How to Configure NetScaler Gateway 10.5 to use with StoreFront 2.6 and XenDesktop 7.6.

Introduction

The purpose of this document is to record the steps required to configure a NetScaler Gateway for use with StoreFront and XenDesktop.

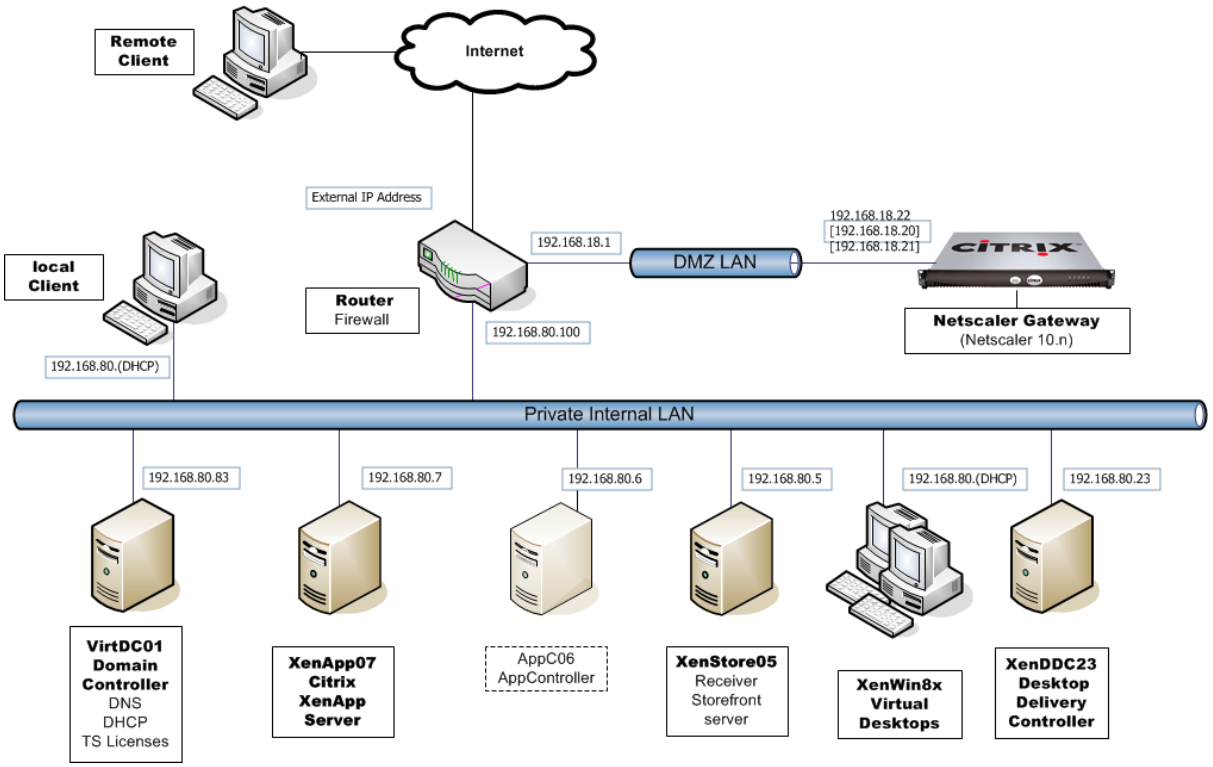
Particular attention has been paid to the use of on-board NetScaler tools for creating a server certificate for the NetScaler Gateway. It will be seen that the NetScaler is using an exported root CA from a Microsoft Certificate Server so that client systems only need a single CA certificate.

The target audience for this document includes developers and testers who wish to set up a representative environment for testing external access scenarios.

While this document only attempts to record a single configuration, it is hoped that it will act as a stepping stone for those who wish to create similar or more advanced configurations.

Contents

Network Diagram



The NetScaler will use the following network addresses

NetScaler IP	192.168.18.20
Subnet IP	192.168.18.21
Virtual IP	192.168.18.22

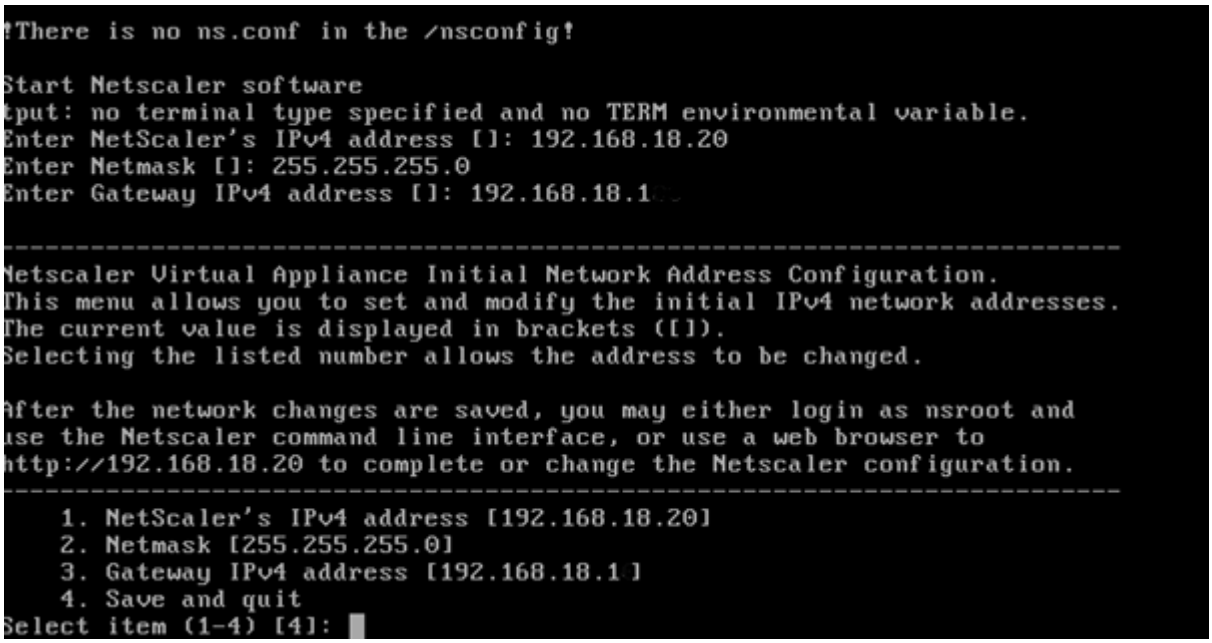
NetScaler Configuration

This section assumes that you will be creating a NetScaler VPX virtual appliance and hosting it on XenServer.

The processes for configuring a physical NetScaler appliance, or a NetScaler VPX virtual appliance hosted on another Hypervisor is similar.

Initial setup from XenCenter Console

1. Download the latest NetScaler VPX virtual appliance from www.citrix.com and import it into XenServer.
2. Using XenCenter, start the new NetScaler VM and go to the VM console.



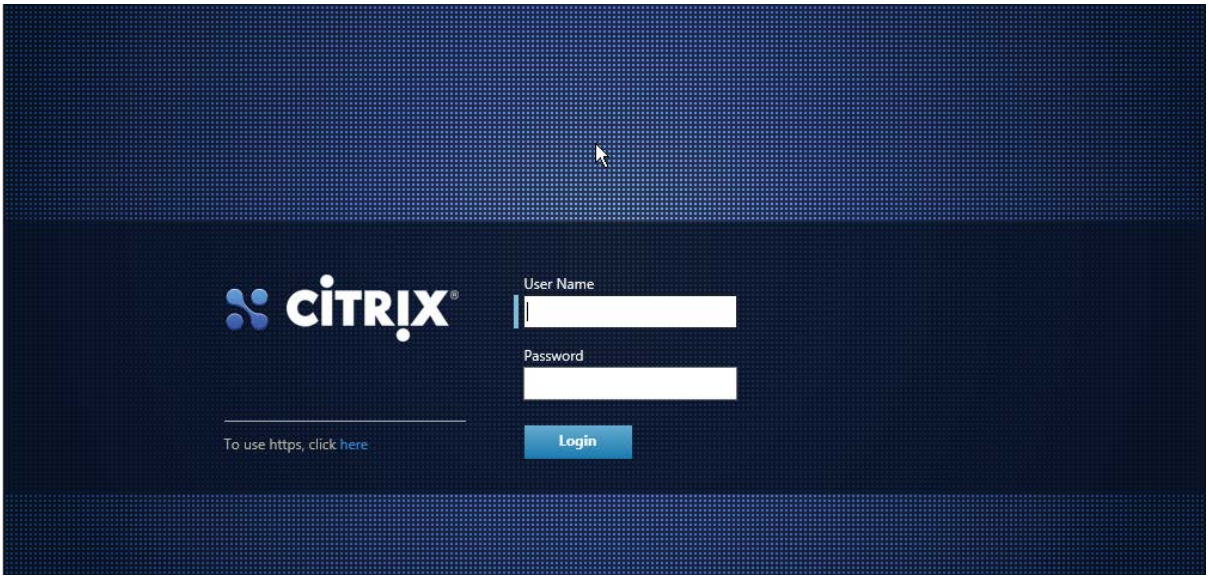
3. Enter the following information into the first time wizard.

IPv4 address	192.168.18.20
Netmask	255.255.255.0
Default Gateway	192.168.18.1

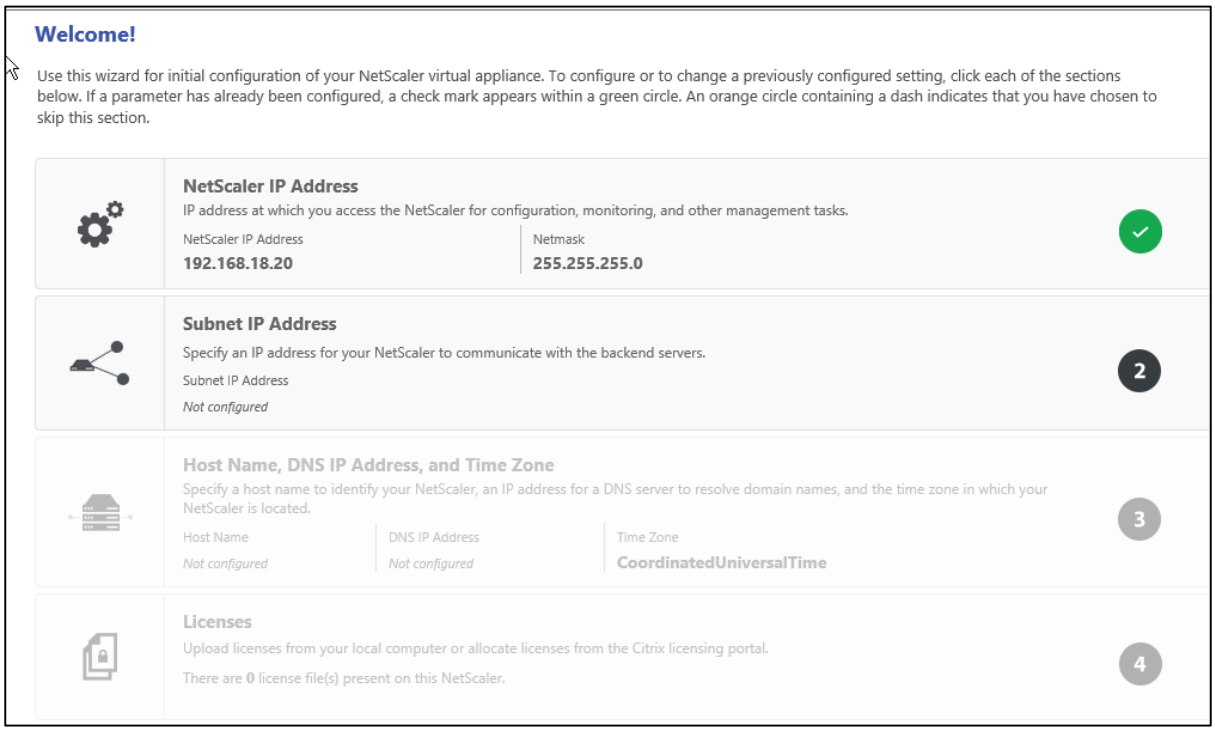
4. Select **4** to Save and quit.
   The NetScaler will reboot.

Continue setup from NetScaler GUI

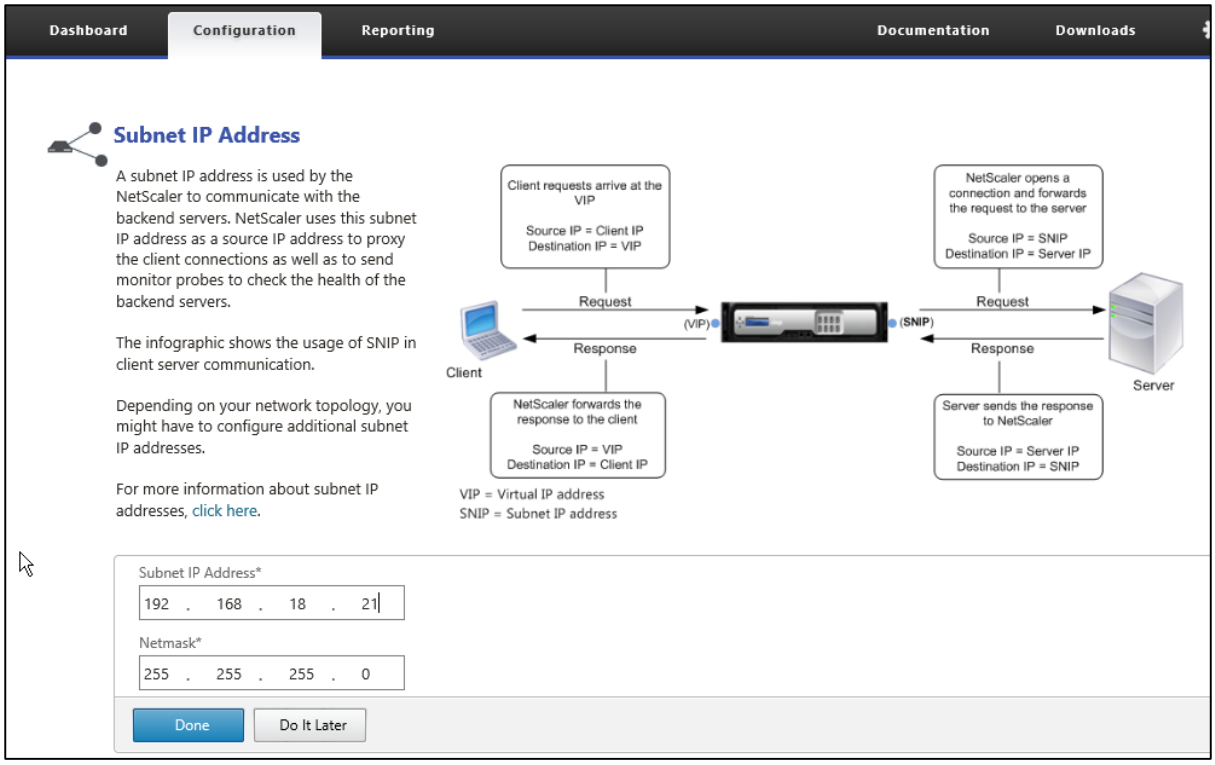
1. From a convenient PC, workstation, or server, launch a browser and point to http://192.168.18.20



2. Log on using the following credentials:
   Username nsroot
   Password nsroot



The NetScaler “Welcome Wizard” now walks you through the configuration of the Subnet IP Address, Host Name, DNS details, Time Zone and Licenses.


Dashboard
Configuration
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Documentation
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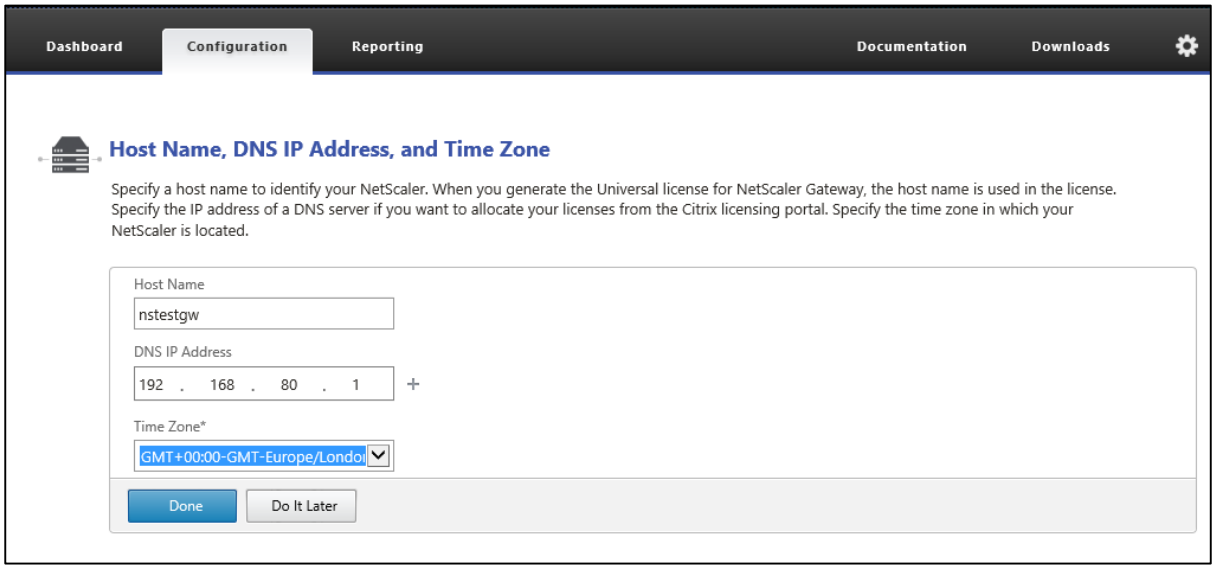
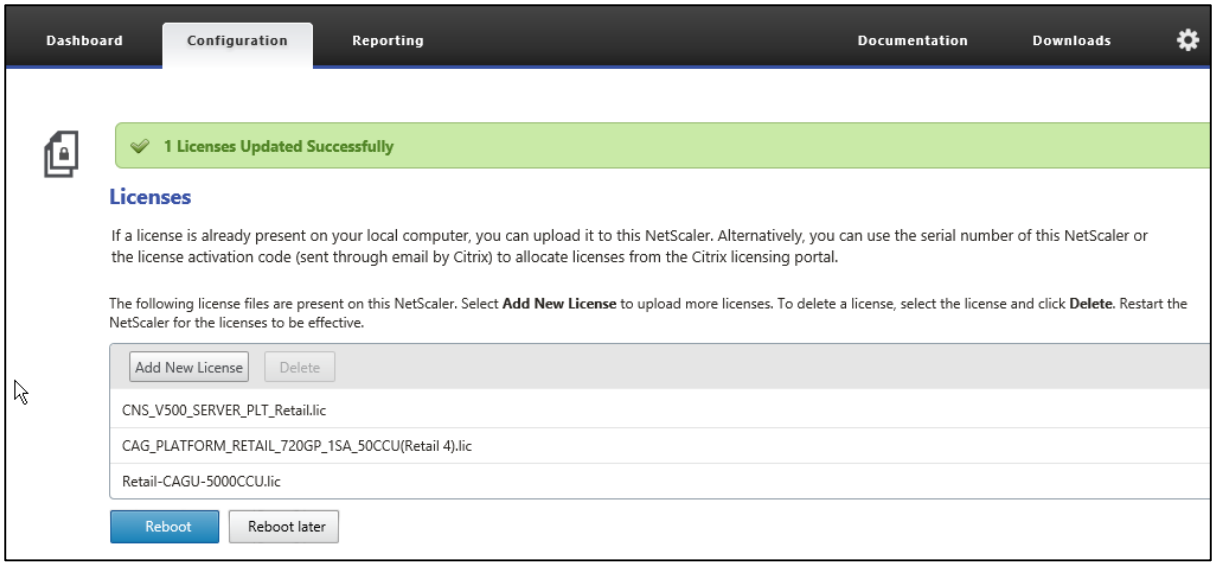
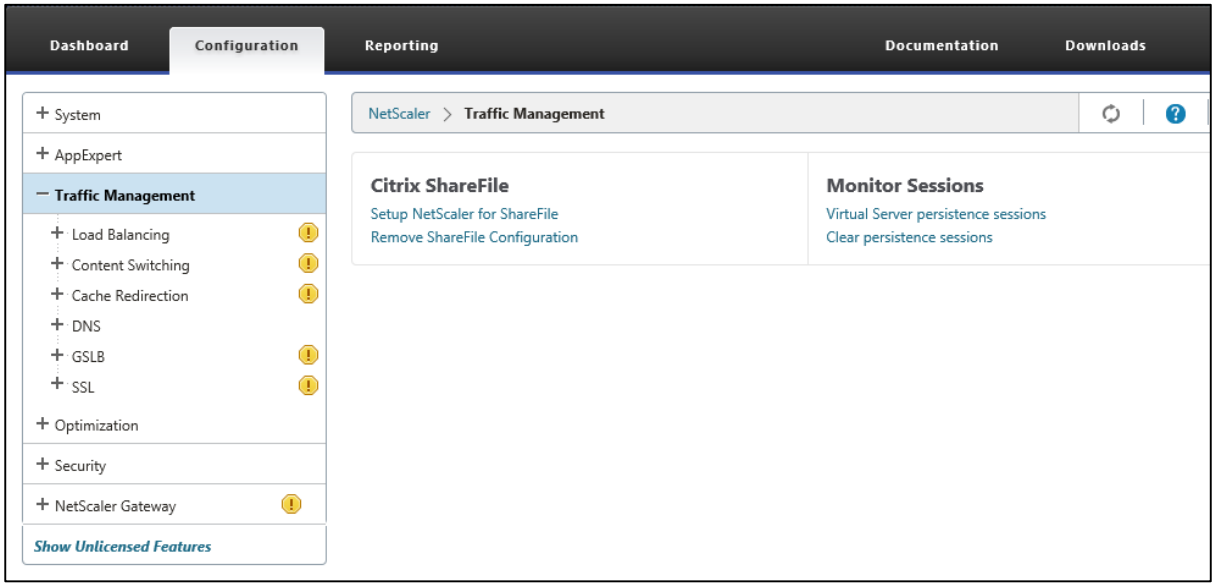
Subnet IP Address
A subnet IP address is used by the NetScaler to communicate with the backend servers. NetScaler uses this subnet IP address as a source IP address to proxy the client connections as well as to send monitor probes to check the health of the backend servers.
The infographic shows the usage of SNIP in client server communication.
Depending on your network topology, you might have to configure additional subnet IP addresses.
For more information about subnet IP addresses, click here.
Client requests arrive at the VIP
Source IP = Client IP
Destination IP = VIP
NetScaler opens a connection and forwards the request to the server
Source IP = SNIP
Destination IP = Server IP
Request
Response
(VIP)
(SNIP)
Client
Server
NetScaler forwards the response to the client
Source IP = VIP
Destination IP = Client IP
Server sends the response to NetScaler
Source IP = Server IP
Destination IP = SNIP
VIP = Virtual IP address
SNIP = Subnet IP address
Subnet IP Address*
192 . 168 . 18 . 21
Netmask*
255 . 255 . 255 . 0
Done
Do It Later

