General information on the HMC prior to the z196 Unified Resource Manager

- The Hardware Management Console (HMC) communicates with each Central Processor Complex (CPC) through a Support Element (SE); see diagram A.
- A support element is a dedicated workstation used for monitoring and operating a system.
- It is attached to the central processor complex (CPC) of a system; see diagram B.
- The SE is an integrated support element. That is, the support element is located inside the same frame that the central processor complex (CPC) is located.
- An alternate support element is also provided to give you the option to switch from your primary support element to your alternate support element if hardware problems occur.

A HMC is a console that you can use to manage and monitor hardware.

- The HCM has a user interface that provides functions you need through an object-oriented design.
- Through this design, you can directly manipulate the objects that are defined to the HMC and be aware of changes to the hardware status as they are detected.

The HMC communicates with each Central Processor Complex (CPC) through the CPC's SE.

- When tasks are performed at the HMC, the commands are sent to one or more SEs, which then issues commands to their CPCs.

- The SE is usually responsible for maintenance operations on a CPC, depending on the number of components, HMC monitoring, System z Moderated, and Power System z.</p>

Change Management

- Change Management has been extended to deal with the fundamental hardware components.
- Blade-related problems are analyzed to determine their severity and are reported to IBM through the call-home mechanism for potential service action.
- Problems that are system-detected can be managed through these mechanisms, as can customer-initiated problems.
- When a service action is required, repair activities are guided by the HMC and the effectiveness of the repair is verified automatically.

Configuration Management

- Configuration Management has been extended to handle vital product data (VPD) for optimizers and blades, determining what VBP resources are enabled to be powered on and managed.
- The layout of the zBX frame can be displayed and managed (e.g., for MES handling), including frames, switches, and BladeCenters.
- Capacity on Demand support enables permanent customer-initiated upgrades to be applied.
- Operations Management allows blade power to be controlled and extends the existing HMC programming interfaces to include operating on zBX resources. Blade-related events can be used as a basis for e-mail and other notifications to support personnel. Functions such as firmware updates and blade activation can be managed through scheduled operation and server enables blade resources to synchronously be assigned or removed.
- Settings for the operational network can also be managed; a console can be launched to provide direct access to blades.

- Total systems management across heterogeneous resources.
- zBX is not physically integrated, but may be tied to a managing zCPC.
- Hardware Management Console (HMC) extended to provide System z values to zBX componentry.
- Secure SSL based remote access (optional)
- Highly flexible password control
- Full complement of certificate management capabilities
- Complete user management suite
- Full function embedded firewall
- Full access controls for tasks and resources allowed for each user (i.e., User Roles provided)

The HMC provides advanced virtualization management that controls hypervisors (each logically federated as a pool of clustered resources) using a single point of control (SPC).

A single integrated administrator model

Notable: A zManager (zMGR) is not a replacement for zOS Console, but it’s a means of making enhanced hardware management smarter.

These extensions provide System z qualities of service to applications-specific optimizers and to generic-purpose IBM Blades.

- Blades integrate into the System z ecosystem (IBM Smart Analytics and Power Systems, etc.)
- Support is for standard 16 U and optional Blade Extension (BX) housing racks for Blade Centers
- The HMC must be integrated and may be tied to a managing zCPC

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A single integrated administrator model

- Hypervisors for the Blades will be treated as System z firmware.
- No customer requirements to obtain these hypervisors; no installation, no need to service (shipped with System z)
- System z boot up will take hypervisors off the SE hard drive and deployed onto the Blades which will be configured and serviced automatically by System z firmware

SE appliance functionality

- Keeps track of the firmware inventory, entitlements, orchestrates capacity upgrade on demand, backup, LPAR configuration, and virtualization integration with Blades (i.e., if a blade or adapter fails, the blade fails, zBX elements) the same process will be used for zBX to call IBM RETAIN to be recorded and service dispatched as used by System z today, inclusive of firmware switches

HMC will begin to provide a more steady state operational capabilities of the system and will eventually be able to plug into other external management interfacing products such as Tivoli, IBM System Director, and even customer based interfaces

Consider the Blades being new specialty engines added to System z managed by the zManager.

- zManager is a set of management capabilities for hardware & platform mgmt up through the hypervisors NOTE: This is NOT taking over the management of the guests, OS middleware or subsystems.

- Hardware setup and management is delivered in suites at different integration levels and are always present

- Manage (initial)
- Monitoring and trend reporting of CPU energy efficiency, simplifying energy management
- New monitor dashboard augments System Activity Display, giving a broader view of system resource use (lower right – Dash Board)
- Monitor and manage energy activities across architectural boundaries

- Introductory data power
- Data Power is not physically integrated, but may be tied to a managing zCPC.
- zManager includes a new "Deployment Manager Guide" that helps customers walk through the steps required to create and manage and assemble and allows them to create notes to document the steps they have performed.

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- Workloads are managed and deployed as System z LIC.
- Blades are logically federated as a pool of clustered resources
- Hypervisors are isolated at power-on reset and isolated on the internal platform management network

- Workload created visible in the main UI and additional choice of where to go next are suggested in the confirmation dialog.

- System Assist Processors (processor usage)
- Logical Partitions (processor usage)
- CPIDs & Channel Usage
- Blades (processor usage, memory usage, network, I/O, storage)
- Virtual Servers (name, hypervisor, processor & memory usage)