IBM i POWER SYSTEM

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Welcome
TOPICS FOR DISCUSSION

• Service Processor
• Hypervisor
• Virtual I/O Server
• IBM i Operating System
• System Service Tools
Advanced System Management Interface (ASMI)

Advanced System Management Interface (ASMI) is a graphical interface that is part of the service processor firmware. The ASMI manages and communicates with the Flexible Service Processor (FSP). The ASMI might also be referred to as the service processor menus.

The Flexible Service Processor (FSP) is firmware that provides diagnostics, initialization, configuration, and run-time error detection and correction. The FSP starts up when the power cords are connected to the system. This process can take a couple minutes to complete. Until the FSP is powered on, you cannot access any of the ASMI menus.

You can access the ASMI through the Hardware Management Console (HMC), console, or a Web browser. When accessing ASMI through HMC, some of the features are disabled.

Using ASMI, an administrator can run the following basic operations:

• Viewing system information
• Controlling system power
• Changing the system configuration
• Setting performance options
• Configuring network services
• Using on-demand utilities
• Using concurrent maintenance utilities
• Viewing and customizing ASMI service aid menus

You cannot manage logical partitions through the ASMI.
Managed System Updates (cont.)

When a managed system is selected, Updates tasks perform a guided update of managed system, power subsystem, or I/O Licensed Internal Code.

Licensed Internal Code can be changed in two ways. You can upgrade the Licensed Internal Code installed on a managed system to a new release, or update the existing Licensed Internal Code running on the system.

An update of a current Licensed Internal Code release may fix problems or add additional function. Updating the Licensed Internal Code may or may not be a disruptive process. Updates that do not disrupt the system are called concurrent updates. To update the Licensed Internal Code currently installed on the managed system, click Change Licensed Internal Code for the current release task.

A new release of the Licensed Internal Code may add support for new hardware or add new function. Upgrading the Licensed Internal Code to a new release is always a disruptive process requiring a complete shut down, power off, and restart of the system. To upgrade the Licensed Internal Code to a new release, click Upgrade Licensed Internal Code to a new release.

Concurrent updates allow the system and the applications running on the system to continue to run as the Licensed Internal Code update is applied. This appreciably lessens the system downtime associated with Licensed Internal Code maintenance. Most updates released will be concurrent. However, certain types of problems are critical to fix and can be fixed only with a disruptive update. View system information allows you to view the levels of the Licensed Internal Code available in a repository and determine which of the available updates are concurrent and which are disruptive.

If the update is disruptive, you are given the option of installing and activating (incurring the disruption) or deferring the activation to a more convenient time. Concurrent updates can only be done for managed system Licensed Internal Code.

Note: Checking is done before the Licensed Internal Code update to assure that the system is in the correct state for an update. The state of the system must not change during a code update. For example, partitions should not be shut down during the Licensed Internal Code update.
Managed System Updates (cont.)

New releases of Licensed Internal Code (upgrades) and updates to these releases are available from the following repositories:
- IBM® service web site
- DVD - a DVD can be ordered from IBM or a DVD may be created that contains downloaded Licensed Internal Code
- FTP site - a site accessible to your HMC by FTP that contains a previously downloaded level of Licensed Internal Code
- HMC hard disk drive - Licensed Internal Code may be downloaded directly to the HMC's hard disk drive or the hard disk drive may contain a previously downloaded level of the Licensed Internal Code

Fixes and upgrades to the Licensed Internal Code can be ordered or downloaded from the IBM Fix Central website.
Use the Flash Side Selection task to select which flash side will be active after the next activation. (This task is intended for service user mode only.)

Use the Check system readiness task to check that all systems selected are in the correct state for the Licensed Internal Code update.

Choose the View system information task to view the level of the Licensed Internal Code currently installed on your managed system or I/O. When a repository is selected, View system information also displays retrievable levels of the Licensed Internal Code available in the repository.
Managed System Updates (cont.)

**Change Licensed Internal Code for the Current Release**
Use this task to apply updates to the currently installed Licensed Internal Code (also known as system firmware) on your system within the current release.

**Upgrade Licensed Internal Code to a New Release**
A new release level of Licensed Internal Code supports major new function such as the introduction of new hardware models and significant function or features enabled by firmware. In addition to the new function and hardware support, new release levels also contain fixes. Upgrading from one release level to another is disruptive to system operations.

**Flash Side Selection**
Select which flash side will be active after the next activation.

**Check System Readiness**
Use this task to confirm that the managed system is in the correct state to perform a Licensed Internal Code update or upgrade successfully.

**View System Information**
Examine current LIC levels on the managed system, including installed, activated, and accepted levels. If a repository is selected, this task also displays retrievable levels available in a repository.
IBM Power Hypervisor™

The underlying software of the Virtual I/O Server (VIOS) that enables the sharing of physical I/O resources between the client logical partitions within the server. In IVM environments, the terms VIOS and IVM are sometimes used interchangeably.

