Welcome to Cyber Aces Online, Module 1! A firm understanding of operating systems is essential to being able to secure or attack one. This module dives in to the Microsoft Windows Operating System, specifically Windows networking and sharing.
This training material was originally developed to help students, teachers, and mentors prepare for the Cyber Aces Online Competition. This module focuses on the basics of what an operating systems is as well as the two predominant OS's, Windows and Linux. This session is part of Module 1, Introduction to Operating Systems. This module is split into two sections, Linux and Windows. In this session, we will continue our examination of Windows.

The three modules of Cyber Aces Online are Operating Systems, Networking, and System Administration.

For more information about the Cyber Aces program, please visit the Cyber Aces website at https://CyberAces.org/.
In this session we will discuss Windows networking.
The Windows Operating System can support a variety of networking protocols to share resources, but SMB is by far the most widely used. SMB or Server Message Block is used to share files, printer and other networking resources between Windows hosts. You access resources on a remote system by mapping the drive through Windows Explorer, by clicking START >RUN and entering the UNC, or mapping the drive at the command line.

To see all of the available commands available with NET run:

C:\> net /?
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The "net view" command can be used to perform most of the browsing functions available via "Network" or "My Computer." Running the command without options will list computers in the current domain or workgroup. To see the resources available on a system, type "net view" followed by two backslashes and the system name:

C:\> net view \servername

Shared resources at \servername
Share name   Type   Comment
------------------------------------------
HP           Print
Pub          Disk   Public access
Private      Disk   My Stuff, STAY OUT!
The "net use" command is used to connect or disconnect from remote resources, typically file servers or network shares. The command can also be used to list open connections to these remote resources.

When connecting to a remote system, the double backslash (\") must be used before the server's name. The Share name must also be preceded by a backslash. E.g.

\servername\sharename

A drive letter can be specified to "mount" the remote resource. Your computer will authenticate as the currently logged in user.

C:\> net use z: \srvr\pub

In addition, alternate credentials can be used to access the resource, either in the command itself:

C:\> net use z: \srvr\pub P@55wd /user:john

...or via a more secure password prompt using the asterisk (*) in place of the password:

C:\> net use z: \srvr\pub * /user:john

Similar to the net user command, the password can be entered as part of the command.
We can also remove the mapping we created previously using the /delete switch. Think of delete as the eject button for network shares.

We can delete a single mapping in either of these two ways, by drive letter:

C:\> net use z: /delete

Or by sharename:

C:\> net use \servername\sharename /delete

We can also delete all the mappings:

C:\> net use * /delete
You are trying to access a share named "FILES" on a server named "SERVER". Your account has permissions to access that directory. How would you map a drive to this server?

A) net use * \server\files
B) net use z: \server\files
C) mount \server\files z:
D) A or B

Which of the following commands will list the files on a remote share?

- dir \servername\share
- dir <IPADDRESS>\share
- net use \servername\share
- net view \servername\share
You are trying to access a share named "FILES" on a server named "SERVER". Your account has permissions to access that directory. How would you map a drive to this server?

D) A or B
Both "net use * \server\files" and "net use z: \server\files" will accomplish the same thing. When the asterisk is used instead of a specific drive letter, the operating system will pick a letter for you.

Which of the following commands will list the files on a remote share?

- dir \servername\share
The dir command is used to list files and it can be used with UNC paths. The command "dir \ipaddress\share" will work, but the answer on the previous slide did not include the leading double backslashes.
Congratulations, you have completed the tutorial on Windows file sharing.
In the next session, we will discuss Windows services and processes.