SafeNet Authentication Service
Integration Guide

Using RADIUS Protocol for Blue Coat ProxySG
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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 Blue Coat ProxySG.

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 Service delivers a fully automated, versatile, and strong authentication-as-a-service solution.

With no infrastructure required, SafeNet Authentication Service provides smooth management processes and highly flexible security policies, token choice, and integration APIs.

The Blue Coat ProxySG appliances provide complete control over all of your web traffic, delivering world-class threat protection. Robust features include user authentication, web filtering, data loss prevention, inspection, and visibility of SSL-encrypted traffic (including the ability to stream decrypted content to an external server with an Encrypted Tap license), content caching, bandwidth management, stream-splitting, and more.

The Blue Coat Secure Web Gateway Virtual Appliance (SWG VA) combines the market-leading security capabilities of Blue Coat ProxySG with the flexibility of virtualization to provide a cost-effective enterprise branch office solution. With the Blue Coat SWG VA, businesses can support web security and other critical remote office infrastructure on a common platform, reducing costs and IT resource requirements.

This document describes how to:

- Deploy multi-factor authentication (MFA) options in Blue Coat ProxySG using SafeNet one-time password (OTP) authenticators managed by SafeNet Authentication Service.
- Configure Blue Coat ProxySG to work with SafeNet Authentication Service in RADIUS mode.

It is assumed that the Blue Coat ProxySG environment is already configured and working with static passwords prior to implementing multi-factor authentication using SafeNet Authentication Service.

Blue Coat ProxySG can be configured to support multi-factor authentication in several modes. The RADIUS protocol will be used for the purpose of working with SafeNet Authentication Service.

Applicability

The information in this document applies to:

- **SafeNet Authentication Service (SAS)**—SafeNet’s cloud-based authentication service
- **SafeNet Authentication Service – Service Provider Edition (SAS-SPE)**—A server version that is used by service providers to deploy instances of SafeNet Authentication Service
- **SafeNet Authentication Service – Private Cloud Edition (SAS-PCE)**—A server version 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 Service (SAS)**—SafeNet’s cloud-based authentication service
- **Blue Coat ProxySG** (Virtual Appliance)—Model No. VA-100
- **Blue Coat ProxySG** (Software)—Version SGOS 6.5.6.4 SWG Edition

Audience

This document is targeted to system administrators who are familiar with Blue Coat ProxySG, and are interested in adding multi-factor authentication capabilities using SafeNet Authentication Service.

RADIUS-based Authentication using SAS Cloud

SAS Cloud provides two RADIUS mode topologies:

- **SAS cloud hosted RADIUS service**—A RADIUS service that is already implemented in the SAS cloud environment and can be used without any installation or configuration requirements.

- **Local RADIUS hosted on-premises**—A RADIUS agent that is implemented in the existing customer’s RADIUS environment. The agent forwards the RADIUS authentication requests to the SAS cloud environment. The RADIUS agent can be implemented on a Microsoft NPS/IAS or FreeRADIUS server.

This document demonstrates the solution using the SAS cloud hosted RADIUS service.

For more information on how to install and configure SAS Agent for IAS/NPS, refer to: http://www2.safenet-inc.com/sas/implementation-guides/sfnt-updates/SAS-Agents-IASNPS.pdf

For more details on how to install and configure FreeRADIUS, refer to the *SafeNet Authentication Service FreeRADIUS Agent Configuration Guide*. 
RADIUS-based Authentication using SAS-SPE and SAS-PCE

For both on-premises versions, SAS can be integrated with the following solutions that serve as local RADIUS servers:

- **Microsoft Network Policy Server (MS-NPS)** or the legacy **Microsoft Internet Authentication Service (MS-IAS)**—SafeNet Authentication Service is integrated with the local RADIUS servers using a special on-premises agent called SAS Agent for Microsoft IAS and NPS.
  
  For more information on how to install and configure the SAS Agent for Microsoft IAS and NPS, refer to the following document:
  

- **FreeRADIUS**—The SAS FreeRADIUS Agent is a strong authentication agent that is able to communicate with SAS through the RADIUS protocol.
  
  For more information on how to install and configure the SAS FreeRADIUS Agent, refer to the SafeNet Support Portal.

