SafeNet Authentication Manager

Integration Guide

Using RADIUS Protocol for Citrix NetScaler Gateway

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Third-Party Software Acknowledgement

This document is intended to help users of Gemalto products when working with third-party software, such as Citrix NetScaler Gateway.

Material from third-party software is being used solely for the purpose of making instructions clear. Screen images and content obtained from third-party software will be acknowledged as such.

Description

SafeNet Authentication Manager (SAM) is a versatile authentication solution that allows you to match the authentication method and form factor to your functional, security, and compliance requirements. Use this innovative management service to handle all authentication requests and to manage the token lifecycle.

Citrix NetScaler Gateway is a secure application and data access solution that gives IT administrators a single point for managing access control and limit actions within sessions based on both user identity and the endpoint device. New threats, risks, and vulnerabilities, as well as evolving business requirements, underscore to the need for a strong authentication approach based on multi-factor authentication.

This document describes how to:

- Deploy multi-factor authentication (MFA) options in Citrix NetScaler Gateway using SafeNet one-time password (OTP) tokens managed by SafeNet Authentication Manager.
- Configure Citrix NetScaler Gateway to work with SafeNet Authentication Manager in RADIUS mode.

It is assumed that the Citrix NetScaler Gateway environment is already configured and working with static passwords prior to implementing multi-factor authentication using SafeNet Authentication Manager, and that the SafeNet Authentication Manager OTP plug-in for Microsoft RADIUS Client was installed as part of the simplified installation mode of SAM. For more information on SafeNet Authentication Manager installation modes, refer to the *SafeNet Authentication Manager 8.2 Administrator's Guide*.

Citrix NetScaler Gateway can be configured to support multi-factor authentication in several modes. RADIUS protocol will be used for the purpose of working with SafeNet Authentication Manager.

Applicability

The information in this document applies to:

- **SafeNet Authentication Manager—**A server version of SAM that is used to deploy the solution on-premises in the organization.

Environment

The integration environment that was used in this document is based on the following software versions:

- **SafeNet Authentication Manager 8.2 HF 493—**A server version of SAM that is used to deploy the solution on-premises in the organization.
- **Citrix NetScaler Gateway—**Version 11.0

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Audience

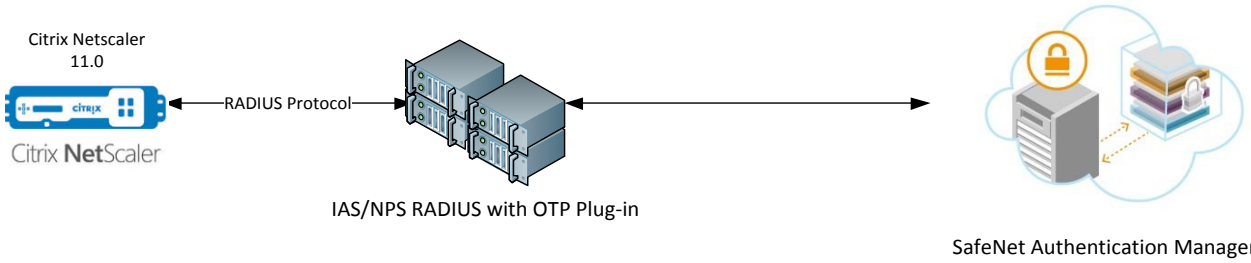
This document is targeted to system administrators who are familiar with Citrix NetScaler Gateway, and are interested in adding multi-factor authentication capabilities using SafeNet Authentication Manager (SAM).

RADIUS-based Authentication using SafeNet Authentication Manager

SafeNet's OTP architecture includes the SafeNet RADIUS server for back-end OTP authentication. This enables integration with any RADIUS-enabled gateway or application. The SafeNet RADIUS server accesses user information in the Active Directory infrastructure via SafeNet Authentication Manage (SAM).

SAM's OTP plug-in for Microsoft RADIUS Client works with Microsoft's IAS or NPS, providing strong authenticated remote access through the IAS or NPS RADIUS server.

When configured, users who access their network remotely using IAS or NPS are prompted for a token-generated OTP passcode for network authentication.