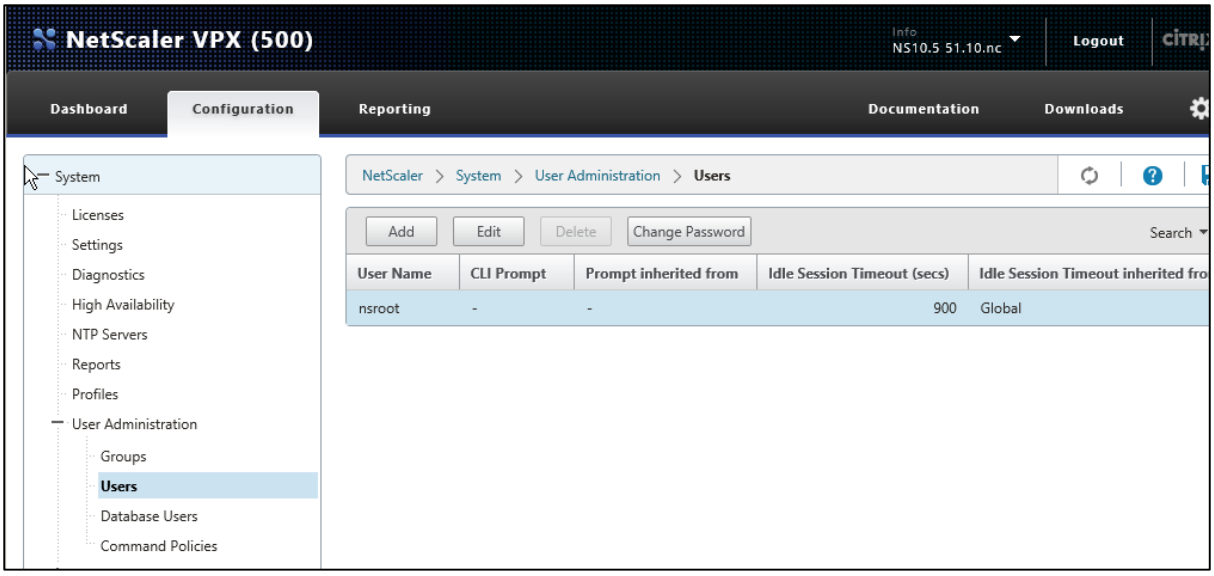

Dashboard
Configuration
Reporting
Documentation
Downloads
Host Name, DNS IP Address, and Time Zone
Specify a host name to identify your NetScaler. When you generate the Universal license for NetScaler Gateway, the host name is used in the license. Specify the IP address of a DNS server if you want to allocate your licenses from the Citrix licensing portal. Specify the time zone in which your NetScaler is located.
Host Name
nstestgw
DNS IP Address
192 . 168 . 80 . 1
Time Zone*
GMT+00:00-GMT-Europe/Londo
Done
Do It Later



3. Add your licenses (the preceding are Citrix test licenses. Your experience will probably differ).
4. Click **Reboot**.



5. After logging back in to the GUI it can be seen that some features are disabled by default.
6. Enable NetScaler Gateway and SSL by selecting the feature, and using right-click and **Enable**.



7. You might need to change the nsroot password.

Server Certificates, CA Certificates, and SSL

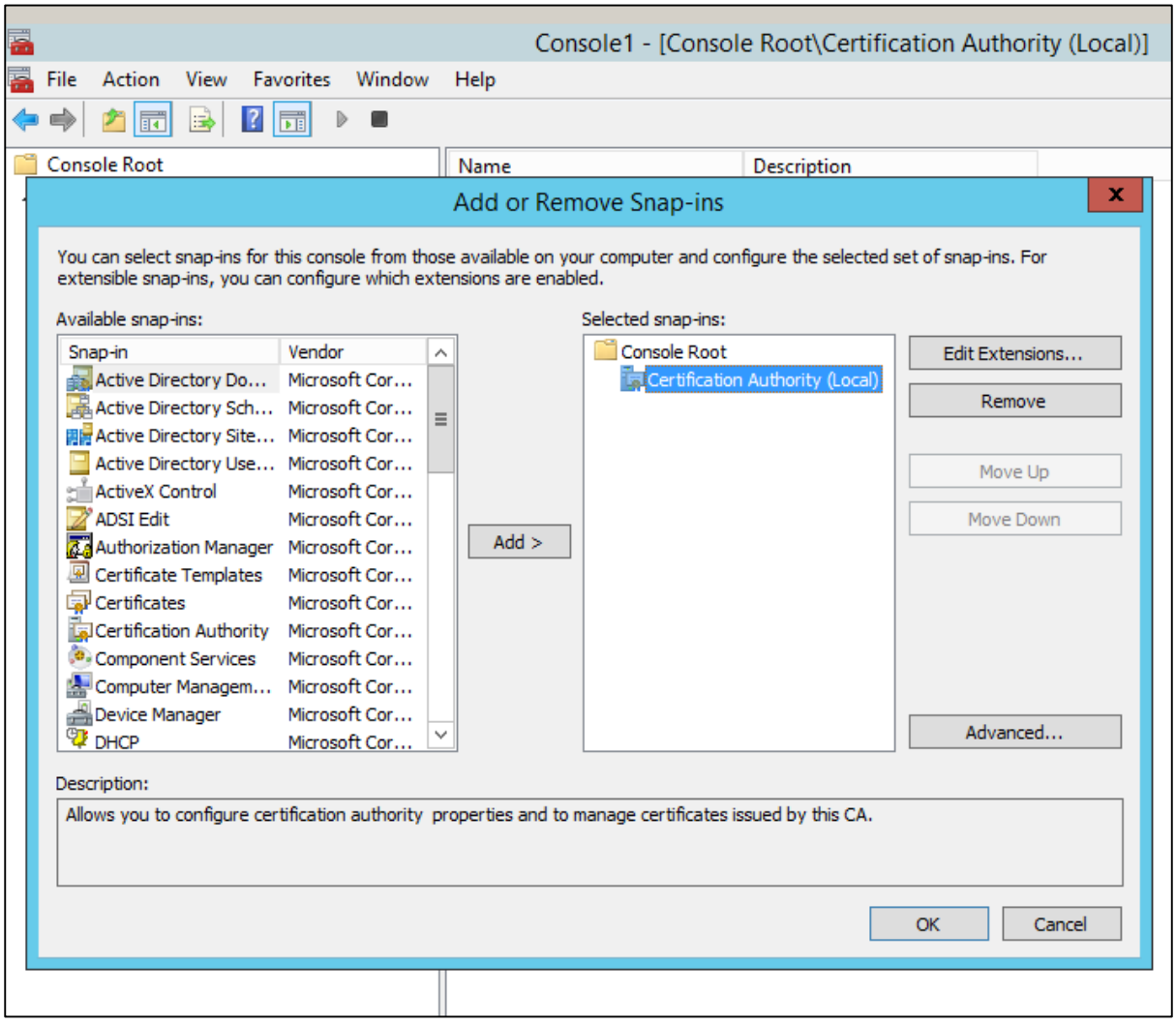
The System 3 test team try to build environments which reflect real world cases and generally server certificates are created for all servers, and use SSL to communicate whenever possible. To create these certificates, engineers use their Microsoft Certificate Server, rather than using public Certificate Authorities which would be expensive for multiple test environments. Because they do not use one of the well-known public Certificate Authorities, they have to ensure that they are installed on trusted CA certificate on all client devices.

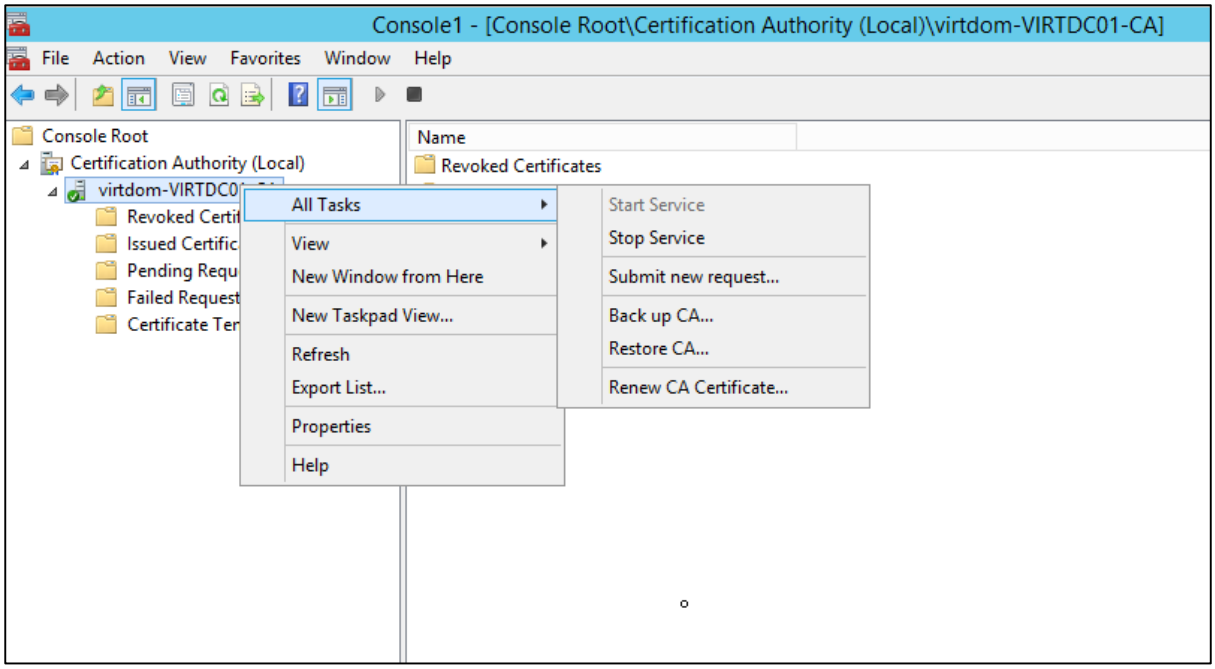
Because the Microsoft Certificate Server is known to Active Directory the trusted CA certificate is automatically installed on all domain-joined systems. The engineers then have to manually add the trusted CA certificate to non-domain-joined systems including domestic PCs, thin clients, tablets and smart phones.

This section describes how to create server certificates for NetScaler Gateways using the tools on the NetScaler appliance. It will be seen that the NetScaler is using an exported root CA from our Microsoft Certificate Server so that we do not have to distribute additional CA certificates to our client systems.

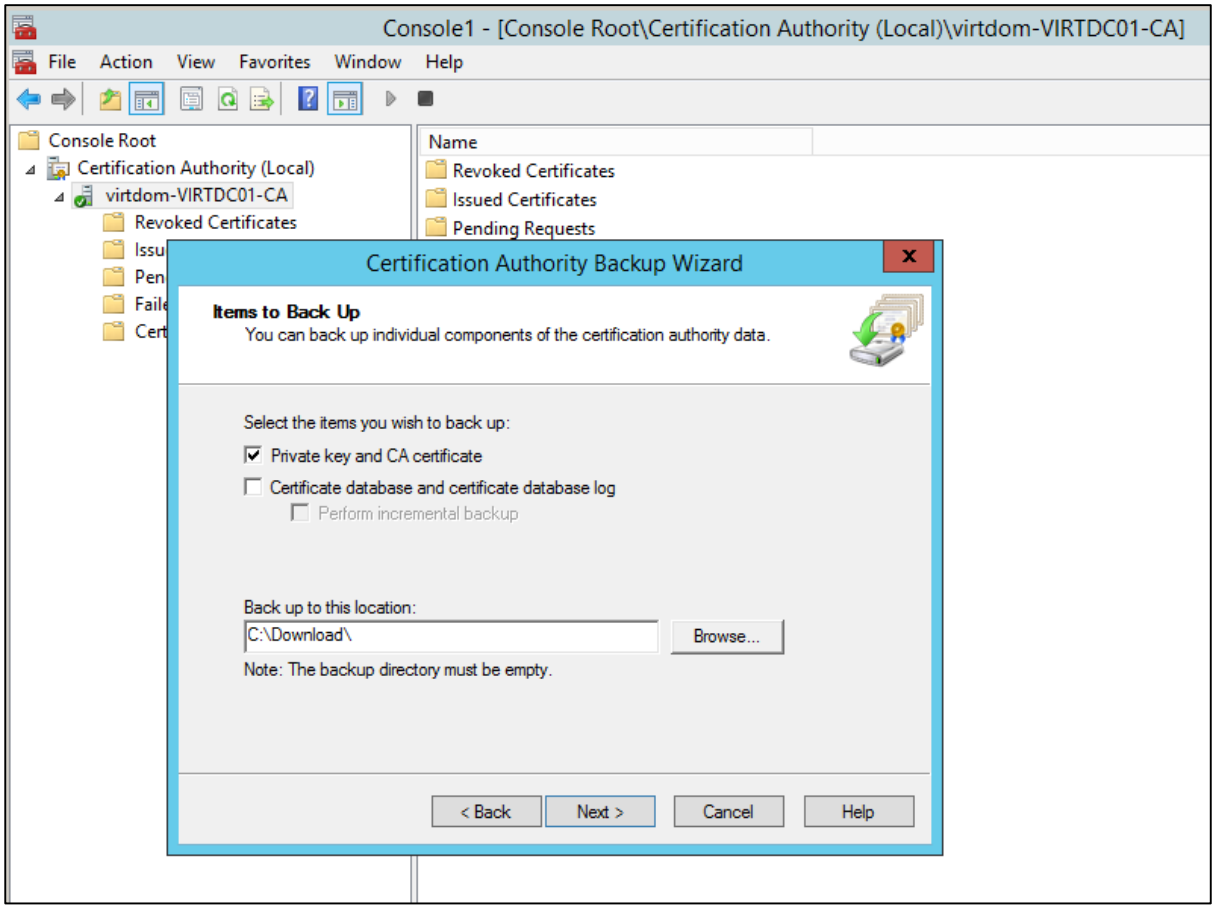
On the Microsoft Certificate Server

1. Run **mmc** and load the Certification Authority Snap-in.

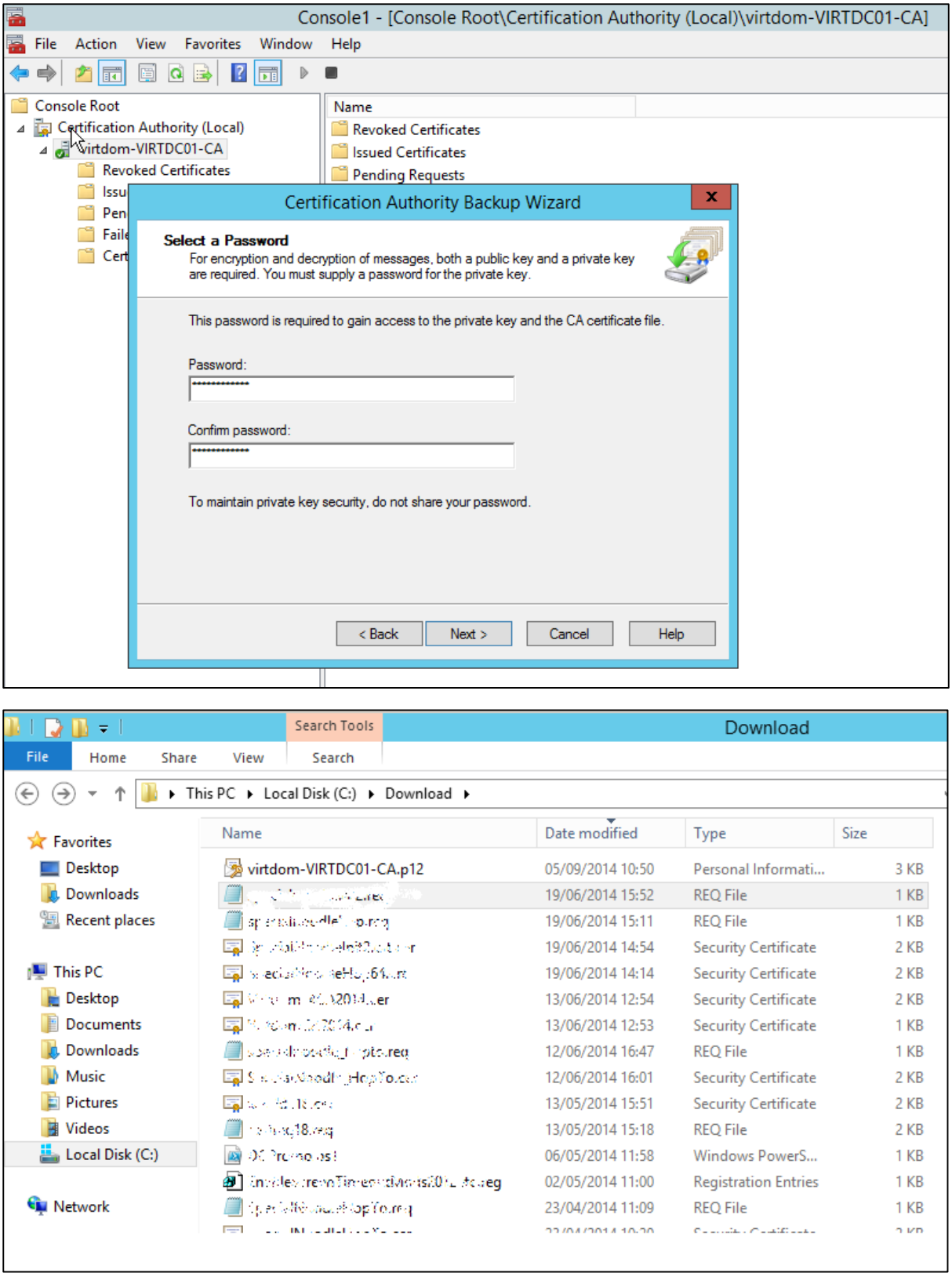




2. Right click the authority > **All Tasks** > **Back up CA**.



3. Back up the Private key and CA certificate to a convenient location.
4. Create a password.
5. Click **Next**.
6. Click **Finish**.

