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

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SHARE in Orlando

Brian Valentine  
HMC/SE Development  
bdvalent@us.ibm.com

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Topics

► HMC 2.13.0 System support          Page:  4
► 1U HMC                             Page:  8
► Alternative to USB Flash Drive     Page: 11
► HMC Data Replication Versioning   Page: 13
► HMC Time Synchronization          Page: 22
► Monitors Dashboard                Page: 30
► Trusted Computing – Boot From Media Protection Page: 35
► Remote Browser Support            Page: 37
► Task User Experience Direction    Page: 41
► User Management Dashboard        Page: 44
► Security Auditing Enhancements    Page: 57
► Other z13 HMC/SE support          Page: 65
► Additional RSF Infrastructure Changes Page: 67
► HMC Statements of Direction       Page: 71
Topics

- Backup
  - Additional IBM z13 HMC/SE Features
    - SMT (Simultaneous MultiThreading) Page: 78
    - Crypto Enhancements Page: 81
    - I/O Enhancements Page: 94
    - Alternative to USB Flash Drive Details Page: 104
    - Security Log UUID Details Page: 113
    - RSF Infrastructure Changes Requirements Details Page: 116
  - zBX Mod 004 Page: 121
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.

<table>
<thead>
<tr>
<th>Machine Family</th>
<th>Machine Type</th>
<th>Firmware Driver</th>
<th>SE Version</th>
<th>Ensemble Node Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>z13</td>
<td>2964</td>
<td>22</td>
<td>2.13.0</td>
<td>Yes</td>
</tr>
<tr>
<td>zBX Node</td>
<td>2458 Mod 004</td>
<td>22</td>
<td>2.13.0</td>
<td>Required</td>
</tr>
<tr>
<td>zBC12</td>
<td>2828</td>
<td>15</td>
<td>2.12.1</td>
<td>Yes</td>
</tr>
<tr>
<td>zEC12</td>
<td>2827</td>
<td>15</td>
<td>2.12.1</td>
<td>Yes</td>
</tr>
<tr>
<td>z114</td>
<td>2818</td>
<td>93</td>
<td>2.11.1</td>
<td>Yes</td>
</tr>
<tr>
<td>z196</td>
<td>2817</td>
<td>93</td>
<td>2.11.1</td>
<td>Yes</td>
</tr>
<tr>
<td>z10 BC</td>
<td>2098</td>
<td>79</td>
<td>2.10.2</td>
<td>No</td>
</tr>
<tr>
<td>z10 EC</td>
<td>2097</td>
<td>79</td>
<td>2.10.2</td>
<td>No</td>
</tr>
<tr>
<td>z9 BC</td>
<td>2096</td>
<td>67</td>
<td>2.9.2</td>
<td>No</td>
</tr>
<tr>
<td>z9 EC</td>
<td>2094</td>
<td>67</td>
<td>2.9.2</td>
<td>No</td>
</tr>
</tbody>
</table>
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),
  - the 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

<table>
<thead>
<tr>
<th>Largest Central Storage Amount Specified (Initial and Reserved)</th>
<th>Storage Granularity Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>LCSA (\leq 256) GB</td>
<td>512 MB</td>
</tr>
<tr>
<td>256 GB (&lt;) LCSA (\leq 512) GB</td>
<td>1,024 MB (1 GB)</td>
</tr>
<tr>
<td>512 GB (&lt;) LCSA (\leq 1,024) GB</td>
<td>2,048 MB (2 GB)</td>
</tr>
<tr>
<td>1,024 GB (&lt;) LCSA (\leq 2,048) GB</td>
<td>4,096 MB (4 GB)</td>
</tr>
<tr>
<td>2,048 GB (&lt;) LCSA (\leq 4,096) GB</td>
<td>8,192 MB (8 GB)</td>
</tr>
<tr>
<td>4,096 GB (&lt;) LCSA (\leq 8,192) GB</td>
<td>16,384 MB (16 GB)</td>
</tr>
<tr>
<td>8,192 GB (&lt;) LCSA (\leq 10,240) GB</td>
<td>32,768 MB (32 GB)</td>
</tr>
</tbody>
</table>
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
    ♦ Ie, unavailable as feature of a zEC12
# IBM z13 GA1 HMC Supported Hardware

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

Configure Data Replication

- One or more problems exist. Click Status for details.
- Customizable Data Replication
  - Enable/Disable
- Data Source(s)
- Customizable Data Types
  - Select Data Types
    - Customer Information Data
    - Group Data
    - Remote Service Data
    - User Profile Data
    - 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
    - Customer Information Data
    - Group Data
    - Remote Service Data
    - User Profile Data
    - Monitor System Events Data
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
Example

Cooperating, redundant masters

An arrow 'points at' a master...
Example...

