Windows security, Active Directory and Azure AD

TD09 – Module 1 – Section 2

July 2020  
V3.1

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Contents

[Windows security, Active Directory and Azure AD Lab step-by-step 1](#_Toc43911074)

[Abstract and learning objectives 1](#_Toc43911075)

[Overview 2](#_Toc43911076)

[Requirements 2](#_Toc43911077)

[Before the exercise 3](#_Toc43911078)

[List of VM to start 3](#_Toc43911079)

[How to start and connect to a VM 4](#_Toc43911080)

[Exercise 1: Kerberos Delegation 6](#_Toc43911081)

[Task 1: Check the permissions on the folder Kerberos on CSI-TD-EXC1 6](#_Toc43911082)

[Task 2: Try to connect to the share using the website on CSI-TD-SRV1 6](#_Toc43911083)

[Task 3: Set Kerberos delegation 7](#_Toc43911084)

[Task 4: Try to connect to the share using the website on CSI-TD-SRV1 7](#_Toc43911085)

[Task 3: Set Sensitive User cannot be delegated for the Par\_User05 8](#_Toc43911086)

[Questions: 10](#_Toc43911087)

[After the Lab 11](#_Toc43911088)

[Task 1: Stop and deallocated all the VMs 11](#_Toc43911089)

# Windows security, Active Directory and Azure AD Lab step-by-step

## Abstract and learning objectives

This training is designed to provide exposure to many of Microsoft Windows, Active Directory and Azure Active Directory security features.

## Overview

In this Lab, the attendees will have a closer look at Kerberos delegation.

## Requirements

1. Attendee’s machine:
   1. Ideal resolution 1920 x 1080
   2. An Internet browser
   3. An RDP client
   4. Internet access without restriction on outbound connections.   
      The following outbound TCP port must be accessible :

* **TCP/80 and TCP/443** to reach Azure Portal
* **TCP/3389** to establish RDP remote connection to virtual machines exposed directly to Internet

or

* **TCP/(49152 to 65535)** to establish RDP remote connection to virtual machines exposed by a Load Balancer

## Before the exercise

Duration: 10 minutes

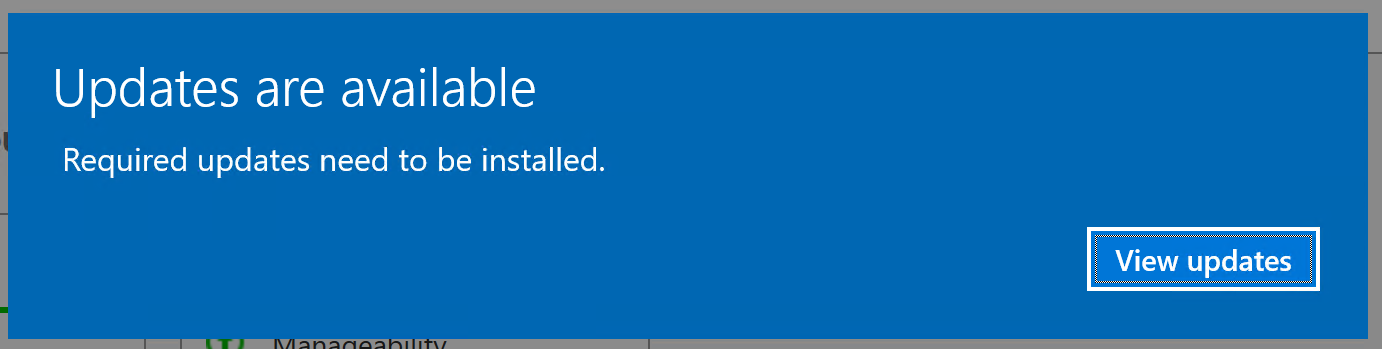
Synopsis: In this section, you will set up your environment for use in the rest of the Lab. You should have the following environment.

