbox"/> Activity	Defined CPC	Access Administrator Tasks, Advanced Operator Tasks, Operator Tasks, Service Representative Tasks, System	Display processor and channel activity on selected CPCs

Total: 283 Selected: 1

Back Next Finish Cancel Help

# User Management – New Role wizard

The image shows two screenshots of the 'New Role' wizard. The left screenshot shows the 'Select Specific Objects' step with a list of objects. A blue callout bubble points to the 'D20BUSE:LP01' row, containing the text 'Select the LP01 row in the list of objects'. The right screenshot shows the 'Summary' step with a blue callout bubble pointing to the 'Finish' button, containing the text 'Click Finish to create the new role'.

**Select Specific Objects**

Select the objects to include in the role.

Name	Type	Description	Group	Object Type
<input type="checkbox"/> CEC15MCF	Defined CPC	Central Processing Complex (CPC)	CEC15MCF	CEC15MCF
<input type="checkbox"/> CEC21MCF	Undefined CPC	Central Processing Complex (CPC)	CEC21MCF	CEC21MCF
<input type="checkbox"/> CEC22MCF	Undefined CPC	Central Processing Complex (CPC)	CEC22MCF	CEC22MCF
<input type="checkbox"/> D20BUSE	Defined CPC	Central Processing Complex (CPC)	D20BUSE	D20BUSE
<input type="checkbox"/> D20BUSE:CF01	LPAR Image	LPAR Image	D20BUSE	D20BUSE
<input type="checkbox"/> D20BUSE:CF02	LPAR Image	LPAR Image	D20BUSE	D20BUSE
<input checked="" type="checkbox"/> D20BUSE:LP01	LPAR Image	LPAR Image	D20BUSE	D20BUSE
<input type="checkbox"/> D20BUSE:LP02	LPAR Image	LPAR Image	D20BUSE	D20BUSE
<input type="checkbox"/> D20BUSE:LP04	LPAR Image	LPAR Image	D20BUSE	D20BUSE
<input type="checkbox"/> D20BUSE:LP05	LPAR Image	LPAR Image	D20BUSE	D20BUSE
<input type="checkbox"/> D20BUSE:LP06	LPAR Image	LPAR Image	D20BUSE	D20BUSE
<input type="checkbox"/> D20BUSE:LP07	LPAR Image	LPAR Image	D20BUSE	D20BUSE
<input type="checkbox"/> D20BUSE:LP08	LPAR Image	LPAR Image	D20BUSE	D20BUSE
<input type="checkbox"/> D20BUSE:LP09	LPAR Image	LPAR Image	D20BUSE	D20BUSE
<input type="checkbox"/> D20BUSE:LP11	LPAR Image	LPAR Image	D20BUSE	D20BUSE
<input type="checkbox"/> D20BUSE:LP14	LPAR Image	LPAR Image	D20BUSE	D20BUSE
<input type="checkbox"/> D20BUSE:LP15	LPAR Image	LPAR Image	D20BUSE	D20BUSE
<input type="checkbox"/> D20BUSE:MCS_1	LPAR Image	LPAR Image	D20BUSE	D20BUSE
<input type="checkbox"/> D20BUSE:ZAWARE	LPAR Image	LPAR Image	D20BUSE	D20BUSE
<input type="checkbox"/> D20BUSE:ZAWARE2	LPAR Image	LPAR Image	D20BUSE	D20BUSE

Total: 98 Selected: 1

**Summary**

Verify the information and then click **Finish** to create the user role.

Name: Activate LP01  
 Description:  
 Associated system defined user role: Operator Tasks

**Tasks**

Name	Permitted Object Types	Description
Activate	BladeCenter, DataPower XI50z, Defined CPC, Defined zBX Node, LPAR Image, POWER Blade, POWER Virtual Server, System x Blade, System x Virtual Server, z/VM Virtual Machine	Make selected objects operational

Total: 1

Types - none selected

**Objects**

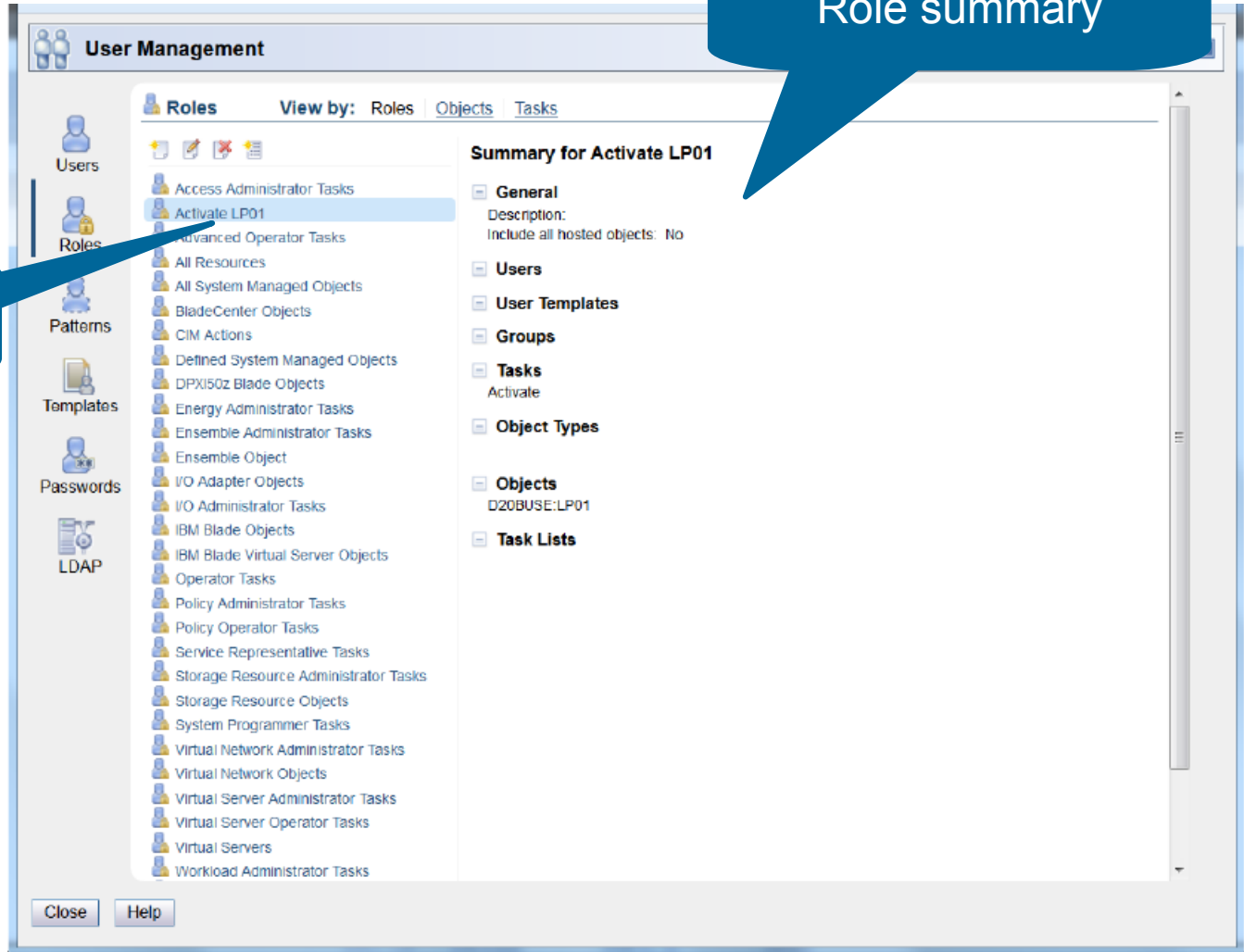
Name	Type	Description	Hypervisor
D20BUSE:LP01	LPAR Image	LPAR Image	D20BUSE

Buttons: Back Next **Finish** Cancel Help

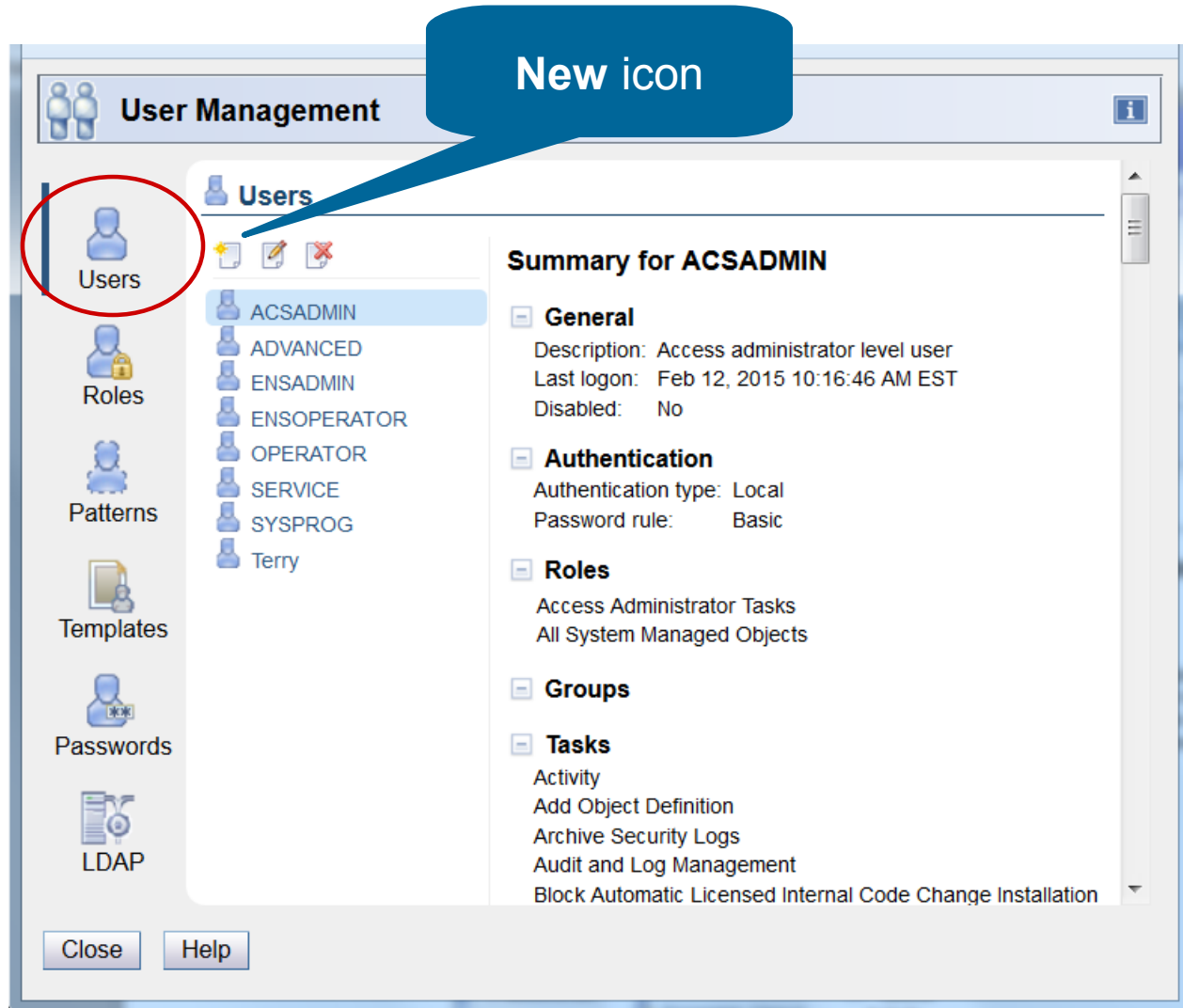
# User Management – dashboard shows the new role

Newly created role

Role summary



# User Management – Create **New User** utilizing new role Activate for LP01



# User Management – New User wizard

**New User**

Welcome

- Name
- Authentication
- Roles
- Summary

**Name User**

Enter a name and a description for the new user.