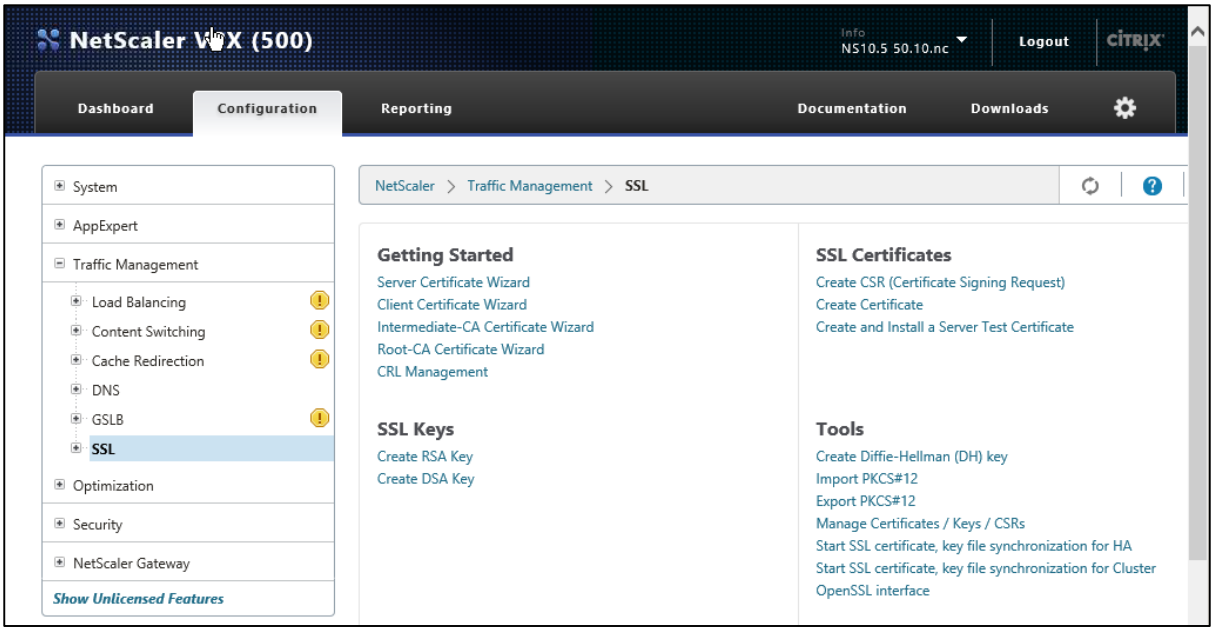


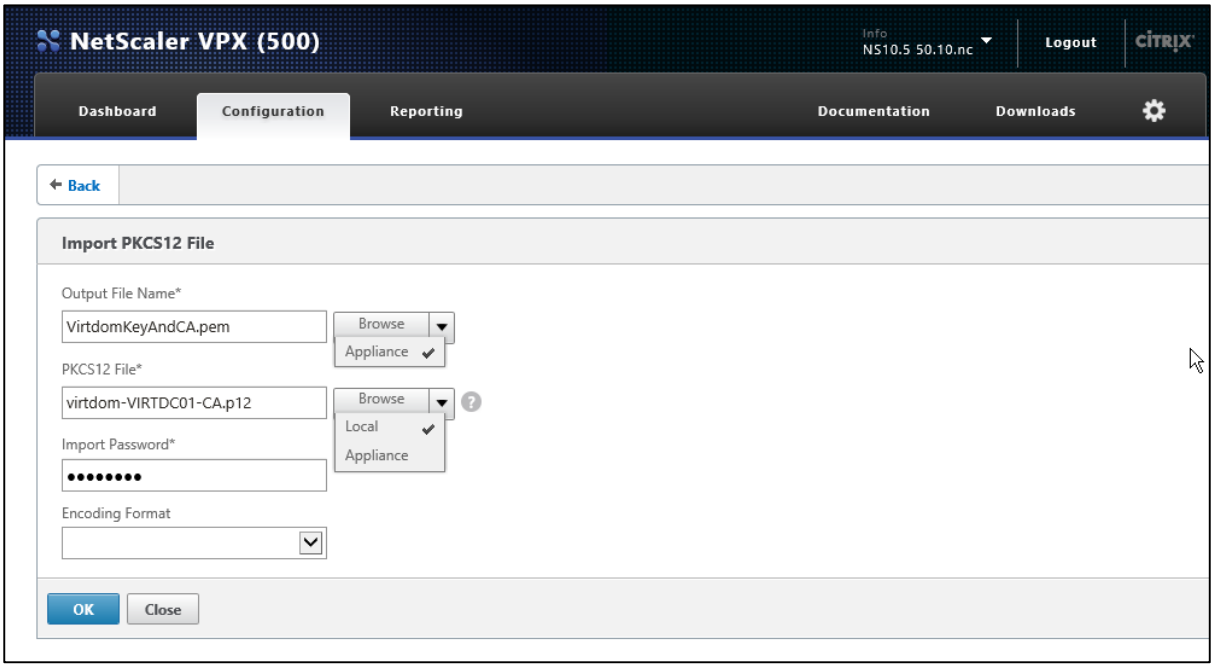
The backup creates a .p12 file with the name of your Certificate authority.

On the NetScaler GUI

To import the backed up key and certificate, complete the following steps:

1. Go to **Traffic Management** > **SSL** > **Tools** > **Import PKCS#12**.





2. Output file name is *xxxxx*.pem in the /flash/nsconfig/ssl folder on the appliance.
   PKCS12 File is the p12 backup file created.
   Password is the password used during the backup

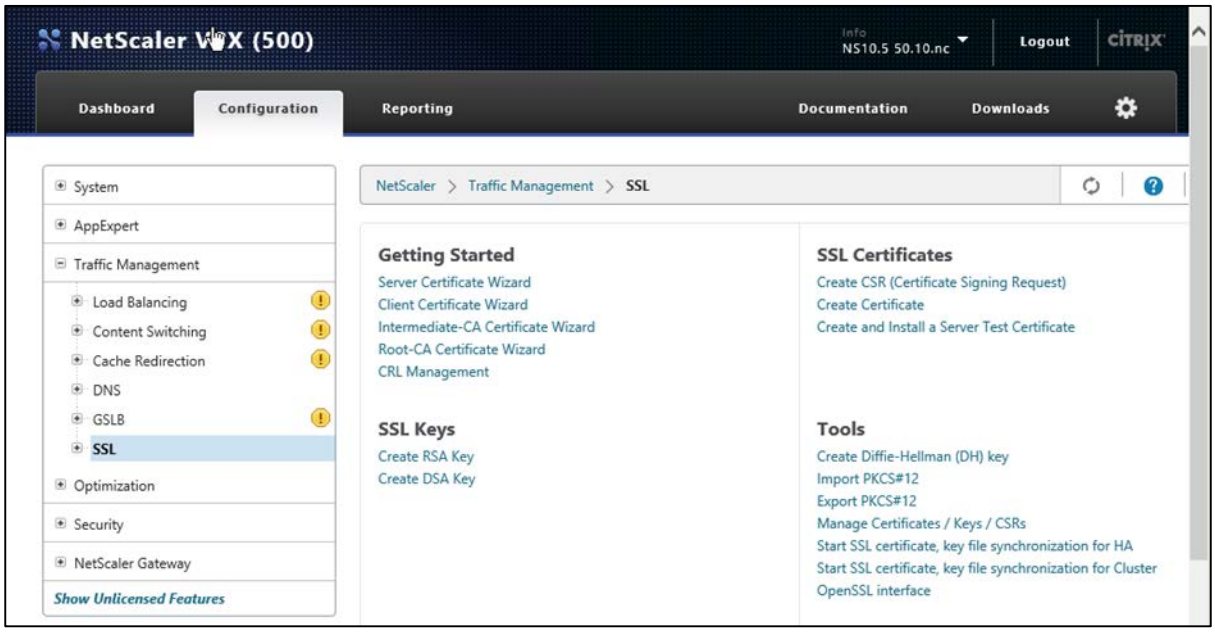
Notes:

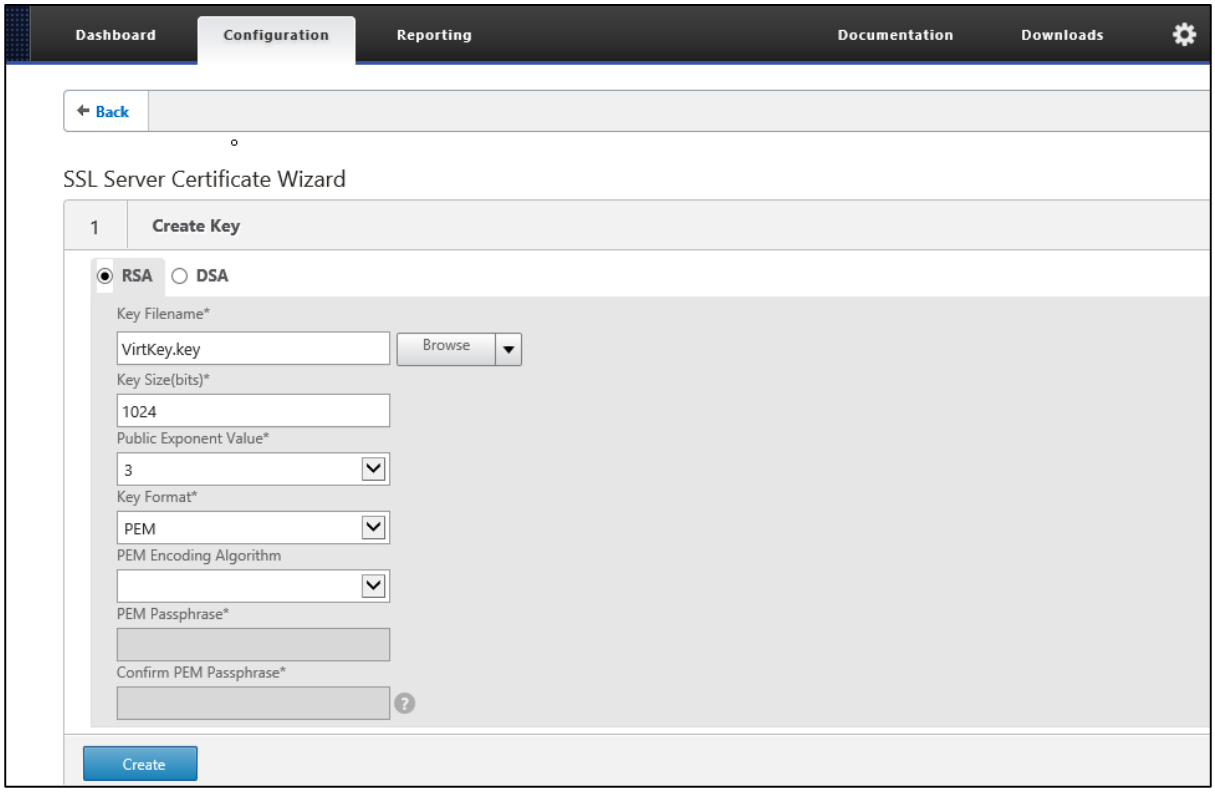
- By using the dropdown arrows next to the browse buttons, it is possible to read the .p12 file from the local PC/Server where you did the Backup, and output the new .pem file to NetScaler appliance.
- The .pem file output by this process will contain both the RSA Private Key and the CA Certificate required to create server certificates on the NetScaler.

Create the server certificate

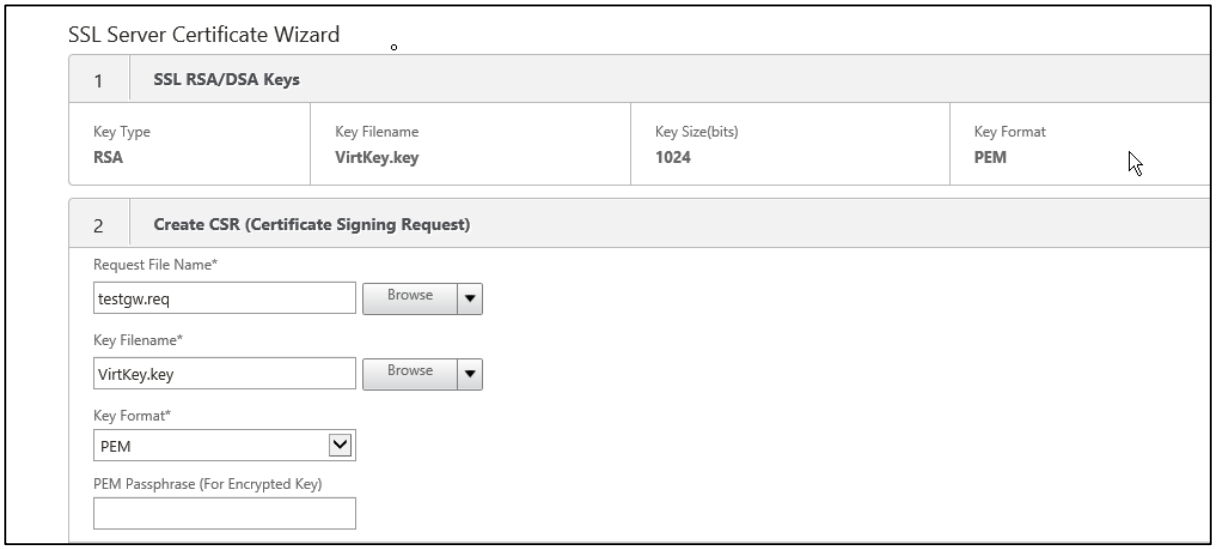
To create the server certificate, complete the following steps:

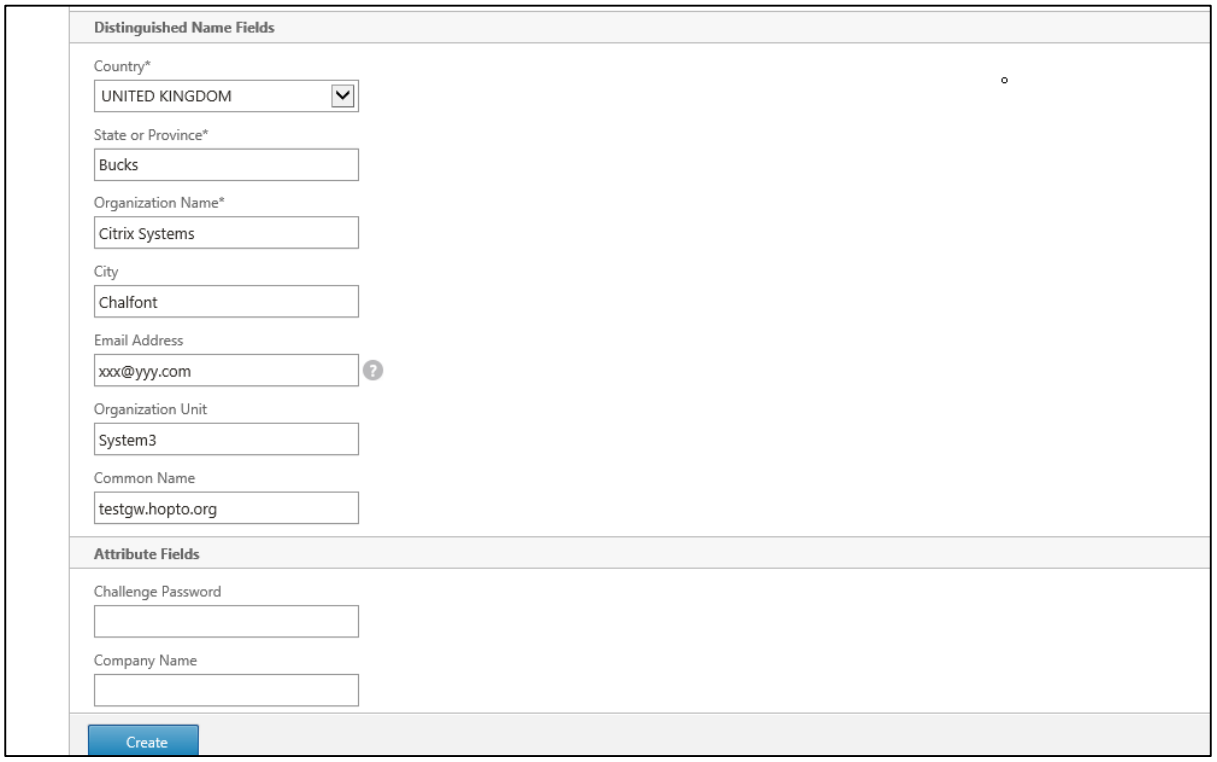
1. Go to **Traffic Management** > **SSL** > **Getting Started** > **Server Certificate Wizard**.



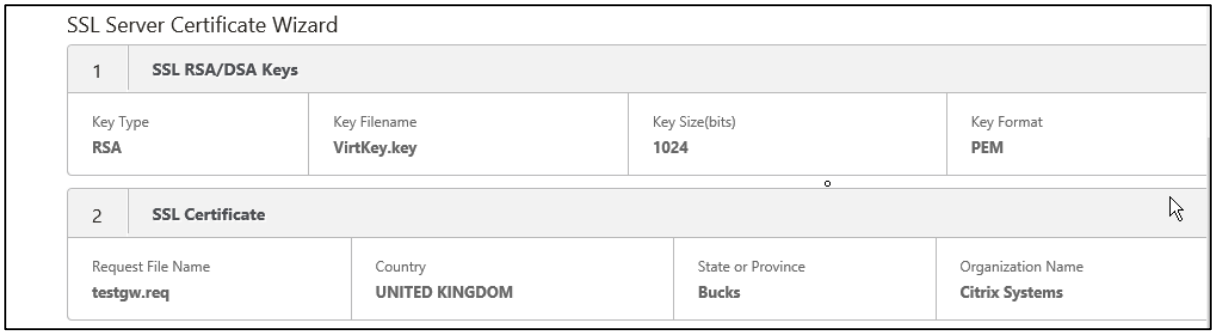


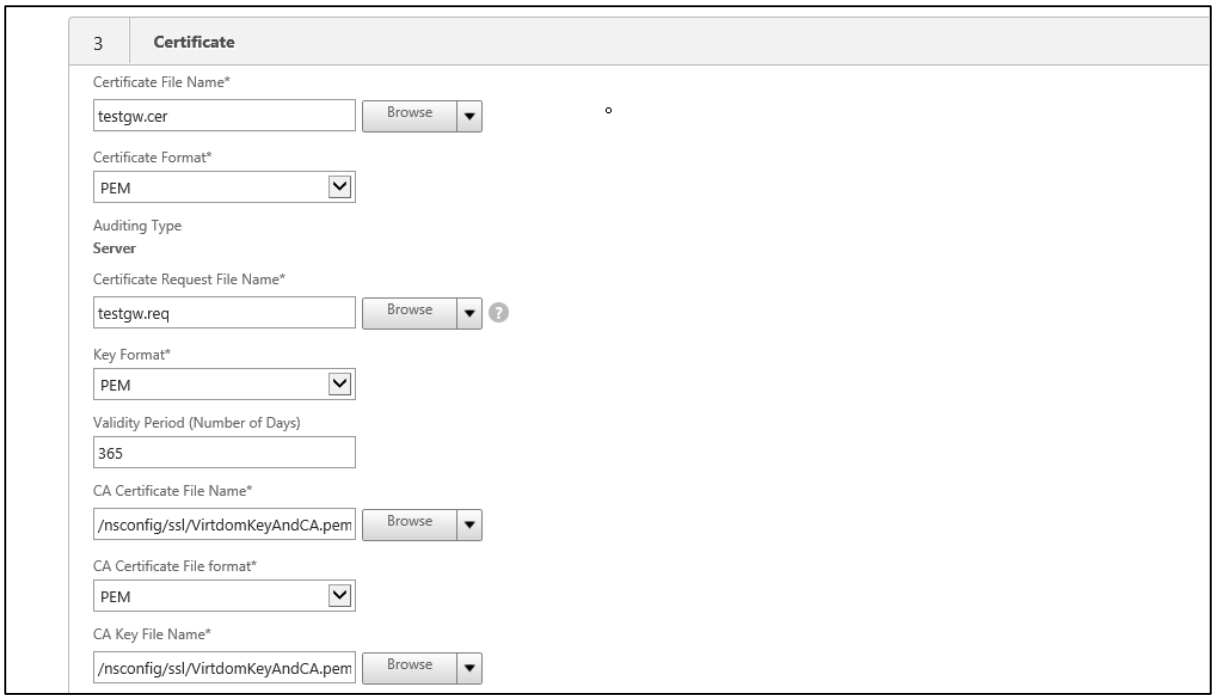
2. Create a Key. Key Filename is a name of your choice.



