



# Parallels Remote Application Server

SAML SSO Authentication Examples

17.1

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## CHAPTER 1

# Introduction

This document describes how to configure SAML 2.0 Single Sign-On (SSO) authentication in Parallels® RAS and gives step-by-step instructions on how to integrate Parallels RAS, as a SAML Service Provider (SP), with third-party identity management solutions configured as SAML Identity Providers (IdPs). IdPs covered in this document include Microsoft Azure, Okta Identity, Ping Identity, and Gemalto's Safenet. Other identity management solutions supporting SAML 2.0 SSO can also be used as IdPs with Parallels RAS.

SAML is an XML-based authentication mechanism that provides single sign-on (SSO) capability between different organizations by allowing the user authentication without sharing the local identity database. As part of the SAML SSO authentication process, the new Parallels RAS Enrollment Server communicates with Microsoft Certificate Authority (CA) to request, enroll, and manage digital certificates on behalf of the user to complete authentication without requiring the users to put in their Active Directory credentials.

Service providers and enterprises with multiple subsidiaries don't have to maintain their own internal Identity Management solutions or complex domains/forest trusts. Integrating with third-party SAML identity providers allows customers and partners to provide end users with a true SSO experience.

### In This Chapter

Parallels RAS 17 Release History..... 4

## Parallels RAS 17 Release History

The following table lists the Parallels RAS 17 release history. Parallels RAS documentation is updated for every release. This guide refers to the latest Parallels RAS 17 release from the table below. If you are using a newer Parallels RAS release or version, please download the current version of the guide from <https://www.parallels.com/products/ras/resources/>

Parallels RAS Version	Release	Date
17.0	Initial release	7/23/2019
17.1	Initial release	12/9/2019
17.1	Update 1	3/19/2020
17.1	Update 2	7/16/2020
17.1	Hotfix	9/15/2020
17.1	Update 3	3/26/2021

## CHAPTER 2

# Prerequisites

Prerequisites for using SAML SSO authentication in Parallels RAS are common to all SAML identity providers described in this guide. For complete information about system requirements and how to install and configure the necessary RAS components, please read the **SAML SSO Authentication** chapter in the **Parallels RAS Administrator's Guide**. The guide is available on the Parallels website at the following location: <https://www.parallels.com/products/ras/resources/>

## CHAPTER 3

# Azure Integration via SAML 2.0

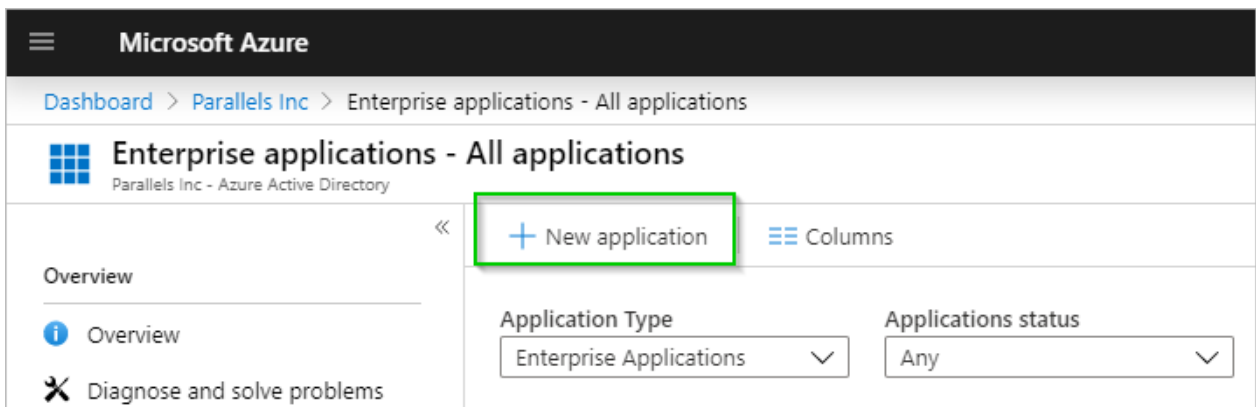
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## Create a Generic SAML Application

First you need to create a generic SAML application in Microsoft Azure as follows:

- 1 Sign in to Azure Portal.
- 2 Open the portal menu and select **Azure Active Directory**.
- 3 In the left pane, click **Enterprise applications**.
- 4 Click the **New application** button.



- 5 Select the **Non-gallery application** option, specify a name and click **Add** to create the application.

**Add an application**

Click here to try out the new and improved app gallery. →

**Add your own app**

- Application you're developing**  
Register an app you're working on to integrate it with Azure AD
- On-premises application**  
Configure Azure AD Application Proxy to enable secure remote access.
- Non-gallery application**  
Integrate any other application that you don't find in the gallery

**Add from the gallery**

Enter a name

**Featured applications**

- Box
- Concur
- Cornerstone O...
- Docusign
- Dropbox for Bu...
- G Suite
- GitHub
- Microsoft Dynamics 365
- JetBrains

**Add your own application**

Name \* ⓘ  
RAS SAML app ✓

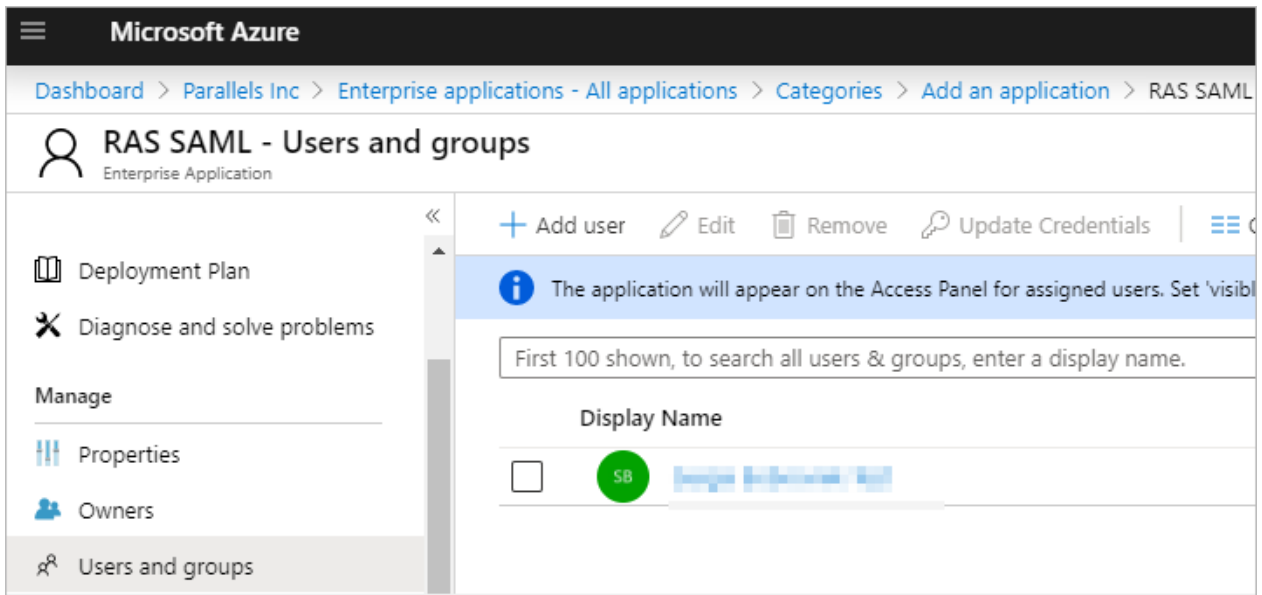
Once you decide on a name for your new application, click the "Add" button below and we'll walk you through some simple configuration steps to get the application working.

