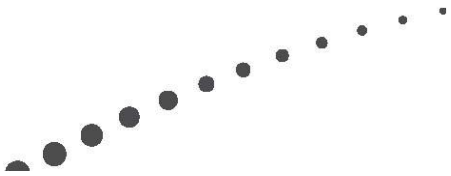
Citrix StoreFront 2.0

Proof of Concept Implementation Guide



Contents

Introduction

Citrix StoreFront provides users an enterprise app store that aggregates resources from XenDesktop, XenApp, XenMobile App Controller, and VDI-in-a-Box in one place. Each StoreFront user is able to subscribe to their favorite application and desktop resources, these favorite resources then automatically follow the user between devices. With Citrix Web Interface reaching end-of-life in 2015, it is important that administrators become familiar with StoreFront to facilitate a successful transition between products.

StoreFront's new modular architecture improves upon the existing design of Web Interface. It includes a new user authentication method which directly queries Active Directory rather than the existing double-hop Web Interface process where user credentials are sent from the Web Interface server to the XML broker who then negotiates authentication with the Domain Controller. StoreFront also makes the process of deploying multiple servers easier through its configuration synchronization feature.

Customers that require a single point of access and self-service for Windows, Web, and SaaS applications should consider integrating StoreFront with XenMobile AppController. ApController, which is part of XenMobile App Edition, is an additional product that must be purchased. StoreFront is a no-cost product that is freely available for download for Citrix XenDesktop and XenApp customers. For a complete list of XenMobile AppController features, visit the product page.

The goal of this document is to guide the reader through the steps required to create a successful StoreFront proof of concept environment. Citrix Consulting recommends implementing StoreFront in a phased approach beginning with mobile users. This user group will receive the greatest benefit since they access resources from multiple devices both inside and outside the corporate network. Selecting the correct user group will ensure that the full breadth of StoreFront's features and self-service capabilities are showcased within this proof of concept.

Architecture

Citrix StoreFront employs a modular architecture, as shown in the following diagram:

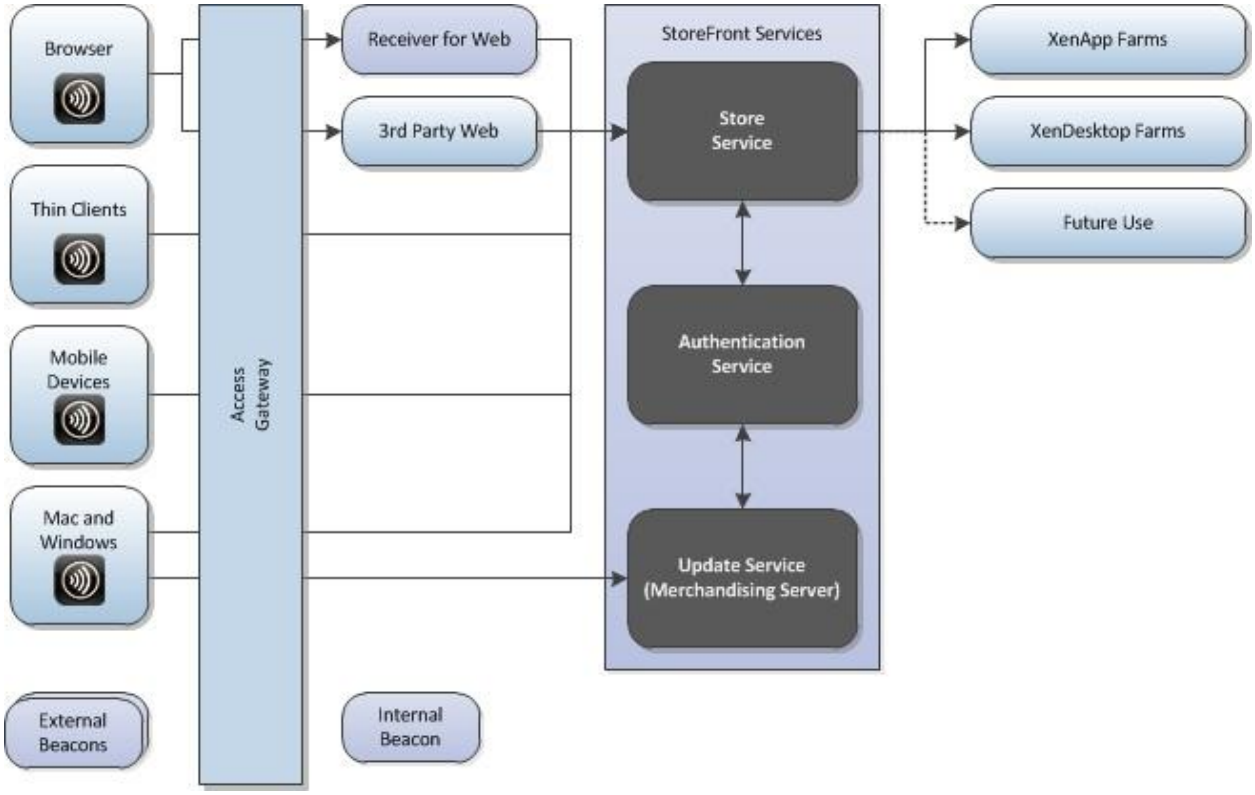


Figure 1: Citrix Storefront Receiver Architecture

- **Authentication Service**. Authenticates users to XenDesktop sites, XenApp farms, and AppController, handling all interactions to ensure that users only need to log on once.
- **Store Services**. Retrieves user credentials from the authentication service to authenticate users to the XenApp and XenDesktop servers providing the application and desktop resources. Enumerates the resources currently available from the servers and sends the details to Citrix Receiver.
- **Receiver for Web.** Enables users to access applications and desktop resources through a web page providing the same user experience as accessing those resources through Citrix Receiver.
- **Resource Subscription Database**. Stores details of individualized user subscriptions plus associated shortcut names and locations.
- **Beacon**. Citrix Receiver uses beacon points to determine whether users are connected to internal or public networks and then selects the appropriate access method.

Hardware and Software Requirements

In preparation for executing all the steps outlined in this Proof of Concept (PoC) Implementation Guide, the following components will be required:

- Windows Server 2008 R2 SP1 / Windows Server 2012: Receiver Storefront is only available for installation on these versions of Windows Server.
- Citrix Receiver 3.3+ (Standard) Windows/ 11.6+ Mac: The Citrix Receiver versions that supports direct connections to StoreFront and take advantage of automatic account provisioning. Receiver 3.1+ for Windows and 11.5 for Mac support direct connections to StoreFront but do not support automatic account provisioning. Previous versions of Citrix Receiver, Citrix Online Plugin, and Receiver Enterprise can be used, but applications and desktops will only be available from the Receiver for Web site or by a legacy site.
- NetScaler Access Gateway 10.0.69.4nc+: While not required for internal access to resources, Access Gateway is a key feature to enable secure remote access and allow the HTML5 client and Account Services features to function.

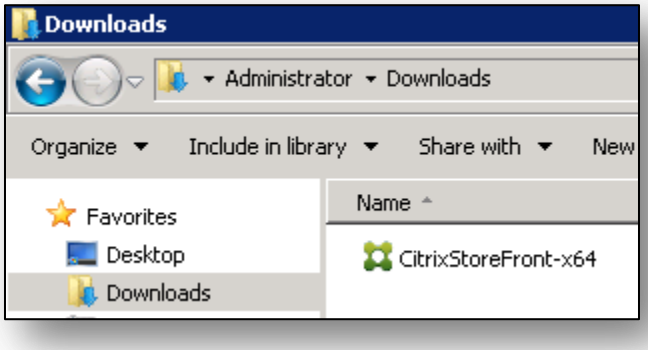
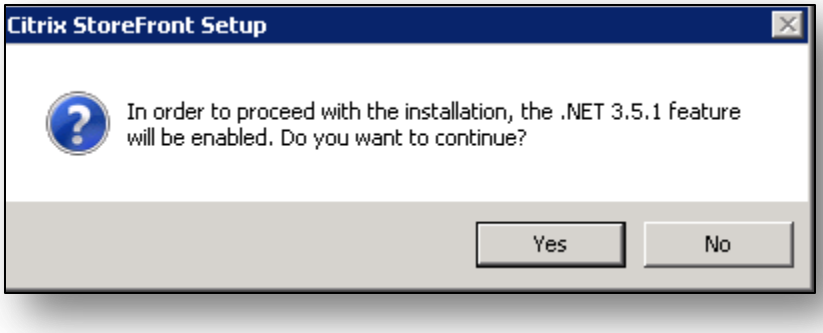
Installation and Configuration

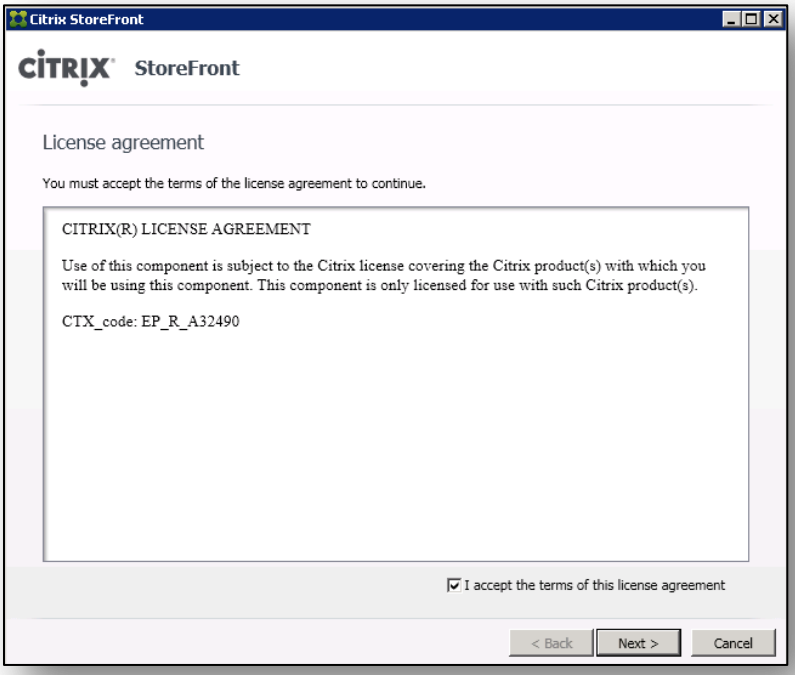
The purpose of this document is to provide step-by-step instructions for the implementation of each component within the Proof of Concept environment. Each step is broken down into the following individual sections:

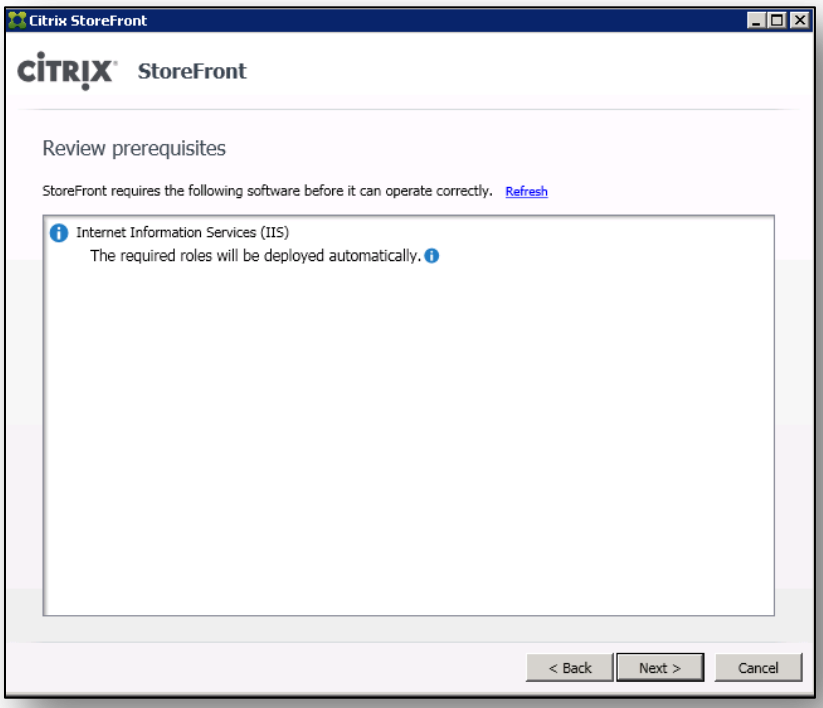
- **Section 1:** StoreFront Initial Deployment
- **Section 2:** Configure Second StoreFront Server
- **Section 3:** Accessing Applications through Receiver
- **Section 4:** Configure NetScaler Gateway Authentication
- **Section 5:** NetScaler Load Balancing Configuration

Section 1: StoreFront Initial Deployment

Citrix StoreFront can be setup in a single or multi-server deployment. Citrix Consulting recommends that StoreFront be deployed in a multi-server configuration to ensure high availability. The following steps detail the installation of StoreFront.

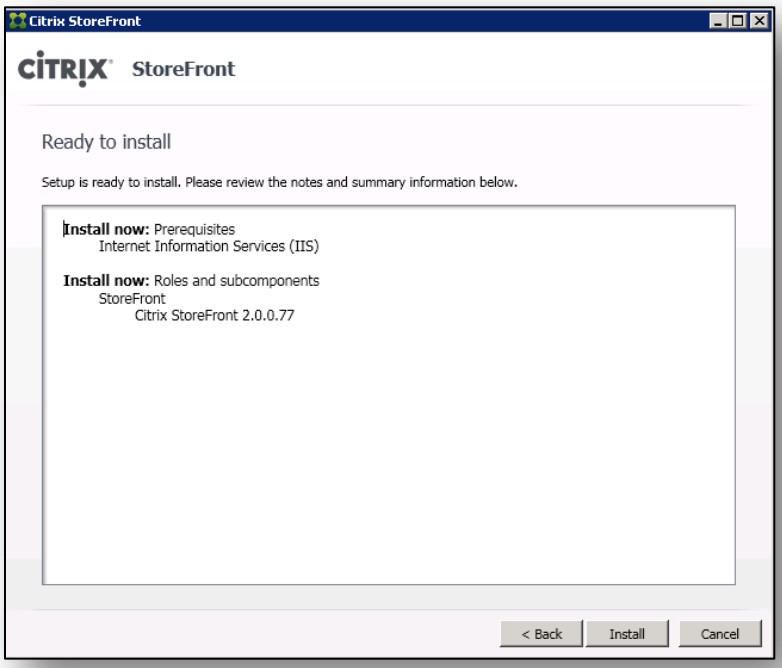
1	Choose the StoreFront installation file 
2	Click **Yes** to install the .NET framework 
	Check the accept terms of license box

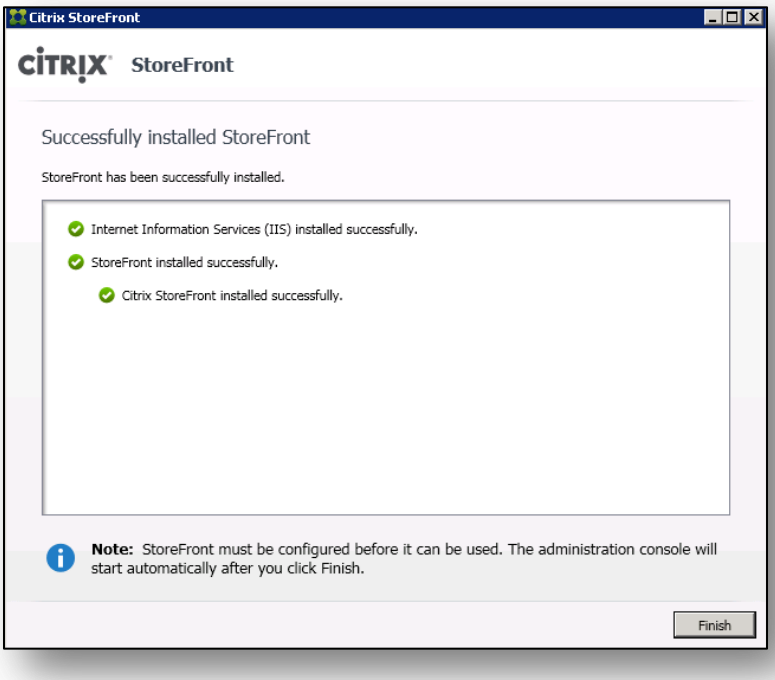
	
7	**Internet Information Server (IIS)** will be deployed as part of the installation Select **Next**



Select **Install**

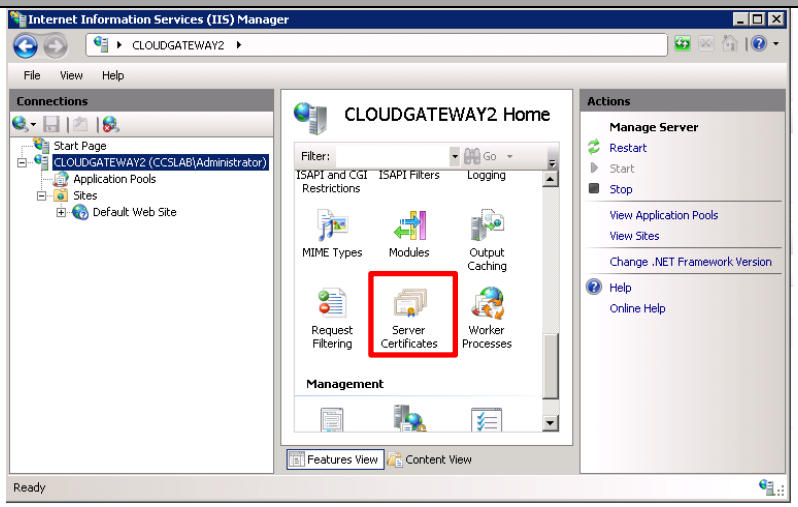
Any pre-requisites missing will be installed automatically by Receiver StoreFront installer