RADIUS Authentication Flow using SAS

SafeNet Authentication Service 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 Blue Coat ProxySG:

1. A user attempts to connect to the Content Server or Web Application (HTTPS) through Blue Coat ProxySG.
2. Blue Coat ProxySG sends a RADIUS request with the user’s credentials to SafeNet Authentication Service for validation.
3. The SAS authentication reply is sent back to Blue Coat ProxySG.
4. After successful user authentication based on the OTP value calculation results from SAS, ProxySG checks the internal cache for the requested content.
5. If the requested content is not available in the cache, ProxySG retrieves the contents from the web server.
6. ProxySG immediately stores the requested content to the cache, and delivers accelerated content to the user.
RADIUS Prerequisites

To enable SafeNet Authentication Service to receive RADIUS requests from Blue Coat ProxySG, ensure the following:

- End users can authenticate from the Blue Coat ProxySG environment with a static password before configuring Blue Coat ProxySG to use RADIUS authentication.
- Ports 1812/1813 are open to and from Blue Coat ProxySG.
- 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.
- Blue Coat ProxySG virtual appliance should be configured as a reverse proxy with HTTPS services.

Configuring SafeNet Authentication Service

The deployment of multi-factor authentication using SAS with Blue Coat ProxySG using RADIUS protocol requires the following:

- Creating Users Stores in SAS, page 7
- Assigning an Authenticator in SAS, page 8
- Adding Blue Coat ProxySG as an Authentication Node in SAS, page 9
- Checking the SAS RADIUS Address, page 11

Creating Users Stores in SAS

Before SAS can authenticate any user in your organization, you need to create a user store in SAS that reflects the users that would need to use multi-factor authentication. User records are created in the SAS user store using one of the following methods:

- Manually, one user at a time, using the Create User shortcut
- Manually, by importing one or more user records via a flat file
- Automatically, by synchronizing with your Active Directory / LDAP server using the SAS Synchronization Agent

For additional details on importing users to SafeNet Authentication Service, refer to “Creating Users” in the SafeNet Authentication Service Subscriber Account Operator Guide:


All SafeNet Authentication Service documentation can be found on the SafeNet Knowledge Base site.
Assigning an Authenticator in SAS

SAS supports a number of authentication methods that can be used as a second authentication factor for users who are authenticating through Blue Coat ProxySG.

The following authenticators are supported:

- eToken PASS
- RB-1 Keypad Token
- KT-4 Token
- SafeNet GOLD
- SMS Token
- MP-1 Software Token
- MobilePASS

Authenticators can be assigned to users in two ways:

- **Manual provisioning**—Assign an authenticator to users one at a time.
- **Provisioning rules**—The administrator can set provisioning rules in SAS so that the rules will be triggered when group memberships and other user attributes change. An authenticator will be assigned automatically to the user.

Refer to “Provisioning Rules” in the *SafeNet Authentication Service Subscriber Account Operator Guide* to learn how to provision the different authentication methods to the users in the SAS user store.

Adding Blue Coat ProxySG as an Authentication Node in SAS

Add a RADIUS entry in the SAS Auth Nodes module to prepare it to receive RADIUS authentication requests from Blue Coat ProxySG. You will need the IP address of Blue Coat ProxySG and the shared secret to be used by both SAS and Blue Coat ProxySG.

1. Log in to the SAS console with an Operator account.

2. Click the COMMS tab, and then select Auth Nodes.
3. In the **Auth Nodes** module, click the **Auth Nodes** link.

4. Under **Auth Nodes**, click **Add**.

5. In the **Add Auth Nodes** section, complete the following fields, and then click **Save**:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agent Description</td>
<td>Enter a host description.</td>
</tr>
<tr>
<td>Host Name</td>
<td>Enter the name of the host that will authenticate with SAS.</td>
</tr>
<tr>
<td>Low IP Address in Range</td>
<td>Enter the IP address of the host that will authenticate with SAS.</td>
</tr>
<tr>
<td>Configure FreeRADIUS Synchronization</td>
<td>Select this option.</td>
</tr>
<tr>
<td>Shared Secret</td>
<td>Enter the shared secret key.</td>
</tr>
<tr>
<td>Confirm Shared Secret</td>
<td>Re-enter the shared secret key.</td>
</tr>
</tbody>
</table>

The authentication node is added to the system.
Checking the SAS RADIUS Address

Before adding SAS as a RADIUS server in Blue Coat ProxySG, check its IP address. The IP address will then be added to Blue Coat ProxySG as a RADIUS server at a later stage.

1. Log in to the SAS console with an Operator account.

2. Click the COMMS tab, and then select Auth Nodes.

3. In the Auth Nodes module, click the Auth Nodes link. The SAS RADIUS server details are displayed.
Configuring Blue Coat ProxySG

Configuring Blue Coat ProxySG requires the following:

- Creating a RADIUS Authentication Realm, page 12
- Configuring RADIUS Realm Properties, page 14
- Configuring RADIUS Realm General Properties, page 15
- Configuring an Authentication Policy, page 16

Creating a RADIUS Authentication Realm

1. In a web browser, open the following URL and log in as an administrator:
   https://<ProxySG_IP_Address>:8082
   where ProxySG_IP_Address is the IP address of the ProxySG virtual appliance, and 8082 is the default management port.