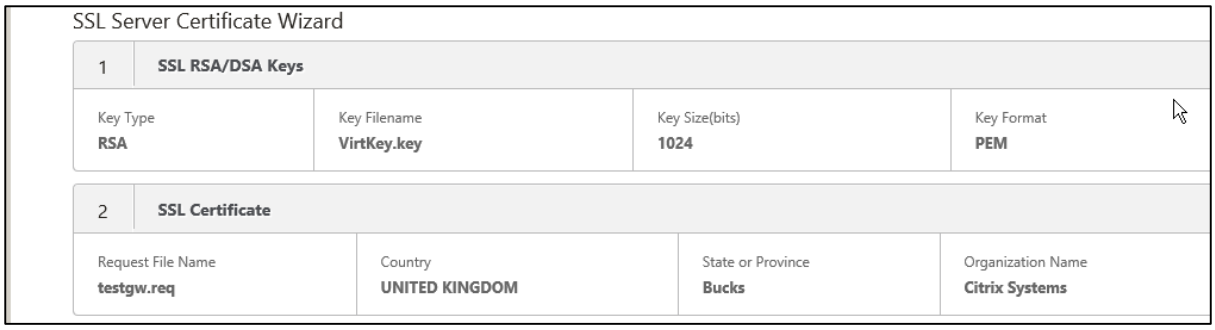


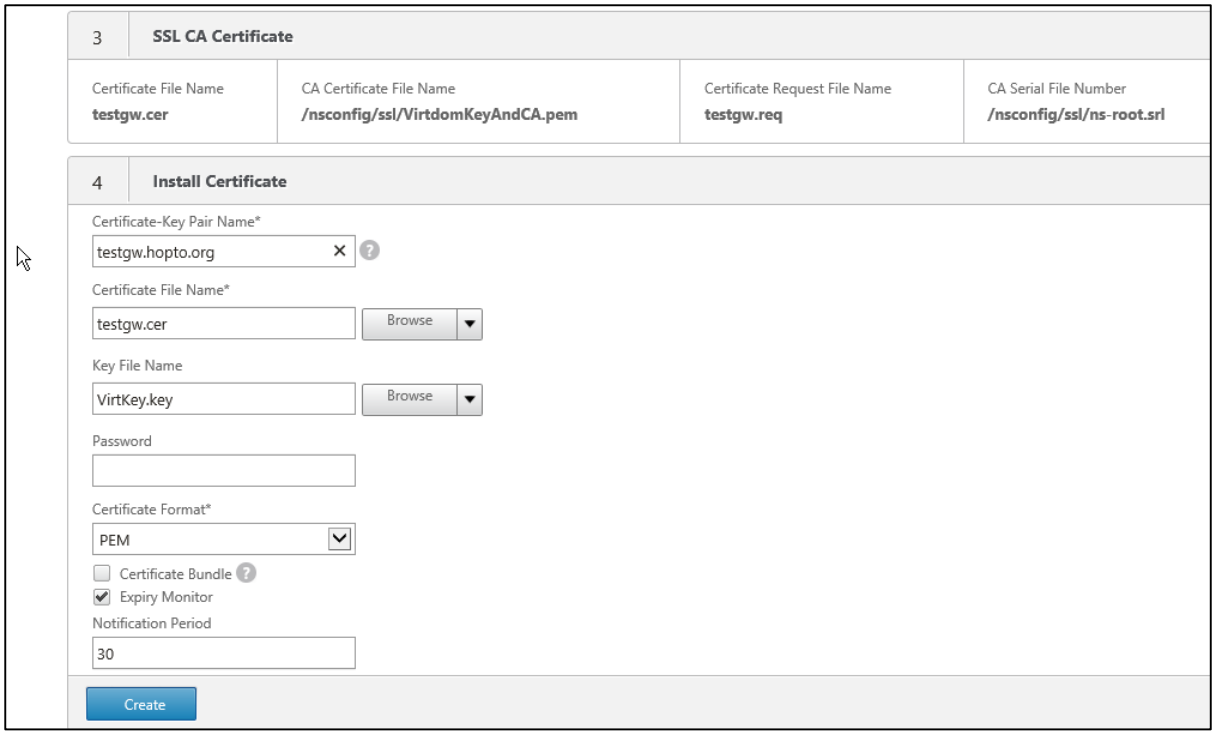
3. Create a Certificate Signing Request. Request File Name is a name of your choice. Key Filename is carried forward from the previous step. Common name is the name that must match the FQDN of the NetScaler Gateway that you will create in a later section of this document.



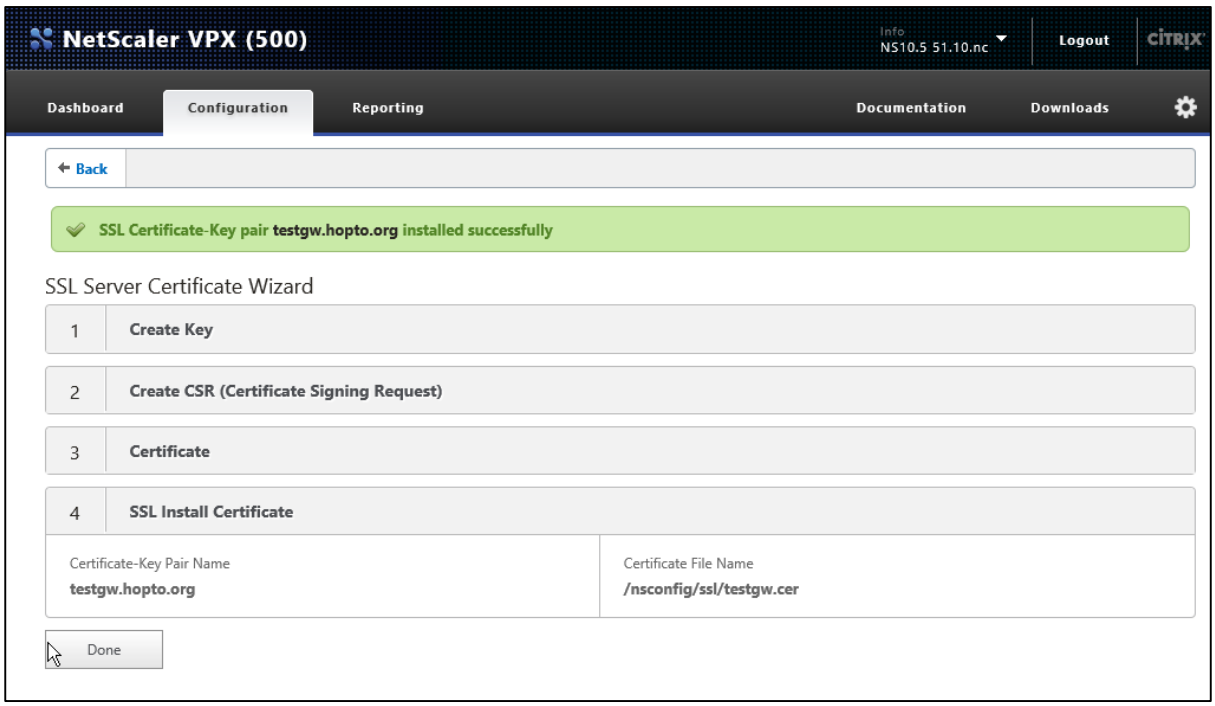


4. Create the Certificate.





5. Install the certificate.
   Important! The GUI also shows a **Done** button as shown in the following screen shot. Do **not** click this before you click **Create**.



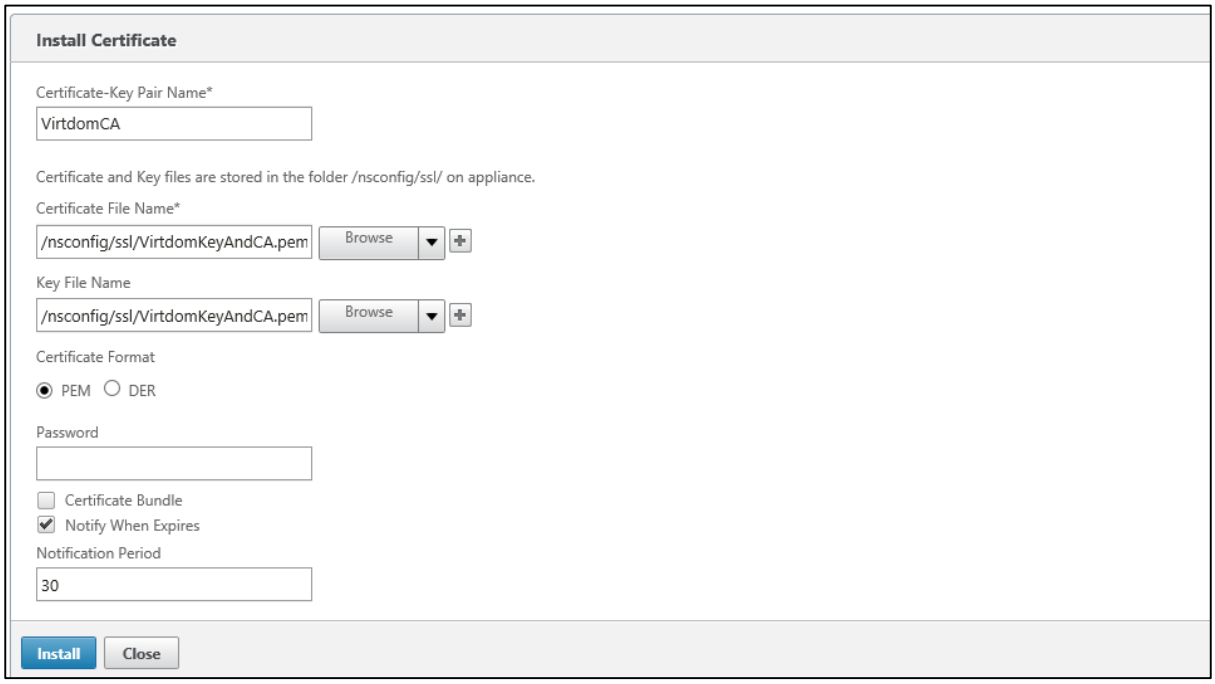
6. All the steps are complete and click **Done**.

(Optional) Install the CA certificate

Install the CA certificate if you want to use SSL to communicate from the NetScaler Gateway to your StoreFront and XenDesktop farm.

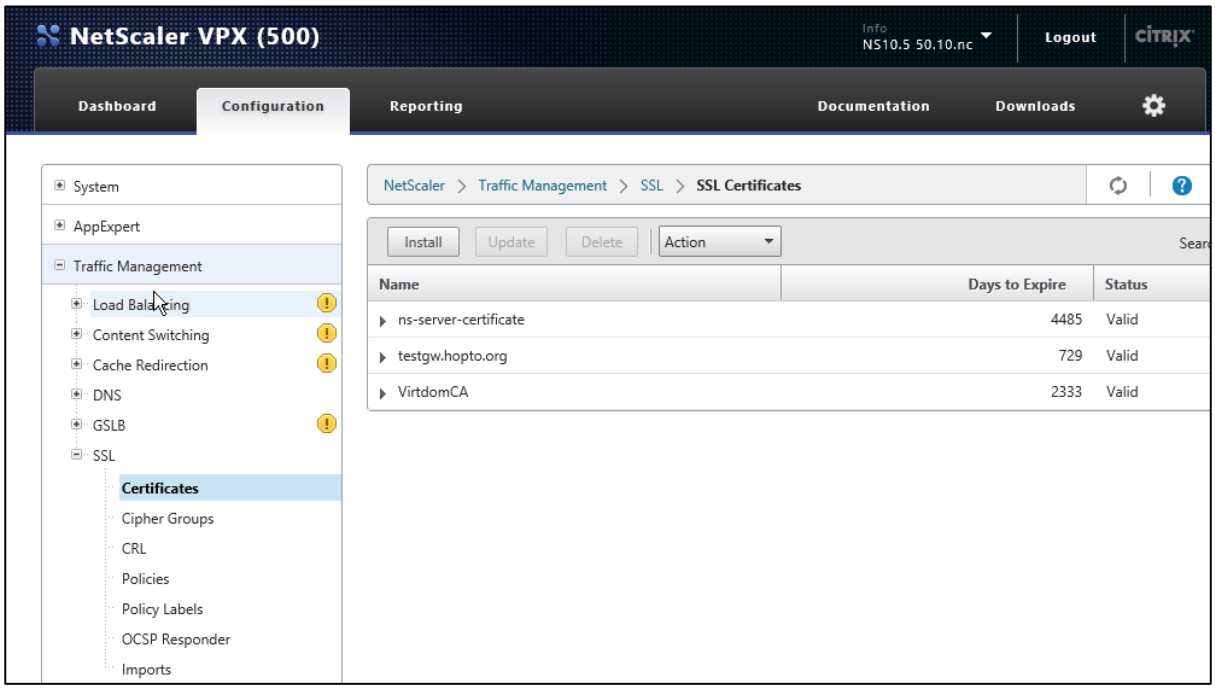
1. Go to **Traffic Management** > **SSL** > **Certificates** > **Install**.

2. Browse and select the imported .pem file at **Certificate File Name** and the **Key File Name** fields.
3. Click **Install**.



Review the installed certificates

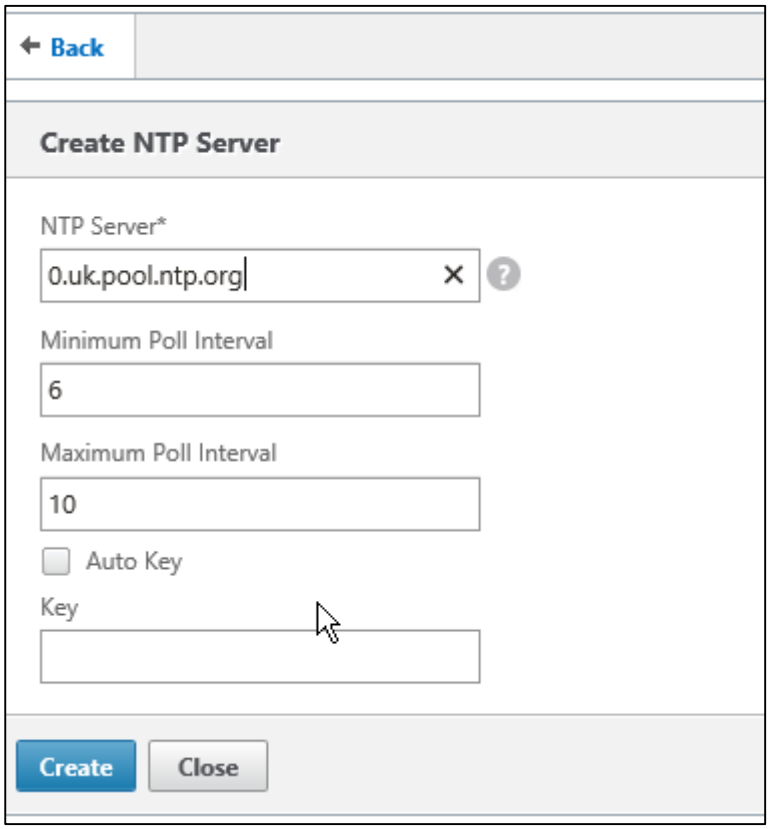
1. Go to **Traffic Management** > **SSL** > **Certificates**.
2. Press the refresh icon.



NTP Server

You can use an NTP server to keep time on the NetScaler. SSL is so much easier when all the clocks are in step with each other.

Go to **System** > **NTP Servers** > **Add**.



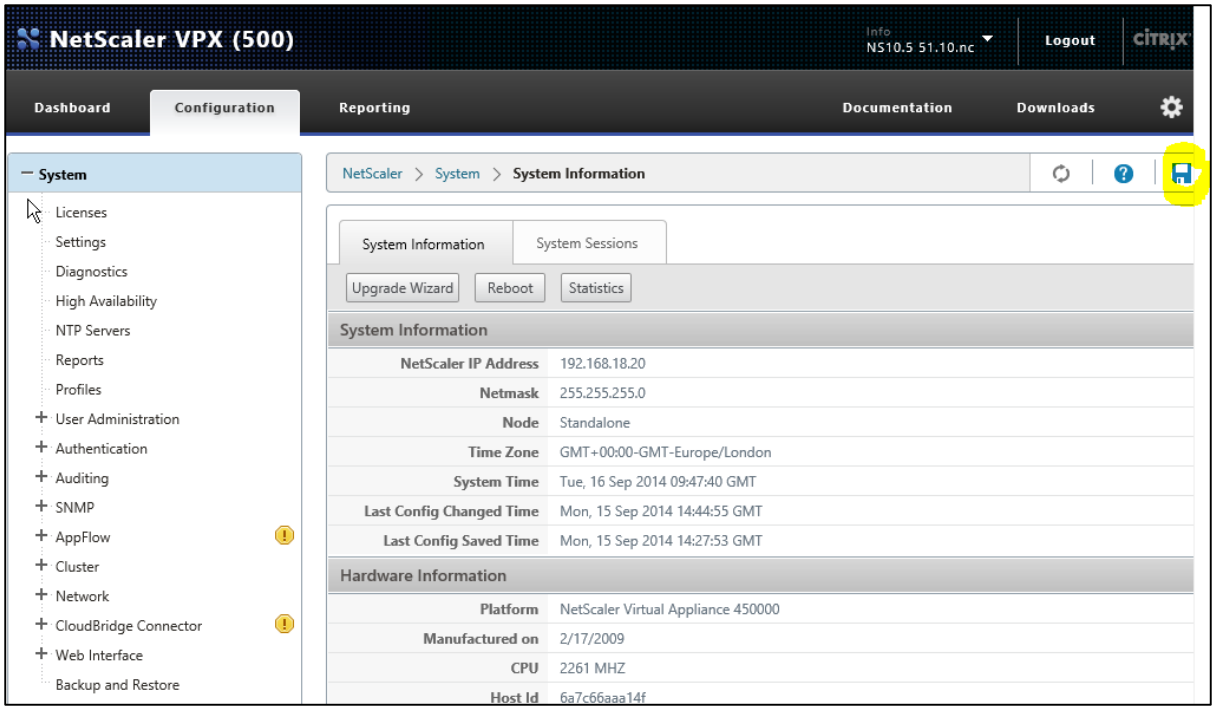
Backups - and why you might want one

The NetScaler appliance now has its network configuration, licences and certificates in place, and the next stage is to run a wizard to create the NetScaler Gateway Virtual Server and its associated elements.

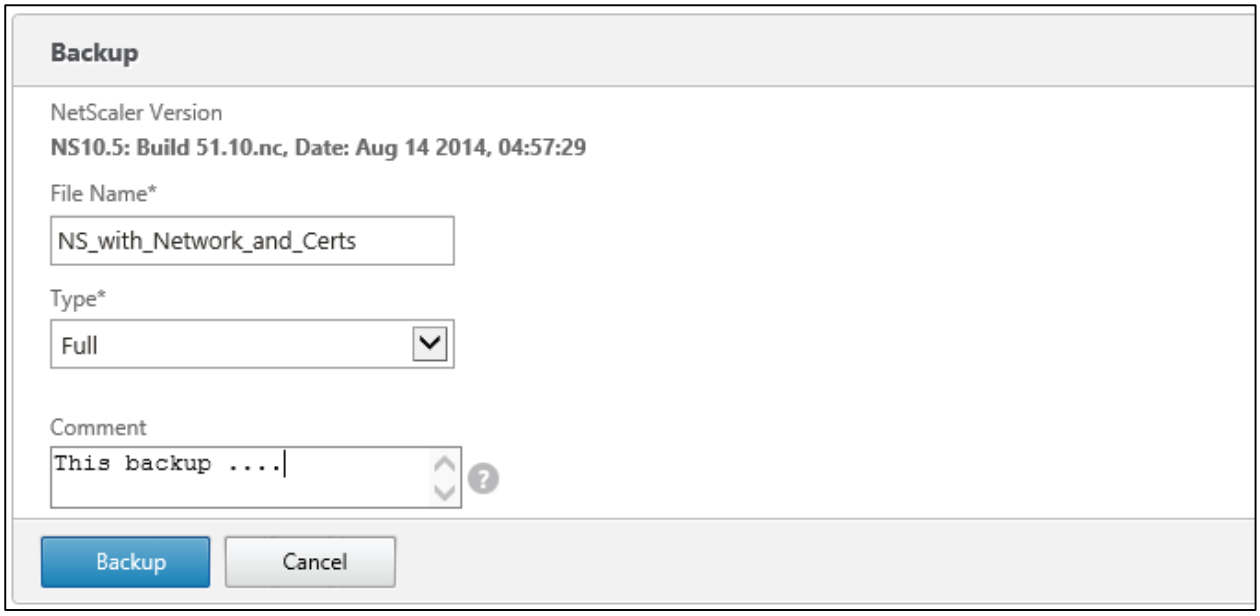
A point to note about the wizard used to establish the NetScaler Gateway Virtual Server is that it is really a series of sub-wizards, and the NetScaler configuration is updated after each sub-wizard. By having a backup or snapshot at this point one has an option to:

a) Accept the resulting configuration and move forward
b) Rerun parts of the wizard
c) Fall back to this point and start again

First save the configuration by using the **Save** button at the top right of the GUI.