**Create Option**

- New:
- New based on:

**User Details**

- Name: John
- Description:

**New User**

Welcome

- Name
- Authentication
- Roles
- Summary

**Authentication**

Select an authentication type for the new user.

Type:

- Local authentication
  - Password rule: Standard
  - Password: [masked]
  - Confirm password: [masked]
  - Force user to change the password at next logon
- LDAP authentication
  - Server: LDAP-Server-1
  - User ID:

Back Next Finish Cancel Help

Specify the user name

Specify your desired authentication method

# User Management – New User wizard

The image shows two screenshots of the 'New User' wizard. The first screenshot shows the 'Select Roles' step where the 'Activate LP01' role is selected. A callout bubble points to this role with the text 'Select the Activate LP01 role'. The second screenshot shows the 'Summary' step where the user information is verified. A callout bubble points to the 'Finish' button with the text 'Click Finish to create the new user'.

**New User**

Welcome  
 Name  
 Authentication  
 Roles  
 Summary

**Select Roles**

Select one or more roles below to define access permissions.

Name	Description
<input type="checkbox"/> Access Administrator Tasks	Security administrator tasks used to configure and control access to machine resources and tasks
<input checked="" type="checkbox"/> Activate LP01	
<input type="checkbox"/> Advanced Operator Tasks	Operator Tasks role plus additional capabilities such as manage internal code change levels and channel configuration
<input type="checkbox"/> All Resources	All defined and undefined managed objects (includes all objects of all types)
<input type="checkbox"/> All System Managed Objects	All defined and undefined system managed objects (includes systems, LPAR images, and groups)
<input type="checkbox"/> BladeCenter Objects	Managed BladeCenter chassis objects
<input type="checkbox"/> CIM Actions	Tasks support APIs
<input type="checkbox"/> Defined System Managed Objects	All defined system managed objects (includes groups)
<input type="checkbox"/> DPX150z Blade Objects	IBM WebSphere (DataPower XI)
<input type="checkbox"/> Energy Administrator Tasks	Administrator tasks used to manage energy resources
<input type="checkbox"/> Ensemble Administrator Tasks	Administrator tasks used to manage Ensemble resources
<input type="checkbox"/> Ensemble Object	Managed object and Members
<input type="checkbox"/> I/O Adapter Objects	I/O Adapter Objects
<input type="checkbox"/> I/O Administrator Tasks	I/O Administrator Tasks
<input type="checkbox"/> IBM Blade Objects	Customer acquisition and management tasks

Total: 32 Selected: 1

**New User**

Welcome  
 Name  
 Authentication  
 Roles  
 Summary

**Summary**

Verify the information and then click **Finish** to create the user.

Name: John  
 Description:  
 Authentication:  
 Type: local  
 Password rule: Standard  
 Force user to change password at next logon: enabled

**Roles**

Name	Description
Activate LP01	

Total: 1

Back Next **Finish** Cancel Help

# User Management – dashboard shows the new user

The screenshot displays the 'User Management' interface. On the left, a navigation pane includes 'Users', 'Roles', 'Patterns', 'Templates', 'Passwords', and 'LDAP'. The 'Users' section is active, showing a list of users: ACSADMIN, ADVANCED, ENSADMIN, ENSOPERATOR, John, OPERATOR, SERVICE, SYSPROG, and Terry. 'John' is highlighted. A callout bubble points to 'John' with the text 'Newly created user'. The main area shows the 'Summary for John' configuration, which includes sections for General, Authentication, Roles, Groups, Tasks, Object Types, and Objects. A callout bubble points to the 'Roles' section, which lists 'Activate LP01', with the text 'Specifies the role assigned to John'. Another callout bubble points to the 'Tasks' section, which lists 'Activate', with the text 'Indicates the resultant task and object that John is granted permission by the assigned role'. A third callout bubble points to the 'Objects' section, which lists 'D20BUSE:LP01'. The interface also features 'Close' and 'Help' buttons at the bottom.

Newly created user

Specifies the role assigned to John

Indicates the resultant task and object that John is granted permission by the assigned role



# Security Auditing Enhancements

## Security Enhancements – Security Auditing

- **Audit, Security and Console Event Log Enhancements**
  - ▶ **Information about the “logged on” user responsible for the entry being added to the audit log, security log or console event log is recorded and displayed**
    - **includes:**
      - **user name**
      - **unique non-repeatable ID (UUID) for the user**
      - **what HMC the user logged on**
      - **the session ID associated with the logon**
      - **whether the logon was via the UI or via Web Services APIs**
    - **Shown on the details of a log entry**
  - ▶ **The text of the entries being logged has not been changed**
    - **the “logged on” user information is added to each log entry alongside the text**

## Security Enhancements – Security Auditing (cont.)

- Below is a screen capture of the View Security Logs task with the new “User” column

View Security Logs

File Search By Options Help

Select	User	Date	Security Event
<input type="radio"/>	ACSADMIN	5/9/14 08:04:17.750	User acsadmin has logged on from location adminib-0jovlr9.endicott.ibm.com [9.60.92.186] to session id 4. The user's maximum role is "Access Administrator Tasks".
<input type="radio"/>	ACSADMIN	5/9/14 08:03:49.730	*The user profile ACSADMIN was changed.
<input type="radio"/>	ACSADMIN	5/9/14 08:02:53.300	User acsadmin has logged on from the console to session id 3. The user's maximum role is "Access Administrator Tasks".
<input type="radio"/>		5/9/14 08:01:55.500	User acsadmin was not permitted to log on since the userid is not allowed remote access.
<input checked="" type="radio"/>		5/9/14 05:35:42.410	An upgrade to EC level N98230 was performed.

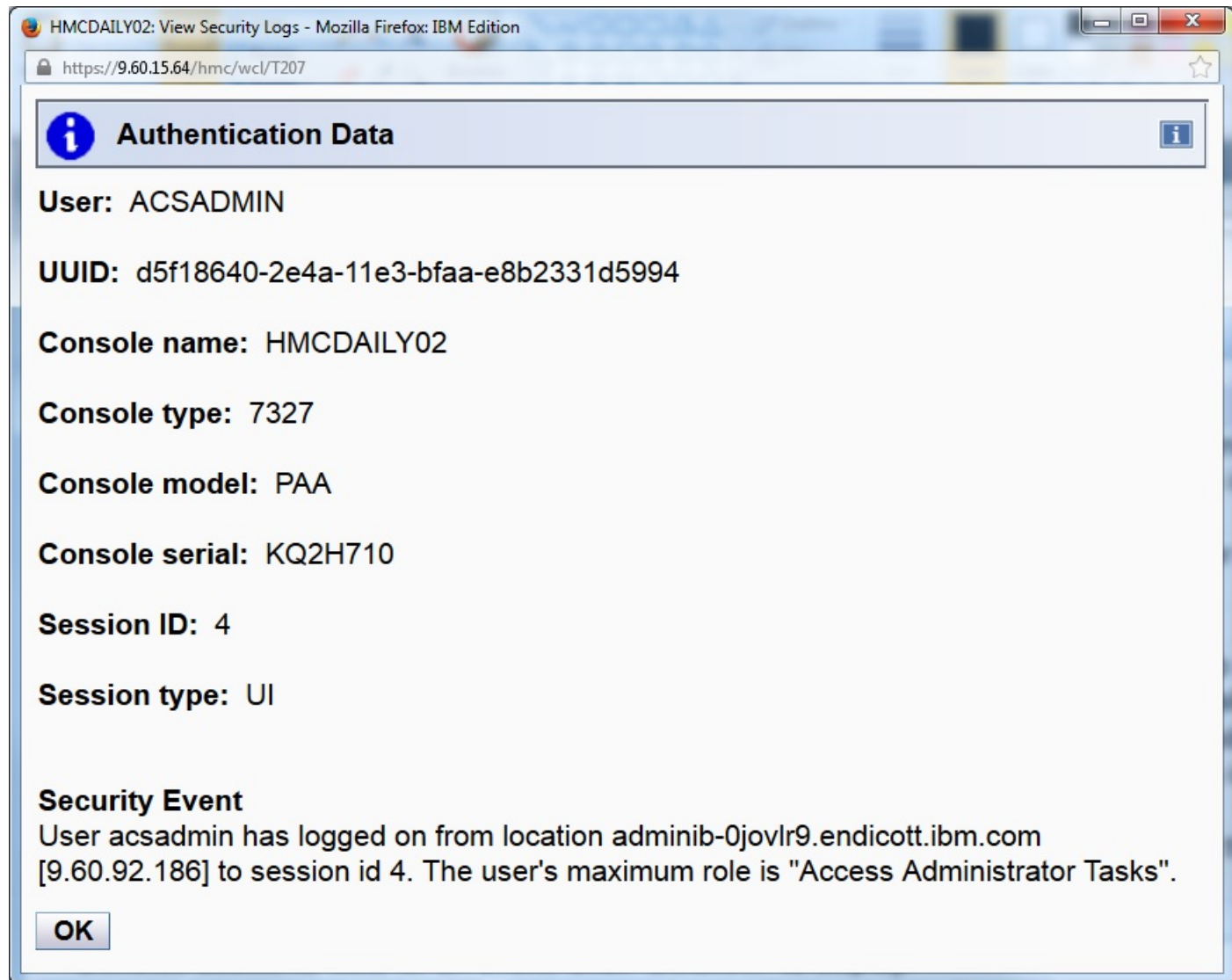
\* - Denotes additional data for an event. Click "Details..." to display.

Details... Authentication Data... Show Earlier Events Show Later Events

Security log is 1% full

## Security Enhancements – Security Auditing (cont.)

- View when “Authentication Data” button pressed on previous screen shot



The screenshot shows a browser window titled "HMCDAILY02: View Security Logs - Mozilla Firefox: IBM Edition" with the address bar displaying "https://9.60.15.64/hmc/wcl/T207". The main content area is titled "Authentication Data" and contains the following information:

- User: ACSADMIN
- UUID: d5f18640-2e4a-11e3-bfaa-e8b2331d5994
- Console name: HMCDAILY02
- Console type: 7327
- Console model: PAA
- Console serial: KQ2H710
- Session ID: 4
- Session type: UI

Below this information is a section titled "Security Event" with the text: "User acsadmin has logged on from location adminib-0jovlr9.endicott.ibm.com [9.60.92.186] to session id 4. The user's maximum role is "Access Administrator Tasks"."