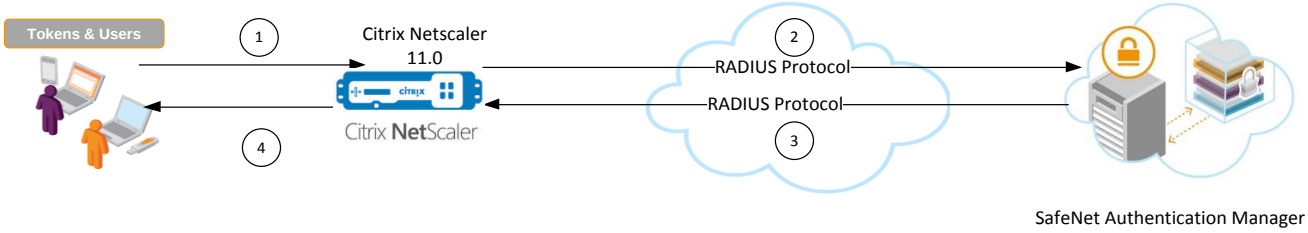


For more information on how to install and configure the SafeNet OTP plug-in for Microsoft RADIUS Client, refer to the *SafeNet Authentication Manager 8.2 Administrator`s Guide*.

RADIUS Authentication Flow using SafeNet Authentication Manager

SafeNet Authentication Manager (SAM) communicates with a large number of VPN and access-gateway solutions using the RADIUS protocol.

The image below describes the dataflow of a multi-factor authentication transaction for Citrix NetScaler Gateway.



1. A user attempts to log on to Citrix NetScaler Gateway using an OTP token.

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2. Citrix NetScaler Gateway sends a RADIUS request with the user's credentials to SafeNet Authentication Manager for validation.
3. The SAM authentication reply is sent back to Citrix NetScaler Gateway.
4. The user is granted or denied access to Citrix NetScaler Gateway based on the OTP value calculation results from SAM and is connected to Citrix NetScaler Gateway.

RADIUS Prerequisites

To enable SafeNet Authentication Manager (SAM) to receive RADIUS requests from Citrix NetScaler Gateway, ensure the following:

- End users can authenticate from the Citrix NetScaler Gateway environment with a static password before configuring the Citrix NetScaler Gateway to use RADIUS authentication.
- Ports 1812/1813 are open to and from Citrix NetScaler Gateway.
- A shared secret key has been selected. A shared secret key provides an added layer of security by supplying an indirect reference to a shared secret key. It is used by a mutual agreement between the RADIUS server and RADIUS client for encryption, decryption, and digital signatures.

Configuring SafeNet Authentication Manager

The deployment of multi-factor authentication using SafeNet Authentication Manage (SAM) with Citrix NetScaler Gateway using the RADIUS protocol requires the following:

- Synchronizing Users Stores to SafeNet Authentication Manager, page 6
- Configuring SafeNet Authentication Manager's Connector for OTP Authentication, page 7
- Assigning a Token in SafeNet Authentication Manager , page 4
- Adding Citrix NetScaler Gateway as a RADIUS Client in IAS/NPS, page 8
- Configuring SafeNet Authentication Manager's OTP Plug-In for Microsoft RADIUS Client, page 10

Synchronizing Users Stores to SafeNet Authentication Manager

SafeNet Authentication Manager (SAM) manages and maintains OTP token information in its data store, including the token status, the OTP algorithm used to generate the OTP, and the token assignment to users. For user information, SAM can be integrated with an external user store. During the design process, it is important to identify which user store the organization is using, such as Microsoft Active Directory.

If the organization is not using an external user store, SAM uses an internal ("stand-alone") user store created and maintained by the SAM server.

SAM 8.2 supports the following external user stores:

- Microsoft Active Directory 2003, 2008, and 2008 R2
- Novell eDirectory
- Microsoft ADAM/AD LDS

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- OpenLDAP
- Microsoft SQL Server 2005 and 2008
- IBM Lotus Domino
- IBM Tivoli Directory Server

Configuring SafeNet Authentication Manager's Connector for OTP Authentication

SafeNet Authentication Manager (SAM) is based on open standards architecture with configurable connectors. This supports integration with a wide range of security applications, including network logon, VPN, web access, one-time password authentication, secure email, and data encryption.

