



## Skill Set Alignment IT Essentials I: PC Hardware and Software together with IT Essentials II: Network Operating Systems

The following skill set for IT Essentials I: PC Hardware and Software, and IT Essentials II: Networking Operating Systems, lists the competencies that students learn during these courses. These courses help prepare students for the CompTIA A+ and Server+ certification exams. Employers, Academies, and students may use this document to communicate current knowledge, or to identify skills demonstrated at a work setting. Another valuable use of this information is as a list of proficiencies expected through work experience.

\_\_\_\_\_  
Name of Business/Employer

\_\_\_\_\_  
Name of Student

\_\_\_\_\_  
Street Address

\_\_\_\_\_  
Street Address

\_\_\_\_\_  
City                      State                      Zip

\_\_\_\_\_  
City                      State                      Zip

\_\_\_\_\_  
Phone

\_\_\_\_\_  
Phone

\_\_\_\_\_  
Employment Supervisor's Name and Position

### **Skill Set - IT Essentials I and II**

#### **Installation**

- Conduct pre-installation planning activities
- Install hardware using ESD best practices (boards, drives, processors, memory, internal cable, etc.)

#### **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
- Add processors
- Add hard drives
- Increase memory
- Upgrade BIOS/firmware
- Upgrade adapters (e.g., NICs, SCSI cards, RAID, etc.)
- Upgrade peripheral devices, internal and external
- Upgrade system monitoring agents
- Upgrade service tools (e.g., diagnostic tools, EISA configuration, diagnostic partition, SSU, etc.)

- Upgrade UPS

### **Diagnosing and Troubleshooting**

- Identify common symptoms and problems associated with each module and how to troubleshoot and isolate the problems
- Identify basic troubleshooting procedures and how to elicit problem symptoms from customers

### **Troubleshooting and Problem Determination**

- Perform problem determination
- Use diagnostic hardware and software tools and utilities
- Identify bottlenecks (e.g., processor, bus transfer, I/O, disk I/O, network I/O, memory)
- Identify and correct misconfigurations and/or upgrades

### **Preventive Maintenance**

- Identify the purpose of various types of preventive maintenance products and procedures and when to use them
- Identify issues, procedures and devices for protection within the computing environment, including people, hardware and the surrounding workspace

### **Proactive Maintenance**

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

### **Disaster Recovery**

- Plan for disaster recovery
- Restoration

### **Environment**

- Recognize and report on physical security issues

### **Motherboard, Processors, and Memory**

- Distinguish between the popular CPU chips in terms of their basic characteristics
- Identify the categories of RAM (Random Access Memory) terminology, their locations and physical characteristics
- Identify the most popular type of motherboards, their components and architecture (bus structures and power supplies)
- Identify the purpose of CMOS (Complementary Metal-Oxide Semiconductor), what it contains and how to change its basic parameters

### **Printers**

- Identify basic concepts, printer operations and printer components
- Identify care and service techniques and common problems with primary printer types

### **Basic Networking**

- Identify basic networking concepts, including how a network works and the ramifications of repairs on the network

Copyright © 2003 Cisco Systems, Inc. All rights reserved. Cisco, Cisco IOS, Cisco Systems, and the Cisco Systems logo are registered trademarks of Cisco Systems, Inc. and/or its affiliates in the U.S. and certain other countries. All other trademarks mentioned in this document or Web site are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (0108R)