2. On the Blue Coat Management Console window, click the Configuration tab, and then in the left pane, click Authentication > RADIUS.

3. In the right pane, on the RADIUS Realms tab, click New.

(The screen image above is from Blue Coat® software. Trademarks are the property of their respective owners.)
4. On the **Add RADIUS Realm** window, complete the following fields, and then click **OK**.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Realm name</strong></td>
<td>Enter a valid name for the new RADIUS realm (for example, SAS_RADIUS).</td>
</tr>
<tr>
<td><strong>Primary server host</strong></td>
<td>Enter the IP address of the SAS RADIUS server.</td>
</tr>
<tr>
<td><strong>Port</strong></td>
<td>Do not change this field.</td>
</tr>
<tr>
<td><strong>Secret</strong></td>
<td>Enter the shared RADIUS secret.</td>
</tr>
<tr>
<td><strong>Confirm secret</strong></td>
<td>Enter the shared RADIUS secret again.</td>
</tr>
</tbody>
</table>

(The screen image above is from Blue Coat® software. Trademarks are the property of their respective owners.)

5. Click **Apply**.

(The screen image above is from Blue Coat® software. Trademarks are the property of their respective owners.)

6. Click **OK**.

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Configuring RADIUS Realm Properties

After you have created the RADIUS realm, you can change the primary host, port, and secret of the RADIUS server for that realm.

1. On the Blue Coat Management Console window, click the Configuration tab, and then in the left pane, click Authentication > RADIUS.

   ![Image of Blue Coat Management Console](image)

   (The screen image above is from Blue Coat® software. Trademarks are the property of their respective owners.)

2. In the right pane, on the RADIUS Servers tab, complete the following fields, and then click Apply.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Realm name</td>
<td>Select the RADIUS realm that you created on page 12 (for example, SAS_RADIUS).</td>
</tr>
<tr>
<td>Primary Server Host / Port</td>
<td>Verify the Host and Port values, and edit them if necessary. The Host field contains the IP address of the SAS RADIUS server. Similarly, the Port field contains the port number of the RADIUS server.</td>
</tr>
<tr>
<td>Alternate Server Host / Port</td>
<td>Specify the IP address and port number of an alternate server, if necessary.</td>
</tr>
<tr>
<td>RADIUS Specific Settings</td>
<td>Do not change these settings.</td>
</tr>
</tbody>
</table>

   ![Image of RADIUS Servers tab](image)

   (The screen image above is from Blue Coat® software. Trademarks are the property of their respective owners.)
3. Click **OK**.

![Changes Done Successfully](image1)

(The screen image above is from Blue Coat® software. Trademarks are the property of their respective owners.)

### Configuring RADIUS Realm General Properties

1. On the **Blue Coat Management Console** window, click the **Configuration** tab, and then in the left pane, click **Authentication > RADIUS**.

![Configuration screenshot](image2)

(The screen image above is from Blue Coat® software. Trademarks are the property of their respective owners.)

2. In the right pane, on the **RADIUS General** tab, complete the following fields, and then click **Apply**.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Realm name</td>
<td>Select the RADIUS realm that you created on page 12 (for example, SAS_RADIUS).</td>
</tr>
<tr>
<td>Display name</td>
<td>(Optional) Modify the RADIUS realm display name. The default display name is the realm name.</td>
</tr>
<tr>
<td>Virtual URL</td>
<td>Enter the virtual URL configured for reverse proxy setup.</td>
</tr>
</tbody>
</table>

![RADIUS General settings](image3)

(The screen image above is from Blue Coat® software. Trademarks are the property of their respective owners.)
3. Click OK.

![Changes Done Successfully](image)

(The screen image above is from Blue Coat® software. Trademarks are the property of their respective owners.)

**Configuring an Authentication Policy**

With an authentication realm configured, now configure a policy on the ProxySG appliance to authenticate, log, and control user access to the web server.

The sections below explain about setting up rules to authenticate users, restrict access for specific users and groups, and deny all other access to the web server.

**Creating the Web Authentication Layer**

1. On the Blue Coat Management Console window, click the **Configuration** tab, and in the left pane, click **Policy > Visual Policy Manager**.

![Visualization of the Management Console](image)

(The screen image above is from Blue Coat® software. Trademarks are the property of their respective owners.)

2. In the right pane, click **Launch**.

3. On the **Visual Policy Manager** window, click **Policy**, and then select **Add Web Authentication Layer**.

![Add Web Authentication Layer](image)

(The screen image above is from Blue Coat® software. Trademarks are the property of their respective owners.)
4. On the **Add new Layer** window, enter a descriptive name for the Web Authentication Layer, and then click **OK**.