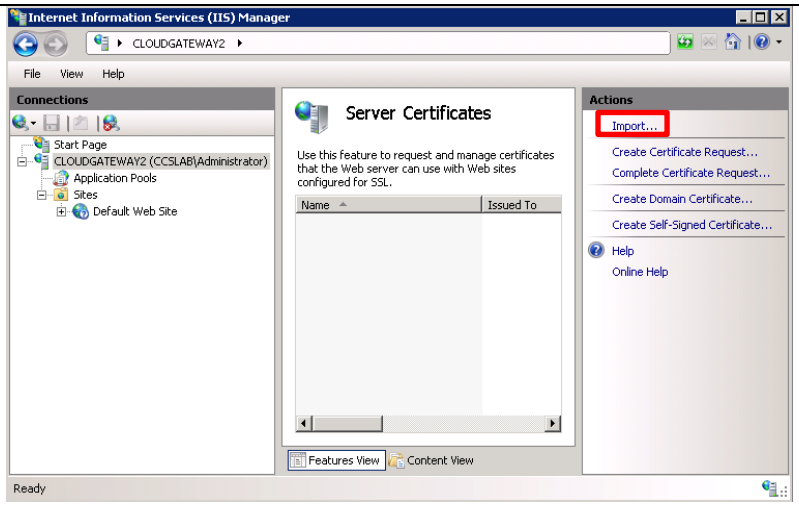
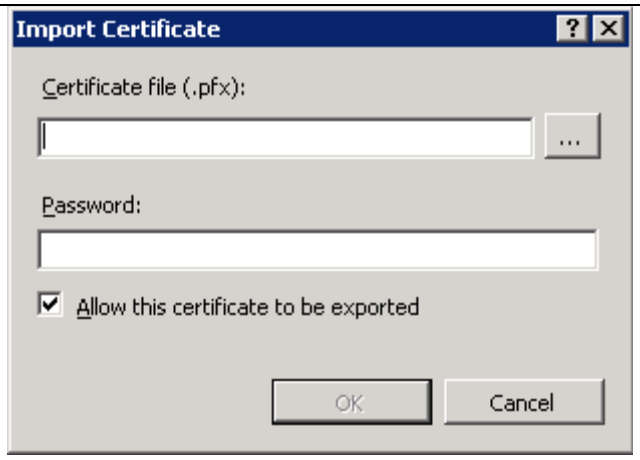
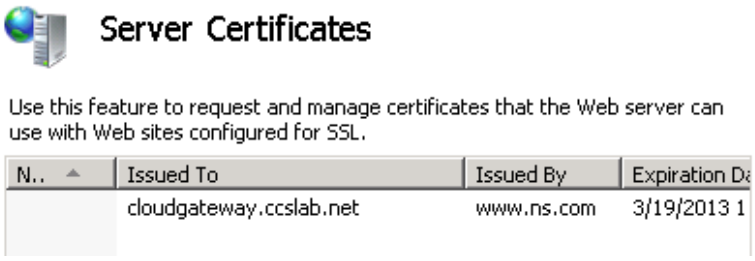
	
8	The installation has now been completed Select **Finish** The StoreFront Receiver administration console will automatically appear

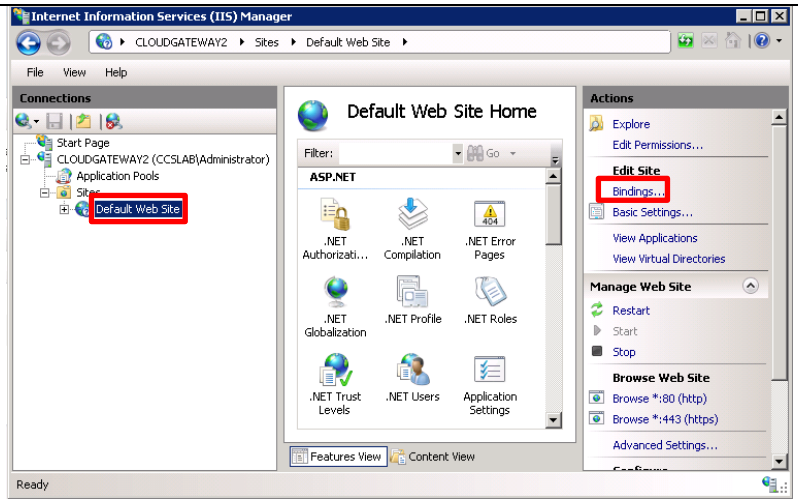
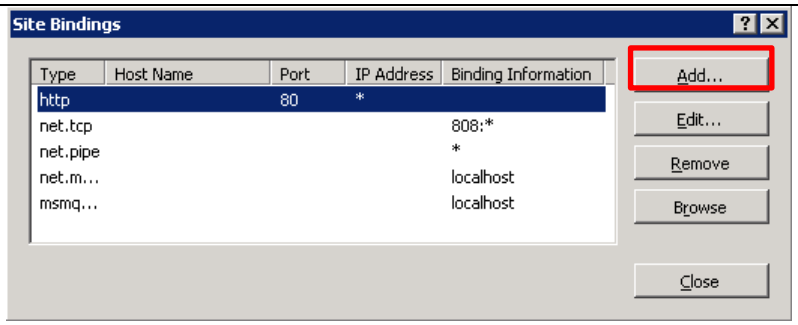
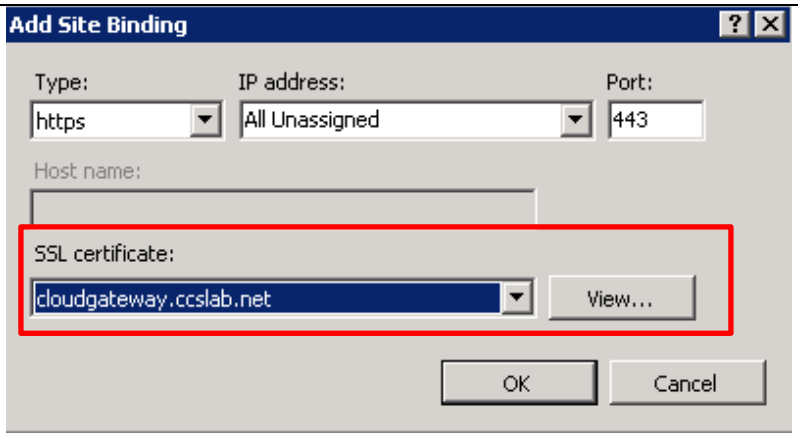


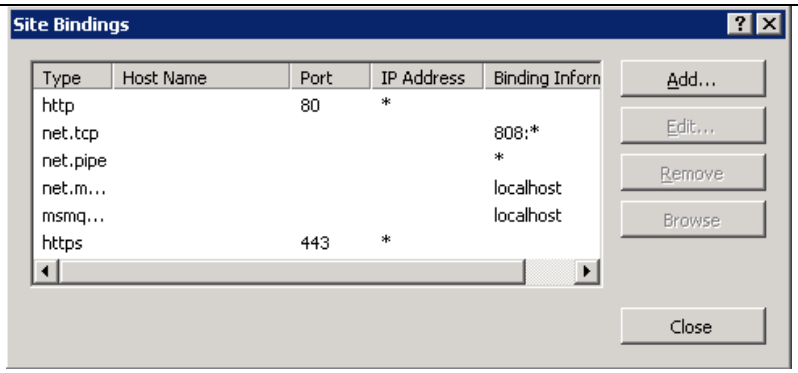
Initial Server Configuration

The first step in configuring Receiver StoreFront is importing and binding a SSL certificate inside Internet Information Server (IIS). The following section walks through the steps needed to complete these tasks.

Initial Server Configuration		
	Screenshot	Description
1		• Before beginning the configuration, a SSL certificate matching the hostname chosen **must be imported and bound** to the default IIS Web Site • This is accomplished in IIS Manager • Select the local Server from the left menu • Select **Server Certificates** from the features menu

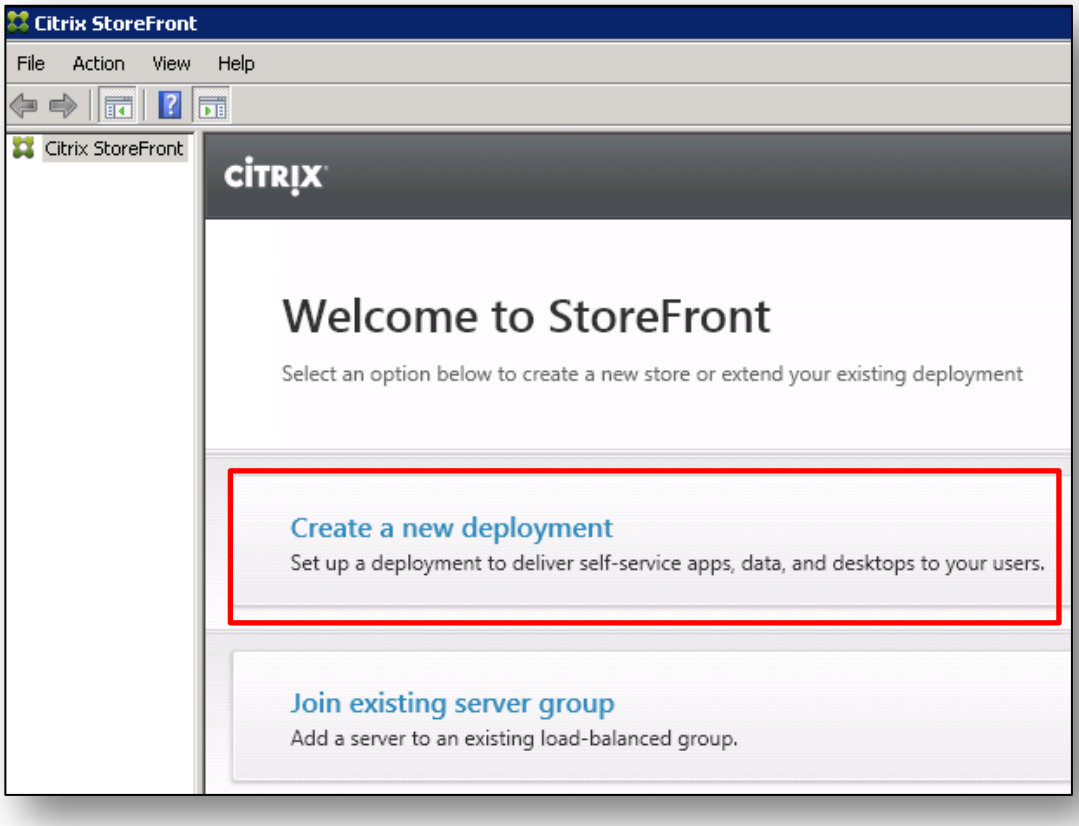
2		• Select **Import** on the Actions menu
3		• Select the certificate file to import • Select **OK**
4		• The certificate is now imported

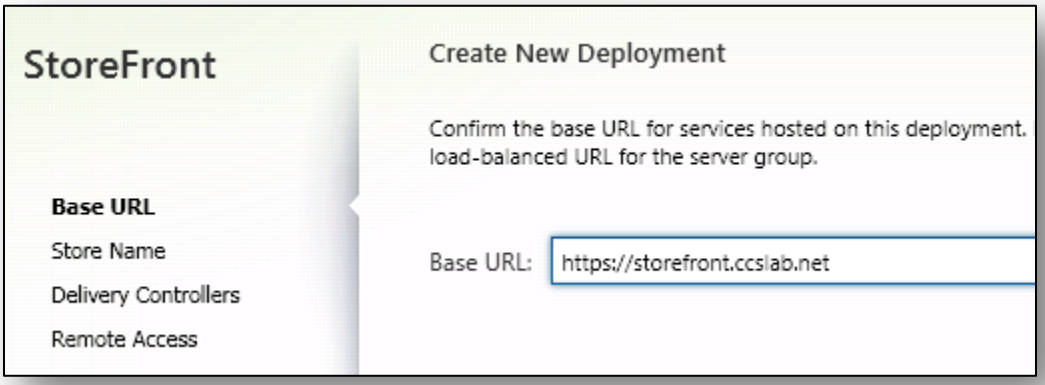
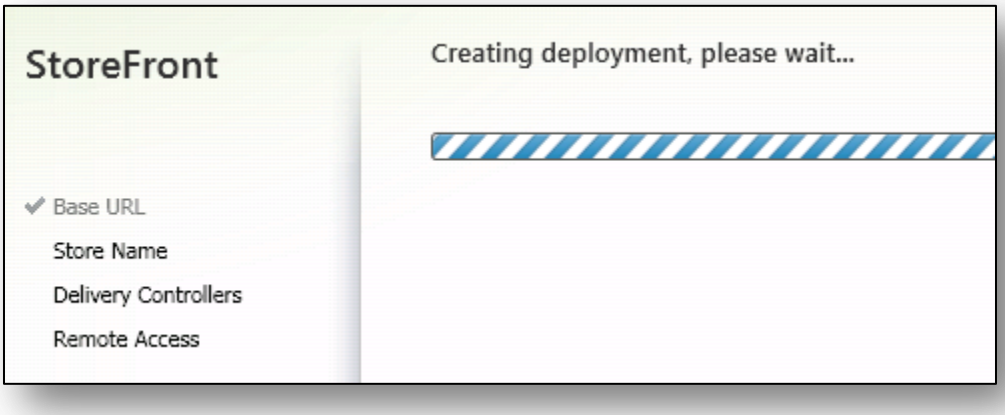
5		• Select **Default Web Site** • Select **Bindings**
6		• Select **Add**
7		• Select **https** as the Type • Select the **SSL Certificate** from the dropdown menu • Select **OK**

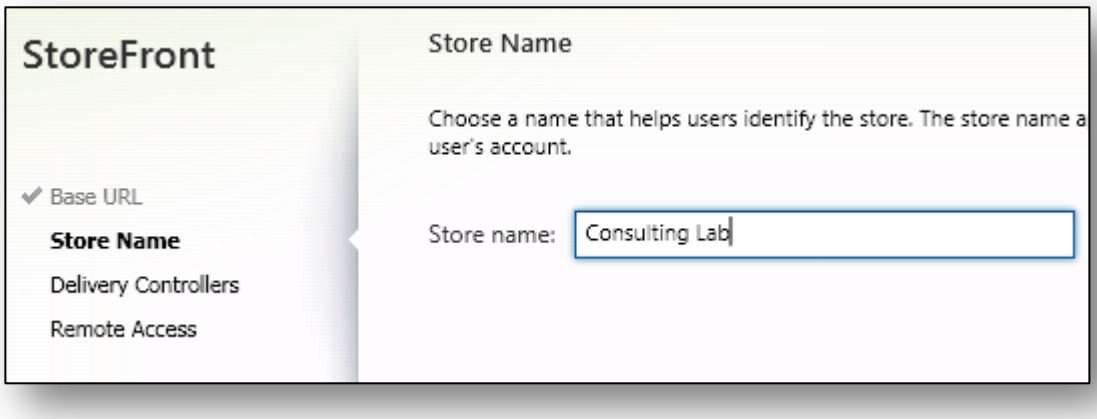
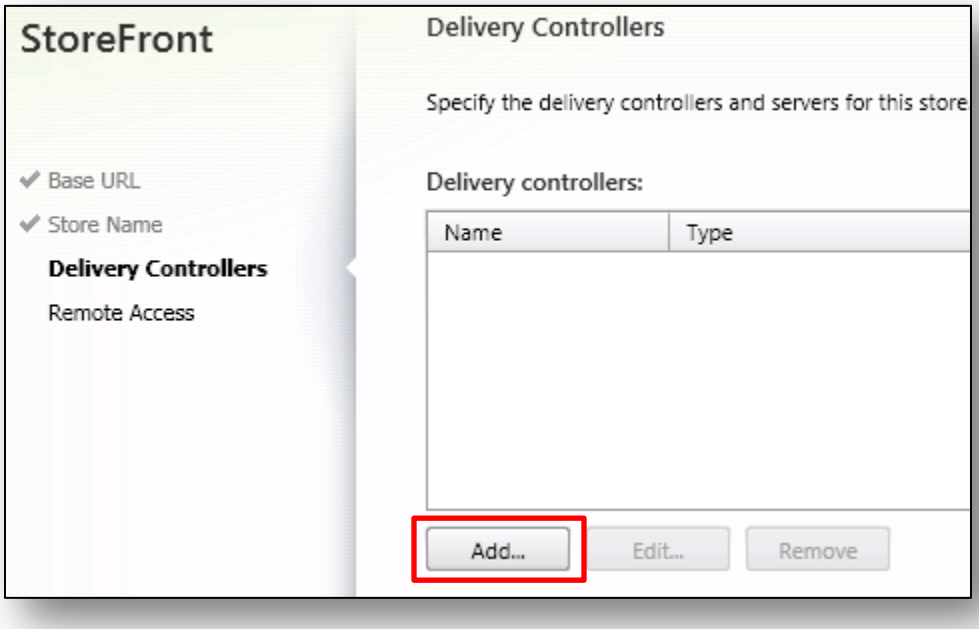
8		• The **https** binding is now listed • Return to the **Receiver Storefront console**