If you selected the **Simplified OTP-only** configuration, SafeNet Authentication Manager is automatically configured with a typical OTP configuration, providing a working SafeNet Authentication Manager OTP solution.

The **Simplified OTP-only** configuration is as follows:

- **Connectors**—SAM Connector for OTP Authentication is installed
- **SAM Back-end Service**—Activated on this server; scheduled to operate every 24 hours

In addition, the SAM default policy is set as follows:

- OTP support (required for OTP) is selected in the **Token Initialization** settings.
- The **SAM Connector for OTP Authentication** is set, by default, to enable enrollment of OTP tokens without requiring changes in the Token Policy Object (TPO) settings. For more information on how to install and configure the SafeNet Authentication Manager for simplified installation, refer to the *SafeNet Authentication Manager 8.2 Administrator's Guide*.

Assigning a Token in SafeNet Authentication Manager

SafeNet Authentication Manager (SAM) supports a number of OTP authentication methods that can be used as a second authentication factor for users authenticating through Citrix NetScaler Gateway.

The following tokens are supported:

- eToken PASS
- eToken NG-OTP
- SafeNet GOLD
- SMS tokens
- MobilePASS
- SafeNet eToken Virtual products
- MobilePASS Messaging
- SafeNet Mobile Authentication (iOS)
- SafeNet eToken 3400
- SafeNet eToken 3500

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Tokens can be assigned to users as follows:

- **SAM Management Center**—Management site used by SAM administrators and helpdesk personnel for token enrollment and lifecycle management.
- **SAM Self-Service Center**—Self-service site used by end users for managing their tokens.
- **SAM Remote Service**—Self-service site used by employees not on the organization's premises as a rescue website to manage cases where tokens are lost or passwords are forgotten.

For more information on SafeNet's tokens and service portals, refer to the *SafeNet Authentication Manager 8.2 Administrator's Guide*.

Adding Citrix NetScaler Gateway as a RADIUS Client in IAS/NPS

For Windows Server 2003, the Windows RADIUS service is Internet Authentication Service (IAS). The IAS is added as the RADIUS server in Citrix NetScaler Gateway.

For Windows Server 2008 and above, the Windows RADIUS service is the Microsoft Network Policy Server (NPS). The NPS server is added as the RADIUS server in Citrix NetScaler Gateway.

Citrix NetScaler Gateway must be added as a RADIUS client on the IAS/NPS server so that IAS/NPS will authorize Citrix NetScaler Gateway for authentication.

NOTE: This document assumes that IAS/NPS policies are already configured and working with static passwords prior to implementing multi-factor authentication using SafeNet Authentication Manager (SAM).

The details below refer to NPS, and are very similar to IAS.

1. Click **Start > Administrative Tools > Network Policy Server**.
2. On the Network Policy Server web console, expand **RADIUS Clients and Servers**, right-click **RADIUS Clients** and then click **New**.

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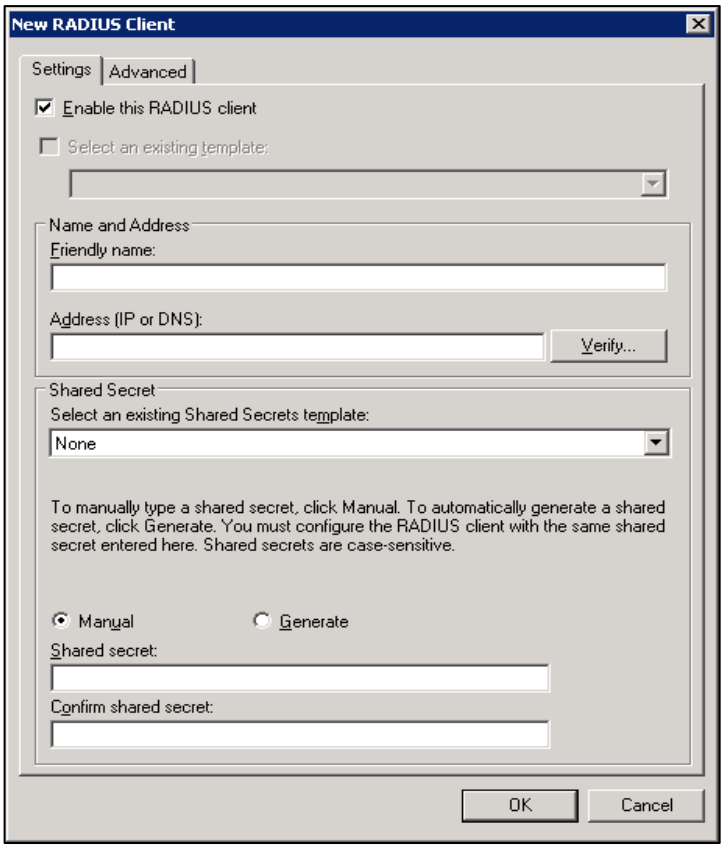
3. On the **New RADIUS Client** window, on the **Settings** tab, complete the following fields:

Enable this RADIUS client	Select this option.
Friendly name	Enter a RADIUS client name.
Address (IP or DNS)	Enter the Citrix NetScaler Gateway IP address or DNS.
Manual/Generate	Select **Manual**.
Shared secret	Enter the shared secret for the RADIUS client. This entry must match the shared secret that was used when the RADIUS server was configured in Citrix NetScaler Gateway.
Confirm shared secret	Re-enter the shared secret to confirm it.



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4. Click **OK**.

   Citrix NetScaler Gateway is added as a RADIUS client in NPS.

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Configuring SafeNet Authentication Manager's OTP Plug-In for Microsoft RADIUS Client

RADIUS protocol is used for authentication and authorization. The SafeNet OTP solution supports the Microsoft IAS service (used in Windows 2003) and Microsoft NPS service (used in Windows 2008 and later) as Windows services running a RADIUS server. These services may be extended by adding plug-ins for the authentication process.

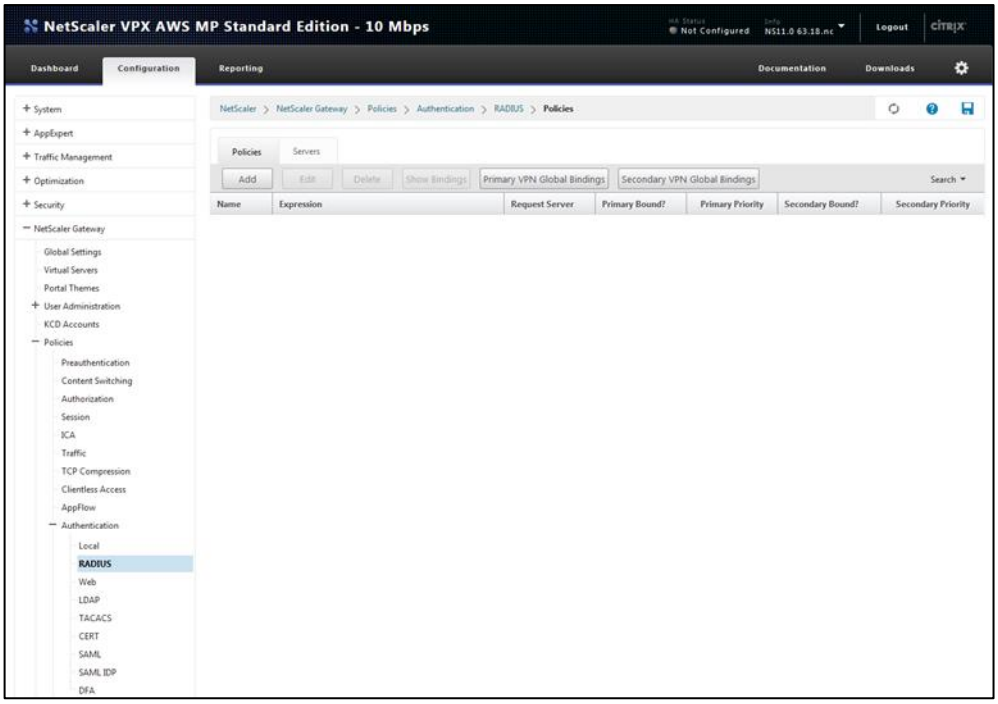
SafeNet Authentication Manager's OTP plug-in for Microsoft RADIUS Client works with Microsoft's IAS or NPS to provide strong, authenticated remote access through the IAS or NPS RADIUS server. When configured, users who access their network remotely using IAS or NPS are prompted for a token-generated OTP passcode for network authentication.

