"Server Virtualization"

By Amna Sohail

Project:

Enabling Remote Work for Mstile During the Pandemic

Projekt story
På grund av corona pandemin är Mstile i behov att kunna jobba effektiv på fjärr.
Kunden vill att vi presenterar ett proof of concept på en lösning hur det kan funka.

Del1

Krav för att göra labbet:
1 x AD Server
- Konfigurera GPO
    - Folder Redirection till alla användare
        - Skrivbord
        - Dokument
        - Bilder
    - Nätverksmapp G:\Gemensam till alla användare
1 x Server 2019
1 x Windows 10 Pro VM

Att göra:
- Installera och konfigurera upp Server 2019
    a. Valfri IP
    b. Döp server namnet till RDS01
- Installera följande roller på Server 2019(AKA RDS01)
    a. RD webaccess, RD Connection Broker, RD Session host

b. Konfigurera Collection
- Surfa in på https://rds01.mstile.se/rdweb
  a. Starta Applikationen och logga in
  b. Kontrollera att Folder Redirection funkar som det ska
  c. Nätverksmapp funkar som det ska
- Del 1 är klar när:
  a. Du kan koppla upp dig via Remote desktop till RDS01
  b. Folder Redirection funkar för användarna
    i. Testa och skapa en fil
  c. Nätverksmapp G:\Gemensam syns för användarna

Del2

Mstile har nu access till något som kallas för Remote Desktop Services.
Tyvärr funkar RDS just nu endast när du befinner dig i det lokala nätet.
Nästa steg i konfigurationen är att får igång så att användarna kan komma åt RDS när de sitter hemma.

Att göra:
- Installera Pfsense eller Window Server 2019 och konfigurerar med Windows routing tjänst
- Konfigurera Port forward och Brandvägg
- Lägger till rollen RDS Gateway i RDS01
- Konfigurerar RDS Gateway med certifikat
- Kopiera certifikatet och installera på den datorn du ska använda för att komma åt RDS01
- Från din Windows 10 vm surfa till https://rds01.mstile.se/rdweb och testa att logga in
  ○ Lägg märke till att certifikat varning är borta
- Från din fysiska dator, surfa till din pfsense WAN ip och se om du kan komma åt RDS01 servern
  ○ OBS du måste konfigurera Host filen på din fysiska dator för att detta ska funka också
  ○ Starta om datorn efter att du har konfigurerat host filen

Del3

Nu kan Mstile användarna komma åt sina arbetsresurs när de jobba hemma.
Vi ska testa en annan funktion som RDS server ger oss möjligheten till.
Detta kallas för Remote App
Att göra:
- Gå till din Collections på din RDS01
- Välj ett program som finns på RDS01 och publicera applikationen.
- Testa som användare att logga in på RDS01 webbsida och starta applikationen.

Att lämna in

Ni ska lämna in en action plan på hur ni har
- RDS server
- De olika rollerna
- Remote app

Ni behöver inte ta med hur ni har konfigurerat AD.

Challenge

Konfigurera RDS så att man kommer åt systemet genom riktig Publik IP

——

**Del 1: Setting Up Remote Desktop Services (RDS)**

Step1# AD Server Configuration*

AD Server (AD01):
 Computer Name: AD01
Domain: mstile.com
IP Address: 192.168.100.10
	-**Roles and Features:**
	
	1. Install AD, DHCP, and DNS roles.
	2. Import user data from CSV file.
	3. Create OUs and security groups.
	4. Configure GPO for Folder Redirection:
	   - Desktop
	   - Documents
	   - Pictures
	   - Network folder G:\Gemensam for all users

**Step2# Server 2019 (RDS01):**

- **Computer Name:** RDS01 - **Domain:** mstile.com - **IP Address:** 192.168.100.11 - **DNS:** 192.168.100.10	**Roles and Features:** 1. Install Remote Desktop role. 2. Configure RD Web Access, RD Connection Broker, and RD Session Host. 3. Set up a collection. 4. Access https://rds01.mstile.se/rdweb, start applications, and verify Folder Redirection.

