StoreFront 3.5

Jan 05, 2017

About StoreFront 3.5

Fixed issues
Known issues

System requirements

Plan your StoreFront deployment

User access options
User authentication
Optimize the user experience
StoreFront high availability and multi-site configuration

Install, set up, upgrade, and uninstall

Create a new deployment
Join an existing server group

Migrate Web Interface features to StoreFront

Configure server groups

Configure authentication and delegation

Configure the authentication service
XML service-based authentication
Configure Kerberos constrained delegation for XenApp 6.5
Configure smart card authentication
Configure the password expiry notification period

Configure and manage stores

Create or remove a store
Create an unauthenticated store
Export store provisioning files for users
Advertise and hide stores to users
Manage the resources made available in stores
Manage a Citrix Receiver for a Web site

Create a Citrix Receiver for Web site
Configure Citrix Receiver for Web sites
Support for the unified Citrix Receiver experience
Create and manage featured apps
Configure workspace control
Configure Citrix Receiver for HTML5 use of browser tabs
Configure communication time-out duration and retry attempts

Configure user access

Configure high availability for stores

Integrate with NetScaler and NetScaler Gateway

Add a NetScaler Gateway connection
Configure NetScaler Gateway connection settings
Load balancing with NetScaler
Configure NetScaler and StoreFront for Delegated Forms Authentication (DFA)
Configure beacon points

Advanced configurations

Configure Desktop Appliance sites
Configure authentication for XenApp Services URLs
Create a single Fully Qualified Domain Name (FQDN) to access a store internally and externally
Configure Resource Filtering

Configure using configuration files

Configure StoreFront using the configuration files
Configure Citrix Receiver for Web sites using the configuration files

Secure your StoreFront deployment
About StoreFront 3.5

Feb 24, 2016

StoreFront manages the delivery of desktops and applications from XenApp, XenDesktop and XenMobile servers in the datacenter to users' devices. StoreFront enumerates and aggregates available desktops and applications into stores. Users access StoreFront stores through Citrix Receiver directly or by browsing to a Citrix Receiver for Web or Desktop Appliance site. Users can also access StoreFront using thin clients and other end-user-compatible devices through XenApp Services site.

StoreFront keeps a record of each user's applications and automatically updates their devices, ensuring users have a consistent experience as they roam between their smartphones, tablets, laptops, and desktop computers. StoreFront is an integral component of XenApp 7.x and XenDesktop 7.x but can be used with several versions of XenApp and XenDesktop.

What's new in the StoreFront 3.5

StoreFront includes the following new features and enhancements.

**Updated StoreFront management console** - The StoreFront management console contains a significant number of changes, which enable:

- Store-centric console architecture - Authentication and Citrix Receiver for Web settings are organized around stores to simplify navigation for multi-store deployment.
- Different authentication settings for different stores.
- Configuring delegation of authentication to XenApp or XenDesktop farms or sites.
- Configuring multi-site high availability.
- Configuring optimal NetScaler Gateway routing.
- Setting a Receiver for Web site as the default site in IIS.
- Configuring many other settings previously done with web.config.

**New administration PowerShell SDK:**

- Cmdlets in the new SDK are prefixed with STF and focus on administration tasks grouped around StoreFront deployment-wide configuration, stores, authentication, and Citrix Receiver for Web.
- Citrix provides high-level example scripts to enable you to script and automate StoreFront deployments quickly and easily.

The existing cmdlets prefixed with DS are deprecated. They are still available and supported in StoreFront 3.5 to enable a gradual transition to the new SDK.

**Configuration export and import:**

You can export the entire configuration of a StoreFront deployment. You can import the exported configuration to a deployment with the same StoreFront version for restoration or replication.

**Self-service password reset (SSPR):**

Users can unlock their Active Directory accounts or reset their passwords using StoreFront. This requires XenApp 6.5.

**Zone-based optimal gateway routing:**
XenApp 7.7 and 7.8 and XenDesktop 7.7 and 7.8 support applications or desktops from different zones in a single site. You can configure a different NetScaler Gateway for HDX connections to applications or desktops from a different zone.

**Global Server Load Balancing (GSLB) powered zone preference:**

You can configure GSLB in NetScaler 11.0-65.x and above to supply zone preference information to StoreFront. Along with this feature, you can configure StoreFront to direct the startrequests to the most preferred XenApp or XenDesktop farms or sites for the user location.

**Background Server Health Check:**

StoreFront runs periodic health checks on each XenApp and XenDesktop broker to reduce the impact of intermittent server availability. You can control the frequency of the health check.

**TLS 1.2 support**

This StoreFront release supports TLS 1.2.
Fixed issues

Jun 21, 2016

Cannot use an ampersand (&) in a featured app group title

If you include an ampersand (&) in a featured app group title when using Manage Featured App Groups to define the featured app group, an error might occur and the app group does not display. Workaround: Do not include an & in featured app group titles. [#603366]

Linux with Firefox does not auto launch the desktop session on Storefront 3.0.

AutoLaunch fails to use the native Citrix receiver. The session will always fall back to using the Citrix Receiver for HTML 5. [#70504789]

Site aggregation might cause multiple launched of an app.

When you click to launch a second or subsequent application, one or more instances of the first application you started can launch. The issue occurs when using a version of Citrix Receiver other than Citrix Receiver for Web when multiple-site aggregation is configured. An additional instance of the first application launches from each aggregated site. [#LC4278, 613665]

Japanese translation inconsistencies.

This fix addresses inconsistencies in the Japanese translation of the term “Classic” in the Management Console user interface. [#LC3607, 592459]
Known issues

Apr 25, 2016
The following issues are known to exist in this release.

Warning
Editing the registry incorrectly can cause serious problems that may require you to reinstall your operating system. Citrix cannot guarantee that problems resulting from the incorrect use of Registry Editor can be solved.
Use Registry Editor at your own risk. Be sure to back up the registry before you edit it.

HTTP Basic authentication and domains
When using HTTP Basic authentication, users must be on the same domain as StoreFront. If not, the two domains must have mutual Active Directory trust. If this is not the case, users are unable to authenticate to StoreFront. The management console allows configuring HTTP Basic with XML Service-based authentication, which might result in the user domain being different from the StoreFront domain and without Active Directory trust between the two domains.

Workaround:
To use HTTP Basic, ensure that users are on the same domain as the StoreFront hosting domain or establish a two-way trust between the two domains. [#627329]

Incorrect Auto launch desktop value returned
The value of Auto launch desktop, which is configurable from the StoreFront management console under Manage Receiver for Web Sites > Configure > Client Interface Settings might not represent the true value of this property. This value can be reliably configured from the management console, but any subsequent configuration changes performed on the Client Interface Settings page might overwrite your intended setting. [#6062623]

Workaround:
1. Set the desired value of Auto launch desktop and apply those changes.
2. If you make any configuration changes on the Client Interface Settings page in the future, confirm that the value of Auto launch desktop is the value you want and click Apply.

Navigation issue when using the NetScaler Gateway creation wizard in the StoreFront management console
You might have an issue when you are using the Managing NetScaler Gateways wizard from the management console Actions pane to Add a NetScaler Gateway appliance. If you choose a Logon type of Security token, SMS Authentication, or Smart card on the Authentication Settings page, and then click Back twice to return to the General Settings page, the Next button on the General Setting page is unavailable. [#622521]

Workaround:
1. Launch the Managing NetScaler Gateways wizard again and enter the valid values on each page.
2. To navigate back to the General Settings page from Authentication Settings page, ensure you have selected Logon type as Domain or Domain or Security token.
3. After returning to the General Settings page and making your changes, you can navigate forward to the Authentication Settings page and select the desired logon type before clicking Create.

Users cannot log on to Citrix Receiver for Web if a custom authentication form contains an element with ID confirmBtn
Users are unable to log on to Citrix Receiver for Web if a StoreFront authentication extension generates a custom authentication form containing an element with ID confirmBtn. Workaround: The authentication extension should use a different ID value in the custom form. [#603196]

Reconnection of applications fails when using the Edge browser
When using a Windows 10 client with the Edge browser, the following functions might not work:
- Auto reconnect applications.
- Manual reconnect to applications through the Connect menu option (visible if the administrator enables it in the configuration).

Workaround: Use a different browser. [#595065]

When using a Windows 10 client with the Edge browser, you cannot auto reconnect disconnected applications. Workaround: Use a different browser. [#595065]

Removal of .dll files
These dlls were included in previous versions of StoreFront to configure Gateways but are not provided in this release. Workaround: Update your old scripts to remove these dlls. [#592677]


Using Citrix Receiver for Web within an iframe
Citrix Receiver for Web does not support Internet Explorer 7 and using iframes on an intranet site causes Internet Explorer to switch to the Internet Explorer 7 document mode by default (no X-UA-Compatible meta tag defined and compatibility mode set to always on for intranet sites). [#570682]

Workaround: Use the X-UA-Compatible meta tag:

\[
\text{<meta http-equiv="X-UA-Compatible" content="IE=10; IE=9; IE=8" />}
\]

Or

\[
\text{<meta http-equiv="X-UA-Compatible" content="IE=edge" />}
\]

Reconnecting apps in the chrome browser might fail
When using the Chrome browser and reconnecting to published applications from XenApp and XenDesktop servers, clicking Connect for the applications might only reconnect the first session when more than one session is being used. [S575364]

Workaround: Click Connect again to reconnect each additional session being used.

Activate Citrix ICA Client link might not work in non-English versions of Firefox

Some non-English versions of Firefox install the Addons Manager by default. You might not receive a response when clicking Activate the Citrix Client on the Activate the Citrix plug-in screen. There are three workarounds (the first being the preferred method) [A494376]

- Click the block-like icon in the address bar and choose an option for Allow <server> to run Citrix ICA Client.
- Remove or disable the Addons Manager.
  1. Click the menu button and choose Add-ons.
  2. The Addons Manager tab opens.
  3. In the Addons Manager tab, select Extensions and click Remove or Disable on the Addons Manager page.

Third-party ad blockers might prevent users of older versions of Chrome from seeing StoreFront logon dialog boxes

This prevents a store from being accessible to users. As a workaround, users can either disable ad-blocking software or add an exception for the desired service domain to the ad-blocking software's configuration. [#319305]

Citrix Receiver for Web sites may be slow to respond on Internet Explorer 8

Users running Internet Explorer 8 may find that Citrix Receiver for Web sites containing a large number of desktops and applications are slow to respond when browsing the store or entering search terms. [#274126]

Citrix Receiver for Linux accessing StoreFront deployed on Windows Server 2012 R2 affected by Certified Trust List (CTL) changes

Windows 2012 Server does not by default send a list of trusted CAs during the SSL handshake, resulting in the Linux client failing to provide a client certificate. The changes to Windows 2012 Server are documented at What's New in TLS/SSL (Schannel SSP).

Citrix Receiver for Windows clients will work if a CTL list is not sent to the client. For the Citrix Receiver for Linux client, it is necessary to enable the CTL list as described in the above link.

The following registry edit is required:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\SecurityProviders\SCHANNEL

Value name: SendTrustedIssuerList
Value type: REG_DWORD
Value data: 1 (True)

[# 460664]

Citrix Receiver for Web with Windows 10 Edge

Starting and application or desktop from Citrix Receiver for Web with the Windows 10 Edge browser might trigger a prompt to download and .ICA file. Workaround: Add Citrix Receiver for Web to the Trusted Sites list. For more information, see this Citrix Blog article: [A594927].

Apps in AppController

Apps published in AppController might not start. Workaround: Use the StoreFront PowerShell commands to manually create a store with an authentication service located at http://sfserver/Citrix/Authentication. [#A599292].

Configuration of Optimal HDX routing with old PowerShell cmdlet fails

When attempting to configure Optimal HDX routing with the old PowerShell cmdlet, the command fails. [#624040]

Workaround:

1. Configure a global gateway with the settings you want for Optimal HDX routing using the Add-DSGlobalV10Gateway command and provide default values for the authentication settings.
2. Use the Add-DSStoreOptimalGateway command to add the optimal gateway configuration.

Example:

Add-DSStoreOptimalGateway -SiteId 1 -VirtualPath /Citrix/Store1 -GatewayId 2eba0524-af40-421e-9c5f-a1ccca80715f -Farms @("Controller") -EnableOnDirectAccess True

Possible management console failure when configuring Optimal HDX routing

While using the StoreFront management console to configure Optimal HDX routing using a gateway that has been configured for HDX routing only, the management console might fail. [#624077]

Workaround:

1. Configure a NetScaler Gateway with the Authentication and HDX routing usage type and provide default values for the authentication settings.
2. Configure Optimal HDX routing using this new gateway.
System requirements

Feb 24, 2016

When planning your installation, Citrix recommends that you allow at least an additional 2 GB of RAM for StoreFront over and above the requirements of any other products installed on the server. The subscription store service requires a minimum of 5 MB disk space, plus approximately 8 MB for every 1000 application subscriptions. All other hardware specifications must meet the minimum requirements for the installed operating system.

Citrix has tested and provides support for StoreFront installations on the following platforms.

- Windows Server 2012 R2 Datacenter and Standard editions
- Windows Server 2012 Datacenter and Standard editions
- Windows Server 2008 R2 Service Pack 1 Enterprise and Standard editions

Upgrading the operating system version on a server running StoreFront is not supported. Citrix recommends that you install StoreFront on a new installation of the operating system. All the servers in a multiple server deployment must run the same operating system version with the same locale settings. StoreFront server groups containing mixtures of operating system versions and locales are not supported. While a server group can contain a maximum of six servers, from a capacity perspective based on simulations, there is no advantage of server groups containing more than three servers. All servers in a server group must reside in the same location.

Microsoft Internet Information Services (IIS) and Microsoft .NET Framework are required on the server. If either of these prerequisites is installed but not enabled, the StoreFront installer enables them before installing the product. Windows PowerShell and Microsoft Management Console, which are both default components of Windows Server, must be installed on the web server before you can install StoreFront. The relative path to StoreFront in IIS must be the same on all the servers in a group.

The StoreFront installer will add the IIS features it requires. If you desire to pre-install these features, below is the required list:

On all platforms:

- Web-Static-Content
- Web-Default-Doc
- Web-Http-Errors
- Web-Http-Redirect
- Web-Http-Logging
- Web-Mgmt-Console
- Web-Scripting-Tools
- Web-Windows-Auth
- Web-Basic-Auth
- Web-AppInit

On Windows Server 2008 R2:

- Web-Asp-Net
- As-Tcp-PortSharing

On Windows Server 2012 R2:

- Web-Asp-Net
StoreFront uses the following ports for communications. Ensure your firewalls and other network devices permit access to these ports.

- TCP ports 80 and 443 are used for HTTP and HTTPS communications, respectively, and must be accessible from both inside and outside the corporate network.
- TCP port 808 is used for communications between StoreFront servers and must be accessible from inside the corporate network.
- A TCP port randomly selected from all unreserved ports is used for communications between the StoreFront servers in a server group. When you install StoreFront, a Windows Firewall rule is configured enabling access to the StoreFront executable. However, since the port is assigned randomly, you must ensure that any firewalls or other devices on your internal network do not block traffic to any of the unassigned TCP ports.
- TCP port 8008 is used by Citrix Receiver for HTML5, where enabled, for communications from local users on the internal network to the servers providing their desktops and applications.

StoreFront supports both pure IPv6 networks and dual-stack IPv4/IPv6 environments.

**Infrastructure requirements**

Citrix has tested and provides support for StoreFront when used with the following Citrix product versions.

**Citrix server requirements**

StoreFront stores aggregate desktops and applications from the following products.

- XenDesktop
  - XenDesktop 7.8
  - XenDesktop 7.7
  - XenDesktop 7.6
  - XenDesktop 7.5
  - XenDesktop 7.1
  - XenDesktop 7
  - XenDesktop 5.6 Feature Pack 1
  - XenDesktop 5.6
  - XenDesktop 5.5
- XenApp
  - XenApp 7.8
  - XenApp 7.7
  - XenApp 7.6
  - XenApp 7.5
  - XenApp 6.5 Feature Pack 2
  - XenApp 6.5 Feature Pack 1 for Windows Server 2008 R2
  - XenApp 6.5 for Windows Server 2008 R2
  - XenApp 6.0 for Windows Server 2008 R2
  - XenApp 5.0 Feature Pack 3 for Windows Server 2008 x64 Edition
  - XenApp 5.0 Feature Pack 3 for Windows Server 2008
  - XenApp 5.0 Feature Pack 3 for Windows Server 2003 x64 Edition
NetScaler Gateway requirements

The following versions of NetScaler Gateway can be used to provide access to StoreFront for users on public networks.

- NetScaler Gateway 11.0
- NetScaler Gateway 10.5
- NetScaler Gateway 10.1
- Access Gateway 10 Build 69.4 (the version number is displayed at the top of the configuration utility)

Citrix Receiver for HTML5 requirements

If you plan to enable users to access desktops and applications using Citrix Receiver for HTML5 running on Receiver for Web sites, the following additional requirements apply.

For internal network connections, Citrix Receiver for HTML5 enables access to desktops and applications provided by the following products.

- XenDesktop 7.8
- XenDesktop 7.7
- XenDesktop 7.6
- XenDesktop 7.5
- XenDesktop 7.1
- XenDesktop 7
- XenApp 7.8
- XenApp 7.7
- XenApp 7.6
- XenApp 7.5
- XenApp 6.5 Feature Pack 2
- XenApp 6.5 Feature Pack 1 for Windows Server 2008 R2 (requires Hotfix XA650R01W2K8R2X64051, which is available at [http://support.citrix.com/article/CTX135757](http://support.citrix.com/article/CTX135757))

For remote users outside the corporate network, Citrix Receiver for HTML5 enables access to desktops and applications through the following versions of NetScaler Gateway.

- NetScaler Gateway 11.0
• NetScaler Gateway 10.1
• Access Gateway 10 Build 71.6014 (the version number is displayed at the top of the configuration utility)

For users connecting through NetScaler Gateway, Citrix Receiver for HTML5 enables access to desktops and applications provided by the following products.

• XenDesktop
  • XenDesktop 7.8
  • XenDesktop 7.7
  • XenDesktop 7.6
  • XenDesktop 7.5
  • XenDesktop 7.1
  • XenDesktop 7
  • XenDesktop 5.6
  • XenDesktop 5.5

• XenApp
  • XenApp 7.8
  • XenApp 7.7
  • XenApp 7.6
  • XenApp 7.5
  • XenApp 6.5 Feature Pack 2
  • XenApp 6.5 Feature Pack 1 for Windows Server 2008 R2
  • XenApp 6.5 for Windows Server 2008 R2
  • XenApp 6.0 for Windows Server 2008 R2
  • XenApp 5.0 Feature Pack 3 for Windows Server 2008 x64 Edition
  • XenApp 5.0 Feature Pack 3 for Windows Server 2008
  • XenApp 5.0 Feature Pack 3 for Windows Server 2003 x64 Edition
  • XenApp 5.0 Feature Pack 3 for Windows Server 2003
  • XenApp 5.0 Feature Pack 2 for Windows Server 2008 x64 Edition
  • XenApp 5.0 Feature Pack 2 for Windows Server 2008
  • XenApp 5.0 Feature Pack 2 for Windows Server 2003 x64 Edition
  • XenApp 5.0 Feature Pack 2 for Windows Server 2003
  • XenApp 5.0 Feature Pack 1 for Windows Server 2003 x64 Edition
  • XenApp 5.0 Feature Pack 1 for Windows Server 2003
  • XenApp 5.0 for Windows Server 2008 x64 Edition
  • XenApp 5.0 for Windows Server 2008
  • XenApp 5.0 for Windows Server 2003 x64 Edition
  • XenApp 5.0 for Windows Server 2003

User device requirements

Updated: 2015-03-16

StoreFront provides a number of different options for users to access their desktops and applications. Citrix Receiver users can either access stores through Citrix Receiver or use a web browser to log on to a Citrix Receiver for Web site for the store. For users who cannot install Citrix Receiver, but have an HTML5-compatible web browser, you can provide access to desktops and applications directly within the web browser by enabling Citrix Receiver for HTML5 on your Citrix Receiver for Web site.
Users with non-domain-joined desktop appliances access their desktops through their web browsers, which are configured to access Desktop Appliance sites. In the case of domain-joined desktop appliances and repurposed PCs running the Citrix Desktop Lock, along with older Citrix clients that cannot be upgraded, users must connect through the XenApp Services URL for the store.

If you plan to deliver offline applications to users, the Offline Plug-in is required in addition to Citrix Receiver for Windows. If you want to deliver Microsoft Application Virtualization (App-V) sequences to users, a supported version of the Microsoft Application Virtualization Desktop Client is also required. For more information, see *Publishing Applications for Streaming* and at docs.citrix.com. Users cannot access offline applications or App-V sequences through Citrix Receiver for Web sites.

It is assumed that all user devices meet the minimum hardware requirements for the installed operating system.

## Requirements for Citrix Receiver-enabled stores

The following Citrix Receiver versions can be used to access StoreFront stores from both internal network connections and through NetScaler Gateway. Connections through NetScaler Gateway can be made using both the NetScaler Gateway Plug-in and/or clientless access. Citrix Receiver for Windows 4.3 is the minimum version required to receive the full StoreFront 3.0.x unified Citrix Receiver experience. See [Support for the unified Citrix Receiver experience](https://docs.citrix.com).

- Citrix Receiver for Chrome 1.9
- Citrix Receiver for HTML5 1.9
- Citrix Receiver for Mac 12.0
- Citrix Receiver for Windows 4.4
- Citrix Receiver for Linux 13.3

## Requirements for access to stores through Citrix Receiver for Web sites

The following Citrix Receiver, operating system, and web browser combinations are recommended for users to access Citrix Receiver for Web sites from both internal network connections and through NetScaler Gateway. Connections through NetScaler Gateway can be made using both the NetScaler Gateway Plug-in and clientless access.

- Citrix Receiver for Windows 4.4, Citrix Receiver for Windows 4.3, and Citrix Receiver for Windows 4.2.x
  - Windows 10 (32-bit and 64-bit editions)
    - Microsoft Edge
    - Internet Explorer 11
  - Windows 8.1 (32-bit and 64-bit editions)
    - Internet Explorer 11 (32-bit mode)
  - Windows 8 (32-bit and 64-bit editions)
    - Internet Explorer 10 (32-bit mode)
  - Windows 7 Service Pack 1 (32-bit and 64-bit editions)
    - Internet Explorer 11, 10, 9, 8 (32-bit mode)
    - Google Chrome 48 and 47
    - Mozilla Firefox 44 and 43
  - Windows 10 (32-bit and 64-bit editions)
    - Microsoft Edge
    - Internet Explorer 11
    - Google Chrome 48 and 47
    - Mozilla Firefox 44 and 43
  - Windows 8 (32-bit and 64-bit editions)
    - Internet Explorer 10 (32-bit mode)
    - Google Chrome 48 and 47
    - Mozilla Firefox 44 and 43
  - Windows 7 Service Pack 1 (32-bit and 64-bit editions)
    - Internet Explorer 11, 10, 9, 8 (32-bit mode)
    - Google Chrome 48 and 47
The following operating systems and web browsers are recommended for users to access desktops and applications using Receiver for HTML5 running on Receiver for Web sites. Both internal network connections and connections through NetScaler Gateway are supported. However, for connections from the internal network, Receiver for HTML5 only enables access to resources provided by specific products. Additionally, specific versions of NetScaler Gateway are required to enable connections from outside the corporate network. For more information, see Infrastructure requirements.

- **Browsers**
  - Microsoft Edge
  - Internet Explorer 11 and 10 (HTTP connections only)
  - Safari 7
  - Google Chrome 48 and 47
  - Mozilla Firefox 44 and 43
Requirements for access to stores through Desktop Appliance sites

The following Citrix Receiver, operating system, and web browser combinations are recommended for users to access Desktop Appliance sites from the internal network. Connections through NetScaler Gateway are not supported.

- Citrix Receiver for Windows 4.1
  - Windows 8.1 (32-bit and 64-bit editions)
    - Internet Explorer 11 (32-bit mode)
  - Windows 8 (32-bit and 64-bit editions)
    - Internet Explorer 10 (32-bit mode)
  - Windows 7 Service Pack 1 (32-bit and 64-bit editions), Windows Embedded Standard 7 Service Pack 1, or Windows Thin PC
    - Internet Explorer 9 (32-bit mode)
    - Internet Explorer 8 (32-bit mode)
  - Windows Embedded XP
    - Internet Explorer 8 (32-bit mode)
- Citrix Receiver for Windows 4.0 or Citrix Receiver for Windows 3.4
  - Windows 8 (32-bit and 64-bit editions)
    - Internet Explorer 10 (32-bit mode)
  - Windows 7 Service Pack 1 (32-bit and 64-bit editions), Windows Embedded Standard 7 Service Pack 1, or Windows Thin PC
    - Internet Explorer 9 (32-bit mode)
    - Internet Explorer 8 (32-bit mode)
  - Windows Embedded XP
    - Internet Explorer 8 (32-bit mode)
- Citrix Receiver for Windows Enterprise 3.4
  - Windows 7 Service Pack 1 (32-bit and 64-bit editions), Windows Embedded Standard 7 Service Pack 1, or Windows Thin PC
    - Internet Explorer 9 (32-bit mode)
    - Internet Explorer 8 (32-bit mode)
• Windows Embedded XP
  • Internet Explorer 8 (32-bit mode)
• Citrix Receiver for Linux 12.1
  • Ubuntu 12.04 (32-bit)
  • Mozilla Firefox 27

Requirements for access to stores through XenApp Services URLs

All the versions of Citrix Receiver listed above can be used to access StoreFront stores with reduced functionality through XenApp Services URLs. In addition, you can use the older client that does not support other access methods - Citrix Receiver for Linux 12.0 (internal network connections only) — to access stores through XenApp Services URLs. Connections through NetScaler Gateway, where supported, can be made using both the NetScaler Gateway Plug-in and clientless access.

Smart card requirements

Requirement for using Citrix Receiver for Windows 4.X with smart cards

Citrix tests for compatibility with the U.S. Government Dept. Of Defense Common Access Card (CAC), U.S. National Institute of Standards and Technology Personal Identity Verification (NIST PIV) cards, and some USB smart card tokens. You can use contact card readers that comply with the USB Chip/Smart Card Interface Devices (CCID) specification and are classified by the German Zentraler Kreditausschuss (ZKA) as Class 1 smart card readers. ZKA Class 1 contact card readers require that users insert their smart cards into the reader. Other types of smart card readers, including Class 2 readers (which have keypads for entering PINs), contactless readers, and virtual smart cards based on Trusted Platform Module (TPM) chips, are not supported.

For Windows devices, smart card support is based on Microsoft Personal Computer/Smart Card (PC/SC) standard specifications. As a minimum requirement, smart cards and card readers must be supported by the operating system and have received Windows Hardware Certification.

The following smart card and middleware combinations have been tested by Citrix as representative examples of their type. However, other smart cards and middleware can also be used. For more information about Citrix-compatible smart cards and middleware, see http://www.citrix.com/ready.

<table>
<thead>
<tr>
<th>Middleware implementation</th>
<th>Smart card</th>
</tr>
</thead>
<tbody>
<tr>
<td>HID Global ActivClient 7.0.2 in both GSC-IS and NIST PIV modes</td>
<td>CAC</td>
</tr>
<tr>
<td></td>
<td>NIST PIV</td>
</tr>
<tr>
<td>HID Global ActivClient 6.2 CAC edition in GSC-IS mode</td>
<td>CAC</td>
</tr>
<tr>
<td>Gemalto Minidriver 8.3 for .NET Smart Card</td>
<td>Gemalto IDPrime .NET 510</td>
</tr>
<tr>
<td>SafeNet Authentication Client 8.0 for Windows</td>
<td>SafeNet eToken 5100</td>
</tr>
</tbody>
</table>

Requirements for using Desktop Appliance sites with smart cards
For users with desktop appliances and repurposed PCs running the Citrix Desktop Lock, Citrix Receiver for Windows Enterprise 3.4 is required for smart card authentication. On all other Windows devices, Citrix Receiver for Windows 4.1 can be used.

**Requirements for using Citrix Receiver for Android with smart cards**

Smartcard authentication to NetScaler Gateway with StoreFront 3.x and XenDesktop 5.6 and above or XenApp 6.5 and above.

Supported smart card readers:
- BaiMobile 3000MP Bluetooth Smart Card Reader

Supported smart cards:
- PIV cards
- Common Access Card

**Requirements for using Citrix Receiver for iOS with smart cards**

Smartcard authentication to NetScaler Gateway with StoreFront 3.x and XenDesktop 5.6 and above or XenApp 6.5 and above.

Supported smart card readers:
- Precise Biometrics Tactivo for iPad Mini
- Precise Biometrics Tactivo for iPad (4th generation) and Tactivo for iPad (3rd generation) and iPad 2
- Thursby TSS-PK7 and PK8 Smart Card Readers
- BaiMobile 3000MP Bluetooth Smart Card Reader

Supported smart cards:
- PIV cards
- Common Access Card

**Requirements for using Citrix Receiver for Linux 13.1 with smart cards and XenApp Services Support**

The following smart cards and readers are supported:

Smart cards:
- Smart cards with PKCS#11 middleware for the appropriate Linux platform

Smart card readers:
- Readers that are CCID compliant

**Requirements for authentication through NetScaler Gateway**

The following versions of NetScaler Gateway can be used to provide access to StoreFront for users on public networks authenticating with smart cards.

- NetScaler Gateway 11.0
- NetScaler Gateway 10.5
- NetScaler Gateway 10.1
- Access Gateway 10 Build 69.4 (the version number is displayed at the top of the configuration utility)
Plan your StoreFront deployment

StoreFront employs Microsoft .NET technology running on Microsoft Internet Information Services (IIS) to provide enterprise app stores that aggregate resources and make them available to users. StoreFront integrates with your XenDesktop, XenApp, and App Controller deployments, providing users with a single, self-service access point for their desktops and applications.

StoreFront comprises the following core components.

- The authentication service authenticates users to Microsoft Active Directory, ensuring that users do not need to log on again to access their desktops and applications. For more information, see User authentication.
- Stores enumerate and aggregate desktops and applications from XenDesktop, XenApp, and App Controller. Users access stores through Citrix Receiver, Citrix Receiver for Web sites, Desktop Appliance sites, and XenApp Services URLs. For more information, see User access options.
- The subscription store service records details of users’ application subscriptions and updates their devices to ensure a consistent roaming experience. For more information about enhancing the experience for your users, see Optimize the user experience.

StoreFront can be configured either on a single server or as a multiple server deployment. Multiple server deployments not only provide additional capacity, but also greater availability. The modular architecture of StoreFront ensures that configuration information and details of users’ application subscriptions are stored on and replicated between all the servers in a server group. This means that if a StoreFront server becomes unavailable for any reason, users can continue to access their stores using the remaining servers. Meanwhile, the configuration and subscription data on the failed server are automatically updated when it reconnects to the server group. Subscription data is updated when the server comes back online but you must propagate configuration changes if any were missed by the server while offline. In the event of a hardware failure that requires replacement of the server, you can install StoreFront on a new server and add it to the existing server group. The new server is automatically configured and updated with users’ application subscriptions when it joins the server group.

The figure shows a typical StoreFront deployment.
Load balancing

For multiple server deployments, external load balancing through, for example, NetScaler or Windows Network Load Balancing is required. Configure the load balancing environment for failover between servers to provide a fault-tolerant deployment. For more information about load balancing with NetScaler, see Load Balancing. For more information about Windows Network Load Balancing, see http://technet.microsoft.com/en-us/library/hh831698.aspx.

Active load balancing of requests sent from StoreFront to XenDesktop sites and XenApp farms is recommended for deployments with thousands of users or where high loads occur, such as when a large number of users log on over a short period of time. Use a load balancer with built-in XML monitors and session persistency, such as NetScaler.

If you deploy SSL-terminating load balancer or if you need to troubleshoot, you can use the PowerShell cmdlet Set-STFWebReceiverCommunication.

Syntax:

```
```

The valid values are:

- **On** - This is the default value for new Citrix Receiver for Web sites. Citrix Receiver for Web uses the schema (HTTPS or HTTP) and port number from the base URL but replaces the host with the loopback IP address to communicate with
StoreFront Services. This works for a single server deployment and deployments with a non SSL-terminating load balancer.

- **OnUsingHttp** - Citrix Receiver for Web uses HTTP and the loopback IP address to communicate with StoreFront Services. If you are using an SSL-terminating load balancer, select this value. You must also specify the HTTP port if it is not the default port 80.

- **Off** - This turns off loopback and Citrix Receiver for Web uses the StoreFront base URL to communicate with StoreFront Services. If you perform an in-place upgrade, this is the default value to avoid disruption to your existing deployment.

For example, if you are using an SSL-terminating load balancer, your IIS is configured to use port 81 for HTTP and the path of your Citrix Receiver for Web site is /Citrix/StoreWeb, you can run the following command to configure the Citrix Receiver for Web site:

```
Swr = Get-STFWebReceiverService -VirtualPath /Citrix/StoreWeb
Set-STFWebReceiverCommunication -WebReceiverService Swr -Loopback OnUsingHttp -LoopbackPortUsingHttp 81
```

Note that you have to switch off loopback to use any web proxy tool like Fiddler to capture the network traffic between Citrix Receiver for Web and StoreFront Services.

### Active Directory considerations

StoreFront servers must reside either within the Active Directory domain containing your users' accounts or within a domain that has a trust relationship with the user accounts domain unless you enable delegation of authentication to the XenApp/XenDesktop sites/farms. All the StoreFront servers in a group must reside within the same domain.

### User connections

In a production environment, Citrix recommends using HTTPS to secure communications between StoreFront and users' devices. To use HTTPS, StoreFront requires that the IIS instance hosting the authentication service and associated stores is configured for HTTPS. In the absence of the appropriate IIS configuration, StoreFront uses HTTP for communications. You can change from HTTP to HTTPS at any time, provided the appropriate IIS configuration is in place.

If you plan to enable access to StoreFront from outside the corporate network, NetScaler Gateway is required to provide secure connections for remote users. Deploy NetScaler Gateway outside the corporate network, with firewalls separating NetScaler Gateway from both the public and internal networks. Ensure that NetScaler Gateway is able to access the Active Directory forest containing the StoreFront servers.

### Scalability

The number of Citrix Receiver users supported by a StoreFront server group depends on the hardware you use and on the level of user activity. Based on simulated activity where users log on, enumerate 100 published applications, and start one resource, expect a single StoreFront server with the minimum recommended specification of two virtual CPUs running on an underlying dual Intel Xeon L5520 2.27Ghz processor server to enable up to 30,000 user connections per hour.

Expect a server group with two similarly configured servers in the group to enable up to 60,000 user connections per hour; three nodes up to 90,000 connections per hour; four nodes up to 120,000 connections per hour; five nodes up to 150,000 connections per hour; six nodes up to 175,000 connections per hour.

The throughput of a single StoreFront server can also be increased by assigning more virtual CPUs to the system, with four virtual CPUs enabling up to 55,000 user connections per hour and eight virtual CPUs enabling 80,000 connections per hour.
The minimum recommended memory allocation for each server is 4GB. When using Citrix Receiver for Web, assign an additional 700 bytes per resource, per user in addition to the base memory allocation. As with using Web Receiver, when using Citrix Receiver, design environments to allow an extra 700 bytes per resource, per user on top of the base 4GB memory requirements for this version of StoreFront.

As your usage patterns might be different than those simulated above, your servers might support more or fewer numbers of users connections per hour.

Important: All servers in a server group must reside in the same location. StoreFront server groups containing mixtures of operating system versions and locales are not supported.

Timeout considerations

Occasionally, network issues or other problems can occur between a StoreFront store and the servers that it contacts, causing delays or failures for users. You can use the timeout settings for a store to tune this behavior. If you specify a short timeout setting, StoreFront quickly abandons a server and tries another one. This is useful if, for example, you have configured multiple servers for failover purposes.

If you specify a longer timeout, StoreFront waits longer for a response from a single server. This is beneficial in environments where network or server reliability is uncertain and delays are common.

Citrix Receiver for Web also has a timeout setting, which controls how long a Citrix Receiver for Web site waits for a response from the store. Set this timeout setting to a value at least as long as the store timeout. A longer timeout setting allows for better fault tolerance, but users might experience long delays. A shorter timeout setting reduces delays for users, but they might experience more failures.

For information about setting timeouts, see Communication time-out duration and server retry attempts and Communication time-out duration and retry attempts.
User access options

Feb 24, 2016

Four different methods are available for users to access StoreFront stores.

- **Citrix Receiver** - Users with compatible versions of Citrix Receiver can access StoreFront stores within the Citrix Receiver user interface. Accessing stores within Citrix Receiver provides the best user experience and the greatest functionality.

- **Citrix Receiver for Web sites** - Users with compatible web browsers can access StoreFront stores by browsing to Citrix Receiver for Web sites. By default, users also require a compatible version of Citrix Receiver to access their desktops and applications. However, you can configure your Citrix Receiver for Web sites to enable users with HTML5-compatible browsers to access their resources without installing Citrix Receiver. When you create a new store, a Citrix Receiver for Web site is created for the store by default.

- **Desktop Appliance sites** - Users with non-domain-joined desktop appliances can access their desktops through the web browsers on their appliances, which are configured to access Desktop Appliance sites in full-screen mode. When you create a new store for a XenDesktop deployment using Citrix Studio, a Desktop Appliance site is created for the store by default.

- **XenApp Services URLs** - Users of domain-joined desktop appliances and repurposed PCs running the Citrix Desktop Lock, along with users who have older Citrix clients that cannot be upgraded, can access stores using the XenApp Services URL for the store. When you create a new store, the XenApp Services URL is enabled by default.

The figure shows the options for users to access StoreFront stores.

Accessing stores from within the Citrix Receiver user interface provides the best user experience and the greatest functionality. For the Citrix Receiver versions that can be used to access stores in this way, see System Requirements.

Citrix Receiver uses internal and external URLs as beacon points. By attempting to contact these beacon points, Citrix Receiver can determine whether users are connected to local or public networks. When a user accesses a desktop or application, the location information is passed to the server providing the resource so that appropriate connection details can be returned to Citrix Receiver. This enables Citrix Receiver to ensure that users are not prompted to log on again when they access a desktop or application. For more information, see Configure beacon points.

After installation, Citrix Receiver must be configured with connection details for the stores providing users' desktops and applications.
applications. You can make the configuration process easier for your users by providing them with the required information in one of the following ways.

Important: By default, Citrix Receiver requires HTTPS connections to stores. If StoreFront is not configured for HTTPS, users must carry out additional configuration steps to use HTTP connections. Citrix strongly recommends that you do not enable unsecured user connections to StoreFront in a production environment. For more information, see Configure and install Citrix Receiver for Windows using command-line parameters in the Citrix Receiver for Windows documentation.

Provisioning files

You can provide users with provisioning files containing connection details for their stores. After installing Citrix Receiver, users open the .cr file to automatically configure accounts for the stores. By default, Citrix Receiver for Web sites offer users a provisioning file for the single store for which the site is configured. You could instruct your users to visit the Receiver for Web sites for the stores they want to access and download provisioning files from those sites. Alternatively, for a greater level of control, you can use the Citrix StoreFront management console to generate provisioning files containing connection details for one or more stores. You can then distribute these files to the appropriate users. For more information, see Export store provisioning files for users.

Auto-generated setup URLs

For users running Mac OS, you can use the Citrix Receiver for Mac Setup URL Generator to create a URL containing connection details for a store. After installing Citrix Receiver, users click on the URL to configure an account for the store automatically. Enter details of your deployment into the tool and generate a URL that you can distribute to your users.

Manual configuration

More advanced users can create new accounts by entering store URLs into Citrix Receiver. Remote users accessing StoreFront through NetScaler Gateway 10.1 and Access Gateway 10 enter the appliance URL. Citrix Receiver obtains the required account configuration information when the connection is first established. For connections through Access Gateway 9.3, users cannot set up accounts manually and must use one of the alternative methods above. For more information, see the Citrix Receiver documentation.

Email-based account discovery

Users who install Citrix Receiver on a device for the first time can set up accounts by entering their email addresses, provided that they download Citrix Receiver from the Citrix website or a Citrix Receiver download page hosted within your internal network. You configure Service Location (SRV) locator resource records for NetScaler Gateway or StoreFront on your Microsoft Active Directory Domain Name System (DNS) server. Users do not need to know the access details for their stores, instead they enter their email addresses during the Citrix Receiver initial configuration process. Citrix Receiver contacts the DNS server for the domain specified in the email address and obtains the details you added to the SRV resource record. Users are then presented with a list of stores that they can access through Citrix Receiver.

Configure email-based account discovery

Configure email-based account discovery to enable users who install Citrix Receiver on a device for the first time to set up their accounts by entering their email addresses. Provided that they download Citrix Receiver from the Citrix website or a Citrix Receiver download page hosted within your internal network, users do not need to know the access details for their stores when they install and configure Citrix Receiver. Email-based account discovery is available if Citrix Receiver is downloaded from any other location, such as a Receiver for Website. Note that ReceiverWeb.exe or ReceiverWeb.dmg downloaded from Citrix Receiver for Web does not prompt users to configure a store. Users can still use Add Account and
enter their email address

During the initial configuration process, Citrix Receiver prompts users to enter either an email address or a store URL. When a user enters an email address, Citrix Receiver contacts the Microsoft Active Directory Domain Name System (DNS) server for the domain specified in the email address to obtain a list of available stores from which the user can select.

To enable Citrix Receiver to locate available stores on the basis of users' email addresses, you configure Service Location (SRV) locator resource records for NetScaler Gateway or StoreFront on your DNS server. As a fallback, you can also deploy StoreFront on a server named “discoverReceiver.domain,” where domain is the domain containing your users' email accounts. If no SRV record is found in the specified domain, Citrix Receiver searches for a machine named “discoverReceiver” to identify a StoreFront server.

You must install a valid server certificate on the NetScaler Gateway appliance or StoreFront server to enable email-based account discovery. The full chain to the root certificate must also be valid. For the best user experience, install a certificate with a Subject or Subject Alternative Name entry of discoverReceiver.domain, where domain is the domain containing your users' email accounts. Although you can use a wildcard certificate for the domain containing your users' email accounts, you must first ensure that the deployment of such certificates is permitted by your corporate security policy. Other certificates for the domain containing your users' email accounts can also be used, but users will see a certificate warning dialog box when Citrix Receiver first connects to the StoreFront server. Email-based account discovery cannot be used with any other certificate identities.

To enable email-based account discovery for users connecting from outside the corporate network, you must also configure NetScaler Gateway with the StoreFront connection details. For more information, see Connecting to StoreFront by Using Email-Based Discovery.

Add an SRV record to your DNS server

1. On the Windows Start screen, click Administrative Tools and, in the Administrative Tools folder, click DNS.
2. In the left pane of DNS Manager, select your domain in the forward or reverse lookup zones. Right-click the domain and select Other New Records.
3. In the Resource Record Type dialog box, select Service Location (SRV) and then click Create Record.
4. In the New Resource Record dialog box, enter in the Service box the host value _citrixreceiver.
5. Enter in the Protocol box the value _tcp.
6. In the Host offering this service box, specify the fully qualified domain name (FQDN) and port for your NetScaler Gateway appliance (to support both local and remote users) or StoreFront server (to support local users only) in the form servername.domain:port.
   If your environment includes both internal and external DNS servers, you can add a SRV record specifying the StoreFront server FQDN on your internal DNS server and another record on your external server specifying the NetScaler Gateway FQDN. With this configuration, local users are provided with the StoreFront details, while remote users receive NetScaler Gateway connection information.
7. If you configured an SRV record for your NetScaler Gateway appliance, add the StoreFront connection details to NetScaler Gateway in a session profile or global setting.

Citrix Receiver for Web sites

Users with compatible web browsers can access StoreFront stores by browsing to Citrix Receiver for Web sites. When you create a new store, a Citrix Receiver for Web site is automatically created for the store. The default configuration for Citrix Receiver for Web sites requires that users install a compatible version of Citrix Receiver to access their desktops and applications. For more information about the Citrix Receiver and web browser combinations that can be used to access
Citrix Receiver for Web sites, see User device requirements.

By default, when a user accesses a Citrix Receiver for Web site from a computer running Windows or Mac OS X, the site attempts to determine whether Citrix Receiver is installed on the user's device. If Citrix Receiver cannot be detected, the user is prompted to download and install the appropriate Citrix Receiver for their platform. The default download location is the Citrix website, but you can also copy the installation files to the StoreFront server and provide users with these local files instead. Storing the Citrix Receiver installation files locally enables you to configure the site to offer users with older clients the option to upgrade to the version on the server. For more information about configuring deployment of Citrix Receiver for Windows and Citrix Receiver for Mac, see Configure Citrix Receiver for Web sites.

Note: Citrix Receiver for Web cannot detect if the native Citrix Receiver is installed when accessed using Microsoft Edge.

## Citrix Receiver for HTML5

Citrix Receiver for HTML5 is a component of StoreFront that is integrated by default with Citrix Receiver for Web sites. You can enable Citrix Receiver for HTML5 on your Citrix Receiver for Web sites so that users who cannot install Citrix Receiver can still access their resources. With Citrix Receiver for HTML5, users can access desktops and applications directly within HTML5-compatible web browsers without needing to install Citrix Receiver. When a site is created, Citrix Receiver for HTML5 is disabled by default. For more information about enabling Citrix Receiver for HTML5, see citrix-receiver-download-page-template.html.

To access their desktops and applications using Citrix Receiver for HTML5, users must access the Citrix Receiver for Web site with an HTML5-compatible browser. For more information about the operating systems and web browsers that can be used with Citrix Receiver for HTML5, see User device requirements.

Citrix Receiver for HTML5 can be used by both users on the internal network and remote users connecting through NetScaler Gateway. For connections from the internal network, Citrix Receiver for HTML5 only supports access to desktops and applications provided by a subset of the products supported by Citrix Receiver for Web sites. Users connecting through NetScaler Gateway can access resources provided by a wider range of products if you chose Citrix Receiver for HTML5 as an option when configuring StoreFront. Specific versions of NetScaler Gateway are required for use with Citrix Receiver for HTML5. For more information, see Infrastructure requirements.

For local users on the internal network, access through Citrix Receiver for HTML5 to resources provided by XenDesktop and XenApp is disabled by default. To enable local access to desktops and applications using Citrix Receiver for HTML5, you must enable the ICA WebSockets connections policy on your XenDesktop and XenApp servers. Ensure your firewalls and other network devices permit access to the Citrix Receiver for HTML5 port specified in the policy. For more information, see WebSockets policy settings.

By default, Citrix Receiver for HTML5 starts desktops and applications in a new browser tab. However, when users start resources from shortcuts using Citrix Receiver for HTML5, the desktop or application replaces the Citrix Receiver for Web site in the existing browser tab rather than appearing in a new tab. You can configure Citrix Receiver for HTML5 so that resources are always started in the same tab as the Receiver for Web site. For more information, see Configure Citrix Receiver for HTML5 use of browser tabs.

### Resource shortcuts

You can generate URLs that provide access to desktops and applications available through Citrix Receiver for Web sites. Embed these links on websites hosted on the internal network to provide users with rapid access to resources. Users click on a link and are redirected to the Receiver for Web site, where they log on if they have not already done so. The Citrix
Receiver for Web site automatically starts the resource. In the case of applications, users are also subscribed to the application if they have not subscribed previously. For more information about generating resource shortcuts, see Configure Citrix Receiver for Web sites.

As with all desktops and applications accessed from Citrix Receiver for Web sites, users must either have installed Citrix Receiver or be able to use Citrix Receiver for HTML5 to access resources through shortcuts. The method used by a Citrix Receiver for Web site depends on the site configuration, on whether Citrix Receiver can be detected on users’ devices, and on whether an HTML5-compatible browser is used. For security reasons, Internet Explorer users may be prompted to confirm that they want to start resources accessed through shortcuts. Instruct your users to add the Receiver for Web site to the Local intranet or Trusted sites zones in Internet Explorer to avoid this extra step. By default, both workspace control and automatic desktop starts are disabled when users access Citrix Receiver for Web sites through shortcuts.

When you create an application shortcut, ensure that no other applications available from the Citrix Receiver for Web site have the same name. Shortcuts cannot distinguish between multiple instances of an application with the same name. Similarly, if you make multiple instances of a desktop from a single desktop group available from the Citrix Receiver for Web site, you cannot create separate shortcuts for each instance. Shortcuts cannot pass command-line parameters to applications.

To create application shortcuts, you configure StoreFront with the URLs of the internal websites that will host the shortcuts. When a user clicks on an application shortcut on a website, StoreFront checks that website against the list of URLs you entered to ensure that the request originates from a trusted website. However, for users connecting through NetScaler Gateway, websites hosting shortcuts are not validated because the URLs are not passed to StoreFront. To ensure that remote users can only access application shortcuts on trusted internal websites, configure NetScaler Gateway to restrict user access to only those specific sites. For more information, see http://support.citrix.com/article/CTX123610.

Customize your sites

Citrix Receiver for Web sites provide a mechanism for customizing the user interface. You can customize strings, the cascading style sheet, and the JavaScript files. You can also add a custom pre-logon or post-logon screen, and add language packs.

Important considerations

Users accessing stores through a Citrix Receiver for Web site benefit from many of the features available with store access within Citrix Receiver, such as application synchronization. When you decide whether to use Citrix Receiver for Web sites to provide users with access to your stores, consider the following restrictions.

