

Jason Hodge

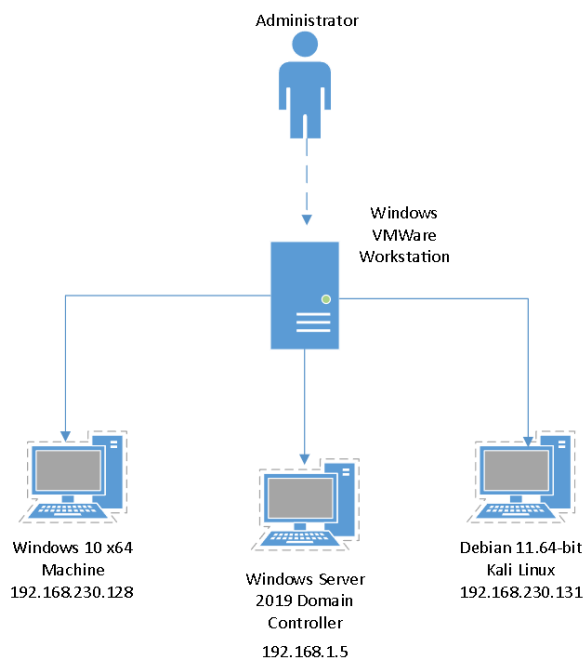
## Lab 01 – Building a Virtual Network Security Test Lab

September 27, 2023

### Description:

The primary objective of this lab was to set up virtual machines (VMs) for us to complete our future labs on. Using VMware Workstation, we set up a Windows operating system environment, I used Windows 10. We also set up a domain controller for future active directory usage on a Windows 2019 Server VM. Furthermore, we created a Kali Linux VM to use as our attack VM later in the course, as Kali provides numerous usage security vulnerability testing tools.

### Topology:



This is a basic overview of the three virtual machines built in this lab within VMWare Workstation.

### Key Syntax:

Command Prompt (CMD) was used to check the hostname and IPv4 address, subnet mask, default gateway and DNS Servers. This was used as a second verification to see the changes have been made.

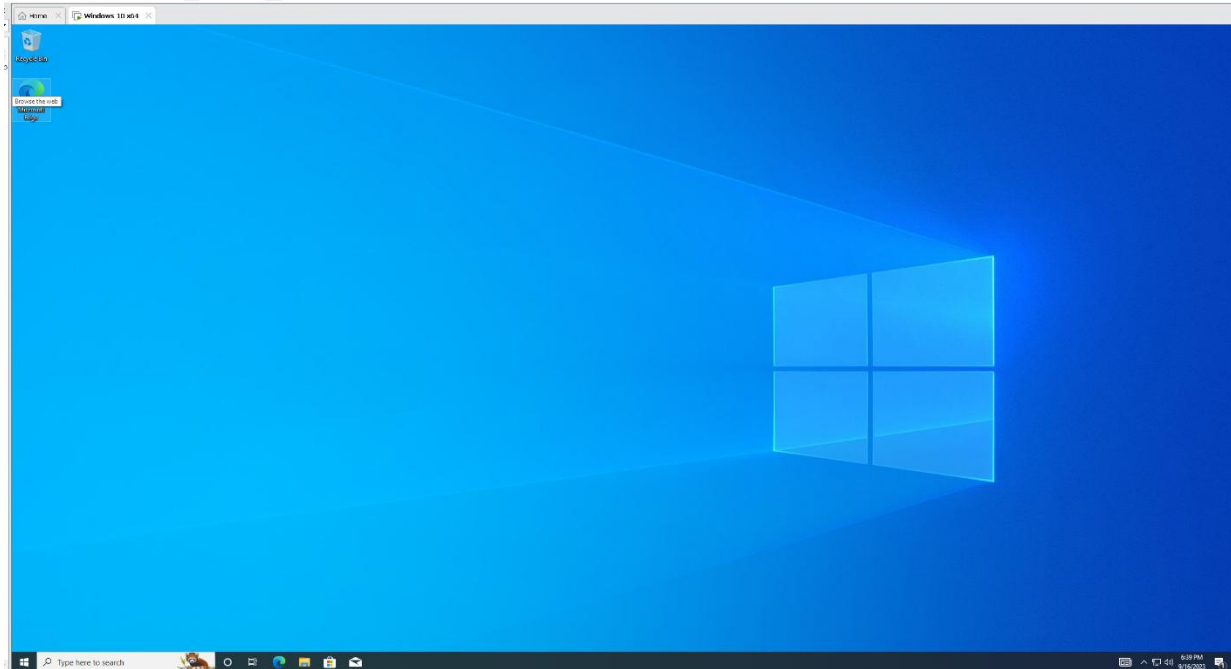
### Commands:

**'hostname'**: Provides the computer's host name.

**'ipconfig /all'**: Provides full detailed adapter configuration information (IPv4 address, subnet mask, default gateway, DNS Servers, etc.)