After restart ,click on RDS and see the Overview,here you can see all the role :RD webaccess, RD Connection Broker, RD Session host
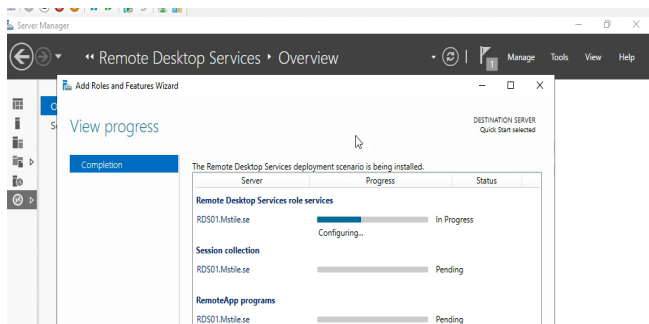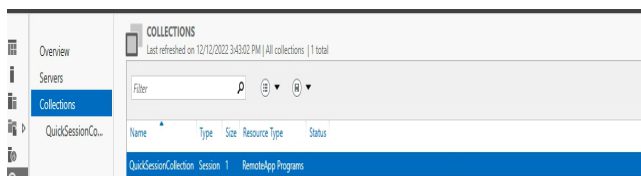
So in quick session we can see REMOTEAPP PROGRAM and the access of applications available:
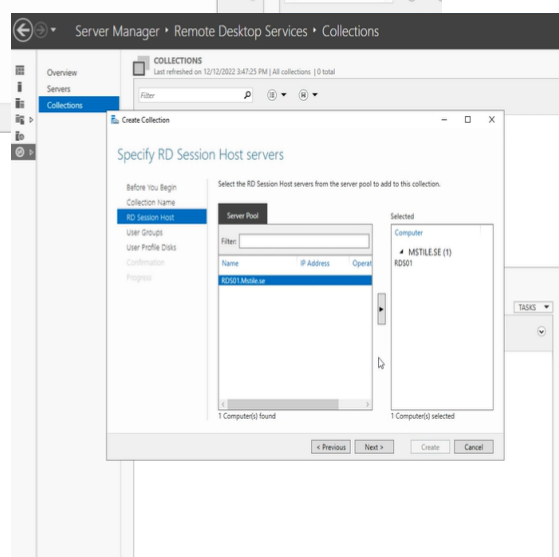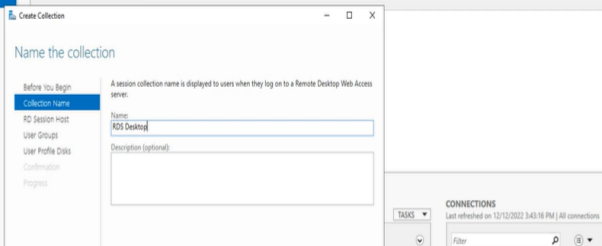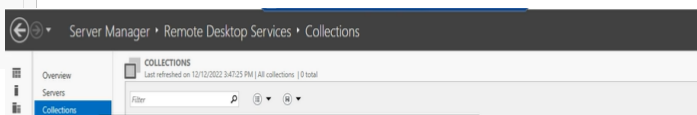- Calculator
- Paint
- Word pad
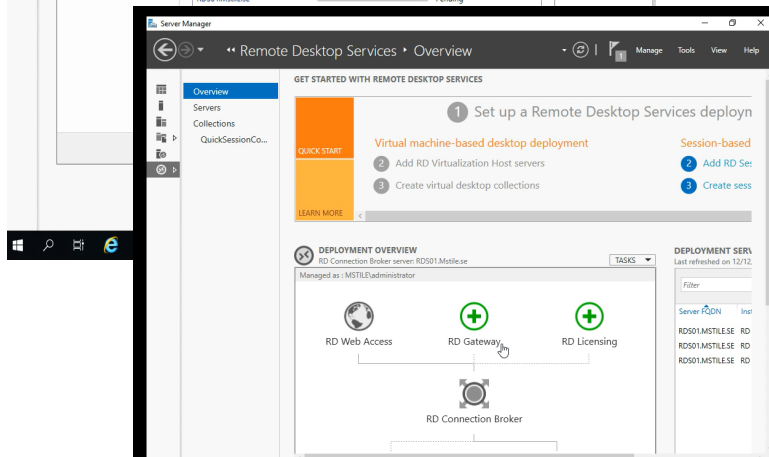
now here on the same page we can see the option of COLLECTION

● So here we can see the in collection; an already available quicksessioncollection so delete it and now create a new collection.
● For this go to Task and create a new session collection,and then write the collection name you want!

Now click"next" & choose "USER GROUP" i.e mstile/domain user. Next>confirm>progress

Step3# Windows 10 (Windows10):

- **Computer Name:** Windows10 - **Domain:** mstile.com - **IP Address:** 192.168.100.12 - **DNS:** 192.168.100.10	**Configuration:** 1. Join Windows 10 to the domain. 2. Ping RDS01.mstile.com. 3. Access https://rds01.mstile.se/rdweb, log in, and connect to RDS01.

After RDS configuration now we will do RDS Windows 10 RDS access

Connecting Windows 10 to the Domain and Accessing RDS01:

To integrate Windows 10 with the domain, initiate the following steps:

A. **Domain Connection:**
   - Join Windows 10 to the domain.
   - Perform a system restart for the changes to take effect.

B. **Testing Connectivity:**
   - Open Command Prompt (CMD).
   - Type the command `ping RDS01.mstile.com`.
   - Verify the response from the server.

C. **Accessing RDS Web Path:**
   - Conduct a web search using a browser.
   - Enter the RDS web access path: `https://rds01.mstile.com/rdweb`.
   - Expect a warning prompt.

D. **Advanced Configuration:**
   - Click on "ADVANCE" to access advanced settings.
   - Enter domain credentials (domain\user) when prompted.
   - Continue to "WORK RESOURCE" and select the RDS DESKTOP option.

E. **Download and Login:**
   - Download the provided file for RDS Desktop.
   - Log in to the domain using your credentials.

F. **Final Connection**:
   - Following this process establishes a connection to RDS01.
   - Windows 10 will display your Server 2019 (RDS01) on the desktop.

By successfully completing these steps, users ensure the integration of Windows 10 into the domain and establish remote access to RDS01, enabling seamless interaction with Server 2019 resources.