**Supports:** ⓘ

- SAML-based single sign-on  
[Learn more](#)
- Automatic User Provisioning with SCIM  
[Learn more](#)
- Password-based single sign-on  
[Learn more](#)

**Add**

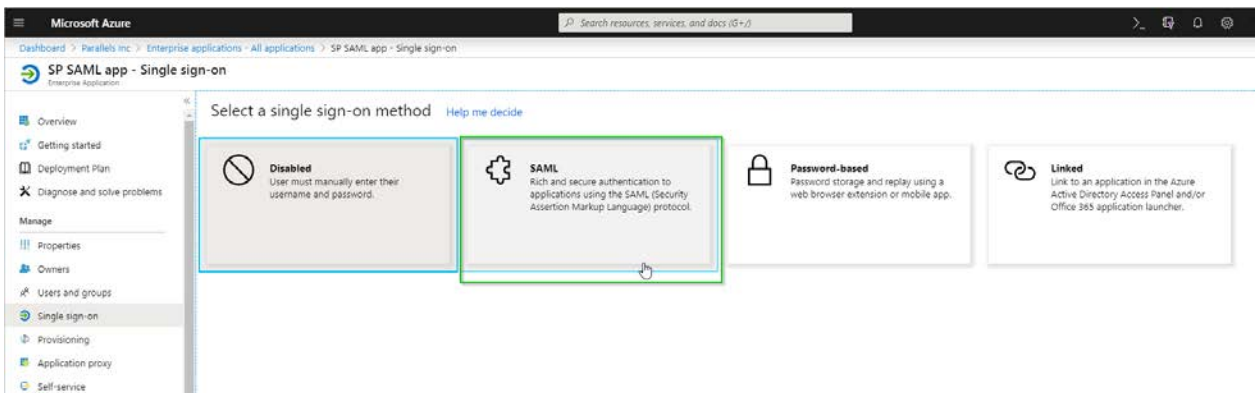
- 6 In the application blade, add users required to use SAML SSO. This can be done inside the **Users and groups** blade.



## Configure the Azure Application for Parallels RAS

To configure the Azure application to work with Parallels RAS, do the following:

- 1 In Azure Portal, click on the **SAML** application tile and switch to the **Single Sign-on** pane > **SAML**.




- 2 In section (3) **SAML Signing Certificate**, copy the **App Federation Metadata Url** value.



**Note:** For manual configuration, you can download **Certificate (Base64)** and **Federation Metadata XML** by clicking the corresponding **Download** links.

3

SAML Signing Certificate	
Status	Active
Thumbprint	138[REDACTED]
Expiration	11/11/2022, 4:18:07 PM
Notification Email	SBF[REDACTED]
App Federation Metadata Url	<a href="https://login.microsoftonline.com/[REDACTED]">https://login.microsoftonline.com/[REDACTED]</a> 
Certificate (Base64)	<a href="#">Download</a>
Certificate (Raw)	<a href="#">Download</a>
Federation Metadata XML	<a href="#">Download</a>

- 3 Open the Parallels RAS Console, navigate to **Connection > SAML** and click **Tasks > Add**.
- 4 In the **Add Identity Provider** wizard, import metadata from a file or specify its URL and choose an HTML5 Theme to associate the IdP with.

Add Identity Provider

**Parallels®**

Name:

Use with Theme:

Select a method that the wizard will use to obtain the identity provider information.

☒ Import published IdP metadata

Example: <https://www.contoso.com/metadata.xml>

☐ Import IdP metadata from file

Example: [c:\mydocuments\metadata.xml](#)

☐ Manually enter the IdP information

< Back   **Next >**   Cancel   Help

- 5 Click **Next**.

- 6 On the next page of the wizard, the **IdP certificate** and **Logon/Logout URL** fields will be automatically populated. Verify that everything is correct and click **Finish**.

**Important:** The **Allow unencrypted assertion** option must be cleared in case you did not configure assertion encryption in Azure.

The screenshot shows the 'Add Identity Provider' dialog box in the Parallels RAS Console. The dialog has a red header with the Parallels logo. It contains the following fields and controls:

- IdP entity ID:** A text box containing the URL `https://sts.windows.net/90...`.
- IdP certificate:** A text box containing the certificate string `MIIC8DCCAdigAwIBAgIQeHYINGBf9KFKM1MuV2VoFTANBgkqhkiG9w0BAQ...`.
- Logon URL:** A text box containing the URL `https://login.microsoftonline.com/90...`.
- Logout URL:** A text box containing the URL `https://login.microsoftonline.com/90...`.
- Allow unencrypted assertion:** An unchecked checkbox.
- Buttons:** At the bottom, there are four buttons: '< Back', 'Finish' (highlighted with a blue border), 'Cancel', and 'Help'.

- 7 Back in the RAS Console, right-click on the IdP provider you just created and choose **Properties**.
- 8 In the dialog that opens, select the **SP** tab.

- 9 Enter the host address. The IdP will redirect to this address, which should be accessible from the end user browser. Take note of other information displayed on this tab.

The screenshot shows the 'Add Identity Provider' dialog box with the 'SP' tab selected. The fields are as follows:

Field	Value
Host:	[Redacted]
SP entity ID:	https://[Redacted]/RASHTML5Gateway/sso/idp_1/metadata.xml
Reply URL:	https://[Redacted]/RASHTML5Gateway/sso/idp_1/assert
Login URL:	https://[Redacted]/RASHTML5Gateway/sso/idp_1/login
Logout URL:	https://[Redacted]/RASHTML5Gateway/sso/idp_1/logout
SP certificate:	-----BEGIN CERTIFICATE----- [Redacted] -----END CERTIFICATE-----

Buttons at the bottom: Copy to clipboard, Regenerate, OK, Cancel, Help.

Link: [Export SP metadata to file](#)

- 10 Switch back to the SAML application in Azure Portal. Specify the values in section **(1) Basic SAML Configuration** according to the values in the **SP** tab in the RAS Console (see above).

The screenshot shows the 'Set up Single Sign-On with SAML' page. It includes a link to the [configuration guide](#) for help integrating Parallels RAS SAML.