- Only a single store can be accessed through each Citrix Receiver for Web site.
- Citrix Receiver for Web sites cannot initiate Secure Sockets Layer (SSL) virtual private network (VPN) connections. Users logging on through NetScaler Gateway without a VPN connection cannot access web applications for which App Controller requires that such a connection is used.
- Subscribed applications are not available on the Windows Start screen when accessing a store through a Citrix Receiver for Web site.
- File type association between local documents and hosted applications accessed through Citrix Receiver for Web sites is not available.
- Offline applications cannot be accessed through Citrix Receiver for Web sites.
- Citrix Receiver for Web sites do not support Citrix Online products integrated into stores. Citrix Online products must be
delivered with App Controller or made available as hosted applications to enable access through Citrix Receiver for Web sites.

- Citrix Receiver for HTML5 can be used over HTTPS connections if the VDA is XenApp 7.6 or XenDesktop 7.6 and has SSL enabled or if the user is connecting using NetScaler Gateway.
- To use Citrix Receiver for HTML5 with Mozilla Firefox over HTTPS connections, users must type about:config in the Firefox address bar and set the network.websocket.allowInsecureFromHTTPS preference to true.

Desktop Appliance sites

Users with non-domain-joined desktop appliances can access their desktops through Desktop Appliance sites. Non-domain-joined in this context means devices that are not joined to a domain within the Microsoft Active Directory forest containing the StoreFront servers.

When you create a new store for a XenDesktop deployment using Citrix Studio, a Desktop Appliance site is created for the store by default. Desktop Appliance sites are only created by default when StoreFront is installed and configured as part of a XenDesktop installation. You can create Desktop Appliance sites manually using Windows PowerShell commands. For more information, see Configure Desktop Appliance sites.

Desktop Appliance sites provide a user experience that is similar to logging on to a local desktop. The web browsers on desktop appliances are configured to start in full-screen mode displaying the logon screen for a Desktop Appliance site. When a user logs on to a site, by default, the first desktop (in alphabetical order) available to the user in the store for which the site is configured starts automatically. If you provide users with access to multiple desktops in a store, you can configure the Desktop Appliance site to display the available desktops so users can choose which one to access. For more information, see Configure Desktop Appliance sites.

When a user's desktop starts, it is displayed in full-screen mode, obscuring the web browser. The user is automatically logged out from the Desktop Appliance site. When the user logs off from the desktop, the web browser, displaying the Desktop Appliance site logon screen, is visible again. A message is displayed when a desktop is started, providing a link for the user to click to restart the desktop if it cannot be accessed. To enable this functionality, you must configure the Delivery Group to enable users to restart their desktops. For more information, see Delivery groups.

To provide access to desktops, a compatible version of Citrix Receiver is required on the desktop appliance. Typically, XenDesktop-compatible appliance vendors integrate Citrix Receiver into their products. For Windows appliances, the Citrix Desktop Lock must also be installed and configured with the URL for your Desktop Appliance site. If Internet Explorer is used, the Desktop Appliance site must be added to the Local intranet or Trusted sites zones. For more information about the Citrix Desktop Lock, see Prevent user access to the local desktop.

Important considerations

Desktop Appliance sites are intended for local users on the internal network accessing desktops from non-domain-joined desktop appliances. When you decide whether to use Desktop Appliance sites to provide users with access to your stores, consider the following restrictions.

- If you plan to deploy domain-joined desktop appliances and repurposed PCs, do not configure them to access stores through Desktop Appliance sites. Though you can configure Citrix Receiver with the XenApp Services URL for the store, we recommend the new Desktop Lock for both domain-joined and nondomain-joined use cases. For more information, see Citrix Receiver Desktop Lock.
- Desktop Appliance sites do not support connections from remote users outside the corporate network. Users logging on to NetScaler Gateway cannot access Desktop Appliance sites.
XenApp Services URLs

Users with older Citrix clients that cannot be upgraded can access stores by configuring their clients with the XenApp Services URL for a store. You can also enable access to your stores through XenApp Services URLs from domain-joined desktop appliances and repurposed PCs running the Citrix Desktop Lock. Domain-joined in this context means devices that are joined to a domain within the Microsoft Active Directory forest containing the StoreFront servers.

StoreFront supports pass-through authentication with proximity cards through Citrix Receiver to XenApp Services URLs. Citrix Ready partner products use the Citrix Fast Connect API to streamline user logons through Citrix Receiver for Windows to connect to stores using the XenApp Services URL. Users authenticate to workstations using proximity cards and are rapidly connected to desktops and applications provided by XenDesktop and XenApp. For more information, see the most recent Citrix Receiver for Windows documentation.

When you create a new store, the XenApp Services URL for the store is enabled by default. The XenApp Services URL for a store has the form http[s]://serveraddress/Citrix/storename/PNAgent/config.xml, where serveraddress is the fully qualified domain name of the server or load balancing environment for your StoreFront deployment and storename is the name specified for the store when it was created. This allows Citrix Receivers that can only use the PNAgent protocol to connect to Storefront. For the clients that can be used to access stores through XenApp Services URLs, see User device requirements.

Important considerations

XenApp Services URLs are intended to support users who cannot upgrade to Citrix Receiver and for scenarios where alternative access methods are not available. When you decide whether to use XenApp Services URLs to provide users with access to your stores, consider the following restrictions.

- You cannot modify the XenApp Services URL for a store.
- You cannot modify XenApp Services URL settings by editing the configuration file, config.xml.
- XenApp Services URLs support explicit, domain pass-through, smart card authentication, and pass-through with smart card authentication. Explicit authentication is enabled by default. Only one authentication method can be configured for each XenApp Services URL and only one URL is available per store. If you need to enable multiple authentication methods, you must create separate stores, each with a XenApp Services URL, for each authentication method. Your users must then connect to the appropriate store for their method of authentication. For more information about configuring user authentication to XenApp Services URLs, see Configure authentication for XenApp Services URLs.
- Workspace control is enabled by default for XenApp Services URLs and cannot be configured or disabled.
- User requests to change their passwords are routed to the domain controller directly through the XenDesktop and XenApp servers providing desktops and applications for the store, bypassing the StoreFront authentication service.
User authentication

Feb 24, 2016

StoreFront supports a number of different authentication methods for users accessing stores; although, not all are available depending on the user access method and their network location. For security reasons, some authentication methods are disabled by default when you create your first store. For more information about enabling and disabling user authentication methods, see Create and configure the authentication service.

User name and password

Users enter their credentials and are authenticated when they access their stores. Explicit authentication is enabled by default. All user access methods support explicit authentication.

When a user employs NetScaler Gateway to access Citrix Receiver for Web, NetScaler Gateway handles the logon and password change at expiration. Users can make elective password changes with the Citrix Receiver for Web UI. After an elective password change, the NetScaler Gateway session terminates and the user must log on again. Citrix Receiver for Linux users can change only expired passwords.

Domain pass-through

Users authenticate to their domain-joined Windows computers, and their credentials are used to log them on automatically when they access their stores. When you install StoreFront, domain pass-through authentication is disabled by default. Domain pass-through authentication can be enabled for users connecting to stores through Citrix Receiver and XenApp Services URLs. Citrix Receiver for Web sites support domain pass-through authentication for Internet Explorer only. Enable domain pass-through authentication in the Citrix Receiver for Web site node in the administration console and requires you to configure SSON on Citrix Receiver for Windows. Citrix Receiver for HTML5 does not support domain pass-through authentication. To use domain pass-through authentication, users require Citrix Receiver for Windows or the Online Plug-in for Windows. Pass-through authentication must be enabled when Citrix Receiver for Windows or the Online Plug-in for Windows are installed on users’ devices.

Pass-through from NetScaler Gateway

Users authenticate to NetScaler Gateway and are automatically logged on when they access their stores. Pass-through from NetScaler Gateway authentication is enabled by default when you first configure remote access to a store. Users can connect through NetScaler Gateway to stores using Citrix Receiver or Citrix Receiver for Web sites. Desktop Appliance sites do not support connections through NetScaler Gateway. For more information about configuring StoreFront for NetScaler Gateway, see Add a NetScaler Gateway connection. For more information about setting up NetScaler Gateway to connect to StoreFront, see Integrating NetScaler Gateway with XenMobile App Edition.

StoreFront supports pass-through with the following NetScaler Gateway authentication methods.

- **Security token.** Users log on to NetScaler Gateway using passcodes that are derived from tokencodes generated by security tokens combined, in some cases, with personal identification numbers. If you enable pass-through authentication by security token only, ensure that the resources you make available do not require additional or alternative forms of authentication, such as users’ Microsoft Active Directory domain credentials.
- **Domain and security token.** Users logging on to NetScaler Gateway are required to enter both their domain credentials and security token passcodes.
- **Client certificate.** Users log on to NetScaler Gateway and are authenticated based on the attributes of the client certificate presented to NetScaler Gateway. Configure client certificate authentication to enable users to log on to
NetScaler Gateway using smart cards. Client certificate authentication can also be used with other authentication types to provide double-source authentication.

StoreFront uses the NetScaler Gateway authentication service to provide pass-through authentication for remote users so that they only need to enter their credentials once. However, by default, pass-through authentication is only enabled for users logging on to NetScaler Gateway with a password. To configure pass-through authentication from NetScaler Gateway to StoreFront for smart card users, delegate credential validation to NetScaler Gateway. For more information, see Create and configure the authentication service.

Users can connect to stores within Citrix Receiver with pass-through authentication through a Secure Sockets Layer (SSL) virtual private network (VPN) tunnel using the NetScaler Gateway Plug-in. Remote users who cannot install the NetScaler Gateway Plug-in can use clientless access to connect to stores within Citrix Receiver with pass-through authentication. To use clientless access to connect to stores, users require a version of Citrix Receiver that supports clientless access.

Additionally, you can enable clientless access with pass-through authentication to Citrix Receiver for Web sites. To do this, configure NetScaler Gateway to act as a secure remote proxy. Users log on to NetScaler Gateway directly and use the Citrix Receiver for Web site to access their applications without needing to authenticate again. For more information about configuring NetScaler Gateway as a remote proxy, see Creating and Applying Web and File Share Links.

Users connecting with clientless access to App Controller resources can only access external software-as-a-service (SaaS) applications. To access internal web applications, remote users must use the NetScaler Gateway Plug-in.

If you configure double-source authentication to NetScaler Gateway for remote users accessing stores from within Citrix Receiver, you must create two authentication policies on NetScaler Gateway. Configure RADIUS (Remote Authentication Dial-In User Service) as the primary authentication method and LDAP (Lightweight Directory Access Protocol) as the secondary method. Modify the credential index to use the secondary authentication method in the session profile so that LDAP credentials are passed to StoreFront. When you add the NetScaler Gateway appliance to your StoreFront configuration, set the Logon type to Domain and security token. For more information, see http://support.citrix.com/article/CTX125364

To enable multidomain authentication through NetScaler Gateway to StoreFront, set SSO Name Attribute to userPrincipalName in the NetScaler Gateway LDAP authentication policy for each domain. You can require users to specify a domain on the NetScaler Gateway logon page so that the appropriate LDAP policy to use can be determined. When you configure the NetScaler Gateway session profiles for connections to StoreFront, do not specify a single sign-on domain. You must configure trust relationships between each of the domains. Ensure that you allow users to log on to StoreFront from any domain by not restricting access to explicitly trusted domains only.

Where supported by your NetScaler Gateway deployment, you can use SmartAccess to control user access to XenDesktop and XenApp resources on the basis of NetScaler Gateway session policies. For more information about SmartAccess, see Configuring SmartAccess on NetScaler Gateway.

Smart cards

Users authenticate using smart cards and PINs when they access their stores. When you install StoreFront, smart card authentication is disabled by default. Smart card authentication can be enabled for users connecting to stores through Citrix Receiver, Citrix Receiver for Web, Desktop Appliance sites, and XenApp Services URLs.

Use smart card authentication to streamline the logon process for your users while also enhancing the security of user access to your infrastructure. Access to the internal corporate network is protected by certificate-based two-factor authentication using public key infrastructure. Private keys are protected by hardware controls and never leave the smart
card. Your users get the convenience of accessing their desktops and applications from a range of corporate devices using their smart cards and PINs.

You can use smart cards for user authentication through StoreFront to desktops and applications provided by XenDesktop and XenApp. Smart card users logging on to StoreFront can also access applications provided by App Controller. However, users must authenticate again to access App Controller web applications that use client certificate authentication.

To enable smart card authentication, users’ accounts must be configured either within the Microsoft Active Directory domain containing the StoreFront servers or within a domain that has a direct two-way trust relationship with the StoreFront server domain. Multi-forest deployments involving two-way trusts are supported.

The configuration of smart card authentication with StoreFront depends on the user devices, the clients installed, and whether the devices are domain-joined. In this context, domain-joined means devices that are joined to a domain within the Active Directory forest containing the StoreFront servers.

**Use smart cards with Citrix Receiver for Windows**

Users with devices running Citrix Receiver for Windows can authenticate using smart cards, either directly or through NetScaler Gateway. Both domain-joined and non-domain-joined devices can be used, although the user experience is slightly different.

The figure shows the options for smart card authentication through Citrix Receiver for Windows.

For local users with domain-joined devices, you can configure smart card authentication so that users are only prompted for their credentials once. Users log on to their devices using their smart cards and PINs and, with the appropriate configuration...
in place, are not prompted for their PINs again. Users are silently authenticated to StoreFront and also when they access their desktops and applications. To achieve this, you configure Citrix Receiver for Windows for pass-through authentication and enable domain pass-through authentication to StoreFront.

Users log on to their devices and then authenticate to Citrix Receiver for Windows using their PINs. There is no further PIN prompts when they try to start apps and desktops.

Because users of non-domain-joined devices log on to Citrix Receiver for Windows directly, you can enable users to fall back to explicit authentication. If you configure both smart card and explicit authentication, users are initially prompted to log on using their smart cards and PINs but have the option to select explicit authentication if they experience any issues with their smart cards.

Users connecting through NetScaler Gateway must log on using their smart cards and PINs at least twice to access their desktops and applications. This applies to both domain-joined and non-domain-joined devices. Users authenticate using their smart cards and PINs, and, with the appropriate configuration in place, are only prompted to enter their PINs again when they access their desktops and applications. To achieve this, you enable pass-through with NetScaler Gateway authentication to StoreFront and delegate credential validation to NetScaler Gateway. Then, create an additional NetScaler Gateway virtual server through which you route user connections to resources. In the case of domain-joined devices, you must also configure Citrix Receiver for Windows for pass-through authentication.

**Note:** If you are using Citrix Receiver for Windows 4.2 - the current version, you can set up a second vServer and use the optimal gateway routing feature to remove the need for PIN prompts when starting apps and desktops.

Users can log on to NetScaler Gateway using either their smart cards and PINs, or with explicit credentials. This enables you to provide users with the option to fall back to explicit authentication for NetScaler Gateway logons. Configure pass-through authentication from NetScaler Gateway to StoreFront and delegate credential validation to NetScaler Gateway for smart card users so that users are silently authenticated to StoreFront.

### Use smart cards with Desktop Appliance sites

Non-domain-joined Windows desktop appliances can be configured to enable users to log on to their desktops using smart cards. The Citrix Desktop Lock is required on the appliance and Internet Explorer must be used to access the Desktop Appliance site.

The figure shows smart card authentication from a non-domain-joined desktop appliance.

When users access their desktop appliances, Internet Explorer starts in full-screen mode displaying the logon screen for a Desktop Appliance site. Users authenticate to the site using their smart cards and PINs. If the Desktop Appliance site is
configured for pass-through authentication, users are automatically authenticated when they access their desktops and applications. Users are not prompted for their PINs again. Without pass-through authentication, users must enter their PINs a second time when they start a desktop or application.

You can enable users to fall back to explicit authentication if they experience any issues with their smart cards. To do this, you configure the Desktop Appliance site for both smart card and explicit authentication. In this configuration, smart card authentication is considered to be primary access method so users are prompted for their PINs first. However, the site also provides a link that enables users to log on with explicit credentials instead.

### Use smart cards with XenApp Services URLs

Users of domain-joined desktop appliances and repurposed PCs running the Citrix Desktop Lock can authenticate using smart cards. Unlike other access methods, pass-through of smart card credentials is automatically enabled when smart card authentication is configured for a XenApp Services URL.

The figure shows smart card authentication from a domain-joined device running the Citrix Desktop Lock.

Users log on to their devices using their smart cards and PINs. The Citrix Desktop Lock then silently authenticates users to StoreFront through the XenApp Services URL. Users are automatically authenticated when they access their desktops and applications, and are not prompted for their PINs again.

### Use smart cards with Citrix Receiver for Web

You can enable smart card authentication to Citrix Receiver for Web from the StoreFront Administration Console.

1. Select the Citrix Receiver for Web node in the left panel.
2. Select the site you want to use smart card authentication.
3. Select the Choose Authentication Methods task in the right panel.
4. Check the Smart card checkbox in the popup dialog screen and click OK.

If you enable pass-through with smart card authentication to XenDesktop and XenApp for Citrix Receiver for Windows users with domain-joined devices who do not access stores through NetScaler Gateway, this setting applies to all users of the store. To enable both domain pass-through and pass-through with smart card authentication to desktops and applications, you must create separate stores for each authentication method. Your users must then connect to the appropriate store for their method of authentication.

If you enable pass-through with smart card authentication to XenDesktop and XenApp for Citrix Receiver for Windows users with domain-joined devices accessing stores through NetScaler Gateway, this setting applies to all users of the store.
To enable pass-through authentication for some users and require others to log on to their desktops and applications, you must create separate stores for each group of users. Then, direct your users to the appropriate store for their method of authentication.

Use smart cards with Citrix Receiver for iOS and Android

Users with devices running Citrix Receiver for iOS and Citrix Receiver for Android can authenticate using smart cards, either directly or through NetScaler Gateway. Non-domain-joined devices can be used.

In the case of devices on the local network, the minimum number of logon prompts that users can receive is two. When users authenticate to StoreFront or initially create the store, they are prompted for the smart card PIN. With the appropriate configuration in place, users are prompted to enter their PINs again only when they access their desktops and applications. To achieve this, you enable smart card authentication to StoreFront and install smart card drivers on the VDA.

With these Citrix Receivers, you have the option of specifying smart cards OR domain credentials. If you created a store to use smart cards and you want to connect to the same store using domain credentials, you must add a separate store without turning on smart cards.

Users connecting through NetScaler Gateway must log on using their smart cards and PINs at least twice to access their desktops and applications. Users authenticate using their smart cards and PINs, and, with the appropriate configuration in place, are only prompted to enter their PINs again when they access their desktops and applications. To achieve this, you enable pass-through with NetScaler Gateway authentication to StoreFront and delegate credential validation to NetScaler Gateway. Then, create an additional NetScaler Gateway virtual server through which you route user connections to resources.

Users can log on to NetScaler Gateway using either their smart cards and PINs or with explicit credentials, depending on how you specified the authentication for the connection. Configure pass-through authentication from NetScaler Gateway to StoreFront and delegate credential validation to NetScaler Gateway for smart card users so that users are silently authenticated to StoreFront. If you want to change the authentication method, you must delete and recreate the connection.

Use smart cards with Citrix Receiver for Linux

Users with devices running Citrix Receiver for Linux can authenticate using smart cards in a similar way to users of non-domain-joined Windows devices. Even if the user authenticates to the Linux device with a smart card, Citrix Receiver for Linux has no mechanism to acquire or reuse the PIN entered.

Configure the server side components for smart cards the same way you configure them for use with the Citrix Receiver for Windows. Refer to How To Configure StoreFront 2.x and Smart Card Authentication for Internal Users using Stores and for instructions on using smart cards, see Citrix Receiver for Linux in docs.citrix.com.
The minimum number of logon prompts that users can receive is one. Users log on to their devices and then authenticate to Citrix Receiver for Linux using their smart cards and PINs. Users are not prompted to enter their PINs again when they access their desktops and applications. To achieve this, you enable smart card authentication to StoreFront.

Because users log on to Citrix Receiver for Linux directly, you can enable users to fall back to explicit authentication. If you configure both smart card and explicit authentication, users are initially prompted to log on using their smart cards and PINs but have the option to select explicit authentication if they experience any issues with their smart cards.

Users connecting through NetScaler Gateway must log on using their smart cards and PINs at least once to access their desktops and applications. Users authenticate using their smart cards and PINs and, with the appropriate configuration in place, are not prompted to enter their PINs again when they access their desktops and applications. To achieve this, you enable pass-through with NetScaler Gateway authentication to StoreFront and delegate credential validation to NetScaler Gateway. Then, create an additional NetScaler Gateway virtual server through which you route user connections to resources.

Users can log on to NetScaler Gateway using either their smart cards and PINs, or with explicit credentials. This enables you to provide users with the option to fall back to explicit authentication for NetScaler Gateway logons. Configure pass-through authentication from NetScaler Gateway to StoreFront and delegate credential validation to NetScaler Gateway for smart card users so that users are silently authenticated to StoreFront.

Smart cards for Citrix Receiver for Linux are not supported with the XenApp Services Support sites.

Once smart card support is enabled for both the server and Citrix Receiver, provided the application policy of the smart card certificates allow it, you can use smart cards for the following purposes:

- Smart card logon authentication. Use smart cards to authenticate users to Citrix XenApp and XenDesktop servers.
- Smart card application support. Enable smart card-aware published applications to access local smart card devices.

### Use smart cards with XenApp Services Support

Users logging on to XenApp Services Support sites to start applications and desktops can authenticate using smart cards without depending on specific hardware, operating systems, and Citrix Receivers. When a user accesses a XenApp Services Support site and successfully enters a smart card and PIN, PNA determines the user identity, authenticates the user with StoreFront, and returns the available resources.

For pass-through and smart card authentication to work, you must enable Trust requests sent to the XML service.

Use an account with local administrator permissions on the Delivery Controller to start Windows PowerShell and, at a command prompt, enter the following commands to enable the Delivery Controller to trust XML requests sent from StoreFront. The following procedure applies to XenApp 7.5 through 7.8 and XenDesktop 7.0 through 7.8.

1. Load the Citrix cmdlets by typing asnp Citrix*. (including the period).
2. Type `Add-PSSnapin citrix.broker.admin.v2`.
3. Type `Set-BrokerSite -TrustRequestsSentToTheXmlServicePort $True`.

For information about configuring the XenApp Services Support smart card authentication method, see Configure authentication for XenApp Services URLs.

### Important considerations
Use of smart cards for user authentication with StoreFront is subject to the following requirements and restrictions.

- To use virtual private network (VPN) tunnels with smart card authentication, users must install the NetScaler Gateway Plug-in and log on through a web page, using their smart cards and PINs to authenticate at each step. Pass-through authentication to StoreFront with the NetScaler Gateway Plug-in is not available for smart card users.
- Multiple smart cards and multiple readers can be used on the same user device, but if you enable pass-through with smart card authentication, users must ensure that only one smart card is inserted when accessing a desktop or application.
- When a smart card is used within an application, such as for digital signing or encryption, users might see additional prompts to insert a smart card or enter a PIN. This can occur if more than one smart card has been inserted at the same time. It can also occur due to configuration settings - such as middleware settings like PIN caching that are typically configured using group policy. Users who are prompted to insert a smart card when the smart card is already in the reader must click Cancel. If users are prompted for a PIN, they must enter their PINs again.
- If you enable pass-through with smart card authentication to XenDesktop and XenApp for Citrix Receiver for Windows users with domain-joined devices who do not access stores through NetScaler Gateway, this setting applies to all users of the store. To enable both domain pass-through and pass-through with smart card authentication to desktops and applications, you must create separate stores for each authentication method. Your users must then connect to the appropriate store for their method of authentication.
- If you enable pass-through with smart card authentication to XenDesktop and XenApp for Citrix Receiver for Windows users with domain-joined devices accessing stores through NetScaler Gateway, this setting applies to all users of the store. To enable pass-through authentication for some users and require others to log on to their desktops and applications, you must create separate stores for each group of users. Then, direct your users to the appropriate store for their method of authentication.
- Only one authentication method can be configured for each XenApp Services URL and only one URL is available per store. If you need to enable other types of authentication in addition to smart card authentication, you must create separate stores, each with a XenApp Services URL, for each authentication method. Then, direct your users to the appropriate store for their method of authentication.
- When StoreFront is installed, the default configuration in Microsoft Internet Information Services (IIS) only requires that client certificates are presented for HTTPS connections to the certificate authentication URL of the StoreFront authentication service. IIS does not request client certificates for any other StoreFront URLs. This configuration enables you to provide smart card users with the option to fall back to explicit authentication if they experience any issues with their smart cards. Subject to the appropriate Windows policy settings, users can also remove their smart cards without needing to reauthenticate.

If you decide to configure IIS to require client certificates for HTTPS connections to all StoreFront URLs, the authentication service and stores must be collocated on the same server. You must use a client certificate that is valid for all the stores. With this IIS site configuration, smart card users cannot connect through NetScaler Gateway and cannot fall back to explicit authentication. Users must log on again if they remove their smart cards from their devices.
Optimize the user experience

Feb 24, 2016

StoreFront includes features designed to enhance the user experience. These features are configured by default when you create new stores and their associated Citrix Receiver for Web sites, Desktop Appliance sites, and XenApp Services URLs.

Workspace control

As users move between devices, workspace control ensures that the applications they are using follow them. Users can keep working with the same application instances across multiple devices rather than having to restart all their applications each time they log on to a new device. This enables, for example, clinicians in hospitals to save time as they move from workstation to workstation accessing patient data.

Workspace control is enabled by default for Citrix Receiver for Web sites and connections to stores through XenApp Services URLs. When users log on, they are automatically reconnected to any applications that they left running. For example, consider a user logging on to a store, either through the Citrix Receiver for Web site or the XenApp Services URL, and starting some applications. If the user then logs on to the same store using the same access method but on a different device, the running applications are automatically transferred to the new device. All the applications that the user starts from a particular store are automatically disconnected, but not shut down, when the user logs off from that store. In the case of Citrix Receiver for Web sites, the same browser must be used to log on, start the applications, and log off.

Workspace control for XenApp Services URLs cannot be configured or disabled. For more information about configuring workspace control for Citrix Receiver for Web sites, see Configure workspace control.

Use of workspace control on Citrix Receiver for Web sites is subject to the following requirements and restrictions.

- Workspace control is not available when Citrix Receiver for Web sites are accessed from hosted desktops and applications.
- For users accessing Citrix Receiver for Web sites from Windows devices, workspace control is only enabled if the site can detect that Citrix Receiver is installed on users’ devices or if Citrix Receiver for HTML5 is used to access resources.
- To reconnect to disconnected applications, users accessing Citrix Receiver for Web sites through Internet Explorer must add the site to the Local intranet or Trusted sites zones.
- If there is only one desktop available for a user on a Citrix Receiver for Web site that is configured to start single desktops automatically when the user logs on, that user’s applications are not reconnected, regardless of the workspace control configuration.
- Users must disconnect from their applications using the same browser that was originally used to start them. Resources started using a different browser or started locally from the desktop or Start menu using Citrix Receiver cannot be disconnected or shut down by Citrix Receiver for Web sites.

Content redirection

Where users have subscribed to the appropriate application, content redirection enables local files on users’ devices to be opened using subscribed applications. To enable redirection of local files, associate the application with the required file types in XenDesktop or XenApp. File type association is enabled by default for new stores. For more information, see Disable file type association.

User changed password

You can enable Citrix Receiver for Web site users logging on with Microsoft Active Directory domain credentials to change
their passwords at any time. Alternatively, you can restrict password changes to users whose passwords have expired. This means you can ensure that users are never prevented from accessing their desktops and applications by an expired password.

If you enable Citrix Receiver for Web site users to change their passwords at any time, local users whose passwords are about to expire are shown a warning when they log on. By default, the notification period for a user is determined by the applicable Windows policy setting. Password expiry warnings are only displayed to users connecting from the internal network. For more information about enabling users to change their passwords, see Configure the authentication service.

Users logging on to Desktop Appliance sites can only change expired passwords, even if you enable users to change their passwords at any time. Desktop Appliance sites do not provide controls to enable users to change their passwords after they have logged on.

When you create the authentication service, the default configuration prevents Citrix Receiver for Web site users from changing their passwords, even if the passwords have expired. If you decide to enable this feature, ensure that the policies for the domains containing your servers do not prevent users from changing their passwords. StoreFront must be able to contact the domain controller to change users' passwords.

Enabling users to change their passwords exposes sensitive security functions to anyone who can access any of the stores that use the authentication service. If your organization has a security policy that reserves user password change functions for internal use only, ensure that none of the stores are accessible from outside your corporate network.

Citrix Receiver for Web site desktop and application views

When both desktops and applications are available from a Citrix Receiver for Web site, the site displays separate desktop and application views by default. Users see the desktop view first when they log on to the site. Regardless of whether applications are also available from a Citrix Receiver for Web site, if only a single desktop is available for a user, the site starts that desktop automatically when the user logs on. You can configure which views appear for your sites and prevent Citrix Receiver for Web sites from automatically starting desktops for users. For more information, see Configure how resources are displayed for users.

The behavior of the views on Citrix Receiver for Web sites depends on the types of resources being delivered. For example, users must subscribe to applications before they appear in the application view, whereas all the desktops available to a user are automatically displayed in the desktop view. For this reason, users cannot remove desktops from the desktop view and cannot reorganize them by dragging and dropping the icons. When desktop restarts are enabled by the XenDesktop administrator, controls that enable users to restart their desktops are provided in the desktop view. If users have access to multiple instances of a desktop from a single desktop group, Citrix Receiver for Web sites differentiate the desktops for users by appending numerical suffixes to the desktop names.

For users connecting to stores within Citrix Receiver or through XenApp Services URLs, the way in which desktops and applications are displayed, and their behavior, is determined by the Citrix client being used.

Additional recommendations

When delivering applications with XenDesktop and XenApp, consider the following options to enhance the experience for users when they access their applications through your stores. For more information about delivering applications, see Create a Delivery Group application.

- Organize applications into folders to make it easier for users to find what they need when browsing through the available resources. The folders you create in XenDesktop and XenApp appear as categories in Citrix Receiver. You could,
for example, group applications according to type or, alternatively, create folders for different user roles in your organization.

- Ensure that you include meaningful descriptions when you deliver applications, as these descriptions are visible to users in Citrix Receiver.
- You can specify that all users have a core set of applications that cannot be removed from the Citrix Receiver home screen by appending the string `KEYWORDS:Mandatory` to the application description. Users can still use the self-service UI to add more applications or remove nonmandatory applications.
- You can automatically subscribe all users of a store to an application by appending the string `KEYWORDS:Auto` to the description you provide when you deliver the application. When users log on to the store, the application is automatically provisioned without users needing to manually subscribe.
- To automatically subscribe all users of a store to a web or software-as-a-service (SaaS) application managed by App Controller, select the `App is available in Citrix Receiver to all users automatically` check box when you configure the application settings.
- Advertise XenDesktop applications to users or make commonly used applications easier to find by listing them in the Featured list in Citrix Receiver. To do this, append the string `KEYWORDS:Featured` to the application description. Note: Multiple keywords must be separated by spaces only; for example, `KEYWORDS:Auto Featured`.
- By default, XenDesktop and XenApp hosted shared desktops are treated like other desktops by Citrix Receiver for Web sites. To change this behavior, append the string `KEYWORDS:TreatAsApp` to the desktop description. The desktop is displayed in the application views of Citrix Receiver for Web sites rather than the desktop views and users are required to subscribe before they can access the desktop. In addition, the desktop is not automatically started when the user logs on to the Citrix Receiver for Web site and is not accessed with the Desktop Viewer, even if the site is configured to do this for other desktops.
- For Windows users, you can specify that the locally installed version of an application should be used in preference to the equivalent delivered instance if both are available. To do this, append the string `KEYWORDS:prefer="application"` to the application description, where application is either one or more complete words in the name of the local application as given by the shortcut file name, or the absolute path including the executable file name to the local application from the \Start Menu folder. When a user subscribes to an application with this keyword, Citrix Receiver searches for the specified name or path on the user's device to determine whether the application is already installed locally. If the application is found, Citrix Receiver subscribes the user to the delivered application, but does not create a shortcut. When the user starts the delivered application from Citrix Receiver, the locally installed instance runs instead. For more information, see Configure application delivery.
StoreFront high availability and multi-site configuration

Feb 24, 2016

StoreFront includes a number of features that combine to enable load balancing and failover between the deployments providing resources for stores. You can also specify dedicated disaster recovery deployments for increased resiliency. These features enable you to configure StoreFront deployments distributed over multiple sites to provide high availability for your stores. StoreFront high availability and multi-site configurations are set up by editing the store configuration files. Highly available multi-site configurations cannot be set up or managed using the Citrix StoreFront management console. For more information, see Set up highly available multi-site store configurations.

Resource aggregation

By default, StoreFront enumerates all the deployments providing desktops and applications for a store and treats all those resources as distinct. This means that if the same resource is available from several deployments, users see an icon for each resource, which might be confusing if the resources have the same name. When you set up highly available multi-site configurations, you can group XenDesktop and XenApp deployments that deliver the same desktop or application so that identical resources can be aggregated for users. Grouped deployments do not need to be identical, but resources must have the same name and path on each server to be aggregated.

When a desktop or application is available from multiple XenDesktop and XenApp deployments configured for a particular store, StoreFront aggregates all instances of that resource and presents users with a single icon. App Controller applications cannot be aggregated. When a user starts an aggregated resource, StoreFront determines the most appropriate instance of that resource for the user on the basis of server availability, whether the user already has an active session, and the ordering you specified in your configuration.

StoreFront dynamically monitors servers that fail to respond to requests on the basis that such servers are either overloaded or temporarily unavailable. Users are directed to resource instances on other servers until communications are re-established. Where supported by the servers providing the resources, StoreFront attempts to reuse existing sessions to deliver additional resources. If a user already has an active session on a deployment that also provides the requested resource, StoreFront reuses the session if it is compatible with that resource. Minimizing the number of sessions for each user reduces the time taken to start additional desktops or applications and can allow for more efficient use of product licenses.

After checking for availability and existing user sessions, StoreFront uses the ordering specified in your configuration to determine the deployment to which the user is connected. If multiple equivalent deployments are available to the user, you can specify that users are connected either to the first available deployment or randomly to any deployment in the list. Connecting users to the first available deployment enables you to minimize the number of deployments in use for the current number of users. Randomly connecting users provides a more even distribution of users across all the available deployments.

You can override the specified deployment ordering for individual XenDesktop and XenApp resources to define preferred deployments to which users are connected when they access a particular desktop or application. This enables you to, for example, specify that users are preferentially connected to a deployment specifically adapted to deliver a particular desktop or application, but use other deployments for other resources. To do this, append the string KEYWORDS:Primary to the description of the desktop or application on the preferred deployment and KEYWORDS:Secondary to the resource on
other deployments. Where possible, users are connected to the deployment providing the primary resource, regardless of
the deployment ordering specified in your configuration. Users are connected to deployments providing secondary
resources when the preferred deployment is unavailable or when the user already has an active session on a non-preferred
deployment.

Map users to resources

By default, users accessing a store see an aggregate of all the resources available from all the deployments configured for
that store. To provide different resources for different users, you can configure separate stores or even separate
StoreFront deployments. However, when you set up highly available multi-site configurations, you can provide access to
particular deployments on the basis of users' membership of Microsoft Active Directory groups. This enables you to
configure different experiences for different user groups through a single store.

For example, you can group common resources for all users on one deployment and finance applications for the Accounts
department on another deployment. In such a configuration, a user who is not a member of the Accounts user group sees
only the common resources when accessing the store. A member of the Accounts user group is presented with both the
common resources and the finance applications.

Alternatively, you can create a deployment for power users that provides the same resources as your other deployments,
but with faster and more powerful hardware. This enables you to provide an enhanced experience for business-critical
users, such as your executive team. All users see the same desktops and applications when they log on to the store, but
members of the Executives user group are preferentially connected to resources provided by the power user deployment.

Subscription synchronization

If you enable your users to access the same applications from similar stores in different StoreFront deployments, users'
application subscriptions must be synchronized between the server groups. Otherwise, users who subscribe to an
application in a store on one StoreFront deployment might need to resubscribe to the application when they log on to a
different server group. To provide a seamless experience for users moving between separate StoreFront deployments, you
can configure periodic synchronization of users' application subscriptions between stores in different server groups. Choose
between regular synchronization at a specific interval or schedule synchronization to occur at particular times throughout
the day.

Dedicated disaster recovery resources

You can configure specific disaster recovery deployments that are not used unless all other deployments are unavailable.
Typically, disaster recovery deployments are not collocated with the main deployments, provide only a subset of the
resources that are normally available, and might offer a degraded user experience. When you specify that a deployment is
to be used for disaster recovery, the deployment will not be used for load balancing or failover. Users cannot access
desktops and applications provided by disaster recovery deployments unless all the other deployments for which the
disaster recovery deployments are configured become unavailable.

When access to any other deployment is re-established, users cannot start more disaster recovery resources, even if they
are already using such a resource. Users running disaster recovery resources are not disconnected from those resources
when access to other deployments is restored. However, they cannot start disaster recovery resources again once they
have exited these resources. Similarly, StoreFront does not attempt to reuse existing sessions with disaster recovery
deployments if any other deployments have subsequently become available.

Optimal NetScaler Gateway routing

If you have configured separate NetScaler Gateway appliances for your deployments, StoreFront enables you to define
the optimal appliance for users to access each of the deployments providing resources for a store. For example, if you create a store that aggregates resources from two geographical locations, each with a NetScaler Gateway appliance, users connecting through an appliance in one location can start a desktop or application in the other location. However, by default, the connection to the resource is then routed through the appliance to which the user originally connected and must therefore traverse the corporate WAN.

To improve the user experience and reduce network traffic over the WAN, you can specify the optimal NetScaler Gateway appliance for each of your deployments. With this configuration, user connections to resources are automatically routed through the appliance local to the deployment providing the resources, regardless of the location of the appliance through which the user accesses the store.

Optimal NetScaler Gateway routing can also be used in the special case where local users on the internal network are required to log on to NetScaler Gateway for endpoint analysis. With this configuration, users connect to the store through the NetScaler Gateway appliance, but there is no need to route the connection to the resource through the appliance as the user is on the internal network. In this case, you enable optimal routing, but do not specify an appliance for the deployment, so user connections to desktops and applications are routed directly and not through NetScaler Gateway. Note that you must also configure a specific internal virtual server IP address for the NetScaler Gateway appliance. Additionally, specify an inaccessible internal beacon point so that Citrix Receiver is always prompted to connect to NetScaler Gateway, regardless of the user's network location.

NetScaler Gateway global server load balancing

StoreFront supports NetScaler Gateway deployments configured for global server load balancing with multiple appliances configured with a single fully qualified domain name (FQDN). For user authentication and to route user connections through the appropriate appliance, StoreFront must be able to distinguish between the appliances. Because the appliance FQDN cannot be used as a unique identifier in a global server load balancing configuration, you must configure StoreFront with unique IP addresses for each of the appliances. Typically, this is the IP address of the NetScaler Gateway virtual server.

For information about load balancing, see Load balancing with NetScaler.

Important considerations

When you decide whether to set up highly available multi-site configurations for your stores, consider the following requirements and restrictions.

- Desktops and applications must have the same name and path on each server to be aggregated. In addition, the properties of aggregated resources, such as names and icons, must be the same. If this is not the case, users could see the properties of their resources change when Citrix Receiver enumerates the available resources.
- Assigned desktops, both pre-assigned and assigned-on-first-use, should not be aggregated. Ensure that Delivery Groups providing such desktops do not have the same name and path in sites that you configure for aggregation.
- App Controller applications cannot be aggregated.
- Primary deployments in the same equivalent deployment set must be identical. StoreFront only enumerates and displays to users the resources from the first available primary deployment in a set, since it is assumed that each deployment provides exactly the same resources. Configure separate equivalent deployment sets for deployments that differ even slightly in the resources they provide.
- If you configure synchronization of users' application subscriptions between stores on separate StoreFront deployments, the stores must have the same name in each server group. In addition, both server groups must reside within the Active Directory domain containing your users' accounts or within a domain that has a trust relationship with the user accounts domain.
• StoreFront only provides access to backup deployments for disaster recovery when all the primary sites in the equivalent deployment set are unavailable. If a backup deployment is shared between multiple equivalent deployment sets, all the primary sites in each of the sets must be unavailable before users can access the disaster recovery resources.
Install, set up, upgrade, and uninstall

Oct 28, 2016
Before installing and configuring

To install and configure StoreFront, complete the following steps in order.

1. If you plan to use StoreFront to deliver XenDesktop and XenApp resources to users, ensure that the StoreFront server is joined to either the Microsoft Active Directory domain containing your users’ accounts or a domain that has a trust relationship with the user accounts domain.

   Note: StoreFront cannot be installed on a domain controller.

2. If not already present, StoreFront requires Microsoft .NET 4.5 Framework, which can be downloaded from Microsoft. You must have Microsoft .NET 4.5 installed before you can install StoreFront.

3. Optionally, if you plan to configure a multiple server StoreFront deployment, set up a load balancing environment for your StoreFront servers.

   To use NetScaler for load balancing, you define a virtual server to proxy your StoreFront servers. For more information on configuring NetScaler for load balancing, see Load balancing with NetScaler.

   1. Ensure that load balancing is enabled on your NetScaler appliance.

   2. For each StoreFront server, create individual HTTP or SSL load balancing services, as appropriate, using the StoreFront monitor type.

   3. Configure the services to insert the client IP address into the X-Forwarded-For HTTP header of requests forwarded to StoreFront, overriding any global policies.

      StoreFront requires users’ IP addresses to establish connections to their resources.

   4. Create a virtual server and bind the services to the virtual server.

   5. On the virtual server, configure persistence using the cookie insert method if you have the latest Citrix Receivers installed on all platforms and you have no need to support Android; otherwise, configure persistence on the basis of source IP address. Ensure the Time To Live (TTL) is sufficient to enable users to stay logged on to the server as long as required.

      Persistence ensures that only the initial user connection is load balanced, after which subsequent requests from that user are directed to the same StoreFront server.

4. Optionally, enable the following features.

   - .NET Framework 4.5 Features > .NET Framework 4.5, ASP.NET 4.5
     Optionally, enable the following roles and their dependencies on the StoreFront server.

     - Web Server (IIS) > Web Server > Common HTTP Features > Default Document, HTTP Errors, Static Content, HTTP Redirection
     - Web Server (IIS) > Web Server > Health and Diagnostics > HTTP Logging
     - On Windows Server 2012 servers:

        Web Server (IIS) > Web Server > Application Development > .NET Extensibility 4.5, Application Initialization, ASP.NET
4.5, ISAPI Extensions, ISAPI Filters

On Windows Server 2008 R2 servers:

Web Server (IIS) > Web Server > Application Development > .NET Extensibility, Application Initialization, ASP.NET, ISAPI Extensions, ISAPI Filters

- Web Server (IIS) > Management Tools > IIS Management Console, IIS Management Scripts and Tools

The StoreFront installer checks that all the features and server roles above are enabled.

5. Install StoreFront.

If you intend the server to be part of a server group, both the StoreFront installation location and IIS website settings, physical path and site IDs must be consistent across them.

6. Optionally, configure Microsoft Internet Information Services (IIS) for HTTPS if you plan to use HTTPS to secure communications between StoreFront and users' devices.

HTTPS is required for smart card authentication. By default, Citrix Receiver requires HTTPS connections to stores. You can change from HTTP to HTTPS at any time after installing StoreFront, provided the appropriate IIS configuration is in place.


7. Ensure your firewalls and other network devices permit access to TCP port 80 or 443, as appropriate, from both inside and outside the corporate network. In addition, ensure that any firewalls or other devices on your internal network do not block traffic to any of the unassigned TCP ports.

When you install StoreFront, a Windows Firewall rule is configured enabling access to the StoreFront executable through a TCP port randomly selected from all unreserved ports. This port is used for communications between the StoreFront servers in a server group.

8. Use the Citrix StoreFront management console to configure your server.

Install StoreFront

1. Download the installer from the download page.
2. Log on to the StoreFront server using an account with local administrator permissions.
3. Ensure that the required Microsoft .NET 4.5 Framework is installed on the server.
4. Browse the download package, locate CitrixStoreFront-x64.exe, and run the file as an administrator.
   Note: On Windows Server 2008 R2 servers, a message may be displayed indicating that the .NET feature will be enabled. If this message appears, click Yes.
5. Read and accept the license agreement, and click Next.
6. If the Review prerequisites page appears, click Next.
7. On the Ready to install page, check the prerequisites and StoreFront components that are listed for installation and click Install.
   Before the components are installed, the following roles are enabled if they are not already configured on the server.
● Web Server (IIS) > Web Server > Common HTTP Features > Default Document, HTTP Errors, Static Content, HTTP Redirection
● Web Server (IIS) > Web Server > Health and Diagnostics > HTTP Logging
● On Windows Server 2012 servers:
  Web Server (IIS) > Web Server > Application Development > .NET Extensibility 4.5, Application Initialization, ASP.NET 4.5, ISAPI Extensions, ISAPI Filters
On Windows Server 2008 R2 servers:
  Web Server (IIS) > Web Server > Application Development > .NET Extensibility, Application Initialization, ASP.NET, ISAPI Extensions, ISAPI Filters
● Web Server (IIS) > Management Tools > IIS Management Console, IIS Management Scripts and Tools
The following features are also enabled if they are not already configured.
● .NET Framework 4.5 Features > .NET Framework 4.5, ASP.NET 4.5
8. When the installation is complete, click Finish. The Citrix StoreFront management console starts automatically. You can also open StoreFront from the Start screen.

9. In the Citrix StoreFront management console, click Create a new deployment.
   1. Specify the URL of the StoreFront server in the Base URL box.
   2. On the Store Name page, specify a name for your store, and click Next.
10. On the Delivery Controllers page, list the infrastructure – the details of the XenApp or XenDesktop services – that is providing the resources you want to make available in the store. You can enter a “dummy” server here; however, no apps will display in the store.
11. Set the Transport type and the Port. You can specify HTTP and port 443 and click OK. Alternatively, copy settings from an existing Web Interface or StoreFront deployment.
12. On the Remote Access page, select None. If you are using NetScaler Gateway, select No VPN Tunnel and enter your gateway details.
13. On the Remote Access page, select Create. Once the store has been created, click Finish.

Your store is now available for users to access through the Citrix Receiver for Web site, which enables users to access their desktops and apps through a webpage.
The URL for users to access the Citrix Receiver for Web site for the new store is displayed. For example: example.net/Citrix/MarketingWeb/. Log on and you will access the new user interface in Citrix Receiver.
To install StoreFront at a command prompt

1. Log on to the StoreFront server using an account with local administrator permissions.
2. Ensure that all of the requirements for installation of StoreFront are met before installing StoreFront. Refer to Before installing and configuring for details.
3. Browse your installation media or download package, locate CitrixStoreFront-x64.exe, and copy the file to a temporary location on the server.
4. At a command prompt, navigate to the folder containing the installation file and type the following command.

   CitrixStoreFront-x64.exe [-silent] [-INSTALLDIR installationlocation]
   [-WINDOWS_CLIENT filelocation\filename.exe]
   [-MAC_CLIENT filelocation\filename.dmg]

   Use the -silent argument to perform a silent installation of StoreFront and all the prerequisites. By default, StoreFront is installed at C:\Program Files\Citrix\Receiver StoreFront\. However, you can specify a different installation location using the -INSTALLDIR argument, where installationlocation is the directory in which to install StoreFront. Note that if you intend the server to be part of a server group, both the StoreFront installation location and IIS website settings, physical path and site IDs must be consistent across them.

   By default, if a Citrix Receiver for Web site cannot detect Citrix Receiver on a Windows or Mac OS X device, the user is prompted to download and install the appropriate Citrix Receiver for their platform from the Citrix website. You can modify this behavior so that users download the Citrix Receiver installation files from the StoreFront server instead. For more information, see Make Citrix Receiver installation files available on the server.

   If you plan to make this configuration change, specify the -WINDOWS_CLIENT and -MAC_CLIENT arguments to copy Citrix Receiver for Windows and Citrix Receiver for Mac installation files, respectively, to the appropriate location in your StoreFront deployment. Replace filelocation with the directory containing the installation file that you want to copy and filename with the name of the Citrix Receiver installation file. Citrix Receiver for Windows and Citrix Receiver for Mac installation files are included on your StoreFront installation media or download package.

Upgrade StoreFront

To upgrade existing StoreFront 2.0 through 3.x deployments to this version of StoreFront, run the StoreFront 3.5 installation file. Releases before StoreFront 2.0 cannot be upgraded directly. Instead, you must first upgrade StoreFront 1.2 to StoreFront 2.0 before upgrading to this StoreFront. Similarly, you cannot upgrade StoreFront 1.1 to this StoreFront directly. You must upgrade Storefront 1.1 to Storefront 1.2 and then again to StoreFront 2.0 before finally upgrading to this StoreFront.
Once the upgrade process is started, it cannot be rolled back. If the upgrade is interrupted or cannot be completed, the existing configuration is removed but StoreFront is not installed. Before starting to upgrade, you must disconnect users from the StoreFront deployment and prevent users from accessing the servers while the upgrade is in progress. This ensures that all StoreFront files are accessible by the installer during the upgrade. If any files cannot be accessed by the installer, they cannot be replaced and so the upgrade will fail, resulting in the removal of the existing StoreFront configuration.