Del 2: Enabling Remote Access

PFsense Configuration:

1. Configure PFsense WAN settings.
2. Disable Reserved Networks.
3. Set up NAT and port forward for HTTPS to RDS01.
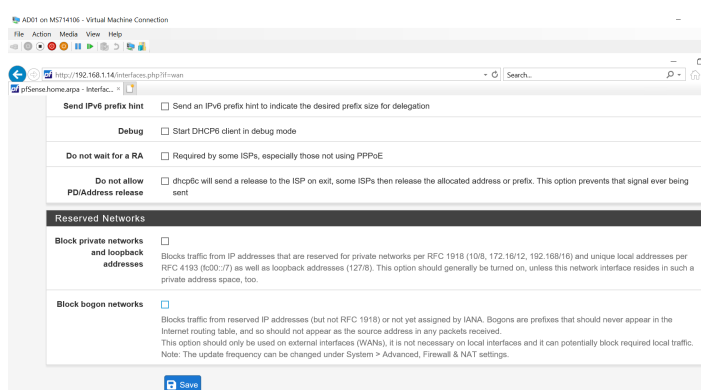4. Update host file on the physical computer for RDS access.

RD Gateway and Certificate Configuration:

1. Install PFsense or Windows Server 2019 with Windows Routing service.
2. Install RDS Gateway role on RDS01.

3. Configure RDS Gateway with a certificate.
4. Copy and install the certificate on the client machine.
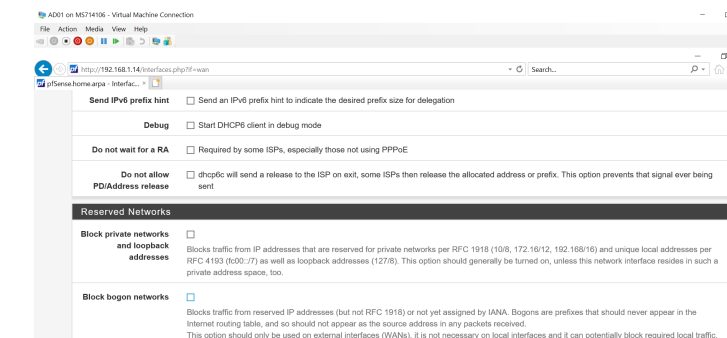5. Test remote access via

https://rds01.mstile.se/rdweb.
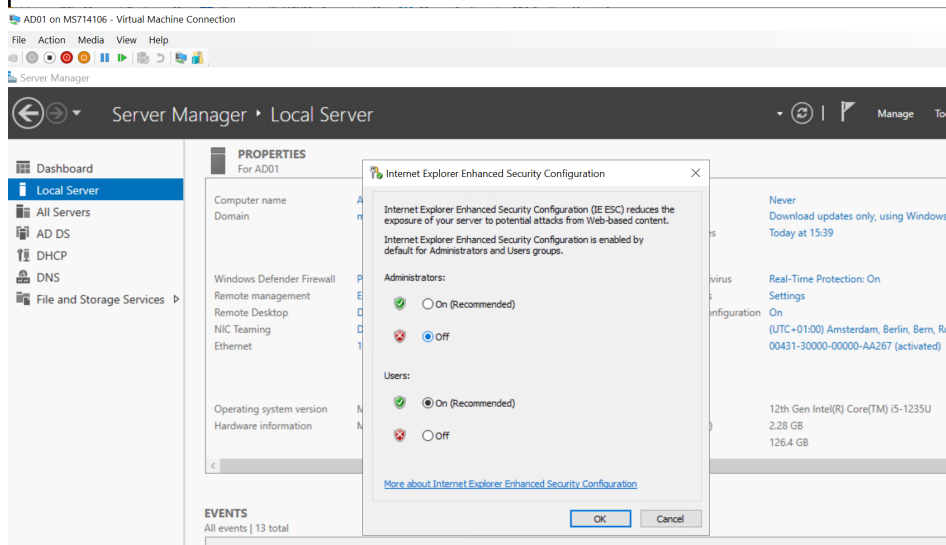
● Now write the WAN address on internet explorer and it will open the PF sense page to log in as

admin and use the password "pfsense".
After you log in go to the interface.and unmark the "RESERVED NETWORKS" and save and apply change.

Now go firewall and select NAT and change the setting.At destination select"ANY" and select the destination port range from "HTTPS"
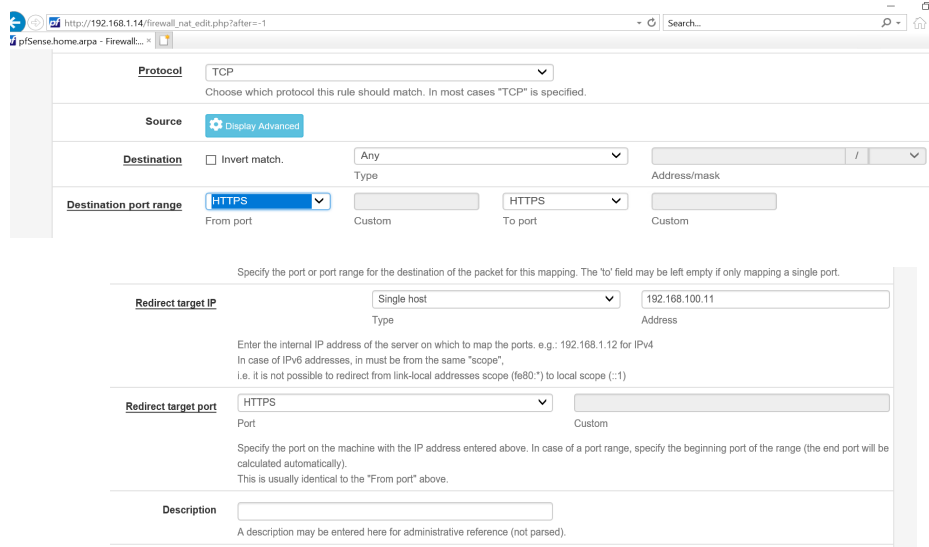
- now in redirect target IP write single host and ip address of your RDS server
- now go to CMD and run as administrator,now type ipconfig/registerdns and then ping rds01.mstile.com