Masters...

Slaves

An arrow 'points at' a master...

Not Communicating
Example...

Masters...

An arrow 'points at' a master...

Slaves
## Potential IBM z13 GA2/beyond Simulated Conflict

### Data Replication Status

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

### Data Type Conflicts

<table>
<thead>
<tr>
<th>Data Source</th>
<th>Data Type</th>
<th>Local Version</th>
<th>Available Version</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>mjqtp</td>
<td>User Profile Data</td>
<td>7</td>
<td>1</td>
<td>Version Conflict</td>
</tr>
</tbody>
</table>

### Slaved HMC Violations

All known slave HMCs are at appropriate levels.

---

ACT05012
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
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
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
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

- SAD
  - zEC12
  - z13

- SAD Profiles

- Detailed Settings for Monitors Dashboard
Logical partition activity by processor type

<table>
<thead>
<tr>
<th>Select</th>
<th>Name</th>
<th>All Processor Usage(%)</th>
<th>CP Processor Usage(%)</th>
<th>IFL Processor Usage(%)</th>
<th>ICF Processor Usage(%)</th>
<th>ZIP Processor Usage(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CF01</td>
<td>30</td>
<td>0</td>
<td>0</td>
<td>30</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>LP01</td>
<td>5</td>
<td>0</td>
<td>5</td>
<td>0</td>
<td>0</td>
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<tr>
<td></td>
<td>LP02</td>
<td>26</td>
<td>20</td>
<td>0</td>
<td>0</td>
<td>50</td>
</tr>
</tbody>
</table>
Processor activity by keys

![Processor Usage by Key - S32:IFP48](image)

<table>
<thead>
<tr>
<th>Key</th>
<th>Total Usage (%)</th>
<th>Supervisor State Usage (%)</th>
<th>Problem State Usage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>1</td>
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<td>0</td>
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<tr>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>3</td>
<td>0</td>
<td>0</td>
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<td>4</td>
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<td>5</td>
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<td>6</td>
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<td>7</td>
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<td>8</td>
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<td>B</td>
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<tr>
<td>C</td>
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<td>D</td>
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<td>0</td>
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</tr>
<tr>
<td>E</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>F</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Total: 16
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

<table>
<thead>
<tr>
<th>Remote Browser</th>
<th>HMC 2.13.0</th>
<th>HMC 2.12.1</th>
<th>HMC 2.12.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>IE (Internet Explorer)</td>
<td>Version 10 &amp; 11</td>
<td>Version 8, 9, &amp; 10</td>
<td>Version 8 &amp; 9</td>
</tr>
<tr>
<td>Firefox</td>
<td>Version 24.8 &amp; 33</td>
<td>Version 17.5 &amp; 21</td>
<td>Version 10</td>
</tr>
<tr>
<td>Google Chrome</td>
<td>Version 38</td>
<td>Version 26</td>
<td>Version 20</td>
</tr>
</tbody>
</table>

- 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\<username>\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\<username>\AppData\LocalLow\Sun\Java\Deployment\deployment.properties
   - **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
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
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)
User Management – Create New Role: task(s) per object(s)
Activate for LP01

New icon
User Management – New Role wizard

Specify the role name

Select the Activate row in the list of tasks
User Management – New Role wizard

Select the LP01 row in the list of objects

Click Finish to create the new role
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

Specify the user name

Specify your desired authentication method
User Management – New User wizard

Select the Activate LP01 role

Click Finish to create the new user
User Management – dashboard shows the new user

- 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](image)

<table>
<thead>
<tr>
<th>Select</th>
<th>User</th>
<th>Date</th>
<th>Security Event</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ACSADMIN</td>
<td>5/9/14 08:04:17.750</td>
<td>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 &quot;Access Administrator Tasks&quot;.</td>
</tr>
<tr>
<td></td>
<td>ACSADMIN</td>
<td>5/9/14 08:03:49.730</td>
<td>*The user profile ACSADMIN was changed.</td>
</tr>
<tr>
<td></td>
<td>ACSADMIN</td>
<td>5/9/14 08:02:53.300</td>
<td>User acsadmin has logged on from the console to session id 3. The user's maximum role is &quot;Access Administrator Tasks&quot;.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5/9/14 08:01:55.500</td>
<td>User acsadmin was not permitted to log on since the userid is not allowed remote access.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5/9/14 05:35:42.410</td>
<td>An upgrade to EC level N98230 was performed.</td>
</tr>
</tbody>
</table>

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

Security log is 1% full
Security Enhancements – Security Auditing (cont.)