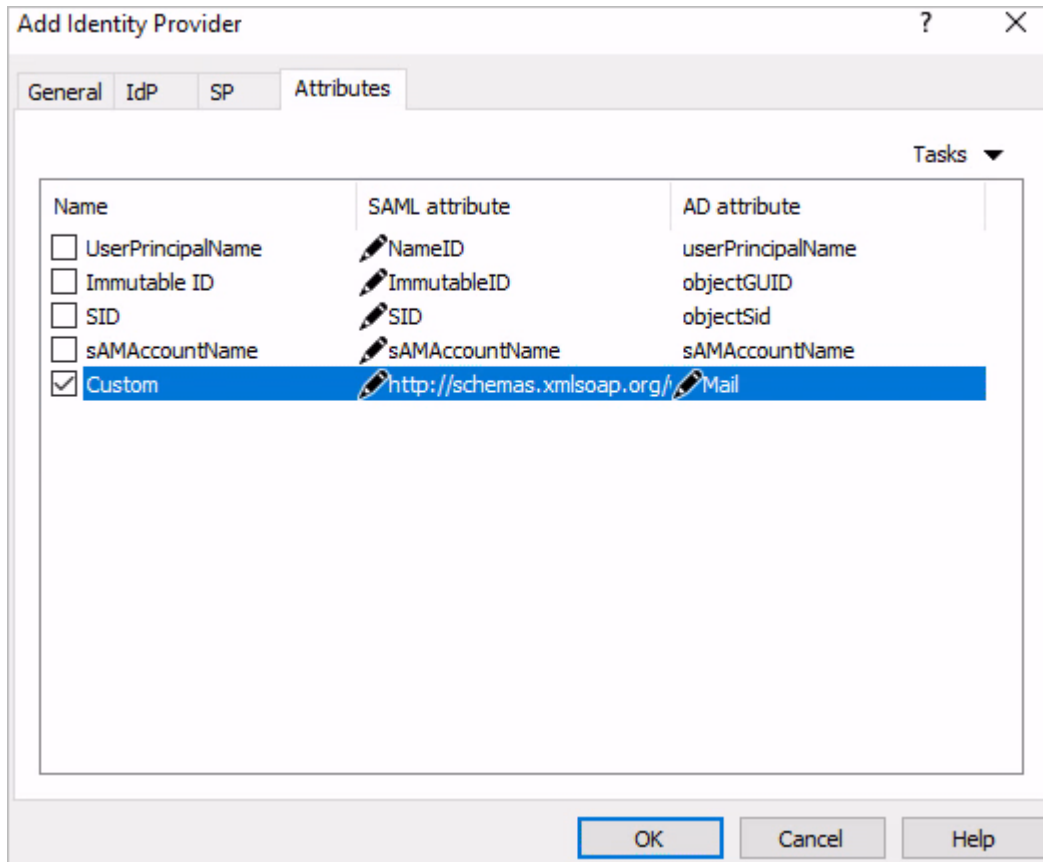
**1 Basic SAML Configuration**

Identifier (Entity ID)	https://[Redacted]/RASHTML5Gateway/sso/idp_1/metadata.xml
Reply URL (Assertion Consumer Service URL)	https://[Redacted]/RASHTML5Gateway/sso/idp_1/assert
Sign on URL	https://[Redacted]/RASHTML5Gateway/sso/idp_1/login
Relay State	Optional
Logout Url	https://[Redacted]/RASHTML5Gateway/sso/idp_1/logout

- 11** Next required step is to configure attributes to match IdP users with AD users. In this example, the custom attribute is used with the following setup:
- In Azure Portal > **SAML app** > **Single Sign-On**, open section **(2) User Attributes & Claims**.
  - From the **Claim name** list, copy the name of the **user.userprincipalname** value. Note that other custom claims can be added as required.

Additional claims	
Claim name	Value
email	user.mail
http://schemas.xmlsoap.org/ws/2005/05/identity/claims/emailaddress	user.mail
http://schemas.xmlsoap.org/ws/2005/05/identity/claims/givenname	user.givenname
http://schemas.xmlsoap.org/ws/2005/05/identity/claims/name	user.userprincipalname
http://schemas.xmlsoap.org/ws/2005/05/identity/claims/surname	user.surname

- 12** Back in the RAS Console, in the **Add Identity Provider** dialog, select the **Attributes** tab, enable the **Custom** attribute and set its value to be the claim name you copied in the previous step. Please note that this is only an example as any attribute can be used. In this particular case, we are matching the Azure login username/email (used to login to Azure) to the email address of the user configured in Active Directory.



You may also use Azure AD Connect to match users via "Immutable ID". To do so, in Active Directory, create an attribute using the following values:

- **Name:** ImmutableID
- **Source:** attribute
- **Source attribute:** user.onpremisesecurityidentifier

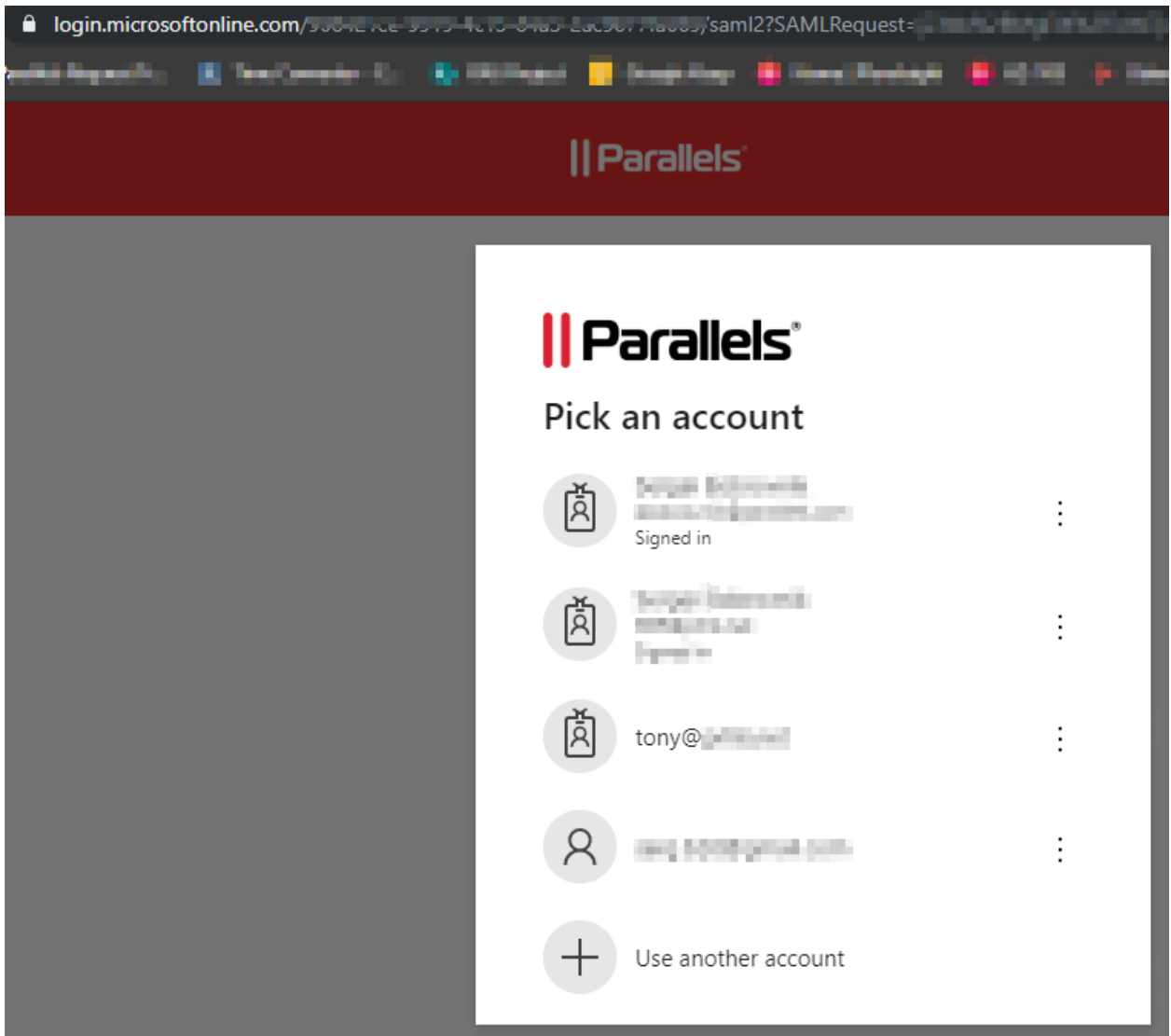
Further information available at [docs.microsoft.com](https://docs.microsoft.com)

## Test Connectivity

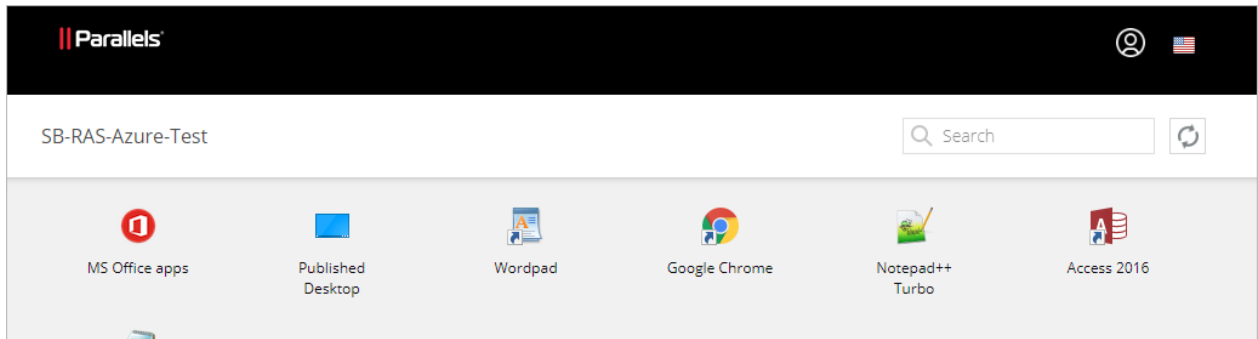
### SP initiated

To test the connectivity between Parallels RAS and Microsoft Azure, do the following:

- 1 Open the HTML5 Portal page in your web browser. Use the Theme you associated with the SAML app.
- 2 If everything is correct, you will be redirected to login.microsoftonline.com where you can proceed signing in.