StoreFront does not support multiple server deployments containing different product versions, so all servers in a group must be updated to the upgraded version before granting access to the deployment. Concurrent upgrade is not supported for multiple server deployments, servers must be upgraded sequentially. Citrix recommends that you back up your data before upgrading.

Uninstalling StoreFront removes the authentication service, stores, users' application subscriptions, Citrix Receiver for Web sites, Desktop Appliance sites, and XenApp Services URLs. This means that if you decide to uninstall StoreFront, you must manually recreate your services, stores, and sites when you reinstall StoreFront. Upgrading also enables you to preserve your StoreFront configuration and leaves users' application subscription data intact so that users do not need to resubscribe to all of their applications.

Upgrading the operating system version on a server running StoreFront is not supported. Citrix recommends that you install StoreFront on a new installation of the operating system.

**To upgrade from StoreFront 2.0 to StoreFront 3.5**

1. Remove one of the servers in the existing server group from the load balancer, and then remove this server from the existing server group.
2. Restart the server you removed.
   - Note that you can use a parallel load balancer to check the new server group as you build it. The variant that maximizes availability and further minimizes risk involves removing and upgrading only one server from the original server group. You can then build the new group out of new machines rather than machines taken out of the original server group.
3. Upgrade the server you removed using an admin account with no other installations running and a minimum of other applications.
4. Check that the server you removed has upgraded successfully.
5. Remove another one of the servers in the existing server group from the load balancer.
6. Restart the server you removed for the same reasons noted in Step 2.
7. Uninstall the currently installed version of StoreFront and install the new version of StoreFront.
8. Join the newly installed server into a new server group consisting of all the upgraded servers and the freshly installed servers, and check they are functioning correctly.
9. Repeat Steps 5-8 until the new server group has sufficient capacity to take over from the old server group, point the load balancer at the new server group, and check that it is functioning correctly.
10. Repeat Steps 5-8 for the remaining servers, adding each one to the load balancer after each successful upgrade.

**Configure StoreFront**

When the Citrix StoreFront management console first starts, two options are available.

- **Create a new deployment.** Configure the first server in a new StoreFront deployment. Single-server deployments are ideal for evaluating StoreFront or for small production deployments. Once you have configured your first StoreFront server, you can add more servers to the group at any time to increase the capacity of your deployment.
- **Join existing server group.** Add another server to an existing StoreFront deployment. Select this option to rapidly increase the capacity of your StoreFront deployment. External load balancing is required for multiple server deployments. To add a new server, you will need access to an existing server in the deployment.
Uninstall StoreFront

In addition to the product itself, uninstalling StoreFront removes the authentication service, stores, Citrix Receiver for Web sites, Desktop Appliance sites, and XenApp Services URLs, and their associated configurations. The subscription store service containing users’ application subscription data is also deleted. In single-server deployments, this means that details of users' application subscriptions are lost. However, in multiple server deployments these data are retained on other servers in the group. Prerequisites enabled by the StoreFront installer, such as the .NET Framework features and the Web Server (IIS) role services, are not removed from the server when StoreFront is uninstalled.

1. Log on to the StoreFront server using an account with local administrator permissions.
2. On the Windows Start screen or Apps screen, locate the Citrix StoreFront tile. Right-click the tile and click Uninstall.
3. In the Programs and Features dialog box, select Citrix StoreFront and click Uninstall to remove all StoreFront components from the server.
4. In the Uninstall Citrix StoreFront dialog box, click Yes. When the uninstallation is complete, click OK.
Create a new deployment

Feb 24, 2016

1. If the Citrix StoreFront management console is not already open after installation of StoreFront, on the Windows Start screen or Apps screen, locate and click the Citrix StoreFront tile.

2. In the results pane of the Citrix StoreFront management console, click Create a new deployment.

3. Specify the URL of the StoreFront server or the load balancing environment for a multiple server deployment in the Base URL box.

   If you have not yet set up your load balancing environment, enter the server URL. You can modify the base URL for your deployment at any time.

   You can change from HTTP to HTTPS at any time using the Change Base URL task in the StoreFront management console, provided that Microsoft Internet Information Services (IIS) is configured for HTTPS.

4. Click Next to set up the authentication service, which authenticates users to Microsoft Active Directory.

   To use HTTPS to secure communications between StoreFront and users' devices, you must configure Microsoft Internet Information Services (IIS) for HTTPS. In the absence of the appropriate IIS configuration, StoreFront uses HTTP for communications.

   By default, Citrix Receiver requires HTTPS connections to stores. If StoreFront is not configured for HTTPS, users must carry out additional configuration steps to use HTTP connections. HTTPS is required for smart card authentication. You can change from HTTP to HTTPS at any time after configuring StoreFront, provided the appropriate IIS configuration is in place. For more information, see Configure server groups.

   You can change from HTTP to HTTPS at any time using the Change Base URL task in the StoreFront management console, provided that Microsoft Internet Information Services (IIS) is configured for HTTPS.

5. On the Store Name page, specify a name for your store, whether you want to allow only unauthenticated (anonymous) users access to the store, and click Next.

   StoreFront stores aggregate desktops and applications, making them available to users. Store names appear in Citrix Receiver under users' accounts, so choose a name that gives users information about the content of the store.

6. On the Controllers page, list the infrastructure providing the resources that you want to make available in the store. To add desktops and applications to the store, follow the appropriate procedure below. You can configure stores to provide resources from any mixture of XenDesktop, XenApp and XenMobile (App Controller) deployments. Repeat the procedures, as necessary, to add all the deployments providing resources for the store.

   - Add XenDesktop and XenApp resources to the store
   - Add App Controller applications to the store

7. When you have added all the required resources to the store, on the Controllers page, click Next.

8. On the Remote Access page, specify whether and how users connecting from public networks can access the internal resources.

   - To make the store available to users on public networks, check the Enable remote access box. If you leave this box unchecked, only local users on the internal network are able to access the store.

   - To make only resources delivered through the store available through NetScaler Gateway, select Allow users to access only resources delivered through StoreFront (No VPN tunnel).

   - To make the store and all other resources on the internal network available through a Secure Sockets Layer (SSL) virtual private network (VPN) tunnel, select Allows users to access all resources on internal network (Full VPN
users might require the NetScaler Gateway Plug-in to establish the VPN tunnel. If you configure remote access to the store through NetScaler Gateway, the pass-through from NetScaler Gateway authentication method is automatically enabled. Users authenticate to NetScaler Gateway and are automatically logged on when they access their stores.

9. If you enabled remote access, list the NetScaler Gateway deployments through which users can access the store. To add a NetScaler Gateway deployment, follow the appropriate procedure below. Repeat the procedures, as necessary, to add further deployments.
   - Provide remote access to the store through a NetScaler Gateway appliance
   - Provide remote access to the store through an Access Gateway 5.0 cluster

10. When you have added all your NetScaler Gateway deployments, select from the NetScaler Gateway appliances list the deployments through which users can access the store. If you enable access through multiple deployments, specify the default deployment to be used to access the store. Click Next.

11. On the Authentication Methods page, select the methods your users will use to authenticate to the store and click Next. You can select from the following methods:

   - **Username and password**: Users enter their credentials and are authenticated when they access their stores.
   - **Domain passthrough**: Users authenticate to their domain-joined Windows computers and their credentials are used to log them on automatically when they access their stores.
   - **Smart card**: Users authenticate using smart cards and PINs when they access their stores.
   - **HTTP basic**: Users authenticate with the StoreFront server's IIS web server.
   - **Passthrough through NetScaler Gateway**: Users authenticate to NetScaler Gateway and are automatically logged on when they access their stores. This is automatically checked when the remote access is enabled.

12. On the XenApp Services URL page, configure the XenApp Service URL for users who use PNAgent to access the applications and desktops.

13. After creating the store, further options become available in the Citrix StoreFront management console. For more information, see the various management articles.

Your store is now available for users to access with Citrix Receiver, which must be configured with access details for the store. There are a number of ways in which you can provide these details to users to make the configuration process easier for them. For more information, see User access options.

Alternatively, users can access the store through the Citrix Receiver for Web site, which enables users to access their desktops and applications through a webpage. The URL for users to access the Citrix Receiver for Web site for the new store is displayed when you create the store.

When you create a new store, the XenApp Services URL is enabled by default. Users of domain-joined desktop appliances and repurposed PCs running the Citrix Desktop Lock, along with users who have older Citrix clients that cannot be upgraded, can access stores directly using the XenApp Services URL for the store. The XenApp Services URL has the form http[s]://serveraddress/Citrix/storename/PNAgent/config.xml, where serveraddress is the fully qualified domain name of the server or load balancing environment for your StoreFront deployment and storename is the name you specified for the store in Step 5.

You can quickly add more servers to your deployment by selecting the option to join an existing server group when installing
Add XenDesktop and XenApp resources to the store

Complete the following steps to make desktops and applications provided by XenApp and XenDesktop available in the store that you create as part of the initial configuration of your StoreFront server. It is assumed that you have completed Steps 1 to 6 in the "Create a new deployment" procedure at the top of this article.

1. On the Controllers page of the StoreFront console Create Store UI, click Add.
2. In the Add Controllers dialog box, specify a name that will help you to identify the deployment and indicate whether the resources that you want to make available in the store are provided by XenDesktop, XenApp, or XenMobile.
3. Add the names or IP addresses of your servers to the Servers list. Specify multiple servers to enable fault tolerance, listing the entries in order of priority to set the failover sequence. For XenDesktop sites, give details of Controllers. In the case of XenApp farms, list servers running the Citrix XML Service.
4. Select from the Transport type list the type of connections for StoreFront to use for communications with the servers.
   - To send data over unencrypted connections, select HTTP. If you select this option, you must make your own arrangements to secure connections between StoreFront and your servers.
   - To send data over secure HTTP connections using Secure Sockets Layer (SSL) or Transport Layer Security (TLS), select HTTPS. If you select this option for XenDesktop and XenApp servers, ensure that the Citrix XML Service is set to share its port with Microsoft Internet Information Services (IIS) and that IIS is configured to support HTTPS.
   - To send data over secure connections to XenApp servers using the SSL Relay to perform host authentication and data encryption, select SSL Relay.
   Note: If you are using HTTPS or the SSL Relay to secure connections between StoreFront and your servers, ensure that the names you specify in the Servers list match exactly (including the case) the names on the certificates for those servers.
5. Specify the port for StoreFront to use for connections to the servers. The default port is 80 for connections using HTTP and the SSL Relay, and 443 for HTTPS connections. In the case of XenDesktop and XenApp servers, the specified port must be the port used by the Citrix XML Service.
6. If you are using the SSL Relay to secure connections between StoreFront and XenApp servers, specify the TCP port of the SSL Relay in the SSL Relay port box. The default port is 443. Ensure that all the servers running the SSL Relay are configured to monitor the same port.

You can configure stores to provide resources from any mixture of XenDesktop, XenApp, and XenMobile deployments. To add further XenDesktop sites or XenApp farms, repeat the procedure above. To make applications managed by App Controller available in the store, follow the steps in Add App Controller applications to the store. When you have added all the required resources to the store, return to Step 7 in the "Create a new deployment" procedure at the top of this article.

Add App Controller applications to the store

Complete the following steps to make applications managed by App Controller available in the store that you create as part of the initial configuration of your StoreFront server. It is assumed that you have completed Steps 1 to 6 in the "Create a new deployment" procedure at the top of this article.

1. On the Delivery Controllers page of the Create Store wizard, click Add.
2. In the Add Delivery Controller dialog box, specify a name that will help you to identify the App Controller virtual appliance managing the applications that you want to make available in the store. Ensure that the name does not contain any spaces. Select AppController.
3. Enter the name or IP address of the App Controller virtual appliance in the Server box and specify the port for StoreFront to use for connections to App Controller. The default port is 443.
You can configure stores to provide resources from any mixture of XenDesktop, XenApp, and App Controller deployments. To add applications managed by other App Controller virtual appliances, repeat the procedure above. To make desktops and applications provided by XenDesktop and XenApp available in the store, follow the steps in Add XenDesktop and XenApp resources to the store. When you have added all the required resources to the store, return to Step 7 in the "Create a new deployment" procedure at the top of this article.

Provide remote access to the store through a NetScaler Gateway appliance

Complete the following steps to configure remote access through a NetScaler Gateway appliance to the store that you create as part of the initial configuration of your StoreFront server. It is assumed that you have completed Steps 1 to 9 in the "Create a new deployment" procedure at the top of this article.

2. In the Add NetScaler Gateway Appliance dialog box, specify a name for the appliance that will help users to identify it. Users see the display name you specify in Citrix Receiver, so include relevant information in the name to help users decide whether to use that appliance. For example, you can include the geographical location in the display names for your NetScaler Gateway deployments so that users can easily identify the most convenient deployment for their location.
3. Enter the URL of the virtual server or user logon point (for Access Gateway 5.0) for your appliance. Specify the product version used in your deployment.
   For information about creating a single Fully Qualified Domain Name (FQDN) to access a store internally and externally, see Create a single Fully Qualified Domain Name (FQDN) to access a store internally and externally.
4. If you are adding an Access Gateway 5.0 appliance, select from the Deployment mode list Appliance. Otherwise, specify the subnet IP address of the NetScaler Gateway appliance, if necessary. A subnet IP address is required for Access Gateway 9.3 appliances, but optional for more recent product versions.
   The subnet address is the IP address that NetScaler Gateway uses to represent the user device when communicating with servers on the internal network. This can also be the mapped IP address of the NetScaler Gateway appliance. Where specified, StoreFront uses the subnet IP address to verify that incoming requests originate from a trusted device.
5. If you are adding an appliance running NetScaler Gateway 10.1, Access Gateway 10, or Access Gateway 9.3, select from the Logon type list the authentication method you configured on the appliance for Citrix Receiver users. The information you provide about the configuration of your NetScaler Gateway appliance is added to the provisioning file for the store. This enables Citrix Receiver to send the appropriate connection request when contacting the appliance for the first time.
   - If users are required to enter their Microsoft Active Directory domain credentials, select Domain.
   - If users are required to enter a tokencode obtained from a security token, select Security token.
   - If users are required to enter both their domain credentials and a tokencode obtained from a security token, select Domain and security token.
   - If users are required to enter a one-time password sent by text message, select SMS authentication.
   - If users are required to present a smart card and enter a PIN, select Smart card.
   If you configure smart card authentication with a secondary authentication method to which users can fall back if they experience any issues with their smart cards, select the secondary authentication method from the Smart card fallback list.
6. Complete the NetScaler Gateway authentication service URL in the Callback URL box. StoreFront automatically appends the standard portion of the URL. Click Next.
   Enter the internally accessible URL of the appliance. StoreFront contacts the NetScaler Gateway authentication service
to verify that requests received from NetScaler Gateway originate from that appliance.

7. If you are making resources provided by XenDesktop or XenApp available in the store, list on the Secure Ticket Authority (STA) page URLs for servers running the STA. Add URLs for multiple STAs to enable fault tolerance, listing the servers in order of priority to set the failover sequence. The STA is hosted on XenDesktop and XenApp servers and issues session tickets in response to connection requests. These session tickets form the basis of authentication and authorization for access to XenDesktop and XenApp resources.

8. If you want XenDesktop and XenApp to keep disconnected sessions open while Citrix Receiver attempts to reconnect automatically, select the Enable session reliability check box. If you configured multiple STAs and want to ensure that session reliability is always available, select the Request tickets from two STAs, where available check box. When the Request tickets from two STAs, where available check box is selected, StoreFront obtains session tickets from two different STAs so that user sessions are not interrupted if one STA becomes unavailable during the course of the session. If, for any reason, StoreFront is unable to contact two STAs, it falls back to using a single STA.

9. Click Create to add your NetScaler Gateway deployment to the list on the Remote Access page. To add further deployments, repeat the procedure above. To configure remote access to the store through an Access Gateway 5.0 cluster, follow the steps in Provide remote access to the store through an Access Gateway 5.0 cluster. When you have added all your NetScaler Gateway deployments, return to Step 10 in the “Create a new deployment” procedure at the top of this article.

Provide remote access to the store through an Access Gateway 5.0 cluster

Complete the following steps to configure remote access through an Access Gateway 5.0 cluster to the store that you create as part of the initial configuration of your StoreFront server. It is assumed that you have completed Steps 1 to 9 in the “Create a new deployment” procedure at the top of this article.


2. In the Add NetScaler Gateway Appliance dialog box, specify a name for the cluster that will help users to identify it. Users see the display name you specify in Citrix Receiver, so include relevant information in the name to help users decide whether to use that cluster. For example, you can include the geographical location in the display names for your NetScaler Gateway deployments so that users can easily identify the most convenient deployment for their location.

3. Enter the URL of the user logon point for your cluster and select from the Version list 5.x.

4. From the Deployment mode list, select Access Controller and click Next.

5. On the Appliances page, list the IP addresses or fully qualified domain names (FQDNs) of the appliances in the cluster and click Next.

6. On the Enable Silent Authentication page, list URLs for the authentication service running on the Access Controller servers. Add URLs for multiple servers to enable fault tolerance, listing the servers in order of priority to set the failover sequence. Click Next. StoreFront uses the authentication service to authenticate remote users so that they do not need to re-enter their credentials when accessing stores.

7. If you are making resources provided by XenDesktop and XenApp available in the store, list on the Secure Ticket Authority (STA) page URLs for servers running the STA. Add URLs for multiple STAs to enable fault tolerance, listing the servers in order of priority to set the failover sequence. The STA is hosted on XenDesktop and XenApp servers and issues session tickets in response to connection requests. These session tickets form the basis of authentication and authorization for access to XenDesktop and XenApp resources.
8. If you want XenDesktop and XenApp to keep disconnected sessions open while Citrix Receiver attempts to reconnect automatically, select the Enable session reliability check box. If you configured multiple STAs and want to ensure that session reliability is always available, select the Request tickets from two STAs, where available check box. When the Request tickets from two STAs, where available check box is selected, StoreFront obtains session tickets from two different STAs so that user sessions are not interrupted if one STA becomes unavailable during the course of the session. If, for any reason, StoreFront is unable to contact two STAs, it falls back to using a single STA.

9. Click Create to add your NetScaler Gateway deployment to the list on the Remote Access page.

To add further clusters, repeat the procedure above. To configure remote access to the store through NetScaler Gateway 10.1, Access Gateway 10, Access Gateway 9.3, or a single Access Gateway 5.0 appliance, follow the steps in Provide remote access to the store through a NetScaler Gateway appliance. When you have added all your NetScaler Gateway deployments, return to Step 10 in the “Create a new deployment” procedure at the top of this article.
Join an existing server group

Feb 24, 2016

Before installing StoreFront, ensure that the server you are adding to the group is running the same operating system version with the same locale settings as the other servers in the group. StoreFront server groups containing mixtures of operating system versions and locales are not supported. While a server group can contain a maximum of five servers, from a capacity perspective based on simulations, there is no advantage of server groups containing more than three servers. In addition, ensure that the relative path to StoreFront in IIS on the server you are adding is the same as on the other servers in the group.

Important: When you add a new server to a server group, StoreFront service accounts are added as members of the local administrators group on the new server. These services require local administrator permissions to join and synchronize with the server group. If you use Group Policy to prevent addition of new members to the local administrator group on your servers, StoreFront cannot join a server group.

1. If the Citrix StoreFront management console is not already open after installation of StoreFront, on the Windows Start screen or Apps screen, locate and click the Citrix StoreFront tile.
2. In the results pane of the Citrix StoreFront management console, click Join existing server group.
3. Log on to a server in the StoreFront deployment that you wish to join and open the Citrix StoreFront management console. Select the Server Group node in the left pane of the console and, in the Actions pane, click Add Server. Make a note of the authorization code that is displayed.
4. Return to the new server and, in the Join Server Group dialog box, specify the name of the existing server in the Authorizing server box. Enter the authorization code obtained from that server and click Join.

Once joined to the group, the configuration of the new server is updated to match the configuration of the existing server. All the other servers in the group are updated with details of the new server.

To manage a multiple server deployment, use only one server at a time to make changes to the configuration of the server group. Ensure that the Citrix StoreFront management console is not running on any of the other servers in the deployment. Any configuration changes you make must be propagated to the other servers in the group to ensure a consistent configuration across the deployment.

Remove a server from an existing server group

If a StoreFront server was a member of a server group and has been removed, you must run the Clear-DSConfiguration PowerShell cmdlet to reset the StoreFront server to a factory default state. After you run the Clear-DSConfiguration cmdlet on the disconnected server, you can add the server back to an existing server group or to a different newly created server group.

1. Open the StoreFront administration console on the primary StoreFront server that you use to manage your entire server group.
2. Select the server group node on the left pane and choose another server to remove.
3. Remove the selected server from the server group.
4. In the Actions pane, propagate changes from the server you used to disconnect one of your server group members. Any other remaining server group members are now aware that a server has been removed from the group. Until you reset the disconnected server to a factory default state, it is not aware that it is no longer a member of the group.
5. Close the administration console on the disconnected server.
6. Open a PowerShell session on your disconnected server after it has been removed from the group and import the StoreFront PowerShell modules using: & "$Env:PROGRAMFILES\Citrix\Receiver
Run the `Clear-DSConfiguration` command, which resets the server to default settings.

Open the StoreFront administration console and the disconnected server is reset and ready to be added to another server group.
Migrate Web Interface features to StoreFront

Feb 24, 2016

Many of the Web Interface customizations have equivalents in StoreFront by using JavaScript tweaks and Citrix published APIs.

The table contains an overview of the customizations and basic information about how to achieve them.

Folder locations

- For script customizations, append the examples to the script.js file found in
  
  C:\inetpub\wwwroot\Citrix\StoreNameWeb\custom
  
- For style customization, append the example to the style.css file found in
  
  C:\inetpub\wwwroot\Citrix\StoreNameWeb\custom
  
- For dynamic content, add the dynamic context to a text file in
  
  C:\inetpub\wwwroot\Citrix\StoreNameWeb\customweb
  
- If you have a multiserver deployment, you can replicate any changes to other servers from the StoreFront administration console or by using PowerShell.

Note: Web Interface enabled individual users to customize various settings. Currently, StoreFront 3.0 does not have this ability, and while it is possible to add more extensive customization to support it, that is not the focus of this article.

<table>
<thead>
<tr>
<th>Web Interface Feature</th>
<th>StoreFront Equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customization with the Management Console</td>
<td></td>
</tr>
<tr>
<td>• Layout-low graphics</td>
<td>Not applicable. StoreFront auto detects and adjusts the UI to device screen.</td>
</tr>
<tr>
<td>• Layout-full graphics</td>
<td></td>
</tr>
<tr>
<td>• Allow users to choose</td>
<td></td>
</tr>
<tr>
<td>• Enable search</td>
<td>• Search is enabled by default.</td>
</tr>
<tr>
<td>• Disable search</td>
<td>• Disable. To hide the search boxes on the desktop/web UI, add the following style to style.css:</td>
</tr>
<tr>
<td></td>
<td>.search-container {</td>
</tr>
<tr>
<td></td>
<td>display: none;</td>
</tr>
<tr>
<td></td>
<td>}</td>
</tr>
</tbody>
</table>
To hide the search boxes on the phone UI, add:

```css
#searchBtnPhone {
    display: none;
}
```

<table>
<thead>
<tr>
<th>Feature</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enable refresh</td>
<td>Enabled by default (browser refresh).</td>
</tr>
<tr>
<td>Enable return to last folder</td>
<td>Not enabled by default.</td>
</tr>
</tbody>
</table>

Enable Return to last folder - To remember the current folder, and return to it on load, add the following to script.js

```javascript
CTXS.Extensions.afterDisplayHomeScreen = function ()
{
    // check if view was saved last time
    CCTXS.ExtensionAPI.localStorageGetItem("view",
    function (view) {
        if (view) {
            // if view was saved, change to it
            CCTXS.ExtensionAPI.changeView(view);
        }
    if (view == "store") {
        // if view is store, see if folder was saved
        CCTXS.ExtensionAPI.localStorageGetItem("folder",
        function(folder) {
            if (folder != ")) {
                // if folder was saved, change to it
                CCTXS.ExtensionAPI.navigateToFolder(folder);
            }
        };
    }
}
```
// set up monitoring of folder

CTXS.Extensions.onFolderChange = function(folder) {
    CTXS.ExtensionAPI.localStorageSetItem("folder", folder);
};

// set up monitoring of view

CTXS.Extensions.onViewChange = function(newview) {
    // don't retain search or appinfo views

    // instead, remember parent view.
    if ((newview != "appinfo") &&
        (newview != "search")) {
        CTXS.ExtensionAPI.localStorageSetItem("view", newview);
    }
};

Enable hints

Citrix Receiver makes very limited use of tool tips, as it is targeting touch and non-touch devices. You can add tool tips by custom script.

- Icon view
- Tree view
- Details view
- List view
- Group view
- Set Default view
- (Low graphics) Icon view
- (Low graphics) List view
- (Low graphics) Default view

Citrix Receiver has a different UI so these choices do not apply. You can use scripts to disable the Citrix Receiver views or add custom views. You can also specify this by configuration.

The web.config file in the web site directory enables and disables different views and sets the default.

Search for:

```xml
<uiViews showDesktopsView="true" showAppsView="true"
defaultView="auto" />
```
Also, search for:

```
enableAppsFolderView="true"
```

Note that the Favorite view displays only if subscription is enabled for the store (see the StoreFront administration console).

<table>
<thead>
<tr>
<th>Single tab UI</th>
<th>Tabbed UI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>App tab</td>
</tr>
<tr>
<td></td>
<td>Desktop tab</td>
</tr>
<tr>
<td></td>
<td>Content tab</td>
</tr>
<tr>
<td></td>
<td>(Tab order)</td>
</tr>
</tbody>
</table>

The Citrix Receiver UI is tabbed by default, with apps and content in one tab and desktops in the other. There is also an optional **Favorite** tab.

<table>
<thead>
<tr>
<th>Header logo</th>
<th>Text color</th>
<th>Header background color</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Header background image</td>
</tr>
</tbody>
</table>

Equivalents for colors and logos using the StoreFront administration console. Click **Customize Website Appearance** in the StoreFront administration console’s Actions pane and make your customizations on the screen that displays.

You can set the header to a background image using a style customization. For example

```
.theme-header-bgc\color {
    background-image: url('spirals.png');
}
```

<table>
<thead>
<tr>
<th>Pre-logon welcome message (Pre-locale)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

By default, there is no separate pre-logon screen.

This example script adds a click-through message box:

```
var doneClickThrough = false;
// Before web login
CTXS.Extensions.beforeLogon = function (callback) {
    doneClickThrough = true;
    CTXS.ExtensionAPI.showMessage(
        {
            messageTitle: "Welcome!",
            messageText: "Only for &lt;a href="http://www.WWc.com" target="_blank">WWCo Employees",
            okButtonText: "Accept",
            okAction: callback
        }
    )
}
```
// Before main screen (for native clients)
CTXS.Extensions.beforeDisplayHomeScreen
  = function (callback) {
    if (!doneClickThrough) {
      CTXS.ExtensionAPI.showMessage({
        messageTitle: "Welcome!",
        messageText: "Only for WWCo Employees",
        okButtonText: "Accept",
        okAction: callback
      });
    } else {
      callback();
    }
  }

- Logon screen title
- Logon screen message
- Logon screen system message

There are four areas for customization on the logon screen(s). Top and bottom of screen (header and footer) and top and bottom of the logon box itself.

\texttt{.customAuthHeader,}
\texttt{.customAuthFooter}
\texttt{.customAuthTop,}
\texttt{.customAuthBottom}
\begin{verbatim}
  {text-align: center;
   color: white;
   font-size: 16px;
  }
\end{verbatim}

Example script (static content)
### Application screen welcome message

- Application screen system message

See the examples for **CustomAuth** welcome screen above.

See examples for dynamic content above. Use `#customTop` rather than `.customAuthTop` to place content on the home screen.

### Footer text (all screens)

Example script:

```javascript
#customBottom {
    text-align: center;
    color: white;
    font-size: 16px;
}
```

Example static content using a script:

```javascript
$('customBottom').html("Welcome to ACME");
```

### Features with no direct equivalent

- Logon screen without headers

There is no direct equivalent in StoreFront. However, you can create custom
<table>
<thead>
<tr>
<th>Deep Customizations (code)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICA File generation hooks and other call-routing customizations.</td>
</tr>
<tr>
<td>Equivalent or better APIs.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Authentication customizations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equivalent or better APIs.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>JSP/ASP source access</th>
</tr>
</thead>
<tbody>
<tr>
<td>There are no equivalent APIs on StoreFront, as the UI is not rendered in the same way. There are many JavaScript APIs to enable customization of the UI.</td>
</tr>
</tbody>
</table>
Citrix Receiver extension APIs

Feb 24, 2016

This document lists CSS and Javascript extension points for Receiver 3.1. Unless otherwise specified, these extensions apply to web and native clients.

CSS Classes for Customization

Areas Commonly Customized

.logo-container

.logon-logo-container

Company logo to replace 'StoreFront' for main UI and authentication screens. Should specify a background image and background size.

.theme-header-color

.theme-highlight-color

Primary colors used for header and highlight text. Should specify a 'color' attribute.

.theme-header-bgcolor

Primary color (or fill) used for header region.

.button / .button.default

Primary color (or fill) used for popup buttons, and the popup button selected by default.

Marker Classes

.large / .small

.largeTiles / .smallTiles

.highdpi

.myapps-view / .store-view / .desksops-view / .appinfo-view / .search-view

Marker classes indicating current state of UI that can be used in CSS to selectively change the display of custom content.

Areas for Custom Content

These are areas within parts of the UI indented for custom content to be added using script.
For example:

$($('#customTop').html('Hello World');

#customTop
#customScrollTop
#customBottom

These are all on in the main UI.

#customInfoTop
#customInfo

These are on the app details (info) page.

#customExplicitAuthHeader
#customExplicitAuthFooter
#customExplicitAuthTop
#customExplicitAuthBottom

These are all on the explicit auth screen (login).

#customAuthHeader
#customAuthFooter
#customAuthTop
#customAuthBottom

These are all on in the auth selection screen (pre-login, when shown).

.customAuthHeader
.customAuthFooter
.customAuthTop
.customAuthBottom

These relate to both authentication screens.
Script Objects

The various script APIs pass, or use a number of javascript classes. An understanding of the intent of these classes, and how they may evolve over time, is key if you wish any customization to work across releases. We considered hiding all Citrix Receiver internals, and creating shadow objects purely for API use. This would have given us a very stable API - but we felt this would be too restrictive, as inevitably it would limit what an extension could do. Instead we choose to reveal the ‘real’ objects and caution users that the further they stray from the core APIs, the more likely it is that they will have work to do on server upgrade. We recommend sticking to the key object properties to ensure smooth upgrade.

app

```javascript
{
    name: Name of app.
    description: Description.
    iconurl: Icon for app (once loaded)
    subscriptionstatus: Current status, if subscription is supported
    mandatory: True if app is required
    store: Store object for this app
}
```

category

```javascript
{
    fname: Name of the leaf folder.
    pname: Full path to folder.
}
```

bundle (featured app group)

```javascript
{
    title: Name of the bundle.
    description: Description of the bundle.
    tileid: Tile id.
}
```

native client properties

```javascript
{
    apiversion: currently always 1.1
    platform: { id: Platform id, eg windows }
    preferredLanguages: [Array of locales]
}
```

store

Currently Citrix Receiver shows only a single store at a time, and this object is of limited use. However in future we may choose to aggregated several, at which point, knowing which store an app belongs to may be of value.
jsondata

This is the low level data format from the server. See wire API specifications.

message box params object

```javascript
{
  localize: If true, then any string matching a key in the localization dictionary will be localized.
  messageText: Text to show
  messageTitle: Title for message box
  okButtonText: Optional button text (defaults to ok)
  cancelButtonText: Optional button text for a second button (defaults to cancel)
  okAction: Function to call if OK is clicked
  cancelAction: Function to call if Cancel is clicked. (If omitted, only a single button is shown)
}
```

ajax options

```javascript
{
  data: Optional data to send (string)
  headers: Optional header dictionary
  type: Request type (GET or POST)
  url: URL to call (relative to page)
  dataType: Type of returned data text/XML/json (optional)
  success: Function to call on success
  error: Function to call on error
}
```

Script Extension 'Hooks'

These are called at various points during execution, and can either pause, or modify the behaviour of receiver. To use hooks, define a function on CTXS.Extensions.

Where a function defines a callback, the callback should be called to continue normal operation. For example:

```javascript
CTXS.Extensions.preInitialize = function(callback) {
  alert("just starting");
  callback();
};
```

Notifications of progress

preInitialize(callback)

postInitialize(callback)

postConfigurationLoaded()
postAppListLoaded()

Note that during these calls, the UI may be hidden in native Citrix Receivers, so it is not safe to show UI

For APIs passing a callback, you MUST call the callback function, though you may delay calling it until code of your own has run.

beforeLogon(callback)

Web browsers only. Called prior to displaying any logon dialogs. You may call 'showMessage' here, or add your own UI.

beforeDisplayHomeScreen(callback)

All clients, called prior to displaying the main UI. This is the ideal place to add custom startup UI.

Note that for native clients, the user may not have logged in at this stage, as some clients allow offline access to the UI.

afterDisplayHomeScreen()

All clients, called once the UI is loaded and displayed. The ideal place to call APIs to adjust the initial UI, for example to start in a different tab.

APIs used to monitor Citrix Receiver environment

noteNativeClient(properties)

This passed back information about the native client environment. Not called for web browser access

noteNativeStore(store)

This passes information about the store being accessed by the native client - as the page URI does not necessarily give any clue.

APIs used to modify the applications shown

preProcessAppData(store,jsondata)

A low level, but extremely useful function to modify application data prior to any processing.

noteStartLoadApps(store)

noteApp(app)

Note an app object exists. Useful if you want to remember specific apps (for example to launch them yourself). This is called during initialization, so you should not immediately attempt to use the app object until initialization completes.

excludeApp(app)

Exclude an application completely from all UI, even if it would normally be included.
includeApp(app)

Include an application, even if it would normally be excluded. For example a platform might exclude applications intended for a different platform.

includeInMyApps(app)

Force an app to be included in the ‘favorites’ view

excludeFromMyApps(app)

Force an app to be excluded from the ‘favorites’ view

APIs to arrange icons

sortCategoryAppList(app_array, category, defaultSortFn)

sortBundleAppList(app_array, bundle, defaultSortFn)

sortMyAppList(app_array, defaultSortFn)

filterAllAppsDisplay(app_array, defaultSortFn)

filterDesktops(app_array, defaultSortFn)

These APIs all allow the apps show in a particular view to be sorted or filtered. You should modify the array of apps in place.

Note that the ‘favorites’ (my apps) view, supports user rearrangement by default, so sorting the list here may be confusing, unless you also disable the user rearrangement.

APIs related to UI updates

preRedraw()

postRedraw()

These are low level catch all functions intended to help tweak a UI that misbehaves. Strictly redraw is under the whim of the browser, so this really means before/after significant UI events, such as change of view. Generally there are more specific callbacks on UI change.

beforeShowAppInfo(app)

Called prior to displaying the details page for an app. Useful to tweak the buttons/information to be displayed.

onFolderChange(folder path)

Called on the Store view if the folder is changed, passing the path. Also called passing ‘”’ if a non-folder view is selected on the store view.
onViewChange(view name)

Called if the view changes.

onAppHTMLGeneration(element)

Called when HTML is generated for one or more app tile, passing the parent container. Intended for deep customization. (Warning this sort of change is likely to be version specific)

useNativeMessageBox(message id title or text)

Called whenever the ui is considering showing a native dialog, rather than a web dialog for a message. You can return 'false' to force the web dialog to be used. Note that some error messages originate in native code and cannot be redirected to web UI.

showMessageBox(params,defaultMessageBoxFn)

Allow override of the (web) dialog used for all error and similar messages, to enable a replacement function to be used.

APIs related to user initiated operations.
Calling the supplied function will allow the operation to proceed. Not calling it will cancel the action.

doLaunch(app,launchFn)

postLaunch(app,status)

doSubscribe(app,subscribeFn)

postSubscribe(app)

doRemove(app, removeFn)

postRemove(app)

doInstall(app,installFn)

postInstall(app)

APIs that only apply to web browsers

includeAuthenticationMethod(authenticationMethod)
excludeAuthenticationMethod(authenticationMethod)
showWebReconnectMenu(bool_showByDefault)
showWebDisconnectMenu(bool_showByDefault)
webReconnectAtStartup(bool_ReconnectByDefault)
webLogoffIcaAction(string_defaultAction)

beforeWebLogoffIca()
    Return false to prevent ICA logoff/disconnect.

beforeWebLogoffWebSession()
    Return false to prevent web session termination.

beforeWebLogoffGateway
    Return false to prevent gateway session termination

afterWebLogoffComplete

Action APIs
These are functions that can be called to make something happen, for example to start an app or show a message box. These APIs are all defined on the CTXS.ExtensionAPI object.

addPlugin(...)
    Add a managed plugin (packaged set of extensions). Reserved.

showMessage(data)
    Show a message box. Data contains messageText, messageTitle, okButtonText, cancelButtonText, okButtonAction, cancelButtonAction

resize()
    Inform Citrix Receiver that custom elements have changed size, and that it may need to relayout its content.

trace(message)
    Send a trace message to the underlying trace system.

refresh()
    Refresh application lists from server. May have side effects, such as reconnection and/or causing authentication
prompts

changeView(view, view title)

Change the current view being displayed. For views added by extensions, also supply a title to be displayed.

Note that changing to the 'appinfo' view will show the app info of the last app for which info was displayed - or return to the home screen if this is no longer valid. Changing to the 'search' view is not supported.

addToolbarButton(text, button_class, optional_htmlContent, optional_onClickFn)

Toolbar buttons are only shown on 'apps' view by default.

addViewButton(view class, button text, view title)

Add an additional view button alongside favourites, desktops and apps.

addInfoButton(text label, button class, onClickFn)

Add a button to the app info view.

addHelpButton(onClickFn)

Add a help button to the UI header.

localStorageGetItem(name, callback fn)

Get an item from web local storage, or native equivalent. The callback function will be called passing the value, and this may return asynchronously.

localStorageSetItem(name, value, optional callback fn)

Get an item from web local storage, or native equivalent. The name and value should be strings. The callback is called once the value has been stored.

openUrl(url)

Open a URL in a new web browser tab, or using local web browser. Don't call window.open as this won't work on native Citrix Receivers.

proxyRequest(options, bool_loginFirst)

Proxy a request to a web service. 'options' is a subset of the jQuery ajax request options.

Note that this is recommended only for access to the server hosting the Citrix Receiver UI. Access to other servers may be limited by browser and/or native security policies.

enableSubscriptionProperties()

Enable suscription (and extended app) properties when communicating with the server.
updateSubscriptionProperties(app, callback)

Update the subscription properties stored on the server for an app to match the in memory object. The callback function is called on completion passing a status string.

launch(app)

Start an app or desktop.
Configure server groups

Feb 24, 2016

The tasks below enable you to modify settings for multiple-server StoreFront deployments. To manage a multiple-server deployment, use only one server at a time to make changes to the configuration of the server group. Ensure that the Citrix StoreFront management console is not running on any of the other servers in the deployment. Any configuration changes you make must be propagated to the other servers in the group to ensure a consistent configuration across the deployment.

You must configure servers comprising a StoreFront server group identically in terms of both StoreFront installation location and IIS website settings, such as physical path and site IDs.

Add a server to a server group

Use the Add Server task to obtain an authorization code to enable you to join a newly installed StoreFront server to your existing deployment. For more information about adding new servers to existing StoreFront deployments, see Join an existing server group. See the Scalability section of Plan your Storefront deployment to assess how many servers you need in your group.

Remove servers from a server group

Use the Remove Server task to delete servers from a multiple-server StoreFront deployment. You can remove any server in the group apart from the server on which you are running the task. Before removing a server from a multiple-server deployment, first remove the server from the load-balancing environment.

Propagate local changes to a server group

Use the Propagate Changes task to update the configuration of all the other servers in a multiple-server StoreFront deployment to match the configuration of the current server. Any changes made on other servers in the group are discarded. While running this task, you cannot make any further changes until all the servers in the group have been updated.

Important: If you update the configuration of a server without propagating the changes to the other servers in the group, you might lose those updates if you later propagate changes from different server in the deployment.

Change the base URL for a deployment

Use the Change Base URL task to modify the URL that is used as the root of the URLs for the stores and other StoreFront services hosted on a deployment. For multiple-server deployments, specify the load-balanced URL. You can use this task to change from HTTP to HTTPS at any time, provided that Microsoft Internet Information Services (IIS) is configured for HTTPS.

To configure IIS for HTTPS, use the Internet Information Services (IIS) Manager console on the StoreFront server to create a server certificate signed by your Microsoft Active Directory domain certification authority. Then add HTTPS binding to the default website. For more information about creating a server certificate in IIS, see http://technet.microsoft.com/en-us/library/hh831637.aspx#CreateCertificate. For more information about adding HTTPS binding to an IIS site, see http://technet.microsoft.com/en-us/library/hh831632.aspx#SSLBinding.
Configure authentication and delegation

Depending on your requirements, there are several authentication and delegations methods.

<table>
<thead>
<tr>
<th>Method</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Configure the authentication service</td>
<td>The authentication service authenticates users to Microsoft Active Directory, ensuring that users do not need to log on again to access their desktops and applications.</td>
</tr>
<tr>
<td>XML service-based authentication</td>
<td>When StoreFront is not in the same domain as XenApp or XenDesktop, and it is not possible to put Active Directory trusts in place, you can configure StoreFront to use the XenApp and XenDesktop XML Service to authenticate the user name and password credentials.</td>
</tr>
<tr>
<td>Kerberos constrained delegation for XenApp 6.5</td>
<td>Use the Configure Kerberos Delegation task to specify whether StoreFront uses single-domain Kerberos constrained delegation to authenticate to delivery controllers.</td>
</tr>
<tr>
<td>Smart card authentication</td>
<td>Set up smart card authentication for all the components in a typical StoreFront deployment.</td>
</tr>
<tr>
<td>Password expiry notification period</td>
<td>If you enable Citrix Receiver for Web site users to change their passwords at any time, local users whose passwords are about to expire are shown a warning when they log on.</td>
</tr>
</tbody>
</table>
Configure the authentication service

May 04, 2016

Create the authentication service

Manage authentication methods

Configure trusted user domains

Enable users to change their passwords

Self-service password reset (SSPR)

Shared authentication service settings

Delegate credential validation to NetScaler Gateway

Create the authentication service

Use the Create Authentication Service task to configure the StoreFront authentication service. The authentication service authenticates users to Microsoft Active Directory, ensuring that users do not need to log on again to access their desktops and applications.

To use HTTPS to secure communications between StoreFront and users' devices, you must configure Microsoft Internet Information Services (IIS) for HTTPS. In the absence of the appropriate IIS configuration, StoreFront uses HTTP for communications.

By default, Citrix Receiver requires HTTPS connections to stores. If StoreFront is not configured for HTTPS, users must carry out additional configuration steps to use HTTP connections. HTTPS is required for smart card authentication. You can change from HTTP to HTTPS at any time, provided the appropriate IIS configuration is in place. For more information, see Configure server groups.

Important: In multiple-server deployments, use only one server at a time to make changes to the configuration of the server group. Ensure that the Citrix StoreFront management console is not running on any of the other servers in the deployment. Once complete, propagate your configuration changes to the server group so that the other servers in the deployment are updated.

1. On the Windows Start screen or Apps screen, locate and click the Citrix StoreFront tile.
2. Select the Store node in the left pane of the Citrix StoreFront management console and, in the Actions pane, click Manage Authentication Methods.
3. Choose the access methods that you want to enable for your users, and click OK.
   - Select the Username and password check box to enable explicit authentication. Users enter their credentials when they access their stores.
   - Select the Domain pass-through check box to enable pass-through of Active Directory domain credentials from users' devices. Users authenticate to their domain-joined Windows computers and are automatically logged on when they access their stores. In order to use this option, pass-through authentication must be enabled when Citrix Receiver for Windows is installed on users' devices.
   - Select the Smart card check box to enable smart card authentication. Users authenticate using smart cards and PINs when they access their stores.
Select the HTTP Basic check box to enable HTTP Basic authentication. Users authenticate with the StoreFront server's IIS web server.

Select the Pass-through from NetScaler Gateway check box to enable pass-through authentication from NetScaler Gateway. Users authenticate to NetScaler Gateway and are automatically logged on when they access their stores. To enable pass-through authentication for smart card users accessing stores through NetScaler Gateway, use the Configure Delegated Authentication task.

The authentication service authenticates users to Microsoft Active Directory, ensuring that users do not need to log on again to access their desktops and applications. You can configure only one authentication service per StoreFront deployment.

The tasks below enable you to modify settings for the StoreFront authentication service. Some advanced settings can only be changed by editing the authentication service configuration files. For more information, see Configure StoreFront using the configuration files.

Important: In multiple-server deployments, use only one server at a time to make changes to the configuration of the server group. Ensure that the Citrix StoreFront management console is not running on any of the other servers in the deployment. Once complete, propagate your configuration changes to the server group so that the other servers in the deployment are updated.

Manage authentication methods

You can enable or disable user authentication methods set up when the authentication service was created by selecting an authentication method in the results pane of the Citrix StoreFront management console and, in the Actions pane, clicking Manage Authentication Methods.

1. On the Windows Start screen or Apps screen, locate and click the Citrix StoreFront tile.
2. Select the Store node in the left pane of the Citrix StoreFront management console and, in the Actions pane, click Manage Authentication Methods.
3. Specify the access methods that you want to enable for your users.
   - Select the User name and password check box to enable explicit authentication. Users enter their credentials when they access their stores.
   - Select the Domain pass-through check box to enable pass-through of Active Directory domain credentials from users' devices. Users authenticate to their domain-joined Windows computers and are automatically logged on when they access their stores. In order to use this option, pass-through authentication must be enabled when Citrix Receiver for Windows is installed on users' devices.
   - Select the Smart card check box to enable smart card authentication. Users authenticate using smart cards and PINs when they access their stores.
   - Select the HTTP Basic check box to enable HTTP Basic authentication. Users authenticate with the StoreFront server's IIS web server.
   - Select the Pass-through from NetScaler Gateway check box to enable pass-through authentication from NetScaler Gateway. Users authenticate to NetScaler Gateway and are automatically logged on when they access their stores.

To enable pass-through authentication for smart card users accessing stores through NetScaler Gateway, use the Configure Delegated Authentication task.

Configure trusted user domains
Use the Trusted Domains task to restrict access to stores for users logging on with explicit domain credentials, either directly or using pass-through authentication from NetScaler Gateway.

1. On the Windows Start screen or Apps screen, locate and click the Citrix StoreFront tile.
2. Select the Stores node in the left pane of the Citrix StoreFront management console and, in the results pane, select the appropriate authentication method. In the Actions pane, click Manage Authentication Methods.
3. From the User name and password (explicit) > Settings drop-down menu, select Configure Trusted Domains.
4. Select Trusted Domains only and click Add to enter the name of a trusted domain. Users with accounts in that domain will be able to log on to all stores that use the authentication service. To modify a domain name, select the entry in the Trusted domains list and click Edit. Select a domain in the list and click Remove to discontinue access to stores for user accounts in that domain.

The way in which you specify the domain name determines the format in which users must enter their credentials. If you want users to enter their credentials in domain user name format, add the NetBIOS name to the list. To require that users enter their credentials in user principal name format, add the fully qualified domain name to the list. If you want to enable users to enter their credentials in both domain user name format and user principal name format, you must add both the NetBIOS name and the fully qualified domain name to the list.

5. If you configure multiple trusted domains, select from the Default domain list the domain that is selected by default when users log on.
6. If you want to list the trusted domains on the logon page, select the Show domains list in logon page check box.

Enable users to change their passwords

Use the Manage Password Options task to enable desktop Receivers and Receiver for Web site users logging on with domain credentials to change their passwords. When you create the authentication service, the default configuration prevents Citrix Receiver and Citrix Receiver for Web site users from changing their passwords, even if the passwords have expired. If you decide to enable this feature, ensure that the policies for the domains containing your servers do not prevent users from changing their passwords. Enabling users to change their passwords exposes sensitive security functions to anyone who can access any of the stores that use the authentication service. If your organization has a security policy that reserves user password change functions for internal use only, ensure that none of the stores are accessible from outside your corporate network.

1. Citrix Receiver for Web supports password changes on expiration, as well as elective password changes. All desktop Citrix Receivers support password change through NetScaler Gateway on expiration only. On the Windows Start screen or Apps screen, locate and click the Citrix StoreFront tile.
2. Select the Stores node in the left pane of the Citrix StoreFront management console and in the Actions pane, click Manage Authentication Methods.
3. From the User name and passwords > Settings drop-down menu select Manage Password Options, specify the circumstances under which Citrix Receiver for Web site users logging on with domain credentials are able to change their passwords.
   • To enable users to change their passwords whenever they want, select At any time. Local users whose passwords are about to expire are shown a warning when they log on. Password expiry warnings are only displayed to users connecting from the internal network. By default, the notification period for a user is determined by the applicable Windows policy setting. For more information about setting custom notification periods, see Configure the password expiry notification period. Supported only with Citrix Receiver for Web.
   • To enable users to change their passwords only when the passwords have already expired, select When expired. Users who cannot log on because their passwords have expired are redirected to the Change Password dialog box. Supported for desktop Citrix Receivers and Citrix Receiver for Web.
• To prevent users from changing their passwords, do not select **Allow users to change passwords**. If you do not select this option, you must make your own arrangements to support users who cannot access their desktops and applications because their passwords have expired.