For more information on how to install and configure the SafeNet Authentication Manager OTP plug-in, refer to the *SafeNet Authentication Manager 8.2 Administrator's Guide*.

Configuring Citrix NetScaler Gateway

Configure the Citrix NetScaler Access Gateway to use RADIUS protocol as a secondary authentication method.

1. Log in to the Citrix NetScaler administrator console.
2. On the Citrix NetScaler administrator console, on the **Configuration** tab, perform the following steps:
   a. In the left pane, click **NetScaler Gateway** > **Policies** > **Authentication** > **RADIUS**.
   b. In the right pane, on the **Servers** tab, click **Add**.



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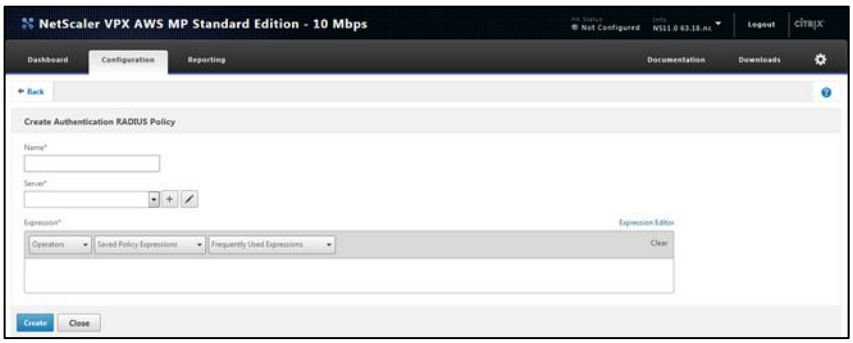
3. On the **Create Authentication RADIUS Policy** window, in the **Name** field, enter a name for the policy.



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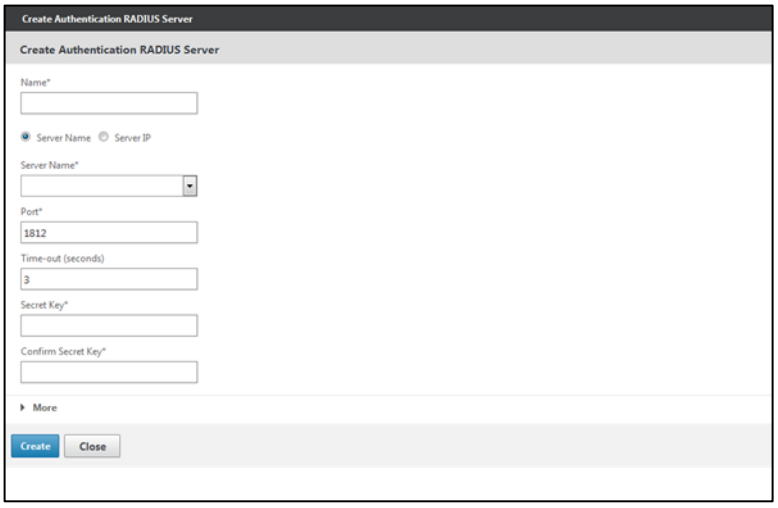
4. In the **Server** field, click the + icon.
5. On the **Create Authentication RADIUS Server** window, complete the following fields, and then click **Create**.

Name	Enter a name for the server.
Server Name/Server IP	Select an option, according to your preferred configuration.
Server Name	Enter the name or IP address of the server, depending on the option selected in the previous field.
Secret Key	Enter the shared secret.
Confirm Secret Key	Re-enter the shared secret.