A hypervisor or virtual machine monitor (VMM) is a piece of computer software, firmware or hardware that creates and runs virtual machines.

A computer on which a hypervisor is running one or more virtual machines is defined as a host machine. Each virtual machine is called a guest machine. The hypervisor presents the guest operating systems with a virtual operating platform and manages the execution of the guest operating systems. Multiple instances of a variety of operating systems may share the virtualized hardware resources.
Virtual I/O Server overview

The VIOS is part of the PowerVM® Editions hardware feature. The VIOS is software that is located in a logical partition. This software facilitates the sharing of physical I/O resources between client logical partitions within the server. The VIOS provides virtual Small Computer Serial Interface (SCSI) target, virtual Fibre Channel, Shared Ethernet Adapter, and PowerVM Active Memory™ Sharing capability to client logical partitions within the system. The VIOS also provides the Suspend/Resume feature to AIX®, IBM® i, and Linux client logical partitions within the system.

As a result, you can perform the following functions on client logical partitions:

• Share SCSI devices, Fibre Channel adapters, and Ethernet adapters
• Expand the amount of memory available to logical partitions, suspend and resume logical partition operations by using paging space devices
• A dedicated logical partition is required for the VIOS software solely for its use.
• You can use the VIOS to perform the following functions:
  • Sharing of physical resources between logical partitions on the system
  • Creating logical partitions without requiring additional physical I/O resources
  • Creating more logical partitions than there are I/O slots or physical devices available with the ability for logical partitions to have dedicated I/O, virtual I/O, or both
  • Maximizing use of physical resources on the system
  • Helping to reduce the storage area network (SAN) infrastructure
IBM i OPERATING SYSTEM

IBM i is an EBCDIC-based operating system that runs on IBM Power Systems and on IBM PureSystems. The name was introduced in 2008, and it is the current evolution of the operating system, previously named i5/OS, and originally named OS/400 when it was introduced with the AS/400 computer system in 1988.

IBM designed IBM i as a "turnkey" operating system, requiring little or no on-site attention from IT staff during normal operation. For example, IBM i has a built-in DB2 database which does not require separate installation. Disks are multiply redundant, and can be replaced on line without interrupting work. Hardware and software maintenance tasks are integrated. System administration has been wizard-driven for years, even before that term was defined. This automatic self-care policy goes so far as to automatically schedule all common system maintenance, detect many failures and even order spare parts and service automatically.

Another peculiar feature is that this system was one of the earliest to be object-based. Unlike traditional OSes like UNIX and Windows NT there are no files, only objects of different types. It implemented one of the earliest-known systems for persistent objects. Further, the objects persist in very large, flat virtual memory, called a single-level store.

The IBM i Access licensed product includes iSeries Navigator, a client-based and web-based graphical tool for administration of the system, database, Apache web server, and WebSphere Application Server. IBM Systems Director Navigator for i now can be used to manage target servers running IBM i 5.4, 6.1 or 7.1 from a single browser environment with the IBM i 7.1.

In 1999, IBM introduced logical partitioning (LPARs) with i5/OS to support multiple virtual systems on a single hardware footprint.
Accessing system service tools

Access SST when the system is in the full-paging environment.

You can access SST only when the system is in the full-paging environment (see System paging environments). The full paging environment is used during normal system operation. All disk units, the Licensed Internal Code, and the operating system are available.

You can access system service tools (SST) in two ways:

1. Selecting SST from the problem handling option
   • At the Main Menu, select the Problem handling option. The Problem Handling display appears.
   • Select the System service tools option. The Start Service Tools (SST) Sign On display appears.
   • Type in your user ID and password and press Enter. The System Service Tools display appears.
   • For more information on SST options, see System service tools options. This ends the procedure.

2. Entering the Start System Service Tools (STRSST) command
   • Type STRSST on the command entry line at the Main Menu and press Enter. The Start Service Tools (SST) Sign On display appears.
   • Type in your user ID and password and press Enter. The System Service Tools (SST) display appears.
   • The System Service Tools (SST) display appears.
SYSTEM SERVICE TOOLS

System Service Tools Options

This topic provides information about system service tools (SST) options.

When you access SST (see Accessing system service tools), the following options are available:

**Start a Service Tool**
This topic provides information about the start a service tool option.

**Work with Active Service Tools**
Use this option to list active service tools and their status.

**Work with Disk Units**
Select this option from the System Service Tools display.

**Work with System Partitions**
Some functions are restricted to DST use only and cannot be performed from SST.

**Work with System Capacity**
Some functions are restricted to DST use only and cannot be performed from SST.

**Work with System Security**
Some functions are restricted to DST use only and cannot be performed from SST.

**Work with Service Tools User IDs**
Some functions are restricted to DST use only and cannot be performed from SST.
Resources

• IBM Knowledge Center
  https://www-01.ibm.com/support/knowledgecenter

• Wikipedia
  https://en.wikipedia.org/wiki/IBM_i
QUESTIONS?