If you enable Citrix Receiver for Web site users to change their passwords at any time, ensure that there is sufficient disk space on your StoreFront servers to store profiles for all your users. To check whether a user's password is about to expire, StoreFront creates a local profile for that user on the server. StoreFront must be able to contact the domain controller to change users' passwords.

<table>
<thead>
<tr>
<th>Citrix Receivers</th>
<th>User can change an expired password if enabled on StoreFront</th>
<th>User is notified that password will expire</th>
<th>User can change password before it expires if enabled on StoreFront</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mac</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Android</td>
<td></td>
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<tr>
<td>Linux</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Web</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Self-service password reset (SSPR)**

Self-service password reset enables end users to have greater control over their user accounts. Once SSPR is configured, if end users have problems logging on to their systems, they can unlock their accounts or reset their passwords to something new by correctly answering several security questions.

Enabling account self-service for a site exposes sensitive security functions to anyone who can access it. If your site is accessible from the Internet, there are no restrictions on who can access these functions. If your organization has a security policy that restricts user account management functions for internal use only, you must ensure the site is not accessible outside of your internal network.

**Important:** When setting up Single Sign-On, you specify which users are able to perform password resets and unlock their accounts. If you enable these features for the StoreFront, users might still be denied permission to perform these tasks based on the settings you configure for Single Sign-On.

Account self-service is available only to users accessing StoreFront using HTTPS connections. If users access StoreFront using an HTTP connection, account self-service is unavailable. Account self-service is available only when authenticating directly to StoreFront with a user name and password.

Account self-service does not support UPN logons, such as username@domain.com.

Before configuring account self-service for a store, you must ensure that:
- The store is configured to use user name and password authentication.
- The store is configured to use only one Single Sign-On Service. If StoreFront is configured to use multiple farms within the same or trusted domains, you must configure Single Sign-On to accept credentials from all of those domains.
- The store is configured to allow users to change their password at any time if you want to enable password reset functionality.

For information about system requirements, see Single-sign-on component requirements.

1. Before being able to use self-service password reset, you must install and configure Citrix Single Sign-On (formerly known as Citrix Password Manager), which is available on the XenApp 6.5 media.
2. Install and configure the Single Sign-On Agent software on a client operating system. When users log on to the VM, they are prompted to provide answers to the security questions you configured.
3. Enable self-service password reset support in StoreFront by selecting the Stores node in the left pane of the Citrix StoreFront management console and in the Actions pane, click Manage Authentication Methods. From the User name and passwords > Settings drop-down menu, select Configure Account Self-Service.

This option is available only when the StoreFront base URL is HTTPS (not HTTP) and the Enable password reset option is available only after you use Manage Password Options to allow users to change passwords at any time.

Once configured in StoreFront, users see the Account Self-Service link on the Citrix Receiver for Web logon screen (it displays as a button in other Citrix Receivers).
Clicking this link takes the user through a series of forms to first select between **Unlock account** and **Reset password** (if both are available).

After choosing a radio button and clicking **Next**, the next screen prompts for a domain and username (domain\username) if that information was not entered in the log on form. Note that account self-service does not support UPN log ons, such as username@domain.com

![Account Self Service](https://docs.citrix.com)

They are required to answer the security questions you configured. If all the answers match those supplied by the user during registration, the requested operation (unlock or reset) is performed and the user is notified that it succeeded.

**Shared authentication service settings**

Use the Shared Authentication Service Settings task to specify stores that will share the authentication service enabling single sign on between them.

1. On the Windows **Start** screen or **Apps** screen, locate and click the **Citrix StoreFront** tile.
2. Select the **Stores** node in the left pane of the Citrix StoreFront management console and, in the results pane, select a store. In the **Actions** pane, click **Manage Authentication Methods**.
3. From the **Advanced** drop-down menu, select **Shared authentication service settings**.
4. Click the **Use shared authentication service** check box and select a store from the **Store** name drop-down menu.

**Note:** There is no functional difference between a shared and dedicated authentication service. An authentication service shared by more than two stores is treated as a shared authentication service and any configuration changes affect the access to all the stores using the shared authentication service.

**Delegate credential validation to NetScaler Gateway**

Use the Configure Delegated Authentication task to enable pass-through authentication for smart card users accessing stores through NetScaler Gateway. This task is only available when Pass-through from NetScaler Gateway is enabled and selected in the results pane.

When credential validation is delegated to NetScaler Gateway, users authenticate to NetScaler Gateway with their smart cards and are automatically logged on when they access their stores. This setting is disabled by default when you enable pass-through authentication from NetScaler Gateway, so that pass-through authentication only occurs when users log on to NetScaler Gateway with a password.
XML service-based authentication

When StoreFront is not in the same domain as XenApp or XenDesktop, and it is not possible to put Active Directory trusts in place, you can configure StoreFront to use the XenApp and XenDesktop XML Service to authenticate the user name and password credentials. A user explicitly provides a user name and password.

Enable XML service-based authentication

1. On the Windows **Start** screen or **Apps** screen, locate and click the Citrix StoreFront tile.
2. Select the **Stores** node in the left pane of the Citrix StoreFront management console and, in the Actions pane, click **Manage Authentication Methods**.
3. On the **Manage Authentication Methods** page, from the User name and password > Settings drop-down menu, select **Configure Password Validation**.
4. From the **Validation Password Via** drop-down menu, select **Delivery Controllers**, and then click **Configure**.
5. Follow the **Configure Delivery Controllers** screens to add one or more **Delivery Controllers** for validating the user credentials and click **OK**.

Disable XML service-based authentication

1. On the Windows **Start** screen or **Apps** screen, locate and click the Citrix StoreFront tile.
2. Select the **Stores** node in the left pane of the Citrix StoreFront management console and, in the Actions pane, click **Manage Authentication Methods**.
3. On the **Manage Authentication Methods** page, from the **User name and password** > **Settings** drop-down menu, select **Configure Password Validation**.
4. From the **Validation Password Via** drop-down menu, select **Active Directory**, and then click **OK**.
Configure Kerberos constrained delegation for XenApp 6.5

Aug 11, 2016

Use the **Configure Store Settings > Kerberos delegation** task to specify whether StoreFront uses single-domain Kerberos constrained delegation to authenticate to delivery controllers.

**Important:** In multiple server deployments, use only one server at a time to make changes to the configuration of the server group. Ensure that the Citrix StoreFront management console is not running on any of the other servers in the deployment. Once complete, propagate your configuration changes to the server group so that the other servers in the deployment are updated.

1. On the Windows Start screen or Apps screen, locate and click the Citrix StoreFront tile.
2. Select the Stores node in the left pane of the Citrix StoreFront management console and, in the results pane, select a store. In the Actions pane, click **Configure Store Settings**, and then click **Kerberos Delegation**.
3. Select Enable or Disable Kerberos delegation to authenticate to delivery controllers, respectively, enable or disable Kerberos constrained delegation.

Configure the StoreFront server for delegation

Follow this procedure when StoreFront is not installed on the same machine as XenApp.

1. On the domain controller, open the MMC Active Directory Users and Computers snap-in.
2. On the View menu, click Advanced Features.
3. In the left pane, click the Computers node under the domain name and select the StoreFront server.
4. In the Action pane, click Properties.
5. On the Delegation tab, click Trust this computer for delegation to specified services only and Use any authentication protocol, and then click Add.
6. In the Add Services dialog box, click Users or Computers.
7. In the Select Users or Computers dialog box, type the name of the server running the Citrix XML Service (XenApp) in the Enter the object names to select box, click OK.
8. Select the HTTP service type from the list, click OK.
9. Apply the changes and close the dialog box.

Configure XenApp server for delegation

Configure Active Directory Trusted Delegation for each XenApp server.

1. On the domain controller, open the MMC Active Directory Users and Computers snap-in.
2. In the left pane, click the Computers node under the domain name and select the server running the Citrix XML Service (XenApp) that StoreFront is configured to contact.
3. In the Action pane, click Properties.
4. On the Delegation tab, click Trust this computer for delegation to specified services only and Use any authentication protocol, and then click Add.
5. In the Add Services dialog box, click Users or Computers.
6. In the Select Users or Computers dialog box, type the name of the server running the Citrix XML Service (XenApp) in the Enter the object names to select box, click OK.
7. Select the HOST service type from the list, click OK, and then click Add.
8. In the Select Users or Computers dialog box, type the name of the Domain Controller in the Enter the object names to select box and click OK.
9. Select the cifs and ldap service types from the list and click OK. Note: If two choices appear for the ldap service, select the one that matches the FQDN of the domain controller.

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Important considerations

When you decide whether to use Kerberos constrained delegation, consider the following information.

- **Key Notes:**
  - You do not need ssonsvr.exe unless doing pass-through authentication (or smart card pin pass-through authentication) without Kerberos constrained delegation.
  - **Storefront and Citrix Receiver for Web domain pass-through:**
    - You do not need ssonsvr.exe on the client.
    - You can set the Local username and password in the Citrix icaclient.adm template to anything (controls ssonsvr.exe function).
    - The icaclient.adm template Kerberos setting is required.
    - Add the Storefront Fully Qualified Domain Name (FQDN) to Internet Explorer trusted sites list. Check the Use local username box in the Internet Explorer security settings for the trusted zone.
    - The client must be in a domain.
    - Enable the Domain pass-through authentication method on the StoreFront server and enable for Citrix Receiver for Web.
  - **Storefront, Citrix Receiver for Web, and smart card authentication with PIN prompt:**
    - You do not need ssonsvr.exe on the client.
    - Smart card authentication was configured.
    - You can set the Local username and password in the Citrix icaclient.adm template to anything (controls ssonsvr.exe function).
    - The icaclient.adm template Kerberos setting is required.
    - Enable the Smart card authentication method on the StoreFront server and enable for Citrix Receiver for Web.
    - To ensure smart card authentication is chosen, do not check the Use local username box in the Internet Explorer security settings for the StoreFront site zone.
    - The client must be in a domain.
  - **NetScaler Gateway, StoreFront, Citrix Receiver for Web, and smart card authentication with PIN prompt:**
    - You do not need ssonsvr.exe on the client.
    - Smart card authentication was configured.
    - You can set the Local username and password in the Citrix icaclient.adm template to anything (controls ssonsvr.exe function).
    - The icaclient.adm template Kerberos setting is required.
    - Enable the Pass-through from NetScaler Gateway authentication method on the StoreFront server and enable for Citrix Receiver for Web.
    - To ensure smart card authentication is chosen, do not check the Use local username box in the Internet Explorer security settings for the StoreFront site zone.
    - The client must be in a domain.
    - Configure NetScaler Gateway for smart card authentication and configure an additional vServer for launch using StoreFront HDX routing to route the ICA traffic through the unauthenticated NetScaler Gateway vServer.
  - **Citrix Receiver for Windows (AuthManager), smart card authentication with PIN prompt,** and **StoreFront:**
    - You do not need ssonsvr.exe on the client.
    - You can set the Local username and password in the Citrix icaclient.adm template to anything (controls ssonsvr.exe function).
    - The icaclient.adm template Kerberos setting is required.
    - The client must be in a domain.
    - Enable the Smart card authentication method on the StoreFront server.
  - **Citrix Receiver for Windows (AuthManager), Kerberos,** and **StoreFront:**
    - You do not need ssonsvr.exe on the client.
    - You can set the Local username and password in the Citrix icaclient.adm template to anything (controls ssonsvr.exe function).
    - The icaclient.adm template Kerberos setting is required.
    - Check the Use local username box in the Internet Explorer security settings for the trusted zone.
    - The client must be in a domain.
    - Enable the Domain pass-through authentication method on the StoreFront server.
    - Ensure this registry key is set:
      - **Caution:** Editing the registry incorrectly can cause serious problems that may require you to reinstall your operating system. Citrix cannot guarantee that problems resulting from the incorrect use of Registry Editor can be solved. Use Registry Editor at your own risk.
      - Be sure to back up the registry before you edit it.
      - For 32-bit machines: HKEY_LOCAL_MACHINE\SOFTWARE\Citrix\AuthManagerProtocols\integratedwindows
        - Name: SSONCheckEnabled
        - Type: REG_SZ
        - Value: true or false
      - For 64-bit machines: HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Citrix\AuthManagerProtocols\integratedwindows
Name: SSONCheckEnable
Type: REG_SZ
Value: true or false
Configure smart card authentication

Jun 13, 2016

This topic gives an overview of the tasks involved in setting up smart card authentication for all the components in a typical StoreFront deployment. For more information and step-by-step configuration instructions, see the documentation for the individual products.

Prerequisites

- Ensure that accounts for all users are configured either within the Microsoft Active Directory domain in which you plan to deploy your StoreFront servers or within a domain that has a direct two-way trust relationship with the StoreFront server domain.
- If you plan to enable pass-through with smart card authentication, ensure that your smart card reader types, middleware type and configuration, and middleware PIN caching policy permit this.
- Install your vendor's smart card middleware on the virtual or physical machines running the Virtual Delivery Agent that provide users' desktops and applications. For more information about using smart cards with XenDesktop, see Authenticate securely with smart cards.
- Before continuing, ensure that your public-key infrastructure is configured appropriately. Check that certificate to account mapping is configured correctly for your Active Directory environment and that user certificate validation can be performed successfully.

Configure NetScaler Gateway

- On your NetScaler Gateway appliance, install a signed server certificate from a certification authority. For more information, see Installing and Managing Certificates.
- Install on your appliance the root certificate of the certification authority issuing your smart card user certificates. For more information, see To install a root certificate on NetScaler Gateway.
- Create and configure a virtual server for client certificate authentication. Create a certificate authentication policy, specifying SubjectAltName:PrincipalName for user name extraction from the certificate. Then, bind the policy to the virtual server and configure the virtual server to request client certificates. For more information, see Configuring and Binding a Client Certificate Authentication Policy.
- Bind the certification authority root certificate to the virtual server. For more information, see To add a root certificate to a virtual server.
- To ensure that users do not receive an additional prompt for their credentials at the virtual server when connections to their resources are established, create a second virtual server. When you create the virtual server, disable client authentication in the Secure Sockets Layer (SSL) parameters. For more information, see Configuring smart card authentication.

You must also configure StoreFront to route user connections to resources through this additional virtual server. Users log on to the first virtual server and the second virtual server is used for connections to their resources. When the connection is established, users do not need to authenticate to NetScaler Gateway but are required to enter their PINs to log on to their desktops and applications. Configuring a second virtual server for user connections to resources is optional unless you plan to enable users to fall back to explicit authentication if they experience any issues with their smart cards.

- Create session policies and profiles for connections from NetScaler Gateway to StoreFront and bind them to the appropriate virtual server. For more information, see Access to StoreFront Through NetScaler Gateway.
- If you configured the virtual server used for connections to StoreFront to require client certificate authentication for all
communications, you must create a further virtual server to provide the callback URL for StoreFront. This virtual server is used only by StoreFront to verify requests from the NetScaler Gateway appliance and so does not need to be publically accessible. A separate virtual server is required when client certificate authentication is mandatory because StoreFront cannot present a certificate to authenticate. For more information, see Creating Virtual Servers.

Configure StoreFront

- You must use HTTPS for communications between StoreFront and users' devices to enable smart card authentication. Configure Microsoft Internet Information Services (IIS) for HTTPS by obtaining an SSL certificate in IIS and then adding HTTPS binding to the default website. For more information about creating a server certificate in IIS, see http://technet.microsoft.com/en-us/library/hh831637.aspx#CreateCertificate. For more information about adding HTTPS binding to an IIS site, see http://technet.microsoft.com/en-us/library/hh831632.aspx#SSLBinding.

- If you want to require that client certificates are presented for HTTPS connections to all StoreFront URLs, configure IIS on the StoreFront server. When StoreFront is installed, the default configuration in IIS only requires that client certificates are presented for HTTPS connections to the certificate authentication URL of the StoreFront authentication service. This configuration is required to provide smart card users with the option to fall back to explicit authentication and, subject to the appropriate Windows policy settings, enable users to remove their smart cards without needing to reauthenticate.

  When IIS is configured to require client certificates for HTTPS connections to all StoreFront URLs, smart card users cannot connect through NetScaler Gateway and cannot fall back to explicit authentication. Users must log on again if they remove their smart cards from their devices. To enable this IIS site configuration, the authentication service and stores must be collocated on the same server, and a client certificate that is valid for all the stores must be used. Moreover, this configuration where IIS is requiring client certificates for HTTPS connections to all StoreFront URLs, will conflict with authentication for Citrix Receiver for Web clients. For this reason, this configuration should be used when Citrix Receiver for Web client access is not required.

  If you are installing StoreFront on Windows Server 2012, note that non-self-signed certificates installed in the Trusted Root Certification Authorities certificate store on the server are not trusted when IIS is configured to use SSL and client certificate authentication. For more information about this issue, see http://support.microsoft.com/kb/2802568.

  If you want smart card users to be able to fall back to explicit authentication if they experience any issues with their smart cards, do not disable the user name and password authentication method.

  If you plan to enable pass-through authentication when you install Citrix Receiver for Windows on domain-joined user devices, edit the default.ica file for the store to enable pass-through of users' smart card credentials when they access their desktops and applications. For more information, see Enable pass-through with smart card authentication for Citrix Receiver for Windows.
If you created an additional NetScaler Gateway virtual server to be used only for user connections to resources, configure optimal NetScaler Gateway routing through this virtual server for connections to the deployments providing the desktops and applications for the store. For more information, see Configure optimal HDX routing for a store.

To enable users of non-domain-joined Windows desktop appliances to log on to their desktops using smart cards, enable smart card authentication to your Desktop Appliance sites. For more information, see Configure Desktop Appliance sites. Configure the Desktop Appliance site for both smart card and explicit authentication to enable users to log on with explicit credentials if they experience any issues with their smart cards.

To enable users of domain-joined desktop appliances and repurposed PCs running the Citrix Desktop Lock to authenticate using smart cards, enable pass-through with smart card authentication to your XenApp Services URLs. For more information, see Configure authentication for XenApp Services URLs.

**Configure user devices**

- Ensure that your vendor's smart card middleware is installed on all user devices.
- For users with non-domain-joined Windows desktop appliances, install Receiver for Windows Enterprise using an account with administrator permissions. Configure Internet Explorer to start in full-screen mode displaying the Desktop Appliance site when the device is powered on. Note that Desktop Appliance site URLs are case sensitive. Add the Desktop Appliance site to the Local intranet or Trusted sites zone in Internet Explorer. Once you have confirmed that you can log on to the Desktop Appliance site with a smart card and access resources from the store, install the Citrix Desktop Lock. For more information, see To install the Desktop Lock.
- For users with domain-joined desktop appliances and repurposed PCs, install Receiver for Windows Enterprise using an account with administrator permissions. Configure Receiver for Windows with the XenApp Services URL for the appropriate store. Once you have confirmed that you can log on to the device with a smart card and access resources from the store, install the Citrix Desktop Lock. For more information, see To install the Desktop Lock.
- For all other users, install the appropriate version of Citrix Receiver on the user device. To enable pass-through of smart card credentials to XenDesktop and XenApp for users with domain-joined devices, use an account with administrator permissions to install Receiver for Windows at a command prompt with the /includeSSON option. For more information, see Configure and install Receiver for Windows using command-line parameters.

Enable the Smart card authentication policy. To enable pass-through of users' smart card credentials, select Use pass-through authentication for PIN. Then, to pass users' smart card credentials through to XenDesktop and XenApp, enable the Local user name and password policy and select Allow pass-through authentication for all ICA connections. For more information, see ICA Settings Reference.

If you enabled pass-through of smart card credentials to XenDesktop and XenApp for users with domain-joined devices, add the store URL to the Local intranet or Trusted sites zone in Internet Explorer. Ensure that Automatic logon with the current user name and password is selected in the security settings for the zone.

Where necessary, provide users with connection details for the store (for users on the internal network) or NetScaler Gateway appliance (for remote users) using an appropriate method. For more information about providing configuration information to your users, see Citrix Receiver.

Enable pass-through with smart card authentication for Receiver for Windows
You can enable pass-through authentication when you install Receiver for Windows on domain-joined user devices. To enable pass-through of users' smart card credentials when they access desktops and applications hosted by XenDesktop and XenApp, you edit the default.ica file for the store.

Important: In multiple server deployments, use only one server at a time to make changes to the configuration of the server group. Ensure that the Citrix StoreFront management console is not running on any of the other servers in the deployment. Once complete, propagate your configuration changes to the server group so that the other servers in the deployment are updated.

1. Use a text editor to open the default.ica file for the store, which is typically located in the
   \C:\inetpub\wwwroot\Citrix\storename\App_Data\ directory, where storename is the name specified for the store when it was created.

2. To enable pass-through of smart card credentials for users who access stores without NetScaler Gateway, add the following setting in the [Application] section.
   **DisableCtrlAltDel=Off**
   This setting applies to all users of the store. To enable both domain pass-through and pass-through with smart card authentication to desktops and applications, you must create separate stores for each authentication method. Then, direct your users to the appropriate store for their method of authentication.

3. To enable pass-through of smart card credentials for users accessing stores through NetScaler Gateway, add the following setting in the [Application] section.
   **UseLocalUserAndPassword=On**
   This setting applies to all users of the store. To enable pass-through authentication for some users and require others to log on to access their desktops and applications, you must create separate stores for each group of users. Then, direct your users to the appropriate store for their method of authentication.

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**Smart card configuration for Citrix environments**

This simple overview for configuring a Citrix deployment for smart cards uses a specific smart card type. Note that similar steps apply to smart cards from other vendors.
Configure the password expiry notification period

Feb 24, 2016

If you enable Citrix Receiver for Web site users to change their passwords at any time, local users whose passwords are about to expire are shown a warning when they log on. By default, the notification period for a user is determined by the applicable Windows policy setting. To set a custom notification period for all users, you edit the configuration file for the authentication service.

Important: In multiple-server deployments, use only one server at a time to make changes to the configuration of the server group. Ensure that the Citrix StoreFront management console is not running on any of the other servers in the deployment. Once complete, propagate your configuration changes to the server group so that the other servers in the deployment are updated.

1. On the Windows Start screen or Apps screen, locate and click the Citrix StoreFront tile.
2. Select the Stores node in the left pane of the Citrix StoreFront management console and, in the Actions pane, click Manage Authentication Methods.
3. On the Manage Authentication Methods page, from the User name and password > Settings drop-down menu, select Manage Password Options, and select the Allow users to change passwords check box.
4. Select At any time... and make a choice under Remind users before their passwords expire.

Note: StoreFront does not support Fine Grained Password Policies in Active Directory.
Configure and manage stores

In Citrix StoreFront, you can create and manage stores that aggregate applications and desktops from XenApp and XenDesktop giving users on-demand, self-service access to resources.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create or remove a store</td>
<td>Configure as many additional stores as you need.</td>
</tr>
<tr>
<td>Create an unauthenticated store</td>
<td>Configure additional unauthenticated stores to support access for unauthenticated (anonymous) users.</td>
</tr>
<tr>
<td>Export store provisioning files for users</td>
<td>Generate files containing connection details for stores, including any NetScaler Gateway deployments and beacons configured for the stores.</td>
</tr>
<tr>
<td>Hide and advertise stores to users</td>
<td>Prevent stores being presented to users to add to their accounts when they configure Citrix Receiver through email-based account discovery or FQDN.</td>
</tr>
<tr>
<td>Manage the resources made available in stores</td>
<td>Add and remove resources from stores.</td>
</tr>
<tr>
<td>Manage remote access to stores through NetScaler Gateway</td>
<td>Configure access to stores through NetScaler Gateway for users connecting from public networks.</td>
</tr>
<tr>
<td>Integrate Citrix Online applications with stores</td>
<td>Select the Citrix Online applications to include in a store and specify the action that Citrix Receiver takes when users subscribe to a Citrix Online application.</td>
</tr>
<tr>
<td>Configure two StoreFront stores to share a common subscription datastore</td>
<td>Configure two stores to share a common subscription database.</td>
</tr>
<tr>
<td>Advanced store settings</td>
<td>Configure advanced store settings.</td>
</tr>
</tbody>
</table>
Create or remove a store

Feb 24, 2016

Use the Create Store task to configure additional stores. You can create as many stores as you need; for example, you can create a store for a particular group of users or to group together a specific set of resources. You can also create an unauthenticated store that allows for anonymous, or unauthenticated store. To create this type of store, refer to the Create an unauthenticated store instruction.

To create a store, you identify and configure communications with the servers providing the resources that you want to make available in the store. Then, optionally, you configure remote access to the store through NetScaler Gateway.

Important: In multiple server deployments, use only one server at a time to make changes to the configuration of the server group. Ensure that the Citrix StoreFront management console is not running on any of the other servers in the deployment. Once complete, propagate your configuration changes to the server group so that the other servers in the deployment are updated.

Add desktops and applications to the store

1. On the Windows Start screen or Apps screen, locate and click the Citrix StoreFront tile.
2. Select the Stores node in the left pane of the Citrix StoreFront management console and, in the Actions pane, click Create Store.
3. On the Store Name page, specify a name for your store and click Next. Store names appear in Citrix Receiver under users’ accounts, so choose a name that gives users information about the content of the store.
4. On the Delivery Controllers page, list the infrastructure providing the resources that you want to make available in the store. Click Add.
5. In the Add Delivery Controller dialog box, specify a name that will help you to identify the deployment and indicate whether the resources that you want to make available in the store are provided by XenDesktop, XenApp, or AppController. For App Controller deployments, ensure that the name you specify does not contain any spaces.
6. If you are adding details of XenDesktop or XenApp servers, continue to Step 7. To make applications managed by App Controller available in the store, enter the name or IP address of an App Controller virtual appliance in the Server box and specify the port for StoreFront to use for connections to App Controller. The default port is 443. Continue to Step 11.
7. To make desktops and applications provided by XenDesktop or XenApp available in the store, add the names or IP addresses of your servers to the Servers list. Specify multiple servers to enable fault tolerance, listing the entries in order of priority to set the failover sequence. For XenDesktop sites, give details of Delivery Controllers. In the case of XenApp farms, list servers running the Citrix XML Service.
8. Select from the Transport type list the type of connections for StoreFront to use for communications with the servers.
   - To send data over unencrypted connections, select HTTP. If you select this option, you must make your own arrangements to secure connections between StoreFront and your servers.
   - To send data over secure HTTP connections using Secure Sockets Layer (SSL) or Transport Layer Security (TLS), select HTTPS. If you select this option for XenDesktop and XenApp servers, ensure that the Citrix XML Service is set to share its port with Microsoft Internet Information Services (IIS) and that IIS is configured to support HTTPS.
   - To send data over secure connections to XenApp servers using the SSL Relay to perform host authentication and data encryption, select SSL Relay.

Note: If you are using HTTPS or the SSL Relay to secure connections between StoreFront and your servers, ensure that the names you specify in the Servers list match exactly (including the case) the names on the certificates for those servers.
9. Specify the port for StoreFront to use for connections to the servers. The default port is 80 for connections using HTTP and the SSL Relay, and 443 for HTTPS connections. In the case of XenDesktop and XenApp servers, the specified port must be the port used by the Citrix XML Service.

10. If you are using the SSL Relay to secure connections between StoreFront and XenApp servers, specify the TCP port of the SSL Relay in the SSL Relay port box. The default port is 443. Ensure that all the servers running the SSL Relay are configured to monitor the same port.

11. Click OK. You can configure stores to provide resources from any mixture of XenDesktop, XenApp, and App Controller deployments. Repeat Steps 4 to 11, as necessary, to list additional deployments providing resources for the store. When you have added all the required resources to the store, click Next.

12. On the Remote Access page, specify whether and how users connecting from public networks can access the store through NetScaler Gateway.
   - To make the store unavailable to users on public networks, select None. Only local users on the internal network will be able to access the store.
   - To make only resources delivered through the store available through NetScaler Gateway, select No VPN tunnel. Users log on directly to NetScaler Gateway and do not need to use the NetScaler Gateway Plug-in.
   - To make the store and all other resources on the internal network available through an SSL virtual private network (VPN) tunnel, select Full VPN tunnel. Users require the NetScaler Gateway Plug-in to establish the VPN tunnel.
   If it is not already enabled, the pass-through from NetScaler Gateway authentication method is automatically enabled when you configure remote access to the store. Users authenticate to NetScaler Gateway and are automatically logged on when they access their stores.

13. If you enabled remote access, continue to the next procedure to specify the NetScaler Gateway deployments through which users can access the store. Otherwise, on the Remote Access page, click Create. Once the store has been created, click Finish.

Provide remote access to the store through NetScaler Gateway

Complete the following steps to configure remote access through NetScaler Gateway to the store that you created in the previous procedure. It is assumed that you have completed all the preceding steps.

1. On the Remote Access page of the Create Store wizard, select from the NetScaler Gateway appliances list the deployments through which users can access the store. Any deployments you configured previously for other stores are available for selection in the list. If you want to add a further deployment to the list, click Add. Otherwise, continue to Step 12.

2. On the Add NetScaler Gateway Appliance General Settings page, specify a name for the NetScaler Gateway deployment that will help users to identify it.
   Users see the display name you specify in Citrix Receiver, so include relevant information in the name to help users decide whether to use that deployment. For example, you can include the geographical location in the display names for your NetScaler Gateway deployments so that users can easily identify the most convenient deployment for their location.

3. Enter the URL of the virtual server or user logon point for your deployment. Specify the product version used in your deployment.
   The fully qualified domain name (FQDN) for your StoreFront deployment must be unique and different from the NetScaler Gateway virtual server FQDN. Using the same FQDN for StoreFront and the NetScaler Gateway virtual server is not supported.

4. Select the usage of the NetScaler Gateway from the available options.
   - **Authentication and HDX routing**: The NetScaler Gateway will be used for Authentication, as well as for routing any HDX sessions.
+ **Authentication Only:** The NetScaler Gateway will be used for Authentication and not for any HDX session routings.
+ **HDX routing Only:** The NetScaler Gateway will be used for HDX session routings and not for Authentication.

5. On the Secure Ticket Authority (STA) page, if you are making resources provided by XenDesktop or XenApp available in the store, list all the Secure Ticket Authority page URLs for servers running the STA. Add URLs for multiple STAs to enable fault tolerance, listing the servers in order of priority to set the failover sequence.

The STA is hosted on XenDesktop and XenApp servers and issues session tickets in response to connection requests. These session tickets form the basis of authentication and authorization for access to XenDesktop and XenApp resources.

6. Choose to set the Secure Ticket Authority to be load balanced. You can also specify the time interval after which the non-responding STAs are bypassed.

7. If you want XenDesktop and XenApp to keep disconnected sessions open while Citrix Receiver attempts to reconnect automatically, select the Enable session reliability check box. If you configured multiple STAs and want to ensure that session reliability is always available, select the Request tickets from two STAs, where available check box. StoreFront obtains session tickets from two different STAs so that user sessions are not interrupted if one STA becomes unavailable during the course of the session. If, for any reason, StoreFront is unable to contact two STAs, it falls back to using a single STA.

8. On Authentication Settings page, select the version of NetScaler gateway you want to configure.

9. Specify the VServer IP address of the NetScaler Gateway appliance, if required. A VServer IP address is required for Access Gateway 9.x appliances, but optional for more recent product versions. The VServer IP address is the IP address that NetScaler Gateway uses to represent the user device when communicating with servers on the internal network. This can also be the mapped IP address of the NetScaler Gateway appliance. Where specified, StoreFront uses the VServer IP address to verify that incoming requests originate from a trusted device.

10. Select from the Logon type list the authentication method you configured on the appliance for Citrix Receiver users. The information you provide about the configuration of your NetScaler Gateway appliance is added to the provisioning file for the store. This enables Citrix Receiver to send the appropriate connection request when contacting the appliance for the first time.

   - If users are required to enter their Microsoft Active Directory domain credentials, select Domain.
   - If users are required to enter a tokencode obtained from a security token, select Security token.
   - If users are required to enter both their domain credentials and a tokencode obtained from a security token, select Domain and security token.
   - If users are required to enter a one-time password sent by text message, select SMS authentication.
   - If users are required to present a smart card and enter a PIN, select Smart card.

   If you configure smart card authentication with a secondary authentication method to which users can fall back if they experience any issues with their smart cards, select the secondary authentication method from the Smart card fallback list.

11. Enter the NetScaler Gateway authentication service URL in the Callback URL box. This is an optional field. StoreFront automatically appends the standard portion of the URL. Enter the internally accessible URL of the appliance. StoreFront contacts the NetScaler Gateway authentication service to verify that requests received from NetScaler Gateway originate from that appliance.

12. Click Create to add your NetScaler Gateway deployment to the list on the Remote Access page. Repeat Steps 1 to 11, as necessary, to add more NetScaler Gateway deployments to the NetScaler Gateway appliances list. If you enable access through multiple deployments by selecting more than one entry in the list, specify the default deployment to be used to access the store.

13. On the Remote Access page, click Create. Once the store has been created, click Finish.
Your store is now available for users to access with Citrix Receiver, which must be configured with access details for the store. There are a number of ways in which you can provide these details to users to make the configuration process easier for them. For more information, see User access options.

Alternatively, users can access the store through the Receiver for Web site, which enables users to access their desktops and applications through a webpage. The URL for users to access the Receiver for Web site for the new store is displayed when you create the store.

When you create a new store, the XenApp Services URL is enabled by default. Users of domain-joined desktop appliances and repurposed PCs running the Citrix Desktop Lock, along with users who have older Citrix clients that cannot be upgraded, can access stores directly using the XenApp Services URL for the store. The XenApp Services URL has the form http[s]://serveraddress/Citrix/storename/PNAgent/config.xml, where serveraddress is the FQDN of the server or load balancing environment for your StoreFront deployment and storename is the name you specified for the store in Step 3.

Remove a store

Use the Remove Store task to delete a store. When you remove a store, any associated Receiver for Web sites, Desktop Appliance sites, and XenApp Services URLs are also deleted.

Important: In multiple server deployments, use only one server at a time to make changes to the configuration of the server group. Ensure that the Citrix StoreFront management console is not running on any of the other servers in the deployment. Once complete, propagate your configuration changes to the server group so that the other servers in the deployment are updated.
Create an unauthenticated store

Feb 24, 2016

Use the Create Store task to configure additional unauthenticated stores to support access for unauthenticated (anonymous) users. You can create as many unauthenticated stores as you need; for example, you can create an unauthenticated store for a particular group of users or to group together a specific set of resources.

Remote access through a NetScaler Gateway cannot be applied to unauthenticated stores.

To create an unauthenticated store, you identify and configure communications with the servers providing the resources that you want to make available in the store.

Important: In multiple server deployments, use only one server at a time to make changes to the configuration of the server group. Ensure that the Citrix StoreFront management console is not running on any of the other servers in the deployment. Once complete, propagate your configuration changes to the server group so that the other servers in the deployment are updated.

Add desktops and applications to the store

1. On the Windows Start screen or Apps screen, locate and click the Citrix StoreFront tile.
2. Select the Stores node in the left pane of the Citrix StoreFront management console and, in the Actions pane, click Create Store.
3. On the Store Name page, specify a name for your store, select Allow only unauthenticated (anonymous) users to access this store, and click Next.
   Store names appear in Citrix Receiver under users' accounts, so choose a name that gives users information about the content of the store.
4. On the Delivery Controllers page, list the infrastructure providing the resources that you want to make available in the store. Click Add.
5. In the Add Delivery Controller dialog box, specify a name that will help you to identify the deployment and indicate whether the resources that you want to make available in the store are provided by XenApp or XenMobile (AppController). For XenMobile (AppController) deployments, ensure that the name you specify does not contain any spaces. When assigning Controllers, ensure that you are only using those which support the anonymous apps feature. Configuring your unauthenticated store with Controllers that do not support this feature may lead to no anonymous apps being available from the store.
6. If you are adding details for XenApp servers, continue to Step 7. To make applications managed by XenMobile (App Controller) available in the store, enter the name or IP address of a XenMobile (App Controller) virtual appliance in the Server box and specify the port for StoreFront to use for connections to XenMobile (App Controller). The default port is 443. Continue to Step 10.
7. To make desktops and applications provided by XenApp available in the store, add the names or IP addresses of your servers to the Servers list. Specify multiple servers to enable fault tolerance, listing the entries in order of priority to set the failover sequence. For XenDesktop sites, give details of Controllers. In the case of XenApp farms, list servers running the Citrix XML Service.
8. Select from the Transport type list the type of connections for StoreFront to use for communications with the servers.
   - To send data over unencrypted connections, select HTTP. If you select this option, you must make your own arrangements to secure connections between StoreFront and your servers.
   - To send data over secure HTTP connections using Secure Sockets Layer (SSL) or Transport Layer Security (TLS), select HTTPS. If you select this option for XenDesktop and XenApp servers, ensure that the Citrix XML Service is set to share its port with Microsoft Internet Information Services (IIS) and that IIS is configured to support HTTPS.
Note: If you are using HTTPS to secure connections between StoreFront and your servers, ensure that the names you specify in the Servers list match exactly (including the case) the names on the certificates for those servers.

9. Specify the port for StoreFront to use for connections to the servers. The default port is 80 for connections using HTTP and 443 for HTTPS connections. In the case of XenDesktop and XenApp servers, the specified port must be the port used by the Citrix XML Service.

10. Click OK. You can configure stores to provide resources from any mixture of XenDesktop, XenApp, and App Controller deployments. Repeat Steps 4 to 10, as necessary, to list additional deployments providing resources for the store. When you have added all the required resources to the store, click Create.

Your unauthenticated store is now available for use. To enable user access to the new store, Citrix Receiver must be configured with access details for the store. There are a number of ways in which you can provide these details to users to make the configuration process easier for them. For more information, see User access options.

Alternatively, users can access the store through the Receiver for Web site, which enables users to access their desktops and applications through a web page. By default with unauthenticated stores, Receiver for Web displays the applications in a folder hierarchy that includes a breadcrumb path. The URL for users to access the Receiver for Web site for the new store is displayed when you create the store.

When you create a new store, the XenApp Services URL is enabled by default. Users of domain-joined desktop appliances and repurposed PCs running the Citrix Desktop Lock, along with users who have older Citrix clients that cannot be upgraded, can access stores directly using the XenApp Services URL for the store. The XenApp Services URL has the form http[s]://serveraddress/Citrix/storename/PNAgent/config.xml, where serveraddress is the FQDN of the server or load balancing environment for your StoreFront deployment and storename is the name you specified for the store in Step 3.

Note: In StoreFront configurations where the web.config file has been configured with the parameter LogoffAction="terminate", Citrix Receiver for Web sessions accessing this unauthenticated store will not terminate. Typically, the web.config file can be found at C:\inetpub\wwwroot\Citrix\storename\, where storename is the name specified for the store when it was created. To ensure these sessions terminate properly, the XenApp server being used by this store must have the Trust XML requests option enabled as shown in Configuring the Citrix XML Service Port and Trust in the XenApp and XenDesktop documentation.
Export store provisioning files for users

Feb 24, 2016
Use the Export Multi-Store Provisioning File and Export Provisioning File tasks to generate files containing connection details for stores, including any NetScaler Gateway deployments and beacons configured for the stores. Make these files available to users to enable them to configure Citrix Receiver automatically with details of the stores. Users can also obtain Citrix Receiver provisioning files from Receiver for Web sites.

Important: In multiple server deployments, use only one server at a time to make changes to the configuration of the server group. Ensure that the Citrix StoreFront management console is not running on any of the other servers in the deployment. Once complete, propagate your configuration changes to the server group so that the other servers in the deployment are updated.

1. On the Windows Start screen or Apps screen, locate and click the Citrix StoreFront tile. Select the Stores node in the left pane of the Citrix StoreFront management console.
2. To generate a provisioning file containing details for multiple stores, in the Actions pane, click Export Multi-Store Provisioning File and select the stores to include in the file.
3. Click Export and Save the provisioning file with a .cr extension to a suitable location on your network.
Advertise and hide stores to users

Feb 24, 2016

Use the Hide Store task to prevent stores being presented to users to add to their accounts when they configure Citrix Receiver through email-based account discovery or FQDN. By default, when you create a store it is presented as an option for users to add in Citrix Receiver when they discover the StoreFront deployment hosting the store. Hiding a store does not make it inaccessible, instead users must configure Citrix Receiver with connection details for the store, either manually, using a setup URL, or with a provisioning file. To resume advertising a hidden store, use the Advertise Store task.

Important: In multiple server deployments, use only one server at a time to make changes to the configuration of the server group. Ensure that the Citrix StoreFront management console is not running on any of the other servers in the deployment. Once complete, propagate your configuration changes to the server group so that the other servers in the deployment are updated.

1. On the Windows Start screen or Apps screen, locate and click the Citrix StoreFront tile.
2. Select the Stores node in the left pane of the Citrix StoreFront management console and, in the Actions pane, click Configure Store Settings > Advertise Store.
3. On the Advertise Store page, select either Advertise Store or Hide Store.
Manage the resources made available in stores

Feb 24, 2016

Use the Manage Controllers task to add and remove from stores resources provided by XenDesktop, XenApp, and App Controller, and to modify the details of the servers providing these resources.

Important: In multiple server deployments, use only one server at a time to make changes to the configuration of the server group. Ensure that the Citrix StoreFront management console is not running on any of the other servers in the deployment. Once complete, propagate your configuration changes to the server group so that the other servers in the deployment are updated.

1. On the Windows Start screen or Apps screen, locate and click the Citrix StoreFront tile.
2. Select the Stores node in the left pane of the Citrix StoreFront management console and, in the results pane, select a store. In the Actions pane, click Manage Delivery Controllers.
3. In the Manage Delivery Controllers dialog box, click Add to include desktops and applications from another XenDesktop, XenApp, or App Controller deployment in the store. To modify the settings for a deployment, select the entry in the Delivery controllers list and click Edit. Select an entry in the list and click Remove to stop the resources provided by the deployment being available in the store.
4. In the Add Controller or Edit Controller dialog box, specify a name that will help you to identify the deployment and indicate whether the resources that you want to make available in the store are provided by XenDesktop, XenApp, or AppController. For App Controller deployments, ensure that the name you specify does not contain any spaces.
5. If you are adding details of XenDesktop or XenApp servers, continue to Step 6. To make applications managed by App Controller available in the store, enter the name or IP address of an App Controller virtual appliance in the Server box and specify the port for StoreFront to use for connections to App Controller. The default port is 443. Continue to Step 10.
6. To make desktops and applications provided by XenDesktop or XenApp available in the store, click Add to enter the name or IP address of a server. Depending on how the web.config file is configured, specifying multiple servers enables either load balancing or failover, as indicated in the dialog box. Load balancing is configured by default. If failover is configured, list the entries in order of priority to set the failover sequence. For XenDesktop sites, give details of Delivery Controllers. In the case of XenApp farms, list servers running the Citrix XML Service. To modify the name or IP address of a server, select the entry in the Servers list and click Edit. Select an entry in the list and click Remove to stop StoreFront contacting the server to enumerate the resources available to the user.
7. Select from the Transport type list the type of connections for StoreFront to use for communications with the servers.
   • To send data over unencrypted connections, select HTTP. If you select this option, you must make your own arrangements to secure connections between StoreFront and your servers.
   • To send data over secure HTTP connections using Secure Sockets Layer (SSL) or Transport Layer Security (TLS), select HTTPS. If you select this option for XenDesktop and XenApp servers, ensure that the Citrix XML Service is set to share its port with Microsoft Internet Information Services (IIS) and that IIS is configured to support HTTPS.
   • To send data over secure connections to XenApp servers using the SSL Relay to perform host authentication and data encryption, select SSL Relay.
   Note: If you are using HTTPS or the SSL Relay to secure connections between StoreFront and your servers, ensure that the names you specify in the Servers list match exactly (including the case) the names on the certificates for those servers.
8. Specify the port for StoreFront to use for connections to the servers. The default port is 80 for connections using HTTP and the SSL Relay, and 443 for HTTPS connections. In the case of XenDesktop and XenApp servers, the specified port must be the port used by the Citrix XML Service.
9. If you are using the SSL Relay to secure connections between StoreFront and XenApp servers, specify the TCP port of the SSL Relay in the SSL Relay port box. The default port is 443. Ensure that all the servers running the SSL Relay are
configured to monitor the same port.

10. Click OK. You can configure stores to provide resources from any mixture of XenDesktop, XenApp, and App Controller deployments. Repeat Steps 3 to 10, as necessary, to add or modify other deployments in the Delivery controllers list.
Manage remote access to stores through NetScaler Gateway

Feb 24, 2016

Use the Remote Access Settings task to configure access to stores through NetScaler Gateway for users connecting from public networks. Remote access through a NetScaler Gateway cannot be applied to unauthenticated stores.

Important: In multiple server deployments, use only one server at a time to make changes to the configuration of the server group. Ensure that the Citrix StoreFront management console is not running on any of the other servers in the deployment. Once complete, propagate your configuration changes to the server group so that the other servers in the deployment are updated.

1. On the Windows Start screen or Apps screen, locate and click the Citrix StoreFront tile.
2. Select the Stores node in the left pane of the Citrix StoreFront management console and, in the results pane, select a store. In the Actions pane, click Configure Remote Access Settings.
3. In the Configure Remote Access Settings dialog box, specify whether and how users connecting from public networks can access the store through NetScaler Gateway.
   - To make the store unavailable to users on public networks, make sure you do not check Enable remote access. Only local users on the internal network will be able to access the store.
   - To make only resources delivered through the store available through NetScaler Gateway, select No VPN tunnel. Users log on directly to NetScaler Gateway and do not need to use the NetScaler Gateway Plug-in.
   - To make the store and other resources on the internal network available through a Secure Sockets Layer (SSL) virtual private network (VPN) tunnel, select Full VPN tunnel. Users require the NetScaler Gateway Plug-in to establish the VPN tunnel.

   If it is not already enabled, the pass-through from NetScaler Gateway authentication method is automatically enabled when you configure remote access to the store. Users authenticate to NetScaler Gateway and are automatically logged on when they access their stores.

4. If you enabled remote access, select from the NetScaler Gateway appliances list the deployments through which users can access the store. Any deployments you configured previously for this and other stores are available for selection in the list. If you want to add a further deployment to the list, click Add. Otherwise, continue to Step 16.
5. On the General Settings page, specify a name for the NetScaler Gateway deployment that will help users to identify it. Users see the display name you specify in Citrix Receiver, so include relevant information in the name to help users decide whether to use that deployment. For example, you can include the geographical location in the display names for your NetScaler Gateway deployments so that users can easily identify the most convenient deployment for their location.

6. Enter the URL of the virtual server or user logon point (for Access Gateway 5.0) for your deployment. Specify the product version used in your deployment.

   The fully qualified domain name (FQDN) for your StoreFront deployment must be unique and different from the NetScaler Gateway virtual server FQDN. Using the same FQDN for StoreFront and the NetScaler Gateway virtual server is not supported.

7. If you are adding an Access Gateway 5.0 deployment, continue to Step 9. Otherwise, specify the subnet IP address of the NetScaler Gateway appliance, if necessary. A subnet IP address is required for Access Gateway 9.3 appliances, but optional for more recent product versions.

   The subnet address is the IP address that NetScaler Gateway uses to represent the user device when communicating with servers on the internal network. This can also be the mapped IP address of the NetScaler Gateway appliance.
Where specified, StoreFront uses the subnet IP address to verify that incoming requests originate from a trusted device.

8. If you are adding an appliance running NetScaler Gateway 10.1, Access Gateway 10, or Access Gateway 9.3, select from the Logon type list the authentication method you configured on the appliance for Citrix Receiver users. The information you provide about the configuration of your NetScaler Gateway appliance is added to the provisioning file for the store. This enables Citrix Receiver to send the appropriate connection request when contacting the appliance for the first time.

- If users are required to enter their Microsoft Active Directory domain credentials, select Domain.
- If users are required to enter a tokencode obtained from a security token, select Security token.
- If users are required to enter both their domain credentials and a tokencode obtained from a security token, select Domain and security token.
- If users are required to enter a one-time password sent by text message, select SMS authentication.
- If users are required to present a smart card and enter a PIN, select Smart card.

If you configure smart card authentication with a secondary authentication method to which users can fall back if they experience any issues with their smart cards, select the secondary authentication method from the Smart card fallback list. Continue to Step 10.

9. To add an Access Gateway 5.0 deployment, indicate whether the user logon point is hosted on a standalone appliance or an Access Controller server that is part of a cluster. If you are adding a cluster, click Next and continue to Step 11.

10. If you are configuring StoreFront for NetScaler Gateway 10.1, Access Gateway 10, Access Gateway 9.3, or a single Access Gateway 5.0 appliance, complete the NetScaler Gateway authentication service URL in the Callback URL box. StoreFront automatically appends the standard portion of the URL. Click Next and continue to Step 13. Enter the internally accessible URL of the appliance. StoreFront contacts the NetScaler Gateway authentication service to verify that requests received from NetScaler Gateway originate from that appliance.

11. To configure StoreFront for an Access Gateway 5.0 cluster, list on the Appliances page the IP addresses or FQDNs of the appliances in the cluster and click Next.

12. On the Enable Silent Authentication page, list URLs for the authentication service running on the Access Controller servers. Add URLs for multiple servers to enable fault tolerance, listing the servers in order of priority to set the failover sequence. Click Next.

StoreFront uses the authentication service to authenticate remote users so that they do not need to re-enter their credentials when accessing stores.