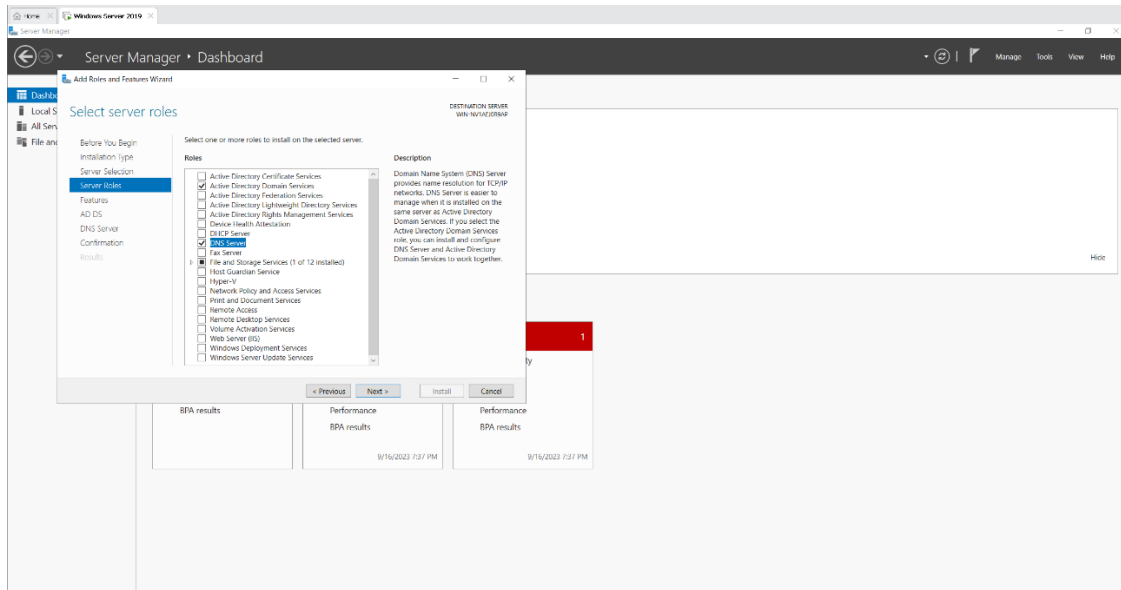
### Verification:

#### Task 1:

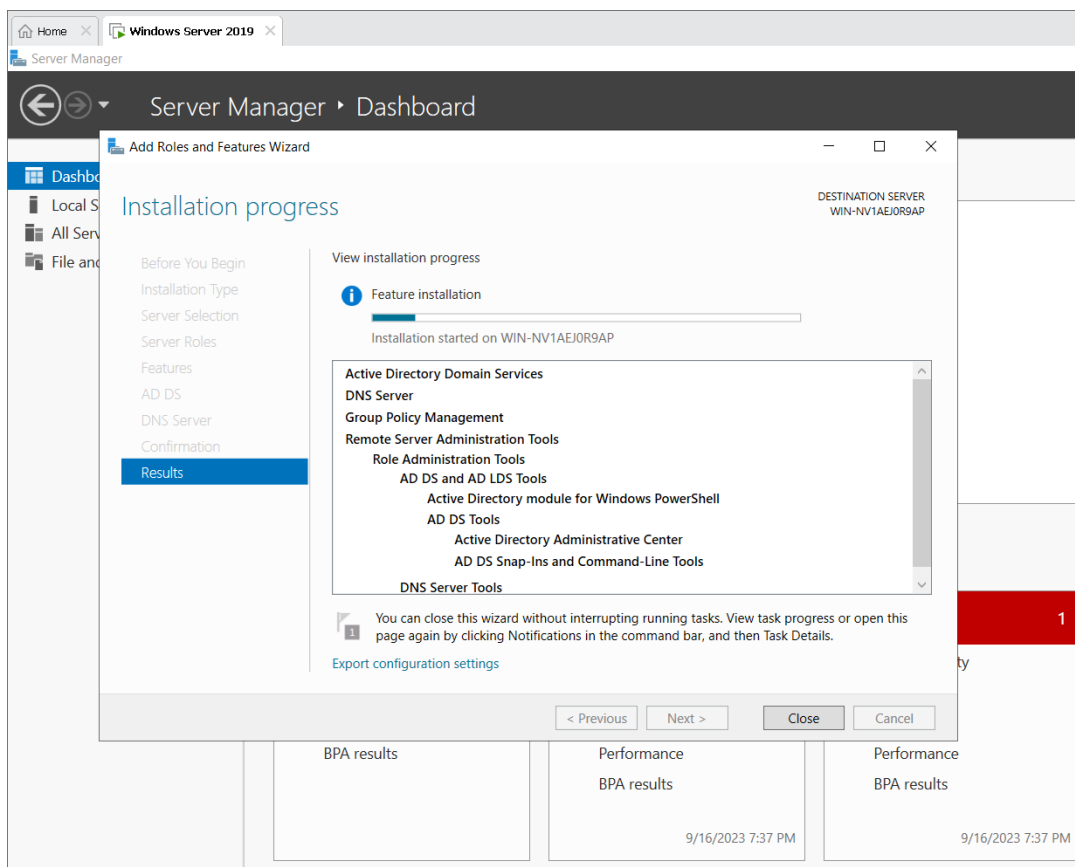


This screenshot is of my Windows 10 x64-bit VM to show VMWare Workstation is up and running.

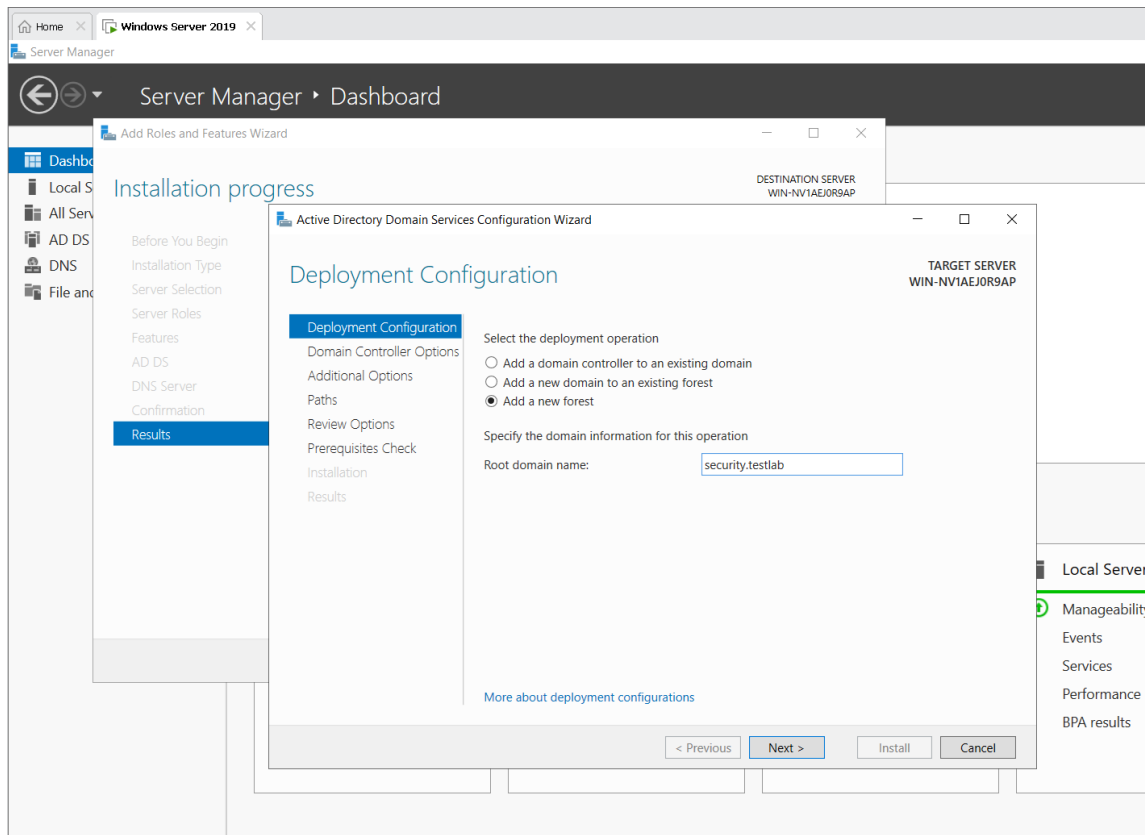
#### Task 2:



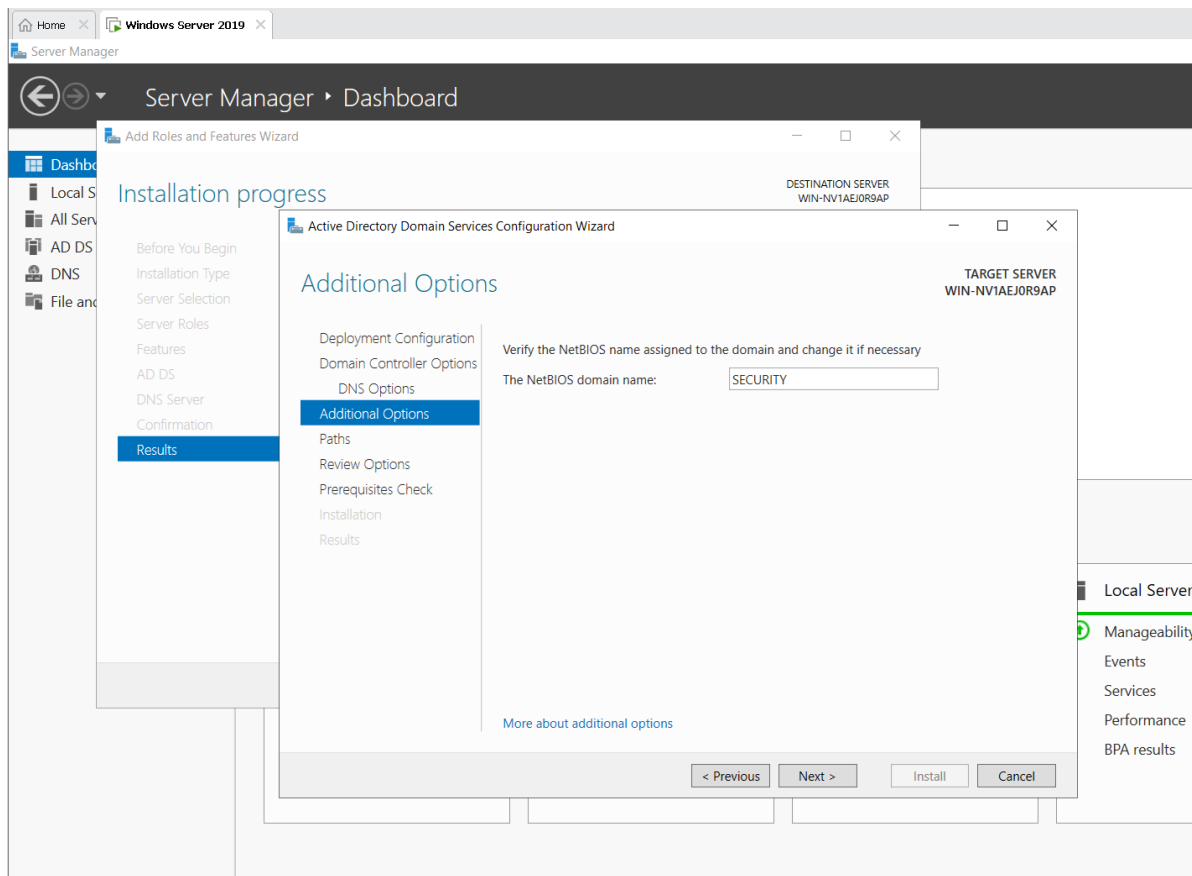
After opening the server manager dashboard and selecting add roles and features, we then get the option to select roles. In our case just Active Directory Domain Services and DNS Server are needed.