#### List of VM to start

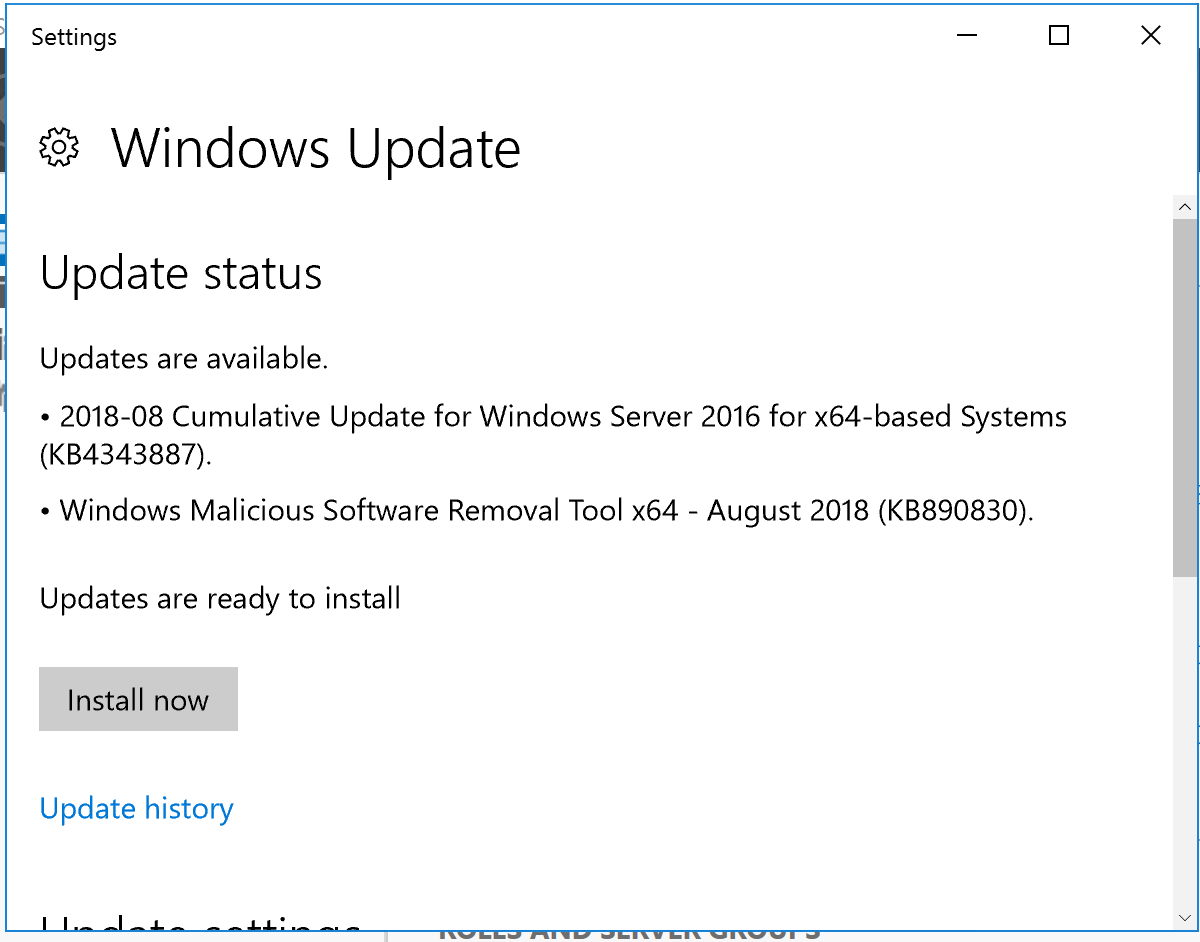
**Remember to start the DC first and to wait 1 minute before starting the other VMs.**

|  |  |  |  |
| --- | --- | --- | --- |
| Name of VM | Hostname | OS Type | Role |
| ID-DC1 | CSI-TD-DC1 | Windows Server 2016 Standard | DC |
| ID-SRV1 | CSI-TD-SRV1 | Windows Server 2016 Standard | Server |
| ID-EXC1 | CSI-TD-EXC1 | Windows Server 2016 Standard | Server |
| ID-CLI1 | CSI-TD-CLI1 | Windows 10 Enterprise | Desktop |

Also note that the machines have been provisioned in March 2020.   
Therefore, it is possible to see the following message while connecting for the first time to the servers:



In this case, click on View updates.



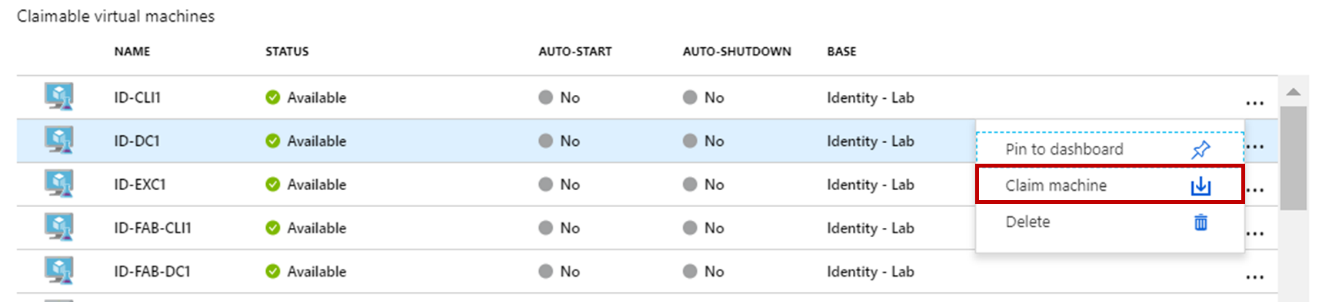
We do not need the latest updates for these labs so you can close this window.