An "OK" button is located at the bottom left of the window.

# Log Consumability



- **Console generates XML document (Audit and Log Management)**
  - ▶ **Console Events (including Tasks Performed), Audit, and Security logs**
  - ▶ **Each log message is tagged with a documented identifier**
- **Users create parser programs to monitor for logs in the XML**
  - ▶ **XML Schema defines form**
  - ▶ **Event Message Documentation defines possible logs, their identifiers, and substitution variables descriptions**

## Log Consumability – Example Use Case

- **Monitor for user “bob” logging on console**
- **Message #1409 - User {0} has {1} from session id {2} for the reason: {3}**

Substitution variables are:

- {0} User name
- {1} 'logged off' or 'disconnected'
- {2} Logon session identifier
- {3} Reason why the session was logged off or disconnected

- **Parser searches for event id “1409” with first subvar “bob”**

# Log Consumability – Offload Logs for Parsing

- **Audit and Log Management task or scheduled operation**

ENDZBX56: Audit and Log Management - Mozilla Firefox: IBM Edition

https://9.60.14.141/hmc/content?taskId=13&refresh=45

**Audit and Log Management**

Select the type of report and the information to be included in the report.

Report Type

HTML  XML

Range for Event-based Audit Data Types

Limit event based audit data to a specific range of dates and times

Starting date: 11/3/14 Starting time: 10:30 AM Ending date: 11/3/14 Ending time: 10:30 AM

Audit Data Types

Select	Audit Data Types
<input type="checkbox"/>	Object locking
<input type="checkbox"/>	Logs
<input checked="" type="checkbox"/>	Audit log
<input checked="" type="checkbox"/>	Console events
<input checked="" type="checkbox"/>	Security log
<input checked="" type="checkbox"/>	Tasks performed log
<input type="checkbox"/>	User profiles

Total: 14 Selected: 4

OK Cancel Help

https://9.60.14.141...electedRow\_c0a8b461

# Log Consumability – Message Documentation

- Messages documented in Online Help and Knowledge Center
  - ▶ Introduction section of the Help Table of Contents
- XML schema file available from IBM Resource Link

The screenshot displays the IBM Hardware Management Console (HMC) interface. At the top, the title bar reads "IBM Hardware Management Console Version 2.13.0" with a language dropdown set to "English". A search bar contains the text "ensemble".

The left sidebar shows the "Table of Contents" for "Hardware Management Console Version 2.13.0". The "Introduction" section is expanded, and "Audit, Event, and Security Log Messages" is highlighted with a red circle. Below it, "Log Messages" is also highlighted.

The main content area, titled "Topic View", displays the following message documentation:

**215 An automatic dial to {0} was attempted. The dial operation failed.**

**Explanation**

Substitution variables are:

{0}Telephone number

---

**216 User {0} has logged on in {1} mode.**

**Explanation**

Substitution variables are:

{0}User name  
{1}User role

---

**217 Channel path swap completed for channels {0} and {1}.**

**Explanation**

Substitution variables are:

{0}CHPID type  
{1}CHPID type

---

**218 Reset of swapped channel paths completed for channels {0} and {1}.**



# Other IBM z13 HMC/SE support

## Other HMC/SE Support

- ▶ **SMT - Simultaneous MultiThreading**
  
- ▶ **Crypto Enhancements**
  - **New Crypto Card - Crypto Express5S (CEX5S)**
  - **Increase of 16 domains to 85 domains**
    - New panels controls => look/feel
    - New conflict analysis support for
      - ◆ **Crypto/LPAR/Domain Index assignment**
  
- ▶ **I/O Enhancements**
  - **FCP “SAN Explorer” option under SE Problem Determination task**
  - **Sharing support for RoCE**
  - **New Hardware support**
    - FICON Express 16s
    - IBM Integrated Coupling Adapter Short Range (ICA SR)

# Additional RSF Infrastructure Changes

## HMC 2.12.1 - RSF Infrastructure Changes

- ▶ **Introduction of enhanced IBM Support System** for RSF (Remote Support Facility) call-home
  - Modernizing IBM support infrastructure for **capacity and reliability**
  - Scope of supported functions in HMC 2.12.1 limited to:
    - Problem Management (report, transmit service data, problem close via repair)
    - Transmit System Availability Data (scheduled operation)
    - Transmit VPD
    - Functionally equivalent to traditional IBM Service infrastructure
- ▶ Enhanced IBM support system used when requesting system and HMC are both at 2.12.1
- ▶ *Traditional IBM support system* used as backup during migration period
- ▶ Enhanced Infrastructure always attempted first if possible
- ▶ Currently Enhanced and Traditional support have equivalent functionality for supported functions
- ▶ Fix and eBoD (eBusiness on Demand) RSF functionality continues to use Traditional IBM support system

## HMC 2.13.0 – Additional RSF Infrastructure Changes

- ▶ **Continuation of enhanced IBM Support System** for RSF (Remote Support Facility)
  - Same value proposition as was for HMC 2.12.1
  - Scope of supported functions in HMC 2.13.0 limited to:
    - eBoD support
      - Support for all Capacity on Demand records that may be ordered from Resource Link (CIU Permanent, On/Off CoD, CPE, CBU)
    - Fix delivery
      - Full fix deliverable capabilities
      - SE “Clone”
    - PMV (Problem Management Viewable) update support
- ▶ Enhanced IBM support system used when requesting system and HMC are both at 2.13.0
- ▶ *Traditional IBM support system used as backup during migration period*
- ▶ Enhanced Infrastructure always attempted first if possible
- ▶ Currently Enhanced and Traditional support have equivalent functionality for supported functions
- ▶ See Backup Section charts => configuration changes for Enhanced RSF infrastructure
  - Next chart: [New addresses added since zEC12 GA2 time frame](#)
    - applies to z13/zEC12 Enhanced & all systems Traditional RSF

## Potential firewall changes required

If using ipv4, outbound connectivity must be permitted to port 443 to the following destinations:

- 129.42.26.224 (traditional)
- 129.42.34.224 (traditional)
- 129.42.42.224 (traditional)
- 129.42.50.224 (traditional) **\*\*NEW\*\***
- 129.42.56.189 (enhanced)
- 129.42.58.189 (enhanced)
- 129.42.60.189 (enhanced)
- 129.42.54.189 (enhanced) **\*\*NEW\*\***

If using ipv6, outbound connectivity must be permitted to port 443 to the following destinations:

- 2620:0:6c0:1::1000
- 2620:0:6c1:1::1000
- 2620:0:6c2:1::1000
- 2620:0:6c4:1::1000 **\*\*NEW\*\***
- 2620:0:6c0:200:129:42:56:189 (enhanced)
- 2620:0:6c1:200:129:42:58:189 (enhanced)
- 2620:0:6c2:200:129:42:60:189 (enhanced)
- 2620:0:6c4:200:129:42:54:189 (enhanced) **\*\*NEW\*\***

If using an SSL Proxy, and plan for it to resolve host names, it must accept the following host names:

- www-945.ibm.com (traditional)
- esupport.ibm.com (enhanced)

# Statements of Direction

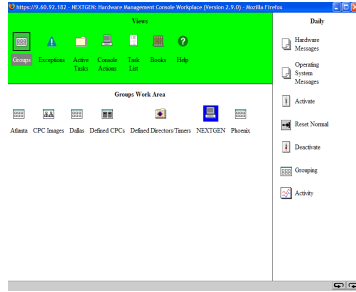
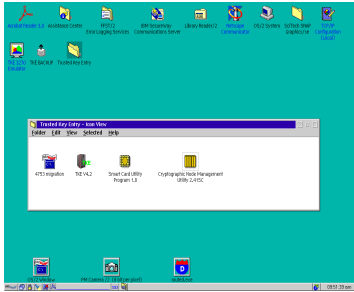
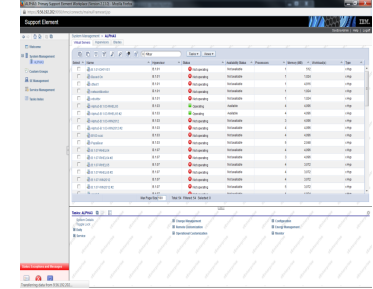
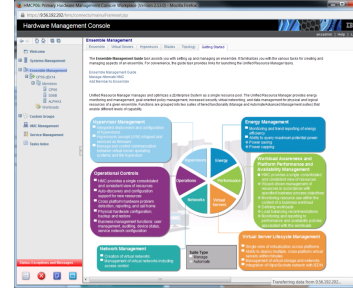
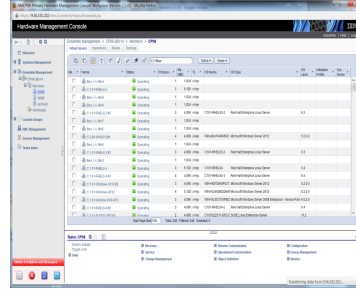
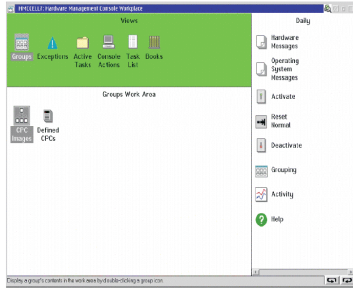
# IBM z Systems January 14, 2015 Announcement

## ▶ HMC Statements of Direction

- **Removal of support for Classic Style User Interface on the Hardware Management Console and Support Element:**
    - The IBM z13 will be the last z Systems server to support Classic Style User Interface. In the future, user interface enhancements will be focused on the Tree Style User Interface.
  
  - **Removal of support for the Hardware Management Console Common Infrastructure Model (CIM) Management Interface:**
    - IBM z13 will be the last z Systems server to support the Hardware Console Common Infrastructure module (CIM) Management Interface. The Hardware Management Console Simple Network Management Protocol (SNMP), and Web Services Application Programming Interfaces (APIs) will continue to be supported.
- 
- ## ▶ Complete January 14, 2015 announcement:
- <http://www-03.ibm.com/systems/z/announcement.html>



# HMC SE TKE Main UI Timeline



● 1992  
Local Console  
HMC/SE/TKE

● 2005  
Web Based  
HMC Tree & Classic  
SE Tree & Classic  
TKE Tree-Only

● 2010  
zManager  
Tree  
Enhancements

● 2015  
zBX SE Tree-Only



# Tree UI Advantages

---

## **Easier Navigation and Discovery**

Objects and tasks are easier to find with fewer views and clicks required.

- Hierarchical Tree Style Navigation
- Topology Views
- Powerful Sorting and Quick Filtering
- Context Sensitive Task Menus
- Tasks Index
- Bread Crumbs
- Home Page Selection
- Back and Forward Navigation
- Resource Tabs
- Collapsible Views
- Easy Selection of Objects

---

## **More Information in Primary Views**

Object properties and status are displayed in primary views.