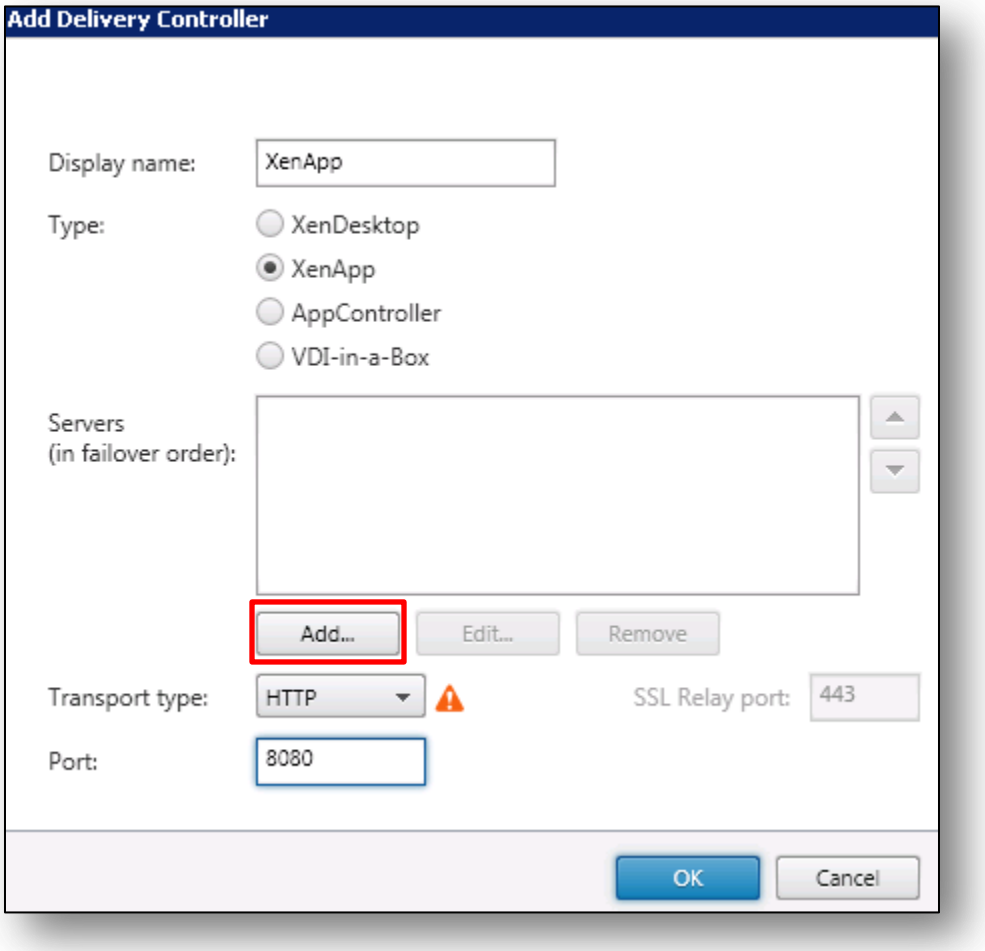
Create New StoreFront Deployment

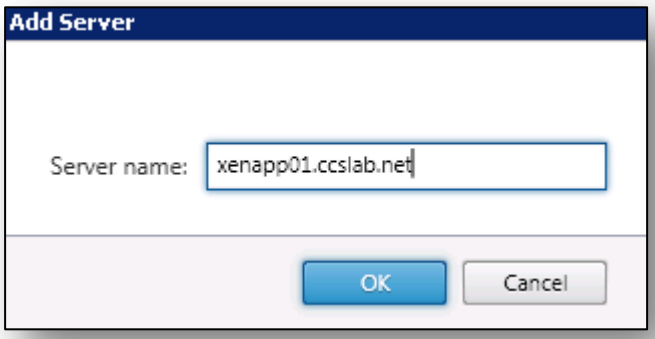
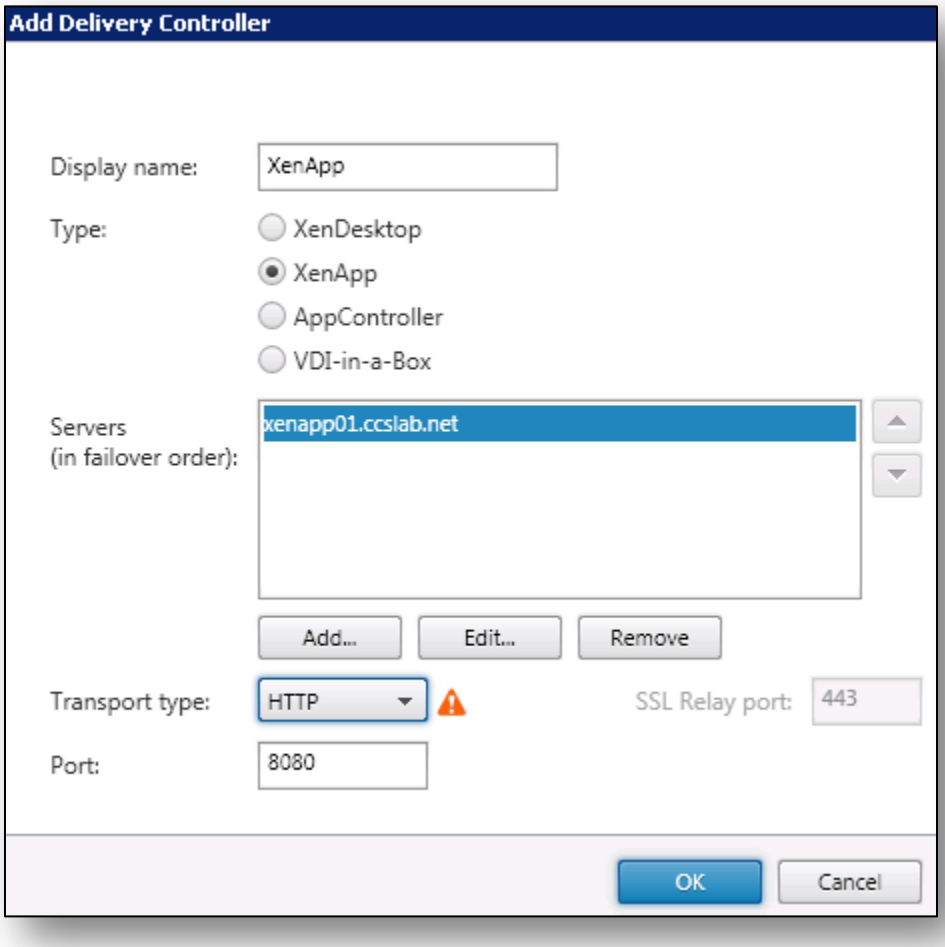
The section walks through the steps to configure the first StoreFront server in a deployment.

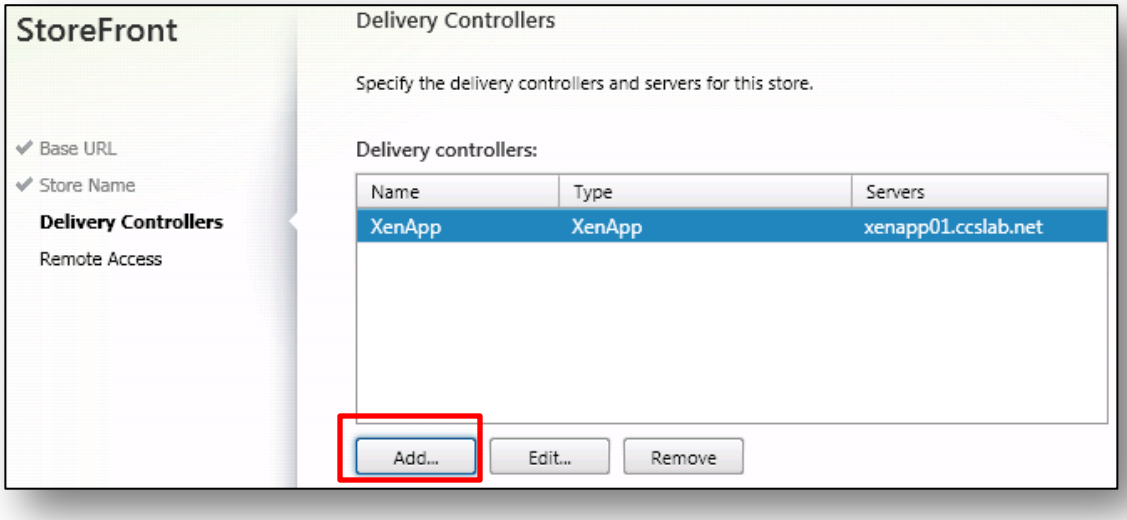
1	When the administration console opens, two options are available. Since this is the first server in the deployment, select **Create a new deployment** 	

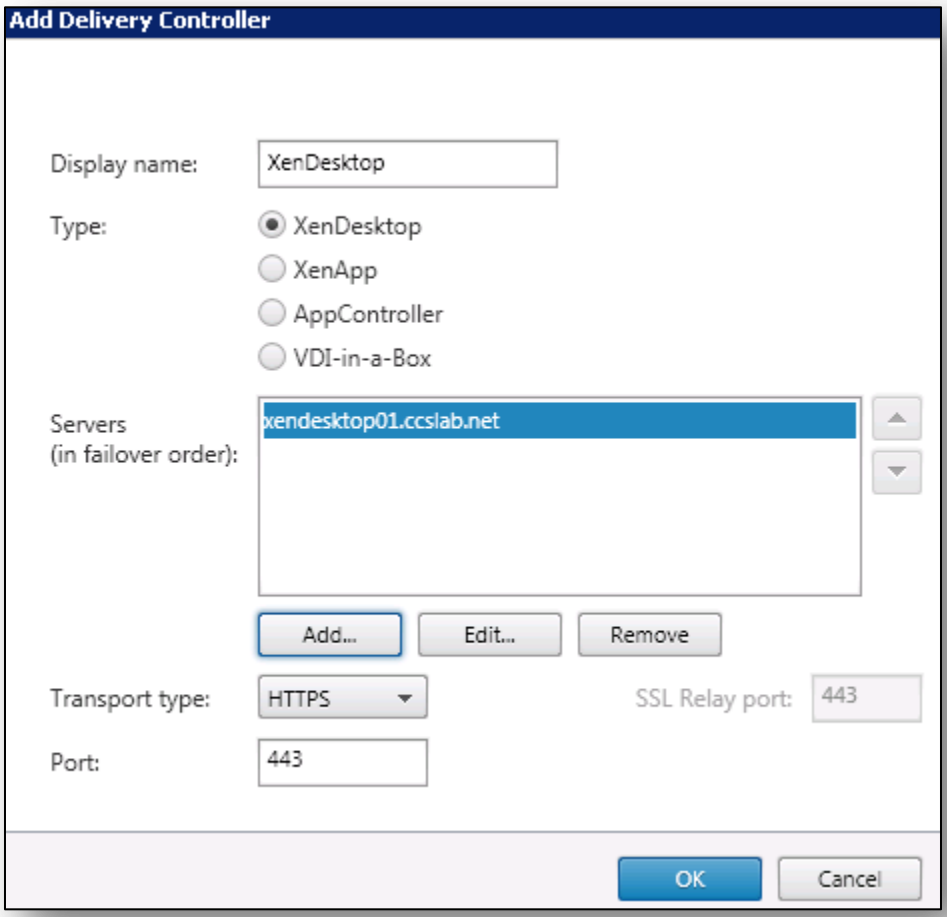
2	Since a SSL certificate has already been bound, the hostname will automatically be filled in. This is the **Hostname** of the load balancing vServer on the NetScaler for the Storefront servers. If the hostname is blank, go back to the SSL certification installation steps Select **Next** 
3	Wait for the Store to be created… 
4	Enter in a **Store Name** It is recommended choosing a name that helps users identify the apps and desktops. This is the name that will appear inside Receiver.

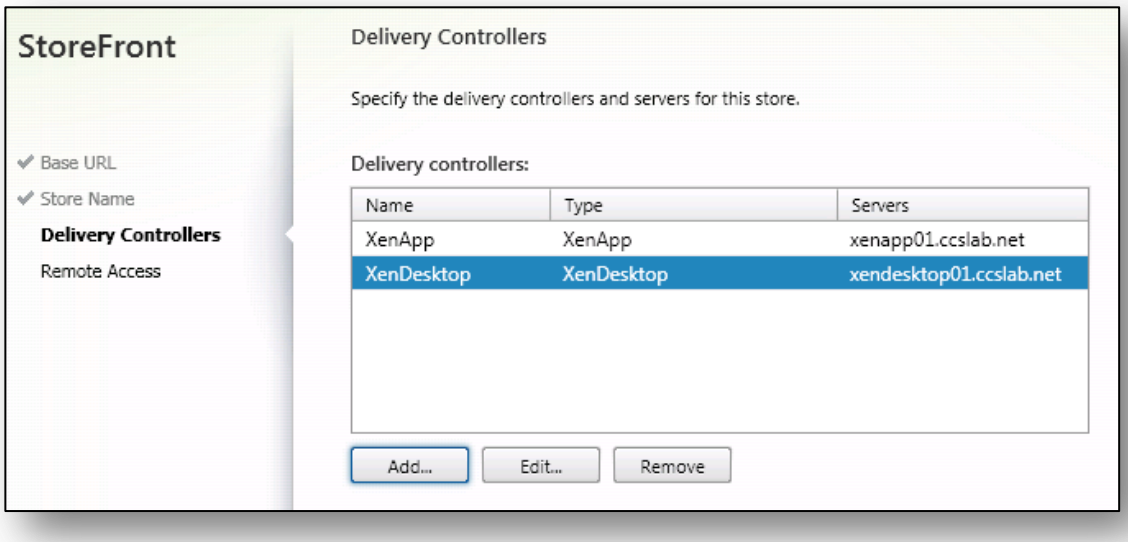
	
5	This menu allows **XenApp**, **XenDesktop,** and **Cloud Gateway Enterprise** resources to be added to the Store. To begin adding resources, select **Add** 
7	First, a XenApp server will be added to the Store. Choose a **Display name** Choose **XenApp** from the Type list

	Change the **Transport type** and **Port** accordingly Select **Add** 
8	Enter the FQDN of the XenApp server. Select **OK**

	
9	The XenApp server is now listed. Select **OK** 
10	To add a XenDesktop resource, the same steps are followed.

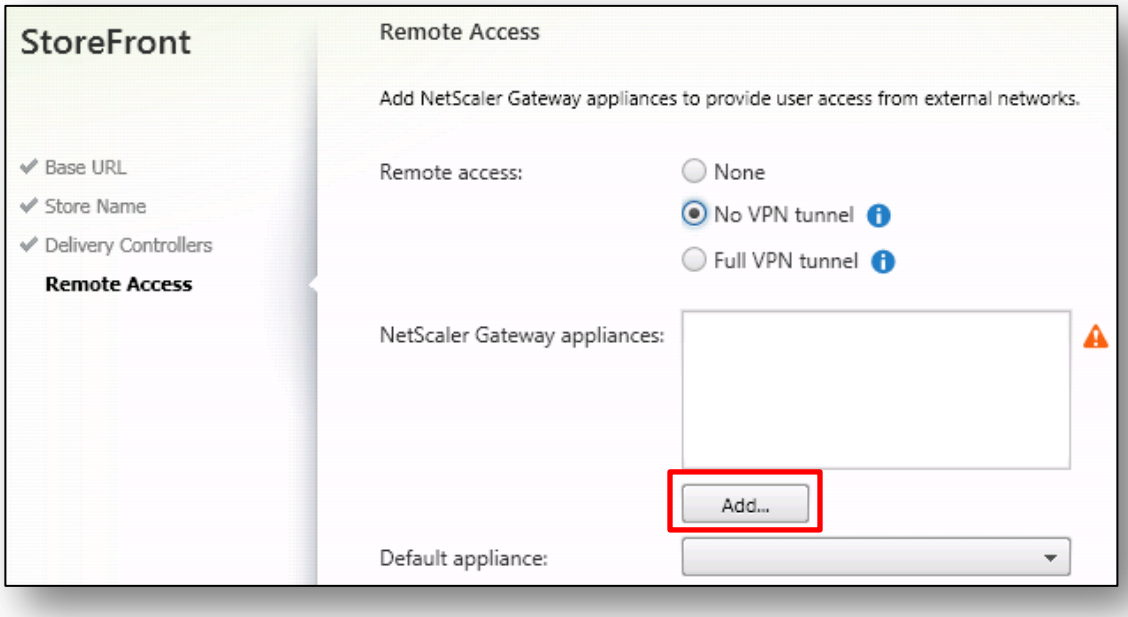
	Begin by selecting **Add** 
11	The XenDesktop type is now selected. Once a server has been added, select **OK**