- 3 On successful authentication, the user is presented with the application list:



## IdP initiated

- 1 Log in to Microsoft Azure portal and launch the assigned application.
- 2 The user is redirected to the HTML5 portal using the assigned Theme and is presented with the application list.

## CHAPTER 4

# Okta Identity Cloud Integration via SAML 2.0

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## Requirements

To configure an application in Okta Identity, you need the following settings from your SP application:

- The Assertion Consumer Service (ACS) URL
- Audience URI
- Any required SAML attributes

Therefore, you should start with RAS configuration.

## Configure Parallels RAS as a Service Provider

In this step, you need to configure Parallels RAS as a service provider (SP) by adding an identity provider (IdP). You will later complete this step by configuring Okta as your IdP.

First you need to add an identity provider (IdP) in the RAS Console as follows:

- 1 Select the **Connection** category, select the **SAML** tab and click **Tasks > Add**.
- 2 Specify a provider name (e.g. Okta).
- 3 In the **Use with Theme** field, keep the default "<not used>" option.



- 4 Select the **Manually enter the IdP information** option and click **Next**.

Add Identity Provider

**Parallels**

Name: OKTA

Use with Theme: <not used>

Select a method that the wizard will use to obtain the identity provider information.

☐ Import published IdP metadata

Example: <https://www.contoso.com/metadata.xml>

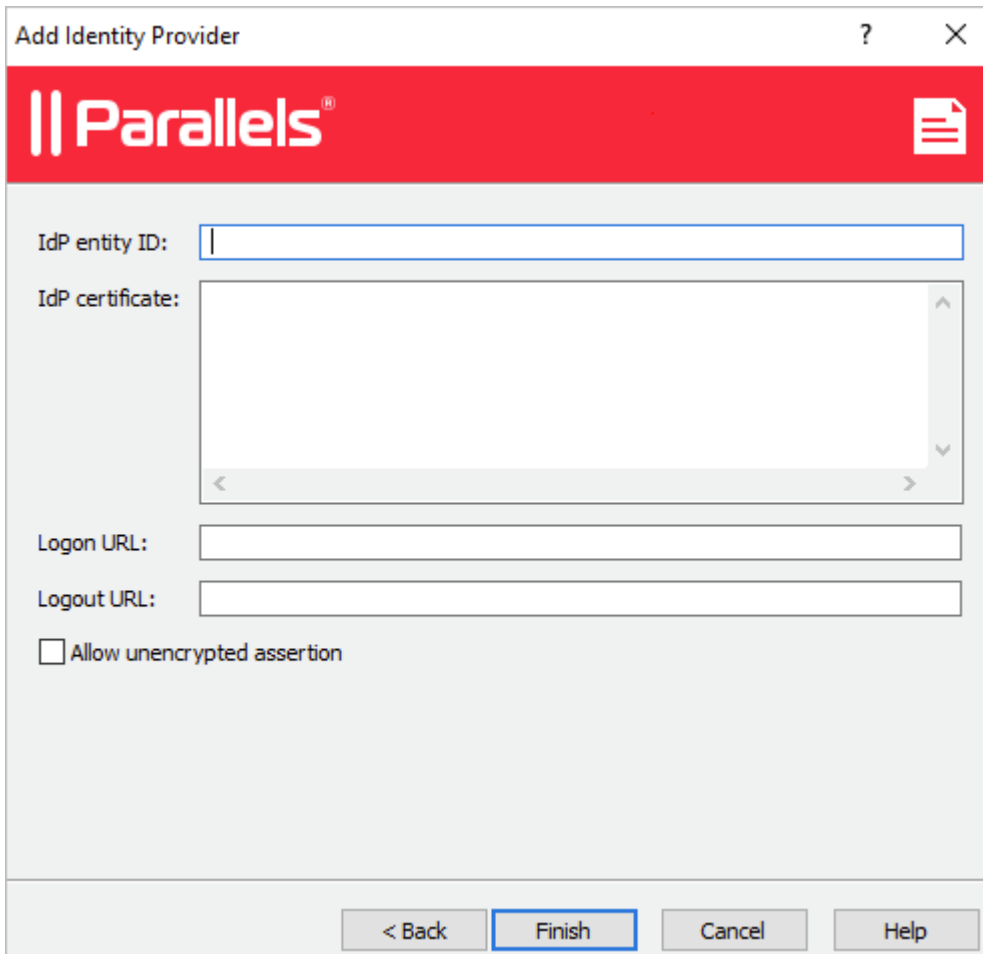
☐ Import IdP metadata from file

Example: [c:\mydocuments\metadata.xml](#)

☒ Manually enter the IdP information

< Back Next > Cancel Help

- 5 On the next page, enter any information to satisfy the requirements to not leave the fields blank (we will import Okta settings using metadata file later) and click **Finish**.



The screenshot shows a window titled "Add Identity Provider" with a red header bar containing the Parallels logo. The main area contains several input fields: "IdP entity ID:" with a single-character text box, "IdP certificate:" with a large multi-line text area, "Logon URL:" with a single-line text box, and "Logout URL:" with a single-line text box. Below these is a checkbox labeled "Allow unencrypted assertion". At the bottom of the window are four buttons: "< Back", "Finish" (which is highlighted with a blue border), "Cancel", and "Help".

- 6 Apply the configuration by clicking the **Apply** button at the bottom of the RAS Console.

### Export SP settings (metadata)

To export the Service Provider settings, do the following:

- 1 In the RAS Console, right-click the "Okta" IdP provider that you created in the previous step and click **Properties**.
- 2 In the dialog that opens, select the **SP** tab.
- 3 Specify the external FQDN or IP address in the **Host** field.
- 4 Copy and save values from the **SP entity ID** and **Reply URL** fields.

- 5 If you are going to use the single logout option, copy and save the value from the **Logout URL** field. Also copy the value from the **SP certificate** field and save it as a text file with the ".cer" extension.

The screenshot shows the 'Add Identity Provider' dialog box with the 'SP' tab selected. The fields are as follows:

- Host: [Redacted]
- SP entity ID: [https://\[Redacted\]/RASHTML5Gateway/sso/idp\\_6/metadata.xml](https://[Redacted]/RASHTML5Gateway/sso/idp_6/metadata.xml)
- Reply URL: [https://\[Redacted\]/RASHTML5Gateway/sso/idp\\_6/assert](https://[Redacted]/RASHTML5Gateway/sso/idp_6/assert)
- Logon URL: [https://\[Redacted\]/RASHTML5Gateway/sso/idp\\_6/login](https://[Redacted]/RASHTML5Gateway/sso/idp_6/login)
- Logout URL: [https://\[Redacted\]/RASHTML5Gateway/sso/idp\\_6/logout](https://[Redacted]/RASHTML5Gateway/sso/idp_6/logout)
- SP certificate: A text area containing a base64-encoded certificate, starting with '-----BEGIN CERTIFICATE-----' and ending with '-----END CERTIFICATE-----'. Below the text area are 'Copy to clipboard' and 'Regenerate' buttons.

At the bottom left, there is a link: [Export SP metadata to file](#). At the bottom right, there are 'OK', 'Cancel', and 'Help' buttons.

You are now ready to proceed to the Okta configuration.