- Detailed Status Overview
- Aggregated Status Bar
- Object Properties, Status, and Metrics
- Object Hyperlinks to Details
- Customizable Tasks Pad
- Task Descriptions and Favorites
- Links to On-line Libraries and Tutorials
- Table Data Export

Thank you for your time and consideration....



**Brian Valentine**  
**HMC/SE Team**

Contact for any Questions:

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## Other SHARE Sessions of Related Interest

- ▶ August 11<sup>th</sup>, 11:15 AM – 12:15 PM
  - **17434**: *The New IBM z13 Part 1: Processor Design, Server Structure, z/Architecture Enhancements, and Operating System Support*
- ▶ August 11<sup>th</sup>, 1:45 – 2:45 PM
  - **17435**: *The New IBM z13 Part 2: Crypto, I/O Design, Features, and Functions, Parallel Sysplex and Implementation Planning*
- ▶ August 11<sup>th</sup>, 3:15 – 4:15 PM
  - **17705**: *Connect the Dots: a z13 and z/OS Dispatching Update*
- ▶ August 12<sup>th</sup>, 8:30 – 9:30 AM
  - **17436**: *Top Ten Things You Should be Doing on Your HMC but You're Not*
- ▶ August 13<sup>th</sup>, 3:15 – 4:15 PM
  - **17414**: *How to Make the Most out of BCPii with z/OS 2.2 updates*

# **Backup Additional IBM z13 HMC/SE Features**

# SMT

## (Simultaneous MultiThreading)

## Simultaneous MultiThreading

- **All threads on a given core will be of the same processor type**
  - **IBM z13 GA1**
    - **SMT support for IFLs, zIIPs**
      - **ICFs supported for CF running as a zVM Guest2**
    - **Not currently supported:**
      - **CPs, SAPs, ICFs for a CF running in a base LPAR**
- **All LPARs come up single-threaded at IPL**
  - **Operating System must “opt-in” to using threads**
- **HMC/SE controls limited to Core only basis**
  - **Capacity on Demand (On/Off CoD, CBU)**
  - **Image Profiles**
  - **Deconfigure/add of logical processors**
    - **Logical processors added in groups of 2 (one core, 2 LPs)**
  - **Mgmt of processor weights for shared partitions**

# Monitors Dashboard

- New columns for processors for SMT
  - Per-thread usage
  - “SMT” usage, showing how often SMT is really exploited

lavinjr: Monitors Dashboard - Mozilla Firefox: IBM Edition  
9.60.73.65:8080/hmc/content?taskId=2&refresh=3

Monitors Dashboard

Pause Display Open Activity Open Activity Profiles Open Workloads Report Open Network Monitors Dashboard

Overview

Select	Name	Type	Processor Usage (%)	Channel Usage (%)	Power Consumption (kW) (Btu/hr)	Ambient Temperature (°C) (°F)
<input type="checkbox"/>	R34	System	68		3 22.758 77,653.519	22.8 73.04

Page 1 of 1 Max Page Size: 100 Total: 1 Filtered: 1 Displayed: 1 Selected: 0

Details

R34

Power Consumption

Name	Power Consumption (kW)	Heat Load (Btu/hr)	Heat Load (forced-air) (Btu/hr)	Heat Load (water) (Btu/hr)	Average Voltage (V)
<input type="checkbox"/> zCPC	22.758	77705	77705		
<input type="checkbox"/> Power cord Z29B-BPEA-J01	5.616				480
<input type="checkbox"/> Power cord Z29B-BPEB-J01	5.797				483
<input type="checkbox"/> Power cord Z29B-BPEA-J02	5.640				478
<input type="checkbox"/> Power cord Z29B-BPEB-J02	5.761				477

Page 1 of 1 Max Page Size: 100 Total: 6 Filtered: 6 Displayed: 6 Selected: 0

Environmentals

Name	Ambient Temperature (°C) (°F)	Humidity (%)	Dew Point (°C) (°F)	Air Pressure (hPa)
<input type="checkbox"/> R34	22.8 73.04		40	8.4 47.12
<input type="checkbox"/> zCPC	22.8 73.04			

Page 1 of 1 Max Page Size: 100 Total: 2 Filtered: 2 Displayed: 2 Selected: 0

Processors

Select	Name	Processor Usage (%)	SMT Usage (%)	Thread 0 Usage (%)	Thread 1 Usage (%)
<input type="checkbox"/>	IFL00	90	100	100	80
<input type="checkbox"/>	IP00	93		50	80
<input type="checkbox"/>	IP01	80		0	80

Page 1 of 1 Max Page Size: 100 Total: 3 Filtered: 3 Displayed: 3 Selected: 0

Close Help



# Crypto Enhancements

# IBM z13 Crypto Support - General

- **Hardware**

- ▶ **New Crypto Card - Crypto Express5S (CEX5S)**

- New Crypto ASIC
  - Consolidate functions
  - Latest technology
  - New / more cryptographic Engines
- Performance improvements
- New functions
- Supports 3 Configuration modes
  - Accelerator, CCA Coprocessor and EP11 Coprocessor

## IBM z13 Crypto Support – General

- **Number of usage and control domains increasing from 16**
  - ▶ **Increasing to 85 for z13**
  - ▶ **HMC/SE task changes**
    - Activation profiles
    - Change LPAR Crypto Controls
    - View LPAR Crypto Controls
      - Also enhanced to identify conflicting crypto id / domain assignments
    - Usage Domain Zeroize
  
- **Number of supported crypto adapters remains at 16**

# Crypto Express5S as viewed under the CPC

S32: Primary Support Element Workplace (Version 2.13.0)

Support Element

System Management > S32 > Cryptos

Cryptos Topology

Select	PCHID	Crypto ID	Status	State	Location	Type
<input checked="" type="checkbox"/>	0164	04	Operating	Online	A13B-LG31	Crypto Express5S
<input type="checkbox"/>	01EC	05	Operating	Online	A06B-LG33	Crypto Express5S

Max Page Size: 500 Total: 2 Filtered: 2 Selected: 1

Tasks: 0164

PCHID Details

- Channel Operations**
  - Advanced Facilities
  - Channel Problem Determination
  - Configure On/Off
  - Service On/Off
  - Show LED
- Crypto Service Operations**
  - Advanced Facilities
  - Channel Problem Determination
  - Configure On/Off
  - Service On/Off

Status: Exceptions and Messages

# Crypto Express5S as viewed in the LPAR

S32: Primary Support Element Workplace (Version 2.13.0)

Support Element

System Management > S32 > Partitions > LP08 > **Cryptos**

Cryptos Topology

Select	Crypto ID	PCHID	Status	State	Type
<input checked="" type="checkbox"/>	04	0164	Operating	Online	Crypto Express5S CCA Coprocessor
<input type="checkbox"/>	05	01EC	Operating	Online	Crypto Express5S CCA Coprocessor

Max Page Size: 500 Total: 2 Filtered: 2 Selected: 1

Tasks: 04

- Crypto Details
- Channel Operations
  - Channel Problem Determination
  - Configure On/Off
- Crypto Service Operations
  - Channel Problem Determination
  - Configure On/Off

Status: Exceptions and Messages

# Crypto Express5S on the Crypto Configuration task

S32: Cryptographic Configuration

**Cryptographic Configuration - S32**

*Cryptographic Information*

Select	Number	Status	Crypto Serial Number	Type	Operating mode	TKE Commands
<input checked="" type="radio"/>	4	Configured	YH30DV48T354	X5 CCA Coprocessor	IBM Default	Denied
<input type="radio"/>	5	Configured	YH30DV48T346	X5 CCA Coprocessor	IBM Default	Denied

Select a Cryptographic number and then click the task push button.

# Customize Image profile

S32: Customize/Delete Activation Profiles

**Customize Image Profiles: LP08 : LP08 : Crypto**

- LP08
  - LP08
    - General
    - Processor
    - Security
    - Storage
    - Options
    - Load
    - Crypto**

**Assigned Domains**

--- Select Action ---

Select ^	Index ^	Control ^	Control and Usage ^
<input type="checkbox"/>	0		✓

**Assigned Cryptos**

--- Select Action ---

Select ^	Number ^	Candidate ^	Candidate and Online ^
<input type="checkbox"/>	0		✓
<input type="checkbox"/>	1		✓
<input type="checkbox"/>	2		✓
<input type="checkbox"/>	3		✓
<input type="checkbox"/>	4		✓

Attention: You must install the 'IBM CP Assist for Cryptographic Functions' (CPACF) feature if a cryptographic candidate is selected from the list box. Otherwise, some functions of Integrated Cryptographic Service Facility (ICSF) may fail.

Cancel Save Copy Profile Paste Profile Assign Profile Help

# Customize Image profile – edit, remove, add

S32: Customize/Delete Activation Profiles

**Customize Image Profiles: LP08 : LP08 : Crypto**

LP08

- LP08
  - General
  - Processor
  - Security
  - Storage
  - Options
  - Load
  - Crypto**

Assigned Domains

Select	Index	Control	--- Select Action ---
<input type="checkbox"/>	0		Edit Remove Add

Assigned Cryptos

Select	Number	Candid	
<input type="checkbox"/>	0		
<input type="checkbox"/>	1		
<input type="checkbox"/>	2		
<input type="checkbox"/>	3		✓
<input type="checkbox"/>	4		✓

--- **Table Actions** ---

- Select All
- Deselect All
- Edit Sort
- Clear All Sorts
- Configure Columns

Attention: You must install the 'IBM CP Assist for Cryptographic Functions' (CPACF) feature if a cryptographic candidate is selected from the list box. Otherwise, some functions of Integrated Cryptographic Service Facility (ICSF) may fail.

Cancel Save Copy Profile Paste Profile Assign Profile Help



# Change LPAR Crypto controls

S32: Change LPAR Cryptographic Controls

**Change LPAR Cryptographic Controls: LP08 (Active) - LP08**

Assigned Domains

--- Select Action ---

Select ^	Index ^	Control ^	Control and Usage ^
<input type="checkbox"/>	0		✓

Assigned Cryptos

--- Select Action ---

Select ^	Number ^	Candidate ^	Candidate and Online ^
<input type="checkbox"/>	0		✓
<input type="checkbox"/>	1		✓
<input type="checkbox"/>	2		✓
<input type="checkbox"/>	3		✓
<input type="checkbox"/>	4		✓

Attention: You must install the 'IBM CP Assist for Cryptographic Functions' (CPACF) feature if a cryptographic candidate is selected from the list box. Otherwise, some functions of Integrated Cryptographic Service Facility (ICSF) may fail.

## Change LPAR Crypto controls – edit, remove, add

S32: Change LPAR Cryptographic Controls

Change LPAR Cryptographic Controls: LP08 (Active) - LP08

Assigned Domains

Select	Index	Control
<input type="checkbox"/>	0	

Assigned Cryptos

Select	Number	Candid
<input type="checkbox"/>	0	
<input type="checkbox"/>	1	
<input type="checkbox"/>	2	✓
<input type="checkbox"/>	3	✓
<input type="checkbox"/>	4	✓

Attention: You must install the 'IBM CP Assist for Cryptographic Functions' (CPACF) feature if a cryptographic candidate is selected from the list box. Otherwise, some functions of Integrated Cryptographic Service Facility (ICSF) may fail.