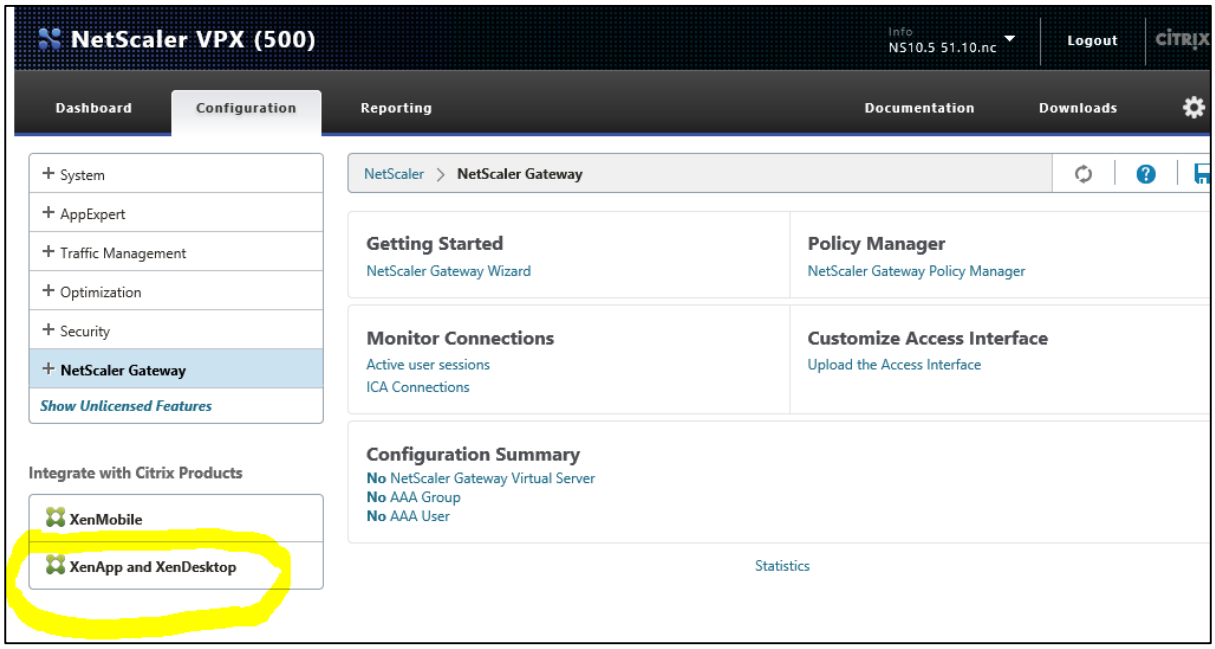
The NetScaler Backup and Restore tool is at **System** > **Backup and Restore**.

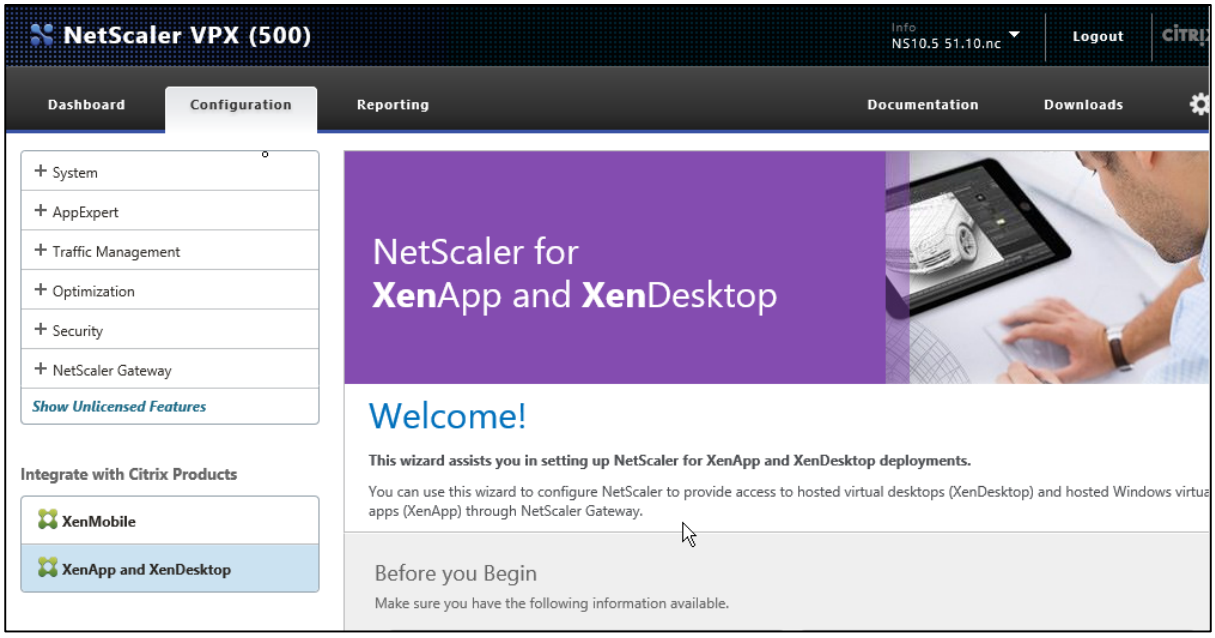

Backup
NetScaler Version
NS10.5: Build 51.10.nc, Date: Aug 14 2014, 04:57:29
File Name*
NS_with_Network_and_Certs
Type*
Full
Comment
This backup ....
Backup
Cancel

Create a NetScaler Gateway Virtual Server

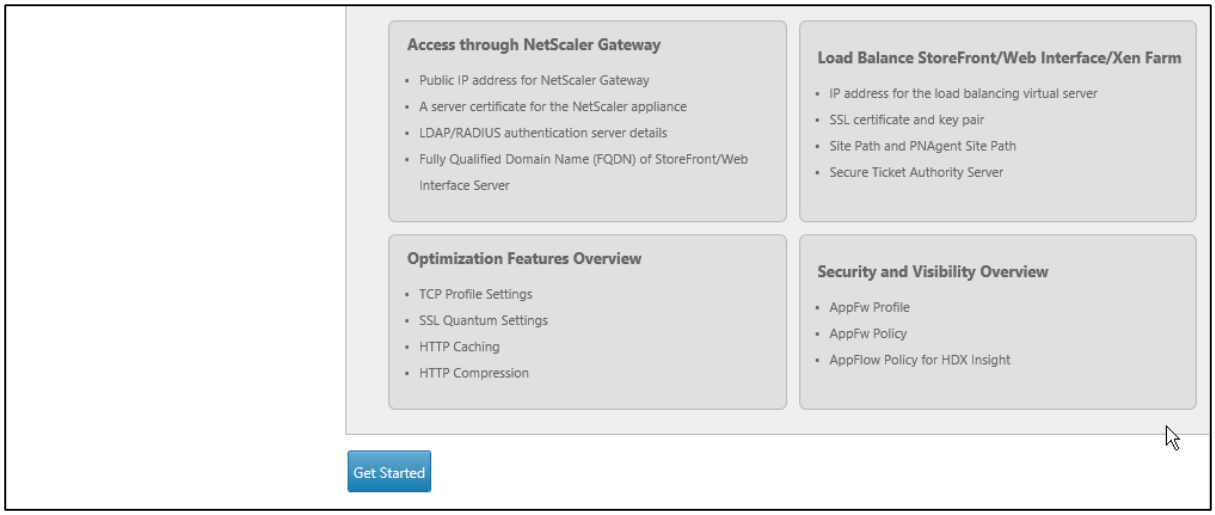
To create a virtual server, complete the following steps:

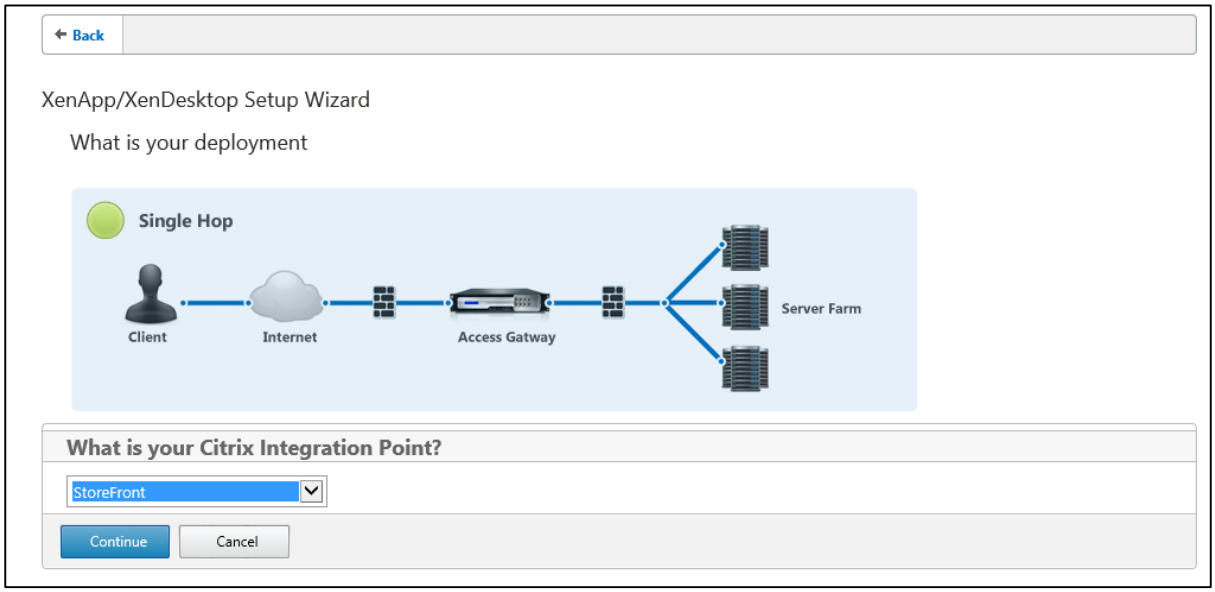
1. Go to **NetScaler** > **NetScaler Gateway** > **Integrate with Citrix Products** > **XenApp and XenDesktop**.





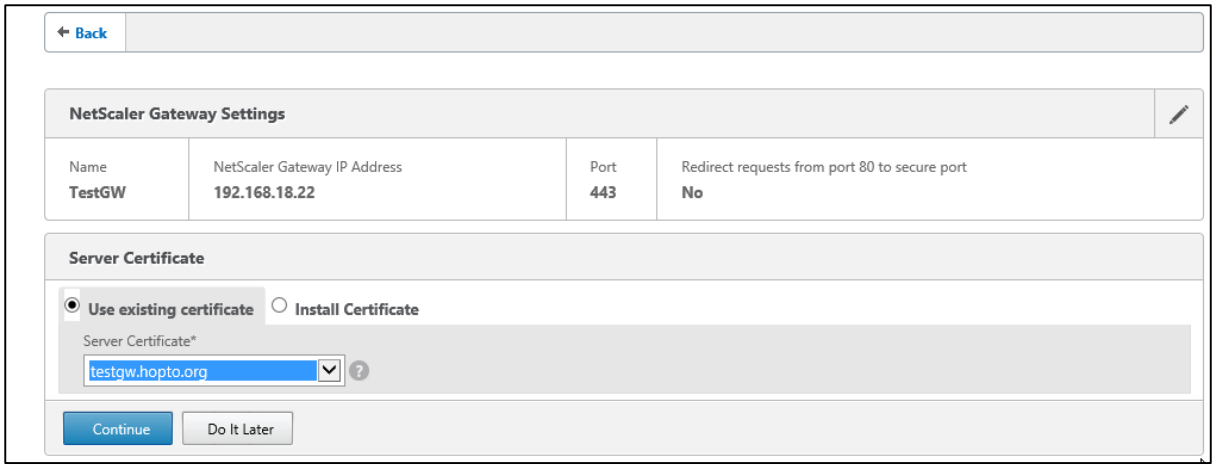
2. Click **Get Started**.

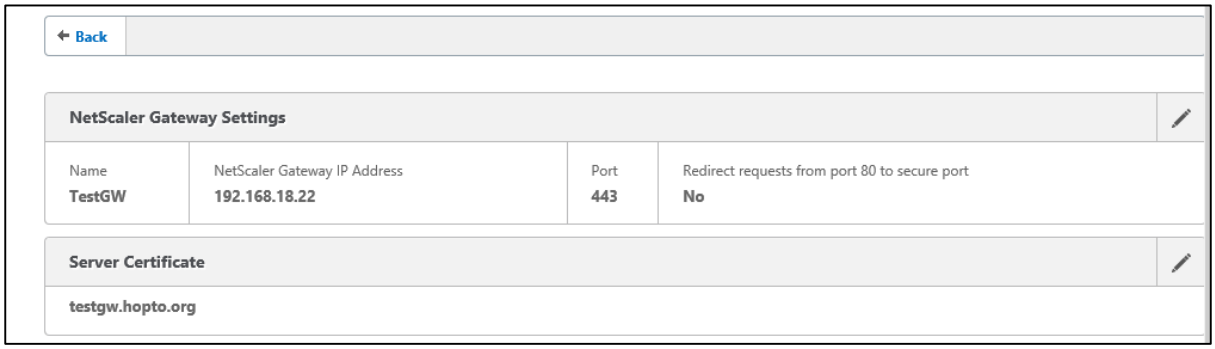


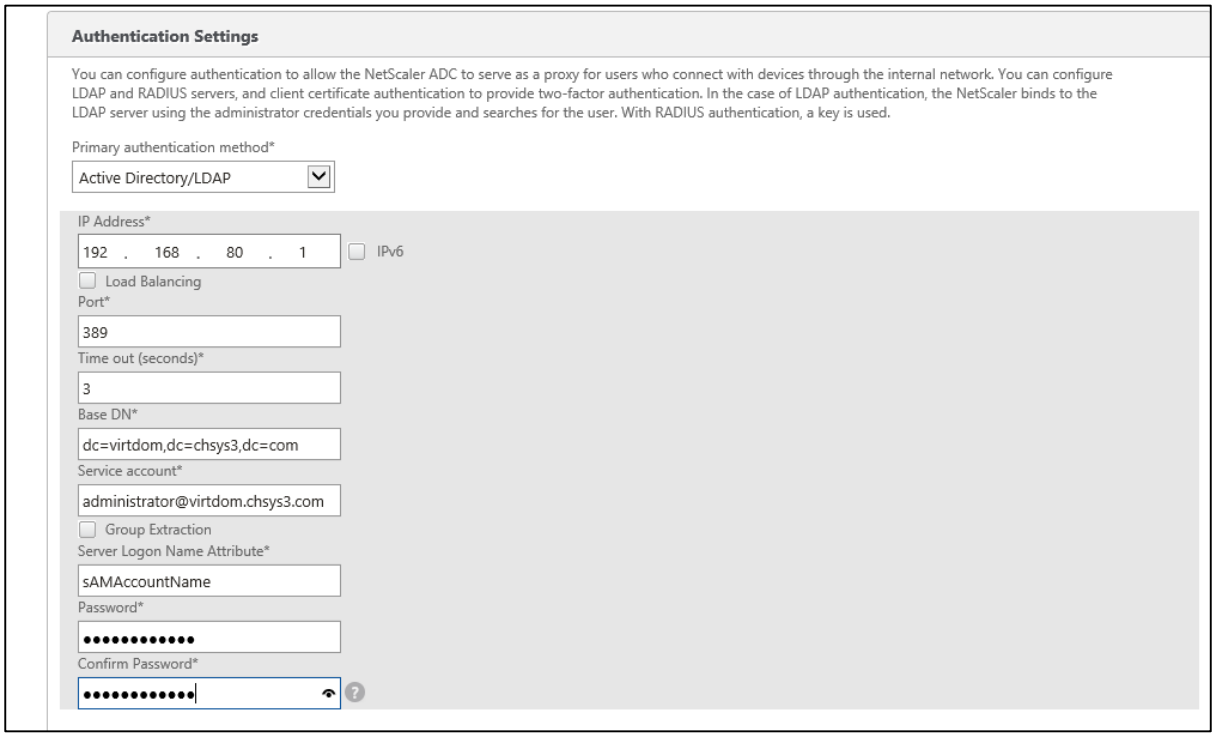


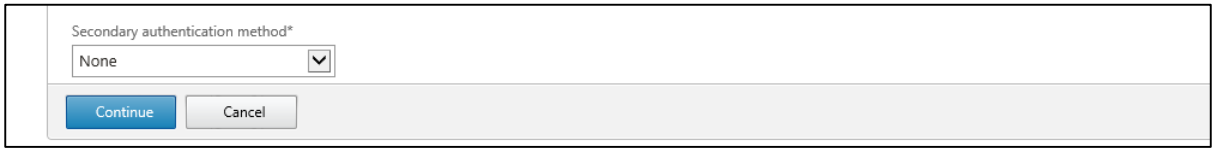
3. Enter the IP for your NetScaler Gateway Virtual Server.
4. Click **Continue**.

5. Chose the Server Certificate created before.
6. Click **Continue**.



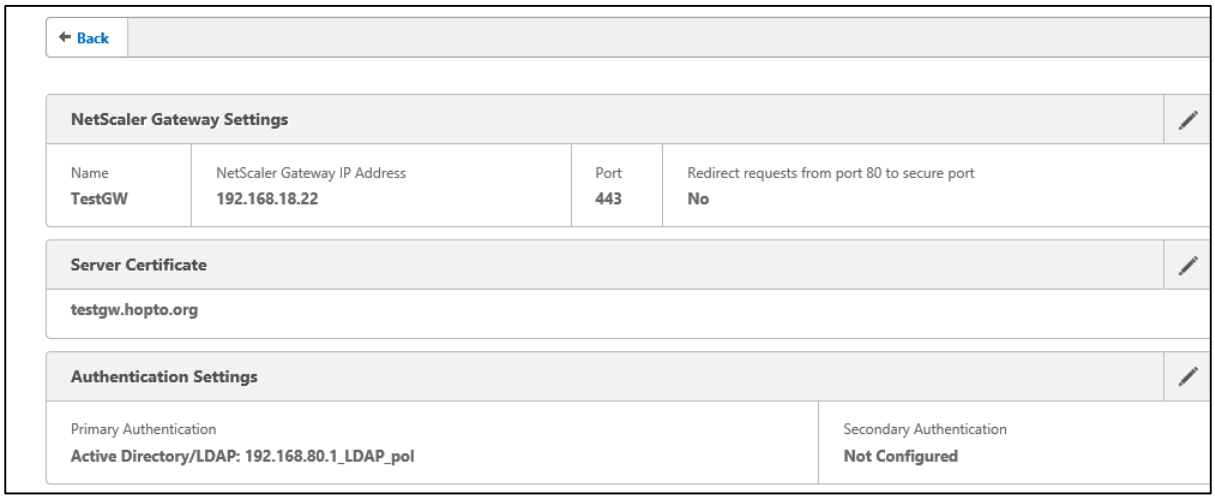


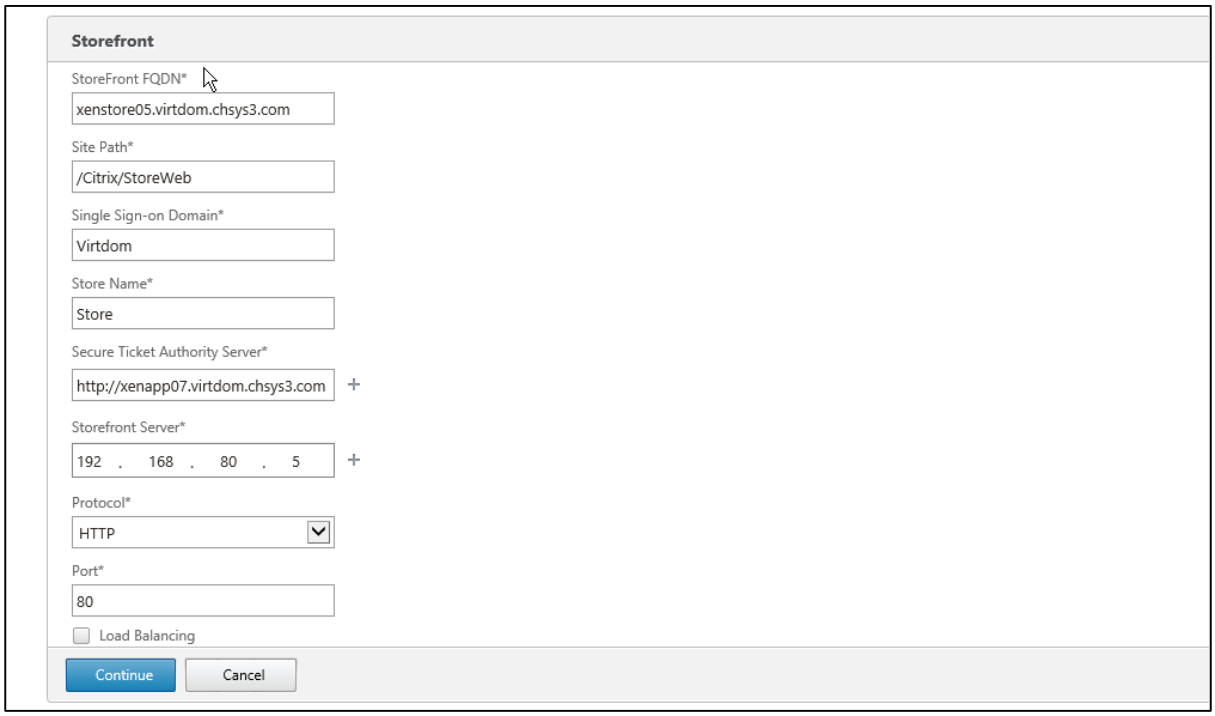


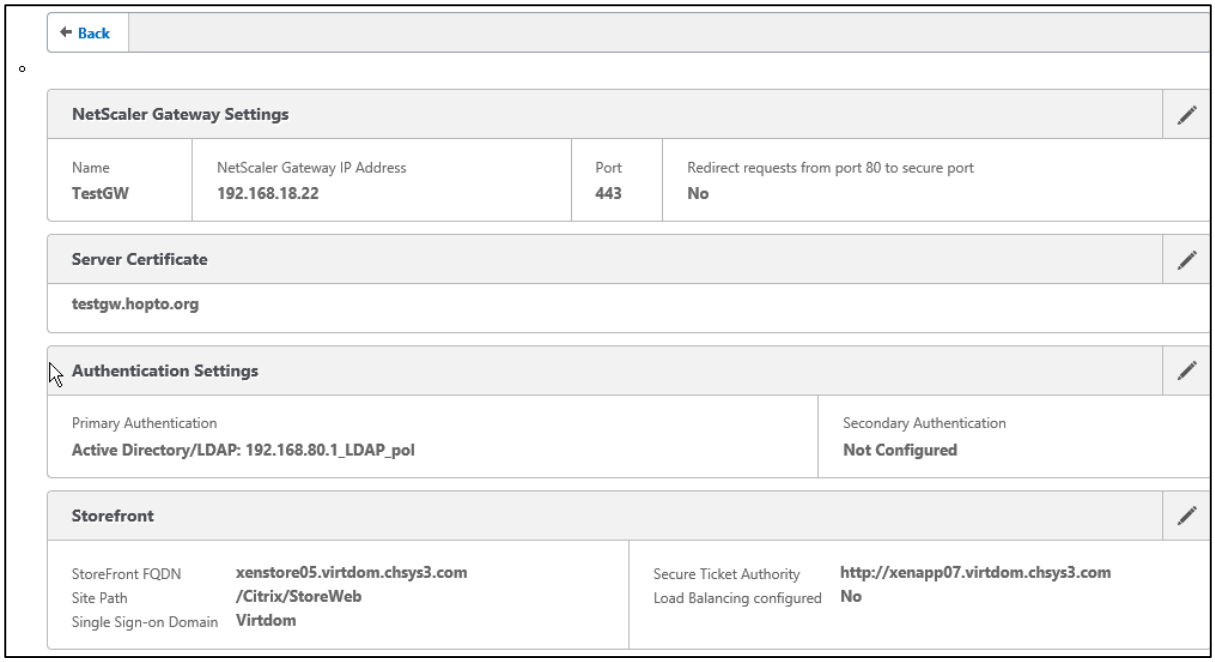


In this example, users are authenticated against Active Directory. The IP Address 192.168.80.1 is the address of the Domain Controller.