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

![Authentication Data]

**User:** ACSADMIN  
**UUID:** d5f18640-2e4a-11e3-bfaa-e8b2331d5994  
**Console name:** HMCUNKNOWN02  
**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]
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
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
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 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 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)
- 2620:0:6c4:200:129:42:54:189 (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

- **2010**
  - zManager Tree Enhancements

- **2015**
  - zBX SE Tree-Only
## Tree UI Advantages

### Easier Navigation and Discovery

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objects and tasks are easier to find with fewer views and clicks required.</td>
<td>Hierarchical Tree Style Navigation</td>
</tr>
<tr>
<td></td>
<td>Topology Views</td>
</tr>
<tr>
<td></td>
<td>Powerful Sorting and Quick Filtering</td>
</tr>
<tr>
<td></td>
<td>Context Sensitive Task Menus</td>
</tr>
<tr>
<td></td>
<td>Tasks Index</td>
</tr>
<tr>
<td></td>
<td>Bread Crumbs</td>
</tr>
<tr>
<td></td>
<td>Home Page Selection</td>
</tr>
<tr>
<td></td>
<td>Back and Forward Navigation</td>
</tr>
<tr>
<td></td>
<td>Resource Tabs</td>
</tr>
<tr>
<td></td>
<td>Collapsible Views</td>
</tr>
<tr>
<td></td>
<td>Easy Selection of Objects</td>
</tr>
</tbody>
</table>

### More Information in Primary Views

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Object properties and status are displayed in primary views.</td>
<td>Detailed Status Overview</td>
</tr>
<tr>
<td></td>
<td>Aggregated Status Bar</td>
</tr>
<tr>
<td></td>
<td>Object Properties, Status, and Metrics</td>
</tr>
<tr>
<td></td>
<td>Object Hyperlinks to Details</td>
</tr>
<tr>
<td></td>
<td>Customizable Tasks Pad</td>
</tr>
<tr>
<td></td>
<td>Task Descriptions and Favorites</td>
</tr>
<tr>
<td></td>
<td>Links to On-line Libraries and Tutorials</td>
</tr>
<tr>
<td></td>
<td>Table Data Export</td>
</tr>
</tbody>
</table>
Thank you for your time and consideration….

Brian Valentine
HMC/SE Team

Contact for any Questions:
Brian Valentine, (607) 429-4382, bdvalent@us.ibm.com
Other SHARE Sessions of Related Interest

- August 11\textsuperscript{th}, 11:15 AM – 12:15 PM

- August 11\textsuperscript{th}, 1:45 – 2:45 PM

- August 11\textsuperscript{th}, 3:15 – 4:15 PM
  - \textbf{17705}: Connect the Dots: a z13 and z/OS Dispatching Update

- August 12\textsuperscript{th}, 8:30 – 9:30 AM
  - \textbf{17436}: Top Ten Things You Should be Doing on Your HMC but You're Not

- August 13\textsuperscript{th}, 3:15 – 4:15 PM
  - \textbf{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
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
Crypto Express5S as viewed in the LPAR
Crypto Express5S on the Crypto Configuration task

```
<table>
<thead>
<tr>
<th>Select</th>
<th>Number</th>
<th>Status</th>
<th>Crypto Serial Number</th>
<th>Type</th>
<th>Operating mode</th>
<th>TKE Commands</th>
</tr>
</thead>
<tbody>
<tr>
<td>☑</td>
<td>4</td>
<td>Configured</td>
<td>YH30DV48T354</td>
<td>X5 CCA Coprocessor</td>
<td>IBM Default</td>
<td>Denied</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>Configured</td>
<td>YH30DV48T346</td>
<td>X5 CCA Coprocessor</td>
<td>IBM Default</td>
<td>Denied</td>
</tr>
</tbody>
</table>
```

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

- View Details...
- Test RNG/CIS
- Zeroize
- Usage Domain Zeroize
- TKE Commands...
- Crypto Type Configuration...