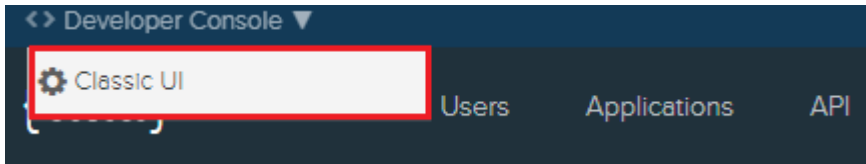
## Configure Okta Identity as IdP

Given the fact that there is a DNS alias defined for EPC Server (e.g. `epc.company.com`, as used in the following examples), we will need to create an application in Okta.

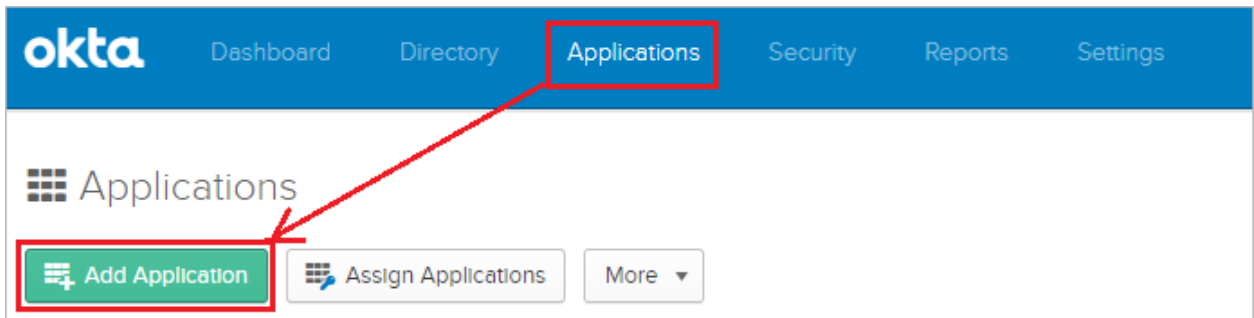
### Create an Application

To create an application:

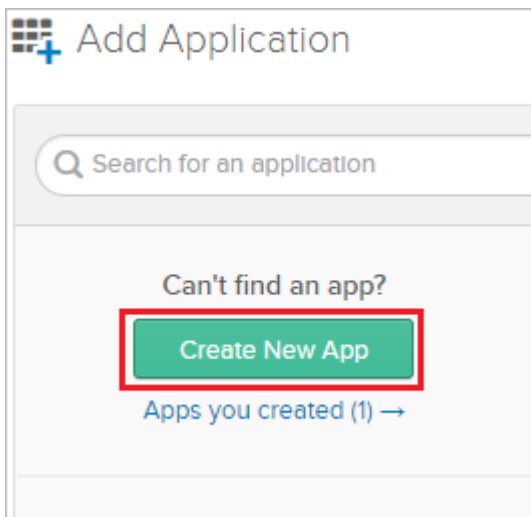
- 1 Open the Okta Admin Management console and switch to Classic UI.



- 2 Click on the **Applications** link and then click the **Add Application** button.



- 3 Click the **Create New App** button.



- 4 In the **Platform** field, select "Web" and then select the "SAML 2.0" protocol in the **Sign on method** section.

**5** Click **Create**.

**Create a New Application Integration** [X]

Platform: Web

Sign on method:

- ☐ Secure Web Authentication (SWA)  
Uses credentials to sign in. This integration works with most apps.
- ☒ SAML 2.0  
Uses the SAML protocol to log users into the app. This is a better option than SWA, if the app supports it.
- ☐ OpenID Connect  
Uses the OpenID Connect protocol to log users into an app you've built.

**Create** **Cancel**

- 6 In the **App name** field, enter the name for the configuration (for example, "RAS") and click **Next**.

The screenshot shows the 'Create SAML Integration' wizard. The title bar says 'Create SAML Integration'. Below it are two tabs: '1 General Settings' (active) and '2 Configure SAML'. The 'General Settings' section contains the following fields:

- App name:** A text input field containing 'RAS', which is highlighted with a red rectangular border.
- App logo (optional):** A field with a gear icon, a text input, and a 'Browse...' button.
- App visibility:** Two checkboxes:
  - ☐ Do not display application icon to users
  - ☐ Do not display application icon in the Okta Mobile app

At the bottom of the form are two buttons: 'Cancel' and 'Next'.

## Configure SAML Settings

### General Settings

In the **Configure SAML** view, specify the following:

- **Single sign on URL:** Paste the **Reply URL** value taken from RAS Server, e.g. [https://40.85.122.19/RASHTML5Gateway/sso/idp\\_6/assert](https://40.85.122.19/RASHTML5Gateway/sso/idp_6/assert).  
Keep the **Use this for Recipient URL and Destination URL option** selected.
- **Audience URI (SP Entity ID):** Paste the **SP entity ID** value taken from RAS Server, e.g. [https://40.85.122.19/RASHTML5Gateway/sso/idp\\_6/metadata.xml](https://40.85.122.19/RASHTML5Gateway/sso/idp_6/metadata.xml).
- **Default RelayState:** Leave it blank.

- **Name ID format:** Keep the “Unspecified” value.
- **Application username:** Keep the “Okta username” value.

**1 General Settings** **2 Configure SAML** **3 Feedback**

**A SAML Settings**

**GENERAL**

Single sign on URL

☒ Use this for Recipient URL and Destination URL

☐ Allow this app to request other SSO URLs

Audience URI (SP Entity ID)

Default RelayState

If no value is set, a blank RelayState is sent

Name ID format

Application username

[Show Advanced Settings](#)

**ATTRIBUTE STATEMENTS (OPTIONAL)** [LEARN MORE](#)

Name	Name format (optional)	Value
Email	Unspecified	user.email

[Add Another](#)

**GROUP ATTRIBUTE STATEMENTS (OPTIONAL)**

Name	Name format (optional)	Filter	Value
	Unspecified	Starts with	

[Add Another](#)

**What does this form do?**

This form generates the XML needed for the app's SAML request.

**Where do I find the info this form needs?**

The app you're trying to integrate with should have its own documentation on using SAML. You'll need to find that doc, and it should outline what information you need to specify in this form.

**Okta Certificate**

Import the Okta certificate to your Identity Provider if required.

[Download Okta Certificate](#)

## Advanced settings — enable single logout

If you click the **Show Advanced Settings** link, you are presented with additional options. To enable single logout in this dialog:

- 1 Select the **Allow application to initiate Single Logout** option.
- 2 Copy and paste the saved value for **Logout URL**.

- 3 Select and upload the SP certificate that you saved to a ".cer" file earlier.

Assertion Encryption ? Unencrypted

Enable Single Logout ? ☒ Allow application to initiate Single Logout

Single Logout URL ?

SP Issuer ?

Signature Certificate ?

Authentication context class ? PasswordProtectedTransport

Honor Force Authentication ? Yes

SAML Issuer ID ?

- 4 When done, close the dialog.

## Attribute Statements

Back in the **Configure SAML** view, in the **Attribute Statements (Optional)** section, add the following attribute mapping:

- **Name:** Email
- **Name format:** Unspecified
- **Value:** user.email

Note that other custom statements can be added as required.

## Download Okta certificate and continue

Click the button on the right side of the SAML configuration to download the Okta certificate (this will be required during the IdP configuration in the RAS Console) and click the **Next** button at the bottom.



Select the type of Okta relationship that you have and click **Finish**.

Create SAML Integration

1 General Settings

2 Configure SAML

3 Feedback

3 Help Okta Support understand how you configured this application

Are you a customer or partner?

☒ I'm an Okta customer adding an internal app

☐ I'm a software vendor. I'd like to integrate my app with Okta

1

The optional questions below assist Okta Support in understanding your app integration.

App type ?

☒ This is an internal app that we have created

Why are you asking me this?

This form provides Okta Support with useful background information about your app. Thank you for your help—we appreciate it.