![Add New Layer](image1.png)

*(The screen image above is from Blue Coat® software. Trademarks are the property of their respective owners.)*

5. Right-click on the **Action** column of the default rule, and then click **Set**.

![Set Action](image2.png)

*(The screen image above is from Blue Coat® software. Trademarks are the property of their respective owners.)*

6. On the **Set Action Object** window, click **New**, and then select **Authenticate**.

![Set Action Object](image3.png)

*(The screen image above is from Blue Coat® software. Trademarks are the property of their respective owners.)*
7. On the **Add Authenticate Object** window, complete the following fields, and then click **OK**.

<table>
<thead>
<tr>
<th>Name</th>
<th>Enter the name of the Authenticate Object (for example, <strong>Authenticate</strong>).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Realm</td>
<td>Select the RADIUS realm that you created on page 12 (for example, <strong>SAS_RADIUS</strong>).</td>
</tr>
<tr>
<td>Mode</td>
<td>Select <strong>Form Cookie Redirect</strong>.</td>
</tr>
<tr>
<td>Authentication Form</td>
<td>Select <strong>authentication_form</strong>.</td>
</tr>
<tr>
<td>New PIN Form</td>
<td>Select <strong>new_pin_form</strong>.</td>
</tr>
<tr>
<td>Query Form</td>
<td>Select <strong>query_form</strong>.</td>
</tr>
</tbody>
</table>

![Add Authenticate Object window](image)

(The screen image above is from Blue Coat® software. Trademarks are the property of their respective owners.)

8. On the **Set Action Object** window, click **OK**.

![Set Action Object window](image)

(The screen image above is from Blue Coat® software. Trademarks are the property of their respective owners.)
Creating a Web Access Rule

Create a policy rule that enables the ProxySG appliance to grant users access to the network.

1. On the Blue Coat Management Console window, click the Configuration tab, and in the left pane, click Policy > Visual Policy Manager.

   (The screen image above is from Blue Coat® software. Trademarks are the property of their respective owners.)

2. In the right pane, click Launch.

3. On the Visual Policy Manager window, click Policy, and then select Add Web Access Layer.

   (The screen image above is from Blue Coat® software. Trademarks are the property of their respective owners.)

4. On the Add New Layer window, enter a descriptive name for the Web Access Layer, and then click OK.

   (The screen image above is from Blue Coat® software. Trademarks are the property of their respective owners.)
5. Right-click on the **Source** column of the default rule, and then click **Set**.

(The screen image above is from Blue Coat® software. Trademarks are the property of their respective owners.)

6. On the Set **Source Object** window, select **Authenticated User**, and then click **OK**.

(The screen image above is from Blue Coat® software. Trademarks are the property of their respective owners.)
7. Right-click on the **Action** column of the default rule, and then click **Allow**. The icon in the **Action** column changes from red to green.

8. Click **Install policy**.
Running the Solution

Before running the solution, ensure that the Blue Coat ProxySG virtual appliance is configured as a reverse proxy with HTTPS service.

In this solution, the SafeNet eToken PASS is used as the enrolled OTP token.

1. Open the following URL in a web browser: https://<Virtual IP of Bluecoat>
   where Virtual IP of Bluecoat is an IP address that is configured on the ProxySG appliance.

2. You are redirected to enter the proxy credentials for the assigned realm.
   a. In the Username field, enter your user name.
   b. Generate an OTP, and enter it in the Password field.
   c. Click Submit.

Enter Proxy Credentials for Realm SAS_RADIUS

Reason for challenge: Credentials are missing.

Username: 
Password: 
Submit  Reset

After successful user authentication on SAS, you are redirected to access the web page.
Support Contacts

If you encounter a problem while installing, registering, or operating this product, please make sure that you have read the documentation. If you cannot resolve the issue, contact your supplier or Gemalto Customer Support. Gemalto Customer Support operates 24 hours a day, 7 days a week. Your level of access to this service is governed by the support plan arrangements made between Gemalto and your organization. Please consult this support plan for further information about your entitlements, including the hours when telephone support is available to you.

<table>
<thead>
<tr>
<th>Contact Method</th>
<th>Contact Information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Address</strong></td>
<td>Gemalto, Inc.</td>
</tr>
<tr>
<td></td>
<td>4690 Millennium Drive</td>
</tr>
<tr>
<td></td>
<td>Belcamp, Maryland 21017 USA</td>
</tr>
<tr>
<td><strong>Phone</strong></td>
<td>United States</td>
</tr>
<tr>
<td></td>
<td>International</td>
</tr>
<tr>
<td></td>
<td>Existing customers with a Technical Support Customer Portal account can log in to manage incidents, get the latest software upgrades, and access the Gemalto Knowledge Base.</td>
</tr>
</tbody>
</table>