

CSK0-001

Server+

version: 6.09.04

Study Notes

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INSTALLATION

-  Conduct pre-installation planning activities: Plan and verify the installation, hardware compatibility, power sources, space, UPS and network availability etc.
-  Install hardware using ESD best practices.
 - Mount the rack installation
 - Cut and crimp network cabling
 - Install UPS
 - Verify SCSI ID configuration and termination
 - Verify power-on via power-on sequence

CONFIGURATION

-  Check/upgrade BIOS/firmware levels (system board, RAID, controller, hard drive, etc.)
-  Configure RAID
-  Install NOS. Configure network and verify network connectivity
-  Configure external peripherals (UPS, external drive subsystems, etc.)
-  Install NOS updates to design specifications
-  Update manufacturer specific drivers
-  Install service tools (SNMP, backup software, system monitoring agents, event logs, etc.)
-  Perform Server baseline

 Document the configuration

UPGRADING

 Perform full backup and verify backup

 Add Processors and verify compatibility, N 1 stepping, speed and cache matching. Perform BIOS, OS and software upgrade. Perform upgrade checklist, review FAQs, instruction, facts and issues.

 Add, replace and verify hard drives. Add drives to array. Perform upgrade checklist, Review FAQs, instructions, facts and issues.

 Add or upgrade memory. Verify hardware and OS support and compatibility. Perform upgrade checklist, review FAQs, instruction, facts and issues. Perform server optimization to make use of additional RAM

 Upgrade BIOS/firmware: Perform upgrade checklist, review FAQs, instruction, facts and issues. Implement ESD best practices; confirm that upgrade has been recognized; review and baseline; document upgrade.

What is CMOS?

CMOS stands for Complimentary Metal Oxide Semiconductor. It is a chip installed on the motherboard, which stores hardware configuration of the computer. When you boot the computer, the hardware is checked according to the CMOS configuration. If the hardware is not configured according to the CMOS configuration, the BIOS issues a warning.

The following information is stored in the CMOS:

- Date and time
- CPU type and memory size
- Floppy disk drive parameters
- Hard disk parameters such as cylinders, heads, and sectors

You can start the CMOS setup program by pressing the DEL key or CTRL+ALT+ESC at the time of system startup during Power On Self Test (POST). In CMOS, you can change the configuration of your computer using a menu driven application.

If you forget the password for CMOS configuration, you cannot change the CMOS configuration. To remove the password assigned, you have to short the CMOS jumper. On some of the new motherboards, you can remove the password by removing the CMOS backup battery for few seconds instead of shorting the CMOS jumper.

 Upgrade adapters (e.g., NICs, SCSI cards, RAID, etc.)
Perform upgrade checklist, review FAQs, instruction, facts and issues.

What is SCSI?

Small Computer System Interface (SCSI) is the second most popular drive interface in use today after the Integrated Drive Electronics (IDE) interface. SCSI is faster than IDE and supports more devices. SCSI devices, such as hard disk drive and CD-ROM drive, are better suited in a network environment in which many users access shared drives simultaneously. SCSI has three standards: SCSI-1, SCSI-2, and SCSI-3.

What is a network interface card (NIC)?

A network interface card (NIC) is a computer circuit board or card installed in a computer. It provides physical connection between a computer and the network. Network interface cards provide a dedicated, full-time connection to a network.

 Upgrade peripheral devices, and verify appropriate system resources (e.g., expansion slots, IRQ, DMA, etc.). Perform upgrade checklist, review FAQs, instruction, facts and issues.

What is an ISA bus?

Industry Standard Architecture (ISA) is an 8-bit expansion bus that provides an interface from devices on expansion cards to the computer's internal bus. A later version of ISA bus comes with a 16-bit expansion slot.

What is an EISA bus?

Extended Industry Standard Architecture (EISA) is a 32-bit PC expansion bus designed as a superset of a 16-bit ISA bus. The EISA bus is designed to increase the speed and expand data width of the legacy expansion bus while still supporting older ISA cards.