- Zeroize All
- Test RNG/CIS on All
- UDX Configuration...
- Refresh
- Cancel
- Help
Customize Image profile

Assigned Domains

Select | Index | Control | Control and Usage
□ 0 | ✔

Assigned Cryptos

Select | Number | Candidate | Candidate and Online
□ 0 | ✔
□ 1 | ✔
□ 2 | ✔
□ 3 | ✔
□ 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.
Customize Image profile – edit, remove, add

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

Assigned Domains

Select | Index | Control | Control and Usage
-------|-------|---------|------------------
   0

Assigned Cryptos

Select | Number | Candidate | Candidate and Online
-------|--------|-----------|---------------------
   0   |        |           | ✓
   1   |        | ✓         |
   2   |        | ✓         |
   3   |        | ✓         |
   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
Change LPAR Crypto controls – edit, remove, add

**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.
View LPAR Crypto controls – no conflicts identified

<table>
<thead>
<tr>
<th>Partition</th>
<th>Active</th>
<th>Crypto Numbers</th>
<th>Conflicts</th>
</tr>
</thead>
<tbody>
<tr>
<td>LP08</td>
<td>Yes</td>
<td>0-7</td>
<td></td>
</tr>
<tr>
<td>LP09</td>
<td>Yes</td>
<td>0-7</td>
<td></td>
</tr>
<tr>
<td>LP11</td>
<td>Yes</td>
<td>0-9</td>
<td></td>
</tr>
<tr>
<td>LP14</td>
<td>Yes</td>
<td>0-15</td>
<td></td>
</tr>
<tr>
<td>LP15</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LX1</td>
<td>No</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Partition</th>
<th>Active</th>
<th>Indexes</th>
<th>Conflicts</th>
</tr>
</thead>
<tbody>
<tr>
<td>LP08</td>
<td>Yes</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>LP09</td>
<td>Yes</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>LP11</td>
<td>Yes</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>LP14</td>
<td>Yes</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>LP15</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LX1</td>
<td>No</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
View LPAR Crypto controls – with conflicts identified

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

Cryptographic Candidates

<table>
<thead>
<tr>
<th>Partition</th>
<th>Active</th>
<th>Crypto Numbers</th>
<th>Conflicts</th>
</tr>
</thead>
<tbody>
<tr>
<td>LP08</td>
<td>Yes</td>
<td>0-7</td>
<td></td>
</tr>
<tr>
<td>LP09</td>
<td>No</td>
<td>0-7</td>
<td></td>
</tr>
<tr>
<td>LP11</td>
<td>Yes</td>
<td>0-9</td>
<td></td>
</tr>
<tr>
<td>LP14</td>
<td>Yes</td>
<td>0-15</td>
<td></td>
</tr>
<tr>
<td>LP15</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LX1</td>
<td>No</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Conflicts:
- LP08
- LP09
- LP11
- LP14

Usage Domain Indexes

<table>
<thead>
<tr>
<th>Partition</th>
<th>Active</th>
<th>Indexes</th>
<th>Conflicts</th>
</tr>
</thead>
<tbody>
<tr>
<td>LP08</td>
<td>Yes</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>LP09</td>
<td>No</td>
<td>0-1</td>
<td></td>
</tr>
<tr>
<td>LP11</td>
<td>Yes</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>LP14</td>
<td>Yes</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>LP15</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LX1</td>
<td>No</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Conflicts:
- LP08
- LP09
- LP11
- LP14
View LPAR Crypto controls – with conflicts identified
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

### SAN Explorer - PCHID0514

- **CSS.CHPID:** 0.8A
- **PCHID:** 0514
- **Partition ID:** 0
- **MIF image ID:** 1
- **NPIV:** Disabled
- **Physical port WWPN:** C05076FFFFC005141
- **Physical port FC-ID:** E10400