	
12	Now both XenApp and XenDesktop are listed. Select **Next**

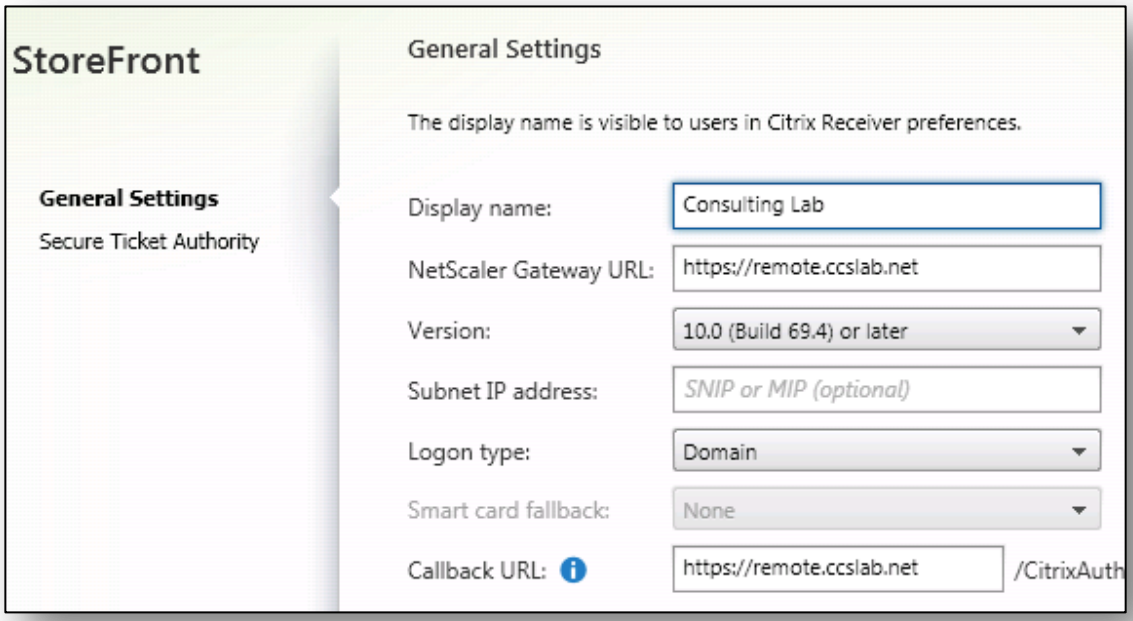
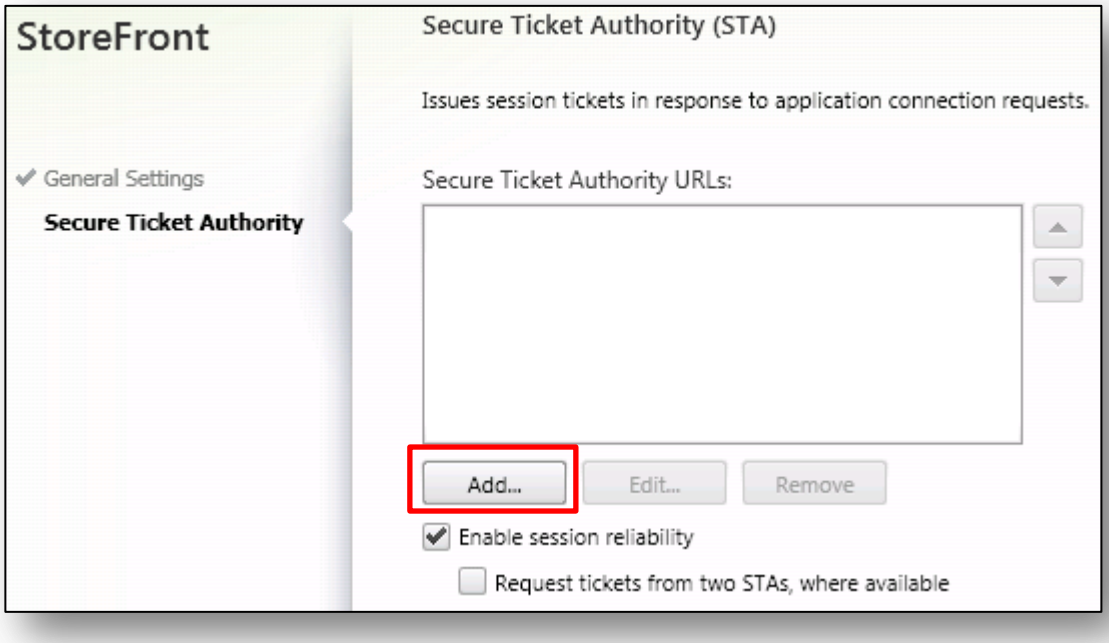


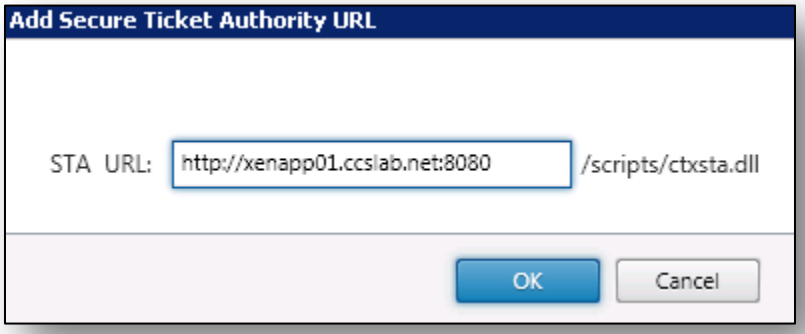
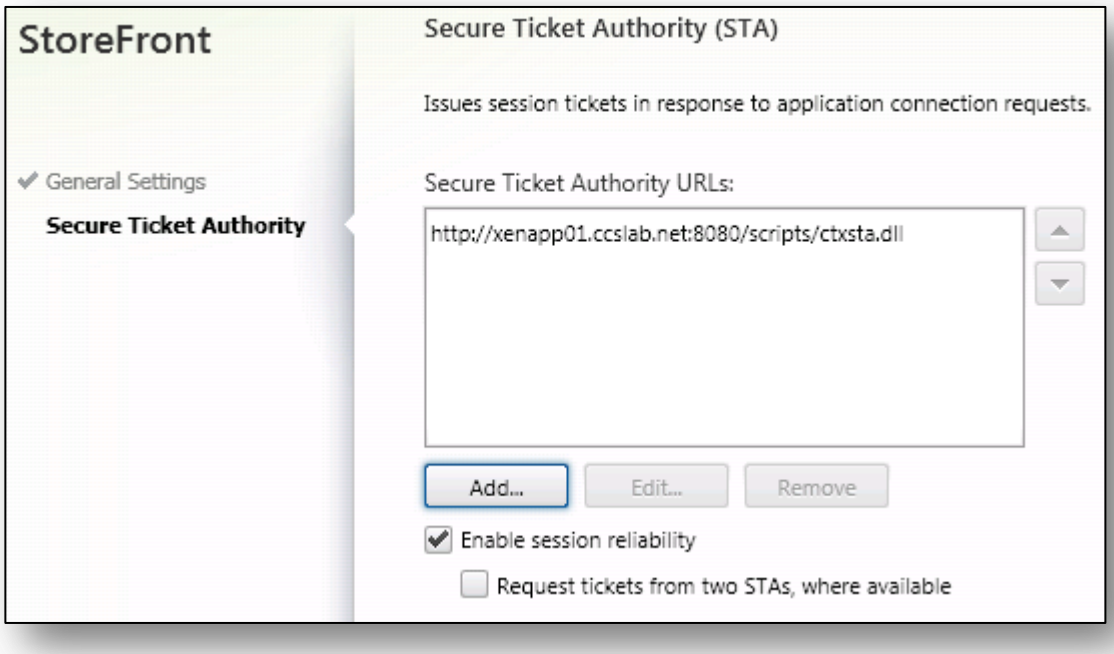
13 This step will begin the Remote Access configuration through NetScaler Gateway. There are two options available: **No VPN tunnel** and **Full VPN tunnel**

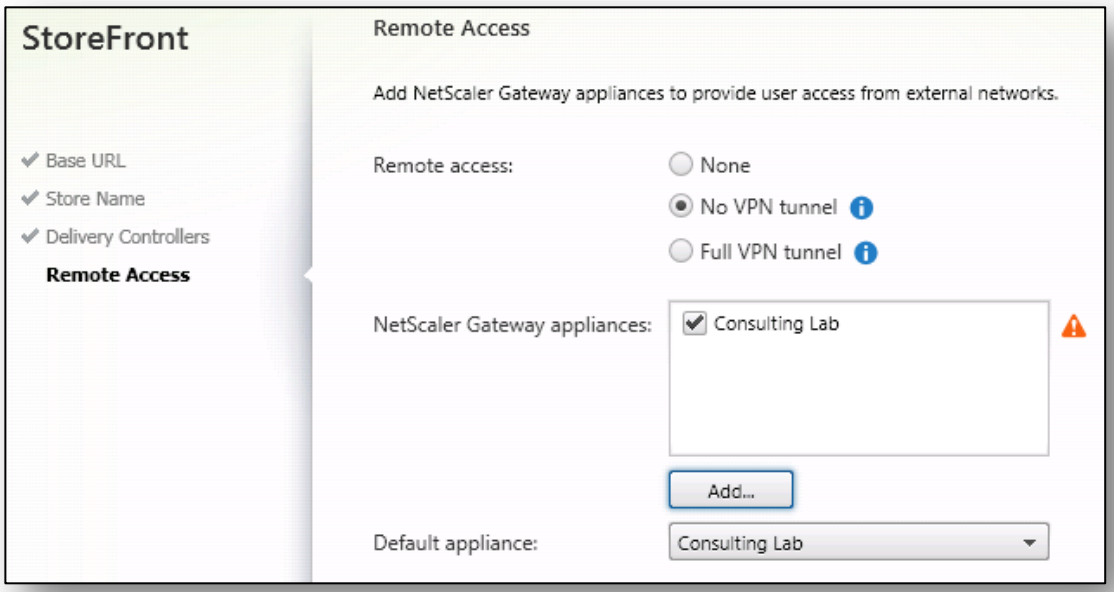
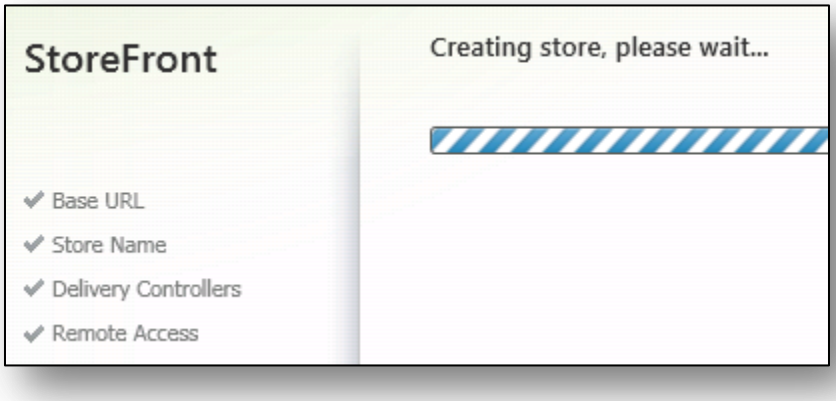
Choose one and then select **Add**

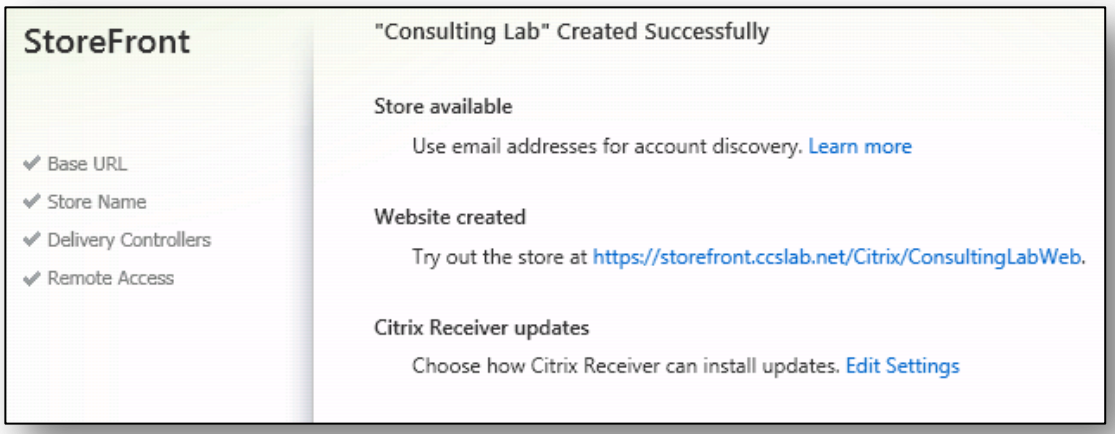


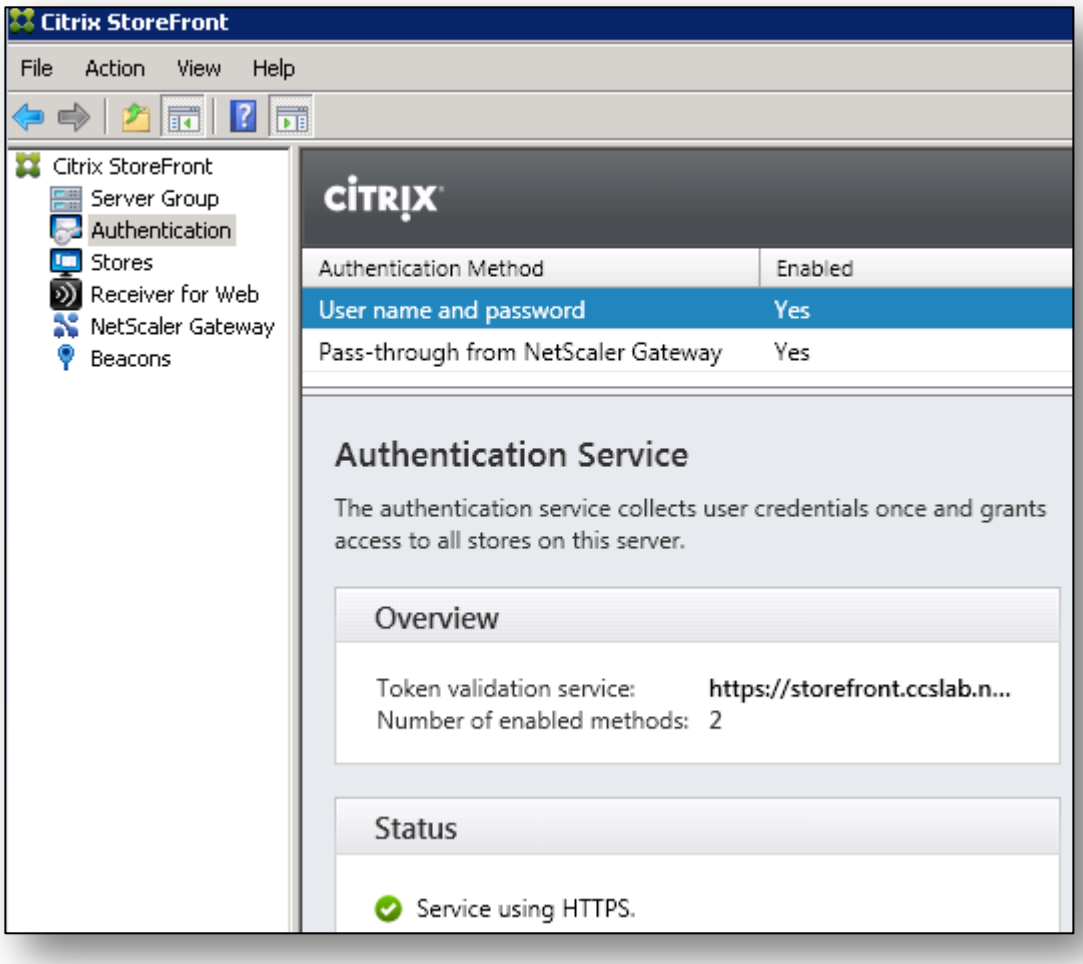
14 Entera **Display Name**, **Gateway URL**, and **Callback URL**

	The **SubNet IP address** field can be left blank Select **Next** 
15	Select **Add** 