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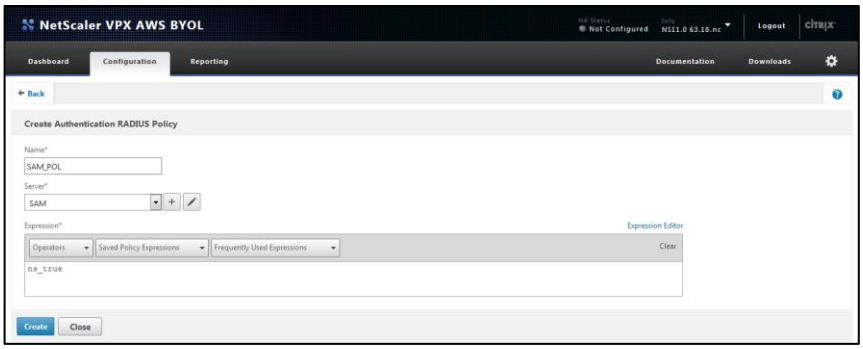
6. On the **Create Authentication RADIUS Policy** window, under **Expression**, click **Saved Policy Expressions**, and then select **ns_true**.



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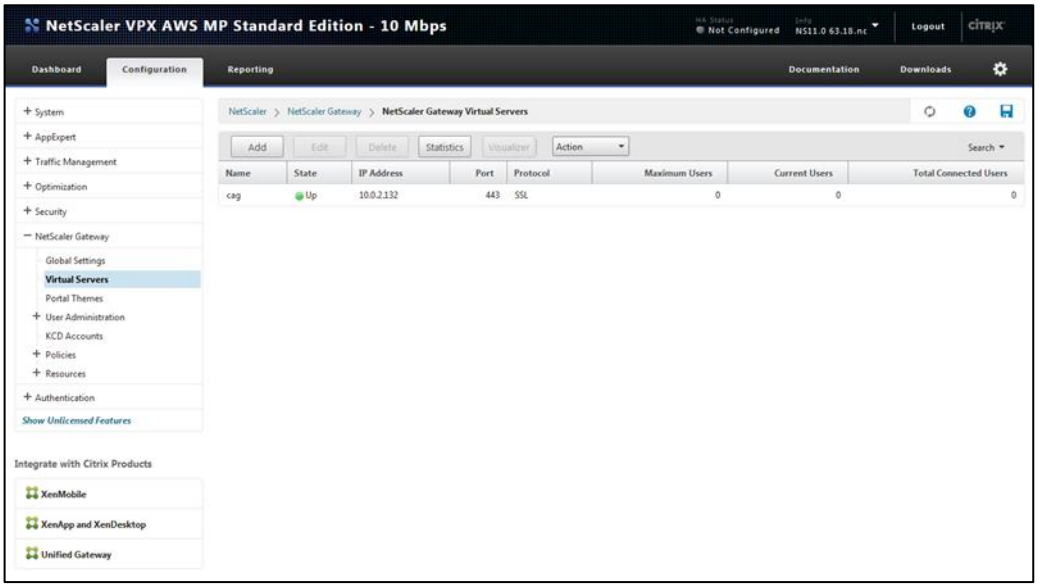
7. Click **Create**.

Now you need to bind the RADIUS authentication to the virtual server.

8. On the **Configuration** tab, in the left pane, click **NetScaler Gateway** > **Virtual Servers**.



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9. In the right pane, select the gateway you created (for example, **cag**), and then click **Edit**.

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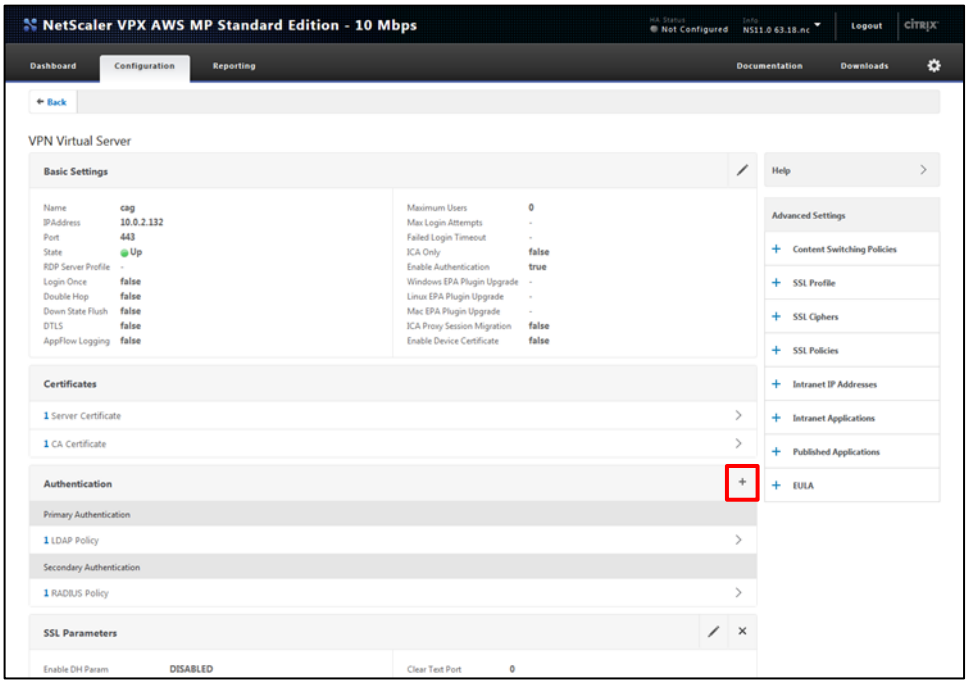
10. On the **VPN Virtual Server** Window, under **Authentication**, click the + icon.