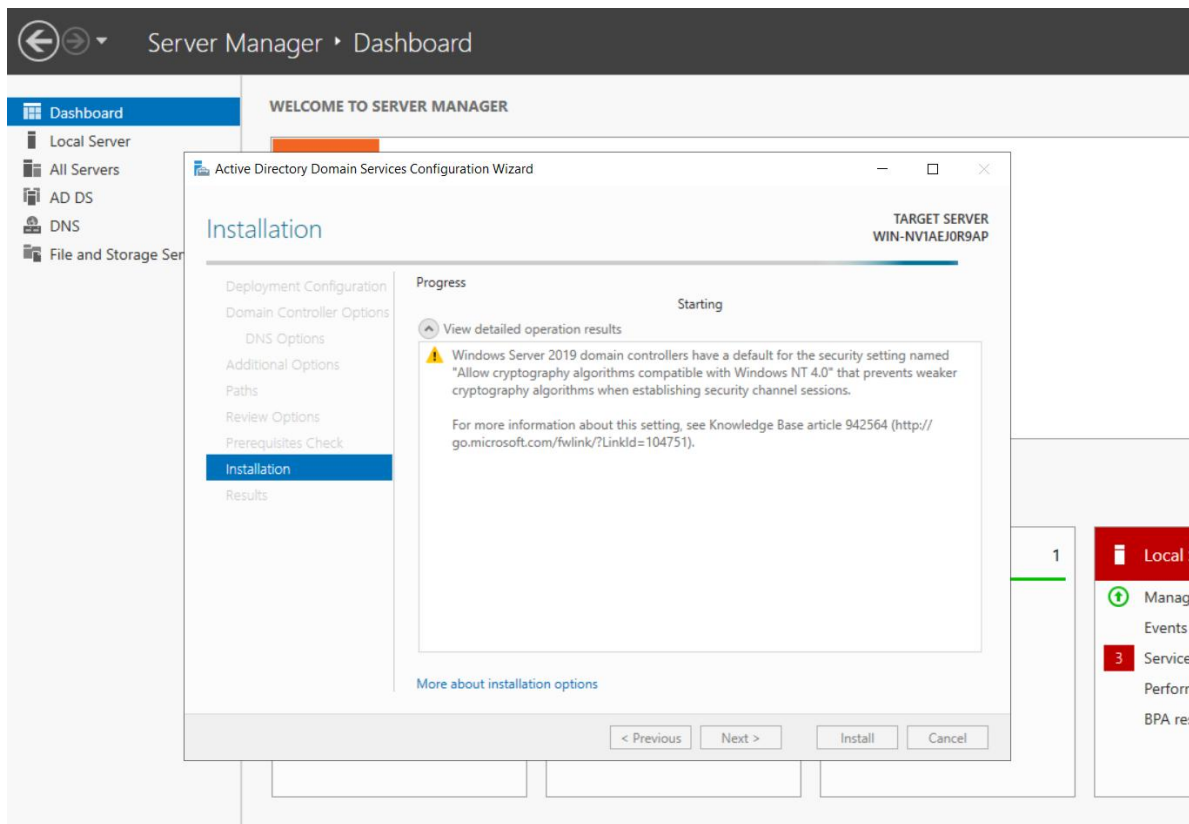
After going through the next couple steps, we see the installation is now in progress.



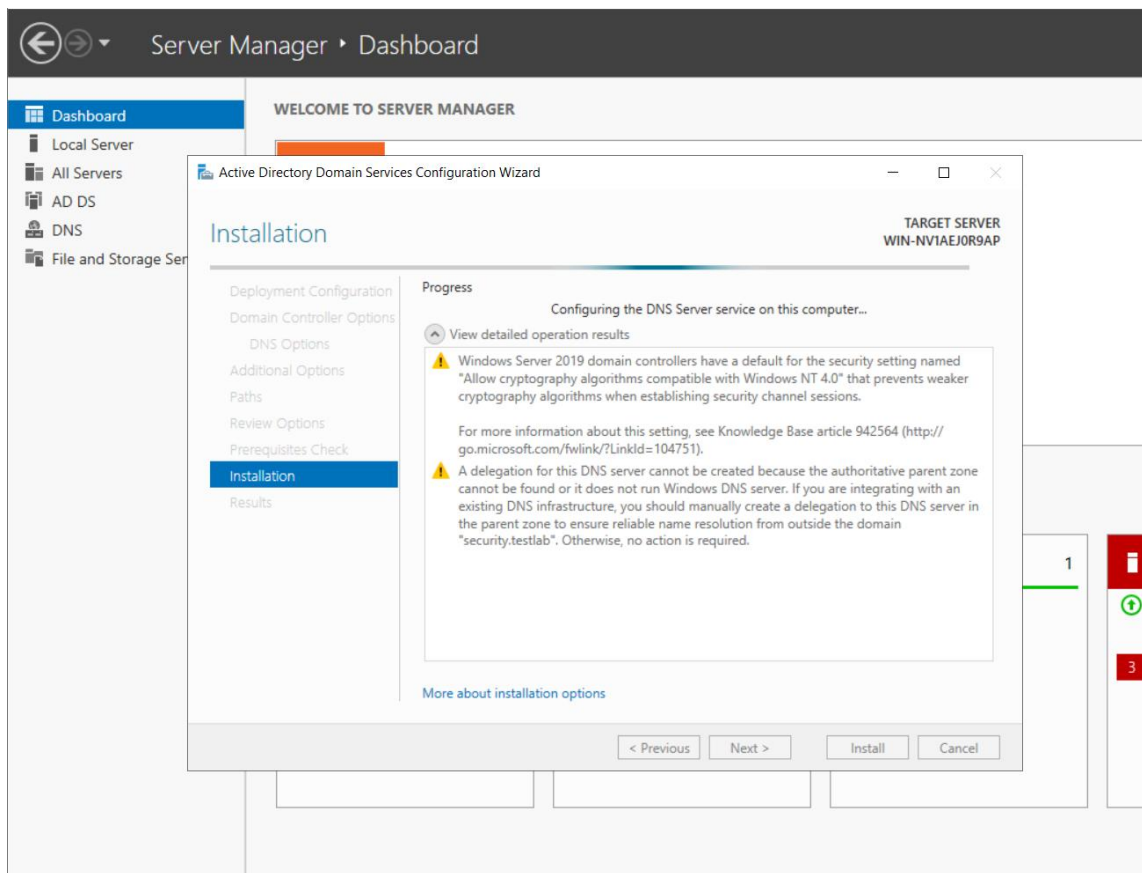
Here we want to promote our server. So we add a new forest at the end of the installation. In this case I named the root domain name “security.testlab”.