16	Enter the **STA URL** and select **OK** 
17	Select **Create** 
18	Select **Create**

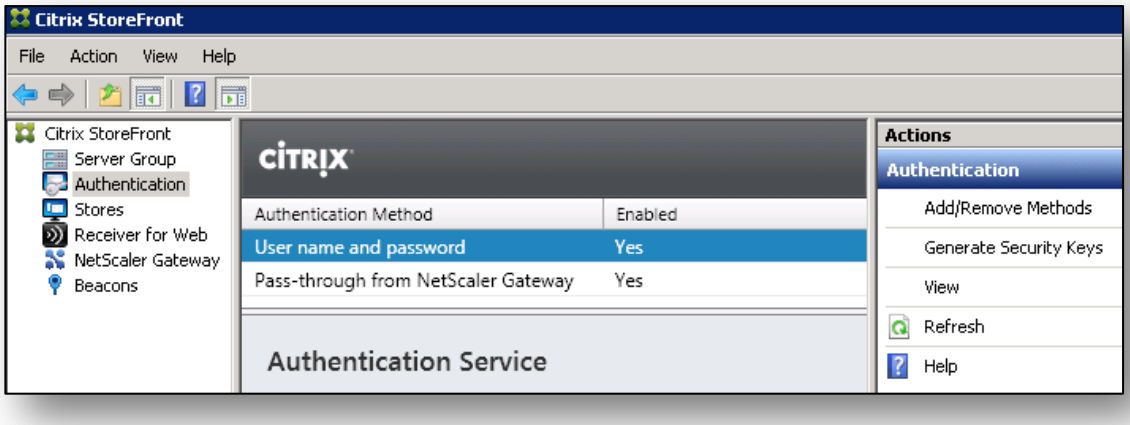
	
19	Wait for the Store to be created … 
20	Click **Finish** s

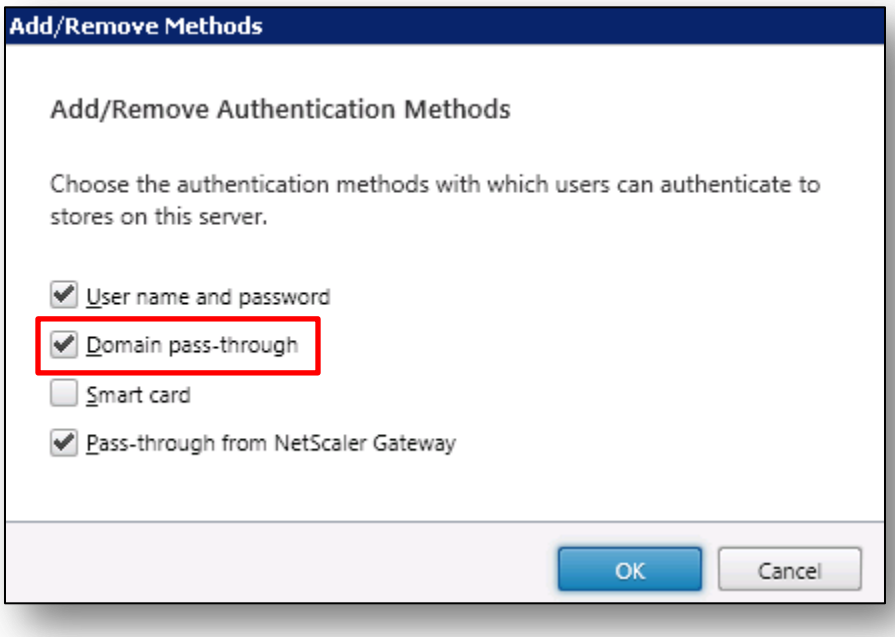
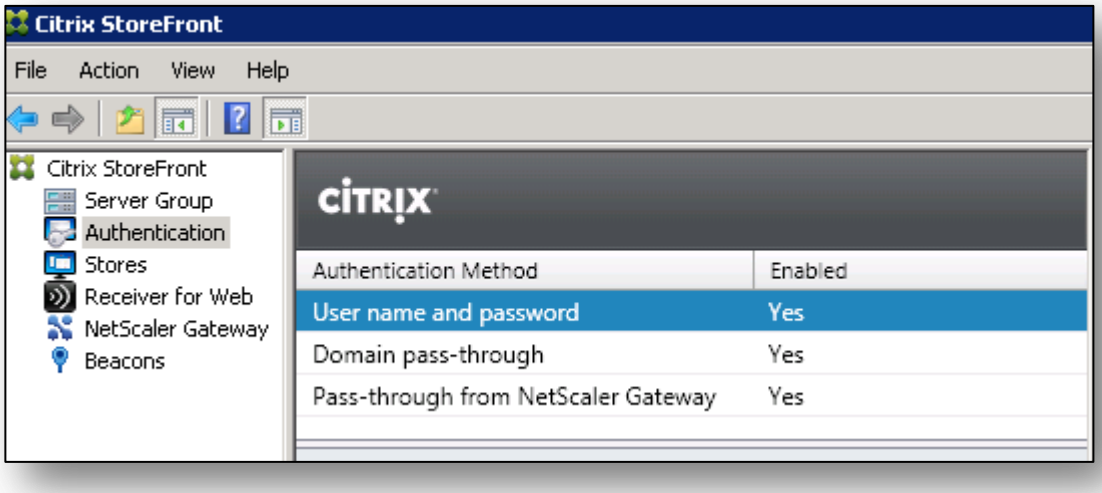
	
21	Click on **Authentication** Observe that the configuration wizard enabled acecss through NetScaler Gateway and explicit username/password.


Citrix StoreFront
File
Action
View
Help
Citrix StoreFront
Server Group
Authentication
Stores
Receiver for Web
NetScaler Gateway
Beacons
CITRIX
Authentication Method
Enabled
User name and password
Yes
Pass-through from NetScaler Gateway
Yes
Authentication Service
The authentication service collects user credentials once and grants access to all stores on this server.
Overview
Token validation service:
https://storefront.ccslab.n...
Number of enabled methods:
2
Status
Service using HTTPS.

Enable the Pass-Through Authentication Service

By default, during the initial configuration of StoreFront, only Explicit and NetScaler Access Gateway pass-through authentications are enabled. To allow users on the domain to pass-through their Windows credentials to Citrix Receiver, the Domain Pass-Through method must be enabled. This pass-through option only works with the desktop Receiver, not the Receiver for Web page. For Citrix Receiver to utilize single sign-on, it must be installed with the following parameter: CitrixReceiver.exe /includeSSON.

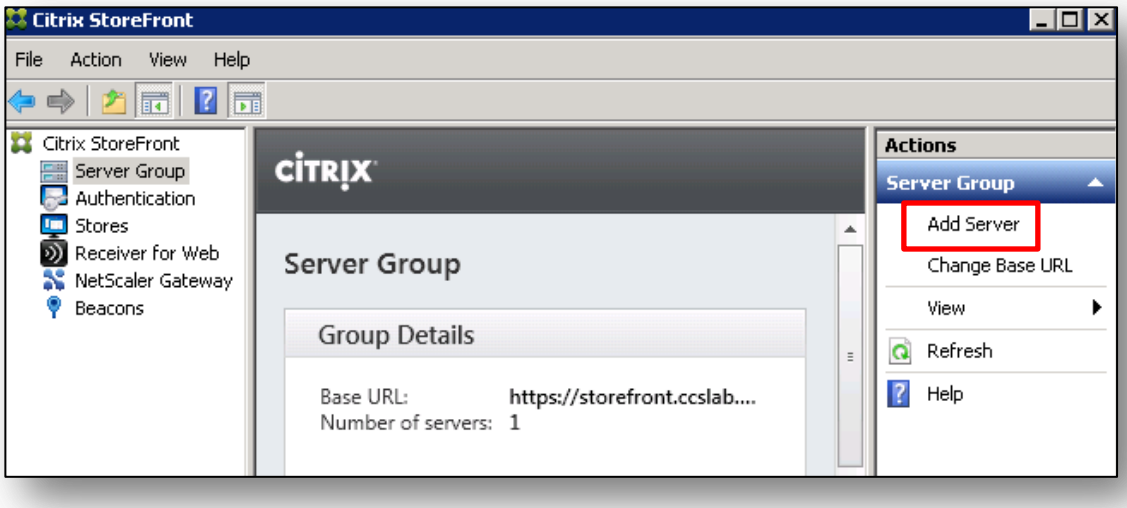
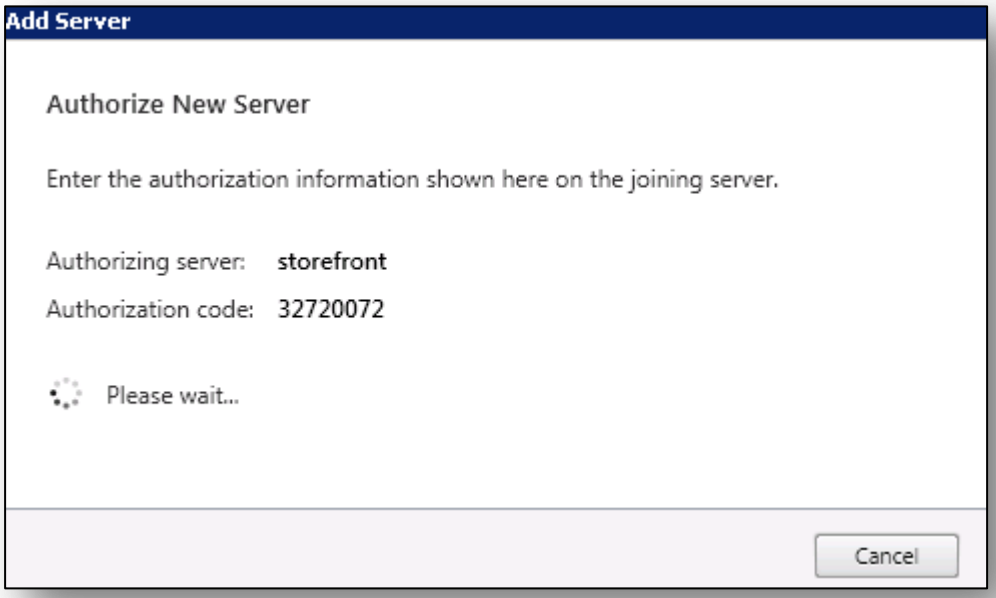
Initial Server Configuration	
	Screenshot
1	Select **Add/Remove Methods** 
2	Select **Domain pass-through** and then click **OK.**

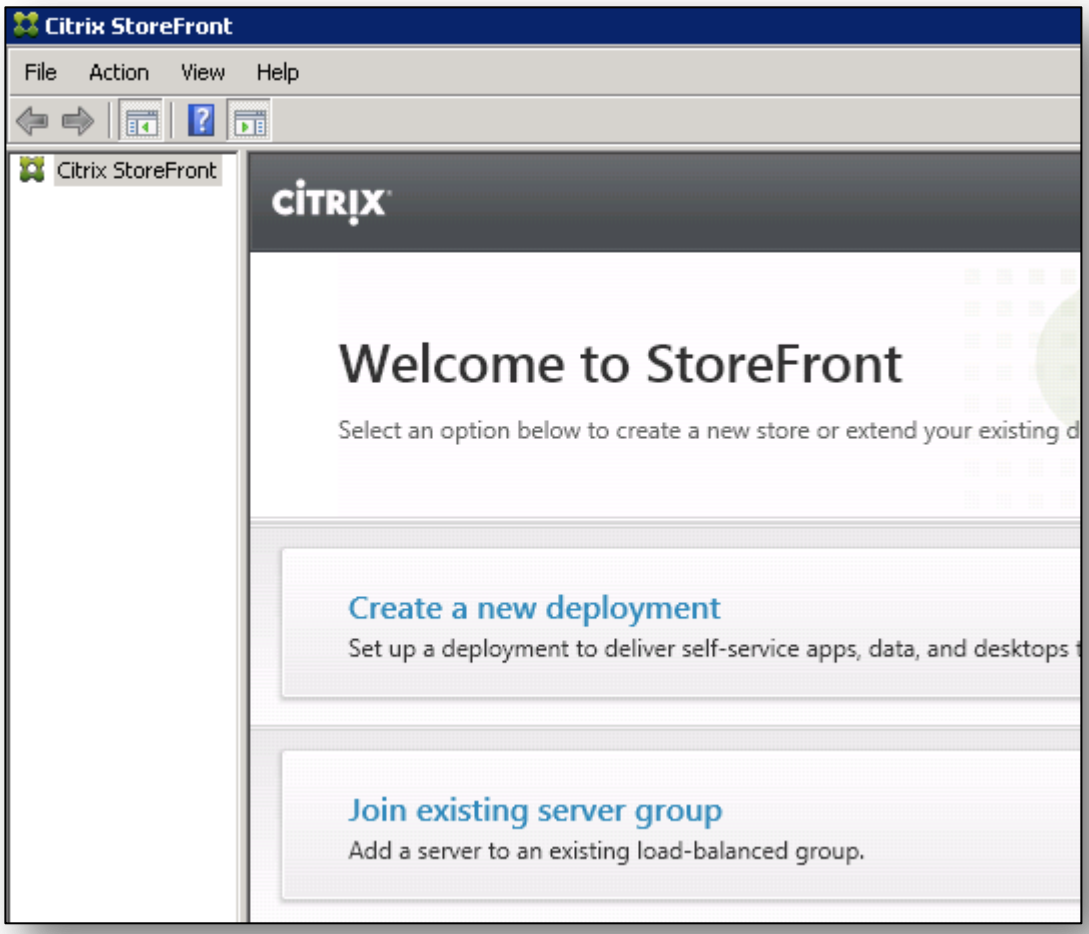
	
3	Domain pass-through authentication has now been enabled. 

Section 2: Configure Second Receiver StoreFront Server

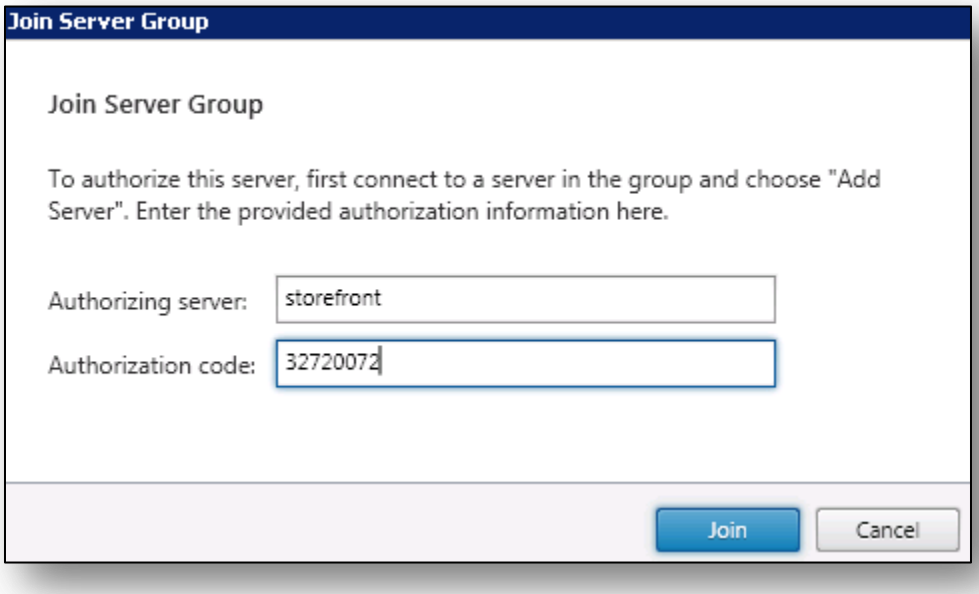
Once the first server has been configured, a second server should be added to the multi-server deployment.

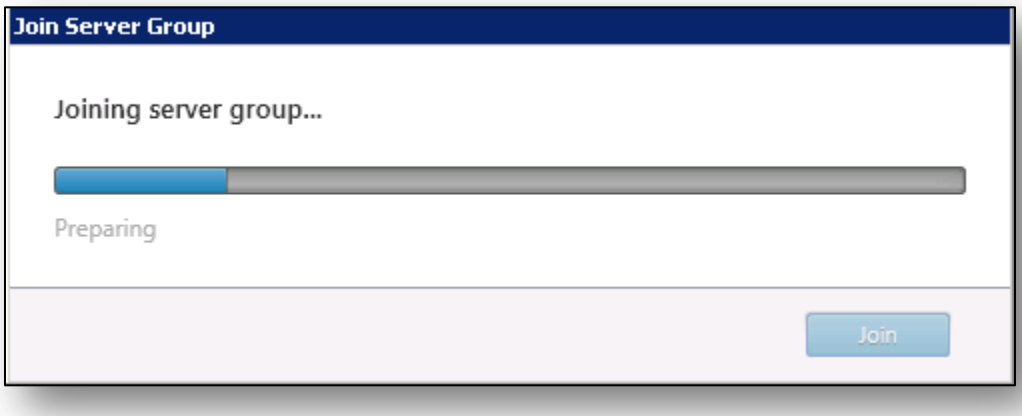
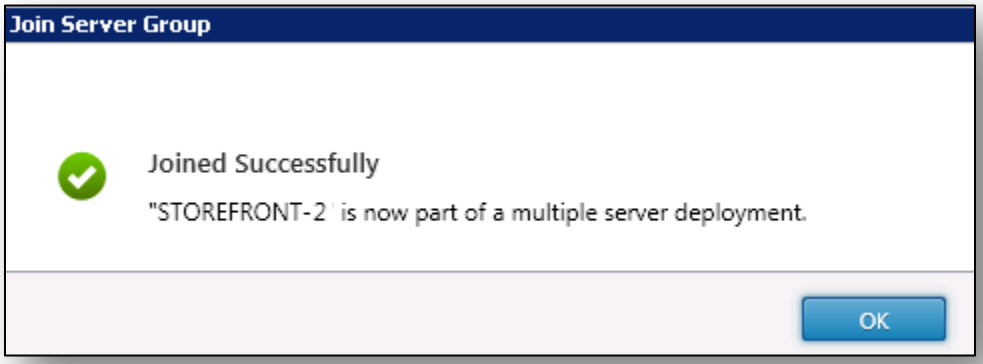
1	On the first server deployed select **Add Server** from the **Server Group** menu.