13. For all deployments, if you are making resources provided by XenDesktop or XenApp available in the store, list on the Secure Ticket Authority (STA) page URLs for servers running the STA. Add URLs for multiple STAs to enable fault tolerance, listing the servers in order of priority to set the failover sequence. The STA is hosted on XenDesktop and XenApp servers and issues session tickets in response to connection requests. These session tickets form the basis of authentication and authorization for access to XenDesktop and XenApp resources.

14. If you want XenDesktop and XenApp to keep disconnected sessions open while Citrix Receiver attempts to reconnect automatically, select the Enable session reliability check box. If you configured multiple STAs and want to ensure that session reliability is always available, select the Request tickets from two STAs, where available check box. When the Request tickets from two STAs, where available check box is selected, StoreFront obtains session tickets from two different STAs so that user sessions are not interrupted if one STA becomes unavailable during the course of the session. If, for any reason, StoreFront is unable to contact two STAs, it falls back to using a single STA.

15. Click Create to add your NetScaler Gateway deployment to the list in the Remote Access Settings dialog box.
16. Repeat Steps 4 to 15, as necessary, to add more NetScaler Gateway deployments to the NetScaler Gateway appliances list. If you enable access through multiple deployments by selecting more than one entry in the list, specify the default deployment to be used to access the store.
Integrate Citrix Online applications with stores

Feb 24, 2016

Use the Citrix Online Integration task to select the Citrix Online applications to include in a store and specify the action that Citrix Receiver takes when users subscribe to a Citrix Online application.

Important: In multiple server deployments, use only one server at a time to make changes to the configuration of the server group. Ensure that the Citrix StoreFront management console is not running on any of the other servers in the deployment. Once complete, propagate your configuration changes to the server group so that the other servers in the deployment are updated.

1. On the Windows Start screen or Apps screen, locate and click the Citrix StoreFront tile.
2. Select the Stores node in the left pane of the Citrix StoreFront management console and, in the results pane, select a store. In the Actions pane, click Configure Store Settings > Citrix Online Integration.
3. Select the Citrix Online applications that you want to include in the store and specify the action that Citrix Receiver takes when users subscribe to a Citrix Online application.
   - If you want to allow users without an account for the selected applications to visit the Citrix website and set up personal trial accounts, select Help users set up a trial account, if required.
   - If you want to prompt users to contact the system administrator to obtain an account for the selected applications, select Ask users to contact their help desk for an account.
   - If accounts for all users are already in place for the selected applications, choose Add the application immediately.
Configure two StoreFront stores to share a common subscription datastore

Feb 24, 2016

As of version 2.0, StoreFront no longer uses an SQL database to maintain its subscription data. Citrix replaced the SQL database with a Windows datastore that requires no additional configuration when StoreFront is first installed. The installation installs the Windows datastore locally on each StoreFront server. In StoreFront server group environments, each server also maintains a copy of the subscription data used by its store. This data is propagated to other servers to maintain user subscriptions across the whole group. By default, StoreFront creates a single datastore for each store. Each subscription datastore is updated independently from each other store.

Where different configuration settings are required, it is common for administrators to configure StoreFront with two distinct stores; one for external access to resources using Netscaler Gateway and another for internal access using the corporate LAN. You can configure both “external” and “internal” stores to share a common subscription datastore by making a simple change to the store web.config file.

In the default scenario involving two stores and their corresponding subscription datastores, a user must subscribe to the same resource twice. Configuring the two stores to share a common subscription database improves and simplifies the roaming experience when users access the same resource from inside or outside the corporate network.

- Each store has a web.config file located in `C:\inetpub\wwwroot\citrix\<storename>`.
- Each store web.config contains a client endpoint for the Subscription Store Service.

```xml
<clientEndpoint uri="net.pipe://localhost/Citrix/Subscriptions/1__Citrix_<StoreName>" authenticationMode="windows" transferMode="Streamed">
  <clientCertificate thumbprint="0" />
</clientEndpoint>
```

The subscription data for each Store is located in:

`C:\Windows\ServiceProfiles\NetworkService\AppData\Roaming\Citrix\Subscriptions\Store\1\Subscription\<StoreName>`

For two stores to share a subscription datastore, you need only point one store to the subscription service end point of the other store. In the case of a server group deployment, all servers have identical pairs of stores defined and identical copies of the shared datastore they both share.

Note: The XenApp, XenDesktop and Appc controllers configured on each store must match exactly; otherwise, an inconsistent set of resource subscriptions on one store compared to another might occur. Sharing a datastore is supported only when the two stores reside on the same StoreFront sever or server group deployment.

**StoreFront subscription datastore endpoints**

1. On a single StoreFront deployment, open the external store web.config file using Notepad and search for the clientEndpoint. For example:

```xml
<subscriptionsStoreClient enabled="true">
  <clientEndpoint uri="net.pipe://localhost/Citrix/Subscriptions/1__Citrix_External" authenticationMode="windows" transferMode="Streamed">
    <clientCertificate thumbprint="0" />
  </clientEndpoint>
</subscriptionsStoreClient>
```

2. Change the external to match the internal store endpoint:

```xml
<subscriptionsStoreClient enabled="true">
  <clientEndpoint uri="net.pipe://localhost/Citrix/Subscriptions/1__Citrix_Internal" authenticationMode="windows" transferMode="Streamed">
    <clientCertificate thumbprint="0" />
  </clientEndpoint>
</subscriptionsStoreClient>
```

3. If using StoreFront server group then propagate any changes made to the web.config file of the primary node to all other nodes.

Both stores are now set to share the internal store subscription datastore.
Advanced store settings

Feb 24, 2016
You can configure advanced store properties by using the Advanced Settings page in the Configure Store Settings.

Address resolution type
Allow font smoothing
Allow session reconnect
Background health check polling period
Communication time-out duration and server retry attempts
Connection timeout
Enable enhanced enumeration
Enable socket pooling
Filter resources by excluded keywords
Filter resources by included keywords
Filter resources by type
Maximum concurrent enumerations
Minimum farms for concurrent enumeration
Override ICA client name
Require token consistency
Server communication attempts
Show Desktop Viewer for legacy clients
Special folder redirection

Important
In multiple server deployments, use only one server at a time to make changes to the configuration of the server group. Ensure that the Citrix StoreFront management console is not running on any of the other servers in the deployment. Once complete, propagate your configuration changes to the server group so that the other servers in the deployment are updated.

1. On the Windows Start screen or Apps screen, locate and click the Citrix StoreFront tile.
2. Select the Stores node in the left pane of the Citrix StoreFront management console, select a store in the center pane, and in the Action pane, select Configure Store Settings.
3. On the **Configure Store Settings** page, select **Advanced Settings**, select the advance option you want to configure, make the required change, and click **OK**.

**Address resolution type**

Use the **Advanced Settings** task to specify the type of address to request from the server. The default is DnsPort. From the **Address resolution type** drop-down menu on **Advanced Settings**, select one of the following:

- Dns
- DnsPort
- IPV4
- IPV4Port
- Dot
- DotPort
- Uri
- NoChange

**Allow font smoothing**

You can specify if you want font smoothing for HDX sessions. The default is On.

Use the **Advanced Settings** task, check the **Allow font smoothing** check box, and click **OK**.

**Allow session reconnect**

You can specify if you want HDX sessions to be reconnected. The default is On.

Use the **Advanced Settings** task, check the **Allow session reconnect** check box, and click **OK** to enable session reconnect.

**Background health check polling period**

StoreFront runs periodic health checks on each XenDesktop broker and XenApp server to reduce the impact of intermittent server availability. The default is every minute (00:01:00). Use the Advanced Settings task, specify a time for the **Background health-check Polling period**, and click **OK** to control the frequency of the health check.

**Communication time-out duration and server retry attempts**

By default, requests from StoreFront to a server providing resources for a store time out after 30 seconds and connection time-out is 6 seconds. The server is considered unavailable after 1 unsuccessful communication attempt. Use the **Advanced Settings** task, make your changes to the default times, and click **OK** to change these settings.

**Connection timeout**

You can specify the number of seconds to wait when establishing an initial connection with a Delivery Controller. The default is 6.

Use the **Advanced Settings** task, specify the seconds to wait when establishing the initial connection, and click **OK**.

**Enable enhanced enumeration**

You can enable (or disable) parallel communication with Delivery Controllers. The default is On.

Use the **Advanced Settings** task, check (or uncheck) the **Enable enhanced enumeration** check box, and click **OK**.
Enable socket spooling

Socket pooling is disabled by default in stores. When socket pooling is enabled, StoreFront maintains a pool of sockets, rather than creating a socket each time one is needed and returning it to the operating system when the connection is closed. Enabling socket pooling enhances performance, particularly for Secure Sockets Layer (SSL) connections. To enable socket pooling, you edit the store configuration file. Use the Advanced Settings task, check the Enable socket spooling check box, and click OK to enable socket pooling.

Filter resources by excluded keywords

You can filter matching resources by excluded keywords. Specifying exclusion keywords removes any previously configured inclusion keywords. The default is No filtering (no resource types excluded).

Use the Advanced Settings task, select Filter resources by excluded keywords, click to the right of it, enter a semicolon-separated list of keywords in the enter keywords box, and click OK.

Filter resources by included keywords

You can filter matching resources by inclusion keywords. Specifying inclusion keywords removes any previously configured exclusion keywords. The default is No filtering (no resource types excluded).

Use the Advanced Settings task, select Filter resources by included keywords, click to the right of it, enter a semicolon-separated list of keywords in the enter keywords box, and click OK.

Filter resources by type

Choose the resource types to be included in resource enumeration. The default is No filtering (all resource types included).

Use the Advanced Settings task, select Filter resources by type, click to the right of it, choose the resource types to include in the enumeration, and click OK.

Maximum concurrent enumerations

Specify the maximum number of concurrent requests to send to different Delivery Controllers. The default is 0 (No Limit).
Use the **Advanced Settings** task, select **Maximum concurrent enumerations**, enter a number, and click **OK**.

**Minimum farms for concurrent enumeration**

Specify the minimum number of Delivery Controllers before enumerations occur in parallel. The default is 3.

Use the **Advanced Settings** task, select **Minimum farms for concurrent enumerations**, enter a number, and click **OK**.

**Override ICA client name**

Overides the client name setting in the .ica launch file with an ID generated by Citrix Receiver for Web. When disabled, Citrix Receiver specifies the client name. The default is Off.

Use the **Advanced Settings** task, check the **Override the ICA client name** check box, and click **OK**.

**Require token consistency**

When enabled, StoreFront enforces consistency between the gateway used to authenticate and the gateway used to access the store. When the values are inconsistent, users must reauthenticate. You must enable this for Smart Access. The default is On.

Use the **Advanced Settings** task, check the **Require token consistency** check box, and click **OK**.

**Server communication attempts**

Specify the number of attempts to communicate with Delivery Controllers before marking them unavailable. The default is 1.

Use the **Advanced Settings** task, select **Server communication attempts**, enter a number, and click **OK**.

**Show Desktop Viewer for legacy clients**

Specify whether to show the Citrix Desktop Viewer window and toolbar when users access their desktop from legacy clients. The default is Off.

Use the **Advanced Settings** task, check the **Show Desktop Viewer for legacy clients** check box, and click **OK**.

**Special folder redirection**

Use the **Advanced Settings** task to enable or disable special folder redirection. With special folder redirection configured, users can map Windows special folders for the server to those on their local computers. Special folders refer to standard Windows folders, such as \Documents and \Desktop, which are always presented in the same way regardless of the operating system.

Use the **Advanced Settings** task, check or uncheck the **Allow special folder redirection** check box to enable or disable special folder redirection, and click **OK**.
Manage a Citrix Receiver for Web site

Feb 24, 2016

Citrix Receiver for Web allows access to applications, data, and desktops easily and securely from a wide range of devices. Use StoreFront to configure Citrix Receiver for Web app selection for the Citrix Receiver for Web.

Use the StoreFront management console to do the following Citrix Receiver for Web-related tasks:

<table>
<thead>
<tr>
<th>Task</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create a Citrix Receiver for Web site</td>
<td>Create Citrix Receiver for Web sites, which enable users to access stores through a web page.</td>
</tr>
<tr>
<td>Configure Citrix Receiver for Web sites</td>
<td>Modify settings for your Receiver for Web sites.</td>
</tr>
<tr>
<td>Configure support for the unified Citrix Receiver experience</td>
<td>StoreFront supports both the classic and unified user experiences. The unified experience delivers a centrally managed HTML5 user experience.</td>
</tr>
<tr>
<td>Create and manage featured apps</td>
<td>Create product featured app groups for your end users that are related to or fit in a specific category.</td>
</tr>
<tr>
<td>Configure workspace control</td>
<td>Workspace control lets applications follow users as they move between devices.</td>
</tr>
<tr>
<td>Configure the Citrix Receiver for HTML5 use of browser tabs</td>
<td>Specify when users start resources from shortcuts using Citrix Receiver for HTML5, whether the desktop or application replaces the Citrix Receiver for Web site in the existing browser tab rather than appearing in a new tab.</td>
</tr>
<tr>
<td>Configure communication time-out duration and retry attempts</td>
<td>By default, requests from a Citrix Receiver for Web site to the associated store time out after three minutes. The store is considered unavailable after one unsuccessful communication attempt. You can change the default settings.</td>
</tr>
</tbody>
</table>
Create a Citrix Receiver for Web site

Feb 24, 2016

Use the Create Website task to add Receiver for Web sites, which enable users to access stores through a webpage.

Important: In multiple server deployments, use only one server at a time to make changes to the configuration of the server group. Ensure that the Citrix StoreFront management console is not running on any of the other servers in the deployment. Once complete, propagate your configuration changes to the server group so that the other servers in the deployment are updated.

1. On the Windows Start screen or Apps screen, locate and click the Citrix StoreFront tile.
2. Select the Store node in the left pane of the Citrix StoreFront management console, select the store for which you want to create the Citrix Receiver for Web site, and in the Actions pane, click Manage Receiver for Web Sites.
3. Click Add to create a new Citrix Receiver for Web site. Specify the desired URL in the Website path Box.
4. Click Create and then, once the site has been created, click Finish.

The URL for users to access the Citrix Receiver for Web site is displayed. For more information about modifying settings for Citrix Receiver for Web sites, see Configure Citrix Receiver for Web sites.

By default, when a user accesses a Receiver for Web site from a computer running Windows or Mac OS X, the site attempts to determine whether Citrix Receiver is installed on the user's device. If Citrix Receiver cannot be detected, the user is prompted to download and install the appropriate Citrix Receiver for their platform from the Citrix website. For more information about modifying this behavior, see Disable detection and deployment of Citrix Receiver.

The default configuration for Receiver for Web sites requires that users install a compatible version of Citrix Receiver to access their desktops and applications. However, you can enable Receiver for HTML5 on your Receiver for Web sites so that users who cannot install Citrix Receiver can still access resources. For more information, see Configure Citrix Receiver for Web sites.
Configure Citrix Receiver for Web sites

Feb 06, 2017

Citrix Receiver for Web sites enable users to access stores through a webpage. The tasks below enable you to modify settings for your Citrix Receiver for Web sites. Some advanced settings can only be changed by editing the site configuration files. For more information, see Configure Citrix Receiver for Web sites using the configuration files.

Important: In multiple server deployments, use only one server at a time to make changes to the configuration of the server group. Ensure that the Citrix StoreFront management console is not running on any of the other servers in the deployment. Once complete, propagate your configuration changes to the server group so that the other servers in the deployment are updated.

Choose authentication methods

Use the Authentication Methods task to assign authentication methods for users connecting to the Citrix Receiver for Web site. This action allows you to specify a subset of authentication methods for each Receiver for Web site.

1. On the Windows Start screen or Apps screen, locate and click the Citrix StoreFront tile.
2. Select the Stores node in the left pane of the Citrix StoreFront management console and select the relevant store that you want to modify from the results pane.
3. In the Actions pane, click Manage Receiver for Web Sites, click Configure, and choose Authentication Methods to specify the access methods that you want to enable for your users.
   - Select the User name and password check box to enable explicit authentication. Users enter their credentials when they access their stores.
   - Select the Domain pass-through check box to enable pass-through of Active Directory domain credentials from users' devices. Users authenticate to their domain-joined Windows computers and are automatically logged on when they access their stores. In order to use this option, pass-through authentication must be enabled when Citrix Receiver for Windows is installed on users' devices. Note that Domain pass-through for Citrix Receiver for Web is limited to Windows operating systems using Internet Explorer.
   - Select the Smart card check box to enable smart card authentication. Users authenticate using smart cards and PINs when they access their stores.
   - Select the Pass-through from NetScaler Gateway check box to enable pass-through authentication from NetScaler Gateway. Users authenticate to NetScaler Gateway and are automatically logged on when they access their stores.
4. Once the authentication method has been selected, click OK.
   For more information about modifying settings for authentication methods, see Configure the authentication service.

Add resource shortcuts to other websites

Use the Add Shortcuts to Websites task to provide users with rapid access to desktops and applications from websites hosted on the internal network. You generate URLs for resources available through the Citrix Receiver for Web site and embed these links on your websites. Users click on a link and are redirected to the Receiver for Web site, where they log on if they have not already done so. The Receiver for Web site automatically starts the resource. In the case of applications, users are also subscribed to the application if they have not subscribed previously.

1. On the Windows Start screen or Apps screen, locate and click the Citrix StoreFront tile.
2. Select the Stores node in the left pane of the Citrix StoreFront management console and select the site from the results pane.
3. In the Actions pane, click Manage Receiver for Web Sites, click Configure, and choose Website Shortcuts.
4. Click Add to enter the URL for a website on which you plan to host shortcuts. URLs must be specified in the form...
http[s]://hostname[port] where hostname is the fully qualified domain name of the website host and port is the port used for communication with the host if the default port for the protocol is not available. Paths to specific pages on the website are not required. To modify a URL, select the entry in the Websites list and click Edit. Select an entry in the list and click Remove to delete the URL for a website on which you no longer want to host shortcuts to resources available through the Citrix Receiver for Web site.

5. Click Get shortcuts and then click Save when you are prompted to save your configuration changes.

6. Log on to the Citrix Receiver for Web site and copy the URLs you require to your website.

Set session timeout

By default, user sessions on Citrix Receiver for Web sites time out after 20 minutes of inactivity. When a session times out, users can continue to use any desktops or applications that are already running but must log on again to access Citrix Receiver for Web site functions such as subscribing to applications.

Use the Session Timeout task in the Manage Receiver for Web Sites to change the session timeout value.

1. On the Windows Start screen or Apps screen, locate and click the Citrix StoreFront tile.
2. Select the Stores node in the left pane and in the Actions pane, click Manage Receiver for Web Sites, click Configure, and choose Session Settings. You can specify minutes and hours. The minimum value for all time intervals is 1. The maximum equates to 1 year for each time interval.

Configure site behavior for users without Citrix Receiver

Use the Deploy Citrix Receiver task to configure the behavior of a Citrix Receiver for Web site when a Windows or Mac OS X user without Citrix Receiver installed accesses the site. By default, Citrix Receiver for Web sites automatically attempt to determine whether Citrix Receiver is installed when accessed from computers running Windows or Mac OS X.

If Citrix Receiver cannot be detected, the user is prompted to download and install the appropriate Citrix Receiver for their platform. The default download location is the Citrix website, but you can also copy the installation files to the StoreFront server and provide users with these local files instead.

For users who cannot install Citrix Receiver, you can enable Citrix Receiver for HTML5 on your Citrix Receiver for Web sites. Citrix Receiver for HTML5 enables users to access desktops and applications directly within HTML5-compatible web browsers without needing to install Citrix Receiver. Both internal network connections and connections through NetScaler Gateway are supported. However, for connections from the internal network, Citrix Receiver for HTML5 only allows access to resources provided by specific products. Additionally, specific versions of NetScaler Gateway are required to enable connections from outside the corporate network. For more information, see Infrastructure requirements.

For local users on the internal network, access through Citrix Receiver for HTML5 to resources provided by XenDesktop and XenApp is disabled by default. To enable local access to desktops and applications using Citrix Receiver for HTML5, you must enable the ICA WebSockets connections policy on your XenDesktop and XenApp servers. XenDesktop and XenApp use port 8008 for Citrix Receiver for HTML5 connections. Ensure your firewalls and other network devices permit access to this port. For more information, see WebSockets policy settings.

Citrix Receiver for HTML5 can only be used with Internet Explorer over HTTP connections. To use Citrix Receiver for HTML5 with Mozilla Firefox over HTTPS connections, users must type about:config in the Firefox address bar and set the network.websocket.allowInsecureFromHTTPS preference to true.

1. On the Windows Start screen or Apps screen, locate and click the Citrix StoreFront tile.
2. Select the Stores node in the left pane of the Citrix StoreFront management console and, in the results pane, select a
site. In the **Actions** pane, click **Manage Receiver for Web Sites** and click **Configure**.

3. Choose **Deploy Citrix Receiver** and specify the response of the Citrix Receiver for Web site if Citrix Receiver cannot be detected on a user's device.

   - If you want the site to prompt the user to download and install the appropriate Citrix Receiver for their platform, select **Install locally**. Users must install Citrix Receiver to access desktops and applications through the site.
   - If you select **Allow users to download HDX engine (plug in)**, the Citrix Receiver for Web allows the user to download and install Citrix Receiver on the end user client if the Citrix Receiver is not available.
   - If you select **Upgrade plug-in at logon**, the Citrix Receiver for Web upgrades the Citrix Receiver client when the user logs on. To enable this feature, ensure the Citrix Receiver files are available on the StoreFront server.
   - Select a source from the drop-down menu.
   - If you want the site to prompt the user to download and install Citrix Receiver but fall back to Citrix Receiver for HTML5 if Citrix Receiver cannot be installed, select **Use Receiver for HTML5 if local Receiver is unavailable**. Users without Citrix Receiver are prompted to download and install Citrix Receiver every time they log on to the site.
   - If you want the site to enable access to resources through Citrix Receiver for HTML5 without prompting the user to download and install Citrix Receiver, select **Always use Receiver for HTML5**. With that option selected, users always access desktops and applications on the site through Citrix Receiver for HTML5, provided they use an HTML5-compatible browser. Users without an HTML5-compatible browser have to install the native Citrix Receiver.

**Remove Citrix Receiver for Web sites**

Use the **Manage Receiver for Web Sites** in the **Actions** pane to delete a Citrix Receiver for Web site. When you remove a site, users can no longer use that webpage to access the store.
Support for the unified Citrix Receiver experience

Apr 25, 2016

StoreFront supports both the **classic** and **unified** user experiences. With the classic experience, each Citrix Receiver platform is responsible for delivering its own user experience. The new unified experience delivers a centrally managed HTML5 user experience to all web and native Citrix Receivers. This supports customization and featured app groups management.

Stores created using this version of StoreFront use the unified experience by default, but for upgrades Citrix retains the classic experience by default. To support the unified experience you must associate a StoreFront store with a Receiver for Web site, and that site must be configured to use the unified experience.

**Important:** The unified experience is not supported if the Receiver for Web site is added to the Restricted zone. If you must add the Receiver for Web site to the Restricted zone, configure your store to use the classic experience.

Use the StoreFront management console to do the following Citrix Receiver for Web related tasks:

- Create a Citrix Receiver for Web site.
- Change the Citrix Receiver for Web site experience.
- Select a unified Citrix Receiver for Web site to associate with the store.
- Customize the Receiver appearance.

**Important:** In multiple server deployments, use only one server at a time to make changes to the configuration of the server group. Ensure that the Citrix StoreFront management console is not running on any of the other servers in the deployment. Once complete, propagate your configuration changes to the server group so that the other servers in the deployment are updated.

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**Note**

If using XenApp 6.x, applications set to **Stream to client** or **Streamed if possible, otherwise accessed from a server** are not supported with the unified experience enabled.

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Create a Citrix Receiver for Web website

A Citrix Receiver for Web site is created automatically, whenever you create a store. You can also create additional Receiver for Web sites using this procedure.

1. On the Windows Start screen or Apps screen, locate and click the Citrix StoreFront tile.
2. Select the Stores node in the left pane of the Citrix StoreFront management console and, in the Actions pane, click **Manage Receiver for Web Sites > Add** and follow the wizard.

Change the Citrix Receiver experience

You can select if a Citrix Receiver for Web website delivers the **classic** or **unified** experience. Note that enabling the classic experience disables the advanced customizations and featured app group management.

1. On the Windows Start screen or Apps screen, locate and click the Citrix StoreFront tile.
2. Select the Stores node in the left pane of the Citrix StoreFront management console, select the store that you want to
change in the center pane, and click Manage Receiver for Web Sites in the Actions pane, and then click Configure.

3. Select Receiver Experience and choose Disable classic experience or Enable classic experience.

Select a unified Citrix Receiver for Web site to associate with the store

When a new store is created using StoreFront, a Citrix Receiver for Web site in unified mode is automatically created and associated with the store. However if you upgrade from a previous version of StoreFront, it defaults to the classic experience.

To select a Citrix Receiver for Web site to provide the unified experience for a store, you must have at least one Citrix Receiver for Web site created with the classic experience disabled.

1. On the Windows Start screen or Apps screen, locate and click the Citrix StoreFront tile.
2. Select the Stores node in the left pane of the Citrix StoreFront management console, select a store in the center pane, and click Configure Unified Experience in the Actions pane. Only websites that support the unified experience (classic experience disabled) can be used for setting as the default for the store. If you do not have a Citrix Receiver for Web website created, a message displays including a link to the Create a new Receiver for Web website. You can also change an existing Receiver for Web site into a Receiver for Web website. See Change the Citrix Receiver experience.
3. When you have a Citrix Receiver for Web site created, choose Configure Unified Experience for this store and choose the specific website.

Customize the Citrix Receiver appearance

To customize the Citrix Receiver appearance, your Citrix Receiver for Web website must have the classic Citrix Receiver experience disabled.

1. On the Windows Start screen or Apps screen, locate and click the Citrix StoreFront tile.
2. Select the Stores node in the left pane of the Citrix StoreFront management console and in the Actions pane, click Manage Receiver for Web Sites and click Configure.
3. Select Receiver Experience > Disable classic experience.
4. Select Customize Appearance and make selections to customize how the website displays after logging on.
Create and manage featured apps

Feb 24, 2016

You can create product featured app groups for your end users that are related to or fit in a specific category. For example, you can create a Sales Department featured app group containing applications that are used by that department. You can define featured apps in the StoreFront administration console by using application names or by using keywords or application categories that were defined in the Studio console.

Use the Featured App Groups task to add, edit, or remove featured app groups.

Important: In multiple server deployments, use only one server at a time to make changes to the configuration of the server group. Ensure that the Citrix StoreFront management console is not running on any of the other servers in the deployment. Once complete, propagate your configuration changes to the server group so that the other servers in the deployment are updated.

Note that this functionality is available only when the Classic experience is disabled.

1. On the Windows Start screen or Apps screen, locate and click the Citrix StoreFront tile.
2. Select the Stores node in the left pane of the Citrix StoreFront management console and in the Actions pane, click Manage Receiver for Web Sites and click Configure.
4. In the Featured App Groups dialog box, click Create to define a new featured app group.
5. In the Create Featured App Group dialog box, specify a featured app group name, description (optional), background, and the method by which you define the featured app groups. You can choose keywords, application names, or application category, and click OK.

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keywords</td>
<td>Define the keywords in Studio.</td>
</tr>
<tr>
<td>Application names</td>
<td>Use the application name to define the featured app group. All applications names matching the name included here in the Create a Featured App Group dialog screen are included in the featured app group. StoreFront does not support wildcards in application names. The match is not case sensitive, but it does match whole words. For example, if you type Excel, StoreFront matches a published app named Microsoft Excel 2013 but typing Exc does not match anything.</td>
</tr>
<tr>
<td>Application category</td>
<td>Define the application category in Studio.</td>
</tr>
</tbody>
</table>

Example:

We created two featured app groups:

- Collaboration - Created by matching apps in the Collaboration category in Studio.
- Engineering - Created by naming the app group and specifying a collection of app names.
Configure workspace control

Workspace control lets applications follow users as they move between devices. This enables, for example, clinicians in hospitals to move from workstation to workstation without having to restart their applications on each device. Workspace control is enabled by default for Citrix Receiver for Web sites. To disable or configure workspace control, you edit the site configuration file.

Important: In multiple server deployments, use only one server at a time to make changes to the configuration of the server group. Ensure that the Citrix StoreFront management console is not running on any of the other servers in the deployment. Once complete, propagate your configuration changes to the server group so that the other servers in the deployment are updated.

1. On the Windows Start screen or Apps screen, locate and click the Citrix StoreFront tile.
2. In the left pane, select Stores and in the Action pane, select Manage Receiver for Web Sites, and click Configure.
3. Select Workspace Control.
4. Configure default settings for workspace control, which include:
   - Enabling workspace control
   - Setting session reconnection options
   - Specifying log off action
Configure Citrix Receiver for HTML5 use of browser tabs

Feb 24, 2016

By default, Citrix Receiver for HTML5 starts desktops and applications in a new browser tab. However, when users start resources from shortcuts using Citrix Receiver for HTML5, the desktop or application replaces the Citrix Receiver for Website in the existing browser tab rather than appearing in a new tab.

Important: In multiple server deployments, use only one server at a time to make changes to the configuration of the server group. Ensure that the Citrix StoreFront management console is not running on any of the other servers in the deployment. Once complete, propagate your configuration changes to the server group so that the other servers in the deployment are updated.

1. On the Windows Start screen or Apps screen, locate and click the Citrix StoreFront tile.
2. In the left pane, select Stores and in the Action pane, select Manage Receiver for Web Sites, and click Configure.
4. Select Always use HTML 5 Receiver from the Deployment options drop-down menu and depending on the tab in which you want to start applications, select or deselect Launch applications in the same tab as Receiver for Web.
Configure communication time-out duration and retry attempts

Feb 24, 2016

By default, requests from a Citrix Receiver for Web site to the associated store time out after three minutes. The store is considered unavailable after one unsuccessful communication attempt. Use the Session Settings task to change the default settings.

**Important:** In multiple server deployments, use only one server at a time to make changes to the configuration of the server group. Ensure that the Citrix StoreFront management console is not running on any of the other servers in the deployment. Once complete, propagate your configuration changes to the server group so that the other servers in the deployment are updated.

1. On the Windows Start screen or Apps screen, locate and click the Citrix StoreFront tile.
2. Select the Stores node in the left pane of the Citrix StoreFront management console, select a store in the center pane, and in the Action pane, select Manage Receiver for Web Site, and click Configure.
3. Select Session Settings, make your changes, and click OK/Apply to save the changes.
Configure user access

Feb 24, 2016
This article contains the following information:

- Configure support for connections through XenApp Services URLs
- Disable workspace control reconnect for all Citrix Receivers
- Configure user subscriptions
- Manage subscription data

Use the Configure XenApp Services Support task to configure access to your stores through XenApp Services URLs. Use the Configure XenApp Services Support task to configure access to your stores through XenApp Services URLs. Users of domain-joined desktop appliances and repurposed PCs running the Citrix Desktop Lock, along with users who have older Citrix clients that cannot be upgraded, can access stores directly using the XenApp Services URL for the store. When you create a new store, the XenApp Services URL is enabled by default.

**Important:** In multiple server deployments, use only one server at a time to make changes to the configuration of the server group. Ensure that the Citrix StoreFront management console is not running on any of the other servers in the deployment. Once complete, propagate your configuration changes to the server group so that the other servers in the deployment are updated.

1. On the Windows Start screen or Apps screen, locate and click the Citrix StoreFront tile.
2. Select the Stores node in the left pane of the Citrix StoreFront management console and, in the results pane, select a store. In the Actions pane, click Configure XenApp Services URL.
3. Select or clear the Enable XenApp Services Support check box to, respectively, enable or disable user access to the store through the displayed XenApp Services URL. The XenApp Services URL for a store has the form http[s]://serveraddress/Citrix/storename/PNAgent/config.xml, where serveraddress is the fully qualified domain name of the server or load balancing environment for your StoreFront deployment and storename is the name specified for the store when it was created.
4. If you enable XenApp Services Support, optionally specify a default store in your StoreFront deployment for users with the Citrix Online Plug-in. Specify a default store so that your users can configure the Citrix Online Plug-in with the server URL or load-balanced URL of the StoreFront deployment, rather than the XenApp Services URL for a particular store.

Workspace control enables applications to follow users as they move between devices. This allows, for example, clinicians in hospitals to move from workstation to workstation without having to restart their applications on each device.

StoreFront contains a configuration to disable workspace control reconnect in the Store Service for all Citrix Receivers. Manage this feature by using the StoreFront console, PowerShell, or by editing web.config.

**Use the StoreFront management console**

1. On the Windows Start screen or Apps screen, locate and click the Citrix StoreFront tile.
2. Select the **Stores** node in the left pane of the Citrix StoreFront management console and, in the **Actions** pane, click **Configure Store Settings**.

3. Select **Advanced Settings** and check or uncheck **Allow session reconnect**.

**Use PowerShell**

Make sure that you close the Administration Console. Run the following code snippet to import the StoreFront PowerShell modules:

```powershell
$dsInstallProp = Get-ItemProperty -Path HKLM:\SOFTWARE\Citrix\DeliveryServicesManagement -Name InstallDir
$dsInstallDir = $dsInstallProp.InstallDir
& $dsInstallDir\..\Scripts\ImportModules.ps1
```

Then the PowerShell command **Set-DSAllowSessionReconnect** turns Workspace control reconnect on or off.

**Syntax**

```powershell
```

For example, to turn off workspace control reconnect for a store in /Citrix/Store, the following command configures the store:

```powershell
Set-DSAllowSessionReconnect -SiteId 1 -VirtualPath /Citrix/Store -IsAllowed $false
```

**Edit web.config**

Open **web.config** under the Store Service (for example, /Citrix/Store) in a text editor. Locate the lines similar to:

```xml
<resourcesService id="f01f7dc4-7f28-4bc1-b8fb-7c0db9570d20"
    storeLockedDown="false"
    anonymousStore="false" allowSessionReconnect="true" />
```

Change the value of **allowSessionReconnect** to **false** to disable workspace control reconnect or **true** to enable it.

Use the **User Subscriptions** task to require users to subscribe to applications before using them or to enable users to receive all applications when they connect to the store.

**Important**: In multiple server deployments, use only one server at a time to make changes to the configuration of the server group. Ensure that the Citrix StoreFront management console is not running on any of the other servers in the deployment. Once complete, propagate your configuration changes to the server group so that the other servers in the deployment are updated.

1. On the Windows **Start** screen or **Apps** screen, locate and click the **Citrix StoreFront** tile.
2. Select the **Stores** node in the left pane of the Citrix StoreFront management console and, in the results pane, select a store. In the **Actions** pane, click **Configure Store Settings** to toggle the user subscriptions feature off or on.
3. Choose **Enable user subscriptions (Self Service Store)** to make users subscribe to the applications to use them. Any previously specified subscriptions are still available.

4. Choose **Disable user subscriptions (Mandatory Store)** to make all applications published to the users available on the Home screen without users subscribing to them. Their subscriptions are not deleted and they can recover them if you re-enable the feature.

Manage subscription data for a store using PowerShell cmdlets.

**Note:** The StoreFront and PowerShell consoles cannot be open at the same time. Always close the StoreFront admin console before using the PowerShell console to administer your StoreFront configuration. Likewise, close all instances of PowerShell before opening the StoreFront console.

**Export subscription data**

You can create a snapshot of a store's subscription data using the following PowerShell cmdlets to create a subscription data file:

```
Export-DSStoreSubscriptions -StoreName StoreName -FilePath DataFile
```

When managing a multiple-server deployment, you can run these PowerShell cmdlets on any server within the StoreFront server group.

**Restore subscription data**

You can restore a store's subscription data to a previously saved snapshot using the following PowerShell cmdlets:

```
Restore-DSStoreSubscriptions -StoreName StoreName -FilePath DataFile
```

This command restores the subscription data to the state when the export data file was produced, and it removes any existing subscriptions before adding the subscription data found in the data file.

When managing a multiple-server deployment, you can run these PowerShell cmdlets on any server within the StoreFront server group.

**Import subscription data**

You can update a store's subscription data from a previously exported data file using the following PowerShell cmdlets:

```
Import-DSStoreSubscriptions -StoreName StoreName -FilePath FilePath
```

This command allows subscription data to be transferred from one store to another, and it retains existing subscriptions before adding/updating subscription data from the imported data file.

When managing a multiple-server deployment, you can run these PowerShell cmdlets on any server within the StoreFront server group.
Purge subscription data for a store

A folder and datastore containing subscription data exists for each store.

1. Stop the Citrix Subscriptions Store service on the StoreFront server.
2. Locate subscription store database folder on each StoreFront server in the new location.
   
   C:\Windows\ServiceProfiles\NetworkService\AppData\Roaming\Citrix\SubscriptionsStore\1___Citrix_\<StoreName>

3. Delete the contents of this folder, but do not delete the folder.
4. Restart the Citrix Subscriptions Store service on all StoreFront servers in the deployment.

Subscription data file details

The subscription data file is a text file containing one line per user subscription. Each line is a tab-separated sequence of values:

\[<user-identifier> <resource-id> <subscription-id> <subscription-status> <property-name> <property-value> <property-name> <property-value> ...\]

where:

- \(<user-identifier>\) - Required. A sequence of characters identifying the user. This is the user's Windows Security Identifier.
- \(<resource-id>\) - Required. A sequence of characters identifying the subscribed resource.
- \(<subscription-id>\) - Required. A sequence of characters uniquely identifying the subscription. This value is not used (although, a value must be present in the data file).
- \(<subscription-status>\) - Required. The status of the subscription: subscribed or unsubscribed.
- \(<property-name>\) and \(<property-value>\) - Optional. A sequence of zero or more pairs of \(<property-name>\) and \(<property-value>\) values. These represent properties associated with the subscription by a StoreFront client (typically a Citrix Receiver). A property with multiple values that is represented by multiple name/value pairs with the same name (for example, "... MyProp A MyProp B ..." represents the property MyProp with values A, B).

Example:

S-0-0-00-0000000000-0000000000-0000000000-0000 XenApp.Excel 21EC2020-3AEA-4069-A2DD-08002B30309D
Subscribed dazzle:position 1

Size of subscription data on the Storefront server's disk

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<tr>
<th>No of Records</th>
<th>Size MB</th>
</tr>
</thead>
<tbody>
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</table>

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Size of import and export .txt files

<table>
<thead>
<tr>
<th>No of Records</th>
<th>Size MB</th>
</tr>
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<tbody>
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<tr>
<td>2000000</td>
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</tr>
</tbody>
</table>
Set up highly available multi-site store configurations

Jul 14, 2016
In this article:

- Configure user mapping and aggregation
- Advanced configurations - load balancing, failover, disaster recovery, and user mapping for a store
- Configure subscription synchronization
- Configure optimal HDX routing for a store
- Use the Citrix StoreFront management console
- Use PowerShell to configure optimal NetScaler Gateway routing for a store

For stores that aggregate resources from multiple deployments, particularly geographically dispersed deployments, you can configure load balancing and failover between deployments, mapping of users to deployments, and specific disaster recovery deployments to provide highly available resources. Where you have configured separate NetScaler Gateway appliances for your deployments, you can define the optimal appliance for users to access each of the deployments. If you deploy NetScaler Gateway in a global server load balancing configuration, you must update the store configuration with details for each of the appliances.

StoreFront has support in the management console for the most common user mapping and aggregation scenarios. Citrix recommends using the management console where this meets your needs. Limitations of the administration UI support include:

- Use of a single aggregation group name is supported. More than one aggregation group name is not supported.
- Use of multiple primary farms or of any backup farms is not supported.

### Warning

If existing configurations use multi-site options not supported by the Citrix StoreFront management console, or web.config is manually edited, some tasks become unavailable in the management console. You can use the information in this section for cases that are not supported by the management console.

### Important:

In multiple server deployments, use only one server at a time to make changes to the configuration of the server group. Ensure that the Citrix StoreFront management console is not running on any of the other servers in the deployment. Once complete, propagate your configuration changes to the server group so that the other servers in the deployment are updated.

1. Ensure that you have configured the store with details of all the XenDesktop and XenApp deployments that you want to use in your configuration. For more information about adding deployments to stores, see Manage the resources made available in stores.
2. On the Windows Start screen or Apps screen, locate and click the Citrix StoreFront tile.
3. Select the Stores node in the left pane of the Citrix StoreFront management console and click Manage Delivery Controllers in the Actions pane.
4. If two or more controllers are defined, click User Mapping and Multi-Site Aggregation Configuration > Configure.
5. Click **Map users to controllers** and make selections on the screens to specify which Delivery Controllers are available to which users.

6. Click **Aggregate resources** to specify whether or not Delivery Controllers are aggregated. If you enable aggregation of Delivery Controllers, applications and desktops from those Delivery Controllers with the same display name and path are presented as a single application/desktop in Citrix Receiver.

Although you can configure many common multi-site and high availability operations with the StoreFront management console, you can still configure StoreFront using the configuration files in the same manner as earlier StoreFront versions.

**Warning:** After configuring load balancing, failover, disaster recovery, and user mapping for a store with configuration files, some tasks become unavailable in the Citrix StoreFront management console to prevent misconfiguration.

**Important:** In multiple server deployments, use only one server at a time to make changes to the configuration of the server group. Ensure that the Citrix StoreFront management console is not running on any of the other servers in the deployment. Once complete, propagate your configuration changes to the server group so that the other servers in the deployment are updated.

1. Ensure that you have configured the store with details of all the XenDesktop and XenApp deployments that you want to use in your configuration, including disaster recovery deployments. For more information about adding deployments to stores, see Manage the resources made available in stores.

2. Use a text editor to open the web.config file for the store, which is typically located in the C:\inetpub\wwwroot\Citrix\storename\ directory, where storename is the name specified for the store when it was created.

3. Locate the following section in the file.

   ```xml
   <resourcesWingConfigurations>
   <resourcesWingConfiguration name="Default" wingName="Default"/>
   </resourcesWingConfigurations>
   ```

4. Specify your configuration as shown below.

   ```xml
   <resourcesWingConfigurations>
   <resourcesWingConfiguration name="Default" wingName="Default">
   <userFarmMappings>
   <clear />
   <userFarmMapping name="user_mapping">
   <groups>
   <group name="domain\usergroup" sid="securityidentifier"/>
   <group .../>
   ...
   </groups>
   <equivalentFarmSets>
   <equivalentFarmSet name="setname" loadBalanceMode="{LoadBalanced | Failover}"
   aggregationGroup="aggregationgroupname">
   <primaryFarmRefs>
   <farm name="primaryfarmname"/>
   <farm .../>
   ...
   </primaryFarmRefs>
   <backupFarmRefs>
   <farm name="backupfarmname"/>
   <farm .../>
   ...
   </backupFarmRefs>
   </equivalentFarmSet>
   <equivalentFarmSet .../>
   ...
   </equivalentFarmSets>
   </resourcesWingConfiguration>
   ```
Use the following elements to define your configuration.

userFarmMapping
Specifies groups of deployments and defines the load balancing and failover behavior between those deployments. Identifies deployments to be used for disaster recovery. Controls user access to resources by mapping Microsoft Active Directory user groups to the specified groups of deployments.

groups
Specifies the names and security identifiers (SIDs) of Active Directory user groups to which the associated mapping applies. User group names must be entered in the format domain\usergroup. Where more than one group is listed, the mapping is only applied to users who are members of all the specified groups. To enable access for all Active Directory user accounts, set the group name & sid to everyone.

equivalentFarmSet
Specifies a group of equivalent deployments providing resources to be aggregated for load balancing or failover, plus an associated group of disaster recovery deployments. The loadBalanceMode attribute determines the allocation of users to deployments. Set the value of the loadBalanceMode attribute to LoadBalanced to randomly assign users to deployments in the equivalent deployment set, evenly distributing users across all the available deployments. When the value of the loadBalanceMode attribute is set to Failover, users are connected to the first available deployment in the order in which they are listed in the configuration, minimizing the number of deployments in use at any given time. Specify names for aggregation groups to identify equivalent deployment sets providing resources to be aggregated. Resources provided by equivalent deployment sets belonging to the same aggregation group are aggregated. While deployments within an equivalent deployment set must be identical, deployments aggregated from different sets do not need to provide exactly the same resources. To specify that the deployments defined in a particular equivalent deployment set should not be aggregated with others, set the aggregation group name to None.

primaryFarmRefs
Specifies a set of equivalent XenDesktop or XenApp deployments providing identical resources. Enter the names of deployments that you have already added to the store. The names of the deployments you specify must match exactly the names you entered when you added the deployments to the store.

optimalGatewayForFarms
Specifies groups of deployments and defines the optimal NetScaler Gateway appliances for users to access resources provided by these deployments. Typically, the optimal appliance for a deployment is colocated in the same geographical location as that deployment. You only need to define optimal NetScaler Gateway appliances for deployments where the appliance through which users access StoreFront is not the optimal appliance.

To configure periodic pull synchronization of users' application subscriptions from stores in different StoreFront deployments, you execute Windows PowerShell commands.

Note: The StoreFront and PowerShell consoles cannot be open at the same time. Always close the StoreFront admin
console before using the PowerShell console to administer your StoreFront configuration. Likewise, close all instances of PowerShell before opening the StoreFront console.

Important: In multiple server deployments, use only one server at a time to make changes to the configuration of the server group. Ensure that the Citrix StoreFront management console is not running on any of the other servers in the deployment. When complete, propagate your configuration changes to the server groups so that the other servers in the deployment are updated.

When establishing your subscription synchronization, note that the configured Delivery Controllers must be named identically between the synchronized Stores and that the Delivery Controller names are case sensitive. Failing to duplicate the Delivery Controller names exactly may lead to users having different subscriptions across the synchronized Stores.

1. Use an account with local administrator permissions to start Windows PowerShell and, at a command prompt, type the following commands to import the StoreFront modules.
   ```powershell
   Import-Module "installationlocation\Management\Cmdlets\UtilsModule.psm1"
   Import-Module "installationlocation\Management\Cmdlets\SubscriptionSyncModule.psm1"
   ```
   Where installationlocation is the directory in which StoreFront is installed, typically C:\Program Files\Citrix\Receiver StoreFront\.

2. To specify the remote StoreFront deployment containing the store to be synchronized, type the following command.
   ```powershell
   Add-DSSubscriptionsRemoteSyncCluster -clusterName deploymentname
   -clusterAddress deploymentaddress
   ```
   Where deploymentname is a name that helps you identify the remote deployment and deploymentaddress is the externally accessible address of the StoreFront server or load-balanced server group for the remote deployment.

3. To specify the remote store with which to synchronize users’ application subscriptions, type the following command.
   ```powershell
   Add-DSSubscriptionsRemoteSyncStore -clusterName deploymentname
   -storeName storename
   ```
   Where deploymentname is the name that you defined for the remote deployment in the previous step and storename is the name specified for both the local and remote stores when they were created. To synchronize application subscriptions between the stores, both stores must have the same name in their respective StoreFront deployments.

4. To configure synchronization to occur at a particular time every day, type the following command.
   ```powershell
   Add-DSSubscriptionsSyncSchedule -scheduleName synchronizationname
   -startTime hh:mm
   ```
   Where synchronizationname is a name that helps you identify the schedule you are creating. Use the -startTime setting to specify a time of day at which you want to synchronize subscriptions between the stores. Configure further schedules to specify additional synchronization times throughout the day.

5. Alternatively, to configure regular synchronization at a specific interval, type the following command.
   ```powershell
   Add-DSSubscriptionsSyncReoccuringSchedule -scheduleName
   synchronizationname -startTime hh:mm:ss -repeatMinutes interval
   ```
   Where synchronizationname is a name that helps you identify the schedule you are creating. Use the -startTime setting to specify the a time of day at which you want to start the reoccurring schedule. For interval, specify the time in minutes between each synchronization.

6. Add the Microsoft Active Directory domain machine accounts for each StoreFront server in the remote deployment to the local Windows user group CitrixSubscriptionSyncUsers on the current server. This will allow the servers in the remote deployment to access the subscription store service on the local deployment once you have configured a synchronization schedule on the remote deployment. The CitrixSubscriptionSyncUsers group
is automatically created when you import the subscription synchronization module in Step 1. For more information about modifying local user groups, see http://technet.microsoft.com/en-us/library/cc772524.aspx.

7. If your local StoreFront deployment consists of multiple servers, use the Citrix StoreFront management console to propagate the configuration changes to the other servers in the group.
   For more information about propagating changes in a multiple server StoreFront deployment, see Configure server groups.

8. Repeat Steps 1 to 7 on the remote StoreFront deployment to configure a complementary subscription synchronization schedule from the remote deployment to the local deployment.
   When configuring the synchronization schedules for your StoreFront deployments, ensure that the schedules do not lead to a situation where the deployments are attempting to synchronize simultaneously.

9. To start synchronizing users' application subscriptions between the stores, restart the subscription store service on both the local and remote deployments. At a Windows PowerShell command prompt on a server in each deployment, type the following command.
   Restart-DSSubscriptionsStoreSubscriptionService

10. To remove an existing subscription synchronization schedule, type the following command. Then, propagate the configuration change to the other StoreFront servers in the deployment and restart the subscription store service.
    Remove-DSSubscriptionsSchedule -scheduleName synchronizationname
    Where synchronizationname is the name that you specified for the schedule when you created it.

11. To list the subscription synchronization schedules currently configured for your StoreFront deployment, type the following command.
    Get-DSSubscriptionsSyncScheduleSummary

Important: In multiple server deployments, use only one server at a time to make changes to the configuration of the server group. Ensure that the Citrix StoreFront management console is not running on any of the other servers in the deployment.
Once complete, propagate your configuration changes to the server group so that the other servers in the deployment are updated.