7. Enter details and click **Continue**.



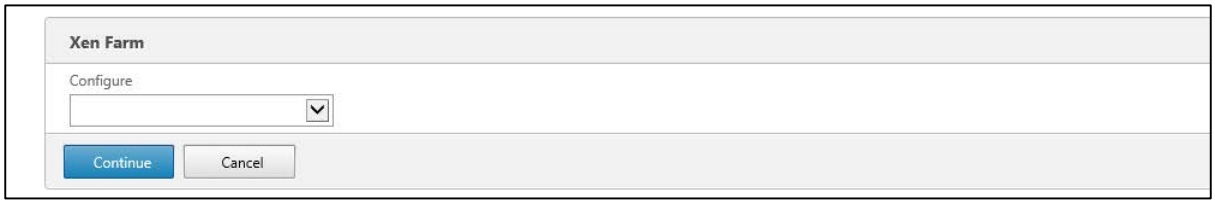


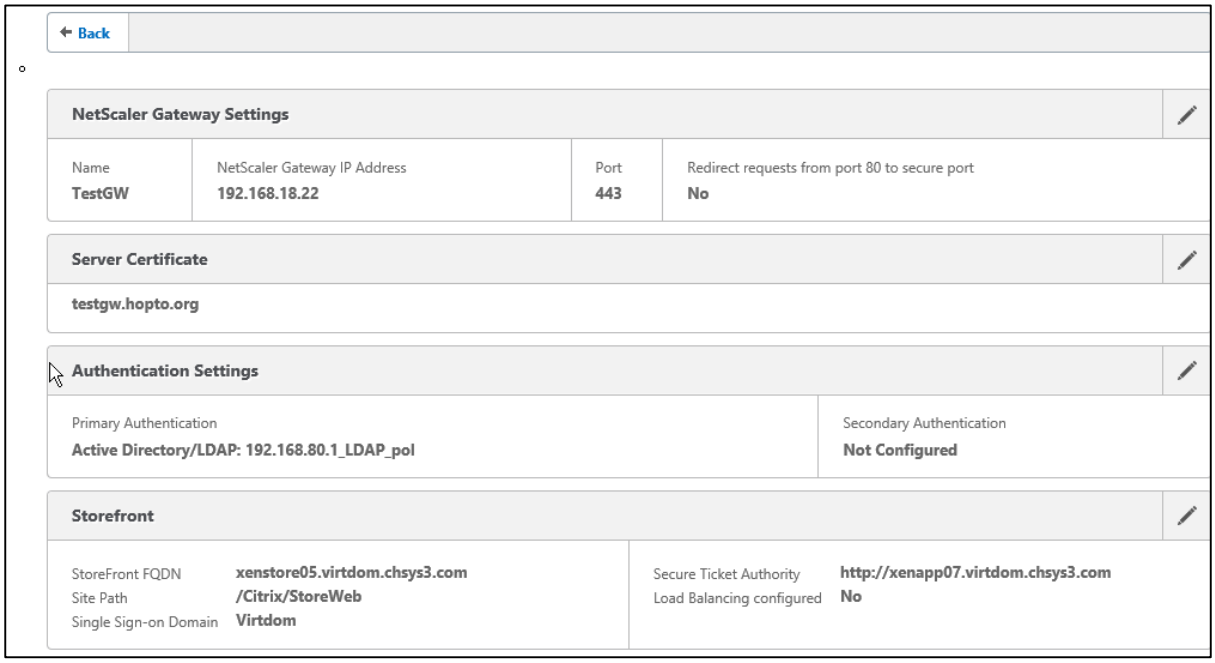


8. Leave Xen Farm > Configure = Blank.

   Note: This section relates to load balancing the XenDesktop Controllers and XenApp servers, which is not covered in this document. However, this sub-wizard can be revisited at any time.

9. Click **Continue**.



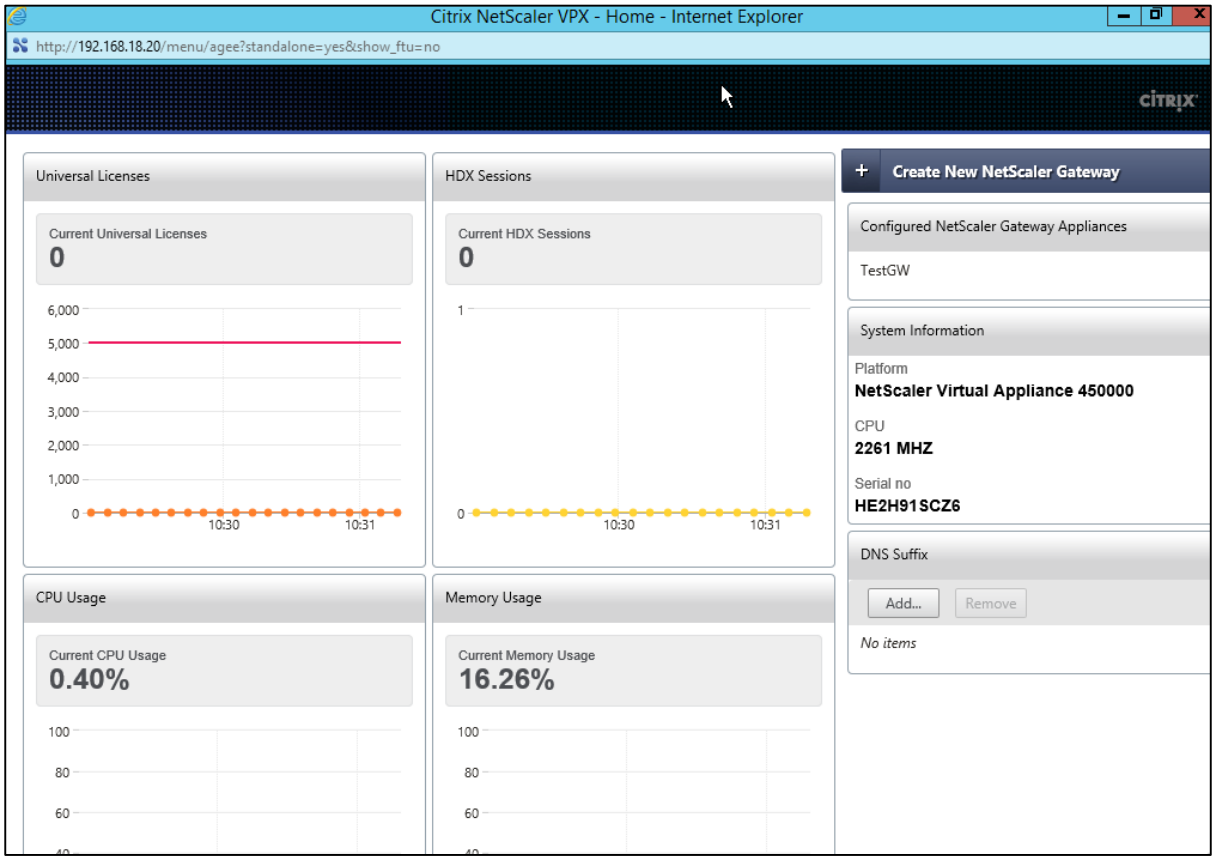


10. Do **not** click **Apply**.

    Note: Optimization is not covered by this document. However, this section can be revisited at any time.

11. Review settings and click **Done**.

A dashboard page is displayed. You can close this and return to the Configuration GUI.

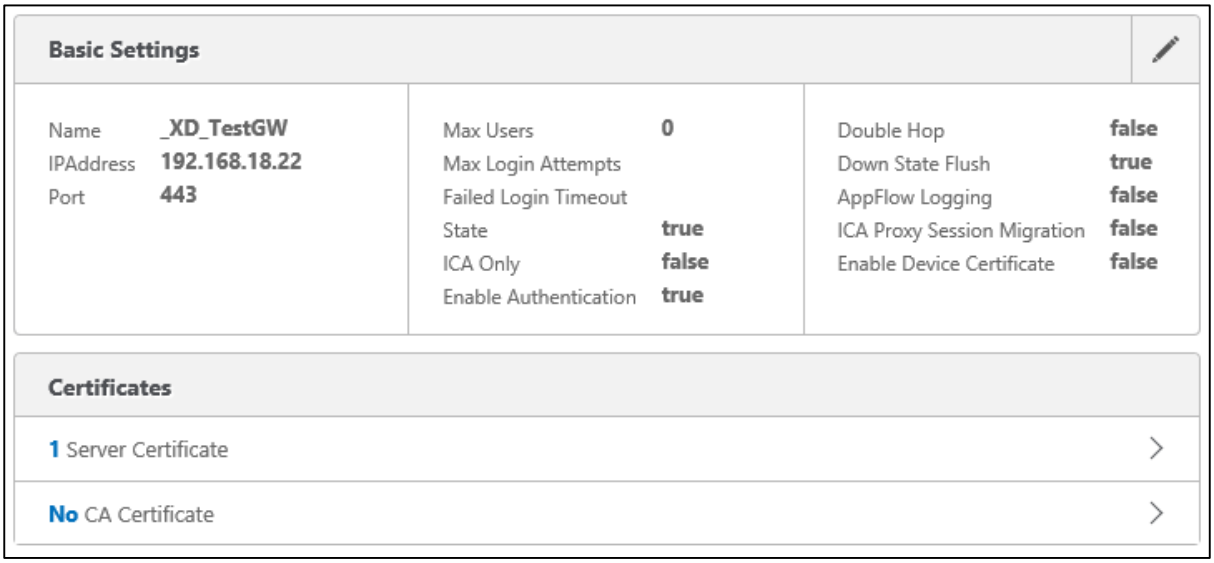


(Optional) Add the CA certificate to the NetScaler Gateway Virtual Server

If you want to use SSL to communicate from the NetScaler Gateway to StoreFront and XenDesktop, you will need to add the CA certificate to the NetScaler Gateway Virtual Server.

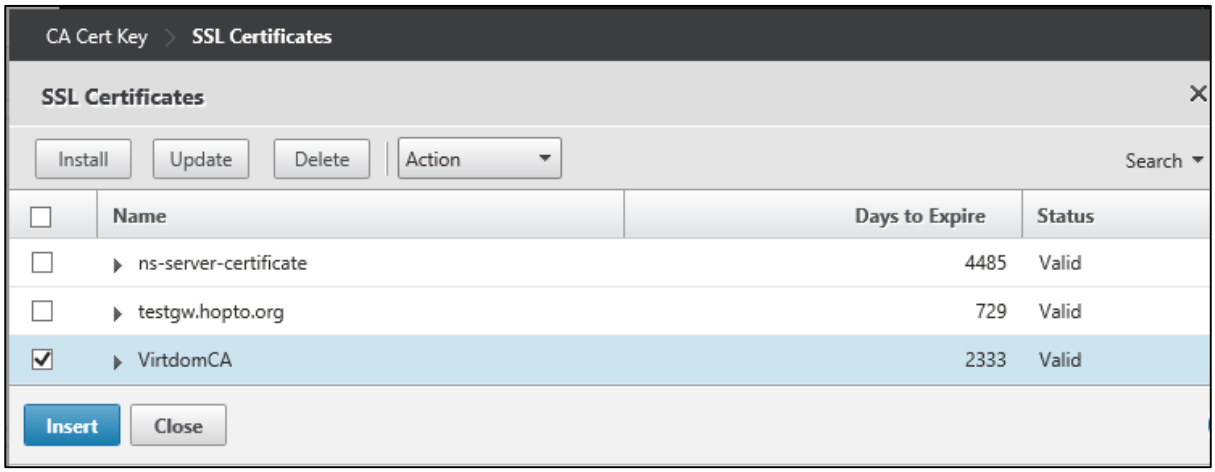
1. Go to **NetScaler** > **NetScaler Gateway** > **NetScaler Gateway Virtual Server**.

2. Select **_TestGW** and click **Edit**.
3. Click **No CA Certificate**.

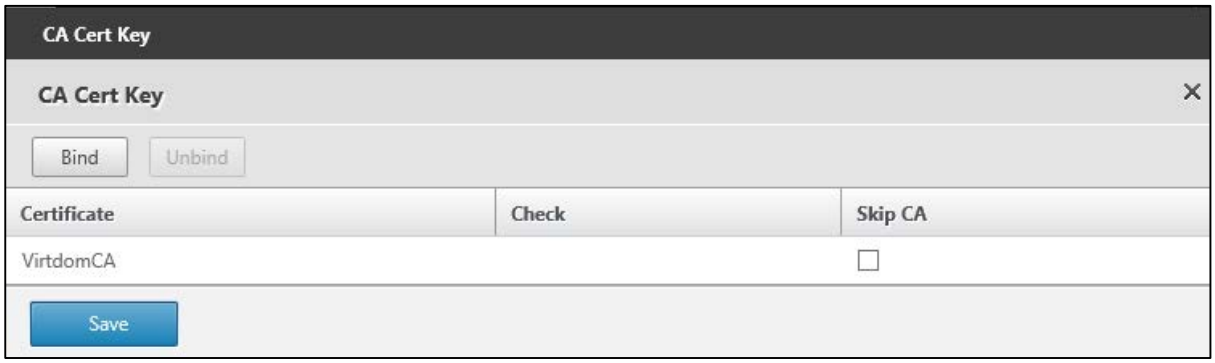


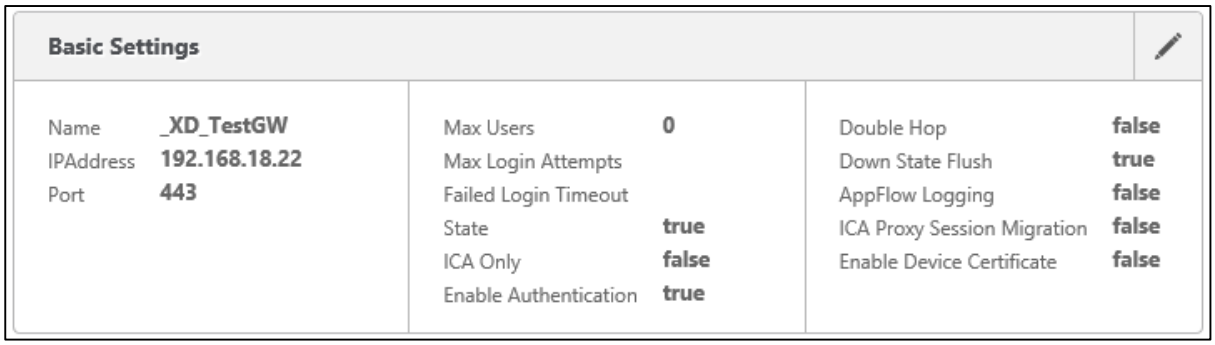
4. Click **Bind**.

5. Select the CA certificate imported and click **Insert**.

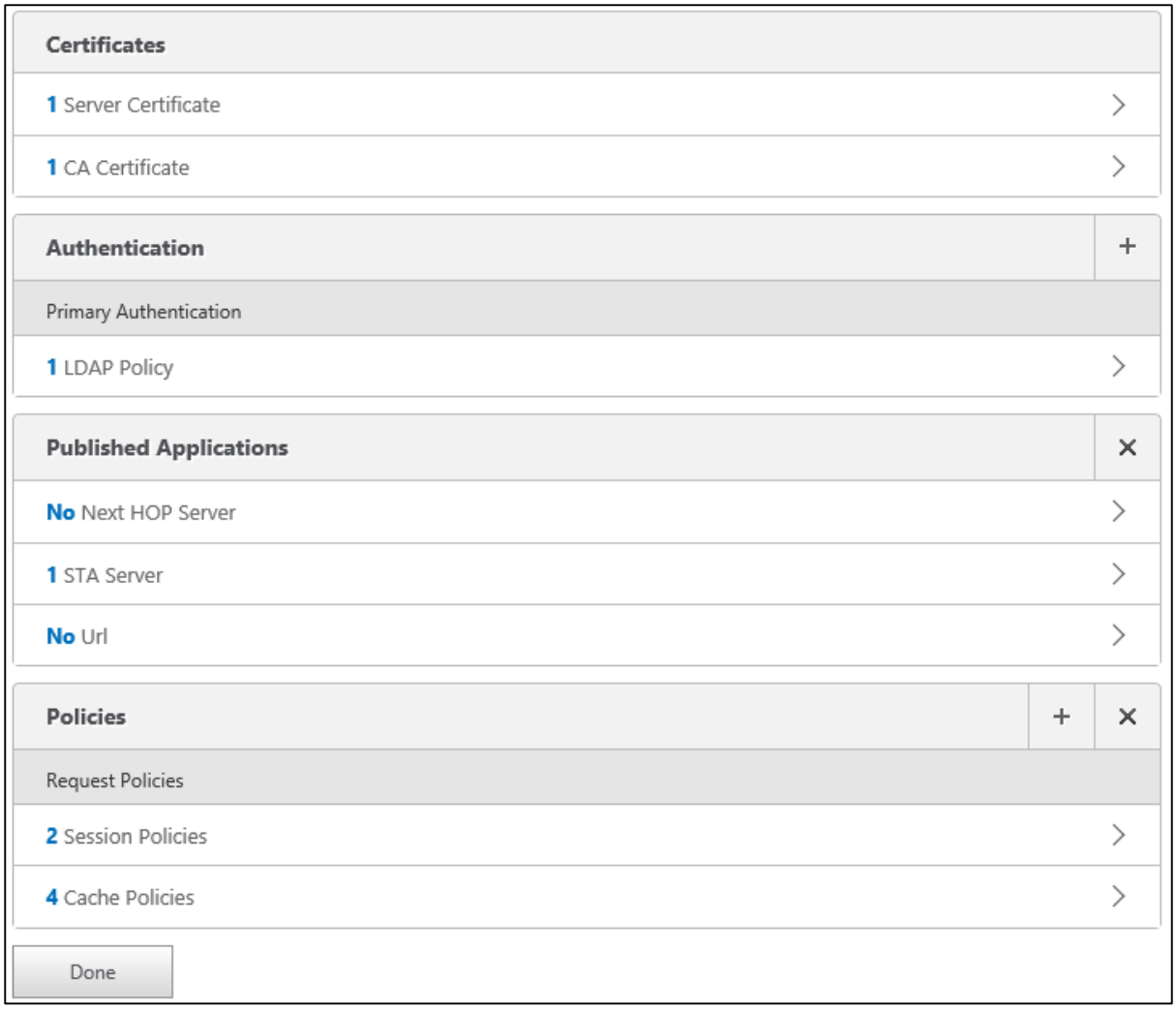


6. Click **Save**.

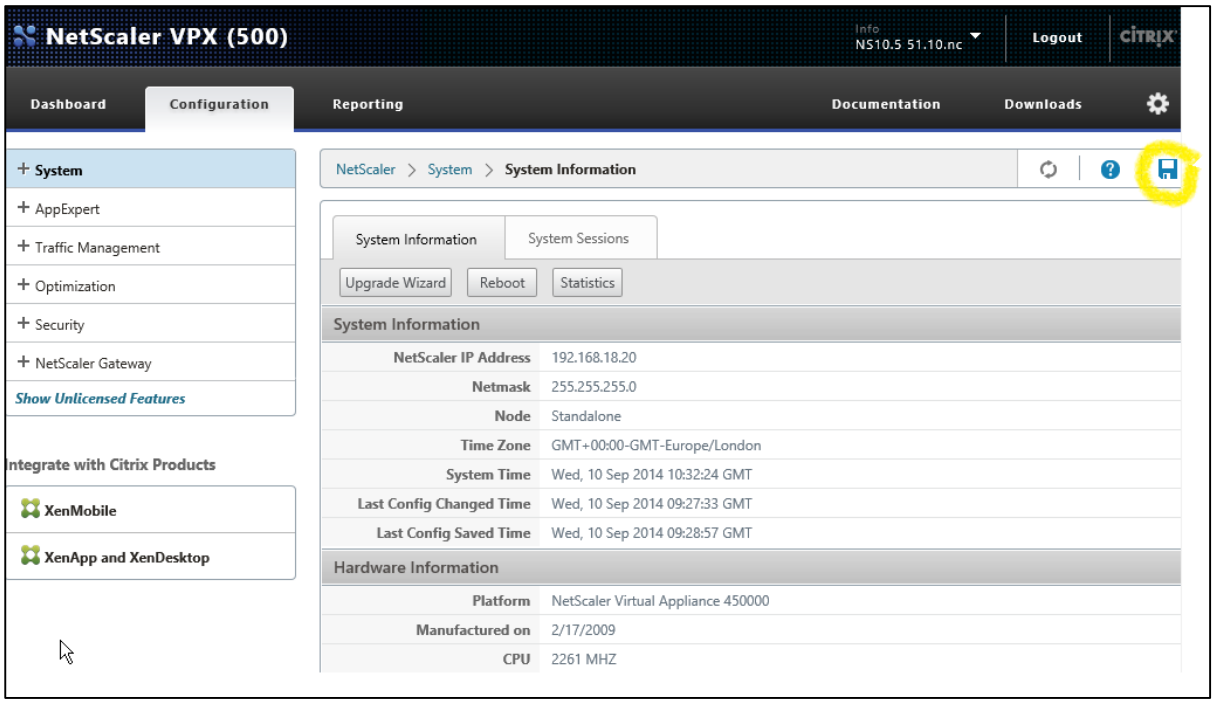




7. Scroll down to the bottom of the screen and click **Done**.



8. Save your work to date by clicking on the **Save** icon on the upper right corner.



If you do not save after making changes to the NetScaler configuration, there is a risk that those changes will be lost when the NetScaler reboots.