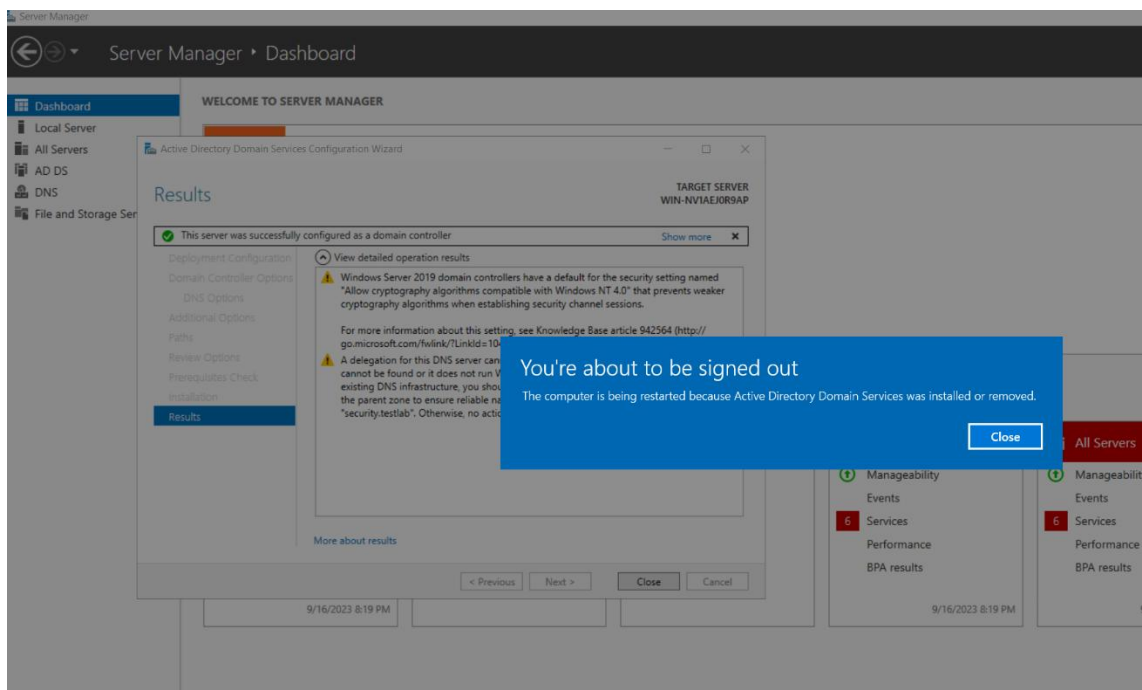
The NetBIOS domain name is prepopulated based on what you named your root. In this case “SECURITY”.