- Now go to the web browser after editing and applying changes to the rules in the PFsense web page and write the "https://WANaddress/rdweb".
- click in advance and process the page and this page will open.
  -

7
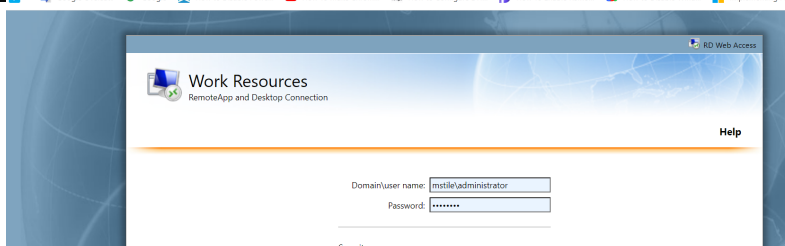
TO add RDS server rule we need to add RD deployment service.For this we go to RDS Overview.
Click on RD-gateway. add the RD Gateway servers 'SERVER selection".select the RDS01.mstile.com and then click add.

Overview. Click on RD-gateway. add the RD Gateway servers 'SERVER

selection".select the RDS01.mstile.com and then click add.
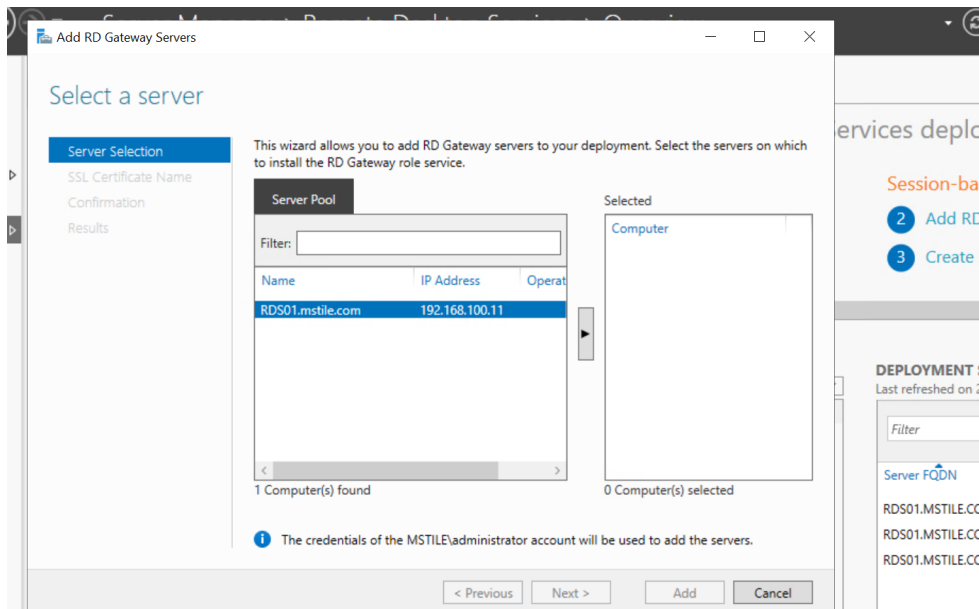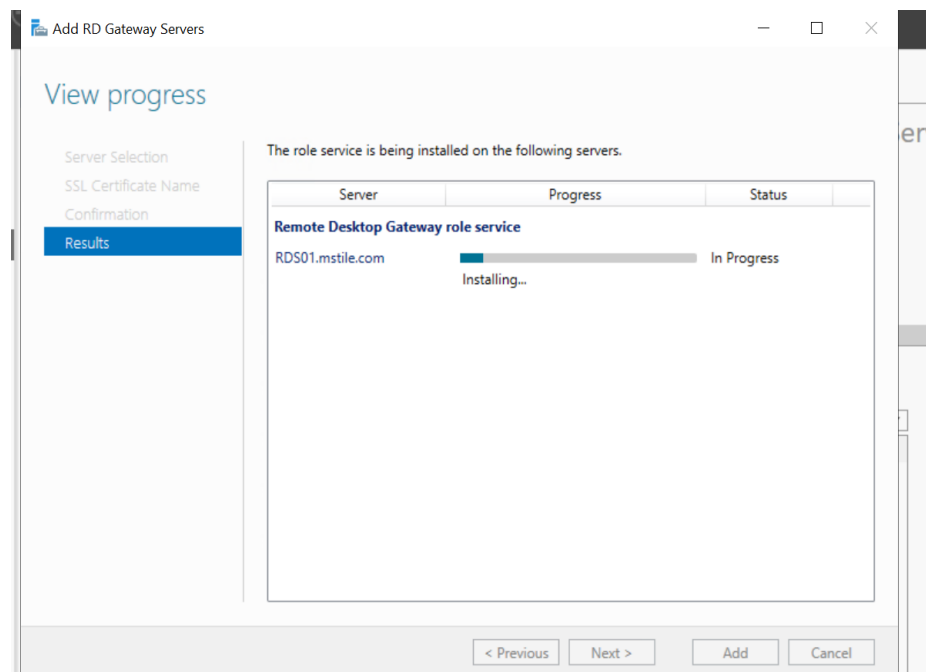

