**Desktop Support**

\*Use PC Device Manager & Task Manager to Resolve Issues

Skills:

-able to work with a variety of desktop equipment

-deploying equipment to designated desktops

-troubleshoot configuration issues

-completion of imaging and staging of Laptops and PC’s

-complete user profile backups

-well versed in unpacking, and the packing preparation of old equipment.

<https://www.youtube.com/watch?v=kJ4KiUk-HuY>

**Troubleshooting Methodology**

Step 1: Identify Problem Step 2: Establish a Theory Step 3: Test Theory

Step 4: Resolve Issue(Draft Plan, Implement, Verify, Document the Updates)

First, I'd ask the user to describe the issue they're experiencing. After understanding the symptoms, I'd have them perform basic troubleshooting steps like checking cables, restarting the computer, and ensuring all software is up to date. Then, I'd use diagnostic tools or check system logs for any error messages or warnings. If the problem persists, I'd narrow it down by testing individual components or running specific tests.

**Windows Trace Mode Diagnostic Tools**

\*Peform *Functional Testing* to verify system or application operations based on specified requirements that focuses on validating the software’s features, capabilities, and interactions with other components to ensure that everything operates as intended.

Dotnet-trace Performance analysis and diagnosing .NET applications

Event Viewer Displays info about system events, errors and warnings; ID crashes

Performance Monitor Analyzes system performance, resource usage and network activity,

Visual Studio Diagnostic Tools De-bug .NET apps, provides real-time charts of memory

Typical Issues & Solutions

Overheating PC => Tune up heatsinks and check fans for optimal cooling.

Inoperable USP Port(s) => Clean ports and update drivers

Slow Performance => Use Task Manager to identify resource-heavy apps

Blue Screen of Death => Update drivers / use system restore for BSOD errors

PC Won’t Power On => Check connections and power sources

PC Freezes or Restarts => Update drivers and consider replacing the PSU

Inoperable Keyboard

Error 0x8030024

Non-Responsive Programs

Software & Application Troubles

Inoperable Browser / Printer

Non-Responsive Start Menu & Taskbar

APP Store Not Accessible

Youtube Videos wont Play

Peripheral Device Issues

Unable to Log-In

Print Spooler Service Stops

PC Unable to Wake from Sleep

System & Performance Problems

Can’t See NAS Drives

Unable to Shut Down / Restart

Can’t open Word Office

Inoperable Microphone

No Sound

Display & Network Issues => Update display drivers and check cable connections.

Monitor / Internet Not Working

Windows Crash

Black Screen with Cursor

Key Insights

**Proper Maintenance is Key:** Regularly cleaning your PC and updating drivers can prevent overheating and performance issues. This emphasizes the importance of routine maintenance for longevity.

**Resource Management:** Utilizing tools like Task Manager to monitor resource usage is crucial for maintaining optimal PC performance. Awareness of resource-heavy applications can lead to efficient multitasking.

**Driver Updates are Essential:** Most common issues, such as USB failures and BSOD, can often be resolved through timely updates of device drivers, highlighting the importance of keeping software up to date.

**System Restore as a Lifesaver:** Utilizing system restore points can effectively fix critical errors, such as the blue screen, without extensive data loss, showcasing the value of preventive measures.

**Power Supply Matters**: Ensuring a reliable power source is fundamental; many startup issues stem from inadequate power supplies, stressing the need for proper hardware checks.

**Input Device Checks:** Simple checks on peripherals like keyboards and mice can quickly resolve frustrating issues, reiterating that troubleshooting often starts with the basics.

**Registry and Command Prompt Solutions:** Advanced users can leverage command-line tools for deeper troubleshooting, indicating the value of command-line proficiency in IT support.

**Networking Commands (CMD Line)**

IPCONFIG verify an IP address

NS LOOKUP

PING

TRACERT

NETSTAT identify active connections

**DHCP** is used to automatically assign IP addresses. A DHCP server automates the process of assigning IP addresses and network configurations, which reduces manual errors and simplifies network management. The IP address that indicates the DHCP server cannot be contacted is 169.254.0.130.

**BIOS** (Basic Input/Output System) performs a series of checks known as the Power-On Self-Test (POST) to validate the hardware configuration of the workstation before booting the operating system. It's like a quick health check for your computer's components.

The advantages of UEFI over BIOS:

* Secure boot
* A graphical pre-boot environment with use of the mouse
* The ability to boot from hard drives over 2.1TB
* Access from within Windows by pressing and holding the Shift key while restarting then selecting Troubleshoot

A **MAC address** is the physical network device.

A **Router IP address** is referred to as the Default Gateway.

A **.PST file** is associated with Microsoft Outlook. It's used to store email messages, contacts, calendar events, and other data for offline access and backup.

