LAB 1

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1. Describe in 350-500 words the purpose of ADDS

Centralized directory and authentication services are provided by Active Directory Domain Services (AD DS), a key element of the Microsoft Windows Server operating system. It is utilized for managing access and identities. Information about the users, equipment, and services connected to a network is stored and organized by ADDS. These items are located via ADDS, which also gives enterprises a single point of control over all activities on their corporate network.

The following are some of the main advantages of ADDS:

Structure that is hierarchical. The primary advantage of ADDS is that it gives the data in Active Directory an organizational structure.

Centralized Directory Service (ADDS) serves as a central repository for data pertaining to users, computers, printers, and other network devices. Administrators can effectively arrange and manage these resources thanks to this directory service. The organizational structure of the network is represented by a hierarchical structure with domains and trees.

User authentication and authorization: Within the network, user authentication and authorization are handled by AD DS. In order to provide or prohibit access to resources, the system verifies a user's login credentials against the directory when they log into a computer that is a member of an AD DS domain. As a result, security is improved because only authorized users can access particular network resources.

Flexibility. Users can choose how data is arranged on the network with the help of ADDS. By consolidating services like user and rights management, it streamlines administrative work and offers some security. From any networked computer, users can access Active Directory. This improves communication among IT teams and restricts access to sensitive resources.

Redundancy. Redundancy and replication are features that are integrated into ADDS. One domain controller's duty is automatically assumed by another in the event of a failure.

Single Sign-On (SSO): ADDS makes it possible for users to sign in once and access many different network resources using just one set of credentials. Because of this, remembering several usernames and passwords is made easier for users.

Scalability: ADDS is incredibly scalable, making it ideal for businesses of all kinds, from small startups to enormous conglomerates. It offers the flexibility required to develop and react to shifting organizational needs by managing dozens or even millions of objects.

1. Describe in 350-500 words the purpose of automation in Powershell

By having the same action take place and result every time, automation scripts ensure consistency in the duties. PowerShell automation scripting has another benefit in that every task is recorded in detail which can be very helpful to individuals in technology. Instead of wasting time doing redundant tasks, automation using PowerShell saves time and let you focus on tasks that require more effort rather than those repetitive tasks that does not involve human intervention or less intervention to complete on its own.

Also, PowerShell can gather system metrics, event logs, and performance information and produce thorough reports which can be tedious if done manually instead of using automated scripts to generate reports. These reports, which offer information about the functionality and health of systems, can be scheduled to run automatically. These statistics can be used by IT teams for compliance auditing, capacity planning, and troubleshooting. Because PowerShell is so flexible, administrators can write scripts that are specifically tailored to the needs of their business. Its adaptability makes it a flexible automation tool that can work in a range of situations and settings.

In essence, the goal of automation in PowerShell is to make administrative operations more effective across Windows installations, eliminate the need for manual intervention, improve consistency, and streamline IT management. Organizations may increase productivity, improve resource utilization, and have more dependable IT operations by utilizing its scripting capabilities and vast ecosystem of modules and libraries. By automating tasks, PowerShell enables IT workers to take control of their infrastructure and systems.

1. Describe in 350-500 words  the purpose of Powershell

PowerShell is a strong automation tool that gives users the ability to automate commonplace chores, create and administer systems, and streamline management workflows. PowerShell scripts are a collection of commands and instructions written in the PowerShell programming language that automate repetitive operations, make administrative jobs simpler, and lower the risk of errors.

In automation, PowerShell is mostly utilized for automating tasks as a scripting language. Each PowerShell use case includes automation. Data accessibility is what makes PowerShell so popular. Administrative tasks make up a sizable portion of PowerShell use cases. Many services operate independently and are managed by a central IT administrator in large computer networks. The IT administrator can easily access various network service data stores using PowerShell, such as file systems or registries.

It can also be used as a tool to implement and enforce security like security checks, monitoring events, ensuring security compliance and alerting. PowerShell also helps with simplification of software updates or patching. What usually done manually in each server that needs patching or updating can be done simultaneously in a click of a key or in a running of a shell script.

In conclusion, the main goal of PowerShell is to enable IT specialists and developers to effectively manage, automate, and control Windows-based systems and services. It is a useful tool for a variety of activities, from system administration and configuration management to software distribution and reporting, thanks to its scripting skills, extensibility, and integration options. PowerShell improves output, lowers administrative burden, and aids in upholding the integrity and security of IT infrastructures.