Previous

Finish

© 2019 Okta, Inc. Privacy Version 2019.11.1 OK7 Cell (US) Status site

Download Okta Plugin Feedback

### Download Okta IdP provider metadata

Export the identity provider metadata by clicking on the **Identity Provider metadata** link and save the XML file to a known location, e.g. "My Documents".

The screenshot shows the 'Sign On' configuration page in the Okta Admin Console. The 'SAML 2.0' tab is selected. Under 'SIGN ON METHODS', the 'SAML 2.0' method is chosen. A message states: 'SAML 2.0 is not configured until you complete the setup instructions.' Below this, there is a 'View Setup Instructions' button and a link for 'Identity Provider metadata' which is highlighted with a red rectangle. The 'CREDENTIALS DETAILS' section shows 'Application username format' set to 'Okta username' and 'Password reveal' set to 'Allow users to securely see their password (Recommended)'. On the right, the 'About' section explains SAML 2.0 and the 'Application Username' section provides instructions on choosing a format.

General **Sign On** Mobile Import Assignments

**Settings** [Edit](#)

**SIGN ON METHODS**

The sign-on method determines how a user signs into and manages their credentials for an application. Some sign-on methods require additional configuration in the 3rd party application.

Application username is determined by the user profile mapping. [Configure profile mapping](#)

**SAML 2.0**

Default Relay State

**SAML 2.0** is not configured until you complete the setup instructions.

[View Setup Instructions](#)

[Identity Provider metadata](#) is available if this application supports dynamic configuration.

**CREDENTIALS DETAILS**

**Application username format** Okta username

**Password reveal** ☐ Allow users to securely see their password (Recommended)

**About**

SAML 2.0 streamlines the end user experience by not requiring the user to know their credentials. Users cannot edit their credentials when SAML 2.0 is configured for this application. Additional configuration in the 3rd party application may be required to complete the integration with Okta.

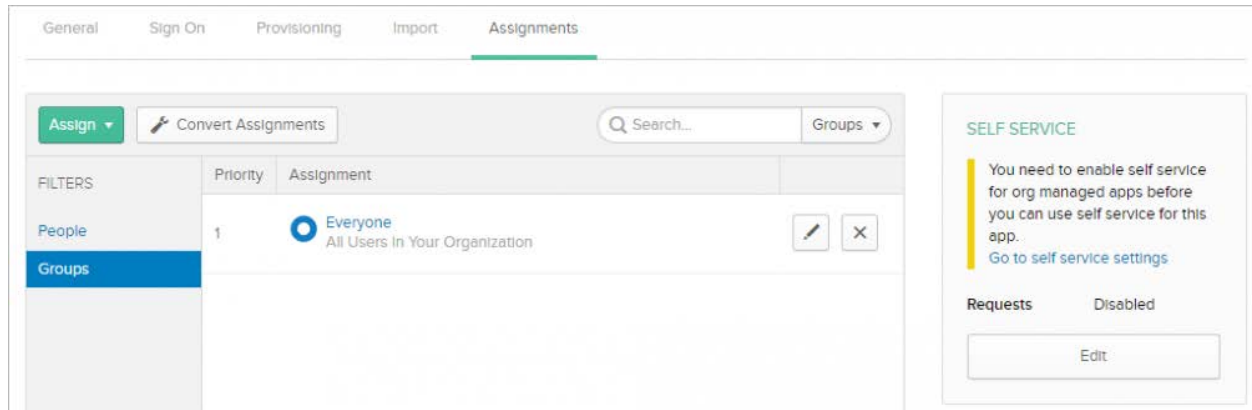
**Application Username**

Choose a format to use as the default username value when assigning the application to users.

If you select None you will be prompted to enter the username manually when assigning an application with password or profile push provisioning features.

## Assign people or groups to the application

Switch to the **Assignments** tab for your application and assign to the application all users in your organization that will have rights to use the RAS application.



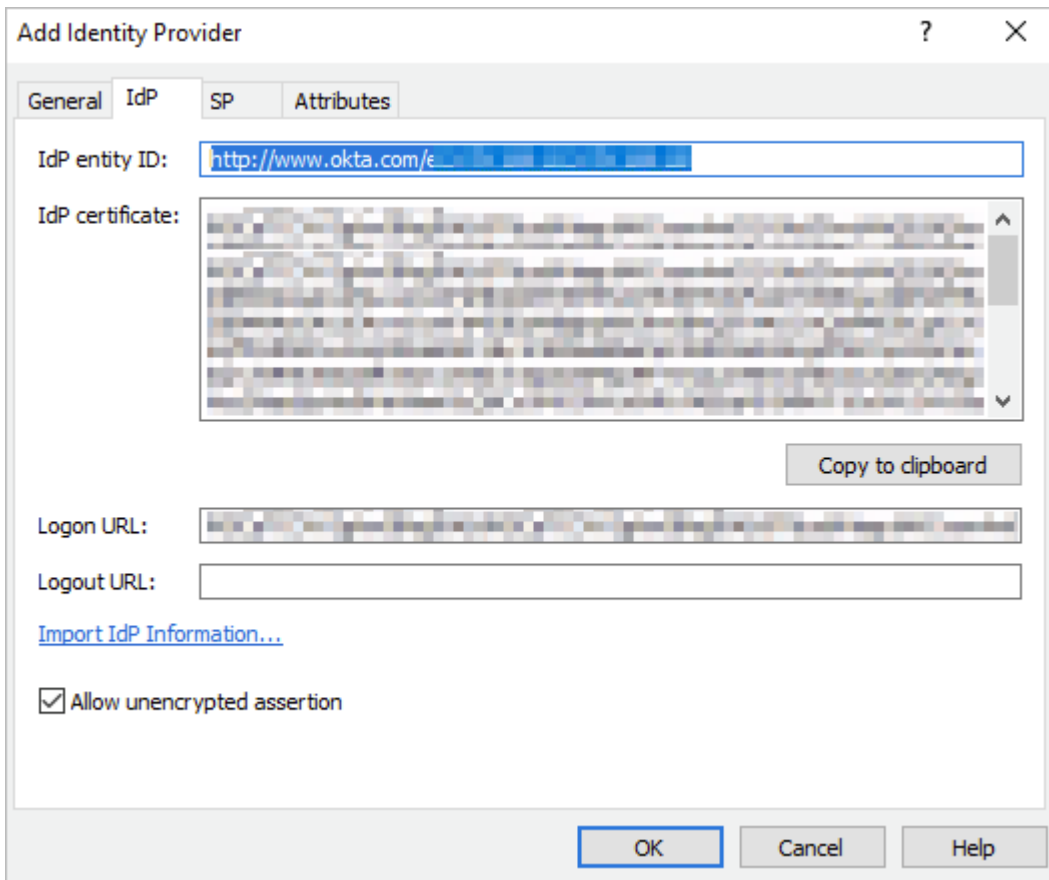
## Complete the Parallels RAS Configuration

Now that we have the IdP metadata, we can finish configuring Parallels RAS as a service provider.

To import the identity provider metadata:

- 1 In the RAS Console, select the **Connection** category.
- 2 Select the **SAML** tab.
- 3 Right-click the "Okta" IdP provider and choose **Properties**.
- 4 In the dialog that opens, select the **IdP** tab.

- 5 Click on the **Import IdP information** link and confirm settings replacement.



The screenshot shows the 'Add Identity Provider' dialog box with the 'IdP' tab selected. The 'IdP entity ID' field contains the URL 'http://www.okta.com/ε...'. The 'IdP certificate' field contains a large, multi-line base64-encoded string. A 'Copy to clipboard' button is located to the right of the certificate field. The 'Logon URL' field contains a base64-encoded string, and the 'Logout URL' field is empty. A link labeled 'Import IdP Information...' is visible below the URL fields. The 'Allow unencrypted assertion' checkbox is checked. At the bottom of the dialog are 'OK', 'Cancel', and 'Help' buttons.

IdP entity ID:

IdP certificate:

Copy to clipboard

Logon URL:

Logout URL:

[Import IdP Information...](#)

☒ Allow unencrypted assertion

OK Cancel Help

- 6 Switch to **Attributes** tab.