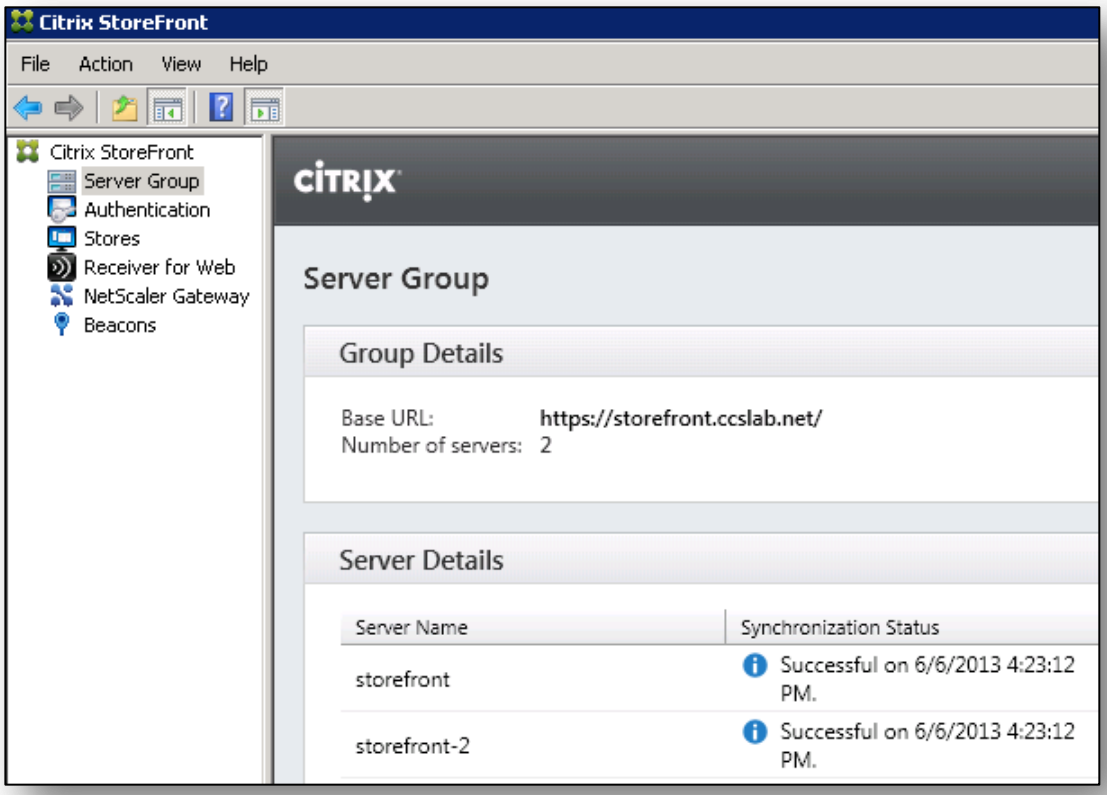
	
2	This server will now show an **Authorization code** that must be entered on the next server joined to the deployment. 
3	On the second server select **Join existing server group**


Citrix StoreFront
File Action View Help
Citrix StoreFront
CITRIX
Welcome to StoreFront
Select an option below to create a new store or extend your existing d
Create a new deployment
Set up a deployment to deliver self-service apps, data, and desktops
Join existing server group
Add a server to an existing load-balanced group.

4


Join Server Group
Join Server Group
To authorize this server, first connect to a server in the group and choose "Add Server". Enter the provided authorization information here.
Authorizing server:
storefront
Authorization code:
32720072
Join
Cancel

5	 Join Server Group Joining server group... Preparing Join
6	 Join Server Group Joined Successfully "STOREFRONT-2 ' is now part of a multiple server deployment. OK

7	

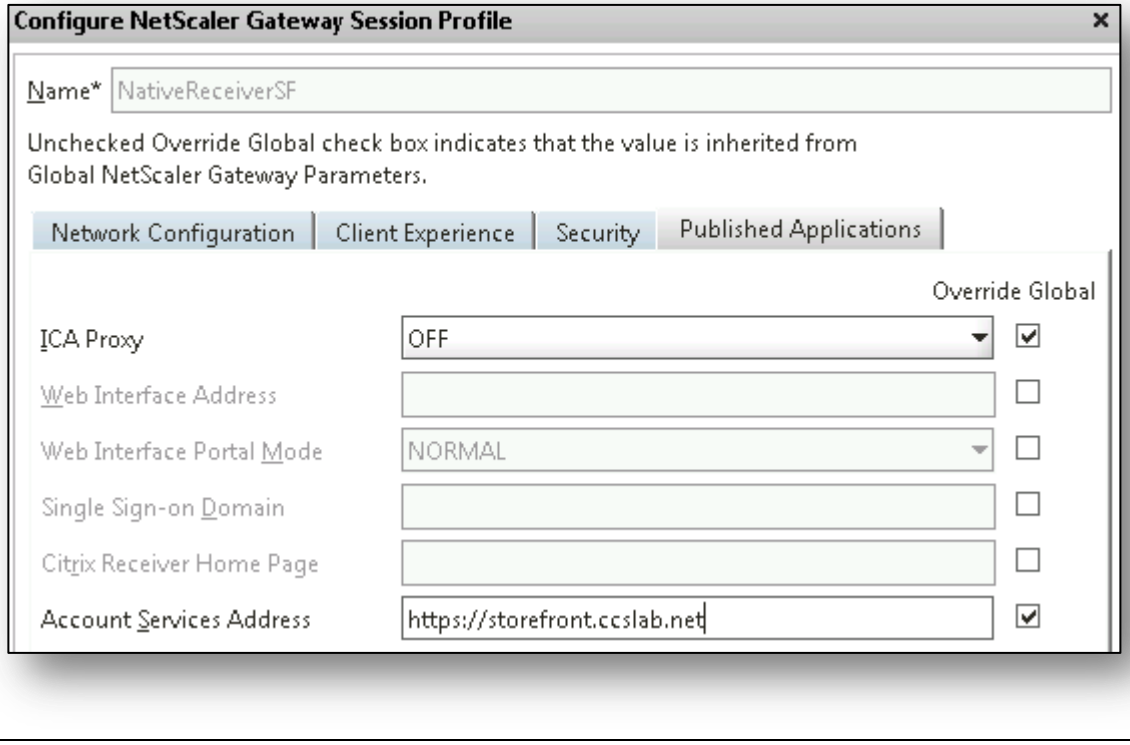
Citrix StoreFront
File Action View Help
Citrix StoreFront
Server Group
Authentication
Stores
Receiver for Web
NetScaler Gateway
Beacons
CITRIX
Server Group
Group Details
Base URL: https://storefront.ccslab.net/
Number of servers: 2
Server Details
Server Name
Synchronization Status
storefront
Successful on 6/6/2013 4:23:12 PM.
storefront-2
Successful on 6/6/2013 4:23:12 PM.

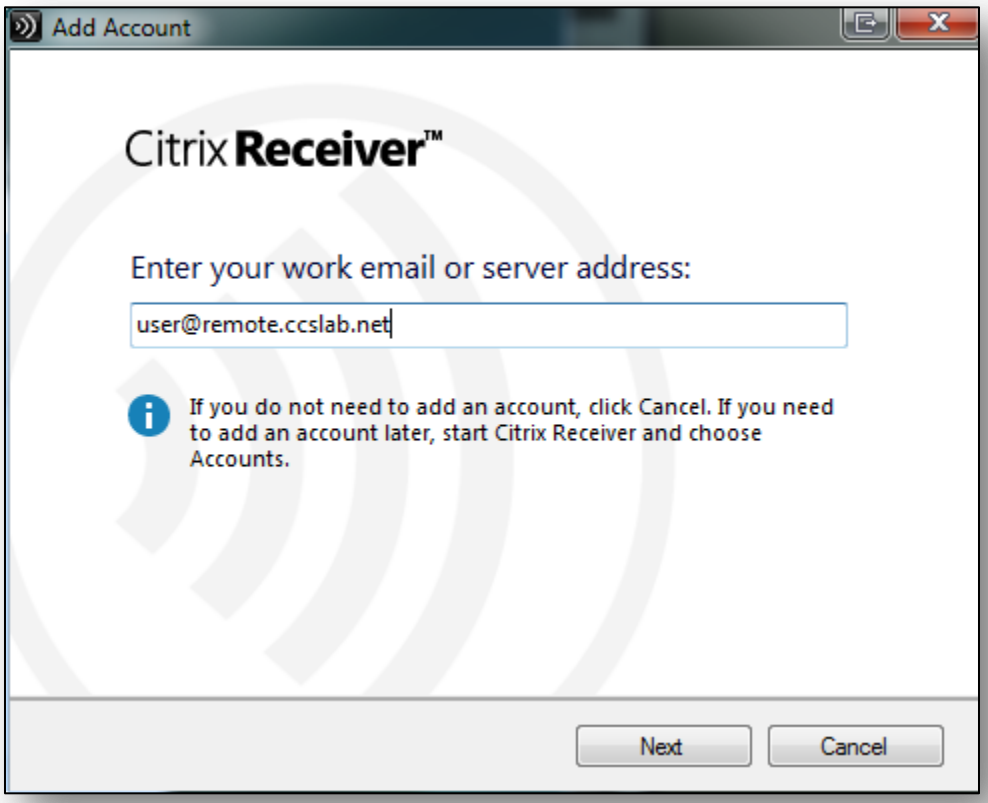
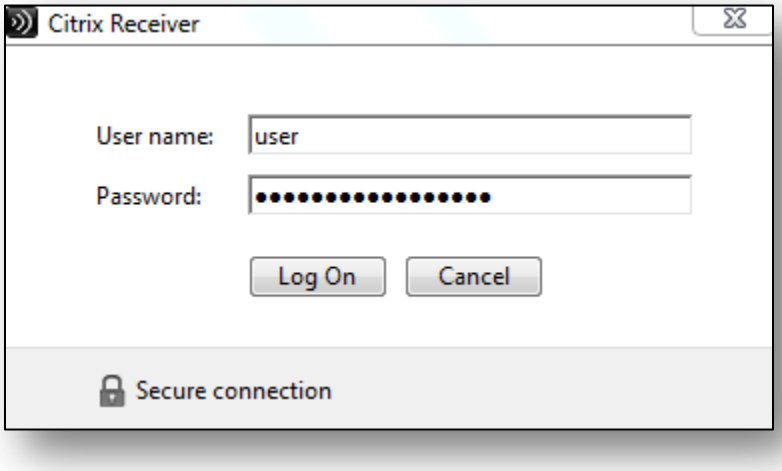
Section 3: Accessing Applications through Receiver

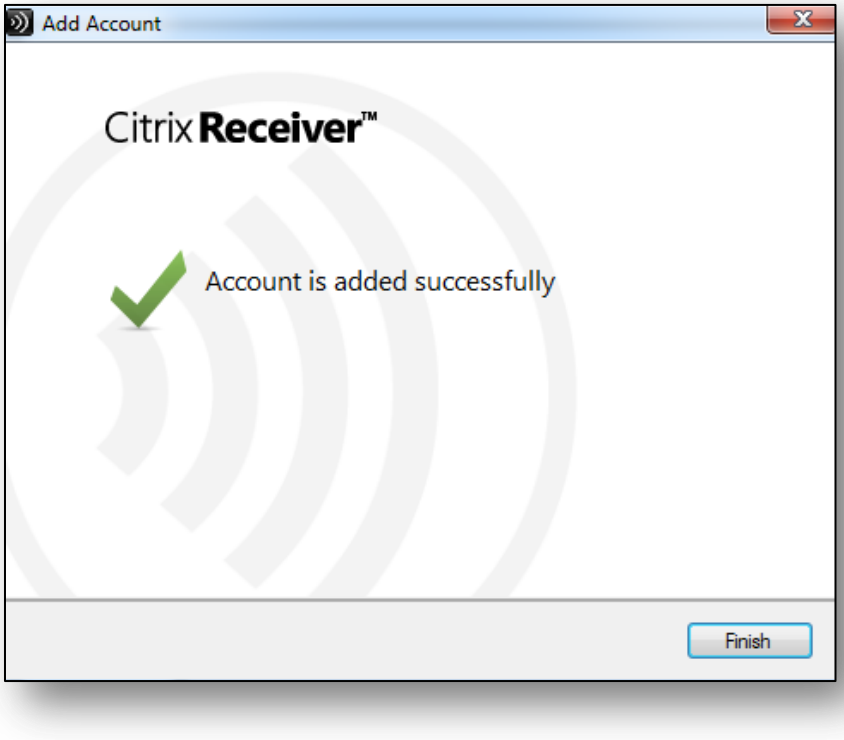
To simplify the Receiver provisioning process, StoreFront has introduced an auto-discovery service called Account Services. Available beginning with Receiver 3.3 Standard for Windows (Mac 11.6, iOS 5.6, Android 3.1), this feature allows Receiver to automatically provision a user for internal and remote access. This service eliminates the need for users to download Provisioning files and manually import them into Receiver.

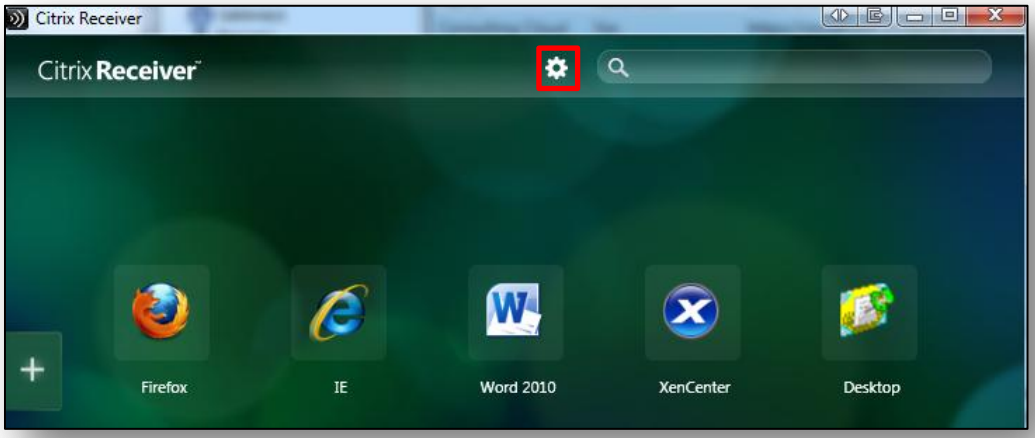
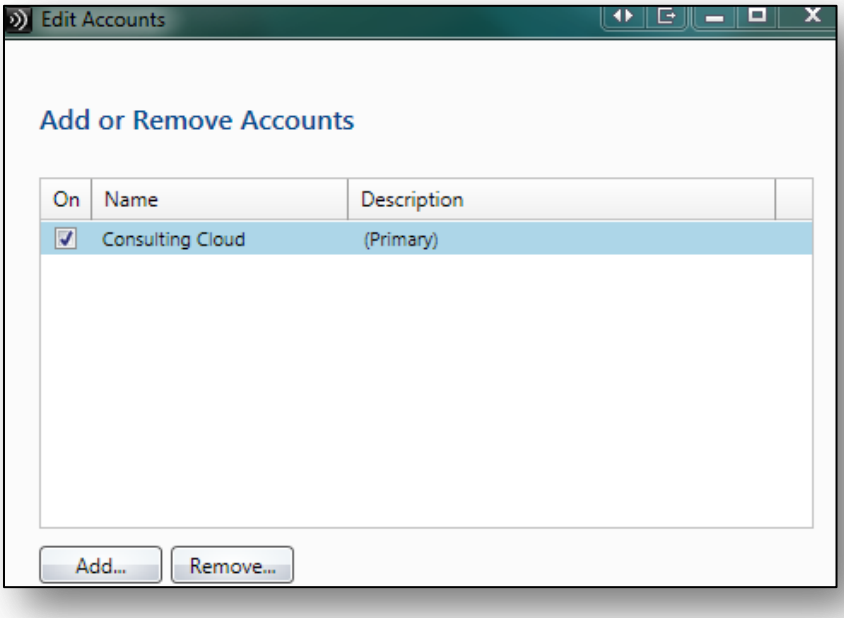
To allow users outside the corporate network to provision Receiver, NetScaler 10 build 69.4.nc and higher now includes a new entry in the session policy profile where the StoreFront Account Services URL is specified. The following steps walk through the process of a user provisioning their account inside Receiver through NetScaler Gateway.

1	Configure the Account Services Address on the NetScaler Gateway Session Profile



2	
3	
4	Click **Yes**

	
5	Click **Finish** 
6	Receiver will now display the subscribed resources. Applications and desktops are now

	ready to be launched Click the **Settings** icon 
7	Stores can be added and removed from this menu 

Receiver for Web

In addition to accessing StoreFront Stores within Citrix Receiver Standard, users can also access applications and desktops through a web page. The Receiver for Web site allows users to easily connect to their resources on devices that might not have Citrix Receiver installed. It supports launching applications with the full Receiver, Receiver Web Plug-in, or HTML5 client. This gives users the flexibility to access resources on devices on which that they do not have permission to install the full Receiver. Receiver for Web also separates applications and desktops and into tabs, with all desktops available to the user automatically appearing on the desktop page. It also provides user driven desktop restarts functionality for XenDesktop resources.