in SSL certificate name write "rds01.mstile.com" then confirm. after installation it will ask you for the deployment .so click on deployment properties and create a new certificate.write the rds01.mstile.com and password you chose and click on store this certificate and safe it in the drive "C" by creating new folder so you can copy the certificate later on to apply it on your physical host.and the click on last option "ALLOW the certificate…." and then press "OK"
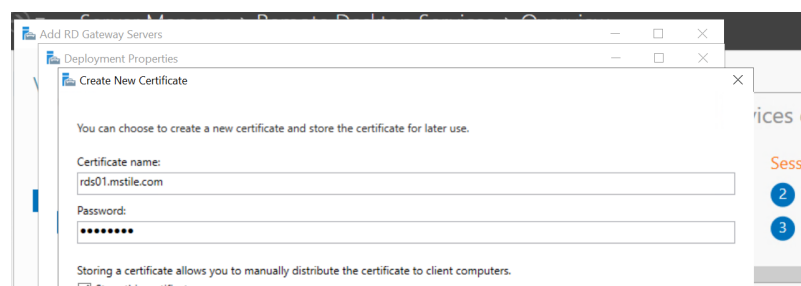
then after creating the certificate we will apply it on the four of the RD role service and then click and apply
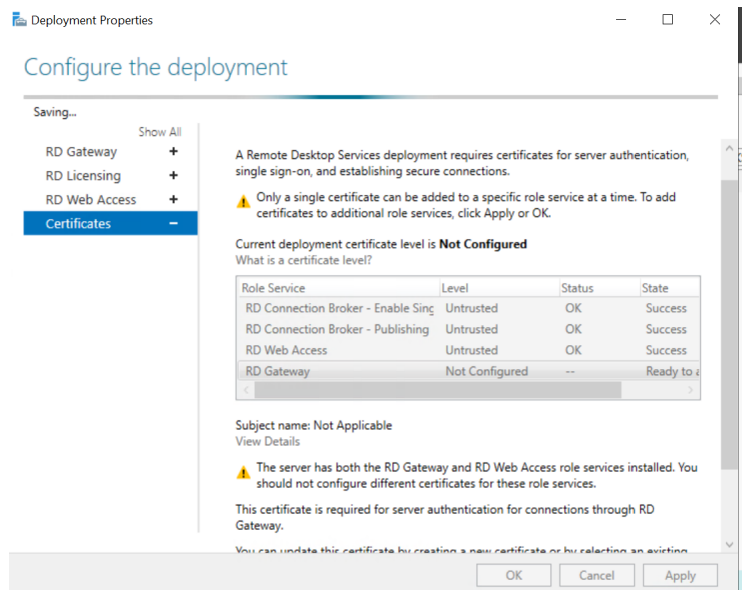
● Now paste the copied certificate to the physical computer and save it in the drive by creating a folder.Now write "mmc" in your CMD of the physical computer and then it will open the console.

● Here in the console you can see the trusted certificate and you can see if an existing "mstile" rds certificate exists so in case it exists then delete it otherwise your next step should be to install the certificate you just copy from RDS servers.

● choose Current user and click ok.
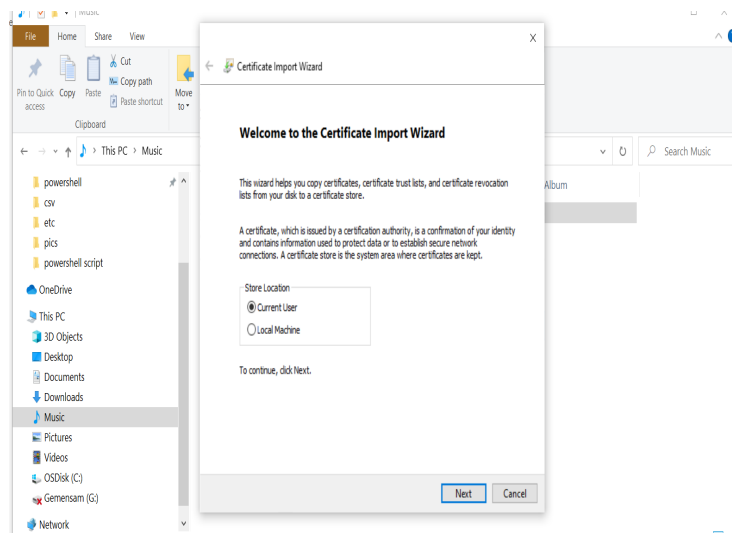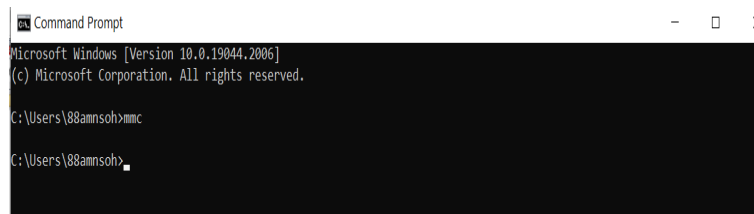
Now write the password we have chosen while creating the certificate and then we will go to the trust root certification authorities.and press "OK". and then click next.
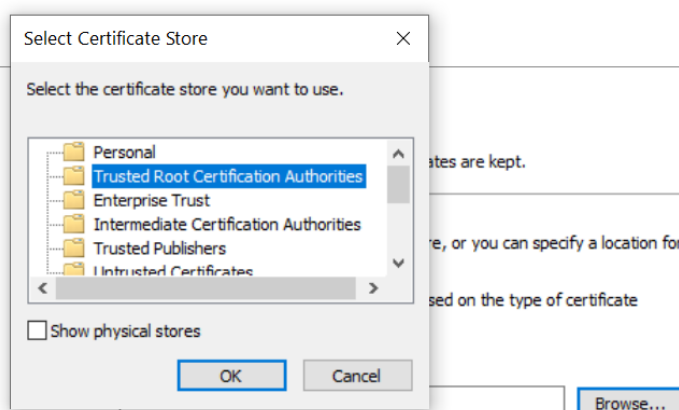
Here you will finish its installation.
now use your "https://WAN address/rdweb" and write in the search engine.
its better to write the DNS in the host file so for this we will go to the drive "C" and write

