Below is a **comprehensive sentence-by-sentence breakdown** of the document **“Automation Scripting Notes”**, fully aligned to your default **Script File Types** format for use in **CompTIA A+ 220-1102 (Core 2)** study (Objective 4.8: *Explain the basics of scripting*). This version removes all narration and structures the notes for **clean, professional formatting suitable for Word**, using compact spacing and numbered topics.

**CompTIA A+ 1102 Study Notes: Automation Scripting (Objective 4.8)**

**1. Concept Overview**

1.1 Automation scripting allows technicians to execute repetitive or complex IT tasks using scheduled or scripted commands.

1.2 It is widely used to save time, reduce manual errors, and ensure consistency across multiple systems or users.

1.3 Scripting can be implemented in various languages such as **PowerShell**, **Batch**, **VBScript**, and **Bash** depending on the operating system and task.

**2. Primary Use Cases for Automation Scripting**

Automation scripting can be used in the following core IT functions:

2.1 **Basic Automations**

* Used for scheduling simple tasks like running antivirus scans or maintenance routines.
* Can be triggered using Windows Task Scheduler (Windows) or cron jobs (Linux).
* Example: A PowerShell, Batch, or VBScript set to run at 2:00 AM daily.

2.2 **Restarting Machines**

* Windows:
  + PowerShell: Use Restart-Computer cmdlet.
  + Batch file: Use shutdown /r command.
* Linux:
  + Bash script using .sh extension.
  + Use shutdown -r or shutdown -r now to restart immediately.
  + Use shutdown -r 15 to delay the restart by 15 minutes.

2.3 **Remapping Network Drives**

* **Batch File Example (.bat)**:

if exists s:\ ( net use s: /delete )

net use s: \\fileserver\shared

* + Deletes existing S drive mapping and reassigns it.
* **PowerShell Example**:

if (Test-Path S:) {

Get-PSDrive S | Remove-PSDrive

}

New-PSDrive -Name "S" -Persist -PSProvider FileSystem -Root "\\fileserver\shared"

* + Performs the same function with different syntax and logic.

2.4 **Installing Applications**

* **Windows**:
  + Batch file: Execute .exe installer from a defined path (e.g., C:\Files\setup.exe /F /desktopicon=yes).
  + PowerShell: Use Start-Process for greater control and error handling.
* **Linux**:
  + Bash scripts (.sh): Use apt-get, apt install, or yum install.

2.5 **Installing Updates and Security Patches**

* **Windows**:
  + PowerShell: Use PSWindowsUpdate module to manage patches.
  + Batch file: Use wusa.exe to initiate Windows Update.
* **Linux**:
  + Bash: Use apt or yum commands with -y flag to auto-confirm prompts.

2.6 **Automated Backups**

* **Windows**:
  + Use copy, xcopy, or robocopy commands inside Batch or PowerShell scripts.
  + Scheduled using **Windows Task Scheduler**.
* **Linux**:
  + Use cp command in Bash scripts.
  + Scheduled using **crontab** jobs.

2.7 **Gathering System Information from Networked Devices**

* PowerShell:
  + Use commands starting with Get-, such as Get-WinEvent to retrieve logs or events.
  + Pipe outputs into other commands for filtering and analysis.
  + Useful for audits like installed applications or system inventories.
* Example Use Case:
  + Script that queries all networked machines to gather installed software data.
  + Helps IT identify unauthorized software and enforce compliance policies.
* Linux:
  + Bash scripts may integrate tools like nmap for network scanning and host discovery.
  + Example: Identify IP addresses of active systems across a subnet.

**3. Additional Capabilities and Considerations**

3.1 Scripts can retrieve detailed system info, such as:

* Disk space availability
* Installed applications
* Missing security patches

3.2 Using scripting allows centralized management of a distributed network, especially in larger organizations.

3.3 Although not all command combinations are taught in this course, technicians should understand that automation scripting is scalable and modular.

3.4 The focus is on knowing **what can be automated**, not necessarily **how to write every command**.

**4. Summary of Common Scripting Automation Tasks**

| **Use Case** | **Description** |
| --- | --- |
| Basic Automation | Routine tasks (e.g., scheduled scans, cleanup scripts) |
| Restarting Machines | Trigger reboots across platforms |
| Remapping Network Drives | Ensure correct drive mappings via script |
| Installing Applications | Automate software deployment using CLI |
| Installing Updates & Patches | Keep systems up to date using update modules or tools |
| Automated Backups | Copy critical data to backup locations automatically |
| Gathering Network Information | Retrieve logs, inventory, system metrics across multiple machines |

**5. Summary: What You Need to Know for the Exam**

5.1 You do not need to memorize exact commands but must:

* Recognize **which scripting types** are used for which tasks.
* Understand **basic syntax and structure**.
* Identify **common use cases** for automation.
* Interpret **high-level intent** of example scripts.

5.2 Common scripting file types to remember:

* .bat – Batch (Windows)
* .ps1 – PowerShell (Windows)
* .vbs – Visual Basic Script (Windows)
* .sh – Bash (Linux)

**6. Exam Inclusion Notification**

✅ **Included in CompTIA A+ 220-1102 – Objective 4.8**

**Justification:**

Automation scripting is a key part of IT operations. The exam focuses on your ability to:

* Identify automation opportunities
* Match scripting types to specific tasks
* Understand fundamental logic and usage scenarios

You will not be tested on exact syntax but must understand the **purpose and components of basic scripts**.