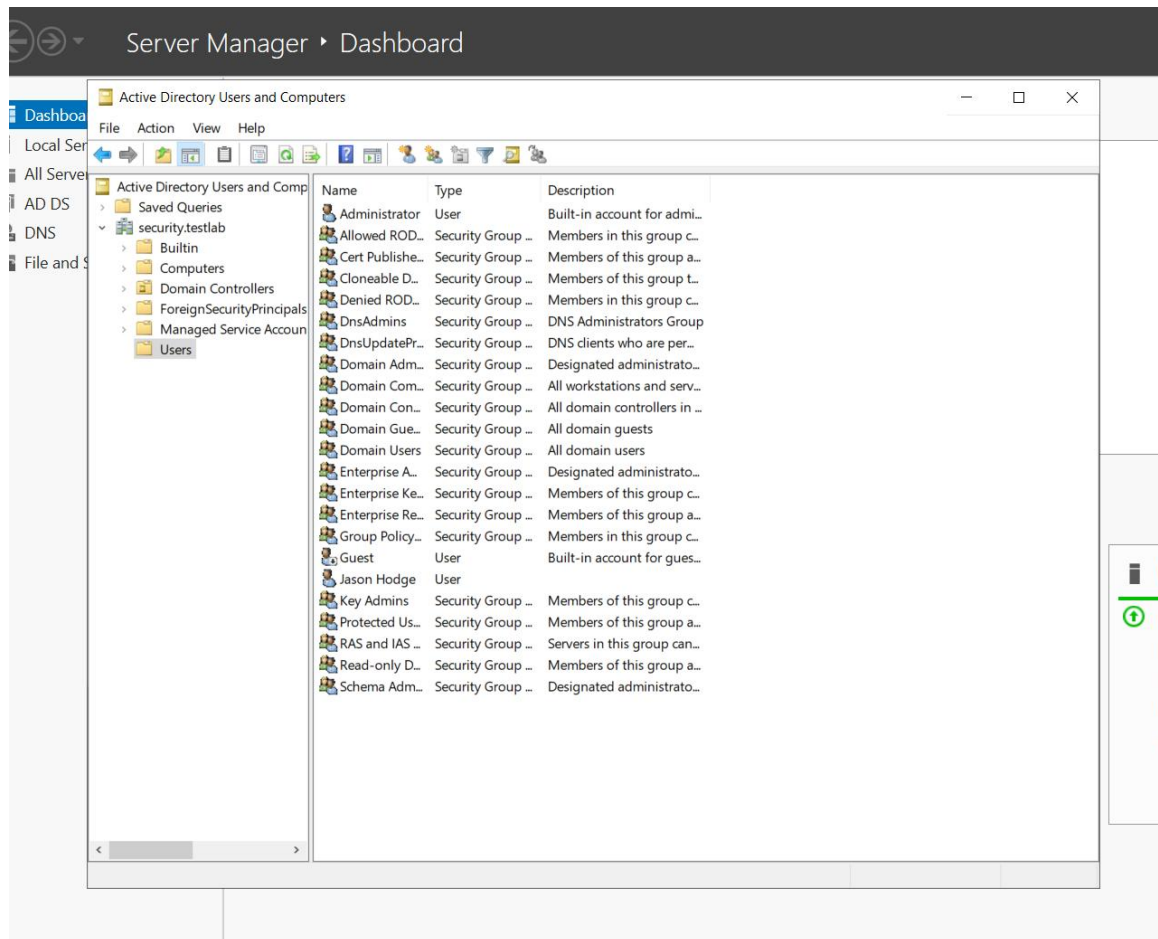
Installation for domain controller starting.



Installation for domain controller in progress.