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11. On the **Choose Type** window, under **Policies**, complete the following fields, and then click **Continue**.

Choose Policy	Select **RADIUS**.
Choose Type	Select **Secondary**.

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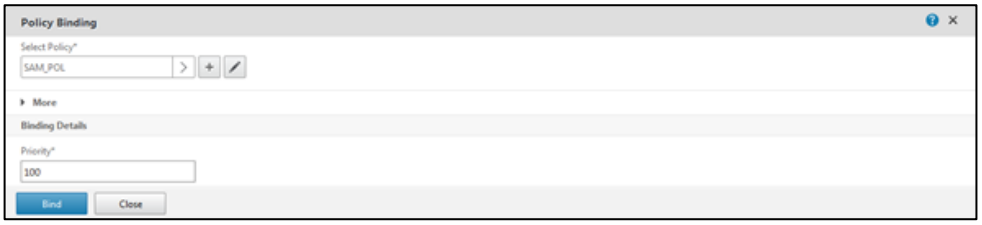
12. Under **Policy Binding**, in the **Select Policy** field, select the RADIUS policy that you created earlier in step 3, and then click **Bind**.



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13. Click **Done**.

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Running the Solution

After Citrix NetScaler Gateway is configured to use RADIUS with SafeNet Authentication Manager (SAM), you can log in to the NetScaler portal.

1. In a web browser, open the Citrix NetScaler Access Gateway login page.
2. On the Citrix NetScaler Access Gateway login page, enter your LDAP credentials and the OTP code, and then click **Log On**.

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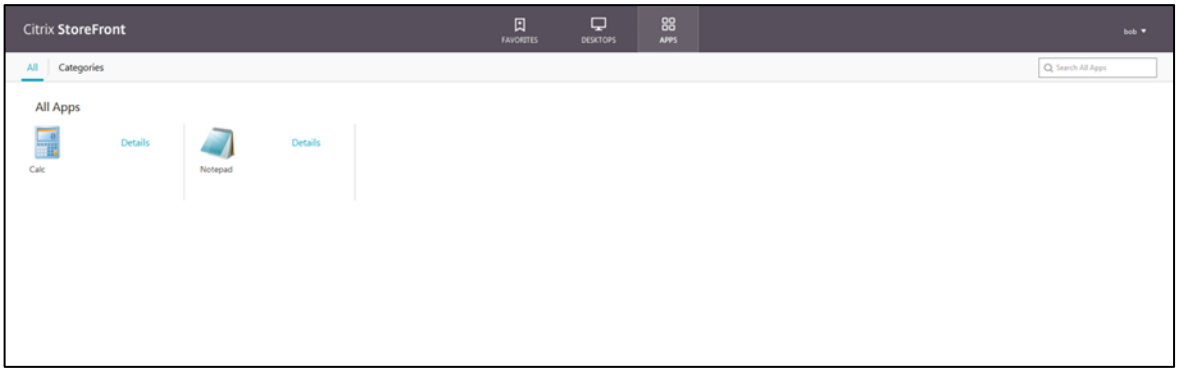
3. After a successful authentication, you will be redirected to access Citrix StoreFront.



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