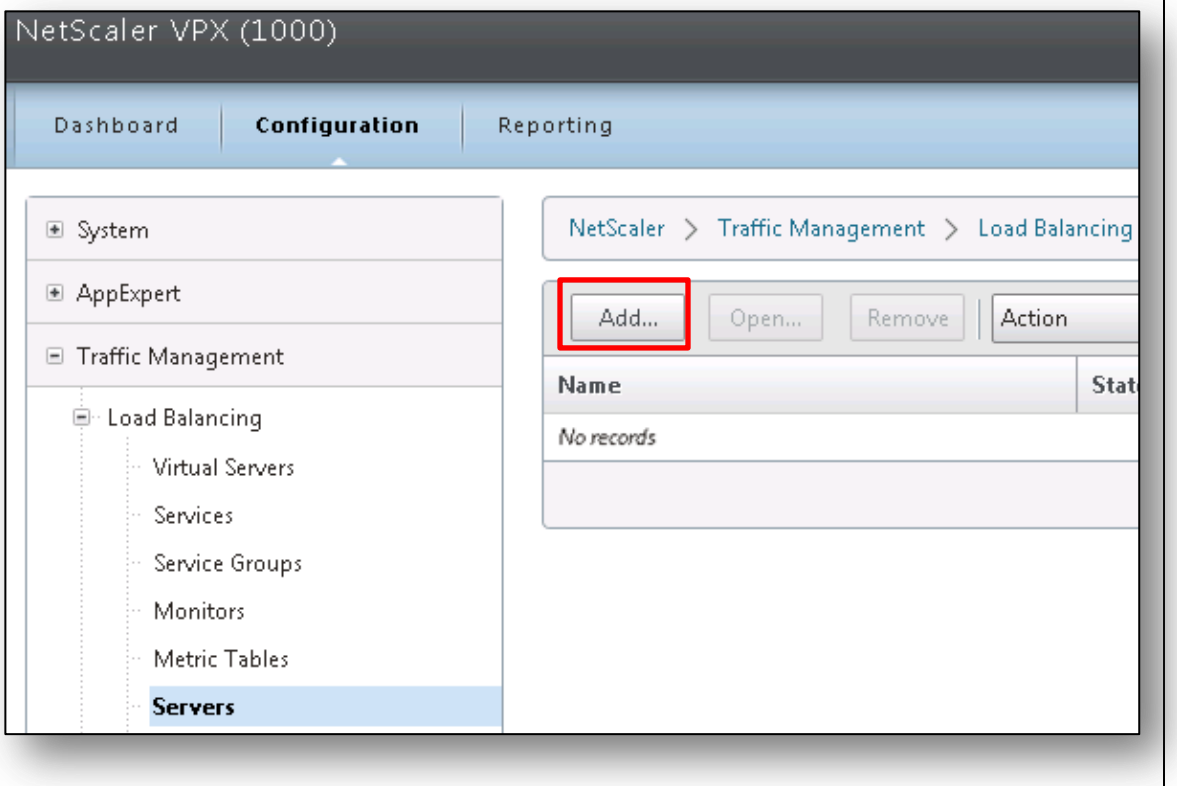
Figure2: Apps View

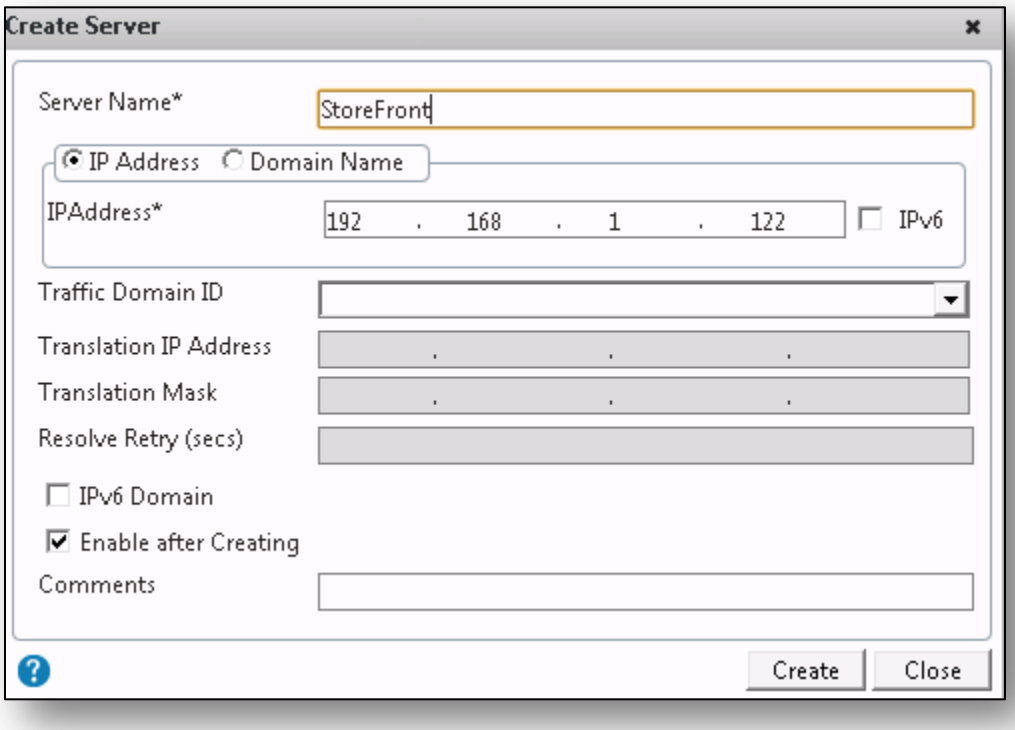
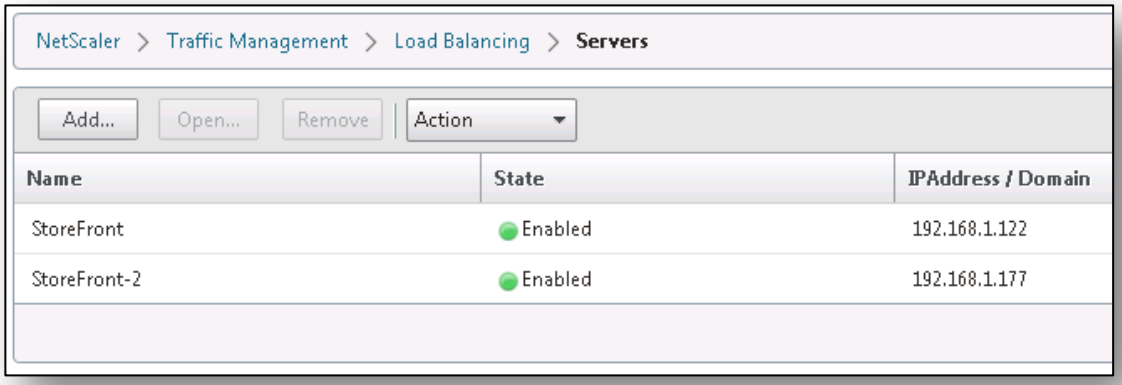
Figure 3: Desktops View

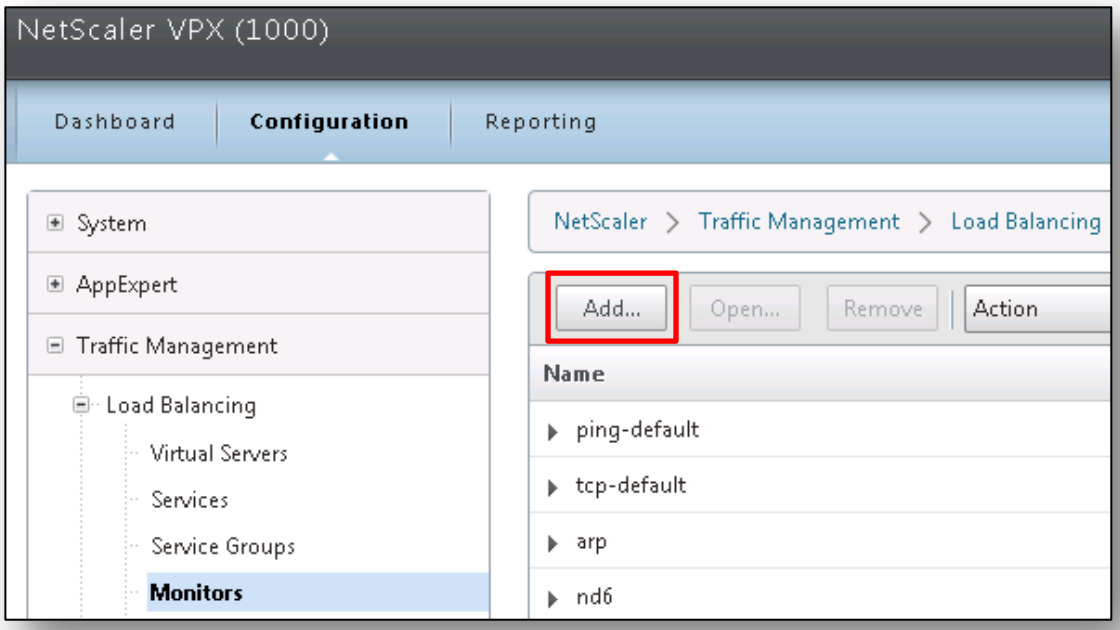
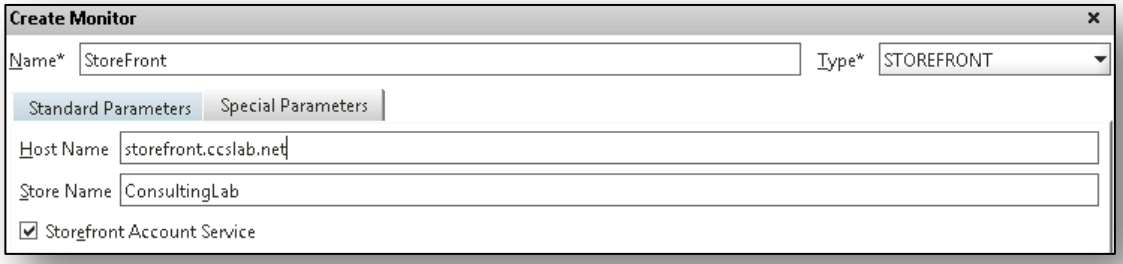
Section 4: NetScaler Load Balancing Configuration

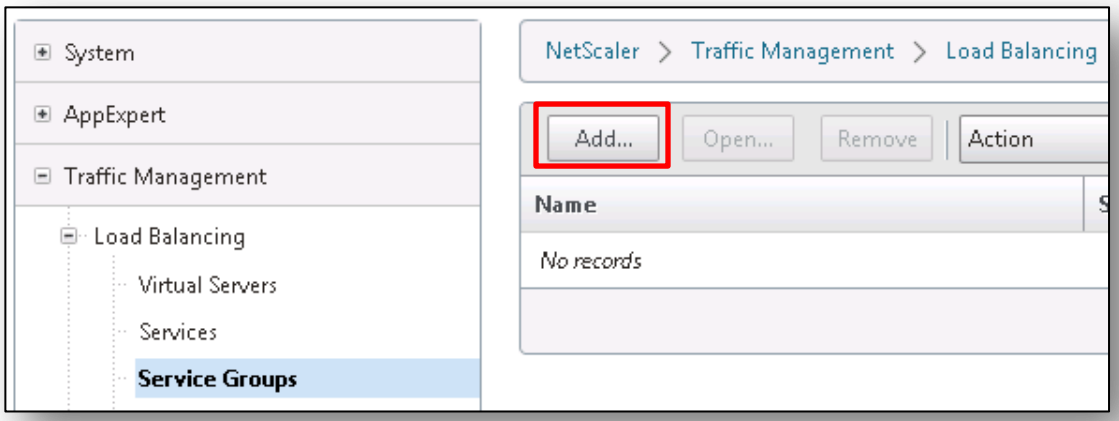
This section will give an overview of the steps necessary to configure a NetScaler to load balance StoreFront. NetScaler 10.1 includes a new health monitor designed to intelligently monitor StoreFront. This allows NetScaler to provide a high level of reliability to the deployment.

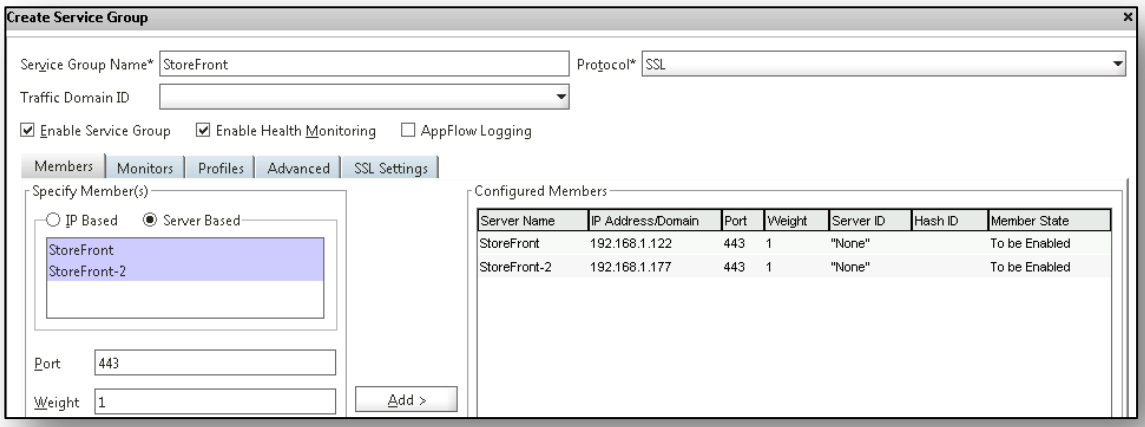
1	From the Load Balancing menu, select **Servers** Select **Add**

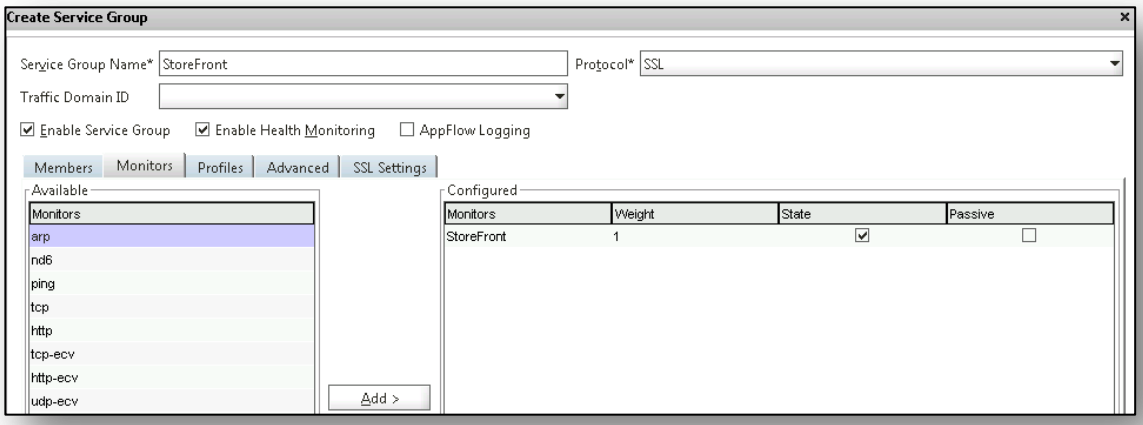
	
2	Choose a name and enter in the IP Address for both StoreFront servers Select **Create** after each server is entered

	
3	Both StoreFront servers are now listed 
4	From the Load Banacing menu, choose **Monitors** Select **Add**

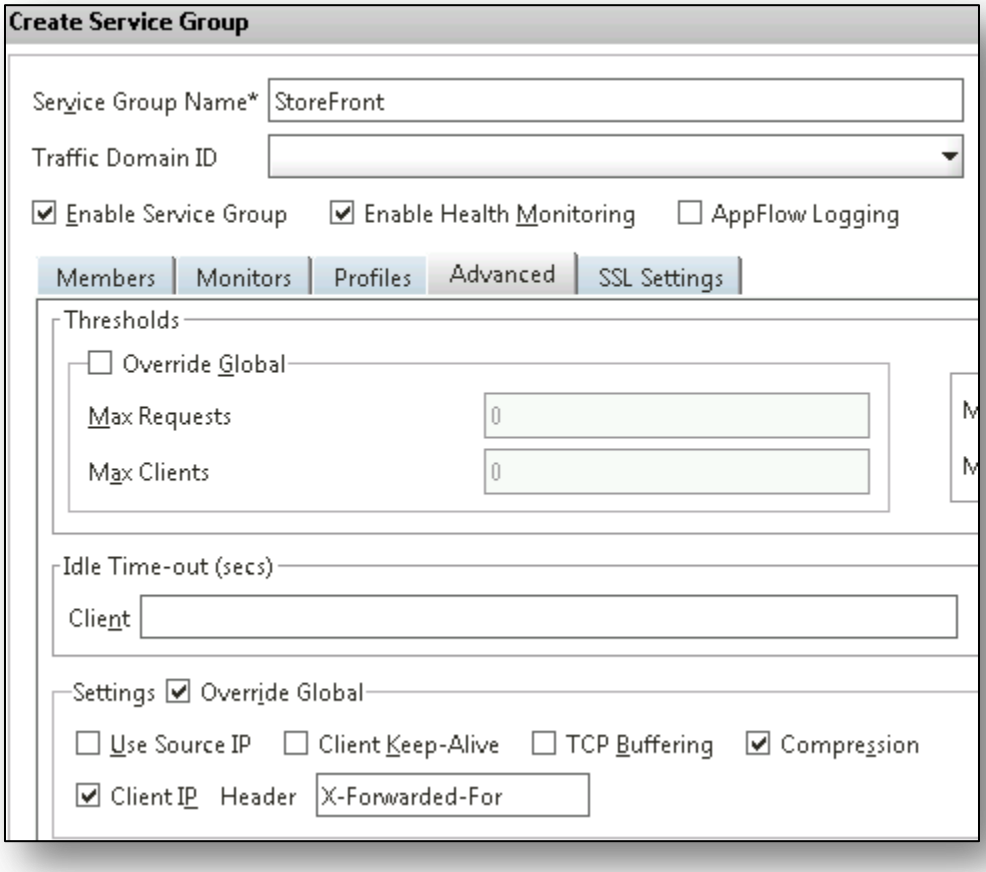
	
5	Choose a name for the Monitor and select **StoreFront** as the **Type** Leave the Standard Parameters settings default and choose the **Special Parameters** tab Enter in the **Hostname** used for the StoreFront group along with the **Store Name** Check **StoreFront Account Services** Click **Create** 
6	Choose Service Groups from the Load Balancing menu Creating a Service Group allows a single health monitor to be attached to both servers Select **Add**