#### How to start and connect to a VM

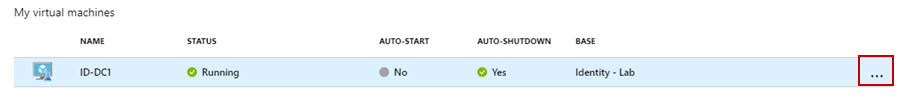
1. Go to Azure portal : <https://portal.azure.com>
2. Sign-in with your student or organizational account
3. Click on the Dev&Test Lab (Select the right subscription if the resource is not displayed)



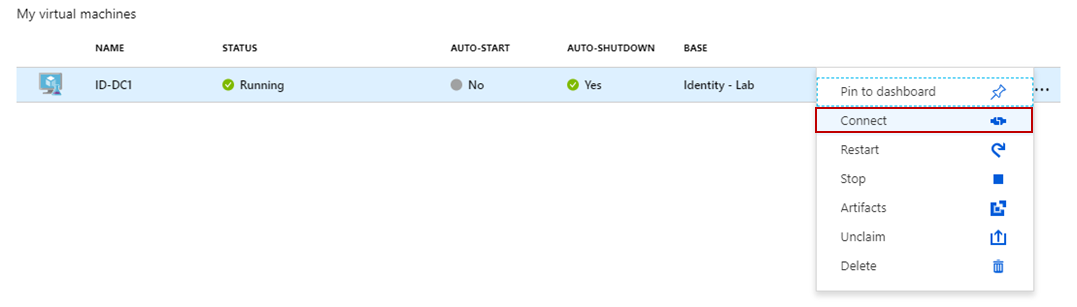
1. To start a VM, click on “Claim machine”



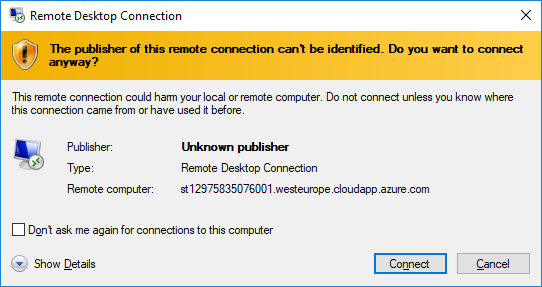
1. When the machine is started, it will be displayed in the “My Virtual Machines” pane.   
   After one minute, the status will be Running. You can wait 30 seconds more before trying to connect on it.



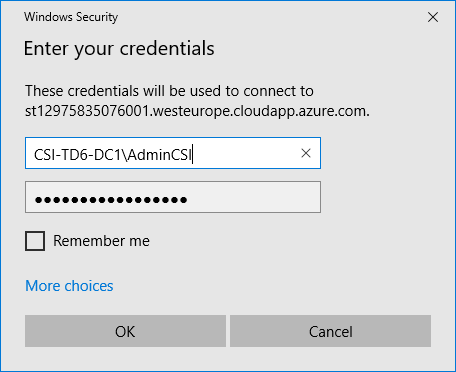
1. Select the running Virtual Machine and at the end of line, click on “…” then select Connect



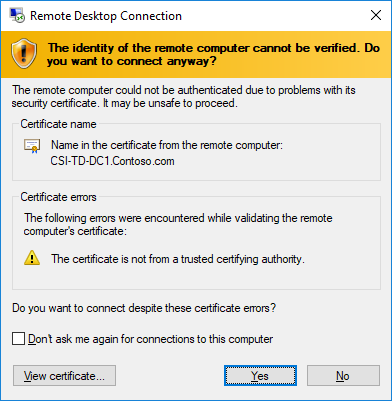
1. A warning is displayed about the publisher. You can ignore the warning and click on Connect.



1. Enter the user name and password to connect to the Virtual Machine detailed in each exercise below.   
   (Do not use your student or organizational account.)



1. A warning on the self-issued certificate is displayed. You can safely ignore this warning by clicking on Yes.



## Exercise 1: Kerberos Delegation

Duration: 30 minutes

Synopsis: In this exercise, attendees will implement Kerberos delegation for a website.