Like MCA, EISA is a 32-bit bus with backward compatibility and a 16-bit ISA bus. This is accomplished by providing the slot with two layers of connectors. The top layer is identical to a 16-bit ISA slot. The bottom layer is engaged by an EISA device, and ignored by an ISA device. So the ISA device or the EISA device can work in an EISA slot.

What is a PCI bus?

Peripheral Component Interconnect (PCI) is a high-performance, 32-bit or 64-bit bus designed to be used with devices that have high bandwidth requirements, such as the display subsystem.

What is a VESA bus?

VESA is an expansion bus standard developed by Video Electronics Standards Association to provide high-performance video and graphics capabilities.

 Upgrade system monitoring agents. Perform upgrade checklist, review FAQs, instruction, facts and issues.

 Upgrade service tools (e.g., diagnostic tools, EISA configuration, diagnostic partition, SSU, etc.). Perform upgrade checklist, review FAQs, instruction, facts and issues.

 Upgrade UPS. Perform upgrade checklist, review FAQs, instruction, facts and issues.

PROACTIVE MAINTENANCE

 Perform regular backup

-  Create baseline and compare performance
-  Set SNMP thresholds
-  Perform physical housekeeping
-  Perform hardware verification
-  Establish remote notification..

ENVIRONMENT

-  Recognize and report on physical security issues. Limit access to server room and backup tapes, ensure physical locks exist on doors, establish anti-theft devices for hardware (lock server racks).
-  Recognize and report on server room environmental issues (temperature, humidity/ESD/power surges, back-up generator/fire suppression/flood considerations)

TROUBLESHOOTING AND PROBLEM DETERMINATION

-  Perform problem determination using questioning techniques. Identify contact(s) responsible for problem resolution. Use senses to observe problem (e.g., smell of smoke, observation of unhooked cable, etc.)
-  Use diagnostic hardware and software tools and utilities. Identify and use common diagnostic tools effectively.
 - Troubleshoot hardware and software problem.
 - Describe how to perform remote troubleshooting for a wake-on-LAN
 - Describe how to perform remote troubleshooting for a remote alert.

What is BOOTSECT.DOS file?

BOOTSECT.DOS is a Windows NT/2000 file with hidden, system, and read-only attributes. NTLDR uses BOOTSECT.DOS when a computer is configured to multiboot option with MS-DOS, Windows 3.x, and Windows 9x. This cannot be used to configure the default operating system.

What is the role of NTDETECT.COM in Windows NT/2000 operating system?

NTDETECT.COM file is one of the Windows NT/2000 startup files. It is located in the root of the startup disk. This file along with the NTBOOTDD.SYS file performs the initial hardware detection during the setup process and then passes the control to the kernel. The other files located in the root of the startup disk are NTLDR, BOOT.INI, and BOOTSECT.DOS (this file is available on a multiple boot system).

What is BOOT.INI file?

The BOOT.INI file is used by Windows NT to determine the operating system options to display during the boot process. It describes the location of the boot partitions specified using Advanced RISC Computing (ARC) naming conventions. BOOT.INI contains information that NTLDR reads for loading the operating system. If multiple operating systems exist on a computer, BOOT.INI provides the choice of selecting an operating system.

-  Identify bottlenecks (e.g., processor, bus transfer, I/O, disk I/O, network I/O, memory)

What is I/O address?

I/O address is a communication port between a device and the CPU. The CPU needs a memory address, known as Input/Output (I/O) address, to communicate with any peripheral device. I/O address is a hexadecimal number that the CPU uses to identify a device. I/O address allows the CPU to send instructions to devices installed on the bus slot of a computer.

Resources such as I/O addresses, IRQs, and DMAs are configurable aspects of communication between devices inside a PC. Whenever a component, such as a sound card or internal modem is installed in a PC, its I/O address, IRQ, and DMA channels must be correctly configured.

-  Identify and correct misconfigurations and/or upgrades
-  Determine if problem is hardware, software or virus related

DISASTER RECOVERY

-  • Plan implement and test the redundancy, fault tolerance and disaster recovery.
- Use the technique of hot swap, warm swap and hot spare to ensure availability
- Identify types of backup and restoration schemes