Save and Change   Save to Profiles   Change Running System   Reset   Cancel   Help

# View LPAR Crypto controls – no conflicts identified

S32: View LPAR Cryptographic Controls

**View LPAR Cryptographic Controls - S32**

Installed Crypto Express4S: NONE  
 Installed Crypto Express5S: 04 05

**Summary**

- CF02
- LP08
- LP09
- LP11
- LP14

Cryptographic Candidates

Partition	Active	Crypto Numbers	Conflicts
LP08	Yes	0-7	
LP09	Yes	0-7	
LP11	Yes	0-9	
LP14	Yes	0-15	
LP15	No		
LX1	No		

Usage Domain Indexes

Partition	Active	Indexes	Conflicts
LP08	Yes	0	
LP09	Yes	1	
LP11	Yes	3	
LP14	Yes	4	
LP15	No		
LX1	No		

Close Refresh Help

# View LPAR Crypto controls – with conflicts identified

S32: View LPAR Cryptographic Controls

**View LPAR Cryptographic Controls - S32**

Installed Crypto Express4S: NONE  
 Installed Crypto Express5S: 04 05  
 Conflicts exist, please see Conflicts below.

**Cryptographic Candidates**

Partition	Active	Crypto Numbers	Conflicts
LP08	Yes	0-7	<a href="#">View</a>
LP09	No	0-7	<a href="#">View</a>
LP11	Yes	0-9	
LP14	Yes	0-15	
LP15	No		
LX1	No		

**Usage Domain Indexes**

Partition	Active	Indexes	Conflicts
LP08	Yes	0	<a href="#">View</a>
LP09	No	0-1	<a href="#">View</a>
LP11	Yes	3	
LP14	Yes	4	
LP15	No		
LX1	No		

Close
Refresh
Help

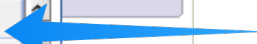
**Summary**

CF02

LP08

LP11

LP14



# View LPAR Crypto controls – with conflicts identified

S32: View LPAR Cryptographic Controls

View LPAR Cryptographic Controls - S32
i

Installed Crypto Express4S: NONE  
 Installed Crypto Express5S: 04 05  
 ⚠ Conflicts exist, please see Conflicts below.

Cryptographic Candidates

Partition	Active	Crypto Numbers	Conflicts
LP08	Yes	0-7	<a href="#">View</a>
LP09	No	0-7	<a href="#">View</a>
LP11	Yes	0-9	
LP14	Yes	0-15	
LP15	No		
LX1	No		

Usage Domain Indexes

Partition	Active	Indexes
LP08	Yes	0
LP09	No	0-1
LP11	Yes	3
LP14	Yes	4
LP15	No	
LX1	No	

Close Refresh Help

**Summary**

CF02

LP08

LP11

LP14

S32: View LPAR Conflicts

Conflicts - LP09
i

Crypto numbers in conflict:0-7  
 Usage domains in conflict:0

Conflicts

Partition	Crypto Number	Domain Index
LP08	0-7	0

Close Help

# I/O Enhancements

## SAN Explorer for FCP (Fiber Channel Protocol)

- **Enhances channel problem determination abilities**
  - ▶ **FCP only**
  - ▶ **No active operating system required.**
  - ▶ **SAN discovery performed by**
    - **New option “SAN Explorer” under the SE Channel Problem Determination task**
  - ▶ **Data provided:**
    - **Device number, WWPN, assigned FC-ID**
    - **All the remote ports available to this initiators zone.**
    - **Inquiry information and or RNID data**
    - **For each remote N-Port the Report LUN’s data.**
    - **LESB**
    - **Test Unit Ready response**
    - **Echo**
    - **FC trace route and FC Ping**

# SAN Explorer for FCP - Devices

CP16: Channel Problem Determination - Mozilla Firefox: IBM Edition  
9.56.194.241:8080/hmc/content?taskId=14&refresh=37

**SAN Explorer - PCHID0514**

CSS.CHPID: 0.8A      PCHID: 0514

Partition ID: 0      MIF image ID: 1

NPIV: Disabled      Physical port WWPN: C05076FFFC005141      Physical port FC-ID: E10400

**Devices**

--- Select Action ---      Filter

Select ^	Device Number ^	World Wide Port Name ^	FC-ID ^
<input checked="" type="radio"/>	<a href="#">5140</a>	C05076FFFC005141	E10400
<input type="radio"/>	<a href="#">5141</a>	C05076FFFC005141	E10400
<input type="radio"/>	<a href="#">5142</a>	C05076FFFC005141	E10400
<input type="radio"/>	<a href="#">5143</a>	C05076FFFC005141	E10400
<input type="radio"/>	<a href="#">5144</a>	C05076FFFC005141	E10400
<input type="radio"/>	<a href="#">5145</a>	C05076FFFC005141	E10400
<input type="radio"/>	<a href="#">5146</a>	C05076FFFC005141	E10400
<input type="radio"/>	<a href="#">5147</a>	C05076FFFC005141	E10400
<input type="radio"/>	<a href="#">5148</a>	C05076FFFC005141	E10400
<input type="radio"/>	<a href="#">5149</a>	C05076FFFC005141	E10400
<input type="radio"/>	<a href="#">514A</a>	C05076FFFC005141	E10400
<input type="radio"/>	<a href="#">514B</a>	C05076FFFC005141	E10400
<input type="radio"/>	<a href="#">514C</a>	C05076FFFC005141	E10400
<input type="radio"/>	<a href="#">514D</a>	C05076FFFC005141	E10400
<input type="radio"/>	<a href="#">514E</a>	C05076FFFC005141	E10400
<input type="radio"/>	<a href="#">514F</a>	C05076FFFC005141	E10400

Page 1 of 1      Total: 16      Filtered: 16      Displayed: 16

Close      Refresh



# SAN Explorer for FCP – Zone Data

CP16: Channel Problem Determination - Mozilla Firefox: IBM Edition  
 9.56.194.241:8080/hmc/content?taskId=14&refresh=39

**SAN Explorer - Zone Data - PCHID0514**

CSS.CHPID: 0.8A PCHID: 0514  
 Partition ID: 0 MIF image ID: 1  
 NPIV: Disabled Physical WWPN: C05076FFFC005141 Physical FCID: E10400  
 Device number: 514C Logical WWPN: C05076FFFC005141 Logical FCID: E10400

**Zones**

Select	World Wide Port Name	FC-ID	Manufacturer	Type/Model	Sequence number	Plant	Tag	World Wide Node Name	Symbolic Port Name
<input checked="" type="radio"/>	<a href="#">C05076FFFC005141</a>	E10400						5005076400C57488	IBM 2827 020000000574 88 PCHID: 0514
<input type="radio"/>	<a href="#">5005076304014739</a>	E36100	IBM	002107/922	0000000CLTZ1	75	0011	5005076304FFC739	
<input type="radio"/>	<a href="#">50000972C00B411C</a>	E37800						50000972C00B4000	SYMMETRIX::0001949 00720::SAF- 8eA::F C::5876_251::EMUL B80F0000 40E32A8B 94555C 09.03.13 09 :36
<input type="radio"/>	<a href="#">50060E8005430E5E</a>	E39800						50060E8005430E5E	
<input type="radio"/>	<a href="#">50050763081386D0</a>	E3A600	IBM	002107/951	0000000LX521	75	0232	5005076308FFC6D0	
<input type="radio"/>	<a href="#">500507630813C6D0</a>	E3A700	IBM	002107/951	0000000LX521	75	0233	5005076308FFC6D0	
<input type="radio"/>	<a href="#">50050763081806D0</a>	E3A800	IBM	002107/951	0000000LX521	75	0300	5005076308FFC6D0	
<input type="radio"/>	<a href="#">50050763081846D0</a>	E3A900	IBM	002107/951	0000000LX521	75	0301	5005076308FFC6D0	
<input type="radio"/>	<a href="#">50050763081886D0</a>	E3AA00	IBM	002107/951	0000000LX521	75	0302	5005076308FFC6D0	
<input type="radio"/>	<a href="#">500507630818C6D0</a>	E3AB00	IBM	002107/951	0000000LX521	75	0303	5005076308FFC6D0	
<input type="radio"/>	<a href="#">C05076FFFC005351</a>	E3D700	IBM	002827/H20	000000057488	02	F09B	5005076400C57488	IBM 2827 020000000574 88 PCHID: 0535
<input type="radio"/>	<a href="#">5005076801404DAA</a>	E3E000						5005076801004DAA	

Page 1 of 1 Total: 12 Filtered: 12 Displayed: 12

Close Refresh

# SAN Explorer for FCP – Remote N\_Port - LUNs

CP16: Channel Problem Determination - Mozilla Firefox: IBM Edition  
 9.56.194.241:8080/hmc/content?taskId=188&refresh=53

**SAN Explorer - Remote N\_Port - PCHID0514**

**Local Port**

CSS.CHPID:	0.8A	PCHID:	0514		
Partition ID:	0	MIF image ID:	1		
NPIV:	Disabled	Physical WWPN:	C05076FFFC005141	Physical FCID:	E10400
Device number:	5140	Logical WWPN:	C05076FFFC005141	Logical FCID:	E10400

**Remote Port**

WWPN: 5005076304014739 FCID: E36100 Symbolic port name:

**LUNs** | Node ID | Link Error Status

--- Select Action --- | Filter

Select	LUN
<input checked="" type="radio"/>	4010409000000000
<input type="radio"/>	4010409100000000
<input type="radio"/>	4010409200000000
<input type="radio"/>	4010409300000000
<input type="radio"/>	4010409400000000
<input type="radio"/>	4010409500000000
<input type="radio"/>	4010409600000000
<input type="radio"/>	4010409700000000
<input type="radio"/>	4010409800000000
<input type="radio"/>	4010409900000000
<input type="radio"/>	4010409A00000000
<input type="radio"/>	4010409B00000000
<input type="radio"/>	4010409C00000000
<input type="radio"/>	4010409D00000000
<input type="radio"/>	4010409E00000000
<input type="radio"/>	4010409F00000000

# SAN Explorer for FCP – Remote N\_Port – Node ID

CP16: Channel Problem Determination - Mozilla Firefox: IBM Edition  
9.56.194.241:8080/hmc/wcl/Tad1

**SAN Explorer - Remote N\_Port - PCHID0514**

**Local Port**

CSS.CHPID:	0.8A	PCHID:	0514		
Partition ID:	0	MIF image ID:	1		
NPIV:	Disabled	Physical WWPN:	C05076FFFC005141	Physical FCID:	E10400
Device number:	5140	Logical WWPN:	C05076FFFC005141	Logical FCID:	E10400

**Remote Port**

WWPN: 5005076304014739 FCID: E36100 Symbolic port name:

World Wide Node Name:	5005076304FFC739	Node status:	Valid
Flag/Parm:	00410100	Type/Model:	002107/922
Manufacturer:	IBM	Plant:	75
Sequence number:	0000000CLTZ1	Tag:	0011