The difference between a farm and a zone when defining optimal gateway mappings for a store

In StoreFront versions released before 3.5, you could map an optimal gateway only to a farm or farms. The concept of zones enables you to divide a XenApp 7.8 or XenDesktop 7.8 deployment into zones based on the data center or geographic location where the XenApp or XenDesktop controllers and published resources reside. Define zones in XenApp or XenDesktop Studio. StoreFront now interoperates with XenApp 7.8 and XenDesktop 7.8 and any zones defined in StoreFront must exactly match the zone names defined in XenApp and XenDesktop.

This version of StoreFront also allows you to create an optimal gateway mapping for all of the delivery controllers located in the defined zone. Mapping a zone to an optimal gateway is almost identical to creating mappings using farms, with which you might already be familiar. The only difference is that zones typically represent much larger containers with many more delivery controllers. You do not need to add every delivery controller to an optimal gateway mapping. To place the controllers into the desired zone, you need only tag each delivery controller with a zone name that matches a zone already defined in XenApp or XenDesktop. You can map an optimal gateway to more than one zone, but typically you should use a single zone. A zone usually represents a data center in a geographic location. It is expected that each zone has at least one optimal Netscaler Gateway that is used for HDX connections to resources within that zone.
For more information about zones, see Zones.

Set the zone attribute on every delivery controller you wish to place within a Zone.

1. On the Windows Start screen or Apps screen, locate and click the Citrix StoreFront tile.
2. Select the Stores node in the left pane of the Citrix StoreFront management console and click Manage Delivery Controllers in the Actions pane.
3. Select a controller, click Edit, and then click Settings on the Edit Delivery Controller screen.
4. On the Zones row, click in the second column.
5. Click Add on the Delivery Controller Zone Names screen and then add a zone name.

Configure optimal NetScaler Gateway routing to optimize the handling of ICA connection routing from the HDX engine to published resources such as XenDesktop VDAs or XenApp or XenDesktop published applications using StoreFront. Typically, the optimal gateway for a site is collocated in the same geographical location.

You need only define optimal NetScaler Gateway appliances for deployments where the appliance through which users access StoreFront is not the optimal gateway. If launches should be directed back through the gateway making the launch request, StoreFront does this automatically.

**Example scenario using farms**

1 x UK Gateway -> 1 x UK StoreFront          -> UK Apps and Desktops local
         -> US Apps and Desktops used only for UK failover
A UK gateway provides remote access to UK hosted resources such as apps and desktops using a UK StoreFront.

The UK storefront has both a UK based and US based NetScaler Gateway defined and UK and US farms in its delivery controller list. UK users access remote resources through their geographically collocated gateway, StoreFront, and farms. If their UK resources become unavailable, they can connect to US resources as a temporary failover alternative.

Without optimal gateway routing all ICA launches would pass through the UK gateway that made the launch request regardless of where the resources are geographically located. By default, gateways used to make launch requests are identified dynamically by StoreFront when the request is made. Optimal gateway routing overrides this and forces US connections through the gateway closest to the US farms that provides apps and desktops.

**Note:** You can map only a single optimal gateway per site for each StoreFront store.

### Example scenario using zones

<table>
<thead>
<tr>
<th>CAMZone</th>
<th>UK StoreFronts</th>
<th>US StoreFronts</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 x</td>
<td>2 x</td>
<td></td>
</tr>
<tr>
<td>Cambridge, UK</td>
<td>Apps and Desktops</td>
<td>Fort Lauderdale, Eastern US: Apps and Desktops</td>
</tr>
<tr>
<td>Bangalore, India</td>
<td>Apps and Desktops</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FTLZone</th>
<th>US StoreFronts</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1 x</td>
<td>2 x</td>
<td></td>
</tr>
<tr>
<td>Fort Lauderdale, Eastern US</td>
<td>Apps and Desktops</td>
<td>Cambridge, UK: Apps and Desktops</td>
</tr>
<tr>
<td>Bangalore, India</td>
<td>Apps and Desktops</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>BGLZone</th>
<th>IN StoreFronts</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1 x</td>
<td>2 x</td>
<td></td>
</tr>
<tr>
<td>Bangalore, India</td>
<td>Apps and Desktops</td>
<td>Cambridge, UK: Apps and Desktops</td>
</tr>
<tr>
<td>Fort Lauderdale, Eastern US</td>
<td>Apps and Desktops</td>
<td></td>
</tr>
</tbody>
</table>
After you configure separate NetScaler Gateway appliances for your deployments, you can define the optimal appliance for users to access each of the deployments.

1. On the Windows **Start** screen or **Apps** screen, locate and click the **Citrix StoreFront** tile.
2. Select the **Stores** node in the left pane of the Citrix StoreFront management console and, in the results pane, select a store. In the **Actions** pane, click **Configure Store Settings**.
3. On the **Settings > Optimal HDX Routing** page, select a gateway.
4. If you select the **External Only** check box, it is equivalent to `-enabledOnDirectAccess = false` and Direct HDX Connection is equivalent to using `Set-DSFarmsWithNullOptimalGateway` for farms or zones.
Add a new gateway

One of the options in the previous procedure is to Add gateway. After you choose Add gateway, the Add NetScaler Gateway screen displays.

1. On the General Settings screen, complete the Display name, NetScaler Gateway URL, and Usage or Role settings to configure access to stores through NetScaler Gateway for users connecting from public networks. Remote access through a NetScaler Gateway cannot be applied to unauthenticated stores.

2. On the Secure Ticket Authority (STA) screen, complete the options displayed. STA is hosted on XenDesktop and XenApp servers and issues session tickets in response to connection requests. These session tickets form the basis of authentication and authorization for access to XenDesktop and XenApp resources.

3. On the Authentication Settings screen, enter the settings that specify how the remote user provides authentication credentials.

PowerShell API parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-SiteId (Int)</td>
<td>Site ID within IIS. This is typically 1 for the site in IIS where StoreFront is installed by default.</td>
</tr>
<tr>
<td>-ResourcesVirtualPath</td>
<td>Path to the store that is to be configured to have a farm to optimal gateway mapping. Example: &quot;/Citrix/Store&quot;</td>
</tr>
<tr>
<td>-GatewayName (String)</td>
<td>Name given to identify the Netscaler Gateway within StoreFront. Example 1: ExternalGateway. Example 2: InternalGateway</td>
</tr>
<tr>
<td>Configuration Parameter</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------</td>
<td>-------------</td>
</tr>
</tbody>
</table>
| **Hostnames (String Array)** | Specifies the fully qualified domain name (FQDN) and port of the optimal NetScaler Gateway appliance.  
Example1 for standard vServer port 443: gateway.example.com  
Example2 for nonstandard vServer port 500: gateway.example.com:500 |
| **Farms (String Array)** | Specifies a set of (typically collocated) XenDesktop, XenApp, and App Controller deployments that share a common optimal NetScaler Gateway appliance. A farm can contain just a single delivery controller or multiple delivery controller that provides published resources.  
You can configure a XenDesktop site in StoreFront under delivery controllers as "XenDesktop". This represents a single farm.  
This could contain multiple delivery controllers in its failover list:  
Example: "XenDesktop"  
XenDesktop-A.example.com  
XenDesktop-B.example.com  
XenDesktop-C.example.com |
| **Zones (String Array)** | Specifies a data center or data centers containing many delivery controllers. This requires you tag delivery controller objects in StoreFront with the appropriate zone to which you want to allocate them. |
| **staUrls (String Array)** | Specifies the URLs for XenDesktop or XenApp servers running the Secure Ticket Authority (STA). If using multiple farms, list the STA servers on each using a comma separated list:  
| **StasUseLoadBalancing (Boolean)** | Set to true: randomly obtains session tickets from all STAs, evenly distributing requests across all the STAs.  
Set to false: users are connected to the first available STA in the order in which they are listed in the configuration, minimizing the number of STAs in use at any given time. |
| **StasBypassDuration** | Set the time period, in hours, minutes, and seconds, for which an STA is considered unavailable after a failed request.  
Example: 02:00:00 |
| **EnableSessionReliability (Boolean)** | Set to true: keeps disconnected sessions open while Receiver attempts to reconnect automatically. If you configured multiple STAs and want to ensure that session reliability is always available, set the value of the useTwoTickets attribute to true to obtain session tickets from two different STAs in case one STA becomes unavailable during the session. |
| **UseTwoTickets (Boolean)** | Set to true: obtains session tickets from two different STAs in case one STA becomes unavailable during the session.  
Set to false: uses only a single STA server. |
| **EnabledOnDirectAccess (Boolean)** | Set to true: ensures that when local users on the internal network log on to StoreFront directly, connections to their resources are still routed through the optimal appliance defined for the farm.  
Set to false: connections to resources are not routed through the optimal appliance for the farm unless users access StoreFront through a NetScaler Gateway. |
Note: When PowerShell scripts span multiple lines such as shown below, each line must end with the backtick character.

Citrix recommends copying any code examples into the Windows PowerShell Integrated Scripting Environment (ISE) to validate the Powershell code using the format checker before you run it.

Configure an optimal gateway for a farm

Example:

Create or overwrite Optimal Gateway For Farms mappings for the store **Internal**.

```powershell
& "$Env:PROGRAMFILES\Citrix\Receiver StoreFront\Scripts\ImportModules.ps1"
Set-DSOptimalGatewayForFarms -SiteId 1
  -ResourcesVirtualPath /Citrix/Internal
  -GatewayName "gateway1"
  -Hostnames "gateway1.example.com:500"
  -Farms "XenApp","XenDesktop"
  -StasUseLoadBalancing:$false
  -StasBypassDuration 02:00:00
  -EnableSessionReliability:$false
  -UseTwoTickets:$false
  -EnabledOnDirectAccess:$true
```

Configure an optimal gateway for a zone

Example:

Create or overwrite Optimal Gateway For Farms mappings for the zone "CAMZone"

```powershell
& "$Env:PROGRAMFILES\Citrix\Receiver StoreFront\Scripts\ImportModules.ps1"
Set-DSOptimalGatewayForFarms -SiteId 1
  -ResourcesVirtualPath /Citrix/Internal
  -GatewayName "gateway1"
  -Hostnames "gateway1.example.com:500"
  -Zones "CAMZone"
  -StasUseLoadBalancing:$false
  -StasBypassDuration 02:00:00
  -EnableSessionReliability:$false
  -UseTwoTickets:$false
  -EnabledOnDirectAccess:$true
```

Example:

This script returns all Optimal Gateway For Farms mappings for the store called Internal.

```powershell
Get-DSOptimalGatewayForFarms -SiteId 1 -ResourcesVirtualPath "/Citrix/Internal"
```

Example:

Remove all optimal gateway for farms mappings for store called Internal.

```powershell
Remove-DSOptimalGatewayForFarms -SiteId 1 -ResourcesVirtualPath "/Citrix/Internal"
```
Configure direct HDX connections for farms

Example:

This script prevents all ICA launches from passing through a gateway for the list of specified farms for the store called Internal.

```
Set-DSFarmsWithNullOptimalGateway -SiteId 1 -ResourcesVirtualPath /Citrix/Store -Farms "Farm1","Farm2"
```

Example:

This script returns all farms that are configured to prevent ICA launches from passing through a gateway for a store called Internal.

```
Get-DSFarmsWithNullOptimalGateway -SiteId 1 -ResourcesVirtualPath "/Citrix/Internal"
```

Determine if your Optimal Gateway For Farms mappings are being used by StoreFront

1. Enable StoreFront tracing on all server group nodes using PowerShell by running:

   ```
   & "$Env:PROGRAMFILES\Citrix\Receiver StoreFront\Scripts\ImportModules.ps1"
   #Traces output is to c:\Program Files\Citrix\Receiver Storefront\admin\trace\
   Set-DSTraceLevel -All -TraceLevel Verbose
   ```

2. Open the Debug View tool on the desktop of a StoreFront server. If you are using a storefront server group, you might have to do this on all nodes to ensure you obtain traces from the node that receives the launch request.

3. Enable Capture Global Win32 events.

4. Save the trace output as a .log file and open the file with Notepad. Search for the log entries shown in the example scenarios below.

5. Turn tracing off afterwards, as it consumes a lot of disk space on your StoreFront servers.

   ```
   Set-DSTraceLevel -All -TraceLevel Off
   ```

Tested optimal gateway scenarios

- **External client logs on Gateway1.** Launch is directed through the designated optimal gateway Gateway2 for the farm Farm2.

  ```
  Set-DSOptimalGatewayForFarms -onDirectAccess=false
  ```

  Farm2 is configured to use the optimal gateway Gateway2.

  Farm2 has optimal gateway on direct access disabled.

  The optimal gateway Gateway2 will be used for the launch.

- **Internal client logs on using StoreFront.** Launch is directed through the designated optimal gateway Gateway1 for the farm Farm1.

  ```
  Set-DSOptimalGatewayForFarms -onDirectAccess=true
  ```

  No dynamically identified gateway in request. StoreFront was contacted directly.

  Farm1 is configured to use the optimal gateway Gateway1.

  Farm1 has optimal gateway on direct access enabled.

  The optimal gateway Gateway1 will be used for the launch.
Internal client logs on using Gateway1. Launches of resources on Farm1 are prevented from passing through any gateway and StoreFront is contacted directly.

Set-DSFarmsWithNullOptimalGateway

Dynamically identified gateway in request: Gateway1

Farm1 is configured to not use a gateway. No gateway will be used for launch.
## Integrate with NetScaler Gateway and NetScaler

Feb 24, 2016

Use NetScaler Gateway with StoreFront to provide secure remote access for users outside the corporate network and NetScaler to provide load balancing.

<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Add a NetScaler Gateway connection</strong></td>
<td>Add NetScaler Gateway deployments through which users can access your stores.</td>
</tr>
<tr>
<td><strong>Configure NetScaler Gateway connection settings</strong></td>
<td>Update details of the NetScaler Gateway deployments through which users access your stores.</td>
</tr>
<tr>
<td><strong>Load balancing with NetScaler</strong></td>
<td>Configure a NetScaler appliance to load balance incoming requests from Citrix Receiver/Citrix Receiver for Web between all of the StoreFront nodes in the server group and to configure the new Storefront Monitor for use with a NetScaler or third party load balancer.</td>
</tr>
<tr>
<td><strong>Configure NetScaler and StoreFront for Delegated Forms Authentication (DFA)</strong></td>
<td>Extensible authentication provides a single customization point for extension of NetScaler and StoreFront form-based authentication. To achieve an authentication solution using the Extensible Authentication SDK, you must configure Delegated Form Authentication (DFA) between NetScaler and StoreFront.</td>
</tr>
<tr>
<td><strong>Configure beacon points</strong></td>
<td>Specify URLs inside and outside your internal network to be used as beacon points. Citrix Receiver attempts to contact beacon points and uses the responses to determine whether users are connected to local or public networks.</td>
</tr>
</tbody>
</table>

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Add a NetScaler Gateway connection

Feb 24, 2016

Use the Add NetScaler Gateway Appliance task to add NetScaler Gateway deployments through which users can access your stores. You must enable the pass-through from NetScaler Gateway authentication method before you can configure remote access to your stores through NetScaler Gateway. For more information about configuring NetScaler Gateway for StoreFront, see Using WebFront to Integrate with StoreFront.

Important: In multiple server deployments, use only one server at a time to make changes to the configuration of the server group. Ensure that the Citrix StoreFront management console is not running on any of the other servers in the deployment. Once complete, propagate your configuration changes to the server group so that the other servers in the deployment are updated.

1. On the Windows Start screen or Apps screen, locate and click the Citrix StoreFront tile.
2. Select the Stores node in the left pane of the Citrix StoreFront management console and in the Actions pane, click Manage NetScaler Gateways.
3. Click Add and General Settings, specify a name for the NetScaler Gateway deployment that will help users to identify it. Users see the display name you specify in Citrix Receiver, so include relevant information in the name to help users decide whether to use that deployment. For example, you can include the geographical location in the display names for your NetScaler Gateway deployments so that users can easily identify the most convenient deployment for their location.
4. Enter the URL of the virtual server or user logon point (for Access Gateway 5.0) for your deployment. Specify the product version used in your deployment.
   The fully qualified domain name (FQDN) for your StoreFront deployment must be unique and different from the NetScaler Gateway virtual server FQDN. Using the same FQDN for StoreFront and the NetScaler Gateway virtual server is not supported.
5. If you are adding an Access Gateway 5.0 deployment, continue to Step 7. Otherwise, specify the subnet IP address of the NetScaler Gateway appliance, if necessary. A subnet IP address is required for Access Gateway 9.3 appliances, but optional for more recent product versions.
   The subnet address is the IP address that NetScaler Gateway uses to represent the user device when communicating with servers on the internal network. This can also be the mapped IP address of the NetScaler Gateway appliance. Where specified, StoreFront uses the subnet IP address to verify that incoming requests originate from a trusted device.
6. If you are adding an appliance running NetScaler Gateway 10.1, Access Gateway 10, or Access Gateway 9.3, select from the Logon type list the authentication method you configured on the appliance for Citrix Receiver users.
   The information you provide about the configuration of your NetScaler Gateway appliance is added to the provisioning file for the store. This enables Citrix Receiver to send the appropriate connection request when contacting the appliance for the first time.
   - If users are required to enter their Microsoft Active Directory domain credentials, select Domain.
   - If users are required to enter a tokencode obtained from a security token, select Security token.
   - If users are required to enter both their domain credentials and a tokencode obtained from a security token, select Domain and security token.
   - If users are required to enter a one-time password sent by text message, select SMS authentication.
   - If users are required to present a smart card and enter a PIN, select Smart card.
   If you configure smart card authentication with a secondary authentication method to which users can fall back if they experience any issues with their smart cards, select the secondary authentication method from the Smart card fallback
list. Continue to Step 8.

7. To add an Access Gateway 5.0 deployment, indicate whether the user logon point is hosted on a standalone appliance or an Access Controller server that is part of a cluster. If you are adding a cluster, click Next and continue to Step 9.

8. If you are configuring StoreFront for NetScaler Gateway 10.1, Access Gateway 10, Access Gateway 9.3, or a single Access Gateway 5.0 appliance, complete the NetScaler Gateway authentication service URL in the Callback URL box. StoreFront automatically appends the standard portion of the URL. Click Next and continue to Step 11. Enter the internally accessible URL of the appliance. StoreFront contacts the NetScaler Gateway authentication service to verify that requests received from NetScaler Gateway originate from that appliance.

9. To configure StoreFront for an Access Gateway 5.0 cluster, list on the Appliances page the IP addresses or FQDNs of the appliances in the cluster and click Next.

10. If you are configuring StoreFront for NetScaler Gateway 10.1, Access Gateway 10, Access Gateway 9.3, or a single Access Gateway 5.0 appliance, complete the NetScaler Gateway authentication service URL in the Callback URL box. StoreFront automatically appends the standard portion of the URL. Click Next and continue to Step 11. Enter the internally accessible URL of the appliance. StoreFront contacts the NetScaler Gateway authentication service to verify that requests received from NetScaler Gateway originate from that appliance.

9. To configure StoreFront for an Access Gateway 5.0 cluster, list on the Appliances page the IP addresses or FQDNs of the appliances in the cluster and click Next.

10. On the Enable Silent Authentication page, list URLs for the authentication service running on the Access Controller servers. Add URLs for multiple servers to enable fault tolerance, listing the servers in order of priority to set the failover sequence. Click Next. StoreFront uses the authentication service to authenticate remote users so that they do not need to re-enter their credentials when accessing stores.

11. For all deployments, if you are making resources provided by XenDesktop or XenApp available in the store, list on the Secure Ticket Authority (STA) page URLs for servers running the STA. Add URLs for multiple STAs to enable fault tolerance, listing the servers in order of priority to set the failover sequence. The STA is hosted on XenDesktop and XenApp servers and issues session tickets in response to connection requests. These session tickets form the basis of authentication and authorization for access to XenDesktop and XenApp resources.

12. If you want XenDesktop and XenApp to keep disconnected sessions open while Citrix Receiver attempts to reconnect automatically, select the Enable session reliability check box. If you configured multiple STAs and want to ensure that session reliability is always available, select the Request tickets from two STAs, where available check box. When the Request tickets from two STAs, where available check box is selected, StoreFront obtains session tickets from two different STAs so that user sessions are not interrupted if one STA becomes unavailable during the course of the session. If, for any reason, StoreFront is unable to contact two STAs, it falls back to using a single STA.

13. Click Create to add details of your NetScaler Gateway deployment. Once the deployment has been added, click Finish. For more information about updating the details of your deployments, see Configure NetScaler Gateway connection settings.

To provide access to stores through NetScaler Gateway, one internal beacon point and at least two external beacon points are required. Citrix Receiver uses beacon points to determine whether users are connected to local or public networks and then selects the appropriate access method. By default, StoreFront uses the server URL or load-balanced URL of your deployment as the internal beacon point. The Citrix website and the virtual server or user logon point (for Access Gateway 5.0) URL of the first NetScaler Gateway deployment you add are used as external beacon points by default. For more information about changing beacon points, see Configure beacon points.

To enable users to access your stores through NetScaler Gateway, ensure that you configure remote user access for those stores.
Configure NetScaler Gateway connection settings

Feb 24, 2016

The tasks below enable you to update details of the NetScaler Gateway deployments through which users access your stores. For more information about configuring NetScaler Gateway for StoreFront, see Using WebFront to Integrate with StoreFront.

If you make any changes to your NetScaler Gateway deployments, ensure that users who access stores through these deployments update Citrix Receiver with the modified connection information. Where a Citrix Receiver for Web site is configured for a store, users can obtain an updated Citrix Receiver provisioning file from the site. Otherwise, you can export a provisioning file for the store and make this file available to your users.

Important: In multiple server deployments, use only one server at a time to make changes to the configuration of the server group. Ensure that the Citrix StoreFront management console is not running on any of the other servers in the deployment. Once complete, propagate your configuration changes to the server group so that the other servers in the deployment are updated.

Use the Change General Settings task to modify the NetScaler Gateway deployment names shown to users and to update StoreFront with changes to the virtual server or user logon point URL, and the deployment mode of your NetScaler Gateway infrastructure.

1. On the Windows Start screen or Apps screen, locate and click the Citrix StoreFront tile.
2. Select the Stores node in the left pane of the Citrix StoreFront management console and pane, click Manage Netscaler Gateways.
3. Specify a name for the NetScaler Gateway deployment that will help users to identify it.
   Users see the display name you specify in Citrix Receiver, so include relevant information in the name to help users decide whether to use that deployment. For example, you can include the geographical location in the display names for your NetScaler Gateway deployments so that users can easily identify the most convenient deployment for their location.
4. Enter the URL of the virtual server or user logon point (for Access Gateway 5.0) for your deployment. Specify the product version used in your deployment.
   The fully qualified domain name (FQDN) for your StoreFront deployment must be unique and different from the NetScaler Gateway virtual server FQDN. Using the same FQDN for StoreFront and the NetScaler Gateway virtual server is not supported.
5. If your deployment is running Access Gateway 5.0, continue to Step 7. Otherwise, specify the subnet IP address of the NetScaler Gateway appliance, if necessary. A subnet IP address is required for Access Gateway 9.3 appliances, but optional for more recent product versions.
   The subnet address is the IP address that NetScaler Gateway uses to represent the user device when communicating with servers on the internal network. This can also be the mapped IP address of the NetScaler Gateway appliance. Where specified, StoreFront uses the subnet IP address to verify that incoming requests originate from a trusted device.
6. If your appliance is running NetScaler Gateway 10.1, Access Gateway 10, or Access Gateway 9.3, select from the Logon type list the authentication method you configured on the appliance for Citrix Receiver users.
   The information you provide about the configuration of your NetScaler Gateway appliance is added to the provisioning file for the store. This enables Citrix Receiver to send the appropriate connection request when contacting the appliance for the first time.
- If users are required to enter their Microsoft Active Directory domain credentials, select Domain.
- If users are required to enter a tokencode obtained from a security token, select Security token.
- If users are required to enter both their domain credentials and a tokencode obtained from a security token, select Domain and security token.
- If users are required to enter a one-time password sent by text message, select SMS authentication.
- If users are required to present a smart card and enter a PIN, select Smart card.

If you configure smart card authentication with a secondary authentication method to which users can fall back if they experience any issues with their smart cards, select the secondary authentication method from the Smart card fallback list.

7. If your deployment consists of NetScaler Gateway 10.1, Access Gateway 10, Access Gateway 9.3, or a single Access Gateway 5.0 appliance, complete the NetScaler Gateway authentication service URL in the Callback URL box. StoreFront automatically appends the standard portion of the URL.

Enter the internally accessible URL of the appliance. StoreFront contacts the NetScaler Gateway authentication service to verify that requests received from NetScaler Gateway originate from that appliance.

Use the Manage Appliances task to add, edit, or remove from StoreFront the IP addresses or FQDNs of the appliances in your Access Gateway 5.0 cluster.

Use the Enable Silent Authentication task to add, edit, or remove URLs for the authentication service running on the Access Controller servers for your Access Gateway 5.0 cluster. Enter URLs for multiple servers to enable fault tolerance, listing the servers in order of priority to set the failover sequence. StoreFront uses the authentication service to authenticate remote users so that they do not need to re-enter their credentials when accessing stores.

Use the Secure Ticket Authority task to update the list of Secure Ticket Authorities (STAs) from which StoreFront obtains user session tickets and to configure session reliability. The STA is hosted on XenDesktop and XenApp servers and issues session tickets in response to connection requests. These session tickets form the basis of authentication and authorization for access to XenDesktop and XenApp resources.

1. On the Windows Start screen or Apps screen, locate and click the Citrix StoreFront tile.
2. Select the Stores node in the left pane of the Citrix StoreFront management console and, in the results pane, select a NetScaler Gateway deployment. In the Actions pane, click Manage NetScaler Gateways.
3. Click Add to enter the URL for a server running the STA. Specify URLs for multiple STAs to enable fault tolerance, listing the servers in order of priority to set the failover sequence. To modify a URL, select the entry in the Secure Ticket Authority URLs list and click Edit. Select a URL in the list and click Remove to stop StoreFront obtaining session tickets from that STA.
4. If you want XenDesktop and XenApp to keep disconnected sessions open while Citrix Receiver attempts to reconnect automatically, select the Enable session reliability check box. If you configured multiple STAs and want to ensure that session reliability is always available, select the Request tickets from two STAs to enable fault tolerance, listing the servers in order of priority to set the failover sequence. To modify a URL, select the entry in the Secure Ticket Authority URLs list and click Edit. Select a URL in the list and click Remove to stop StoreFront obtaining session tickets from that STA.

When the Request tickets from two STAs, where available check box is selected, StoreFront obtains session tickets from two different STAs so that user sessions are not interrupted if one STA becomes unavailable during the course of the session. If, for any reason, StoreFront is unable to contact two STAs, it falls back to using a single STA.
In the **Actions** pane, use the Remove task from **Manage NetScaler Gateways** to delete the details of a NetScaler Gateway deployment from StoreFront. Once a NetScaler Gateway deployment is removed, users are no longer be able to access stores through that deployment.
Load balancing with NetScaler

Feb 24, 2016
This article contains the information needed to use NetScaler for load balancing.

Configure a StoreFront server group and NetScaler load balancing

Create an SSL certificate for the NetScaler load balancer and StoreFront servers

Create a load balancing vServer for subscription synchronization between server groups

Configure the StoreFront server group for load balancing

Citrix Service Monitor

NetScaler Gateway and load balancing vServers on the same NetScaler appliance

Loopback options when load balancing a StoreFront server group using NetScaler

Plan your load balanced StoreFront deployment

This article provides guidance on how to deploy a StoreFront server group containing two or more StoreFront servers in all active load balanced configuration. The article provides details of how to configure a NetScaler appliance to load balance incoming requests from Citrix Receiver/Citrix Receiver for Web between all of the StoreFront nodes in the server group and how to configure the new Storefront Monitor for use with a NetScaler or third party load balancer.

For load balancing configuration examples, see the sections "Scenario 1" and "Scenario 2" below.

Tested with the following environment

- Four Windows Server 2012 R2 StoreFront 3.0 nodes in a single server group.
- One NetScaler 10.5 load balancer configured for Least Connection and CookieInsert "sticky" load balancing.
- One Windows 8.1 test client with Fiddler 4.0 and Citrix Receiver for Windows 4.3 installed.

SSL certificate requirements for the load balanced deployment if you intend to use HTTPS

Consider the following options before purchasing a certificate from a commercial certificate authority or issuing one from your enterprise CA.

- **Option 1:** Use a *.example.com wildcard certificate on both the NetScaler load balancing vServer and on the StoreFront server group nodes. This simplifies the configuration and allows you to add extra StoreFront servers in the future without the need to replace the certificate. Citrix recommends this option.
- **Option 2:** Use a certificate including Subject Alternative Names (SANs) on both the NetScaler load balancing vServer and on the StoreFront server group nodes. Extra SANs within the certificate that match all of StoreFront server fully qualified domain names (FQDNs) are optional, but recommended, as this allows greater flexibility in the StoreFront deployment. Include a SAN for email-based discovery discoverReceiver.example.com.

**Note:** When exporting the private key associated with the certificate is not feasible: Use two separate certificates: One on the NetScaler load balancing vServer and a different certificate on the StoreFront server group nodes. Both certificates must include Subject Alternative Names. Citrix does not recommend this unless you are using a FIPS compliant physical NetScaler appliance. This is the only viable option if using a FIPS NetScaler.

**Example Web server certificates**

**Option 1:** Wildcard certificate

**Option 2:** SAN certificate with every StoreFront server

**Common Properties**
Import a certificate issued from a Windows CA onto a NetScaler appliance using OpenSSL

- WinSCP is a useful third party and free tool to move files from a Windows machine to a NetScaler file system. Copy certificates for import to the `/nsconfig/ssl/` folder within the NetScaler file system.
- You can also use OpenSSL tools on the NetScaler to extract the certificate and key from a PKCS12/PFX file to create a two separate .CER and .KEY X.509 files in PEM format that NetScaler can use.

1. Copy the PFX file into `/nsconfig/ssl/` on the NetScaler appliance or VPX.
2. Open the NetScaler command line interface (CLI).
3. Type `Shell` to switch to exit the NetScaler CLI and switch to the FreeBSD shell.
5. Run `openssl pkcs12 -in <imported cert file>.pfx -nokeys -out <certfilename>.cer` and enter the PFX password when prompted.
6. Run `openssl pkcs12 -in <imported cert file>.pfx -nocerts -out <keyfilename>.key` and enter the PFX password when prompted, and then set the private key PEM passphrase to protect the .KEY file.
7. Run `ls –al` to check the .CER and .KEY files have been successfully created inside `/nsconfig/ssl/`.
8. Type `Exit` to return to the NetScaler CLI.

Configure the SSL certificate on the NetScaler after it is imported

1. Log onto the NetScaler management GUI.
2. Select Traffic Management > SSL > SSL Certificates and click Install.
3. On the Install Certificate window, enter the certificate and private key pair names.
   - Select the .cer certificate file on the NetScaler file system under `/nsconfig/ssl/`.
   - Select the .key file containing the private key from the same location.
Create DNS records for the StoreFront server group load balancer

Create a DNS A and PTR record for your chosen shared FQDN. Clients within your network use this FQDN to access the StoreFront server group using the NetScaler load balancer.

Example - `storefront.example.com` resolves to the load balancing vServer virtual IP (VIP).

Scenario 1: An end to end HTTPS 443 secure connection between the client and NetScaler load balancer and also between the load balancer and two or more StoreFront 3.0 servers.

This scenario uses a modified StoreFront monitor using port 443.

1. Log onto the NetScaler management GUI.
2. Select **Traffic Management > Load Balancing > Servers > Add** and add each of the four StoreFront nodes to be load balanced.

   Example = 4 x 2012R2 StoreFront Nodes called 2012R2-A to –D

3. Use IP based server configuration and enter the server IP address for each StoreFront node.
1. Log onto the NetScaler management GUI.
2. Select **Traffic Management > Load Balancing > Monitors > Add** and add a new monitor called StoreFront and accept all default settings.
3. From the **Type** drop down menu, select **StoreFront**.
4. Make sure the **Secure** check box is checked if using SSL connections between your load balancing vServer and StoreFront; otherwise leave this option disabled.
5. Specify the store name under the Special Parameters tab.
6. Check the **Check Backend Services** check box under the Special Parameters tab. This option enables monitoring of services running on the StoreFront server. StoreFront services are monitored by probing a Windows service that runs on the StoreFront server, which returns the status of all running StoreFront services.
1. Within your Service Group, select the Members option on the right hand side and add all of the StoreFront server nodes you defined previously in the Servers section.

2. Set the SSL port and give each node a unique server ID as they are added.
3. On the Monitors tab, select the StoreFront monitor you created earlier.

4. On the Certificates tab, bind the SSL certificate you imported earlier.

5. Bind the CA certificate used to sign the SSL certificate you imported earlier and any other CAs that might be part of the PKI chain of trust.

1. Log onto the NetScaler management GUI.

3. Select the load balancing method for the vServer. Common choices for StoreFront load balancing are **round robin** or **least connection**.

4. Bind the **Service Group** you created earlier to the load balancing vServer.

5. Bind the same SSL and CA certificate you previously bound to the service group, to the load balancing vServer.

6. From within the load balancing vServer menu, select **Persistence** on the right hand side and set the persistence method to be **CookieInsert**.

7. Name the cookie. For example, **NSC_SFPersistence**, as this makes it easy to identify in Fiddler traces during debugging.

8. Set backup persistence to **None**.
Scenario 2: SSL termination - HTTPS 443 communication between the client and NetScaler load balancer and HTTP 80 connections between the load balancer and the StoreFront 3.0 servers behind it.

This scenario uses the default StoreFront monitor using port 8000.

1. Log onto the NetScaler management GUI.
2. Select Traffic Management > Load Balancing > Servers > Add and add each of the four StoreFront servers to be load balanced.

   Example = 4 x 2012R2 Storefront servers called 2012R2-A to -D.

3. Use IP based Server configuration and enter the server IP address for each Storefront server.

1. Log onto the NetScaler management GUI.
2. Select Traffic Management > Monitors > Add and add a new monitor called StoreFront.
3. Add a name for the new monitor and accept all default settings.
4. Select Type from the drop down menu as StoreFront.
5. Specify the store name under the Special Parameters tab.
6. Enter 8000 into destination port, as this matches the default monitor instance that is created on each StoreFront server.
7. Tick the Check Backend Services check box under the Special Parameters tab. This option enables monitoring of services running on the StoreFront server. StoreFront services are monitored by probing to a Windows service that runs on the StoreFront server, which returns the status of all running StoreFront services.

1. Within your Service Group, select the Members option on the right hand side and add all of the StoreFront server nodes you defined previously in the Servers section.
2. Set the HTTP port to 80 and give each server a unique server ID as you add them.
3. On the Monitors tab, select the StoreFront monitor you created earlier.

2. Select the load balancing method vServer will use. Common choices for StoreFront load balancing are **round robin** or **least connection**.
3. Bind the Service Group you created earlier to the load balancing vServer.
4. Bind the same SSL and CA certificate you previously bound to the service group, to the load balancing vServer.

   **Note:** If the client is not allowed to store the HTTP cookie, the subsequent requests do not have the HTTP cookie and **Persistence** is not used.

5. From within the load balancing vServer menu, select **Persistence** and set the persistence method to be **CookieInsert**.
6. Name the cookie. For example, **NSC_SFPersistence**, as this makes it easy to identify in Fiddler traces during debugging.
7. Set backup persistence to **None**.

Considerations before creating a load balancing vServer include the following:

- **Option 1:** Create a single vServer: To load balance only user traffic. This is all that is needed if performing only ICA launches of published apps and desktops. (Mandatory and usually all that is required.)
- **Option 2:** Create a pair of vServers: One to load balance user traffic for performing ICA launches of published apps and desktops and another for load balancing subscription data synchronization operations. (Necessary only when...
propagating subscription data between two or more load balanced StoreFront server groups in a large multisite deployment.)

If a multisite deployment consists of two or more StoreFront server groups located in separate geographic locations, you can replicate subscription data between them using a pull strategy on a repeating schedule. StoreFront subscription replication uses TCP port 808, so using an existing load balancing vServer on HTTP port 80 or SSL 443 fails. To provide high availability for this service, create a second vServer on each NetScaler in your deployment to load balance TCP port 808 for each of the StoreFront server groups. When configuring the replication schedule, specify a server group address that matches the subscription synching vServer virtual IP address. Ensure the server group address is the FQDN of the load balancer for the server group at that location.

**Configure a service group for subscription synchronization**

1. Log onto the NetScaler management GUI.
2. Select **Traffic Management > Service Groups > Add** and add a new service group.
3. Change the protocol to **TCP**.
4. Within your Service Group, select the **Members** option on the right hand side and add all of the StoreFront server nodes you defined previously in the Servers section.
5. On the **Monitors** tab, select the TCP monitor.

<table>
<thead>
<tr>
<th>Monitors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add Binding</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Monitor Name</th>
<th>Weight</th>
<th>State</th>
<th>Passive</th>
</tr>
</thead>
<tbody>
<tr>
<td>tcp</td>
<td>1</td>
<td>✓</td>
<td>x</td>
</tr>
</tbody>
</table>

| Close |

**Create a load balancing vServer for subscription synchronization between server groups**

1. Log onto the NetScaler management GUI.
2. Select **Traffic Management > Service Groups > Add** and add a new service group.
3. Set the load balancing method to **round robin**.
4. Change the protocol to **TCP**.
5. Enter **808** and **NOT 443** as the port number.
Membership within CitrixSubscriptionsSyncUsers

For StoreFront server A at Location A to request and pull subscription data from server B at a different location, server A must be a member of the CitrixSubscriptionsSyncUsers local security group on server B. The CitrixSubscriptionsSyncUsers local group contains an access control list of all remote StoreFront servers authorized to pull subscription data from a particular server. For bidirectional subscription synchronization, server B must also be a member of the CitrixSubscriptionsSyncUsers security group on server A to pull subscription data from it.
1. Import the same certificate and private key that was deployed on the NetScaler load balancing vServer to every StoreFront node in the server group.

2. Create an HTTPS binding in IIS on every StoreFront node, and then bind the certificate you imported earlier to it.

3. Install StoreFront on every node in the server group.

4. During installation of StoreFront, set the host base URL on the primary node to be the shared FQDN used by all members of the server group. You must use a certificate containing the load balanced FQDN as a Common Name (CN) or Subject Alternative Name (SAN).

   See the “Create an SSL certificate for the NetScaler load balancer and StoreFront servers” section.

5. When you complete the initial StoreFront configuration, join each of the nodes, one after the other, to the server group using the primary node.

7. Propagate the configuration from the primary node to all other server group nodes in the group.

8. Test the load balanced server group using a client that can contact and resolve the shared FQDN of the load balancer.

To enable external monitoring of the run-state of the Windows services on which StoreFront relies for correct operation, use the **Citrix Service Monitor** Windows service. This service has no other service dependencies and can monitor and report the failure of other critical StoreFront services. The monitor enables the relative health of a StoreFront server deployment to be determined externally by other Citrix components, such as NetScaler. Third party software can consume the StoreFront monitor’s XML response to monitor the health of essential StoreFront services.

After StoreFront is deployed, a default monitor that uses HTTP and port 8000 is created.

**Note:** Only a single instance of a monitor can exist within a Storefront deployment.

To make any changes to the existing default monitor, such as changing the protocol and port to HTTPS 443, use the three PowerShell cmdlets to view or reconfigure the StoreFront monitor service URL.

```powershell
$DefaultServiceURL = "http://localhost:8000/StorefrontMonitor"
Remove-DSServiceMonitorFeature
Install-DSServiceMonitorFeature -ServiceUrl $DefaultServiceURL
Get-DSServiceMonitorFeature
```

Remove the default Service Monitor and replace it with one that uses HTTPS and port 443

1. Open the PowerShell Integrated Scripting Environment (ISE) on the primary StoreFront server and run the following commands to change the default monitor to HTTPS 443.

```powershell
# Import StoreFront API Modules
& "$Env:PROGRAMFILES\Citrix\Receiver StoreFront\Scripts\ImportModules.ps1"
$ServiceURL = "https://localhost:443/StorefrontMonitor"
```
Remove-DSServiceMonitorFeature

Install-DSServiceMonitorFeature -ServiceUrl $ServiceURL

2. Once completed, propagate the changes to all other servers in the StoreFront server group.
3. To perform a quick test on the new monitor, enter the following URL into the browser on the StoreFront server or any other machine with network access to the StoreFront server. The browser should return an XML summary of the status of every Storefront service.

https://<loadbalancingFQDN>:443/StoreFrontMonitor/GetSFServicesStatus

This XML file does not appear to have any style information associated with it. The document tree is shown below.

```
  <ServiceStatus>
    <name>Citrix Peer Resolution Service</name>
    <status>running</status>
  </ServiceStatus>
  <ServiceStatus>
    <name>Citrix Configuration Replication</name>
    <status>running</status>
  </ServiceStatus>
  <ServiceStatus>
    <name>Citrix Credential Wallet</name>
    <status>running</status>
  </ServiceStatus>
  <ServiceStatus>
    <name>Citrix Default Domain Service</name>
    <status>running</status>
  </ServiceStatus>
  <ServiceStatus>
    <name>Citrix Subscriptions Store</name>
    <status>running</status>
  </ServiceStatus>
  <ServiceStatus>
    <name>NetTCP Port Sharing</name>
    <status>running</status>
  </ServiceStatus>
  <ServiceStatus>
    <name>WAS</name>
    <status>running</status>
  </ServiceStatus>
  <ServiceStatus>
    <name>WSVC</name>
    <status>running</status>
  </ServiceStatus>
</ArrayOfServiceStatus>
```

If you have configured the NetScaler Gateway vServer and load balancing vServer on the same NetScaler appliance, internal domain users might experience issues when trying to access the StoreFront load balanced host base URL directly rather than passing through the NetScaler Gateway vServer.

In this scenario StoreFront assumes that the end user has already authenticated at the NetScaler Gateway because StoreFront correlates the source IP address of the incoming user with the NetScaler Gateway Subnet IP Address (SNIP).
This triggers StoreFront attempt to use the AGBasic protocol to perform NetScaler Gateway silent authentication, rather than actually prompting the user to log on with their domain credentials. To avoid this issue, omit a SNIP address as shown below so that username and password authentication is used instead of AGBasic.

**Configure a Netscaler Gateway on the Storefront Server Group**

![Netscaler Gateway Appliance](image)

In previous versions of Storefront such as 2.6 or older, Citrix recommended that you manually modify the hosts file on each StoreFront server to map the fully qualified domain name (FQDN) of the load balancer to the loopback address or the IP address of the specific StoreFront server. This ensures that Receiver for Web always communicates with the StoreFront services on the same server in a load balanced deployment. This is necessary because an HTTP session is created during the explicit login process between Receiver for Web and the authentication service and Receiver for Web communicates with Storefront services using the base FQDN. If the base FQDN were to resolve to the load balancer, the load balancer could potentially send the traffic to a different StoreFront server in the group, leading to authentication failure. This does not bypass the load balancer except when Receiver for Web attempts to contact the Store service residing on the same server as itself.

You can set loopback options using PowerShell. Enabling loopback negates the need to create host file entries on every StoreFront server in the server group.

Example Receiver for Web web.config file:

```xml
<communication attempts="2" timeout="00:01:00" loopback="On" loopbackPortUsingHttp="80">
```

Example PowerShell command:

```powershell
& "c:\program files\Citrix\receiver storefront\scripts\ImportModules.ps1"

Set-DSLoopback -SiteId 1 -VirtualPath "/Citrix/StoreWeb" -Loopback "OnUsingHttp" -LoopbackPortUsingHttp 81
```
The **Loopback** parameter can take three possible values.

<table>
<thead>
<tr>
<th>Value</th>
<th>Context</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>On:</strong></td>
<td>Changes the host of the URL to 127.0.0.1. The schema and port (if specified) are not changed. Cannot be used if SSL-terminating load balancer is used.</td>
</tr>
<tr>
<td><strong>OnUsingHttp:</strong></td>
<td>Changes the host to 127.0.0.1 and schema to HTTP and modifies the port the value configured for loopbackPortUsingHttp attribute. Use only when the load balancer is SSL terminating. Communication between the load balancer and StoreFront servers is with HTTP. You can explicitly configure the HTTP port using the -loopbackPortUsingHttp attribute.</td>
</tr>
<tr>
<td><strong>Off:</strong></td>
<td>The URL in the request is not modified in any way. Use for trouble shooting. Tools like Fiddler cannot capture the traffic between Receiver for Web and StoreFront Services if loopback is set to “On”.</td>
</tr>
</tbody>
</table>
Configure NetScaler and StoreFront for Delegated Forms Authentication (DFA)

Feb 24, 2016

Extensible authentication provides a single customization point for extension of NetScaler's and StoreFront's form-based authentication. To achieve an authentication solution using the Extensible Authentication SDK, you must configure Delegated Form Authentication (DFA) between NetScaler and StoreFront. The Delegated Forms Authentication protocol allows generation and processing of authentication forms, including credential validation, to be delegated to another component. For example, NetScaler delegates its authentication to StoreFront, which then interacts with a third party authentication server or service.

- To ensure communication between NetScaler and StoreFront is protected, use HTTPS instead of HTTP protocol.
- For cluster deployment, ensure that all the nodes have the same server certificate installed and configured in IIS HTTPS binding prior to configuration steps.
- Ensure that Netscaler has the issuer of StoreFront's server certificate as a trusted certificate authority when HTTPS is configured in StoreFront.

- Install a third party authentication plugin on all the nodes prior to joining them up together.
- Configure all the Delegated Forms Authentication related settings on one node and propagate the changes to the others. See the "Enable Delegated Forms Authentication"

Because there is no GUI to setup Citrix pre-shared key setting in StoreFront, use the PowerShell console to install Delegated Forms Authentication.

1. Install Delegated Forms Authentication. It is not installed by default and you need to install it using the PowerShell console.
   PS C:\Users\administrator.PTD.000> cd 'C:\Program Files\Citrix\Receiver StoreFront\Scripts'
   PS C:\Program Files\Citrix\Receiver StoreFront\Scripts> & \ImportModules.ps1
   Adding snapins
   Importing modules
   Loading 'C:\Program Files\Citrix\Receiver StoreFront\Admin\Citrix.DeliveryServices.ConfigurationProvider.dll'
   Loading 'C:\Program Files\Citrix\Receiver StoreFront\Admin\Citrix.DeliveryServices.ConfigurationProvider.dll'
   PS C:\Program Files\Citrix\Receiver StoreFront\Scripts> Install-DSDFAServer
   Id : bf694fbc-ae0a-4d56-8749-c945559e897a
   ClassType : e1eb3668-9c1c-4ad8-bbae-c08b2682c1bc
   ParentInstance : ebd182c7-f970-466c-ad4c-27a5980f716c
   RootInstance : 5d0cdc75-1dee-4df7-806d-7375d79634b3
   TenantId : 860e9401-39c8-4f2c-928d-34251102b840
   Data : {}
   ReadOnlyData : {
     [Name, DelegatedFormsServer],
     [Cmdlet, Add-DSWebFeature],
     [Snapin, Citrix.DeliveryServices.Web.Commands],
     [Tenant, 860e9401-39c8-4f2c-928d-34251102b840]
   }
   ParameterData : {
     [FeatureClassId, e1eb3668-9c1c-4ad8-bbae-c08b2682c1bc],
     [ParentInstanceId, 8dd182c7-f970-466c-ad4c-27a5980f716c],
     [TenantId, 860e9401-39c8-4f2c-928d-34251102b840]
   }
   AdditionalInstanceDependencies : {b1e4be0f-0b9e-5-4697-af9b-0910062aa2a3}
   IsDeployed : True

2. Add Citrix Trusted Client. Configure the shared secret key (passphrase) between StoreFront and NetScaler. Your passphrase and client ID must be identical to what you configured in NetScaler.
   PS C:\Program Files\Citrix\Receiver StoreFront\Scripts> Add-DSCitrixPSKTrustedClient -clientId netscaler.fqdn.com -passphrase secret

3. Set the Delegated Forms Authentication conversation factory to route all the traffic to the custom form. To find the conversation factory, look for ConversationFactory in C:\\inetpub\\wwwroot\\Citrix\Authentication\\web.config. This is an example of what you might see.

```xml
<example connectorURL="http://Example.connector.url:8080/adapters-sf-aaconnector-webapp">
  <routeTable order="1000">
    <routes>
      <route name="StartExampleAuthentication" url="Example-Bridge-Forms/Start">
        <defaults>
          <add param="controller" value="ExplicitFormsAuthentication"/>
        </defaults>
      </route>
    </routes>
  </routeTable>
</example>
```
4. In PowerShell, set the Delegated Forms Authentication conversation factory. In this example, to ExampleBridgeAuthentication.

   PS C:\Program Files\Citrix\Receiver StoreFront\Scripts> Set-DSDFAProperty -ConversationFactory ExampleBridgeAuthentication

   PowerShell's arguments are not case-sensitive: -ConversationFactory is identical to –conversationfactory.

   Before you uninstall StoreFront, uninstall any third party authentication plugin, as it will impact the functionality of StoreFront.
Configure beacon points

Feb 24, 2016

Use the Manage Beacons task to specify URLs inside and outside your internal network to be used as beacon points. Citrix Receiver attempts to contact beacon points and uses the responses to determine whether users are connected to local or public networks. When a user accesses a desktop or application, the location information is passed to the server providing the resource so that appropriate connection details can be returned to Citrix Receiver. This ensures that users are not prompted to log on again when they access a desktop or application.