":/c/windows/system32/driver/etc/host" and then edit the host file as using the wordpad as administrator and write the wan address next to the rds01.mstile.com so you can easily

access the rdweb from your physical browser.
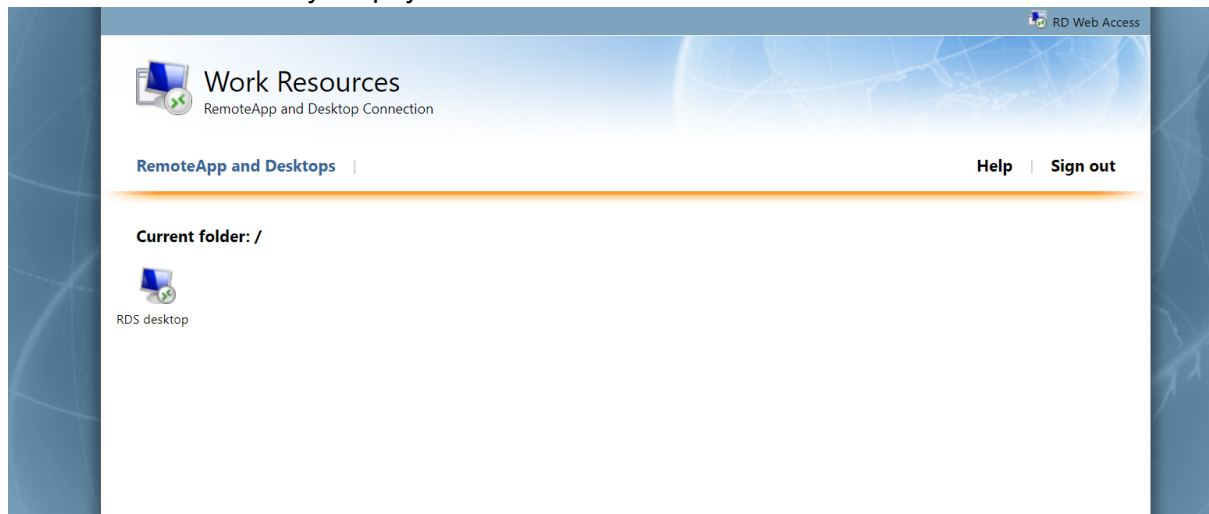
Del 3: Implementing Remote App

Remote App Configuration:

1. Go to RDS01 Collections.
2. Select a program and publish it as a Remote App.
3. Test user login on the RDS01 web page and launch the application.

For this we will go to RDSserver and go to rds desktop and go to task and select "publish remoteapp programs"
then select the app we want for the RDS app.
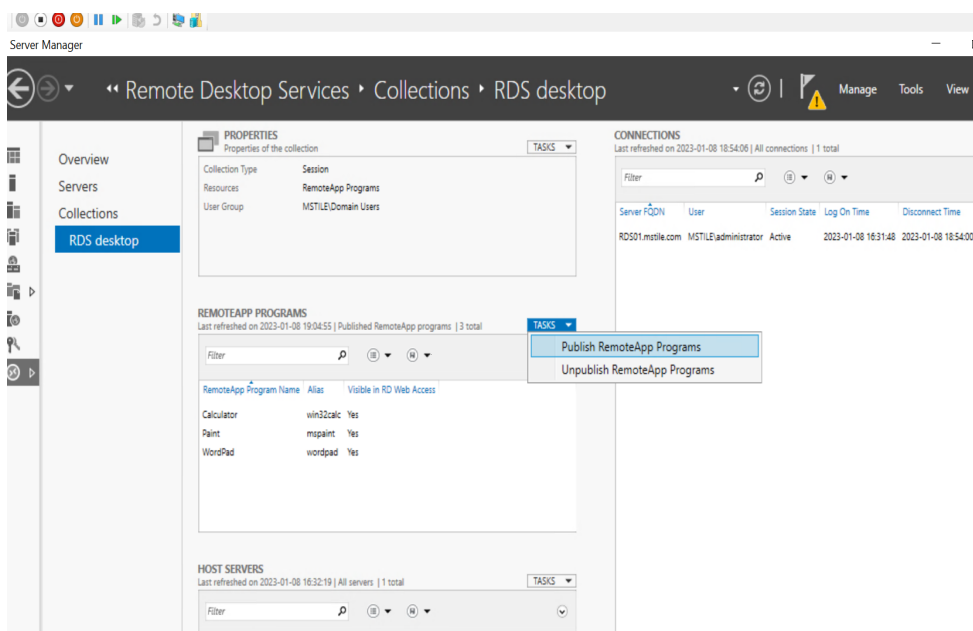
After the selection, log in Windows 10 and connect the RDS through search engine by typing the rds path and after being accessed to the rds server use the applications and save it in the document so one can access the used application.