#### Task 1: Check the permissions on the folder Kerberos on CSI-TD-EXC1

1. Open a session on **CSI-TD-EXC1**
   1. Username: **AdminCSI@contoso.com**
   2. Password: **PiKarAlR@AlBenMo1 (Note that l is a L in lower case)**
2. Open **Explorer**
3. Check the permission for the folder **c:\Kerberos** 
   1. You should see that Par\_User05 has **Full Control** on the share
4. What is the signification the trailing **$** sign at the end of the share’s name?

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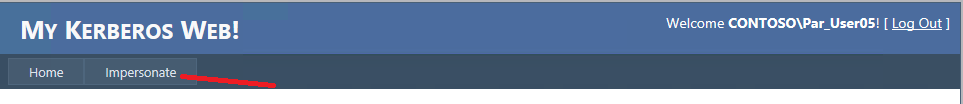
1. Close your session

#### Task 2: Try to connect to the share using the website on CSI-TD-SRV1

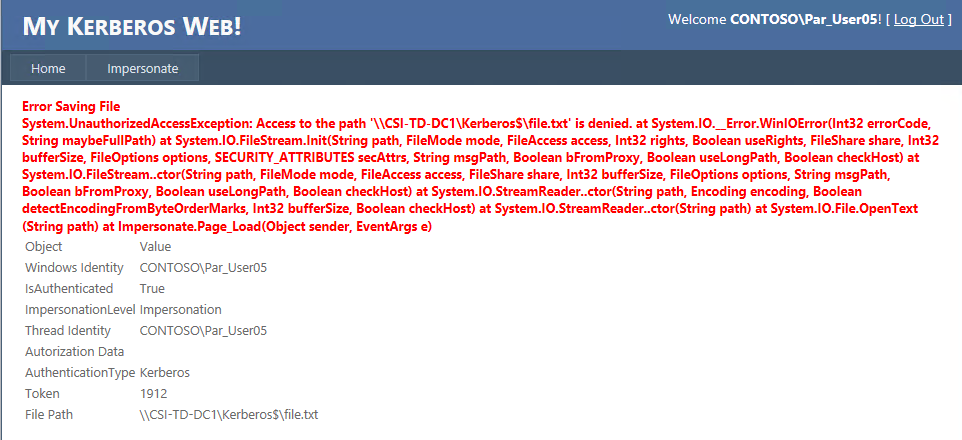
1. Open a session on **CSI-TD-CLI**
   1. Username: **Par\_User05@contoso.com**
   2. Password: **Ilovesecu\*!**
2. Open Edge
3. In the address bar enter [**http://csi-td-srv1/kerberosweb**](http://csi-td-srv1/kerberosweb)

This website is trying to access the share you have just created on your behalf.

1. Click on **Impersonate**



1. As Kerberos delegation has not be set, you’ll have the following error :

  
It fails because the website account (the computer account on which it is running) does not have Kerberos delegation permissions.

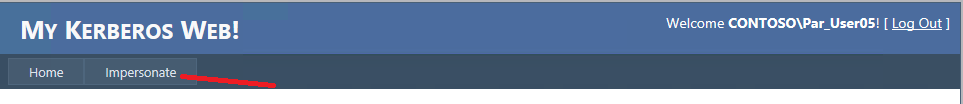
1. Close **Edge**

#### Task 3: Set Kerberos delegation

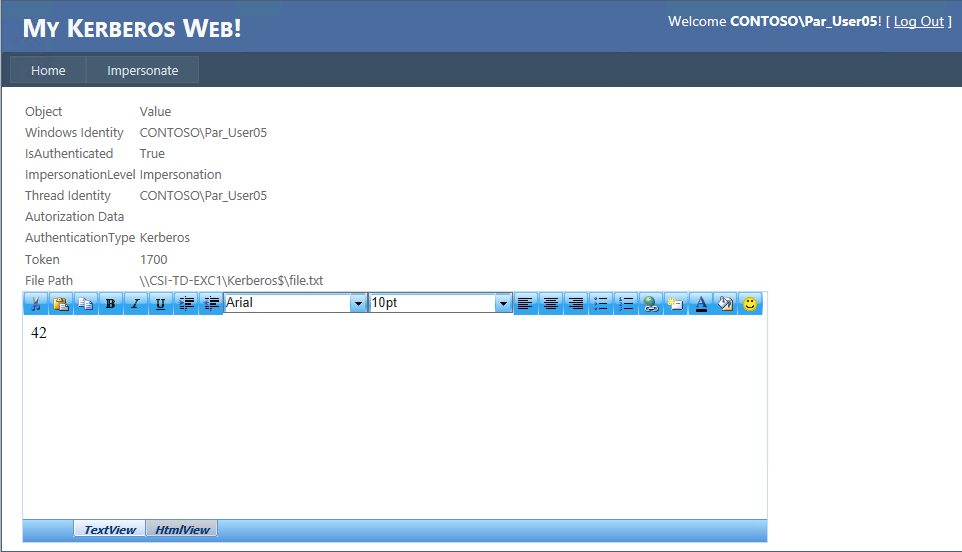
1. Open a session on **CSI-TD-DC1** with your admin account
2. For the server **CSI-TD-SRV1** set **Delegation** **“Trust this computer for delegation to specified services only”** for **“Use any authentication protocol”** for **CSI-TD-EXC1** for **CIFS**
3. Logon to **CSI-TD-SRV1** and Reboot **CSI-TD-SRV1**
4. Close your session on **CSI-TD-DC1**Note that we configure the delegation on the computer account because the website is not using a service account. If the website was using a service account, we should have configured the delegation on the service account.