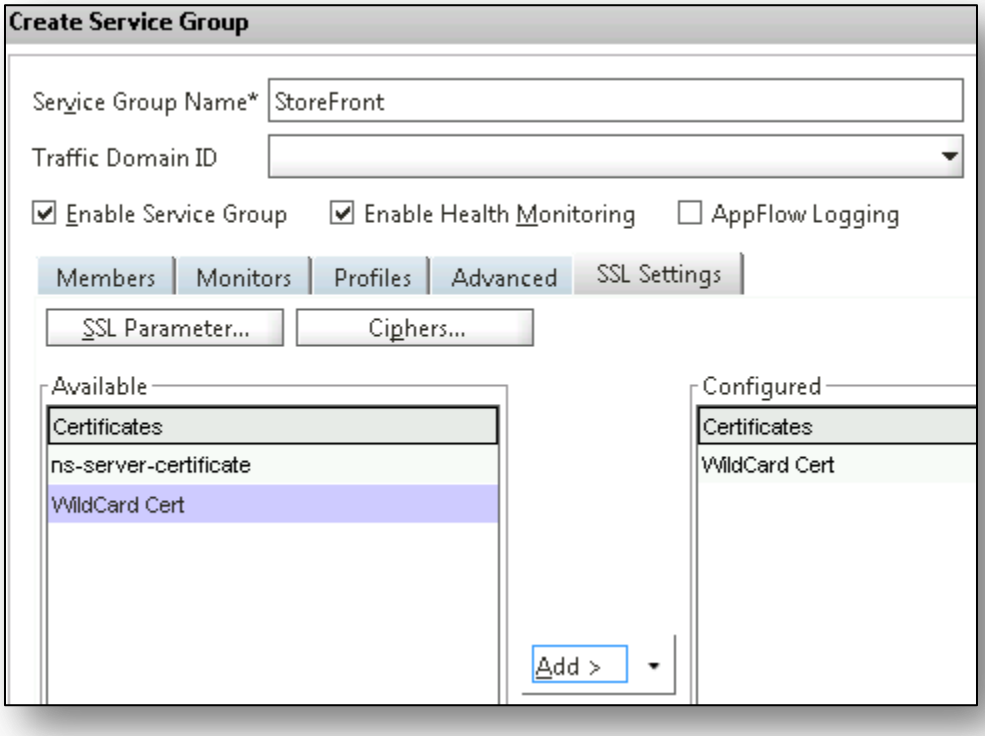
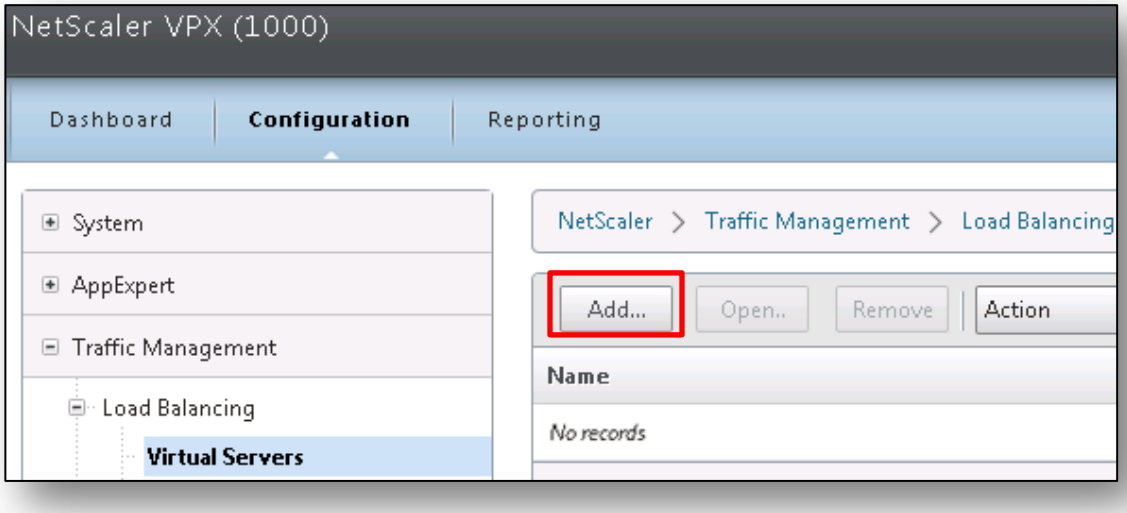
7	Enter in a **Service Group Name**. Choose **SSL** for the **Protocol** Select the two StoreFront servers and enter **443** as the Port and then click **Add** 
8	Select the **Monitors** tab and choose the previously creted StoreFront monitor and click **Add**. It will then appear as a configured monitor

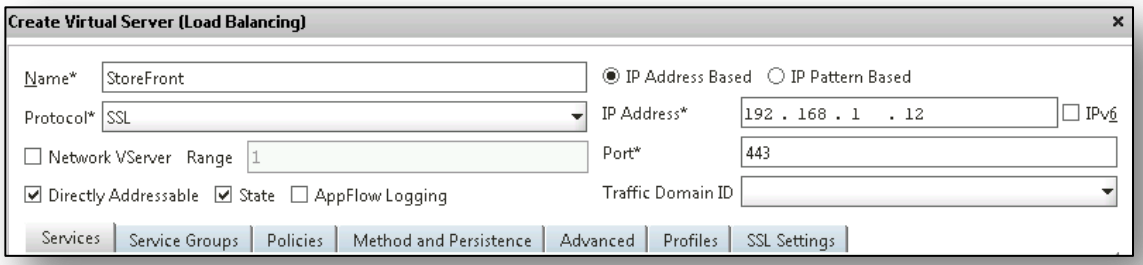


9	Choose the **Advanaced** tab Click **Override Global,** uncheck **Use Source IP** Click Client IP Header and enter in **X-Forwarded-For**

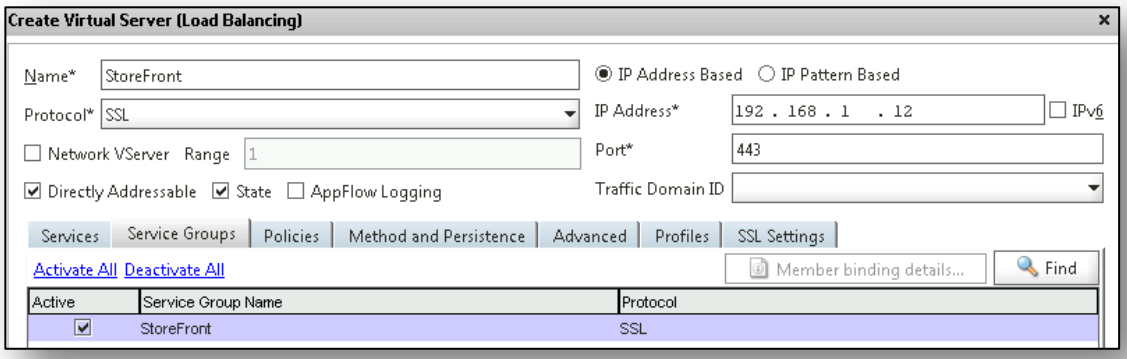


10	Choose the **SSL Settings** tab Select the SSL certicate for the StoreFront servers and click **Add**

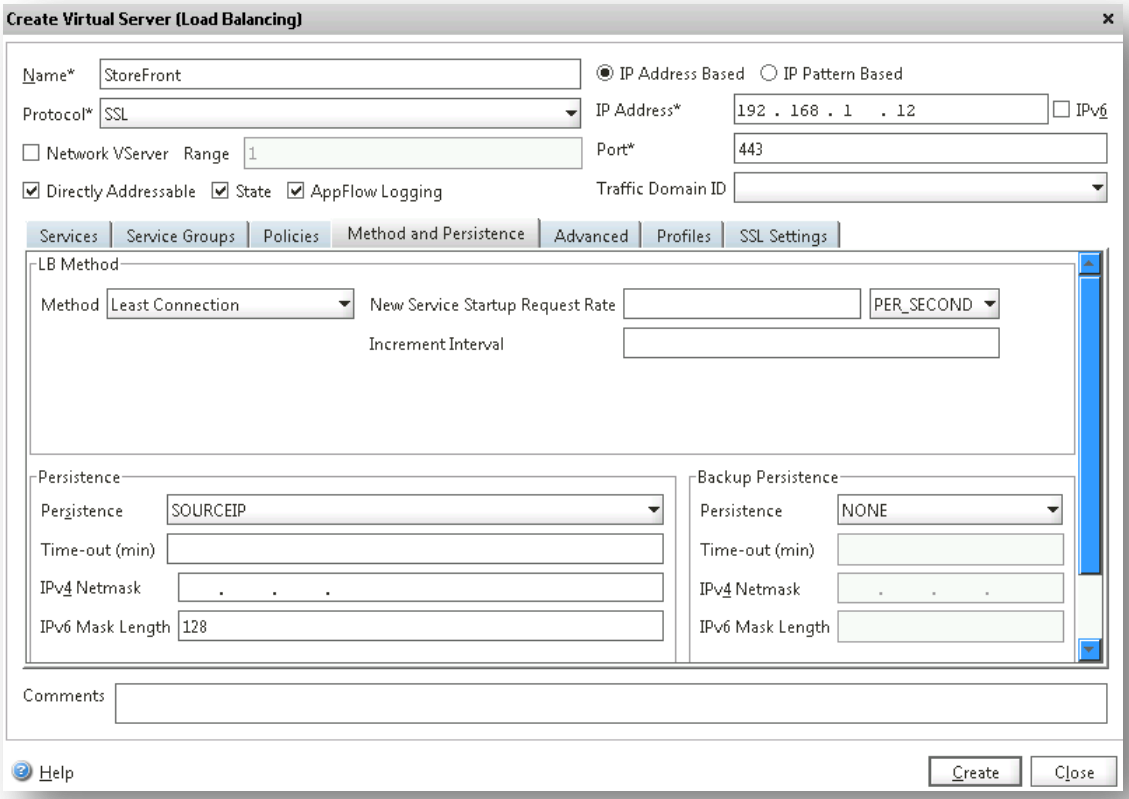
	Click **Create** 
11	Select **Virtual Servers** from the Load Balancing menu. Select **Add** 
12	Enter a **Name** and **IP Address** for the Virtual Server Choose **SSL** for the **Protocol**



13 Choose the **Service Groups** tab
Choose the previously created **StoreFront** Service Group



14 Choose the **Method and Persistence** tab
Select **SOURCEIP** as the **Persistence**

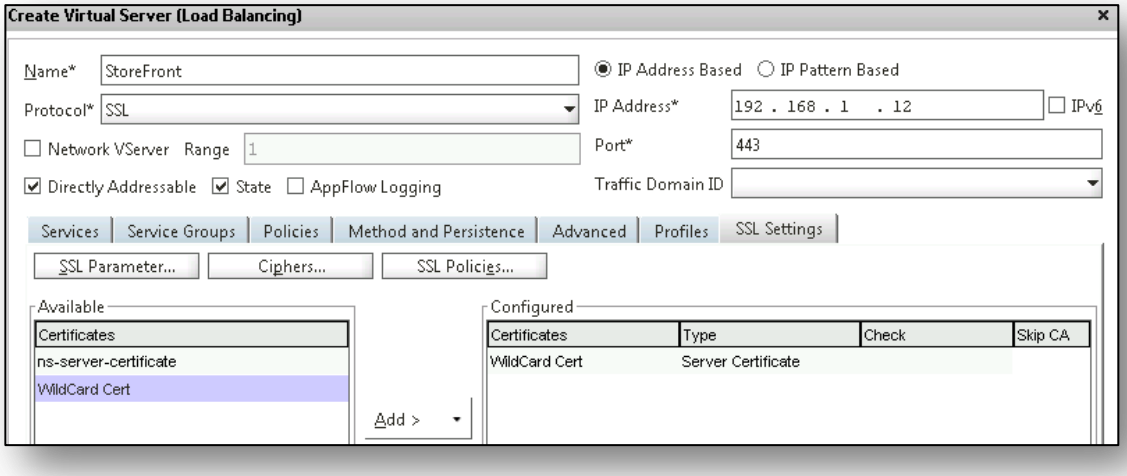


15

Choose the **SSL Settings** tab

Select the SSL certificiate and click **Add**

Click **Create**



Section 5: NetScaler Gateway for Remote Access

To provide remote access for users located outside the corporate network, it is recommended that StoreFront be deployed in conjunction with NetScaler Gateway, formally known as Access Gateway. NetScaler Gateway acts as a reverse proxy, tunneling all Citrix HDX traffic over SSL. Remote users have the option of accessing their resources from either the locally installed Citrix Receiver or via the Receiver for Web site. For an optimal deployment that allows users to easily connect from inside and outside the organization, it is recommended that the Account Services feature be implemented. This feature will allow users to seamlessly configure their locally installed Receiver for external access through NetScaler Gateway. This feature essentially automates the process of downloading and importing a Provisioning file.

A Provisioning file is a XML file that includes the necessary information to allow Receiver to decide whether it should connect directly to StoreFront or through NetScaler Gateway. This decision is made by using the beacon addressees included in the file. If Receiver is able to resolve the internal Beacon address, it will connect directly to StoreFront. By default, the internal Beacon address is set to the load balancing hostname for the StoreFront servers, although this can be changed in the Beacons menu inside StoreFront. For more information on configuring the Receiver Provisioning file, please reference Citrix eDocs.

Session Policies

To direct remote users to the optimal location, multiple session policies should be created on NetScaler Gateway. Using HTTP headers, the NetScaler is able to detect if the connection is being made from a web browser or directly from inside Receiver. Below is an example of the session policies required for Native Receiver and Receive for Web access.

Priority	Policy Name	Expression	Profile
10	Native Receiver	REQ.HTTP.HEADER User-Agent CONTAINS CitrixReceiver && REQ.HTTP.HEADER X-Citrix-Gateway EXISTS	Native Receiver
20	Receiver for Web	ns_true	Receiver for Web

Profile Name	Settings
Native Receiver	ICA Proxy: On |Clientless Access: On |Account Services URL: StoreFront Server FQDN | WebInterface URL: StoreFront Server FQDN| SSO Domain
Receiver for Web	ICA Proxy: On | WebInterface URL: StoreFront Receiver for Web page | SSO Domain

To function correctly, Citrix Receiver requires that the StoreFront Services traffic not be rewritten, as would normally be the case when NetScaler Gateway is operating in Clientless Access (CVPN) mode. To disable rewriting, it is necessary to define a custom rewrite policy for Clientless mode. Under the Clientless Session Policies tab, a new policy should be created and binded. The URL Rewite policy should be set to ns_cvpn_default_inet_url_label and the expression set to true.

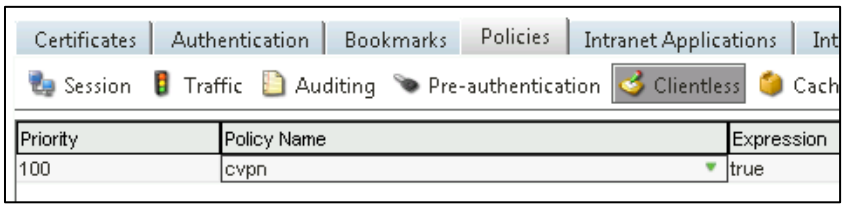


Figure 4. Clientless Access Policy

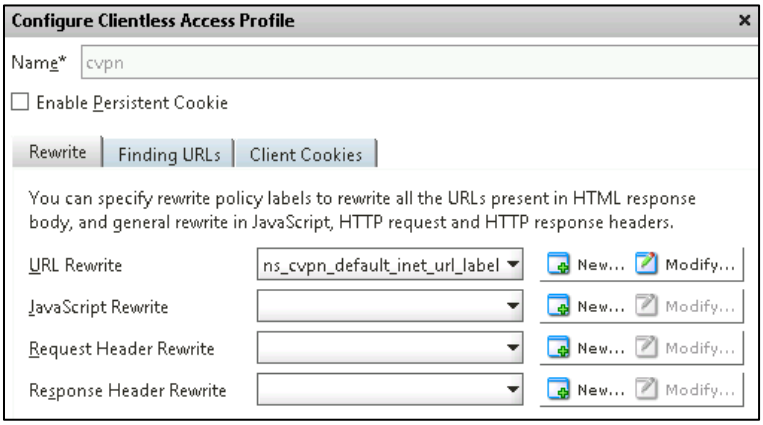


Figure 5. Clientless Access Profile

HTML5 Receiver Client

StoreFront 2.0 is packaged with a native HTML5 Citrix Receiver client that can be used as a fallback client if the native Receiver is not installed. Receiver for HTML5 allows connections to through a browser without having to install any software on the endpoint. The Java client, which was previously used as the fallback option with Web Interface is no longer supported with StoreFront. The HTML5 client can be enabled during the initial StoreFront configuration or afterwards on the Receiver for Web section of the administration console. Administrators have the option of configuring the HTML Receiver the primary client for all users or configuring it as a fallback if the native Receiver is not installed. The only exception to the configured options is ChromeOS which always will use the HTML5 client. Before deploying the HTML5 client, please verify your environment against Citrix eDocs for a list the prerequisites that must be in place.

Conclusion

Citrix Consulting currently recommends StoreFront be implemented in a phased approach beginning with pilot environment for mobile users. This user group will see the greatest benefit from having a seamless experience between devices regardless of their location. The pilot environment should deliver resources from the production XenDesktop & XenApp deployments. Additionally, StoreFront should be deployed in parallel to the existing Web Interface environment on a separate Windows server instance. This will ensure a smooth transition while not disturbing any user groups that are utilizing Web Interface.

Acknowledgments

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Revision History

Revision	Change Description	Updated By	Date

1.0	Initial Document	Citrix Consulting Solutions	March 27, 2012
1.2	Document Update	Citrix Consulting Solutions	April 12, 2012
1.3	Document Update	Citrix Consulting Solutions	July 31, 2012
1.4	Document Update	Citrix Consulting Solutions	June 28 , 2013
1.5	Document Update	Citrix Consulting Solutions	August 15, 2013

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