- 7 Select the **Custom** attribute and set the **SAML attribute** value to "email" and **AD attribute** value to "Mail". Please note that this is only an example as any attribute can be used. In this particular case, we are matching the Okta login username/email (used to login to Okta) to the email address of the user configured in Active Directory.

Name	SAML attribute	AD attribute
<input type="checkbox"/> UserPrincipalName	userName	userPrincipalName
<input type="checkbox"/> Immutable ID	ImmutableID	objectGUID
<input type="checkbox"/> SID	SID	objectSid
<input type="checkbox"/> sAMAccountName	sAMAccountName	sAMAccountName
<input checked="" type="checkbox"/> Custom	email	Mail

Tasks ▼

OK Cancel Help

- 8 Switch to the **General** tab and select a Theme to be used with the IdP.
- 9 Click **OK** and **Apply**.

## Test Connectivity

### SP initiated

- 1 Open the RAS HTML5 portal in a web browser. Use the Theme that you associated with the SAML application.
- 2 The user is redirected to the Okta portal for authentication.
- 3 On successful authentication, the application list is presented to the user.

### IdP initiated

- 1 Log in to the Okta portal and launch the assigned application.

- 2** The user is redirected to the HTML5 portal using the assigned Theme and is presented with the application list.

## CHAPTER 5

# Ping Identity Integration via SAML 2.0

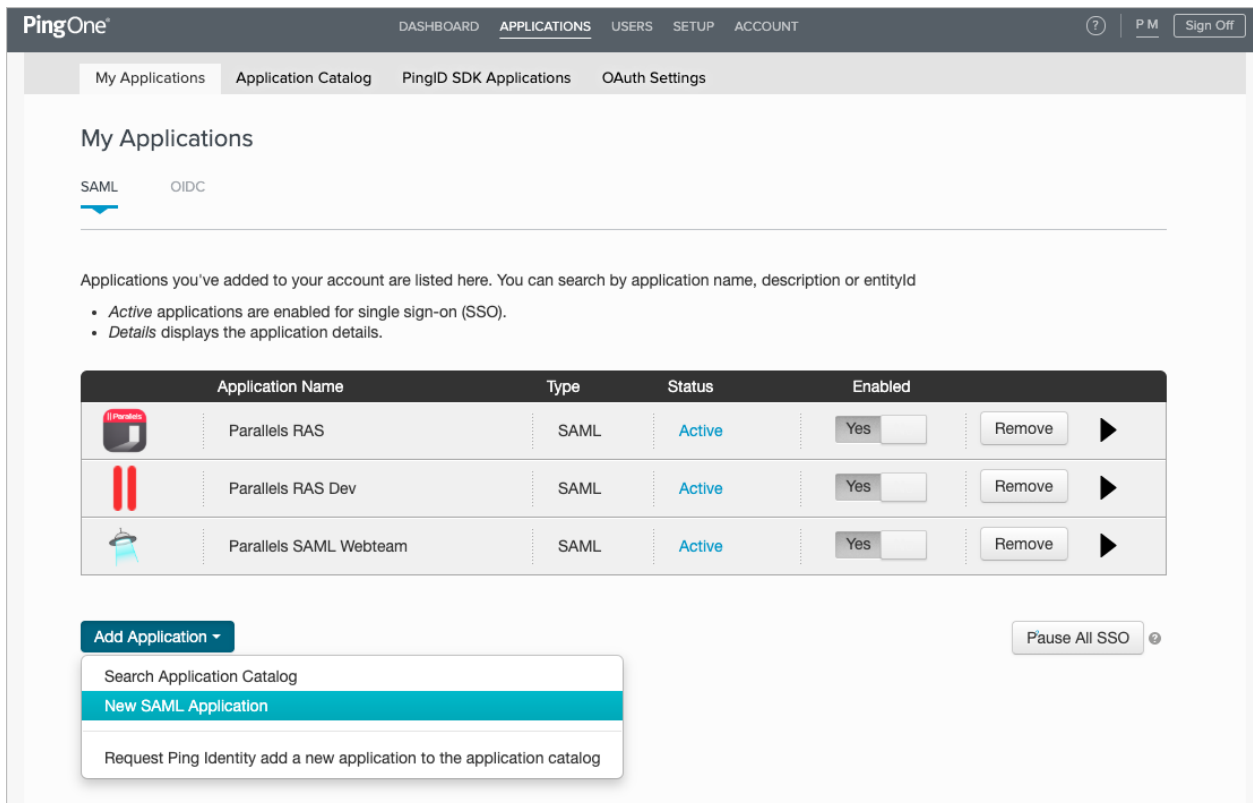
### In This Chapter

Create a Generic SAML Application.....	31
Configure Parallels RAS as a Service Provider .....	34
Complete the SAML Application Configuration .....	38
Testing Connectivity .....	41

## Create a Generic SAML Application

First you need to create a generic SAML application in PingOne as follows:

- 1 Log in to PingOne at <https://admin.pingone.com/web-portal/login>
- 2 Select the **My Applications** tab as shown on the screenshot below.



- 3 Click **Add Application** and then choose **New SAML Application**. The new application wizard opens.
- 4 On the **1. Application Details** page, add the following data:
  - **Application Name:** Parallels RAS (or choose your own name).
  - **Application Detail:** Remote Application Server (or type your own description).
  - **Category:** Other
  - **Graphics:** Upload an icon 256x256 pixels in png format if needed.

The screenshot shows the '1. Application Details' page of the 'New Application' wizard. The page is titled 'New Application' and has tabs for 'SAML' and 'Incomplete'. A 'No' button is visible in the top right. The main content area is divided into sections for 'Application Name', 'Application Description', 'Category', and 'Graphics'. The 'Application Name' field contains 'My Application'. The 'Application Description' field contains 'A short description of your application.' The 'Category' dropdown is set to 'Choose One'. The 'Graphics' section shows a placeholder for an application icon with a 'Change' button. The page has a 'NEXT: Application Configuration' link and 'Cancel' and 'Continue to Next Step' buttons. At the bottom, there is an 'Add Application' button and a 'Pause All SSO' button.

- 5 Click **Continue to Next Step**.



6 The **2. Application configuration** page opens.

	Parallels SAML Webteam	SAML	Active	Yes <input type="checkbox"/>	Remove	▶
	New Application	SAML	Incomplete	No <input type="checkbox"/>		

### 2. Application Configuration

I have the SAML configuration
I have the SSO URL

You will need to download this SAML metadata to configure the application:

Signing Certificate PingOne Account Origination Certificate ▾

SAML Metadata [Download](#)

Provide SAML details about the application you are connecting to:

Protocol Version ☒ SAML v 2.0 ☐ SAML v 1.1

Upload Metadata Select File [Or use URL](#)

Assertion Consumer Service (ACS) <https://sso.example.com/a/sso.saml2> \*

Entity ID [example.com/a](https://sso.example.com/a/sso.saml2) \*

Application URL

Single Logout Endpoint [example.com/slo.endpoint](https://sso.example.com/a/sso.saml2)

Single Logout Response Endpoint [example.com/sloresponse.endpoint](https://sso.example.com/a/sso.saml2)

Single Logout Binding Type ☐ Redirect ☐ Post

Primary Verification Certificate Choose file No file chosen

Secondary Verification Certificate Choose file No file chosen

Encrypt Assertion ☐

Signing ☒ Sign Assertion ☐ Sign Response

Signing Algorithm RSA\_SHA256 ▾

Force Re-authentication ☐

7 On this page, you need to download the SAML Metadata from Ping Identity. Click the **Download** link next to the **SAML Metadata** label.

**SAML Metadata** [Download](#)

- 8 Save the metadata file (.xml) on the local drive.
- 9 Switch to the Parallels RAS Console. Read on.