Topology Diagram:

```
+-----------------------+       +-----------------------+                    +------------------------+
|      AD Server        |       |     RDS Server        |                    |      Windows 10        |
|-----------------------|       |-----------------------|                    |------------------------|
| Computer Name: AD01|          | Computer Name: RDS01 |                     | Computer Name: Windows10|
| Domain: mstile.com |          | Domain: mstile.com |                       | Domain: mstile.com     |
| IP: 192.168.100.10 |          | IP: 192.168.100.11 |                       | IP: 192.168.100.12     |
    +-----------------------+       +-------------------------------+             +------------------------+
            |                               |                                        |
            |                               |                                        |
            |                               |                                        |
            |                               |                                        |
      +------------------------------+---------------------------+----------------+
                                     |
                            +--------------+
                            |   PFsense    |
                            |--------------|
                            | WAN Address  |
                            +--------------+

                                  |
                            +--------------+
                            |  Physical    |
                            |  Computer    |
                            |--------------|
                            | Hosts File   |
                            +--------------+
```
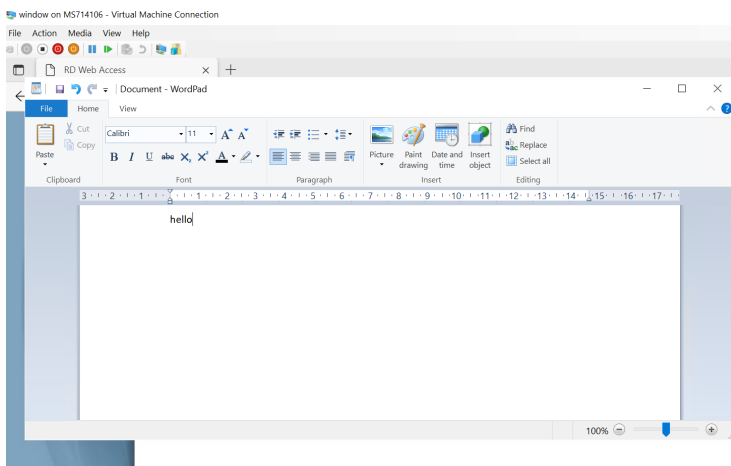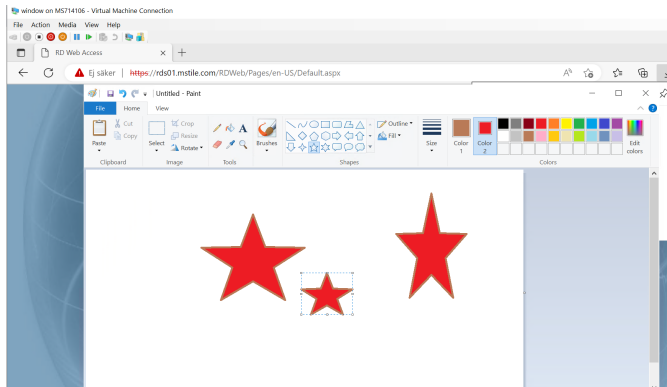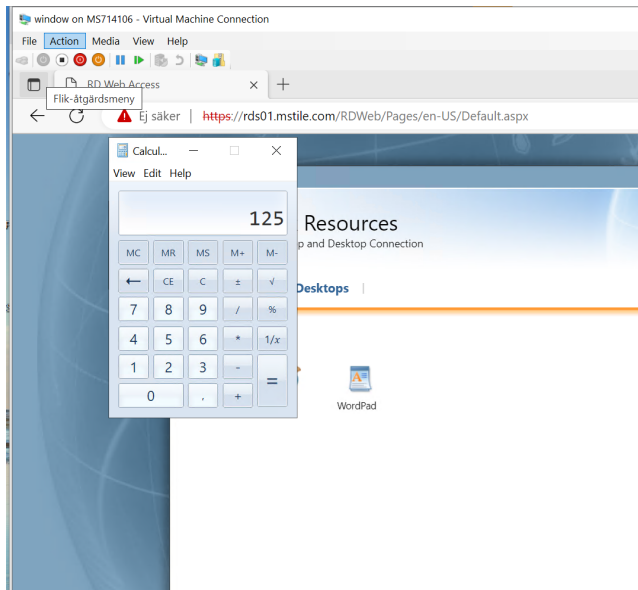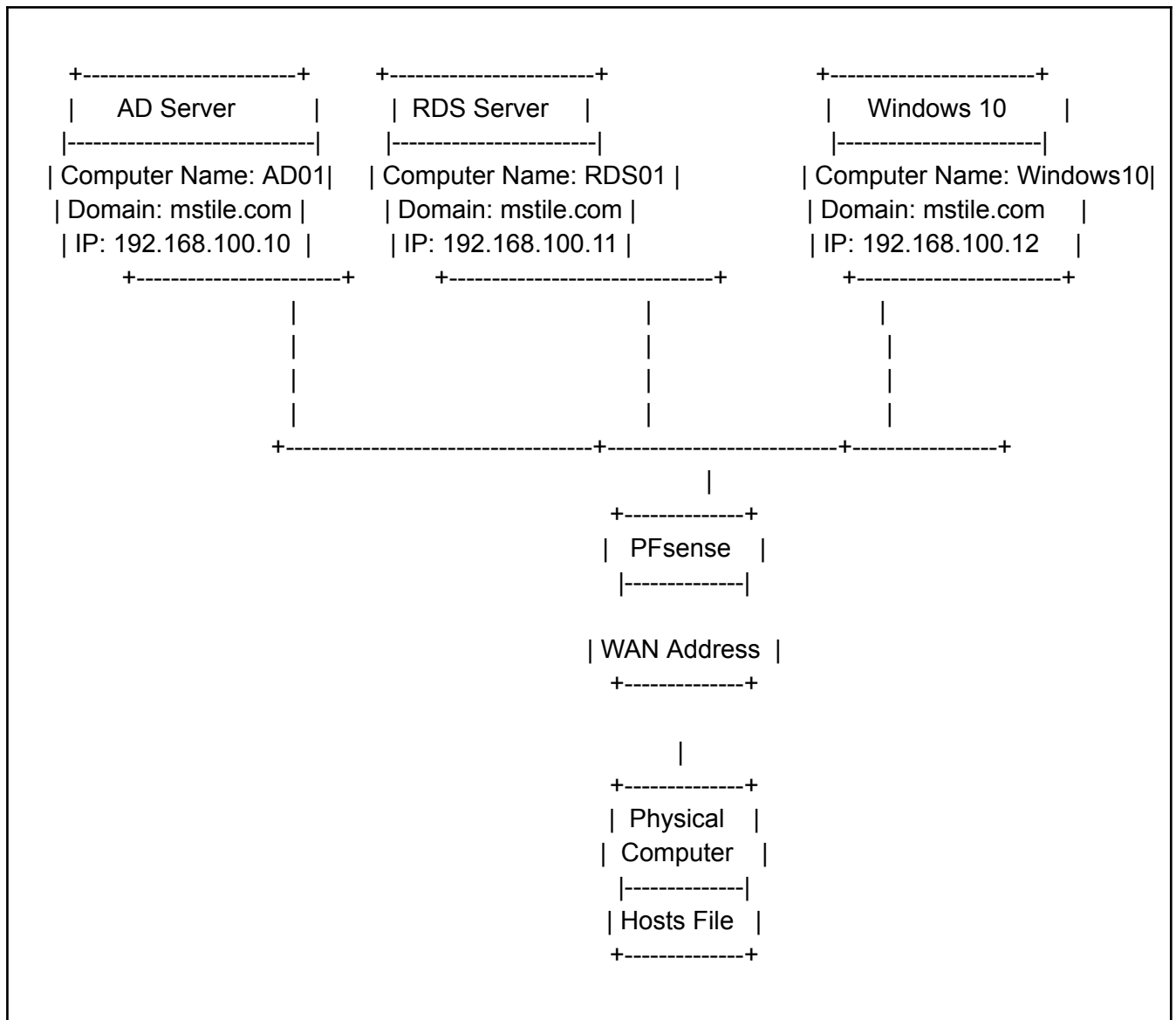
Quick solution look:

AD Server Configuration Steps:
1. Install AD, DHCP, and DNS roles.
2. Import user data from CSV file.
3. Create OUs and security groups.
4. Configure GPO for Folder Redirection.

RDS Server Configuration Steps:
1. Install Remote Desktop role.

2. Configure RD Web Access, RD Connection Broker, and RD Session Host.
3. Set up a collection.
4. Access https://rds01.mstile.se/rdweb, start applications, and verify Folder Redirection.

Windows 10 Configuration Steps:
1. Join Windows 10 to the domain.
2. Ping RDS01.mstile.com.
3. Access https://rds01.mstile.se/rdweb, log in, and connect to RDS01.

PFsense Configuration Steps:
1. Configure WAN settings.
2. Disable Reserved Networks.
3. Set up NAT and port forward for HTTPS to RDS01.
4. Update host file on the physical computer for RDS access.

RD Gateway and Certificate Configuration Steps:
1. Install PFsense or Windows Server 2019 with Windows Routing service.
2. Install RDS Gateway role on RDS01.
3. Configure RDS Gateway with a certificate.
4. Copy and install the certificate on the client machine.
5. Test remote access via https://rds01.mstile.se/rdweb.

Remote App Configuration Steps:
1. Go to RDS01 Collections.
2. Select a program and publish it as a Remote App.
3. Test user login on the RDS01 webpage and launch the application.