**DNS** (Domain Name System) translates/resolves domain names (like www.example.com) into IP addresses (like 192.0.2.1) that computers use to identify each other on the network.

A proper **Universal Naming Convention** (UNC) path looks something like this:

\\ServerName\SharedFolder\Resource

**Mapping a network drive** means creating a shortcut on your computer to a folder or drive that's located on another computer or server in your network to access and manage files on the shared resource.

The correct protocol for transferring electronic mail messages is **SMTP** (Simple Mail Transfer Protocol).

Wireless encryption protocols to secure wireless networks:

**WPA** (Wi-Fi Protected Access)

**WEP** (Wired Equivalent Privacy)

An example of a MAC address is 00-1F-E2-57-DD-A6.

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**Computer Network KNOWLEDGE**

**Boot Order** is a BIOS setting used for changing the order in which a PC searches for an Operating System or boot instructions.

**MAC address** a unique hexadecimal number burned in each Network Interface Card.

c. A hexadecimal address assigned to Macintosh Computers.

d. A unique dotted decimal address also known as subnets.

**PXE** is a method in which a computer boots off a network connection to retrieve boot instructions from a server.

**DHCP** is a client/server protocol that automatically assigns Internet Protocol addresses which include the network mask, gateway address, and IP lease information.

**Network Drop** a connection point in which a computer or network device can be plugged to get network connection.

**Network Patch Panel** a connection point that enables network devices to be patched into a network switch or other network connection closet location e.g. IDF.

**Managed Network Switch** is a network switch is a managed layer 2 device that prevents data collision and can segment broadcast domains.

**Kiosks** are customer facing computers that provide information and services such as self-serve transactions for customer convenience.

TFTP is a simple network protocol used for getting/putting a small file to or from a remote computer.

**U position**, also known as ***Rack Unit or RU***, is a measure used to describe the height of a mountable server or electronic equipment.

Different server functions and services ***can be*** consolidated into one physical server hardware using virtualization software.

A Power over Ethernet (PoE) IP camera without a power source ***will NOT*** have network presence connected to a non-PoE network switch.

Most modern retail register setup will consist of a Touchscreen, receipt printer, cash drawer, barcode scanner, debit pinpad and Magnetic Stripe Reader (MSR).

Standalone PoE devices connected to a managed PoE switch ***requires*** its own a power brick to function.

In a managed local network, wireless devices ***can*** securely access local server resources ***only if*** the Wireless LAN Controller (WLC) ***and*** the Wireless Access Points (WAP) are physically connected to the same LAN.

In Public Switched Telephone Network (PSTN), what pins makes a phone line active for analog telephones using a RJ11 connector? #3 & #4 (center pins)

Enterprise Voice over Internet Protocol (VoIP) phone solutions ***are*** mostly connected to a PoE network switch.

**VLAN** is a way of grouping network services and devices.

**Unified Threat Management (UTM)** is a type of network security appliance that enables an administrator to monitor and manage a wide variety of essential security technologies.

Access firewall configuration interface, verify that the DNS server addresses are correctly set, and if not, update them with the appropriate DNS server addresses.

Remove the hard drive and access it from another computer, create a bootable USB drive with a Linux distribution. Use password reset tools and utilize the built-in Administrator account to put in safe mode.

Run Check Disk (CHKDSK) and use the system file checker to scan for and repair corrupted files.

DMA Direct Memory Access

When a PC has been heavily infected and the work order calls for deleting all partitions and a re-OS from external media, *backup client data using another PC or bootable rescue media and follow work order instructions.*

A desktop PC randomly restarts, or shuts off and may or may not be able to quickly power back on is most likely the result of a failed **PSU**.

*Reseat the HDD* A PC cannot start up and is giving an "Operating System not found" error.

Adjust the *Boot Device Order and Disable Secure Boot* to install Windows 8.1 from a DVD.

When a PC has an IP address starting with 169, the *DHCP server* has likely failed.

**Diagnostic Software** are programs used to find out possible faults and their causes.

**Assembly Languages** are classified as low level programming languages.

Use CMD **\show interfaces** to View the State of a Port.

Use CMD **\show interface trunk** to Ascertain if Port is a Trunk or Access.

Use CMD **\Erase startup-config** to Delete the Configuration Data stored in the NVRAM.

When connecting two different layer devices (switch to a pc or router to a switch) you use a **Straight Cable**.

When connecting two of the same layer devices (switch to a switch, router to a router, a PC to a PC) you use a **Crossover Cable**.

**Routers & Switches**

Use the IP split horizon command, when implementing a routing protocol configuration that uses split-horizon, in the **In line configuration mode**.

Use the CMD **\copy flash tfp** to create a backup of your router IOS image to a network server.

Use the **ISL** trunking protocol on a trunk link between Cisco switches.

Use CMD **\no cdp run** to disable the CDP protocol on a router that has multiple interfaces.