# SAN Explorer for FCP – LUN Details

CP16: Channel Problem Determination - Mozilla Firefox: IBM Edition  
 9.56.194.241:8080/hmc/content?taskId=18&refresh=54

**SAN Explorer - LUN Details - PCHID0514**

**Local Port**

CSS.CHPID:	0.8A	PCHID:	0514		
Partition ID:	0	MIF image ID:	1		
NPIV:	Disabled	Physical WWPN:	C05076FFFC005141	Physical FCID:	E10400
Device number:	5140	Logical WWPN:	C05076FFFC005141	Logical FCID:	E10400

**Remote Port**

WWPN: 5005076304014739 FCID: E36100 Symbolic Port Name:

**Logical Unit**

LUN: 4010409000000000 UUID:

**Inquiry** Test Unit Ready Extended Inquiry Read Capacity

Standard Inquiry:  
 PQual=0 Device\_type=0 RMB=0 Version=0x5 [SPC-3]  
 [AERC=0] NormACA=1 HiSup=1 Response\_data\_format=2  
 SCCS=0 ACC=0 TPGS=1 3PC=0 Protect=0  
 [BQue=0] EncServ=0 VS=0 MultiP=1 [MChngr=0] Addr16=0  
 [RelAdr=0] WBUS16=0 SYNC=0 [Linked=0] CmdQue=1

Peripheral Device Type: disk  
 Vendor Identification: IBM  
 Product Identification: 2107900  
 Product Revision Level: 36.5

Raw Inquiry Data:  
 0000: 00000532 9F101002 49424D20 20202020  
 0010: 32313037 39303020 20202020 20202020  
 0020: 33362E35 3735434C 545A3131 30393020  
 0030: 20202020 20202020 00600DA0 0A000300

Close Refresh

# SR-IOV for 10 Gbps RoCE

## ▪ RoCE

### ▶ Shareable by up to 31 LPARs

- Shared using SR/IOV framework
- Up to 31 Function IDs (FIDs) per PCHID
  - These FIDs can be assigned to customer LPAR

### ▶ More on FIDs

- FIDs => unique across the CEC
- FIDs => can be configured to only on LPAR at a time
  - CSS.CHPIDs can be configured to multiple LPARs

### ▶ Sample IOCDS

- Function FID=B2,PCHID=5F8,VF=1,PART=((VMALT1),(VMALT1,VMALT2))
- Function FID=B3,PCHID=5F8,VF=2,PART=((VMALT1),(VMALT1,VMALT2))
- Function FID=B4,PCHID=5F8,VF=3,PART=((VMALT1),(VMALT1,VMALT2))

### ▶ Notes on Sample

- FIDs can be configured to VMALT1 or VMALT2
- Currently configured to VMALT1

# SR-IOV for 10 Gbps RoCE

S32: Primary Support Element Workplace (Version 2.13.0)

Support Element

System Management > S32 > Channels

Channels | Topology

Select	PCHID	IDs	Status	State	Swapped	Cage-Slot-Jack	Type
<input type="checkbox"/>	4501 0190		Not defined	Reserved		A06B-LG00- - 01	OSA-Express4S
<input type="checkbox"/>	5501 0194		Not defined	Reserved		A06B-LG07-	OSA-Express5S
<input type="checkbox"/>	zEBC 0198		Not defined	Reserved		A06B-LG08-	zEDC Express
<input type="checkbox"/>	019C		Not defined	Reserved		A06B-D109-	FICON
<input type="checkbox"/>	019D		Not defined	Reserved		A06B-D209-	FICON
<input type="checkbox"/>	01E0	0.E1	Definition error	Online		A06B-D130-	FICON Express16S
<input type="checkbox"/>	01E1	0.F1	Definition error	Online		A06B-D230-	FICON Express16S
<input type="checkbox"/>	01E4	0.12	Operating	Online		A06B-LG31- - 01	OSA-Express4S
<input type="checkbox"/>	01E8	0.22	Operating	Online		A06B-LG32-	OSA-Express5S
<input type="checkbox"/>	01F0	0.32	Operating	Online		A06B-LG35-	OSA-Express4S
<input type="checkbox"/>	01F4	0.42	Operating	Online		A06B-LG36-	OSA-Express4S
<input type="checkbox"/>	RoCE 01FC	0011 0012	Operating	Online		A06B-LG38-	10GbE RoCE Express

Max Page Size: 500 Total: 44 Filtered: 44 Selected: 0

Tasks: Channels

- Two shared FIDs

Status: Exceptions and Messages

## New Channels

- **FICON Express 16s**
  - ▶ **No significant changes to HMC/SE**
    - **Except new PCHID icon**
    - **All other functionality same as FICON Express 8S**
  
- **IBM Intergrated Coupling Adapter Short Range (ICA SR)**
  - ▶ **New high speed coupling channel**
    - **No significant changes to HMC/SE**
      - **Except new Channel type**

# Alternative to USB Flash Drive Details



## Configure the FTP backup server

- **The backup FTP server must be configured before you can select it as an alternative to USB**
  - ▶ **There is a new task called Configure Backup Settings.**
    - **You need the following information to configure the FTP server:**
      - **IP Address / Name**
      - **User ID**
      - **Password**
      - **Backup directory (where the backup files will be stored)**

# Configure Backup Settings -- screen shots

The screenshot displays the HMC Management console interface. On the left, a navigation pane shows 'Ensemble Management', 'Custom Groups', 'HMC Management' (highlighted with a green box), 'Service Management', and 'Tasks Index'. The main content area is divided into 'Security' and 'Configuration' sections. The 'Configure Backup Settings' option is highlighted with a green box in the bottom right of the Configuration section.

**Security**

- Audit and Log Management**  
View or off-load audit reports for configuration and log information
- Archive Security Logs**  
Archive the console's security logs
- Customize Automatic Logon**  
Customize the automatic logon settings for the console
- Manage SSH Keys**  
Manage SSH Keys used for Secure FTP access
- View Security Logs**  
View security logs
- Users and Tasks**  
View the logged on users and the tasks they are running
- Certificate Management**  
Create, modify, delete, and import certificates used on the HMC, a
- Domain Security**  
Change console's domain name or password.

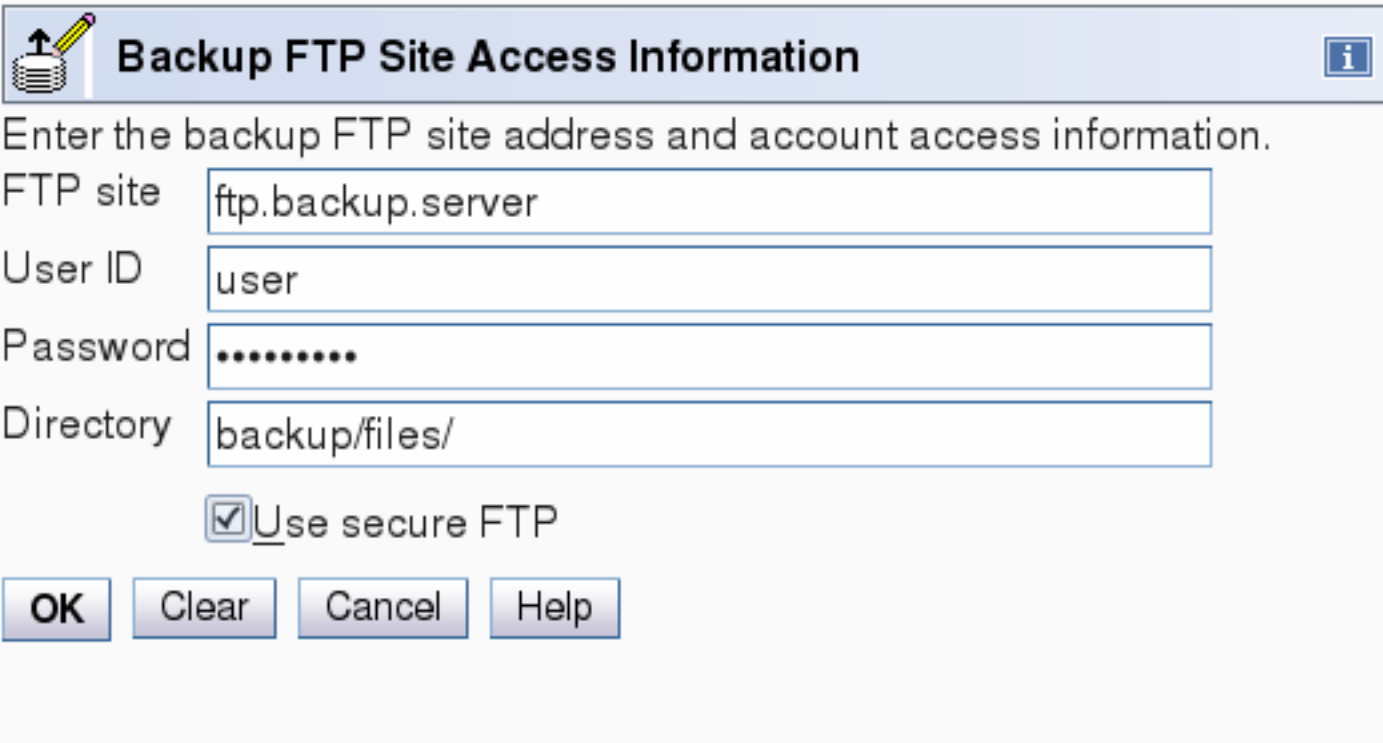
**Configuration**


- User Settings**  
Customize the appearance of the workplace
- Configure Data Replication**  
Configure the Data Replication settings for the HMC
- Customize Console Date/Time**  
Customize the date and time
- Customize Customer Information**  
Customize the customer information for the console
- Customize Scheduled Operations**  
Customize schedule of automated console operations
- Object Locking Settings**  
Change the automatic locking of managed objects.
- Configure 3270 Emulators**  
Customize the 3270 emulator sessions
- Customize API Settings**  
Customize the Application Programming Interface for the console
- Customize Console Services**  
Customize the enablement of various console services
- Customize Network Settings**  
View current network information and change settings
- Enable FTP Access to Mass Storage Media**  
Enable FTP Access to Mass Storage Media
- Configure Backup Settings**  
Configure the backup settings.

**Status: Exceptions and Messages**

At the bottom of the console, there are four icons: a list icon, a red 'X' icon, a document icon, and a square icon.

## Configure Backup Settings -- screen shots



**Backup FTP Site Access Information** 

Enter the backup FTP site address and account access information.