For example, if the internal beacon point is accessible, this indicates that the user is connected to the local network. However, if Citrix Receiver cannot contact the internal beacon point and receives responses from both the external beacon points, this means that the user has an Internet connection but is outside the corporate network. Therefore, the user must connect to desktops and applications through NetScaler Gateway. When the user accesses a desktop or application, the server providing the resource is notified to provide details of the NetScaler Gateway appliance through which the connection must be routed. This means that the user does not need to log on to the appliance when accessing the desktop or application.

By default, StoreFront uses the server URL or load-balanced URL of your deployment as the internal beacon point. The Citrix website and the virtual server or user logon point (for Access Gateway 5.0) URL of the first NetScaler Gateway deployment you add are used as external beacon points by default.

If you change any beacon points, ensure that users update Citrix Receiver with the modified beacon information. Where a Receiver for Web site is configured for a store, users can obtain an updated Citrix Receiver provisioning file from the site. Otherwise, you can export a provisioning file for the store and make this file available to your users.

Important: In multiple server deployments, use only one server at a time to make changes to the configuration of the server group. Ensure that the Citrix StoreFront management console is not running on any of the other servers in the deployment. Once complete, propagate your configuration changes to the server group so that the other servers in the deployment are updated.

1. On the Windows Start screen or Apps screen, locate and click the Citrix StoreFront tile.
2. Select the Stores node in the left pane of the Citrix StoreFront management console and, in the Actions pane, click Manage Beacons.
3. Specify the URL to use as the internal beacon point.
   - To use the server URL or load-balanced URL of your StoreFront deployment, select Use the service URL.
   - To use an alternative URL, select Specify beacon address and enter a highly available URL within your internal network.
4. Click Add to enter the URL of an external beacon point. To modify a beacon point, select the URL in the External beacons list and click Edit. Select a URL in the list and click Remove to stop using that address as a beacon point. You must specify at least two highly available external beacon points that can be resolved from public networks. The beacon URLs should be fully qualified domain names (http://domain.com) and not the abbreviated NetBIOS name (http://domain). This enables Citrix Receiver to determine whether users are located behind an Internet paywall, such as in a hotel or Internet café. In such cases, all the external beacon points connect to the same proxy.
## Advanced configurations

Feb 24, 2016

StoreFront allows advanced options that you can configure using the StoreFront console, PowerShell, certificate properties, or configuration files.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Configure Desktop Appliance sites</strong></td>
<td>Create, remove, and modify Desktop Appliance sites.</td>
</tr>
<tr>
<td><strong>Configure authentication for XenApp Services URLs</strong></td>
<td>Enable users of domain-joined desktop appliances and repurposed PCs running the Citrix Desktop Lock, along with users who have older Citrix clients that cannot be upgraded, to access stores.</td>
</tr>
<tr>
<td><strong>Create a single Fully Qualified Domain Name (FQDN) to access a store internally and externally</strong></td>
<td>Provide access to resources from within your corporate network and from the Internet through a NetScaler Gateway and simplify the user experience by creating a single FQDN for both internal and roaming external clients.</td>
</tr>
<tr>
<td><strong>Configure Resource Filtering</strong></td>
<td>Filter enumeration resources based on resource type and keywords.</td>
</tr>
</tbody>
</table>
Configure Desktop Appliance sites

Feb 24, 2016

The tasks below describe how to create, remove, and modify Desktop Appliance sites. To create or remove sites, you execute Windows PowerShell commands. Changes to Desktop Appliance site settings are made by editing the site configuration files.

Important: In multiple server deployments, use only one server at a time to make changes to the configuration of the server group. Ensure that the Citrix StoreFront management console is not running on any of the other servers in the deployment. Once complete, propagate your configuration changes to the server group so that the other servers in the deployment are updated.

Note: The StoreFront and PowerShell consoles cannot be open at the same time. Always close the StoreFront admin console before using the PowerShell console to administer your StoreFront configuration. Likewise, close all instances of PowerShell before opening the StoreFront console.

Only a single store can be accessed through each Desktop Appliance site. You can create a store containing all the resources you want to make available to users with non-domain-joined desktop appliances. Alternatively, create separate stores, each with a Desktop Appliance site, and configure your users' desktop appliances to connect to the appropriate site.

1. Use an account with local administrator permissions to start Windows PowerShell and, at a command prompt, type the following command to import the StoreFront modules.

   & "installationlocation\Scripts\ImportModules.ps1"

   Where installationlocation is the directory in which StoreFront is installed, typically C:\Program Files\Citrix\Receiver StoreFront\.

2. To create a new Desktop Appliance site, type the following command.

   Install-DSDesktopAppliance -FriendlyName sitename -SiteId iisid
   -VirtualPath sitepath -UseHttps {$False | $True}
   -StoreUrl storeaddress [-EnableMultiDesktop {$False | $True}]
   [-EnableExplicit {$True | $False}] [-EnableSmartCard {$False | $True}]
   [-EnableEmbeddedSmartCardSSO {$False | $True}]

   Where sitename is a name that helps you to identify your Desktop Appliance site. For iisid, specify the numerical ID of the Microsoft Internet Information Services (IIS) site hosting StoreFront, which can be obtained from the Internet Information Services (IIS) Manager console. Replace sitepath with the relative path at which the site should be created in IIS, for example, /Citrix/DesktopAppliance. Note that Desktop Appliance site URLs are case sensitive.

   Indicate whether StoreFront is configured for HTTPS by setting -UseHttps to the appropriate value.

   To specify the absolute URL of the store service used by the Desktop Appliance Connector site, use StoreUrl storeaddress. This value is displayed for the Store summary in the administration console.

   By default, when a user logs on to a Desktop Appliance site, the first desktop available to the user starts automatically. To configure your new Desktop Appliance site to enable users to choose between multiple desktops, if available, set -EnableMultiDesktop to $True.

   Explicit authentication is enabled by default for new sites. You can disable explicit authentication by setting the -
EnableExplicit argument to $False. Enable smart card authentication by setting -EnableSmartCard to $True. To enable pass-through with smart card authentication, you must set both -EnableSmartCard and -EnableEmbeddedSmartCardSSO to $True. If you enable explicit and either smart card or pass-through with smart card authentication, users are initially prompted to log on with a smart card, but can fall back to explicit authentication if they experience any issues with their smart cards.

The optional arguments configure settings that can also be modified after the Desktop Appliance site has been created by editing the site configuration file.

**Example:**

Create a Desktop Appliance Connector site at virtual path /Citrix/DesktopAppliance1 in the default IIS web site.

```powershell
Install-DSDesktopAppliance -FriendlyName DesktopAppliance1 -SiteId 1 -VirtualPath /Citrix/DesktopAppliance1 -UseHttps $false -StoreUrl https://serverName/Citrix/Store -EnableMultiDesktop $true -EnableExplicit $true -EnableSmartCard $true -EnableEmbeddedSmartCardSSO $false
```

3. To remove an existing Desktop Appliance site, type the following command.

   ```powershell
   Remove-DSDesktopAppliance -SiteId iid -VirtualPath sitepath
   ```

   Where iid is the numerical ID of the IIS site hosting StoreFront and sitepath is the relative path of the Desktop Appliance site in IIS, for example, /Citrix/DesktopAppliance.

4. To list the Desktop Appliance sites currently available from your StoreFront deployment, type the following command.

   ```powershell
   Get-DSDesktopAppliancesSummary
   ```

Desktop Appliance sites support explicit, smart card, and pass-through with smart card authentication. Explicit authentication is enabled by default. If you enable explicit and either smart card or pass-through with smart card authentication, the default behavior initially prompts users to log on with a smart card. Users who experience issues with their smart cards are given the option of entering explicit credentials. If you configure IIS to require client certificates for HTTPS connections to all StoreFront URLs, users cannot fall back to explicit authentication if they cannot use their smart cards. To configure the authentication methods for a Desktop Appliance site, you edit the site configuration file.

```
1. Use a text editor to open the web.config file for the Desktop Appliance site, which is typically located in the C:\inetpub\wwwroot\Citrix\storename\DesktopAppliance directory, where storename is the name specified for the store when it was created.
```

https://docs.citrix.com © 1999-2017 Citrix Systems, Inc. All rights reserved.
2. Locate the following element in the file.
   <explicitForms enabled="true" />
3. Change the value of the enabled attribute to false to disable explicit authentication for the site.
4. Locate the following element in the file.
   <certificate enabled="false" useEmbeddedSmartcardSso="false"
      embeddedSmartcardSsoPinTimeout="00:00:20" />
5. Set the value of the enabled attribute to true to enable smart card authentication. To enable pass-through with smart card authentication, you must also set the value of the useEmbeddedSmartcardSso attribute to true. Use the embeddedSmartcardSsoPinTimeout attribute to set the time in hours, minutes, and seconds for which the PIN entry screen is displayed before it times out. When the PIN entry screen times out, users are returned to the logon screen and must remove and reinsert their smart cards to access the PIN entry screen again. The time-out period is set to 20 seconds by default.

By default, when a user logs on to a Desktop Appliance site, the first desktop (in alphabetical order) available to the user in the store for which the site is configured starts automatically. If you provide users with access to multiple desktops in a store, you can configure the Desktop Appliance site to display the available desktops so users can choose which one to access. To change these settings, you edit the site configuration file.

1. Use a text editor to open the web.config file for the Desktop Appliance site, which is typically located in the C:\inetpub\wwwroot\Citrix\storenameDesktopAppliance directory, where storename is the name specified for the store when it was created.
2. Locate the following element in the file.
   <resources showMultiDesktop="false" />
3. Change the value of the showMultiDesktop attribute to true to enable users to see and select from all the desktops available to them in the store when they log on to the Desktop Appliance site.
Configure authentication for XenApp Services URLs

Feb 24, 2016

XenApp Services URLs enable users of domain-joined desktop appliances and repurposed PCs running the Citrix Desktop Lock, along with users who have older Citrix clients that cannot be upgraded, to access stores. When you create a new store, the XenApp Services URL is enabled by default. The XenApp Services URL for a store has the form http[s]://serveraddress/Citrix/storename/PNAgent/config.xml, where serveraddress is the fully qualified domain name of the server or load balancing environment for your StoreFront deployment and storename is the name specified for the store when it was created.

XenApp Services URLs support explicit, domain pass-through, and pass-through with smart card authentication. Explicit authentication is enabled by default. You can change the authentication method, but only one authentication method can be configured for each XenApp Services URL. To enable multiple authentication methods, create separate stores, each with a XenApp Services URL, for each authentication method. To change the authentication method for a XenApp Services URL, you run a Windows PowerShell script.

Note: The StoreFront and PowerShell consoles cannot be open at the same time. Always close the StoreFront admin console before using the PowerShell console to administer your StoreFront configuration. Likewise, close all instances of PowerShell before opening the StoreFront console.

Important: In multiple server deployments, use only one server at a time to make changes to the configuration of the server group. Ensure that the Citrix StoreFront management console is not running on any of the other servers in the deployment. Once complete, propagate your configuration changes to the server group so that the other servers in the deployment are updated.

Use an account with local administrator permissions to start Windows PowerShell and, at a command prompt, enter one of the following commands to configure the user authentication method for users accessing the store through the XenApp Services URL.

```powershell
& "installationlocation\Scripts\EnablePnaForStore.ps1"  –SiteId iisid –ResourcesVirtualPath storepath –LogonMethod {prompt | sson | smartcard_sson | smartcard_prompt}
```

Where installationlocation is the directory in which StoreFront is installed, typically C:\Program Files\Citrix\Receiver StoreFront\. For iisid, specify the numerical ID of the Microsoft Internet Information Services (IIS) site hosting StoreFront, which can be obtained from the Internet Information Services (IIS) Manager console. Replace storepath with the relative path to the store in IIS, for example, /Citrix/Store. To enable explicit authentication, set the -LogonMethod argument to prompt. For domain pass-through, use sson and for pass-through with smart card authentication, set the argument to smartcard_sson.

XenApp Services Support smart card authentication method

```powershell
& "installationlocation\Scripts\EnablePnaForStore.ps1"  –SiteId iisid –ResourcesVirtualPath storepath –LogonMethod smartcard_prompt
```

The installationlocation is the directory in which StoreFront is installed, typically C:\Program Files\Citrix\Receiver StoreFront\. Replace storepath with the relative path to the store in IIS, for example, /Citrix/Store.

For domain pass-through with smart card authentication, set the argument to smartcard_prompt.
Create a single Fully Qualified Domain Name (FQDN) to access a store internally and externally

Feb 24, 2016

Note: To use this feature with native desktop receivers, the following versions are required.
- Windows Receiver 4.2
- MAC Receiver 11.9

You can provide access to resources from within your corporate network and from the Internet through a NetScaler Gateway and simplify the user experience by creating a single FQDN for both internal and roaming external clients.

Creating a single FQDN is helpful to users who configure any of the native Receivers. They need remember only a single URL whether they are currently connected to an internal or public network.

Citrix Receiver attempts to contact beacon points and uses the responses to determine whether users are connected to local or public networks. When a user accesses a desktop or application, the location information is passed to the server providing the resource so that appropriate connection details can be returned to Citrix Receiver. This ensures that users are not prompted to log on again when they access a desktop or application. For information about configuring beacon points, see Configure beacon points.

The shared FQDN resolves either to an external firewall router interface IP or NetScaler Gateway vServer IP in the DMZ when external clients try to access resources from outside of the corporate network. Ensure the Common Name and Subject Alternative Name fields of the SSL certificate contain the shared FQDN to be used to access the store externally. By using a third party root CA such as Verisign instead of an enterprise Certification Authority (CA) to sign the gateway certificate, any external client automatically trusts the certificate bound to the gateway vServer. If you use a third party root CA such as Verisign, no additional root CA certificates need to be imported on to external clients.

To deploy a single certificate with the Common Name of the shared FQDN to both the NetScaler Gateway and the StoreFront server, consider whether you want to support remote discovery. If so, make sure the certificate follows the specification for the Subject Alternative Names.
NetScaler Gateway vServer example certificate: storefront.example.com
1. Ensure that the shared FQDN, the callback URL, and the accounts alias URL are included in the DNS field as Subject Alternative Name (SANs).
2. Ensure that the private key is exportable so the certificate and key can be imported into the NetScaler Gateway.
3. Ensure that Default Authorization is set to Allow.
4. Sign the certificate using a third party CA such as Verisign or an enterprise root CA for your organization.

Two-node server group example SANs:
storefront.example.com (mandatory)
storefrontcb.example.com (mandatory)
accounts.example.com (mandatory)
storefrontserver1.example.com (optional)
storefrontserver2.example.com (optional)

Sign the NetScaler Gateway vServer SSL certificate using a Certification Authority (CA)

Based on your requirements, you have two options for choosing the type of CA signed certificate.

- Option 1 - Third Party CA signed certificate: If the certificate bound to the NetScaler Gateway vServer is signed by a trusted third party, external clients will likely NOT need any root CA certificates copied to their trusted root CA certificate stores. Windows clients ship with the root CA certificates of the most common signing agencies. Examples of commercial third party CAs that could be used include DigiCert, Thawte, and Verisign. Note that mobile devices such as iPads, iPhones, and Android tablets and phones might still require the root CA to be copied onto the device to trust the NetScaler Gateway vServer.
- Option 2 - Enterprise Root CA signed certificate: If you choose this option, every external client requires the enterprise root CA certificate copied to their trusted root CA stores. If using portable devices with native Receiver installed, such as iPhones and iPads, create a security profile on these devices.
**Import the root certificate into portable devices**

- iOS devices can import .CER x.509 certificate files using email attachments, because accessing the local storage of iOS devices is usually not possible.
- Android devices require the same .CER x.509 format. The certificate can be imported from the device local storage or email attachments.

**External DNS: storefront.example.com**

Ensure that the DNS resolution provided by your organization's Internet service provider resolves to the externally facing IP of the firewall router on the outside edge of DMZ or to the NetScaler Gateway vServer VIP.

**Split view DNS**

- When split-view DNS is correctly configured, the source address of the DNS request should send the client to the correct DNS A record.
- When clients roam between public and corporate networks, their IP should change. Depending on the network to which they are currently connected, they should receive the correct A record when they query storefront.example.com.

**Import certificates issued from a Windows CA to NetScaler Gateway**

WinSCP is a useful and free third party tool to move files from a Windows machine to a NetScaler Gateway file system. Copy certificates for import to the /nsconfig/ssl/ folder within the NetScaler Gateway file system. You can use the OpenSSL tools on the NetScaler Gateway to extract the certificate and key from a PKCS12/PFX file to create two separate .CER and .KEY X.509 files in PEM format that can be used by the NetScaler Gateway.

1. Copy the PFX file into /nsconfig/ssl on the NetScaler Gateway appliance or VPX.
2. Open the NetScaler Gateway command line interface.
3. To switch to the FreeBSD shell, type `Shell` to exit the NetScaler Gateway command line interface.
4. To change directory, use `cd /nsconfig/ssl`.
5. Run `openssl pkcs12 -in <imported cert file>.pfx -nokeys -out <certfilename>.cer` and enter the PFX password when prompted.
6. Run `openssl pkcs12 -in <imported cert file>.pfx -nocerts -out <keyfilename>.key` and enter the PFX password when prompted.
7. Enter the PFX password when prompted and then set a private key PEM passphrase to protect the .KEY file.
8. To ensure that the .CER and .KEY files were successfully created inside /nsconfig/ssl/, run `ls –al`.
9. To return to the NetScaler Gateway command line interface, type `Exit`.

**REQ.HTTPHEADER**

| User-Agent CONTAINS CitrixReceiver & & REQ.HTTPHEADER X-Citrix-Gateway EXISTS |
|-----------------------------|-------------|

| User-Agent NOTCONTAINS CitrixReceiver & & REQ.HTTPHEADER Referer EXISTS |
|-----------------------------|-------------|

**cVPN and Smart Access Settings**

If you use SmartAccess, enable smart access mode on the NetScaler Gateway vServer properties page. Universal Licenses are required for every concurrent user who accesses remote resources.

**Receiver profile**
Configure the session profile accounts service URL to be https://accounts.example.com/Citrix/Roaming/Accounts NOT https://storefront.example.com/Citrix/Roaming/Accounts.

Also add this URL as an additional <allowedAudiences> in the authentication and roaming web.config files on the StoreFront server. For more information, see the "Configure the StoreFront server host base URL, gateway, and SSL certificate" section below.

Receiver for Web profile
If you use ICA proxy, enable basic mode on the NetScaler Gateway vServer properties page. Only a Netscaler platform license is required.

Receiver profile
The same shared FQDN that resolves to the NetScaler Gateway vServer should also resolve directly to the StoreFront load balancer, if a StoreFront cluster was created or a single StoreFront server IP that hosts the store.

Internal DNS: Create three DNS A records.

- storefront.example.com should resolve to the storefront load balancer or single StoreFront server IP.
- storefrontcb.example.com should resolve to the gateway vServer VIP so if a firewall exists between the DMZ and the
enterprise local network, allow for this.

- accounts.example.com — create as a DNS alias for storefront.example.com. It also resolves to the load balancer IP for the StoreFront cluster or a single StoreFront server IP.

**StoreFront server example certificate: storefront.example.com**

1. Create a suitable certificate for the StoreFront server or server group before installing StoreFront.
2. Add the shared FQDN to the Common name and DNS fields. Ensure this matches the FQDN used in the SSL certificate bound to the NetScaler Gateway vServer that you created earlier or use the same certificate bound to the NetScaler Gateway vServer.
3. Add the accounts alias (accounts.example.com) as another SAN to the certificate. Note that the accounts alias used in the SAN is the one used in the Netscaler Gateway Session Profile in the earlier procedure - **Native Receiver Gateway session policy and profile**.

![Certificate Properties](image)

4. Ensure that the private key is exportable so the certificate can be transferred to another server or to multiple StoreFront server group nodes.
5. Sign the certificate using a third party CA such as VeriSign, your enterprise root CA, or intermediate CA.
6. Export the certificate in PFX format including the private key.
7. Import the certificate and private key into the StoreFront server. If deploying a Windows NLB StoreFront cluster, import the certificate into every node. If using an alternative load balancer such as a Netscaler LB vServer, import the certificate there instead.
8. Create an HTTPS binding in IIS on the StoreFront server and bind the imported SSL certificate to it.

9. Configure the host base URL on the StoreFront server to match the already chosen shared FQDN.
   **Note:** StoreFront always auto selects the last Subject Alternative Name in the list of SANs within the certificate. This is merely a suggested host base URL to assist StoreFront administrators and is usually correct. You can manually set it to any valid HTTPS://<FQDN> provided it exists within the certificate as a SAN. Example: https://storefront.example.com
Configure the Gateway on the StoreFront server: storefront.example.com

1. From the Stores node, click on Manage NetScaler Gateways in the Actions pane.

2. Select the Gateway from the list and click Edit.

3. On the General Settings page, type the shared FQDN in the NetScaler Gateway URL field.

4. Select the Authentication Settings tab and type the callback FQDN into the Callback URL field.

5. Select the Secure Ticket Authority tab and ensure that the Secure Ticket Authority (STA) servers match the list of delivery controllers already configured within the Store node.

6. Enable remote access for the store.

7. Manually set the internal beacon to the accounts alias (accounts.example.com) and it must not be resolvable from outside the gateway. This FQDN must be distinct from the external beacon that is shared by the StoreFront hostbase URL and NetScaler Gateway vServer (storefront.example.com). DO NOT use the shared FQDN, as this creates a situation where both the internal and external beacons are identical.
8. Note that if you want to support discovery using FQDNs, follow these steps. If the provisioning file configuration is enough or if you are using only Receiver for Web, you can skip the following steps.

Add an additional `<allowedAudiences>` entry in `C:\inetpub\wwwroot\Citrix\Authentication\web.config`. There are two `<allowedAudiences>` entries in the authentication web.config file. Only the first entry in the file for the Authentication Token Producer requires you to add an additional `<allowedAudience>`.

9. Perform a search for the `<allowedAudiences>` string. Locate the following entry below and add the line shown in bold, save, and close the web.config file.

```xml
<service id="abd6f54b-7d1c-4a1b-a8d7-14804e6c8c64" displayName="Authentication Token Producer">
    ..........
    ..........
    <allowedAudiences>
        <add name="https-storefront.example.com" audience="https://storefront.example.com/" />
        <add name="https-accounts.example.com" audience="https://accounts.example.com/" />
    </allowedAudiences>
</service>
```

9. In `C:\inetpub\wwwroot\Citrix\Roaming\web.config`, locate the following entry below and add the line shown in bold, save, and close the web.config file.

```xml
<tokenManager>
    <services>
        <clear />
    </services>
</tokenManager>
```

```xml
<trustedIssuers>
    <allowedAudiences>
        <add name="https-storefront.example.com" audience="https://storefront.example.com/" />
        <add name="https-accounts.example.com" audience="https://accounts.example.com/" />
    </allowedAudiences>
</trustedIssuers>
```
Alternatively, it is possible to export the native receiver .CR provisioning file for the store. This eliminates the need for First Time Use configuration of native Receivers. Distribute this file to all Windows and MAC Receiver clients.

If a Receiver is installed on the client, the .CR file type is recognized and double clicking on the provisioning file triggers it to be automatically imported.
Configure Resource Filtering

Feb 24, 2016

This topic explains how to filter enumeration resources based on resource type and keywords. You can use this type of filtering with the more advanced customization offered by the Store Customization SDK. Using this SDK, you can control which apps and desktops are displayed to users, modify access conditions, and adjust launch parameters. For more information, see the Store Customization SDK.

Note: The StoreFront and PowerShell consoles cannot be open at the same time. Always close the StoreFront admin console before using the PowerShell console to administer your StoreFront configuration. Likewise, close all instances of PowerShell before opening the StoreFront console.

Configure the filter using PowerShell cmdlets defined within the StoresModule. Use the following PowerShell snippet to load the required modules:

```powershell
$dsInstallProp = Get-ItemProperty `   -Path HKLM:\SOFTWARE\Citrix\DeliveryServicesManagement -Name InstallDir $dsInstallDir = $dsInstallProp.InstallDir & $dsInstallDir\..\Scripts\ImportModules.ps1
```

Use this to filter the resource enumeration by resource type. This is an inclusive filter, meaning it removes any resources that are not of the specified types from the resource enumeration result. Use the following cmdlets:

Set-DSResourceFilterType: Sets up enumeration filtering based on resource types.

Get-DSResourceFilterType: Gets the list of resource types that StoreFront is allowed to return in enumeration.

Note: Resource types are applied before keywords.

Use this to filter resources based on keywords, such as resources derived from XenDesktop or XenApp. Keywords are generated from mark-up in the description field of the corresponding resource.

The filter can operate either in inclusive or exclusive mode, but not both. The inclusive filter allows enumeration of resources matching the configured keywords and removes non matching resources from the enumeration. The exclusive filter removes resources matching the configured keywords from the enumeration. Use the following cmdlets:

Set-DSResourceFilterKeyword: Sets up enumeration filtering based on resource keywords.

Get-DSResourceFilterKeyword: Gets the list of filter keywords.

The following keywords are reserved and must not be used for filtering:

- Auto
- Mandatory
This command will set filtering to exclude workflow resources from enumeration:

Set-DSResourceFilterKeyword -SiteId 1 -VirtualPath "/Citrix/Store" -ExcludeKeywords @("WFS")

This example will set allowed resource types to applications only:

Set-DSResourceFilterType -SiteId 1 -VirtualPath "/Citrix/Store" -IncludeTypes @("Applications")
Configure using configuration files

Feb 24, 2016

You can use configuration files to configure additional settings for Citrix StoreFront and Citrix Receiver for Web that cannot be set with the Citrix StoreFront management console.

The **Citrix StoreFront** settings you can configure include:

- Enable ICA file signing
- Disable file type association
- Customize the Citrix Receiver logon dialog box
- Prevent Receiver for Windows from caching passwords and usernames
- Server bypass behavior

The **Citrix Receiver for Web** settings you can configure include:

- How resources are displayed for users
- Disable the My Apps Folder View
- Make Citrix Receiver installation files available on the server
- Disable detection and deployment of Citrix Receiver
- Stop offering provisioning files to users
- Receiver for HTML5 use of browser tabs
- Session duration
Configure StoreFront using the configuration files

Feb 24, 2016
This describes additional configuration tasks that cannot be carried out using the Citrix StoreFront management console.

Enable ICA file signing
Disable file type association
Customize the Citrix Receiver logon dialog box
Prevent Citrix Receiver for Windows from caching passwords and usernames
Configure server bypass behavior

Important: In multiple server deployments, use only one server at a time to make changes to the configuration of the server group. Ensure that the Citrix StoreFront management console is not running on any of the other servers in the deployment. Once complete, propagate your configuration changes to the server group so that the other servers in the deployment are updated.

In multiple server deployments, use only one server at a time to make changes to the configuration of the server group. Ensure that the Citrix StoreFront management console is not running on any of the other servers in the deployment. Once complete, propagate your configuration changes to the server group so that the other servers in the deployment are updated.

Note: The StoreFront and PowerShell consoles cannot be open at the same time. Always close the StoreFront admin console before using the PowerShell console to administer your StoreFront configuration. Likewise, close all instances of PowerShell before opening the StoreFront console.

ICA File Signing to protect against application or desktop launches from untrusted servers

For ICA file signing, Citrix recommends using a code signing or SSL signing certificate obtained from a public certification authority or from your organization's private certification authority. If you are unable to obtain a suitable certificate from a certification authority, you can either use an existing SSL certificate, such as a server certificate, or create a new root certification authority certificate and distribute it to users' devices.

ICA file signing is disabled by default in stores. To enable ICA file signing, you edit the store configuration file and execute Windows PowerShell commands. For more information about enabling ICA file signing in Citrix Receiver, see .

ICA file signing is disabled by default in stores. To enable ICA file signing, you edit the store configuration file and execute Windows PowerShell commands. For more information about enabling ICA file signing in Citrix Receiver, see .

To be used for ICA file signing with StoreFront, certificates must include the private key and be within the allowed validity period. If the certificate contains a key usage extension, this must allow the key to be used for digital signatures. Where an extended key usage extension is included, it must be set to code signing or server authentication.

For ICA file signing, Citrix recommends using a code signing or SSL signing certificate obtained from a public certification authority or from your organization's private certification authority. If you are unable to obtain a suitable certificate from a certification authority, you can either use an existing SSL certificate, such as a server certificate, or create a new root certification authority certificate and distribute it to users' devices.

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ICA file signing is disabled by default in stores. To enable ICA file signing, you edit the store configuration file and execute Windows PowerShell commands. For more information about enabling ICA file signing in Citrix Receiver, see .

By default, file type association is enabled in stores so that content is seamlessly redirected to users' subscribed applications when they open local files of the appropriate types. To disable file type association, you edit the store configuration file.

Important: In multiple server deployments, use only one server at a time to make changes to the configuration of the server group. Ensure that the Citrix StoreFront management console is not running on any of the other servers in the deployment. Once complete, propagate your configuration changes to the server group so that the other servers in the deployment are updated.

1. Ensure that the certificate you want to use to sign ICA files is available in the Citrix Delivery Services certificate store on the StoreFront server and not the current user's certificate store.

2. Use a text editor to open the web.config file for the store, which is typically located in the C:\inetpub\wwwroot\Citrix\storename\ directory, where storename is the name specified for the store when it was created.

3. Locate the following section in the file.

```xml
<certificateManager>
  <certificates>
    <clear />
    <add ... /> ...
  </certificates>
</certificateManager>
```

4. Include details of the certificate to be used for signing as shown below.

```xml
<certificateManager>
  <certificates>
    <clear />
    <add id="certificateid" thumb="certificatethumbprint" />
    ...
  </certificates>
</certificateManager>
```

Where certificateid is a value that helps you to identify the certificate in the store configuration file and certificatethumbprint is the digest (or thumbprint) of the certificate data produced by the hash algorithm.

5. Locate the following element in the file.

```xml
<icaFileSigning enabled="False" certificateId="" hashAlgorithm="sha1" />
```

6. Change the value of the enabled attribute to True to enable ICA file signing for the store. Set the value of the certificateId attribute to the ID you used to identify the certificate, that is, certificateid in Step 4.

7. If you want to use a hash algorithm other than SHA-1, set the value of the hashAlgorithm attribute to sha256, sha384, or sha512, as required.

8. Using an account with local administrator permissions, start Windows PowerShell and, at a command prompt, type the following commands to enable the store to access the private key.

```
$certificate = Get-DSCertificate "certificatethumbprint"
Add-DSCertificateKeyReadAccess -certificate $certificates[0] -accountName "IIS APPPOOL\Citrix Delivery Services Resources"
```

Where certificatethumbprint is the digest of the certificate data produced by the hash algorithm.

By default, file type association is enabled in stores so that content is seamlessly redirected to users' subscribed applications when they open local files of the appropriate types. To disable file type association, you edit the store configuration file.

Important: In multiple server deployments, use only one server at a time to make changes to the configuration of the server group. Ensure that the Citrix StoreFront management console is not running on any of the other servers in the deployment. Once complete, propagate your configuration changes to the server group so that the other servers in the deployment are updated.

1. Use a text editor to open the web.config file for the store, which is typically located in the C:\inetpub\wwwroot\Citrix\storename\ directory, where storename is the name specified for the store...
To change the bypass parameters for a Store running on any of the other servers in the deployment. Once complete, **Important:**

In multiple-server deployments, use only one server at a time to make changes to the configuration of the server group. Ensure that the Citrix StoreFront management console is not running on any of the other servers in the deployment. Once complete, propagate your configuration changes to the server group so that the other servers in the deployment are updated.

1. Use a text editor to open the UsernamePasswordFile for the authentication service, which is typically located in the C:\inetpub\wwwroot\Citrix\Authentication\App_Data\Templates\UsernamesPasswordFile file.
2. Locate the following line in the file.
   ```xml```
   ```
   <farmset ... enableFileTypeAssociation="on" ... >
   ```
3. Change the value of the enableFileTypeAssociation attribute to off to disable file type association for the store.

When Citrix Receiver users log on to a store, no title text is displayed on the logon dialog box, by default. You can display the default text “Please log on” or compose your own custom message. To display and customize the title text on the Citrix Receiver logon dialog box, you edit the files for the authentication service.

**Important:**

In multiple-server deployments, use only one server at a time to make changes to the configuration of the server group. Ensure that the Citrix StoreFront management console is not running on any of the other servers in the deployment. Once complete, propagate your configuration changes to the server group so that the other servers in the deployment are updated.

1. Use a text editor to open the UsernamePasswordFile file for the authentication service, which is typically located in the C:\inetpub\wwwroot\Citrix\Authentication\App_Data\Templates\UsernamesPasswordFile file.
2. Locate the following line in the file.
   ```xml```
   ```
   @GetTextValue("saveCredentialsId")->labelKey: "ExplicitFormsCommon:SaveCredentialsLabel", initiallyChecked: ControlValue("SaveCredentials")
   ```
3. Comment the statement by removing the leading and trailing @* and trailing *@, as shown below.
   ```xml```
   ```
   @GetTextValue("saveCredentialsId")->labelKey: "ExplicitFormsCommon:SaveCredentialsLabel", initiallyChecked: ControlValue("SaveCredentials")
   ```
4. To modify the title text, use a text editor to open the ExplicitAuth.tfrm file for the authentication service, which is typically located in the C:\inetpub\wwwroot\Citrix\Authentication\App_Data\resources\ExplicitAuth.resx file when it was created.

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**Important:**

In multiple-server deployments, use only one server at a time to make changes to the configuration of the server group. Ensure that the Citrix StoreFront management console is not running on any of the other servers in the deployment. Once complete, propagate your configuration changes to the server group so that the other servers in the deployment are updated.

1. Use a text editor to open the UsernamePasswordFile file for the authentication service, which is typically located in the C:\inetpub\wwwroot\Citrix\Authentication\App_Data\Templates\UsernamesPasswordFile file.
2. Locate the following line in the file.
   ```xml```
   ```
   @GetTextValue("saveCredentialsId")->labelKey: "ExplicitFormsCommon:SaveCredentialsLabel", initiallyChecked: ControlValue("SaveCredentials")
   ```
3. Comment the statement by removing the leading and trailing @* and trailing *@, as shown below.
   ```xml```
   ```
   @GetTextValue("saveCredentialsId")->labelKey: "ExplicitFormsCommon:SaveCredentialsLabel", initiallyChecked: ControlValue("SaveCredentials")
   ```
4. To modify the title text, use a text editor to open the ExplicitAuth.tfrm file for the authentication service, which is typically located in the C:\inetpub\wwwroot\Citrix\Authentication\App_Data\resources\ExplicitAuth.resx file when it was created.

When Citrix Receiver users log on to a store, no title text is displayed on the logon dialog box, by default. You can display the default text “Please log on” or compose your own custom message. To display and customize the title text on the Citrix Receiver logon dialog box, you edit the files for the authentication service.

**Important:**

In multiple-server deployments, use only one server at a time to make changes to the configuration of the server group. Ensure that the Citrix StoreFront management console is not running on any of the other servers in the deployment. Once complete, propagate your configuration changes to the server group so that the other servers in the deployment are updated.

1. Use a text editor to open the UsernamePasswordFile file for the authentication service, which is typically located in the C:\inetpub\wwwroot\Citrix\Authentication\App_Data\Templates\UsernamesPasswordFile file.
2. Locate the following line in the file.
   ```xml```
   ```
   @GetTextValue("saveCredentialsId")->labelKey: "ExplicitFormsCommon:SaveCredentialsLabel", initiallyChecked: ControlValue("SaveCredentials")
   ```
3. Comment the statement by removing the leading and trailing @* and trailing *@, as shown below.
   ```xml```
   ```
   @GetTextValue("saveCredentialsId")->labelKey: "ExplicitFormsCommon:SaveCredentialsLabel", initiallyChecked: ControlValue("SaveCredentials")
   ```
4. To modify the title text, use a text editor to open the ExplicitAuth.tfrm file for the authentication service, which is typically located in the C:\inetpub\wwwroot\Citrix\Authentication\App_Data\resources\ExplicitAuth.resx file when it was created.

Warning

Using Registry Editor incorrectly can cause serious problems that can require you to reinstall the operating system. Citrix cannot guarantee that problems resulting from incorrect use of Registry Editor can be solved. Use Registry Editor at your own risk. Make sure you back up the registry before you edit it.

By default, Citrix Receiver for Windows stores users' passwords when they log on to StoreFront stores. To prevent Citrix Receiver for Windows, but not Citrix Receiver for Windows Enterprise, from caching users' passwords, you edit the files for the authentication service.

**Important:**

In multiple-server deployments, use only one server at a time to make changes to the configuration of the server group. Ensure that the Citrix StoreFront management console is not running on any of the other servers in the deployment. Once complete, propagate your configuration changes to the server group so that the other servers in the deployment are updated.

1. Use a text editor to open the UsernamesPasswordFile file for the authentication service, which is typically located in the C:\inetpub\wwwroot\Citrix\Authentication\App_Data\Templates\UsernamesPasswordFile file.
2. Locate the following line in the file.
   ```xml```
   ```
   @SaveCredential(id: @GetTextValue("saveCredentialsId"), labelKey: "ExplicitFormsCommon:SaveCredentialsLabel", initiallyChecked: ControlValue("SaveCredentials"))
   ```
3. Comment the statement by removing the leading and trailing @* and trailing *@, as shown below.
   ```xml```
   ```
   @GetTextValue("saveCredentialsId"), labelKey: "ExplicitFormsCommon:SaveCredentialsLabel", initiallyChecked: ControlValue("SaveCredentials"))
   ```
4. To modify the title text, use a text editor to open the ExplicitAuthLanguageCode.resx file, which is typically located in the C:\inetpub\wwwroot\Citrix\Authentication\App_Data\resources\ExplicitAuthLanguageCode.resx file when it was created.

By default, Citrix Receiver for Windows automatically populated the last username entered. To suppress population of the username field, edit the registry on the user device:

1. Create a REG_SZ value HKLM\SOFTWARE\Citrix\AuthManager\RememberUsername. Set its value "false".

To improve performance when some of the servers providing resources become unavailable, StoreFront temporarily bypasses servers that fail to respond. While a server is being bypassed, StoreFront ignores that server and does not use it to access resources. Use these parameters to specify the duration of the bypass behavior:

- **bypassDuration** specifies the time in minutes that StoreFront bypasses an individual server after a failed attempt to contact that server. The default is 60 minutes.
- **allFailedBypassDuration** specifies a reduced duration in minutes that StoreFront uses instead of bypassDuration if all servers for a particular Delivery Controller are being bypassed. The default is 0 minutes.

**Considerations when specifying allFailedBypassDuration**

Setting a larger allFailedBypassDuration reduces the impact of unavailability of a particular Delivery Controller; however, it has the negative effect that resources from this Delivery Controller are unavailable to users for the specified duration after a temporary network outage or server unavailability. Consider the use of larger allFailedBypassDuration values when many Delivery Controllers have been configured for a Store, particularly for nonbusiness-critical Delivery Controllers.

Setting a smaller allFailedBypassDuration increases the availability of resources served by that Delivery Controller but increases the possibility of client-side timeouts if many Delivery Controllers are configured for a store and several of them become unavailable. It is worth keeping the default 0-minute value when not many farms are configured and for business-critical Delivery Controllers.

To change the bypass parameters for a Store:

1. Use a text editor to open the web.config file for the store, which is typically located in the C:\inetpub\wwwroot\Citrix\storename\directory, where storename is the name specified for the store when it was created.
2. Locate the following element in the file:
   ```xml```
   ```
   <farmset ... enableFileTypeAssociation="on" ... >
   ```
3. Change the value of the enableFileTypeAssociation attribute to off to disable file type association for the store.
3. Change the value of the allFailedBypassDuration attribute to the maximum number of minutes that StoreFront should allow all servers from the specified Delivery Controller to be bypassed.

4. If desired, add (or update if the attribute is already present) the bypassDuration attribute to specify the number of minutes an individual server should be bypassed when StoreFront fails to contact that server.
Configure Citrix Receiver for Web sites using the configuration files

Feb 24, 2016

This article describes additional configuration tasks for Citrix Receiver for Web sites that cannot be carried out using the Citrix StoreFront management console.

Configure how resources are displayed for users

Disable the My Apps Folder View

Make Citrix Receiver installation files available on the server

Disable detection and deployment of Citrix Receiver

Stop offering provisioning files to users

Configure session duration

When both desktops and applications are available from a Citrix Receiver for Web site, separate desktop and application views are displayed by default. Users see the desktop view first when they log on to the site. If only a single desktop is available for a user, regardless of whether applications are also available from a site, that desktop starts automatically when the user logs on. To change these settings, you edit the site configuration file.

Important: In multiple server deployments, use only one server at a time to make changes to the configuration of the server group. Ensure that the Citrix StoreFront management console is not running on any of the other servers in the deployment. Once complete, propagate your configuration changes to the server group so that the other servers in the deployment are updated.

1. Use a text editor to open the web.config file for the Citrix Receiver for Web site, which is typically located in the C:\inetpub\wwwroot\Citrix\storenameWeb\ directory, where storename is the name specified for the store when it was created.

2. Locate the following element in the file.

   <uiViews showDesktopsView="true" showAppsView="true" defaultView="desktops" />

3. Change the value of the showDesktopsView and showAppsView attributes to false to prevent desktops and applications, respectively, from being displayed to users, even if they are available from the site. When both the desktop and application views are enabled, set the value of the defaultView attribute to apps to display the application view first when users log on to the site.

4. Locate the following element in the file.

   <userInterface ... autoLaunchDesktop="true" />

5. Change the value of the autoLaunchDesktop attribute to false to prevent Citrix Receiver for Web sites from automatically starting a desktop when a user logs on to the site and only a single desktop is available for that user. When the autoLaunchDesktop attribute is set to true and a user for whom only one desktop is available logs on, that user's applications are not reconnected, regardless of the workspace control configuration.

Note: To enable Citrix Receiver for Web sites to start their desktops automatically, users accessing the site through Internet Explorer must add the site to the Local intranet or Trusted sites zones.
By default, Citrix Receiver for Web displays the My Apps Folder View for unauthenticated (access for unauthenticated users) and mandatory (all published applications are available in the Home screen without users subscribing to them) stores. This view displays applications in a folder hierarchy and includes a breadcrumb path.

Important: In multiple server deployments, use only one server at a time to make changes to the configuration of the server group. Ensure that the Citrix StoreFront management console is not running on any of the other servers in the deployment. Once complete, propagate your configuration changes to the server group so that the other servers in the deployment are updated.

1. Use a text editor to open the web.config file for the Citrix Receiver for Web site, which is typically located in the C:\inetpub\wwwroot\Citrix\storenameWeb\ directory, where storename is the name specified for the store when it was created.
2. Locate the following element in the file.
   `<userInterface enableAppsFolderView="true">`
3. Change the value of the enableAppsFolderView attribute to false to disable Citrix Receiver for Web My Apps Folder View.

By default, when a user accesses a Citrix Receiver for Web site from a computer running Windows or Mac OS X, the site attempts to determine whether Citrix Receiver is installed on the user's device. If Citrix Receiver cannot be detected, the user is prompted to download and install the appropriate Citrix Receiver for their platform from the Citrix website.

If you copy Citrix Receiver for Windows and Citrix Receiver for Mac installation files to the StoreFront server, you can configure the site to provide users with these local files rather than redirecting them to the Citrix website. When Citrix Receiver installation files are available on the StoreFront server, you can also configure the site to offer users with older clients the option to upgrade to the version on the server. To configure deployment of Citrix Receiver for Windows and Citrix Receiver for Mac, you run Windows PowerShell scripts and edit the site configuration file.

Note: These changes cannot be reverted. If you are not changing other configuration settings, you may revert with the following workaround: Back up the web.config file under C:\inetpub\wwwroot\citrix\<storename> before you change the download link and restore the web.config file when you want to revert it back. Make a copy of the default setting to refer to. The StoreFront and PowerShell consoles cannot be open at the same time. Always close the StoreFront admin console before using the PowerShell console to administer your StoreFront configuration. Likewise, close all instances of PowerShell before opening the StoreFront console.

Important: In multiple server deployments, use only one server at a time to make changes to the configuration of the server group. Ensure that the Citrix StoreFront management console is not running on any of the other servers in the deployment. Once complete, propagate your configuration changes to the server group so that the other servers in the deployment are updated.

1. Copy the Citrix Receiver for Windows and Citrix Receiver for Mac installation files to \Receiver Clients\Windows\ and \Receiver Clients\Mac\ directories, respectively, in the StoreFront installation, which is typically located at C:\Program Files\Citrix\Receiver StoreFront\. You also have the option to copy Citrix Receiver installation files to the server when installing StoreFront at a command prompt. For more information, see To install StoreFront at a command prompt.
2. Using an account with local administrator permissions, start Windows PowerShell and, at a command prompt, type the following commands to update StoreFront with the Citrix Receiver installation file names.
   ```powershell
   & ""installationlocation\Scripts\UpdateWindowsReceiverLocation.ps1"
   -ClientLocation "Windows\filename.exe"
   ```
& "installationlocation\Scripts\UpdateMacOSReceiverLocation.ps1"
-ClientLocation "Mac\filename.dmg"

Where installationlocation is the directory in which StoreFront is installed, typically C:\Program Files\Citrix\Receiver
StoreFront\, and filename is the name of the Citrix Receiver installation file.

3. On the StoreFront server, use a text editor to open the web.config file for the Citrix Receiver for Web site, which is
typically located in the C:\inetpub\wwwroot\Citrix\storenameWeb\ directory, where storename is the name specified
for the store when it was created.
4. Locate the following element in the file.
   <pluginAssistant ... upgradeAtLogin="false"/>
5. Set the value of the upgradeAtLogin attribute to true to offer users with older clients the option to upgrade to the
versions available on the server.

By default, when a user accesses a Citrix Receiver for Web site from a computer running Citrix Windows or Mac OS X, the
site attempts to determine whether Citrix Receiver is installed on the user's device. If Citrix Receiver cannot be detected,
the user is prompted to download and install the appropriate Citrix Receiver for their platform from the Citrix website. To
disable detection and deployment of Citrix Receiver for Windows and Citrix Receiver for Mac for the Citrix Receiver for Web
site, you edit the site configuration file.

Important: In multiple server deployments, use only one server at a time to make changes to the configuration of the server
group. Ensure that the Citrix StoreFront management console is not running on any of the other servers in the deployment.
Once complete, propagate your configuration changes to the server group so that the other servers in the deployment are
updated.
1. Use a text editor to open the web.config file for the Citrix Receiver for Web site, which is typically located in the
   C:\inetpub\wwwroot\Citrix\storenameWeb\ directory, where storename is the name specified for the store when it was
   created.
2. Locate the following element in the file.
   <pluginAssistant enabled="true" ... />
3. Change the value of the enabled attribute to false to disable detection and deployment of Citrix Receiver for the site.

By default, Citrix Receiver for Web sites offer provisioning files that enable users to configure Citrix Receiver automatically
for the associated store. The provisioning files contain connection details for the store that provides the resources on the
site, including details of any NetScaler Gateway deployments and beacons configured for the store. To stop offering Citrix
Receiver provisioning files to users, you edit the site configuration file.

Important: In multiple server deployments, use only one server at a time to make changes to the configuration of the server
group. Ensure that the Citrix StoreFront management console is not running on any of the other servers in the deployment.
Once complete, propagate your configuration changes to the server group so that the other servers in the deployment are
updated.
1. Use a text editor to open the web.config file for the Citrix Receiver for Web site, which is typically located in the
   C:\inetpub\wwwroot\Citrix\storenameWeb\ directory, where storename is the name specified for the store when it was
   created.
2. Locate the following element in the file.
   <receiverConfiguration enabled="true" ... />
3. Change the value of the enabled attribute to false to remove from the site the option for users to download a provisioning file.

Once authenticated, users can, by default, access XenDesktop, XenApp, and App Controller resources for up to eight hours without needing to log on again. By default, user sessions on Citrix Receiver for Web sites time out after 20 minutes of inactivity. When a session times out, users can continue to use any desktops or applications that are already running, but must log on again to access Citrix Receiver for Web site functions such as subscribing to applications. To change these settings, you edit the site configuration file.

Important: In multiple server deployments, use only one server at a time to make changes to the configuration of the server group. Ensure that the Citrix StoreFront management console is not running on any of the other servers in the deployment. Once complete, propagate your configuration changes to the server group so that the other servers in the deployment are updated.

1. Use a text editor to open the web.config file for the Citrix Receiver for Web site, which is typically located in the C:\inetpub\wwwroot\Citrix\storenameWeb\ directory, where storename is the name specified for the store when it was created.

2. Locate the following element in the file.
   <authentication tokenLifeTime="08:00:00" ... />

3. Change the value of the tokenLifeTime attribute to set the time in hours, minutes, and seconds for which users, once authenticated to XenDesktop, XenApp, or App Controller can continue to use resources provided by that deployment.

4. Locate the following element in the file.
   <sessionState timeout="20" />

5. Use the timeout attribute to set the time in minutes for which a Citrix Receiver for Web site session can remain idle before the user is required to log on again to access the site.
Secure your StoreFront deployment

Aug 08, 2016

This topic highlights areas that may have an impact on system security when deploying and configuring StoreFront.

You can configure StoreFront with a restricted IIS configuration. Note that this is not the default IIS configuration.