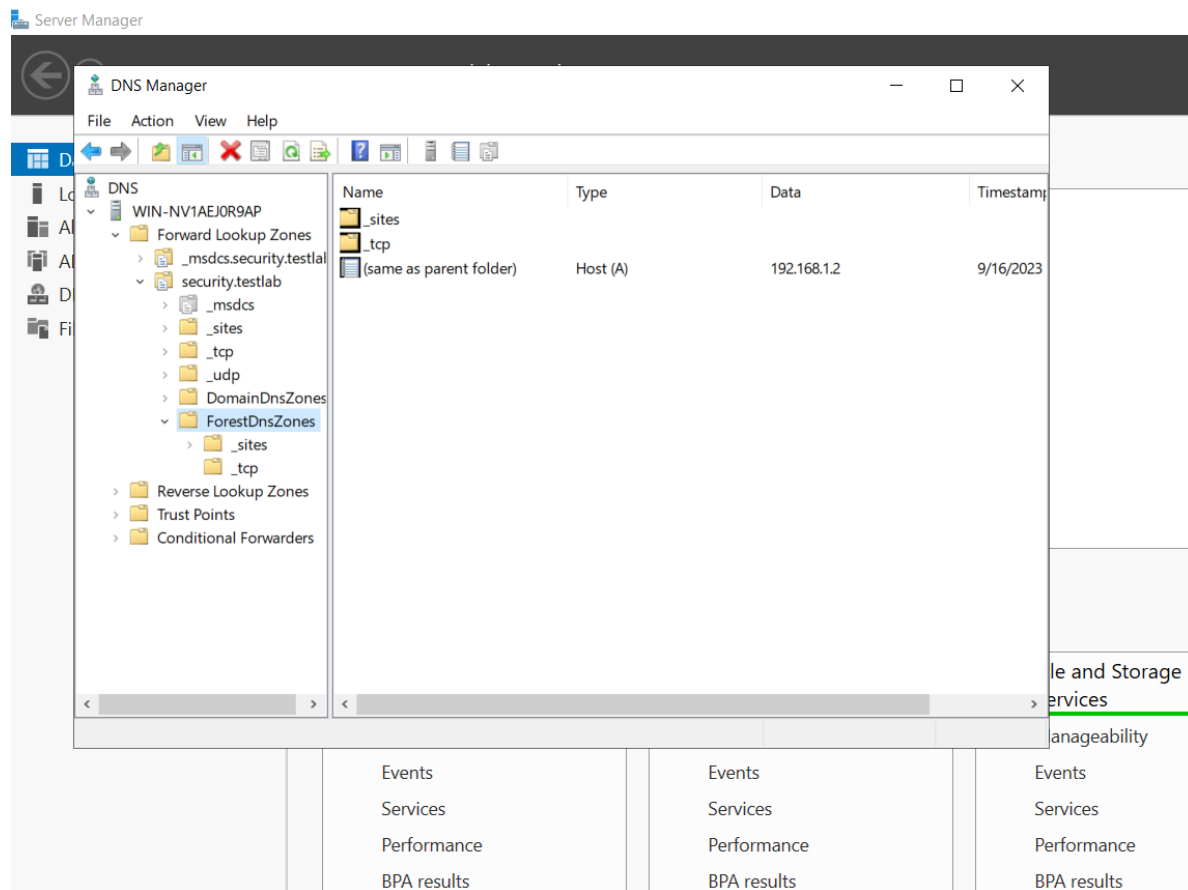


These show the configuration installation process for the domain controller, and we can see it is successful. The PC now prompts to restart to make these changes.



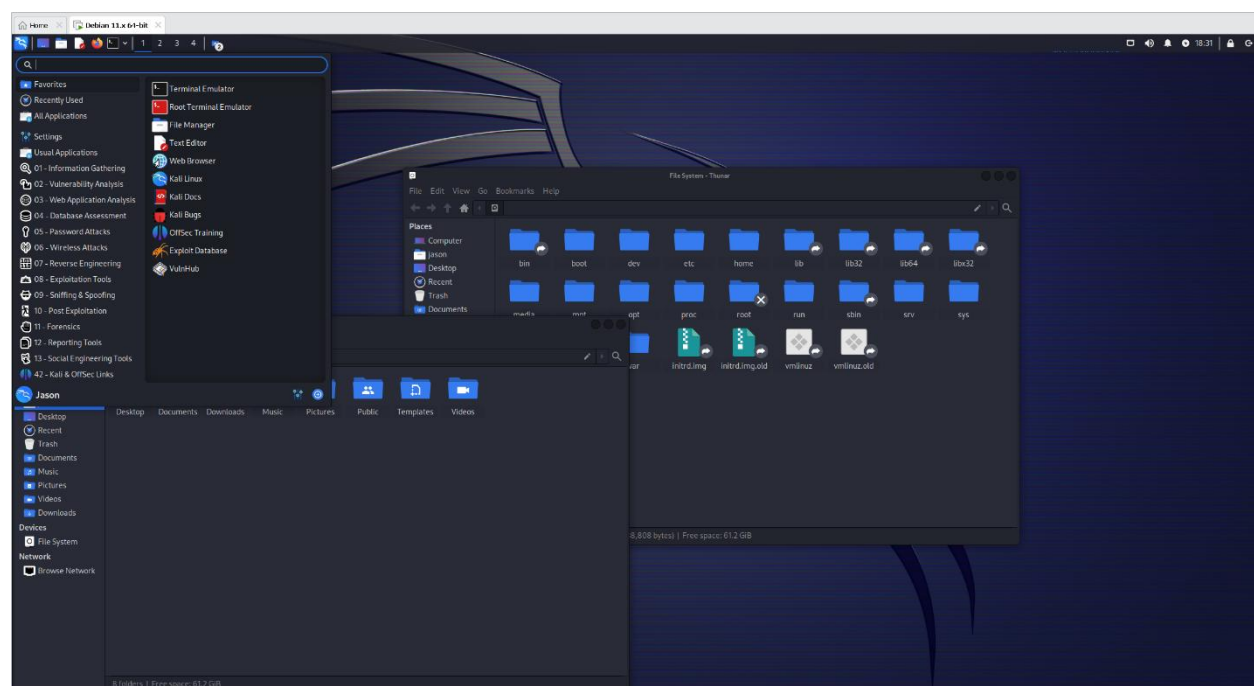
After the restart, I signed back into the VM and checked the Active Directory Users. Here we can create a user, add them to a group and they can successfully sign in with a created username and password. Once in a group a user has access to organization resources within that group.





Here we can see the DNS Manager Forest for controlling and organizing DNS server clusters.

### Task 3:



This showcases my Debian 11 x64-bit VM is operational.

**Conclusion:**

Everything went smoothly in this lab as I was able to accurately set up the three virtual machines I will be using in future labs throughout the course of the semester.

**References:** N/A