StoreFront

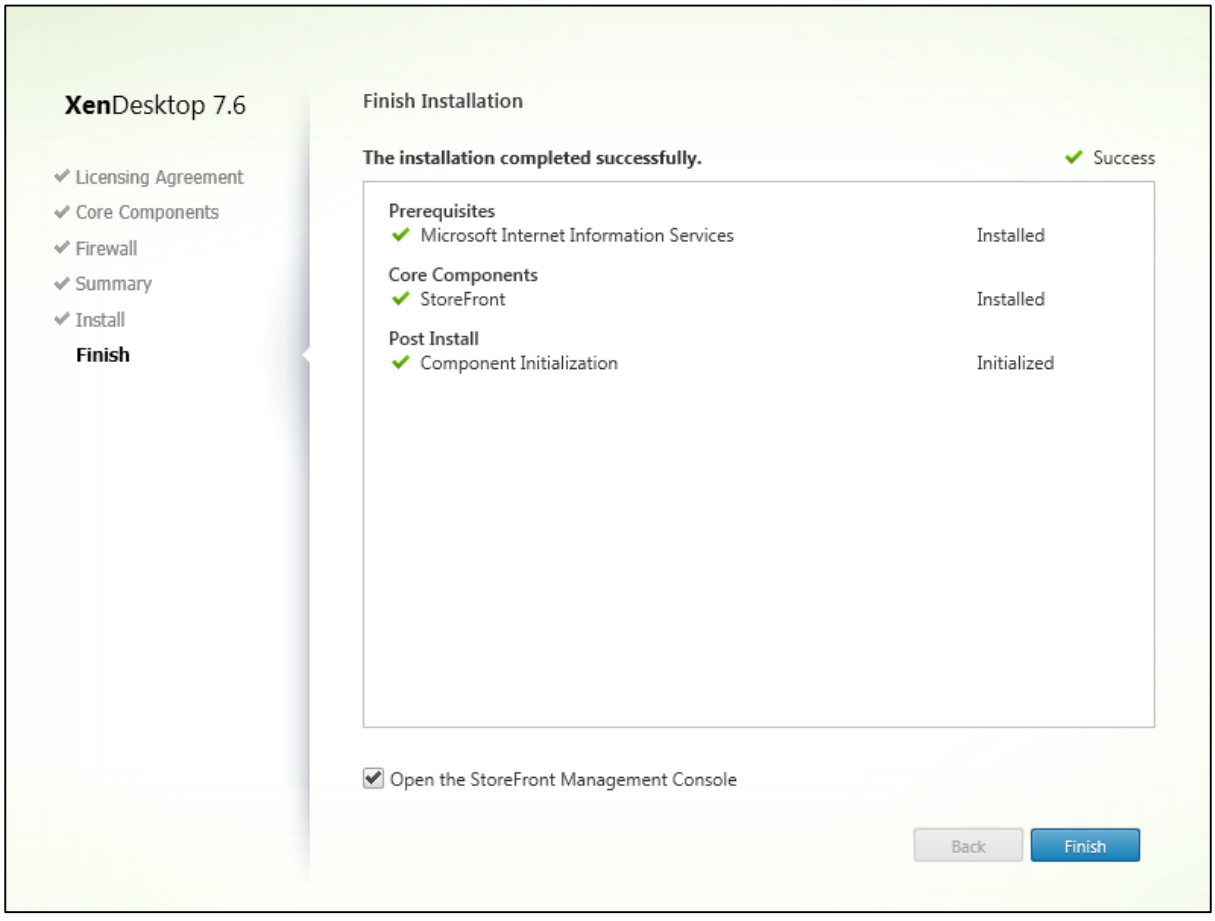
DNS

Check that the DNS entries for the NetScaler Gateway Virtual Server (testgw.hopto.org) point to the correct place.

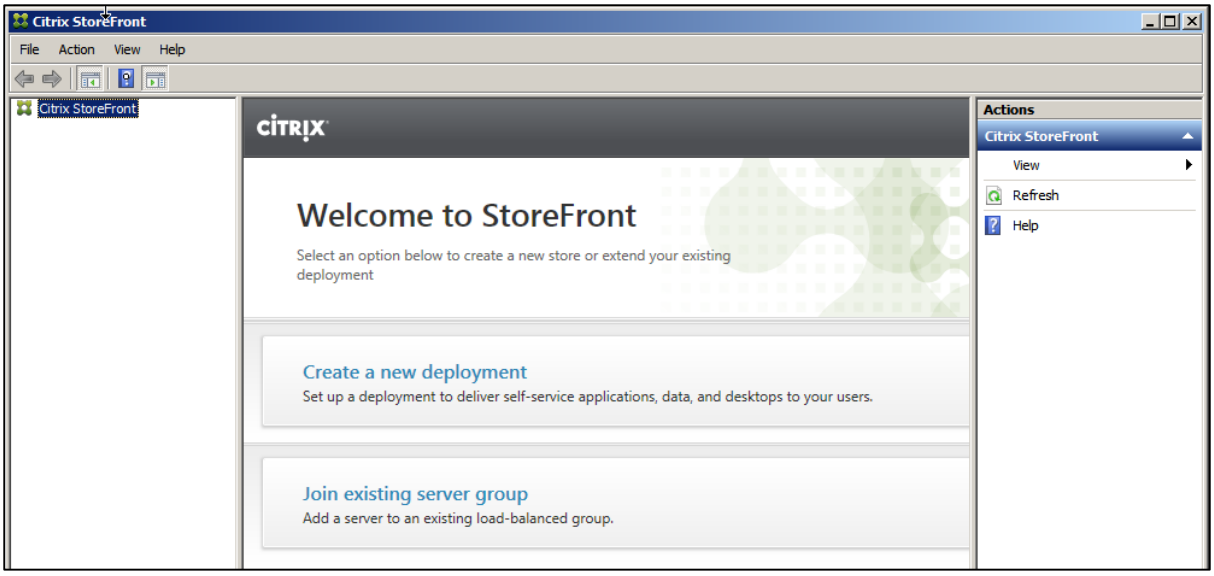
- On Internet - DNS needs to point to a public address that is accessible from the Internet. This will typically be a public address on a firewall/router that is forwarded to the NetScaler Gateway Virtual Server IP
- On the private internal LAN – DNS needs to point to the local address of the NetScaler Gateway Virtual Server in the DMZ – 192.168.18.22

StoreFront – Configuring a new installation

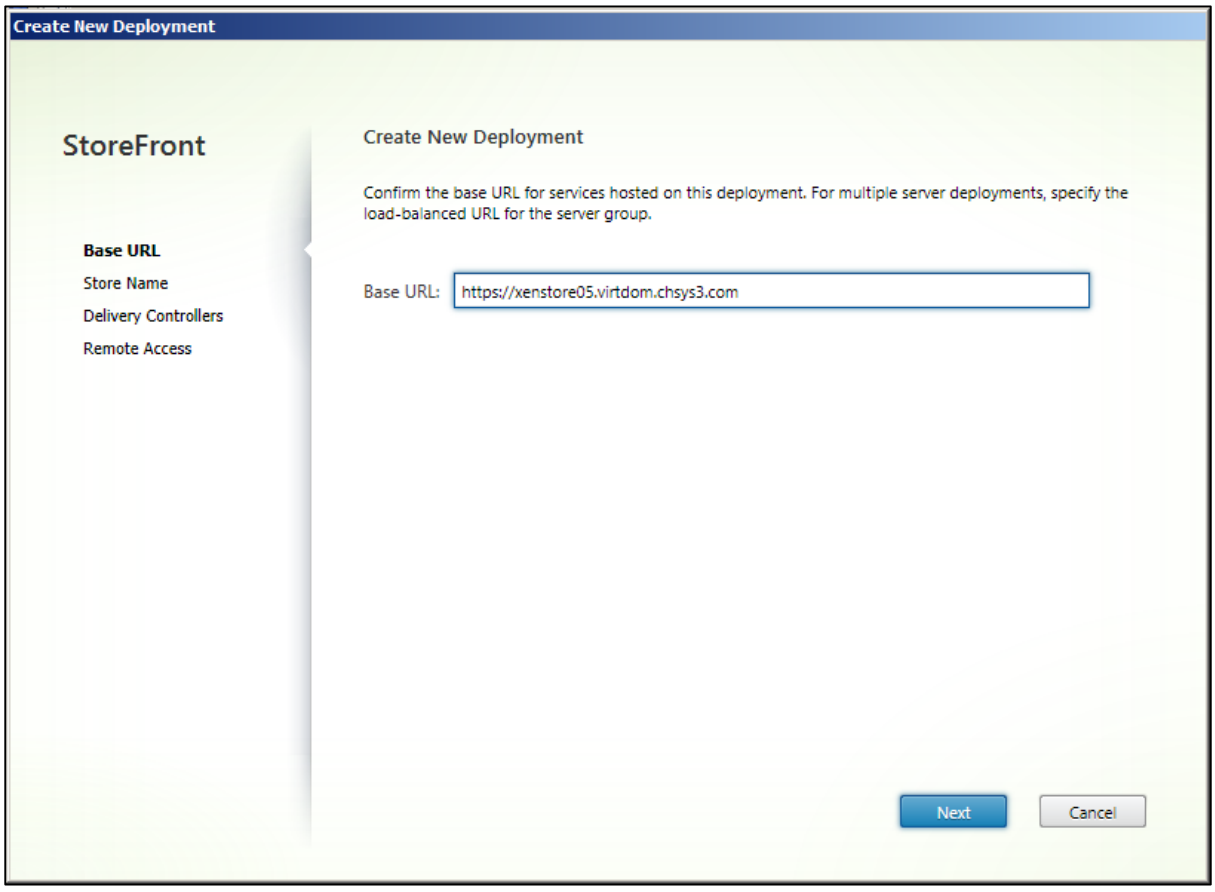
1. Install StoreFront from your distribution media.



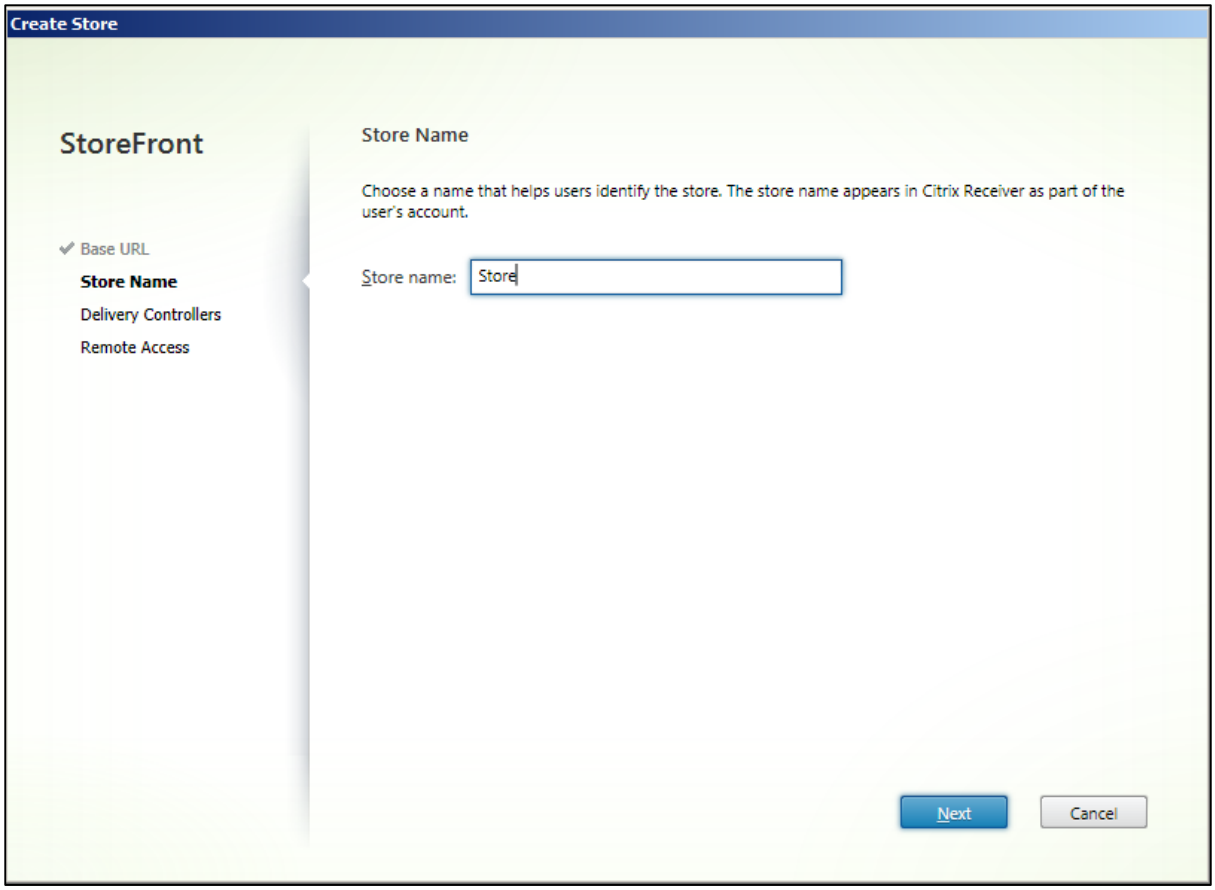
2. On completion, click **Finish** and open the StoreFront Management Console.



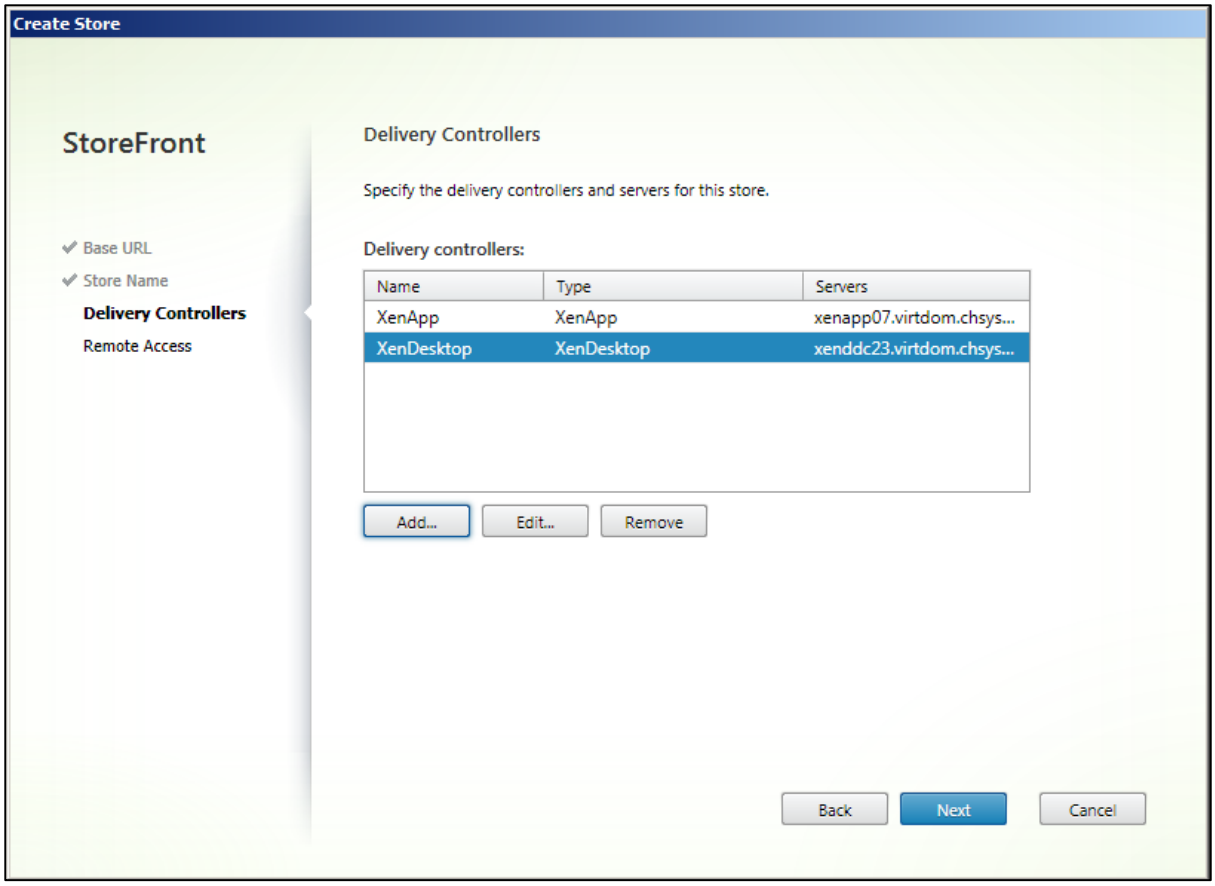
3. When opened, the Management Console will notice that this is a new installation and will offer a choice of options.
4. Click **Create a new deployment**.
5. Accept the default Base URL and click **Next**.



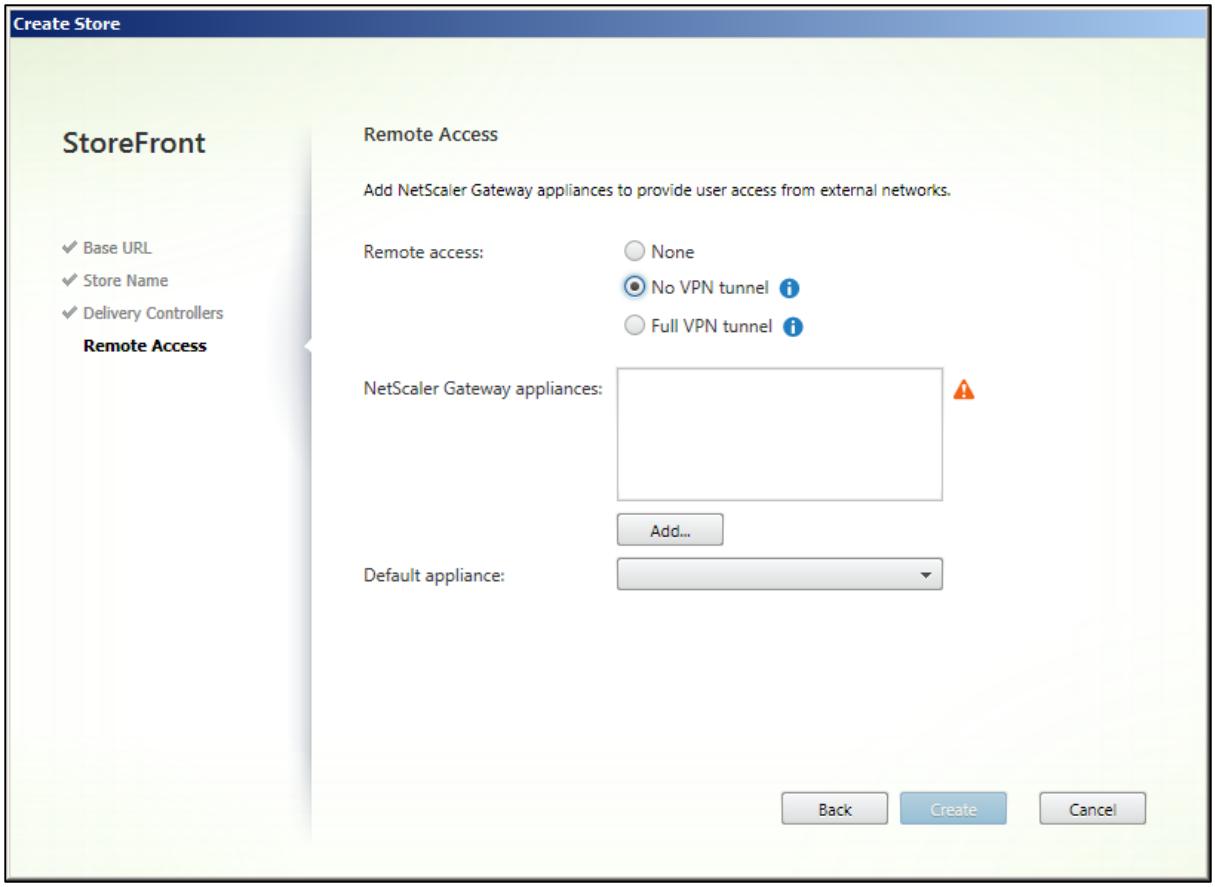
6. Enter a store name of Store.
7. Click **Next**.