**Filename extensions**
You can disallow unlisted file name extensions.

<table>
<thead>
<tr>
<th>StoreFront requires these file name extensions in Request Filtering:</th>
<th>. (blank ext)</th>
</tr>
</thead>
<tbody>
<tr>
<td>.appcache</td>
<td>.aspx</td>
</tr>
<tr>
<td>.cr</td>
<td>.css</td>
</tr>
<tr>
<td>.dtd</td>
<td>.gif</td>
</tr>
<tr>
<td>.htm</td>
<td>.html</td>
</tr>
<tr>
<td>.ica</td>
<td>.ico</td>
</tr>
<tr>
<td>.jpg</td>
<td>.js</td>
</tr>
<tr>
<td>.png</td>
<td>.svg</td>
</tr>
<tr>
<td>.txt</td>
<td>.xml</td>
</tr>
</tbody>
</table>

If download/upgrade of Citrix Receiver is enabled for Citrix Receiver for Web, StoreFront also requires these file name extensions:

| .dmg | .exe |

If Citrix Receiver for HTML5 is enabled, StoreFront also requires these file name extensions:

<table>
<thead>
<tr>
<th>.eot</th>
<th>.ttf</th>
</tr>
</thead>
<tbody>
<tr>
<td>.woff</td>
<td></td>
</tr>
</tbody>
</table>

StoreFront requires the following HTTP verbs in Request Filtering. You can disallow unlisted verbs.
StoreFront does not require:

- ISAPI filters
- ISAPI extensions
- CGI programs
- FastCGI programs

Important

- StoreFront requires Full Trust. Do not set the global .NET trust level to High or lower.
- StoreFront does not support a separate application pool for each site. Do not modify these site settings.

When you install StoreFront, its application pools are granted the logon right **Log on as a service** and the privileges **Adjust memory quotas for a process**, **Generate security audits**, and **Replace a process level token**. This is normal installation behavior when application pools are created.

You do not need to change these user rights. These privileges are not used by StoreFront and are automatically disabled.

StoreFront installation creates the following Windows services:

- Citrix Configuration Replication (NT SERVICE\CitrixConfigurationReplication)
- Citrix Cluster Join (NT SERVICE\CitrixClusterService)
- Citrix Peer Resolution (NT SERVICE\Citrix Peer Resolution Service)
- Citrix Credential Wallet (NT SERVICE\CitrixCredentialWallet)
- Citrix Subscriptions Store (NT SERVICE\CitrixSubscriptionsStore)
- Citrix Default Domain Services (NT SERVICE\CitrixDefaultDomainService)

These services are granted the logon right **Log on as a service** and the privileges **Adjust memory quotas for a process**, **Generate security audits**, and **Replace a process level token**.

You do not need to change these user rights. These privileges are not used by StoreFront and are automatically disabled.

If you configure StoreFront Kerberos constrained delegation for XenApp 6.5, this creates the Citrix StoreFront Protocol Transition service (NT SERVICE\SYSTEM). This service requires a privilege not normally granted to Windows services.

The StoreFront Windows services listed above in the “Configure user rights” section are configured to log on as the NETWORK SERVICE identity. The Citrix StoreFront Protocol Transition service logs on as SYSTEM. Do not change this configuration.

StoreFront installation adds the following services to the Administrators security group:
Citrix Configuration Replication (NT SERVICE\CitrixConfigurationReplication)
Citrix Cluster Join (NT SERVICE\CitrixClusterService)

These group memberships are required for StoreFront to operate correctly, to:

- Create, export, import and delete certificates, and set access permissions on them
- Read and write the Windows registry
- Add and remove Microsoft .NET Framework assemblies in the Global Assembly Cache (GAC)
- Access the folder Program Files\Citrix\<StoreFrontLocation>
- Add, modify, and remove IIS app pool identities and IIS web applications
- Add, modify, and remove local security groups and firewall rules
- Add and remove Windows services and PowerShell snap-ins
- Register Microsoft Windows Communication Framework (WCF) endpoints

In updates to StoreFront, this list of operations might change without notice.

StoreFront installation also creates the following local security groups:

- CitrixClusterMembers
- CitrixCWServiceReadUsers
- CitrixCWServiceWriteUsers
- CitrixDelegatedAuthenticatorUsers
- CitrixDelegatedDirectoryClaimFactoryUsers
- CitrixPNRSUsers
- CitrixStoreFrontPTServiceUsers
- CitrixSubscriptionServerUsers
- CitrixSubscriptionsStoreServiceUsers
- CitrixSubscriptionsSyncUsers

StoreFront maintains the membership of these security groups. They are used for access control within StoreFront, and are not applied to Windows resources such as files and folders. Do not modify these group memberships.

Server certificates

Server certificates are used for machine identification and Transport Layer Security (TLS) transport security in StoreFront. If you decide to enable ICA file signing, StoreFront can also use certificates to digitally sign ICA files.

To enable email-based account discovery for users installing Citrix Receiver on a device for the first time, you must install a valid server certificate on the StoreFront server. The full chain to the root certificate must also be valid. For the best user experience, install a certificate with a Subject or Subject Alternative Name entry of discoverReceiver.domain, where domain is the Microsoft Active Directory domain containing your users' email accounts. Although you can use a wildcard certificate for the domain containing your users' email accounts, you must first ensure that the deployment of such certificates is permitted by your corporate security policy. Other certificates for the domain containing your users' email accounts can also be used, but users will see a certificate warning dialog box when Citrix Receiver first connects to the StoreFront server. Email-based account discovery cannot be used with any other certificate identities. For more information, see Configure email-based account discovery.
If your users configure their accounts by entering store URLs directly into Citrix Receiver and do not use email-based account discovery, the certificate on the StoreFront server need only be valid for that server and have a valid chain to the root certificate.

**Token management certificates**

Authentication services and stores each require certificates for token management. StoreFront generates a self-signed certificate when an authentication service or store is created. Do not use self-signed certificates generated by StoreFront for any other purpose.

**Citrix Delivery Services certificates**

StoreFront holds a number of certificates in a custom Windows certificate store (Citrix Delivery Services). The Citrix Configuration Replication service, Citrix Credential Wallet service, and Citrix Subscriptions Store service use these certificates. Each StoreFront server in a cluster has a copy of these certificates. These services do not rely on TLS for secure communications, and these certificates are not used as TLS server certificates. These certificates are created when a StoreFront store is created or StoreFront is installed. Do not modify the contents of this Windows certificate store.

**Code signing certificates**

StoreFront includes a number of PowerShell scripts (.ps1) in the folder in `<InstallDirectory>\Scripts`. The default StoreFront installation does not use these scripts. They simplify the configuration steps for specific and infrequent tasks. These scripts are signed, allowing StoreFront to support PowerShell execution policy. We recommend the **AllSigned** policy. (The **Restricted** policy is not supported, as this prevents PowerShell scripts from executing.) StoreFront does not alter the PowerShell execution policy.

Although StoreFront does not install a code signing certificate in the Trusted Publishers store, Windows can automatically add the code signing certificate there. This happens when the PowerShell script is executed with the **Always run** option. (If you select the **Never run** option, the certificate is added to the Untrusted Certificates store, and StoreFront PowerShell scripts will not execute.) Once the code signing certificate has been added to the Trusted Publishers store, its expiration is no longer checked by Windows. You can remove this certificate from the Trusted Publishers store after the StoreFront tasks have been completed.

In a production environment, Citrix recommends using the Internet Protocol security (IPsec) or HTTPS protocols to secure data passing between StoreFront and your servers. IPsec is a set of standard extensions to the Internet Protocol that provides authenticated and encrypted communications with data integrity and replay protection. Because IPsec is a network-layer protocol set, higher level protocols can use it without modification. HTTPS uses the Secure Sockets Layer (SSL) and Transport Layer Security (TLS) protocols to provide strong data encryption.

The SSL Relay can be used to secure data traffic between StoreFront and XenApp servers. The SSL Relay is a default component of XenApp that performs host authentication and data encryption.

Citrix recommends securing communications between StoreFront and users' devices using NetScaler Gateway and HTTPS. To use HTTPS, StoreFront requires that the Microsoft Internet Information Services (IIS) instance hosting the authentication service and associated stores is configured for HTTPS. In the absence of the appropriate IIS configuration, StoreFront uses HTTP for communications. Citrix strongly recommends that you do not enable unsecured user connections to StoreFront in a production environment.
If you deploy any web applications in the same web domain (domain name and port) as StoreFront, then any security risks in those web applications could potentially reduce the security of your StoreFront deployment. Where a greater degree of security separation is required, Citrix recommends that you deploy StoreFront in a separate web domain.

StoreFront provides the option to digitally sign ICA files using a specified certificate on the server so that versions of Citrix Receiver that support this feature can verify that the file originates from a trusted source. ICA files can be signed using any hash algorithm supported by the operating system running on the StoreFront server, including SHA-1 and SHA-256. For more information, see Enable ICA file signing.

You can enable Receiver for Web site users logging on with Active Directory domain credentials to change their passwords, either at any time or only when they have expired. However, this exposes sensitive security functions to anyone who can access any of the stores that use the authentication service. If your organization has a security policy that reserves user password change functions for internal use only, ensure that none of the stores are accessible from outside your corporate network. When you create the authentication service, the default configuration prevents Receiver for Web site users from changing their passwords, even if they have expired. For more information, see Optimize the user experience.

To strengthen security, do not write customizations that load content or scripts from servers not under your control. Copy the content or script into the Citrix Receiver for Web site custom folder where you are making the customizations. If StoreFront is configured for HTTPS connections, ensure that any links to custom content or scripts also use HTTPS.
Export and import the StoreFront configuration

Feb 24, 2016

You can export the entire configuration of a StoreFront deployment. This includes both single server deployments and server group configurations. If an existing deployment is already present on the importing server, the current configuration is erased and then replaced by the configuration contained within the backup archive. If the target server is a clean factory default installation, a new deployment is created using the imported configuration stored within the backup. The exported configuration backup is in the form of a single .zip archive if unencrypted, or a .ctxzip if you choose to encrypt the backup file when it is created.

Things to consider when exporting and importing a StoreFront configuration

PowerShell credential objects used for encryption and decryption of StoreFront backups

PowerShell cmdlets

Configuration export and import examples

- Do you want to use the Host Base URL contained in the backup archive or specify a new Host Base URL to use on the importing server?
- Do you currently use any Citrix published authentication SDK examples, such as Magic Word authentication or third party authentication customizations? If so, you must install these packages on ALL importing servers BEFORE importing a configuration containing extra authentication methods. The configuration import fails if required authentication SDK packages are not installed on any of the importing servers. If importing a configuration into a server group, install the authentication packages on all members of the group.
- You can encrypt or decrypt your configuration backups. The exporting and importing PowerShell cmdlets support both use cases.
- You can decrypt encrypted backups (.ctxzip) later, but StoreFront cannot re-encrypt unencrypted backup files (.zip). If an encrypted backup is required, perform the export again using a PowerShell credential object containing a password of your choice.

A PowerShell credential object comprises both a Windows account username and a password. PowerShell credential objects ensure that your password stays protected in memory.

Note

To encrypt a configuration backup archive, you need only the password to perform encryption and decryption. The username stored within the credential object is not used. You must create a credential object containing the same password within the PowerShell sessions that is used on both the exporting and importing servers. Within the credential object you can specify any user.

PowerShell requires that you specify a user when creating a new credential object. This example code obtains only the currently logged on Windows user for convenience.
$Password = "Pa55w0rd"
$Password = $Password | ConvertTo-SecureString -asPlainText -Force
$CredObject = New-Object System.Management.Automation.PSCredential($User,$Password)

Export-STFConfiguration

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-TargetFolder</td>
<td>The export path to the backup archive. Example: &quot;$env:userprofile\desktop&quot;</td>
</tr>
<tr>
<td>-Credential</td>
<td>Specify a credential object to create an encrypted .ctxzip backup archive</td>
</tr>
<tr>
<td>-NoEncryption</td>
<td>Specify that the backup archive should be an unencrypted .zip. Do not use</td>
</tr>
<tr>
<td>-ZipFileName</td>
<td>The name for the StoreFront configuration backup archive. Do not add a file</td>
</tr>
<tr>
<td>-Force</td>
<td>This parameter automatically overwrites backup archives with the same file</td>
</tr>
</tbody>
</table>

Import-STFConfiguration

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-SiteId</td>
<td>The Site ID within IIS. This is mandatory if importing a configuration onto</td>
</tr>
<tr>
<td></td>
<td>a factory default StoreFront installation. This is typically 1 for the</td>
</tr>
<tr>
<td></td>
<td>default website in IIS where StoreFront is installed by default.</td>
</tr>
</tbody>
</table>
**Unprotect-STFConfigurationBackup**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>-ConfigurationZip (String)</strong></td>
<td>The full path to the backup archive you want to import. This should also include the file extension. Use .zip for unencrypted and .ctxzip for encrypted backup archives. Example: &quot;$env:UserProfile\desktop\backup.ctxzip&quot;</td>
</tr>
<tr>
<td><strong>-Credential (PSCredential Object)</strong></td>
<td>Specify a credential object to decrypt an encrypted backup during import. Example: $CredObject</td>
</tr>
<tr>
<td><strong>-HostBaseURL (String)</strong></td>
<td>If this parameter is included, the Host base URL you specify is used instead of the Host base URL from the exporting server. Example: &quot;https://&lt;importingserver&gt;.example.com&quot;</td>
</tr>
<tr>
<td><strong>-TargetFolder (String)</strong></td>
<td>The export path to the backup archive. Example: &quot;$env:UserProfile\desktop&quot;</td>
</tr>
<tr>
<td><strong>-Credential (PSCredential Object)</strong></td>
<td>Use this parameter to create an unencrypted copy of the encrypted backup archive. Specify the PowerShell credential object containing the password to use for decryption. Example: $CredObject</td>
</tr>
<tr>
<td><strong>-EncryptedConfigurationZip (String)</strong></td>
<td>The full path of the encrypted backup archive you want to decrypt. You must specify the file extension .ctxzip. Example: &quot;$env:UserProfile\desktop\backup.ctxzip&quot;</td>
</tr>
<tr>
<td><strong>-OutputFolder (String)</strong></td>
<td>The path to create an unencrypted copy (.zip) of the encrypted (.ctxzip) backup archive. The original encrypted copy of the backup is retained so it can be reused. Do not specify a file name and file extension for the unencrypted copy. Example: &quot;$env:UserProfile\desktop&quot;</td>
</tr>
<tr>
<td><strong>-Force (Boolean)</strong></td>
<td>This parameter automatically overwrites backup archives with the same file name as existing backup files already present in the specified export location.</td>
</tr>
</tbody>
</table>
Import the StoreFront SDK into the current PowerShell session

Open the PowerShell Integrated Scripting Environment (ISE) on the StoreFront server and run:

```
$SDKModules = 'C:\Program Files\Citrix\Receiver StoreFront\PowerShellSDK\Modules\Citrix.StoreFront'
Import-Module "$SDKModules\Citrix.StoreFront.psd1" -verbose
Import-Module "$SDKModules\Authentication\Citrix.StoreFront.Authentication.psd1" -verbose
Import-Module "$SDKModules\Roaming\Citrix.StoreFront.Roaming.psd1" -verbose
Import-Module "$SDKModules\Stores\Citrix.StoreFront.Stores.psd1" -verbose
Import-Module "$SDKModules\WebReceiver\Citrix.StoreFront.WebReceiver.psd1" -verbose
Import-Module "$SDKModules\SubscriptionsStore\Citrix.StoreFront.SubscriptionsStore.psd1" -verbose
```

Single server scenarios

Create an unencrypted backup of an existing configuration on Server A and restore it onto the same deployment.

```
Export-STFConfiguration -targetFolder "$env:userprofile\desktop\" -zipFileName "backup" -NoEncryption
Import-STFConfiguration -configurationZip "$env:userprofile\desktop\backup.zip"
```

Create an encrypted backup of an existing configuration on Server A and restore it onto the same deployment.

```
# Create a PowerShell Credential Object
$Password = "Pa55w0rd"
$Password = $Password | ConvertTo-SecureString -asPlainText -Force
$CredObject = New-Object System.Management.Automation.PSCredential($User,$Password)
Export-STFConfiguration -targetFolder "$env:userprofile\desktop\" -zipFileName "backup" -Credential $CredObject
Import-STFConfiguration -configurationZip "$env:userprofile\desktop\backup.ctxzip" -Credential $CredObject
```

Unprotect an existing encrypted backup archive

```
$Password = "Pa55w0rd"
$Password = $Password | ConvertTo-SecureString -asPlainText -Force
$CredObject = New-Object System.Management.Automation.PSCredential($User,$Password)
Unprotect-STFConfigurationExport -encryptedConfigurationZip "$env:userprofile\desktop\backup.ctxzip" -credential $CredObject -outputFolder "c:\StoreFrontBackups" -Force
```

Back up an existing configuration on Server A and restore it onto a new factory default installation on Server B

Server B is a new deployment but intended to coexist alongside Server A. Specify the `-HostBaseUrl` parameter. Server B is also a new factory default StoreFront installation. Specify the `-SiteID` parameter.

1. Create a PowerShell credential object and export an encrypted copy of the Server A configuration.
2. Create a PowerShell credential object on Server B using the same password you used to encrypt the backup.
3. Decrypt and import the Server A configuration onto Server B using both the `-SiteID` and `-HostBaseURL` parameters.

```powershell
$SiteID = 1
Import-STFConfiguration -SiteId $SiteID -configurationZip "$env:userprofile\desktop\backup.ctxzip" -Credential $CredObject -HostBaseURL "https://serverB.example.com"
```

**Back up an existing configuration on Server A and use it to overwrite an existing deployment on Server B**

Server B is an existing deployment with an outdated configuration. Use the Server A configuration to update Server B. Server B is intended to coexist alongside Server A. Specify the `-HostBaseURL` parameter. Because Server B already has an existing StoreFront deployment, the `-SiteID` parameter is not required.

1. Create a PowerShell credential object and export an encrypted copy of the Server A configuration.
2. Create a PowerShell credential object on Server B using the same password you used to encrypt the backup.
3. Decrypt and import the Server A configuration onto Server B using the `-HostBaseURL` parameter.

```powershell
Import-STFConfiguration -configurationZip "$env:userprofile\desktop\backup.ctxzip" -Credential $CredObject -HostBaseURL "https://serverB.example.com"
```

**Create a clone of an existing deployment with the same host base URL such as when upgrading to a new server OS and decommissioning an obsolete StoreFront deployment**

2012R2 Server B is a new deployment intended to replace the obsolete 2008R2 Server A. Use the HostBaseURL from within the backup archive. Do not use the `-HostBaseURL` parameter during import. Server B is also a new factory default StoreFront installation. Specify the `-SiteID` parameter.

1. Create a PowerShell credential object and export an encrypted copy of the 2008R2 Server A configuration.
2. Create a PowerShell credential object on 2012R2 Server B using the same password you used to encrypt the backup.
3. Decrypt and import the 2008R2 Server A configuration onto 2012R2 Server B without using the `-HostBaseURL` parameter.

```powershell
$SiteID = 1
Import-STFConfiguration -SiteId $SiteID -configurationZip "$env:userprofile\desktop\backup.ctxzip" -Credential $CredObject
```

**StoreFront is already deployed onto a custom website in IIS. Restore the configuration onto another custom website deployment.**

Server A has StoreFront deployed on a custom website location rather than the usual default website within IIS. The IIS SiteID for the second website created in IIS is 2. The StoreFront website’s physical path can be on another nonsystem drive such as d:\ or on the default c:\ system drive but should use an IIS SiteID greater than 1.

A new website called StoreFront has been configured within IIS, which uses `SiteID = 2`. StoreFront is already deployed on the custom website in IIS with its physical path on drive d:\inetpub\wwwrooot\.
1. Create a PowerShell credential object and export an encrypted copy of the Server A configuration.
2. On Server B, configure IIS with a new website called **StoreFront**, which also uses SiteID 2.
3. Create a PowerShell credential object on Server B using the same password you used to encrypt the backup.
4. Decrypt and import the Server A configuration onto Server B using both the **-HostBaseURL** and **-SiteID** parameters.

   ```powershell
   $SiteID = 2
   Import-STFConfiguration -SiteId $SiteID -configurationZip "$env:userprofile\desktop\backup.ctxzip" -Credential $CredObject -HostBaseURL "https://serverB.example.com"
   ```

**Server group scenarios**

**Scenario 1: Backup an existing server group configuration and restore it later onto the same server group deployment.**

A previous configuration backup was taken while only two StoreFront servers, 2012R2-A and 2012R2-B, were members of the server group. Within the backup archive is a record of the **CitrixClusterMembership** at the time the backup was taken containing only the two original servers 2012R2-A and 2012R2-B. The StoreFront server group deployment has subsequently increased in size since the original backup was taken due to business demand, so an additional node 2012R2-C has been added to the server group. The underlying StoreFront configuration of the server group held in the backup has not changed. The current CitrixClusterMembership of three servers must be maintained even if an old backup containing only the two original server group nodes is imported. During import the current cluster membership is preserved and then written back once the configuration has been successfully imported onto the primary server. The import also preserves the current CitrixClusterMembership if server group nodes were removed from the server group since the original backup was taken.
1. Export the Server Group 1 configuration from 2012R2-A, which is the primary server used to manage the entire server group.

2. Later you add an additional server, 2012R2-C to the existing server group.

3. The configuration of the server group must be restored to a known previously working state. Storefront backs up the current CitrixClusterMembership of three servers during the import process, and then restores it after the import has succeeded.

4. Import the Server Group 1 configuration back onto node 2012R2-A.

   Import-STFConfiguration -configurationZip "$env:userprofile\desktop\backup.ctxzip" -Credential $CredObject

5. Propagate the newly imported configuration to the entire server group, so all servers have a consistent configuration after import.

Scenario 2: Backup an existing configuration from Server Group 1 and use it to create a new Server Group on a different factory default installation. You can then add other new server group members to the new primary server.

Server Group 2 is created containing two new servers, 2012R2-C and 2012R2-D. The Server Group 2 configuration will be based on the configuration of an existing deployment, Server Group 1, which also contains two servers 2012R2-A and 2012R2-B. The CitrixClusterMembership contained within the backup archive is not used when creating a new server group.
The current CitrixClusterMembership is always backed up and then restored after the import is successful. When creating a new deployment using an imported configuration, the CitrixClusterMembership security group contains only the importing server until additional servers are joined to the new group. Server Group 2 is a new deployment and intended to coexist alongside Server Group 1. Specify the -HostBaseURL parameter. Server Group 2 will be created using a new factory default StoreFront installation. Specify the -SiteID parameter.

1. Export the Server Group 1 configuration from 2012R2-A, which is the primary server used to manage the entire server group.

2. Import the Server Group 1 configuration onto node 2012R2-C, which will be the primary server used to manage the newly created Server Group 2.

```powershell
$SiteID = 1
Import-STFConfiguration -SiteID $SiteID -configurationZip $env:userprofile\desktop\backup.ctxzip" -Credential $CredObject -HostBaseURL "https://servergroup2.example.com"
```

3. Join any additional servers that will be part of the new Server Group 2 deployment. Propagation of the newly imported configuration from Server Group 1 to all new members of Server Group 2 is automatic, as this forms part of the normal join process when a new server is added.

**Scenario 3:** Backup an existing configuration from Server Group A and use it to overwrite the existing Server Group B configuration.

Server Group 1 and Server Group 2 already exist in two separate data centers. Many StoreFront configuration changes are made on Server Group 1, which you should apply to Server Group 2 in the other data center. You can port the changes from Server Group 1 to Server Group 2. Do not use the `CitrixClusterMembership` within the backup archive on Server Group 2. Specify the `-HostBaseURL` parameter during import, as the Server Group 2 host base URL should not be changed to the same FQDN that is currently in use by Server Group 1. Server Group 2 is an existing deployment. The `-SiteID` parameter is **NOT** required.

1. Export the Server Group 1 configuration from 2012R2-A, which is the primary server used to manage the entire server group.

2. Import the Server Group 1 configuration onto the factory default installation on node 2012R2-C, which will be the primary server of the new Server Group 2.

```powershell
Import-STFConfiguration -configurationZip $env:userprofile\desktop\backup.ctxzip" -Credential $CredObject -HostBaseURL "https://servergroup2.example.com"
```
Citrix StoreFront provides an SDK based on a number of Microsoft Windows PowerShell version 3.0 modules. With the SDK, you can perform the same tasks as you would with the StoreFront MMC console, together with tasks you cannot do with the console alone.

- **High-level SDK Examples** - This version provides high-level SDK scripts that enable you to script and automate StoreFront deployments quickly and easily. You can tailor the high-level examples to your particular requirements enabling you to create a new deployment simply by running one script.

- **New low-level SDK** - Citrix provides a documented low-level StoreFront SDK enabling the configuration of deployments including stores, authentication methods, Citrix Receiver for Web and Unified Citrix Receiver sites, as well as remote access with NetScaler Gateway.

- **Backwards Compatibility** - StoreFront 3.0 still contains the StoreFront 3.0 and earlier APIs so existing scripts can be gradually transitioned to the new SDK.

**Important**

Backwards compatibility with StoreFront 3.0 has been maintained where possible and practicable. However, Citrix recommends when writing new scripts, use the new `Citrix.StoreFront.*` modules, as the StoreFront 3.0 SDK is deprecated and will eventually be removed.

The SDK comprises of a number of PowerShell snap-ins installed automatically by the installation wizard when you install and configure various StoreFront components.

To access and run the cmdlets:

1. Start a shell in PowerShell 3.0.
   You must run the shell or script using a member of the local administrators group on the StoreFront server.

2. To use SDK cmdlets within scripts, set the execution policy in PowerShell.
   For more information about PowerShell execution policy, see your Microsoft documentation.

3. Add the modules you require into the PowerShell environment using the `Add-Module` command in the Windows PowerShell console. For example, type:
   - `Import-Module Citrix.StoreFront`
   To import all the cmdlets, type:
   ```powershell
   Get-Module -ListAvailable | Where-Object { $_.Name.StartsWith("Citrix.StoreFront") } | Import-Module
   ```
After importing, you have access to the cmdlets and their associated help.

For an example of a typical use case, see *Get started with the SDK*.

Tip: For a complete listing of all help text for the cmdlets, see PowerShell cmdlet help at https://www.citrix.com/downloads/storefront-web-interface/betas-and-tech-previews/.

To create a script, perform the following steps:

1. Take one of the provided SDK examples installed by StoreFront into the `%ProgramFiles%\Citrix\Receiver\PowerShellSDK\Examples` folder.
2. To help you customize your own script, review the example script to understand what each part is doing. For more information, see the example use case, which explains in detail the script's actions.
3. Convert and adapt the example scripts to turn them into a script that is more consumable. To do this:
   - Use the PowerShell ISE or a similar tool to edit the script.
   - Use variables to assign values that are to be reused or modified.
   - Remove any commands that are not required.
   - Note that StoreFront cmdlets can be identified by the prefix STF.
   - Use the Get-Help cmdlet supplying the cmdlet name and -Full parameter for more information on a specific command.

Examples

**Note:** When creating a script, to ensure you always get the latest enhancements and fixes, Citrix recommends you follow the procedure described above rather than copying and pasting the example scripts.

<table>
<thead>
<tr>
<th>Examples</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;Example: Create a Simple Deployment&gt;</td>
<td>Script: creates a simple deployment with a StoreFront controller configured with a single XenDesktop server.</td>
</tr>
<tr>
<td>&lt;Example: Create a Remote Access Deployment&gt;</td>
<td>Script: builds on the previous script to add remote access to the deployment.</td>
</tr>
<tr>
<td>&lt;Example: Create a Remote Access Deployment with Optimal Launch Gateway&gt;</td>
<td>Script: builds on the previous script to add preferred optimal launch gateways for a better user experience.</td>
</tr>
<tr>
<td>&lt;Example: Create a Deployment with a Desktop Appliance Site&gt;</td>
<td>Script: creates a simple deployment configured with a Desktop Appliance site.</td>
</tr>
</tbody>
</table>

The following example shows how to create a simple deployment configured with one XenDesktop controller.

Before you begin, make sure you follow the steps detailed in *Get Stared with the SDK*. This example can be customized using the methods described to produce a script for automating StoreFront deployment.
Note: To ensure you always get the latest enhancements and fixes, Citrix recommends you follow the procedure described in this document, rather than copying and pasting the example script.

**Understand the script**

This section explains what each part of the script produced by StoreFront is doing. This will help you with the customization of your own script.

- Sets the error handling requirements and imports the required StoreFront modules. Imports are not required in newer versions of PowerShell.

```powershell
Param(
    [Parameter(Mandatory=$true)]
    [Uri]$HostbaseUrl,
    [long]$SiteId = 1,
    [ValidateSet("XenDesktop","XenApp","AppController","VDiinaBox")]
    [string]$Farmtype = "XenDesktop",
    [Parameter(Mandatory=$true)]
    [string[]]$FarmServers,
    [string]$StoreVirtualPath = "/Citrix/Store",
    [bool]$LoadbalanceServers = $false,
    [int]$Port = 80,
    [int]$SSLRelayPort = 443,
    [ValidateSet("HTTP","HTTPS","SSL")]
    [string]$TransportType = "HTTP"
)

# Import StoreFront modules. Required for versions of PowerShell earlier than 3.0 that do not support autoloading
Import-Module Citrix.StoreFront
Import-Module Citrix.StoreFront.Stores
Import-Module Citrix.StoreFront.Authentication
Import-Module Citrix.StoreFront.WebReceiver

- Automates the virtual path of the authentication and Citrix Receiver for Web services based on the $StoreVirtualPath supplied.
```
# Determine the Authentication and Receiver virtual path to use based of the Store

SauthenticationVirtualPath = "$(StoreIISPath.TrimEnd('/'))Auth"

SreceiverVirtualPath = "$(StoreVirtualPath.TrimEnd('/'))Web"

- Creates a new deployment if one is not already present in preparation for adding the required StoreFront services. `-Confirm:$false` supresses the requirement to confirm the deployment can proceed.

# Determine if the deployment already exists

SexistingDeployment = Get-STFDeployment

if(-not $existingDeployment)
{
    # Install the required StoreFront components
    Add-STFDeployment -HostBaseUrl $HostbaseUrl -SiteId $SiteId -Confirm:$false
}

elseif($existingDeployment.HostbaseUrl -eq $HostbaseUrl)
{
    # The deployment exists but it is configured to the desired hostbase url

    Write-Output "A deployment has already been created with the specified hostbase url on this server and will be used."

}
else
{
    {Write-Error "A deployment has already been created on this server with a different host base url."
    }
}

- Creates a new authentication service if one does not exist at the specified virtual path. The default authentication method of username and password is enabled.

# Determine if the authentication service at the specified virtual path exists

Sauthentication = Get-STFAuthenticationService -VirtualPath SauthenticationVirtualPath

if(-not $authentication)
{
    # Add an Authentication service using the IIS path of the Store appended with Auth

    Sauthentication = Add-STFAuthenticationService $authenticationVirtualPath
else
{
    Write-Output "An Authentication service already exists at the specified virtual path and will be used."
}

- Creates a new authentication service if one does not exist at the specified virtual path. The default authentication method of username and password is enabled.

    # Determine if the authentication service at the specified virtual path exists
    $authentication = Get-STFAuthenticationService -VirtualPath $authenticationVirtualPath
    if(-not $authentication)
    {
        # Add an Authentication service using the IIS path of the Store appended with Auth
        $authentication = Add-STFAuthenticationService $authenticationVirtualPath
    }
    else
    {
        Write-Output "An Authentication service already exists at the specified virtual path and will be used."
    }

- Creates the new store service configured with one XenDesktop controller with the servers defined in the array $XenDesktopServers at the specified virtual path if one does not already exist.

    # Determine if the store service at the specified virtual path exists
    $store = Get-STFStoreService -VirtualPath $StoreVirtualPath
    if(-not $store)
    {
        # Add a Store that uses the new Authentication service configured to publish resources from the supplied servers
        $store = Add-STFStoreService -VirtualPath $StoreVirtualPath -AuthenticationService $authentication -FarmName $Farmtype -FarmType $Farmtype -Servers $FarmServers -LoadBalance $LoadbalanceServers -Port $Port -SSLRelayPort $SSLRelayPort -TransportType $TransportType
    }
else
{
    Write-Output "A Store service already exists at the specified virtual path and will be used. Farm and servers will be appended to this store."

    # Get the number of farms configured in the store
    $farmCount = (Get-STFStoreFarmConfiguration $store).Farms.Count

    # Append the farm to the store with a unique name
    Add-STFStoreFarm -StoreService $store -FarmName "Controller$($farmCount + 1)" -FarmType $Farmtype -Servers $FarmServers -LoadBalance $LoadbalanceServers -Port $Port
    -SSLRelayPort $SSLRelayPort -TransportType $TransportType
}

- Adds a Citrix Receiver for Web service at the specified IIS virtual path to access applications published in the store created above.
  
  # Determine if the receiver service at the specified virtual path exists
  $receiver = Get-STFWebReceiverService -VirtualPath $receiverVirtualPath
  if(-not $receiver)
  {
      # Add a Receiver for Web site so users can access the applications and desktops in the published in the Store
      $receiver = Add-STFWebReceiverService -VirtualPath $receiverVirtualPath -StoreService $store
  }
  else
  {
      Write-Output "A Web Receiver service already exists at the specified virtual path and will be used."
  }

- Enables XenApp services for the store so older Citrix Receiver clients can connect to published applications.
  
  # Determine if PNA is configured for the Store service
  $storePnaSettings = Get-STFStorePna -StoreService $store
  if(-not $storePnaSettings.PnaEnabled)
  {
      # Enable XenApp services on the store and make it the default for this server
Enable-STFStorePna -StoreService $store -AllowUserPasswordChange -DefaultPnaService
}

The following example builds on the previous script to add a deployment with remote access.

Before you begin, make sure you follow the steps detailed in Get Started with the SDK. This example can be customized using the methods described to produce a script for automating StoreFront deployment.

Note: To ensure you always get the latest enhancements and fixes, Citrix recommends you follow the procedure described in this document, rather than copying and pasting the example script.

Understand the script

This section explains what each part of the script produced by StoreFront is doing. This will help you with the customization of your own script.

- Sets the error handling requirements and import the required StoreFront modules. Imports are not required in newer versions of PowerShell.

  Param(
    [Parameter(Mandatory=$true)]
    [Uri]$HostbaseUrl,
    [Parameter(Mandatory=$true)]
    [long]$SiteId = 1,
    [Parameter(Mandatory=$true)]
    [string]$Farmtype = "XenDesktop",
    [Parameter(Mandatory=$true)]
    [string[]]$FarmServers,
    [Parameter(Mandatory=$true)]
    [string]$StoreVirtualPath = "/Citrix/Store",
    [bool]$LoadbalanceServers = $false,
    [int]$Port = 80,
    [int]$SSLRelayPort = 443,
    [ValidateSet("HTTP","HTTPS","SSL")]
    [string]$TransportType = "HTTP",
    [Uri]$GatewayUrl,
    [Parameter(Mandatory=$true)]
Uri]$GatewayCallbackUrl,
[Parameter(Mandatory=$true)]
[string[]]$GatewaySTAUrls,
[string]$GatewaySubnetIP,
[Parameter(Mandatory=$true)]
[string]$GatewayName
)
Set-StrictMode -Version 2.0

# Any failure is a terminating failure.
$ErrorActionPreference = 'Stop'
$ReportErrorShowStackTrace = $true
$ReportErrorShowInnerException = $true

# Import StoreFront modules. Required for versions of PowerShell earlier than 3.0 that do not support autoloading
Import-Module Citrix.StoreFront
Import-Module Citrix.StoreFront.Stores
Import-Module Citrix.StoreFront.Roaming

● Create an internal access StoreFront deployment by calling the previous examples script. The base deployment will be extended to support remote access.

    # Create a simple deployment by invoking the SimpleDeployment example
    $scriptDirectory = Split-Path -Path $MyInvocation.MyCommand.Definition -Parent
    $scriptPath = Join-Path $scriptDirectory "SimpleDeployment.ps1"
    & $scriptPath -HostbaseUrl $HostbaseUrl -SiteId $SiteId -FarmServers $FarmServers -StoreVirtualPath $StoreVirtualPath -Farmtype $Farmtype -LoadbalanceServers $LoadbalanceServers -Port $Port -SSLRelayPort $SSLRelayPort -TransportType $TransportType

● Gets services created in the simple deployment as they need to be updated to support the remote access scenario.

    # Determine the Authentication and Receiver sites based on the Store
    $store = Get-STFStoreService -VirtualPath $StoreVirtualPath
    $authentication = Get-STFAuthenticationService -StoreService $store

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SreceiverForWeb = Get-STFWebReceiverService -StoreService $store

- Enables CitrixAGBasic on the Citrix Receiver for Web service required for remote access using NetScaler Gateway. Get the Citrix Receiver for Web CitrixAGBasic and ExplicitForms authentication method from the supported protocols.

  # Get the Citrix Receiver for Web CitrixAGBasic and ExplicitForms authentication method from the supported protocols

  # Included for demonstration purposes as the protocol name can be used directly if known

  $receiverMethods = Get-STFWebReceiverAuthenticationMethodsAvailable | Where-Object { $_ -match "Explicit" -or $_ -match "CitrixAG" }

  # Enable CitrixAGBasic in Receiver for Web (required for remote access)

  Set-STFWebReceiverService SreceiverForWeb -AuthenticationMethods $receiverMethods

- Enables CitrixAGBasic on the authentication service. This is required for remote access.

  # Get the CitrixAGBasic authentication method from the protocols installed.

  # Included for demonstration purposes as the protocol name can be used directly if known

  $citrixAGBasic = Get-STFAuthenticationProtocolsAvailable | Where-Object { $_ -match "CitrixAGBasic" }

  # Enable CitrixAGBasic in the Authentication service (required for remote access)

  Enable-STFAuthenticationServiceProtocol -AuthenticationService $authentication -Name $citrixAGBasic

- Adds a new remote access Gateway, adding the optional subnet ipaddress is supplied and registers it with the store to be accessed remotely.

  # Add a new Gateway used to access the new store remotely

  Add-STFRoamingGateway -Name "NetScaler10x" -LogonType Domain -Version Version10_0_69_4 -GatewayUrl $GatewayUrl
  -CallbackUrl $GatewayCallbackUrl -SecureTicketAuthorityUrls $GatewaySTAUrls

  # Get the new Gateway from the configuration (Add-STFRoamingGateway will return the new Gateway if -PassThru is supplied as a parameter)

  $gateway = Get-STFRoamingGateway -Name $GatewayName

  # If the gateway subnet was provided then set it on the gateway object

  if($GatewaySubnetIP)
  {
    Set-STFRoamingGateway -Gateway $gateway -SubnetIPAddress $GatewaySubnetIP
  }

  # Register the Gateway with the new Store
Register-STFStoreGateway -Gateway $gateway -StoreService $store -DefaultGateway

The following example builds on the previous script to add a deployment with optimal launch Gateway remote access.

Before you begin, make sure you follow the steps detailed in Get Started with the SDK. This example can be customized using the methods described to produce a script for automating StoreFront deployment.

Note: To ensure you always get the latest enhancements and fixes, Citrix recommends you follow the procedure described in this document, rather than copying and pasting the example script.

Understand the script

This section explains what each part of the script produced by StoreFront is doing. This will help you with the customization of your own script.

- Sets the error handling requirements and imports the required StoreFront modules. Imports are not required in newer versions of PowerShell.

```powershell
Param(
    [Parameter(Mandatory=$true)]
    [Uri]$HostbaseUrl,
    [long]$SiteId = 1,
    [string]$Farmtype = "XenDesktop",
    [Parameter(Mandatory=$true)]
    [string[]]$FarmServers,
    [string]$StoreVirtualPath = "/Citrix/Store",
    [bool]$LoadbalanceServers = $false,
    [int]$Port = 80,
    [int]$SSLRelayPort = 443,
    [ValidateSet("HTTP","HTTPS"", "SSL")]
    [string]$TransportType = "HTTP",
    [Parameter(Mandatory=$true)]
    [Uri]$GatewayUrl,
    [Parameter(Mandatory=$true)]
    [Uri]$GatewayCallbackUrl
)
Calls into the remote access deployment script to configure the basic deployment and add remote access.

# Create a remote access deployment

$scriptDirectory = Split-Path -Path $MyInvocation.MyCommand.Definition -Parent
$scriptPath = Join-Path $scriptDirectory "RemoteAccessDeployment.ps1"

& $scriptPath -HostbaseUrl $HostbaseUrl -SiteId $SiteId -FarmServers $FarmServers -StoreVirtualPath $StoreVirtualPath -Farmtype $Farmtype

-LoadbalanceServers $LoadbalanceServers -Port $Port -SSLRelayPort $SSLRelayPort -TransportType $TransportType

-GatewayUrl $GatewayUrl -GatewayCallbackUrl $GatewayCallbackUrl -GatewaySTAUrls $GatewaySTAUrls -GatewayName $GatewayName
- Adds the preferred optimal launch gateway and get it from the list of configured gateways.

  # Add a new Gateway used for remote HDX access to desktops and apps

  $gateway = Add-STFRoamingGateway -Name $OptimalGatewayName -LogonType UsedForHDXOnly -GatewayUrl $OptimalGatewayUrl -SecureTicketAuthorityUrls $OptimalGatewaySTAUrls -PassThru

- Gets the store service to use the optimal gateway, register it assigning it to launches from the farm named.

  # Get the Store configured by SimpleDeployment.ps1

  $store = Get-STFStoreService -VirtualPath $StoreVirtualPath

  # Register the Gateway with the new Store for launch against all of the farms (currently just one)

  $farmNames = @(($store.FarmsConfiguration.Farms | foreach { $_.FarmName }) -join ', ')

  Register-STFStoreOptimalLaunchGateway -Gateway $gateway -StoreService $store -FarmName $farmNames

The following example builds on the simple deployment example to add a deployment with Desktop Appliance site.

Before you begin, make sure you follow the steps detailed in Get Started with the SDK. This example can be customized using the methods described to produce a script for automating StoreFront deployment.

Note: To ensure you always get the latest enhancements and fixes, Citrix recommends you follow the procedure described in this document, rather than copying and pasting the example script.

Understand the script

This section explains what each part of the script produced by StoreFront is doing. This will help you with the customization of your own script.

- Sets the error handling requirements and import the required StoreFront modules. Imports are not required in newer versions of PowerShell.

```powershell
Param(
    [Parameter(Mandatory=$true)]
    [Uri]$HostbaseUrl,
    [long]$SiteId = 1,
    [string]$Farmtype = "XenDesktop",
    [Parameter(Mandatory=$true)]
    [string[]]$FarmServers,
    [string]$StoreVirtualPath = "/Citrix/Store",
    [bool]$LoadbalanceServers = $false,
)
```
[int]$Port = 80,
[int]$SSLRelayPort = 443,
[ValidateSet("HTTP","HTTPS","SSL")]
[string]$TransportType = "HTTP",
[Parameter(Mandatory=$true)]
[Uri]$GatewayUrl,
[Parameter(Mandatory=$true)]
[Uri]$GatewayCallbackUrl,
[Parameter(Mandatory=$true)]
[string][]$GatewaySTAUrls,
[string]$GatewaySubnetIP,
[Parameter(Mandatory=$true)]
[string]$GatewayName,
[Parameter(Mandatory=$true)]
[Uri]$OptimalGatewayUrl,
[Parameter(Mandatory=$true)]
[string][]$OptimalGatewaySTAUrls,
[Parameter(Mandatory=$true)]
[string]$OptimalGatewayName
)
Set-StrictMode -Version 2.0
# Any failure is a terminating failure.
$ErrorActionPreference = 'Stop'
$ReportErrorShowStackTrace = $true
$ReportErrorShowInnerException = $true
# Import StoreFront modules. Required for versions of PowerShell earlier than 3.0 that do not support autoloading
Import-Module Citrix.StoreFront
Import-Module Citrix.StoreFront.Stores
Import-Module Citrix.StoreFront.Roaming

- Automate a desktop appliance path based on that of the $StoreVirtualPath.
  
  $desktopApplianceVirtualPath = "$(StoreIISPath.TrimEnd('/'))Appliance"

- Calls into the simple deployment script to configure a default deployment with the required services.
  
  ```powershell
  # Create a remote access deployment
  $scriptDirectory = Split-Path -Path $MyInvocation.MyCommand.Definition -Parent
  $scriptPath = Join-Path $scriptDirectory "RemoteAccessDeployment.ps1"
  & $scriptPath -HostbaseUrl $HostbaseUrl -SiteId $SiteId -FarmServers $FarmServers -StoreVirtualPath $StoreVirtualPath -Farmtype $Farmtype
  -LoadbalanceServers $LoadbalanceServers -Port $Port -SSLRelayPort $SSLRelayPort -TransportType $TransportType
  -GatewayUrl $GatewayUrl -GatewayCallbackUrl $GatewayCallbackUrl -GatewaySTAUrls $GatewaySTAUrls -GatewayName $GatewayName
  ```

- Gets the store service to use for the Desktop Appliance site. Use the Add-STFDesktopApplianceService cmdlet to add the new site with MultiDesktop and Explicit username and password authentication.
  
  ```powershell
  $store = Get-STFStoreService -VirtualPath $StoreVirtualPath
  # Create a new Desktop Appliance site using the desktops published by the Store Service
  Add-STFDesktopApplianceService -VirtualPath $desktopApplianceVirtualPath -StoreService $store -EnableExplicit
  ```
Troubleshoot StoreFront

Feb 24, 2016

When StoreFront is installed or uninstalled, the following log files are created by the StoreFront installer in the
C:\Windows\Temp\ directory. The file names reflect the components that created them and include time stamps.

- Citrix-DeliveryServicesRoleManager-*.log—Created when StoreFront is installed interactively.
- Citrix-DeliveryServicesSetupConsole-*.log—Created when StoreFront is installed silently and when StoreFront is
  uninstalled, either interactively or silently.
- CitrixMsi-CitrixStoreFront-x64-*.log—Created when StoreFront is installed and uninstalled, either interactively or silently.

StoreFront supports Windows event logging for the authentication service, stores, and Receiver for Web sites. Any events
that are generated are written to the StoreFront application log, which can be viewed using Event Viewer under either
Application and Services Logs > Citrix Delivery Services or Windows Logs > Application. You can control the number of
duplicate log entries for a single event by editing the configuration files for the authentication service, stores, and Receiver
for Web sites.

The Citrix StoreFront management console automatically records tracing information. By default, tracing for other
operations is disabled and must be enabled manually. Logs created by Windows PowerShell commands are stored in the
\Admin\logs\ directory of the StoreFront installation, typically located at C:\Program Files\Citrix\Receiver StoreFront\. The
log file names contain command actions and subjects, along with time stamps that can be used to differentiate command
sequences.

Important: In multiple server deployments, use only one server at a time to make changes to the configuration of the server
group. Ensure that the Citrix StoreFront management console is not running on any of the other servers in the deployment.
Once complete, propagate your configuration changes to the server group so that the other servers in the deployment are
updated.

1. Use a text editor to open the web.config file for the authentication service, store, or Receiver for Web site, which are
typically located in the C:\inetpub\wwwroot\Citrix\Authentication\, C:\inetpub\wwwroot\Citrix\storename\, and
C:\inetpub\wwwroot\Citrix\storenameWeb\ directories, respectively, where storename is the name specified for the
store when it was created.

2. Locate the following element in the file.

   <logger duplicateInterval="00:01:00" duplicateLimit="10">

   By default, StoreFront is configured to limit the number of duplicate log entries to 10 per minute.

3. Change the value of the duplicateInterval attribute to the set the time period in hours, minutes, and seconds over which
duplicate log entries are monitored. Use the duplicateLimit attribute to set the number of duplicate entries that must be
logged within the specified time interval to trigger log throttling.

When log throttling is triggered, a warning message is logged to indicate that further identical log entries will be suppressed.
Once the time limit elapses, normal logging resumes and an informational message is logged indicating that duplicate log
entries are no longer being suppressed.

Caution: The StoreFront and PowerShell consoles cannot be open at the same time. Always close the StoreFront admin
console before using the PowerShell console to administer your StoreFront configuration. Likewise, close all instances of
the PowerShell before opening the StoreFront console.

1. Use an account with local administrator permissions to start Windows PowerShell and, at a command prompt, type the following commands and restart the server to enable tracing.

   ```powershell
   Set-DSTraceLevel -All -TraceLevel Verbose
   ```

   Allowed values for -TraceLevel are, in increasing levels of tracing detail: Off, Error, Warning, Info, Verbose. StoreFront automatically captures Error trace messages. Due to the large amount of data that can potentially be generated, tracing may significantly impact the performance of StoreFront, so it is recommended that the Info or Verbose levels are not used unless specifically required for troubleshooting.

   Optional arguments for the Set-DSTraceLevel cmdlet are:
   -FileCount: Specifies the number of trace files (default = 3)
   -FileSizeKb: Specifies the maximum size of each trace file (default = 1000)
   -ConfigFile <FileName>: An alternative to -All that allows a specific configuration file to be updated rather than all. For example, a -ConfigFile value of c:\inetpub\wwwroot\Citrix\<StoreName>\web.config would set tracing for the Store with the name <StoreName>.

2. To disable tracing, type the following commands and restart the server.

   ```powershell
   Set-DSTraceLevel -All -TraceLevel Off
   ```

   When tracing is enabled, tracing information is written in the \Admin\Trace\ directory of the StoreFront installation located at C:\Program Files\Citrix\Receiver StoreFront\.