FTP site

User ID

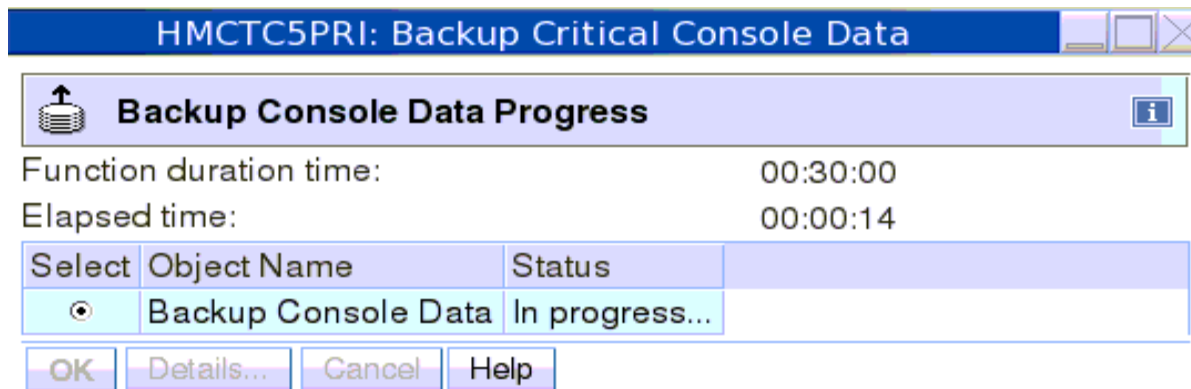
Password

Directory

Use secure FTP

## Backup for HMC

- Once the user selects the **Backup Critical Console Data** task, the following windows are displayed:





## Backup for IBM z13 & zBX Node SE

- **The SE no longer supports backing up to removable media**
  - ▶ **Users now will have the option to backup to:**
    - **Primary and Alternate SE Hard Drives**
    - **Primary SE, Alternate SE, and FTP server**
    - **We will maintain backing up to USB only for Legacy SEs (z196 & previous).**
  - ▶ **If the FTP server information has not been added to the Configure Backup Settings, then users cannot backup to the FTP server.**
  - ▶ **The same support has also been implemented for SE backups created via Scheduled Operation.**

## Backup for SE – IBM z13/zBX Mod 004

- The user selects the Backup Critical Data task for zBX/ IBM z13 systems

 **Backup Critical Data Confirmation**


Select the destination for each node's backup.

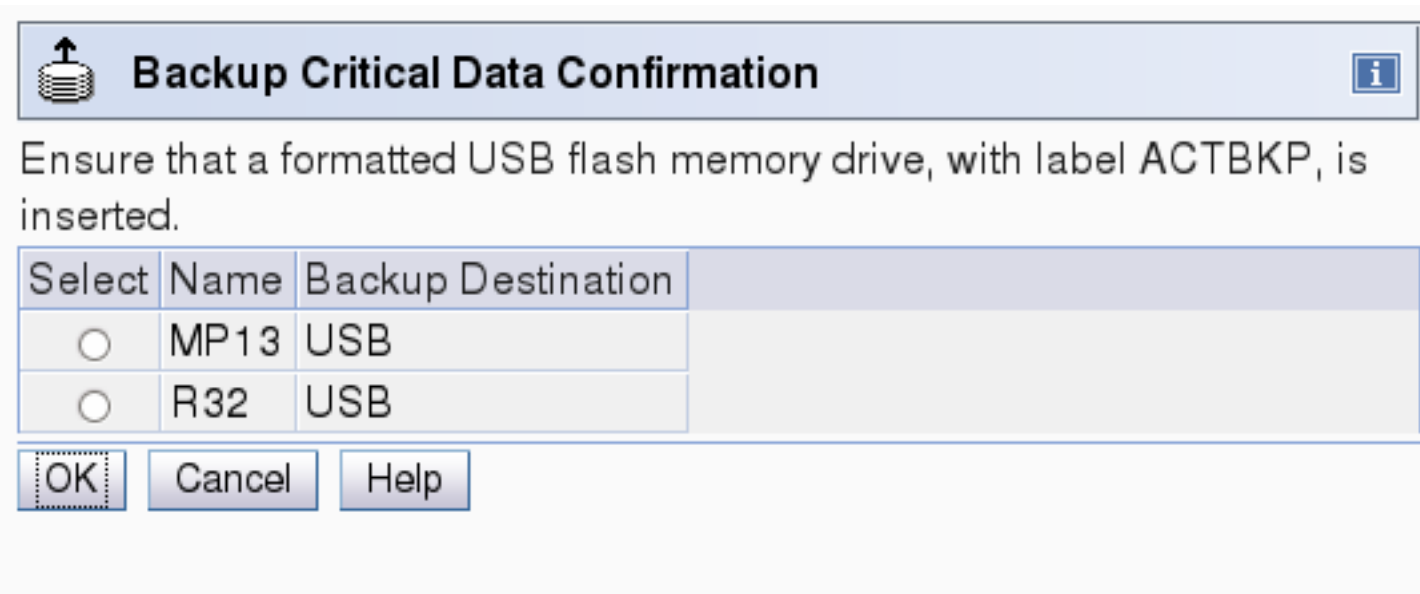
Select	Name	Backup Destination
<input type="radio"/>	P00ZFX07	Primary and Alternate SE <span style="float: right;">▼</span>
<input type="radio"/>	S32	Primary and Alternate SE <span style="float: right;">▼</span>
<input type="radio"/>	ZBX51	Primary SE, Alternate SE, and FTP Server <span style="float: right;">▼</span>

Primary and Alternate SE
▼

Primary SE, Alternate SE, and FTP Server
▼

## Backup for SE – Legacy Systems

- The user selects the **Backup Critical Data** task for Legacy systems – only USB



## Hard Disk Restore for IBM z13 HMC, SE, TKE

- **Hard Disk Restore => IBM Service action**
- **If customer doesn't use FTP option as only backup option,**
  - ▶ **Remains IBM Service action with no input from customer**
- **If data for Hard Disk Restore will come from FTP Server,**
  - ▶ **Customer will need to work with IBM SSR to provide input for FTP Server access**

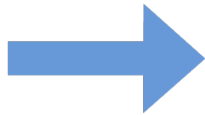


# Security Log UUID Details

## Security Enhancements – UUID Details

- ▶ **Unique in time ID (UUID) associated with every user**
  - **Helps distinguish between user IDs created with the same name at different times**
    - e.g. User “Sally” is deleted and 6 months later a new user “Sally” is created.
    - recorded in security and audit logs

## Security Enhancements – Security Auditing (cont.)



HMCDAILY02: View Security Logs - Mozilla Firefox: IBM Edition  
https://9.60.15.64/hmc/wcl/T207

**i Authentication Data** i

**User:** ACSADMIN

**UUID:** d5f18640-2e4a-11e3-bfaa-e8b2331d5994

**Console name:** HMCDAILY02

**Console type:** 7327

**Console model:** PAA

**Console serial:** KQ2H710

**Session ID:** 4

**Session type:** UI

**Security Event**  
User acsadmin has logged on from location adminib-0jovlr9.endicott.ibm.com [9.60.92.186] to session id 4. The user's maximum role is "Access Administrator Tasks".

OK

# RSF Infrastructure Changes Requirements Details

## DNS resolution of addressing to enhanced IBM Support structure

DNS host name resolution is required for connectivity to the Enhanced IBM infrastructure.

- ▶ If RSF connection is not configured to use an SSL Proxy Server
  - Network Settings on call-home HMCs must include DNS configuration
  - Recommend a backup DNS for reliability
- ▶ If RSF connection uses an SSL Proxy Server, customer has choice where the ip address resolution is done:
  - Can be resolved on HMC, using Network Settings on HMC
  - Can be resolved at SSL Proxy, if Proxy has DNS available

Note: Use of hostnames usage facilitates dynamic management of redundant servers.

## Customize Outbound Connectivity Panel: Proxy usage

Indicates if proxy required to connect to the internet, and how to reach it

Resolve setting dictates whether hostnames or ip addresses passed to SSL Proxy

✓ if checked, DNS is required on HMC

☐ if unchecked, DNS is required from SSL Proxy

**Outbound Connectivity Settings**

Enable the local console as a call-home server

**Configure Internet Options**

Use SSL Proxy Connection to Internet

Address: \* 9.60.14.42

Port: \* 3128

Resolve IBM IP addresses on console

Use SSL Proxy Authentication

User: \*

Password: \*

Confirm Password: \*

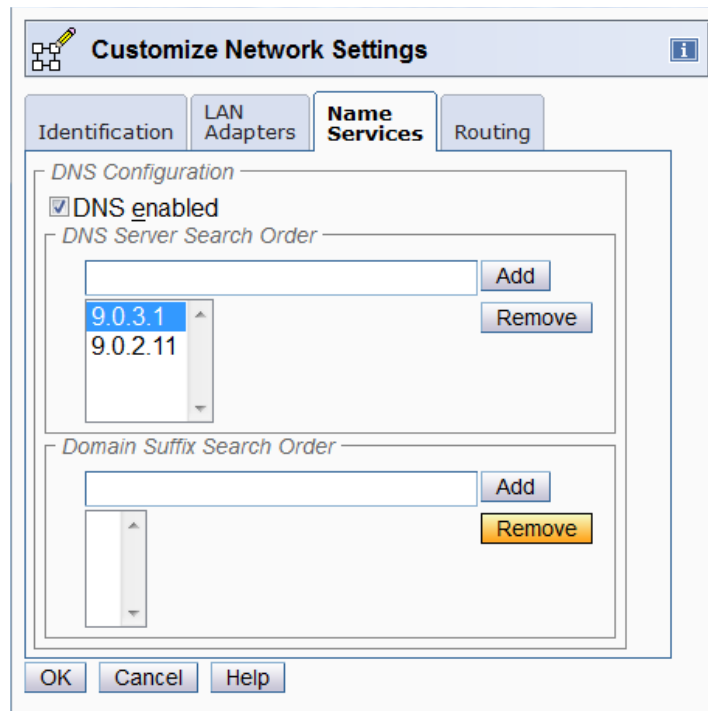
Internet Protocol: \* IPv4

Test...