#### Devices

<table>
<thead>
<tr>
<th>Select</th>
<th>Device Number</th>
<th>World Wide Port Name</th>
<th>FC-ID</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5140</td>
<td>C05076FFFFC005141</td>
<td>E10400</td>
</tr>
<tr>
<td></td>
<td>5141</td>
<td>C05076FFFFC005141</td>
<td>E10400</td>
</tr>
<tr>
<td></td>
<td>5142</td>
<td>C05076FFFFC005141</td>
<td>E10400</td>
</tr>
<tr>
<td></td>
<td>5143</td>
<td>C05076FFFFC005141</td>
<td>E10400</td>
</tr>
<tr>
<td></td>
<td>5144</td>
<td>C05076FFFFC005141</td>
<td>E10400</td>
</tr>
<tr>
<td></td>
<td>5145</td>
<td>C05076FFFFC005141</td>
<td>E10400</td>
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<tr>
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<td>514A</td>
<td>C05076FFFFC005141</td>
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<td>C05076FFFFC005141</td>
<td>E10400</td>
</tr>
<tr>
<td></td>
<td>514C</td>
<td>C05076FFFFC005141</td>
<td>E10400</td>
</tr>
<tr>
<td></td>
<td>514D</td>
<td>C05076FFFFC005141</td>
<td>E10400</td>
</tr>
<tr>
<td></td>
<td>514E</td>
<td>C05076FFFFC005141</td>
<td>E10400</td>
</tr>
<tr>
<td></td>
<td>514F</td>
<td>C05076FFFFC005141</td>
<td>E10400</td>
</tr>
</tbody>
</table>

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

**Close**  **Refresh**
SAN Explorer for FCP – Zone Data

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

<table>
<thead>
<tr>
<th>Select</th>
<th>World Wide Port Name</th>
<th>FC-ID</th>
<th>Manufacturer</th>
<th>Type/Model</th>
<th>Sequence number</th>
<th>Plant</th>
<th>Tag</th>
<th>World Wide Node Name</th>
<th>Symbolic Port Name</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>C05076FFFC005141</td>
<td>E10400</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5005076400C57488</td>
<td>SYMETRIX::001949</td>
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<tr>
<td></td>
<td>5005076304014739</td>
<td>E36100</td>
<td>IBM</td>
<td>002107/922</td>
<td>0000000CLTZ1</td>
<td>75</td>
<td>0011</td>
<td>5005076304FFC739</td>
<td>88 PCHID: 0514</td>
</tr>
<tr>
<td></td>
<td>5000097200B411C</td>
<td>E37800</td>
<td></td>
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SAN Explorer for FCP – Remote N_BPort - LUNs

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

--- Select Action ---
Filter
SAN Explorer for FCP – Remote N_Port – Node ID

Local Port

- CSS.CHPID: 0.8A
- PCHID: 0514
- Partition ID: 0
- MIF image ID: 1
- NPIV: Disabled
- Physical WWPN: C05076FFFFC005141
- Physical FCID: E10400
- Device number: 5140
- Logical WWPN: C05076FFFFC005141
- 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

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 39303202 20202020 20202020
0020: 3362E35 3735434C 54A3131 30393200
0030: 20202020 20202020 0600DA0 0A000030

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

- Two shared FIDs
New Channels

- FICON Express 16s
  - No significant changes to HMC/SE
    - Except new PCHID icon
    - All other functionality same as FICON Express 8S

- IBM Integrated 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

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 Login: Customize the automatic login settings for the console
- Manage SSH Keys: Manage SSH Keys used for Secure FTP access

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 the schedule of automated console operations
- Object Locking Settings: Change the automatic locking of managed objects

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

Domain Security
Change console's domain name or password

Configure 3270 Emulators
Customize the 3270 emulator sessions

Customize AP Setting
Customize the Application Programming Interface for the console

Create App 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.
Configure Backup Settings -- screen shots

![Backup FTP Site Access Information]

- **FTP site**: ftp.backup.server
- **User ID**: user
- **Password**: ********
- **Directory**: backup/files/

- **Use secure FTP**

[Buttons: OK, Clear, Cancel, Help]
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 for SE – Legacy Systems

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

![Backup Critical Data Confirmation](image)
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.)

Authentication Data

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.
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
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

Diagram showing the connectivity of zEC12, zBX, and z196 systems to a Primary HMC and an Alternate HMC.
IBM z13 & zBX Node Ensemble

- zEC12
- IBM z13
- zBX
- z196
- SEs
- Alternate HMC
- Primary HMC

IBM z13 will never own a zBX!
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 >= 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
Trademarks