# Overview

In this assessment you will be tested on the skills you have learned previously. You can use your notes, labs, and the Internet as resources. This assessment may be timed.

# Objectives

Implement an Active Directory infrastructure to support the needs of a typical business environment.

* Define or explain common terms and concepts related to Active Directory on Windows
  + Install Active Directory
  + Configure Group Policy settings and processing
  + Manage Organizational Units
* Deploy and manage containers in Windows.
  + Create containers
  + Manage containers with docker
  + Manage container storage and networking
  + Manage apps in containers

# Instructions

## Setup

1. **Stop** all running virtual machines
2. **Download** and **run** the **Create-PA3-Topology** script **from** the **practical** **assignment**. This script will create the virtual devices necessary for this assessment

C:\Scripts\Create-PA3-Topology.ps1

## Active Directory Objects (30 pts)

1. On **FA-SVR-01**, configure the following TCP/IP settings:
   1. Computer name: DC01
   2. Adapter name: LAN
   3. IP: 10.199.152.1/24
   4. GW: 10.199.152.254
   5. DNS: as required to support Active Directory
2. (5 pts) Install Active Directory using the domain **fa.net**
3. (5 pts) Create an OU named **Denver** in the root of the domain
4. (5 pts) Make the following OUs in the Denver OU:
   1. **IT**
   2. **Sales**
   3. **Computers**
5. The username convention for **fa.net** is the first two initials of first name + last name. (i.e., **Billy Sunday’s** username would be **bisunday.**)
   1. Add a user named **Jane Smith** in the **IT** OU.
   2. Add a user named **Chris Jones** in the **Sales** OU.
6. (5 pts) On **FA-CLT-01**, configure the following TCP/IP settings:
   1. Computer name: FA01
   2. Adapter name: LAN
   3. IP: 10.199.152.101/24
   4. GW: 10.199.152.254
   5. DNS: as required to support joining the **fa.net** Active Directory domain.
7. Join **FA-CLT-01** to the **fa.net** domain
8. (5 pts) Move the **FA-CLT-01** computer account to the **Denver** \ **Computers** OU
9. (10 pts) Create the following groups
   1. A group named **IT** that represents the **IT** department inside of the **IT** OU.
   2. A group named **Sales** that represents **Sales** department inside of the **Sales** OU.
   3. Create a group named **Employees** in the **Denver** OU.
   4. Add the users to their respective departmental group.
10. (5 pts) Use group nesting to configure the **Employees** group to contain all the members of the **Sales** and **IT** departments.

## Active Directory Security (20 pts)

On **FA-SVR-01**, perform the following:

1. Create a folder named **Shares** on the **C:** drive.
2. (5 pts) Remove the **Users** group from the DACL for the **Shares** folder.
3. Create a folder named **Software** in the **Shares** folder.
4. (5 pts) **Share** the **Software** folder so that **Everyone** has **Full Control**.
5. (10 pts) Configure the NTFS security on the **Software** folder to give the **Employees** **Read** permissions using the AGGDLP grouping strategy and the naming convention used in previous Guided Practice exercises.

## Active Directory Group Policy (15 pts)

On **FA-SVR-01**, perform the following:

1. Create a policy that is only applied to the computers in the **Denver** location and configures Windows updates, with the following settings:
   1. Name – **Windows Update** Policy
   2. Configure **Windows Updates** with the following settings: (These settings are in the **ComputersàPoliciesàAdministrative TemplatesàWindows ComponentsàWindows Update** node of group policy)
   3. **Configure Automatic Updates** is enabled, **Auto download and schedule the install**, **Every Saturday** at **02:00**.
   4. **Specify** **intranet Microsoft update** service location à **https://192.168.13.1**for **intranet update service for detecting updates**: and **intranet statistics server**

## Container Deployment and Configuration (35 pts)

On your **Host** machine, perform the following:

1. (5 pts) **Remove** any **containers**, **volumes**, and **networks** **you created** in previous labs.
2. (5 pts) **Remove** **all** the **images** **except** the **servercore** image
3. (5 pts) **Create** a docker **network** using the **nat** **driver** named **PA-Switch** that uses the **10.2.0.0/16** network address.
4. **Create** a **folder** on the **C:\** drive named **Site**.
5. (5 pts) **Create** a **container** using the **servercore** **image** and **install** **DNS** on it. **Name** the container **TempDNS.**
6. (5 pts) **Build** an **image** **from** the **container** with DNS installed and **name** it **pa-dns**.
7. (10 pts) Create a container with the following settings:
   1. Name: **DNS-Test**
   2. Uses the **pa-dns** image
   3. Has an **interactive** **prompt**
   4. Maps the **C:\Site** folder to the **C:\Data** folder in the container
   5. Runs **PowerShell**
   6. Exposes port **53/udp** as port **57/udp** on the host
8. (Extra Credit 10 pts) Build the image above using a DockerFile

# Submission Requirements

1. **Download** the **grading script** from the assignment page onto ***yourlastname*-VM-Host**. **Run** the **script** to check your work. **Correct** any **errors** you may have and run the script until all the output is green as shown in the figure. **Note:** the script normally takes 60 - 90 seconds to run.
2. **Open** a **new** **Word document** and name it **PA3-*studentID***, where ***studentID*** is your assigned student ID. **Paste** a **snippet** of the **command** and the **output** of the command into the document. All characters in the snippet(s) must be legible. You may need to increase the font size of PowerShell so that the characters are large enough to be legible. The text in the snippets **must be legible** when pasted into the Word document. You may need to use more than one snippet to capture all the output. If you must use more than one snippet to capture the output, you must have at least **one line of overlap** in the snippets
3. The output should be like the images below.
4. **Upload** your **DockerFile** **if** you **created** one. (EXTRA Credit)