OK Cancel Help

## Network Setting customized on HMC for DNS

- Name Services is defined using Customize Network Settings Task
- Select DNS enabled
- One or more DNS Servers must be defined in search order
  - Recommendation that at least 2 be defined to avoid single point of failure
- Domain Suffix Search Order is not used by RSF, can be configured for other reasons



# RSF Infrastructure Changes Summary

- ▶ “Enhanced”, IBM infrastructure
  - Outside of initial setup, functionality is equivalent and transparent
- ▶ Depending on your current installation, there may be changes required to exploit this:
  - DNS enablement
  - Additional firewall rules
- ▶ Currently dual support is available, but IBM recommends you make changes to enable this now.
- ▶ Full description for RSF setup can be found in:
  - **SC28-6927-01: *zEnterprise System Integrating the Hardware Management Console’s Broadband Remote Support Facility into your Enterprise***



# Backup zBX Mod 004

# Introduction/Benefits

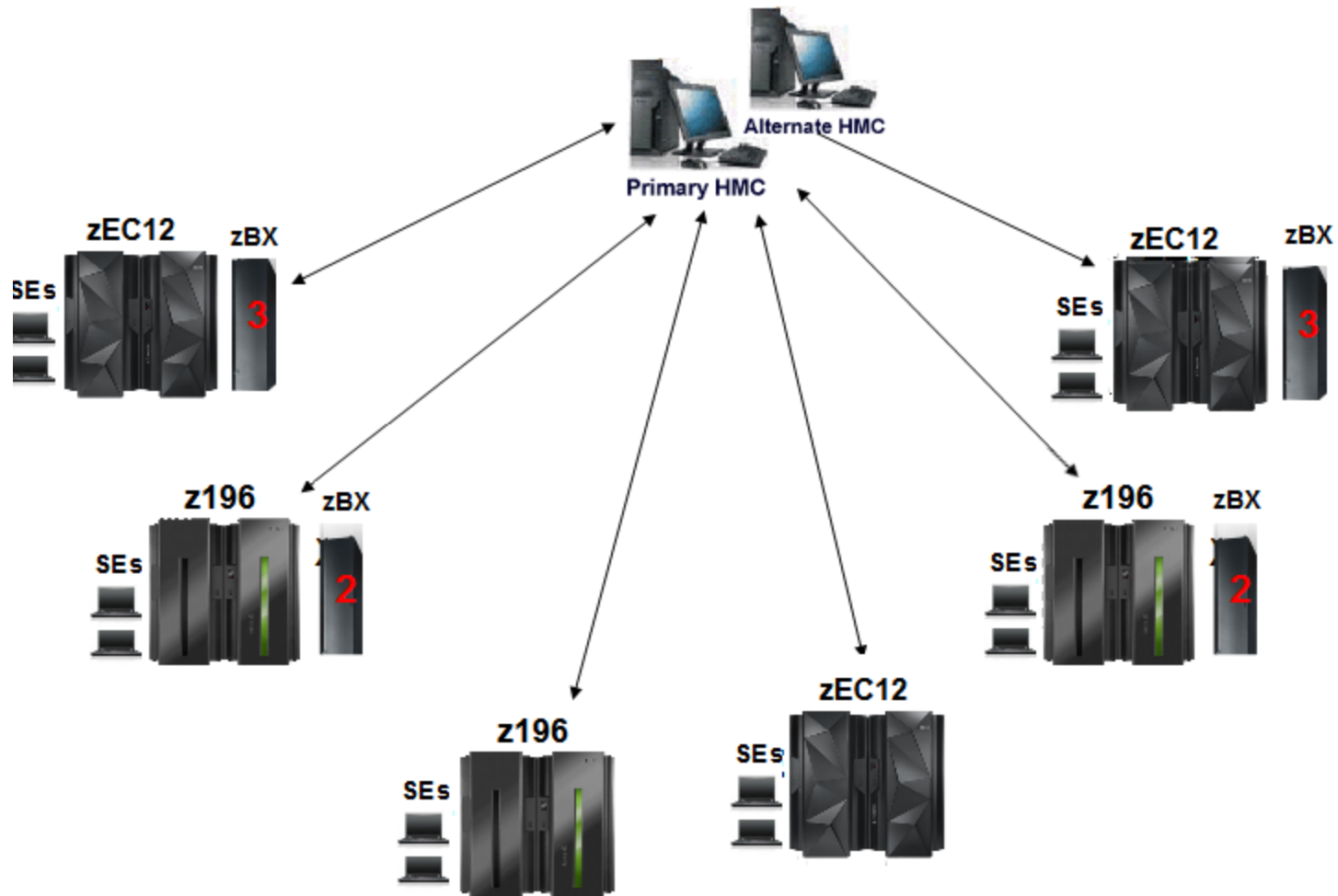
# Introduction

- ▶ zBX Node Infrastructure
  - Improve flexibility and scale-out by eliminating 1-1 coupling with a CPC
  - Support customer investment in current BladeCenter- H technology
  - Provide CEC only upgrades to IBM z13
    - ◆ Migrate zBX Mod 002/003 to BCH Node
    - ◆ Eliminates CEC/zBX Upgrade complexities
  - Continue to offer advanced virtualization management as well as integrated hardware management via zManager-based management

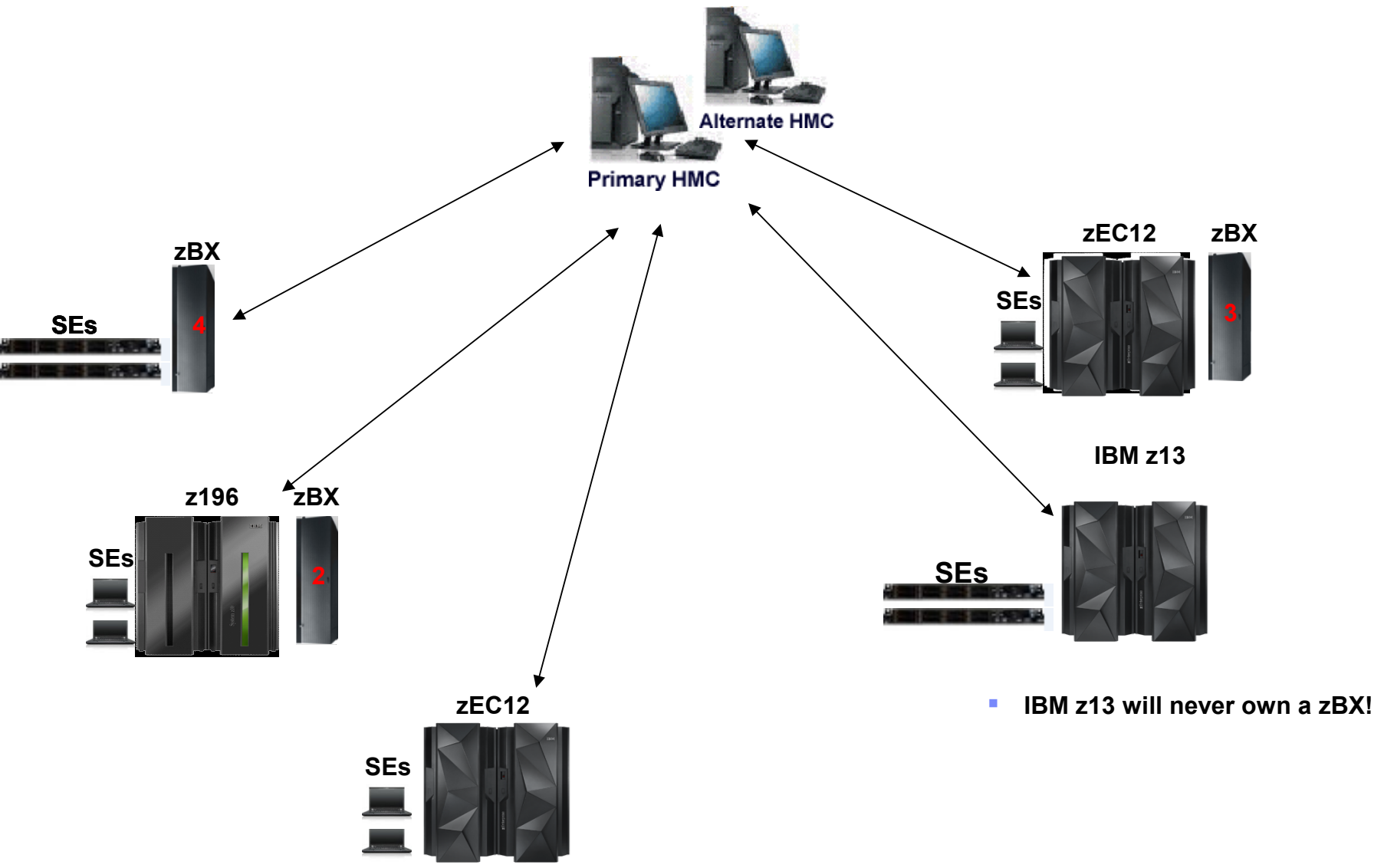
## Introduction (cont.)

- ▶ **zBX Node: Decouple zBX from CPC**
  - zBX Rack(s) plus Redundant 1U SEs
- ▶ **Provide same zBX values**
  - Full z Systems Integration with Concurrency, Security, Automatic Discovery and Configuration
  - Change Mgmt, Serviceability Mgmt (Problem Reporting and Repair),
  - Virtual Server Life Cycle Mgmt, Platform Performance Mgmt
  - Unified Resource Manager value add
    - **Ensemble Mgmt of Virtualized Set of Resource**
- ▶ **Also, includes same Networking value**
  - Intra Ensemble Data Network
  - Intra Node Management Network
- ▶ zBX already separate Machine Type Model for Service Warranty
- ▶ zBX is just another node in the Ensemble
  - z Systems CPCs connect to zBX as today when zBX is shared by multiple CPCs
    - zBX Node simply no longer has a CPC owner
- ▶ New rules for Ensemble node maximum

# zEC12 Ensemble



# IBM z13 & zBX Node Ensemble



# Model 004 Upgrade



## Customer Benefit:

- Firmware Updates and Service Activity Not Linked to the CEC
- zBX May Be Moved Beyond 25 Feet from CEC
- Lifecycle Updates ( Datapower 7.0 and Latest Fix Releases)
- May Participate in an Ensemble with z196/z114, zEC12/zBC12, z13 EC servers
- Investment Protection including blades, DataPower and zManager

## How:

- Install two Support Elements and Cabling
- Carry Forward Current Infrastructure and Blades
- Install Model 004 Firmware

## What is Available for Model 004:

- MES Upgrade From a Model 002 or Model 003 to a Model 004
- Code Updates: Entitlement Increases, DP Features, QoS
- After Upgrade DP Moves from Model 002/003 to Model 004
- HW Features: Optics, Top Exit and Doors (Acoustic/Cooling)

## What is Not Available for Model 004:

- Adding Chassis to the Model 002 and 003 during upgrade
- Adding Chassis to the Model 004 after upgrade
- Moving DP Blades from another zBX during the upgrade

## Special Note:

- Upgrade does Not Require a [IBM z13](#)

# Hardware Setup

- ▶ zBX Node
  - Take current fully redundant hardware zBX with CPC and remove CPC
  - Add Two SEs (Support Elements) into zBX
    - Redundant 1U System x Servers (3550 M4, Ivy Bridge processor)
      - ◆ AC powered versus the DC powered ones used for CPC
    - Redundant 1U RackMount Display/Keyboard
      - ◆ Slideout Keyboard/Display (7316-TF3 Display/Keyboard)
      - ◆ Intended for SSR or PE only use
      - ◆ Customer physical console access via HMC
  - Same as CPC, HMC must be at Code Release level  $\geq$  zBX Node SE
    - Must meet HMC HW requirements for that HMC release level
  
- ▶ Blade maximums
  - System x: 56
  - Power: 112
  - DataPower: 28



## General Information

- **Ensemble rules**
  - ▶ **Up to 16 members**
    - **1 - 8 CPC**
    - **0 - 8 zBX Model 002 / 003/ 004**
- **No classic UI on zBX Model 004 Support Element**
  - ▶ **Classic UI supported on HMC**
  - ▶ **Classic UI supported on CPC SE**
- **New support**
  - ▶ **Activate / Deactivate at zBX Node level**
  - ▶ **Activate / Deactivate at BladeCenter level**
  - ▶ **Service mode on / off at blade level**
    - **Isolate blade - Details in later presentation**
  - ▶ **Service required state**

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