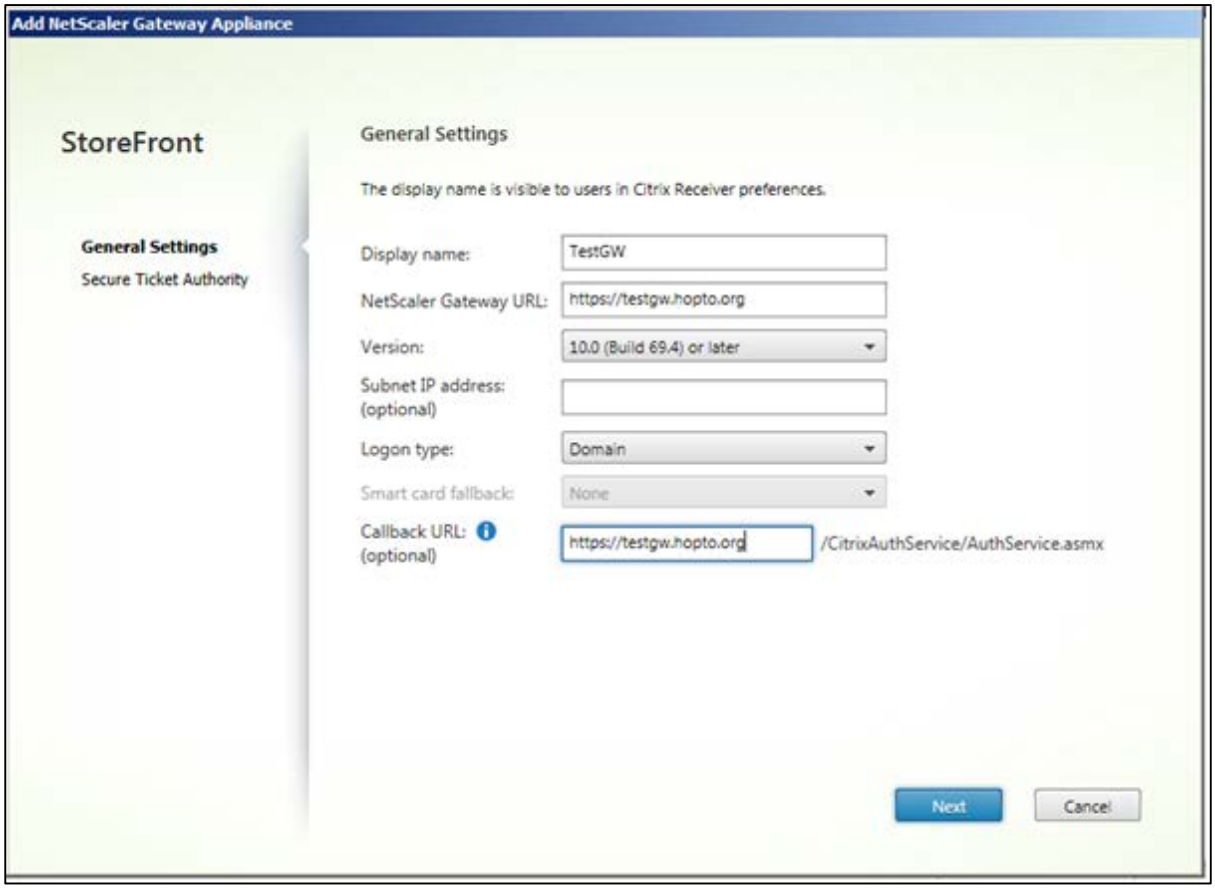
8. Enter Delivery Controllers.
9. Click **Next**.



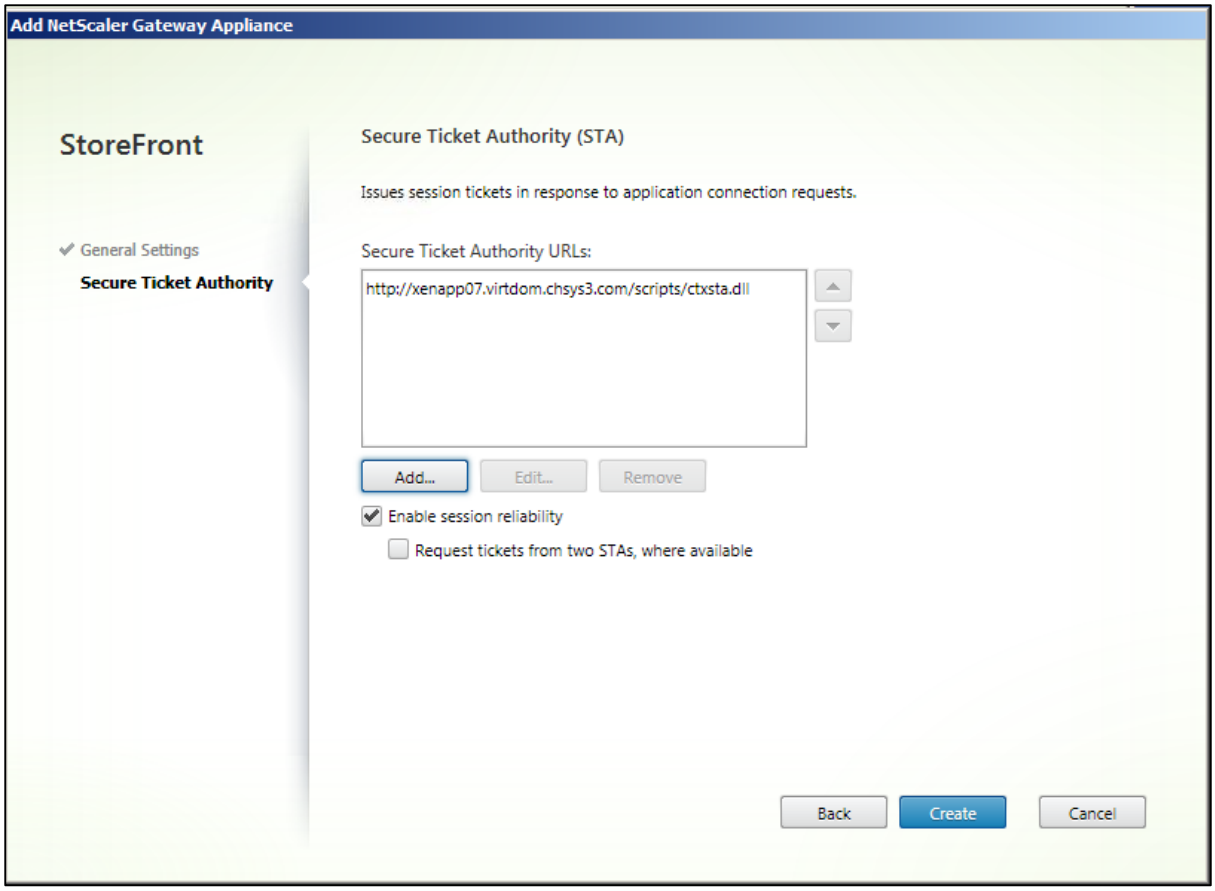
10. Select **No VPN tunnel**.



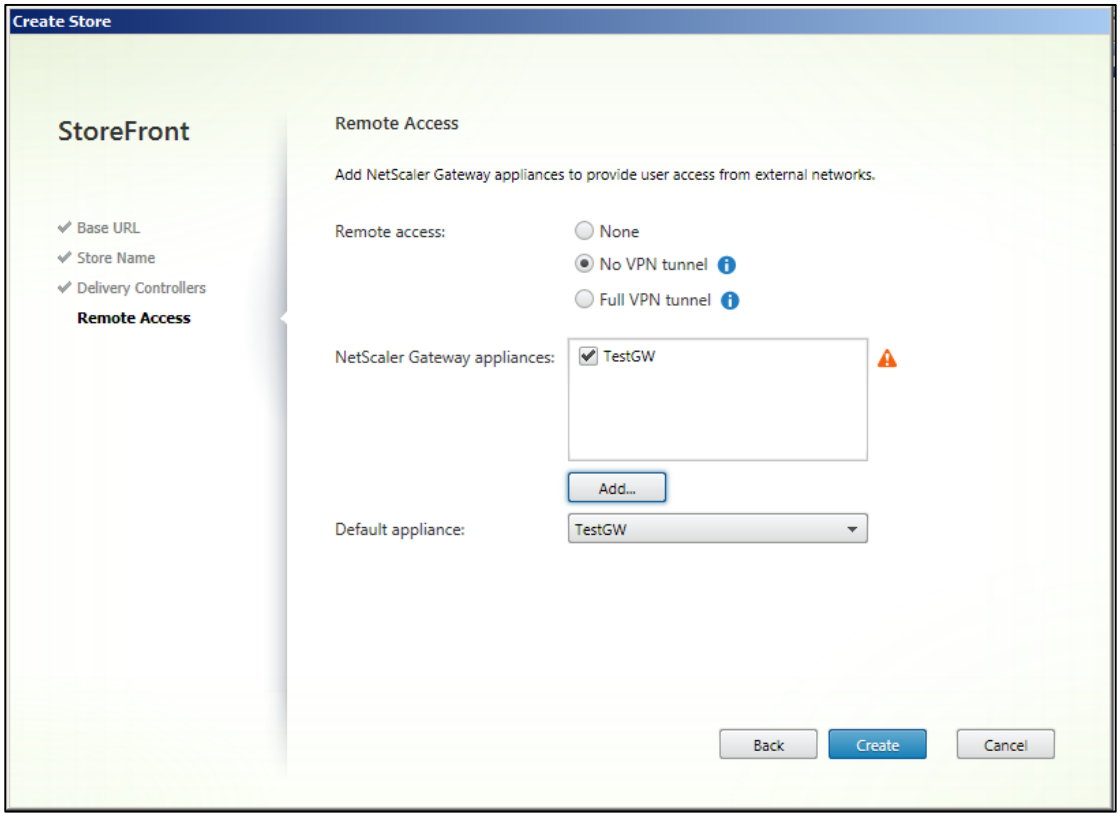
11. Add a NetScaler Gateway appliance.
12. Fill out the details of the NetScaler Gateway Appliance. Unless you have a complex environment, the Subnet IP address may be left blank.
13. Click **Next**.



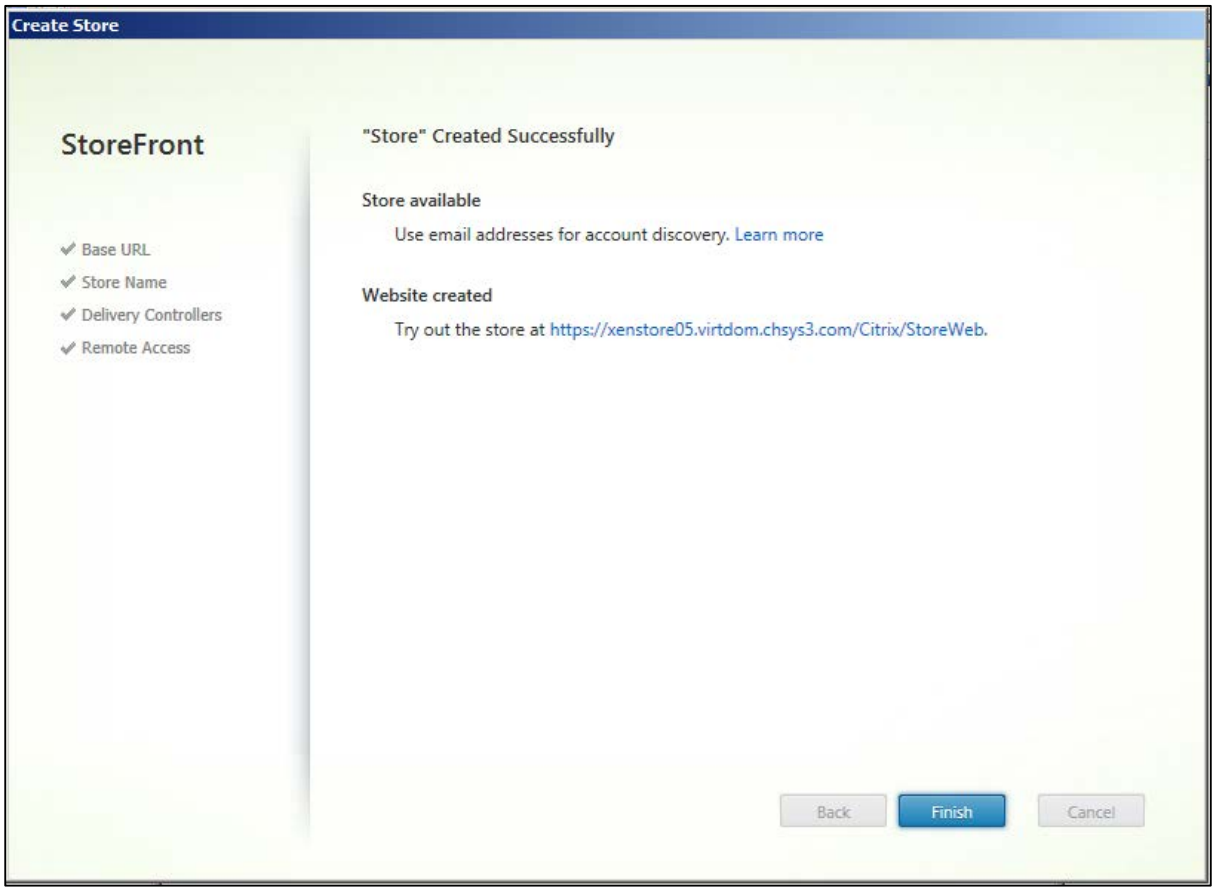
14. Add a Secure Ticket Authority.
15. Ensure that any STA referenced here is also included in the NetScaler Gateway Virtual Server list of STAs.
16. Click **Create**.



17. There appears a warning symbol indicating that enabling remote access will automatically enable pass-through authentication from the NetScaler Gateway. This is what is expected. Click **Create**.



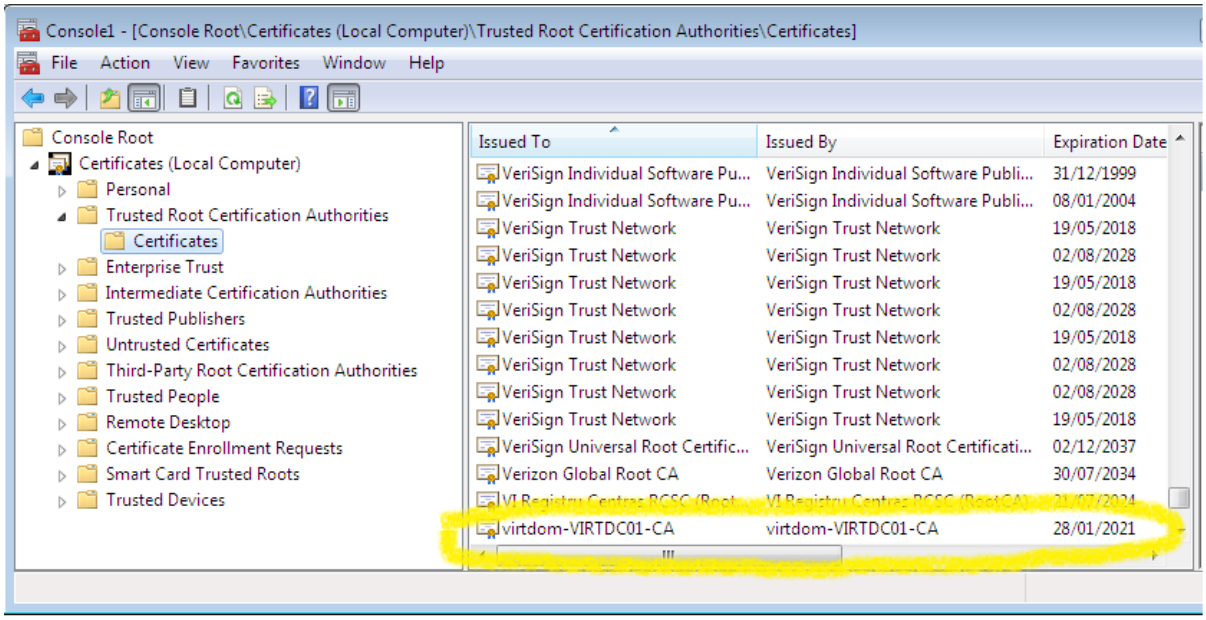
18. Click **Finish**.



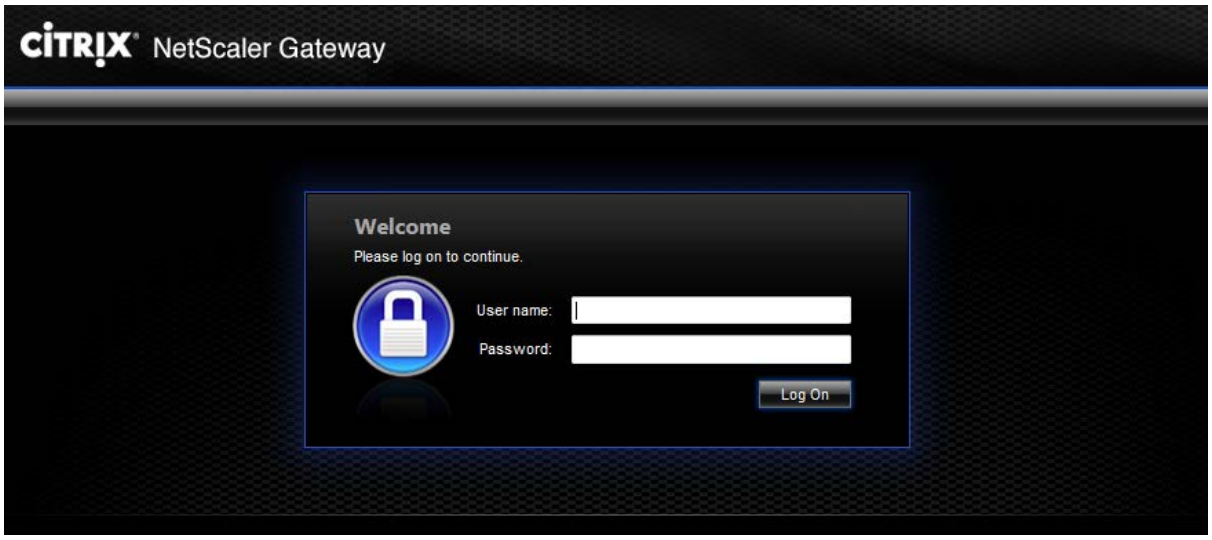
Test the deployment from a Windows PC connected to the Internet.

On the Windows PC

1. Confirm that a recent Citrix Receiver is installed.
2. Confirm that the Trusted Root CA Certificate has been installed into the **Trusted Root Certification Authorities** > **Certificates container**.



3. Turn off certificate revocation checking in Internet Explorer. This is required because our private certificate server is unknown on the Internet.
    a. Go to **Internet Explorer** > **Internet Options** > **Advanced**.
    b. Check for publisher's certificate revocation = Off
    c. Check for server certificate revocation = Off
4. If you use a browser other than Internet Explorer (such as Firefox) you might need to import the Trusted Root CA Certificate into its Certificate Manager, and turn off Online Certificate Status Protocol checking.



5. Use Internet Explorer to browse to your NetScaler Gateway. You should be presented with the NetScaler logon page.

6. When logged in you should be presented with the StoreFront page, and be able to launch Apps and Desktops.