#### Task 4: Try to connect to the share using the website on CSI-TD-SRV1

1. Wait until a complete reboot of **CSI-TD-SRV1**
2. Switch to **CSI-TD-CLI**
3. Open **Edge**
4. In the address bar enter [**http://csi-td-srv1/kerberosweb**](http://csi-td-srv1/kerberosweb)
5. Click on **Impersonate**



1. You should have the following result :

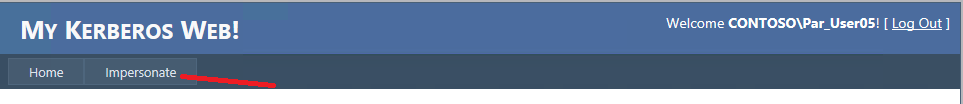


If necessary, reboot CSI-TD-EXC1

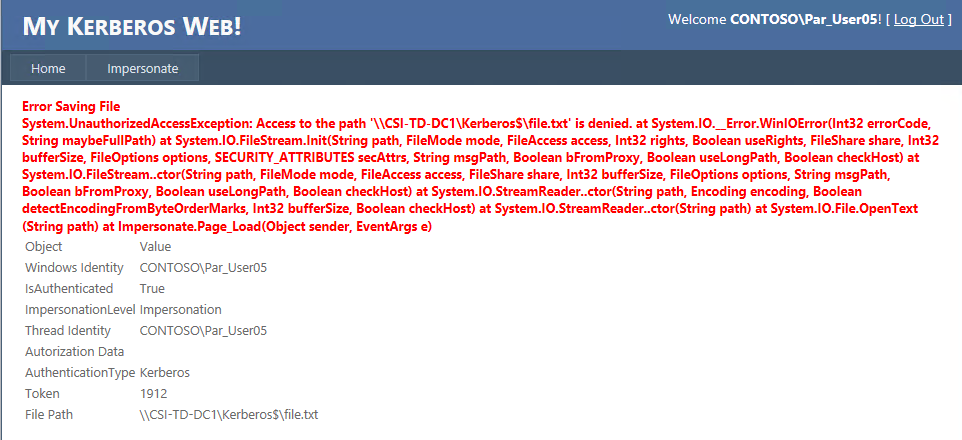
1. Close **Edge**
2. Close your session

#### Task 3: Set Sensitive User cannot be delegated for the Par\_User05

1. Open a session on **CSI-TD-DC1**
2. Launch the **Active Directory Users and Computers** console
3. For the user, **Par\_User05** set **Account is sensitive and cannot be delegated**
4. Close your session
5. Connect to **CSI-TD-SRV1** and Reboot **CSI-TD-SRV1**
6. Open a session on **CSI-TD-CLI**
   1. Username: **Par\_User05@contoso.com**
   2. Password: **Ilovesecu\*!**
7. In the address bar enter [**http://csi-td-srv1/kerberosweb**](http://csi-td-srv1/kerberosweb)
8. Click on **Impersonate**



1. As the account has been configured as sensitive the Kerberos delegation doesn’t work



1. Close **Edge**
2. Close your session

## Questions:

1. What is the purpose of the setting: Sensitive User cannot be delegated?

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1. Describe how the Kerberos delegation flow works?

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## After the Lab

Duration: 10 minutes

In this exercise, attendees will deallocate any Azure resources that were started in support of the lab.

#### Task 1: Stop and deallocated all the VMs

1. Properly shutdown all the VMs
2. Deallocate the VM in the Azure Portal
3. To Stop a VM, simply click on Unclaim.