## Configure Parallels RAS as a Service Provider

In this step, you need to configure Parallels RAS as a service provider (SP) by adding PingOne as the identity provider.

In the RAS Console, add an identity provider as follows:

- 1 Select the **Connection** category.
- 2 Select the **SAML** tab.
- 3 Click **Tasks > Add**.
- 4 In the **Add Identity Provider** wizard, type a provider name and select an HTML5 Theme to associate with the provider.

The screenshot shows the 'Add Identity Provider' wizard in the Parallels RAS Console. The window has a red header with the Parallels logo and a document icon. The main area is light gray. It contains the following fields and options:

- Name:** A text box containing 'Ping2'.
- Use with Theme:** A dropdown menu showing 'Tenant2'.
- Select a method that the wizard will use to obtain the identity provider information.**
  - ☐ Import published IdP metadata: A text box with an example URL: `https://www.contoso.com/metadata.xml`.
  - ☒ Import IdP metadata from file: A text box with an example file path: `c:\mydocuments\metadata.xml` and a file selection button (three dots).
  - ☐ Manually enter the IdP information.

At the bottom, there are four buttons: '< Back', 'Next >' (highlighted with a blue border), 'Cancel', and 'Help'.

- 5 Select the **Import IdP metadata from file** option and specify the SAML Metadata file that you've downloaded from PingOne earlier.

The screenshot shows the 'Add Identity Provider' wizard in Parallels Desktop. The window title is 'Add Identity Provider'. The Parallels logo is in the top left. The 'Name' field contains 'Ping2'. The 'Use with Theme' dropdown is set to 'Tenant2'. Below this, a message says 'Select a method that the wizard will use to obtain the identity provider information.' There are three radio button options: 'Import published IdP metadata' (unselected), 'Import IdP metadata from file' (selected), and 'Manually enter the IdP information' (unselected). Under the selected option, a text field contains the file path 'C:\Users\...saml2-metadata-idp.xml'. Below this field is an example: 'Example: c:\mydocuments\metadata.xml'. At the bottom of the window are four buttons: '< Back', 'Next >', 'Cancel', and 'Help'. The 'Next >' button is highlighted with a blue border.

- 6 Click **Next**.

- 7 On the next page, the **IdP entity ID**, **IdP certificate**, **Logon URL**, and **Logout URL** fields will be populated automatically using the imported metadata.

The screenshot shows the 'Add Identity Provider' dialog box in the Parallels RAS Console. The dialog has a red header bar with the Parallels logo and a menu icon. The main area contains the following fields and controls:

- IdP entity ID:** A text field containing the URL `https://pingone.com/idp`.
- IdP certificate:** A large text area containing a blurred certificate string. Below the text area are navigation arrows (left and right) and a vertical scrollbar.
- Logon URL:** A text field containing the URL `https://sso.connect.pingidentity.com/sso/idp/sso`.
- Logout URL:** A text field containing the URL `https://sso.connect.pingidentity.com/sso/`.
- Import Certificate...** A button located below the Logout URL field.
- ☒ **Allow unencrypted assertion** A checkbox that is checked.

At the bottom of the dialog, there are four buttons: **< Back**, **Finish** (which is highlighted with a blue border), **Cancel**, and **Help**.

- 8 Click **Finish** and then click **Apply** in the RAS Console.
- 9 Right-click the IdP provider that you just created and click **Properties**.
- 10 Select the **Attributes** tab.

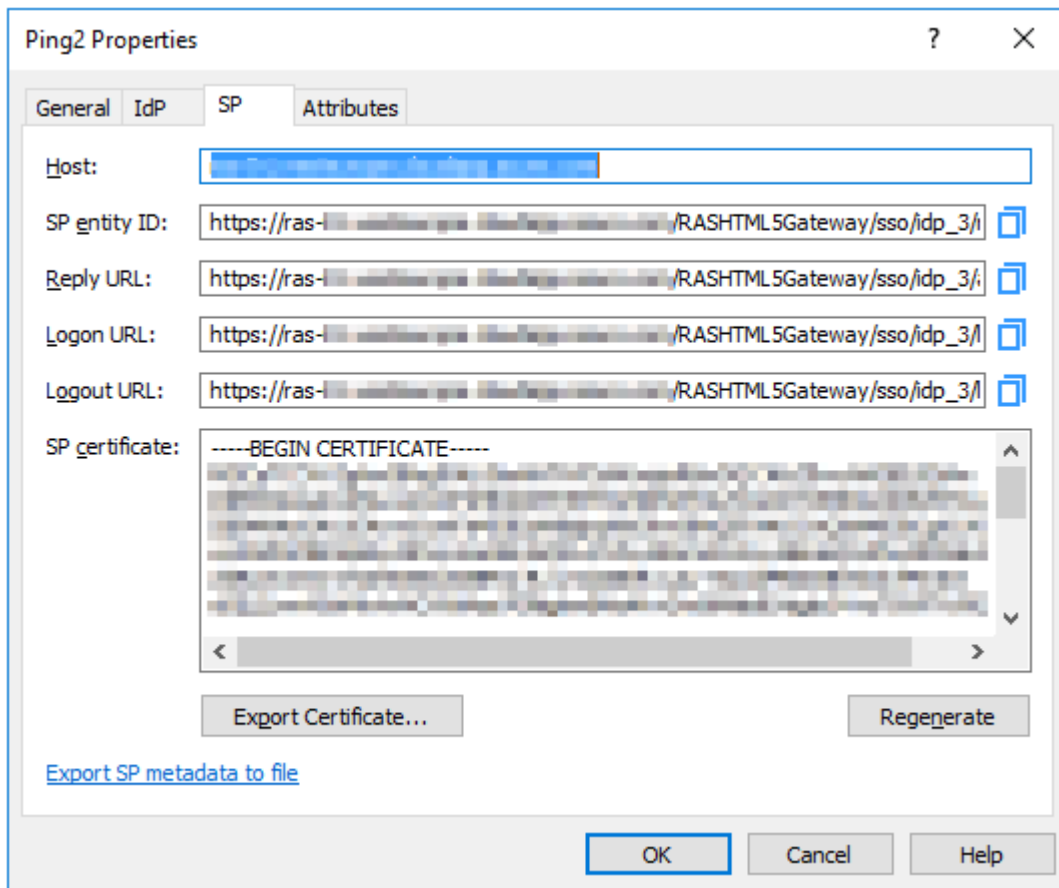
- 11 Select the **Custom** attribute name and change the **SAML attribute** to **Email**. Clear the **UserPrincipalName** attribute.

The screenshot shows the 'Ping2 Properties' dialog box with the 'Attributes' tab selected. The 'Name' column lists several attributes, with 'Custom' checked. The 'SAML attribute' column shows 'Email' selected with a pencil icon. The 'AD attribute' column shows 'Mail' selected with a pencil icon. The 'UserPrincipalName' attribute is unchecked.

Name	SAML attribute	AD attribute
<input type="checkbox"/> UserPrincipalName	NameID	userPrincipalName
<input type="checkbox"/> Immutable ID	ImmutableID	objectGUID
<input type="checkbox"/> SID	SID	objectSid
<input type="checkbox"/> sAMAccountName	sAMAccountName	sAMAccountName
<input checked="" type="checkbox"/> Custom	Email	Mail

- 12 Click **OK** and then click **Apply** in the RAS Console.
- 13 Open IdP provider **Properties** dialog again and switch to the **SP** tab.
- 14 Export the SP configuration to an XML file and save it on local drive.

- 15** Copy the **Logon URL** to the clipboard or save it to a file. You will need to specify it in the PingOne administrator console as described in the section that follows this one.



The screenshot shows the 'Ping2 Properties' dialog box with the 'SP' tab selected. The fields are as follows:

- Host:** [Empty text box]
- SP entity ID:** `https://ras-l[redacted]/RASHTML5Gateway/sso/idp_3/i` [Copy icon]
- Reply URL:** `https://ras-l[redacted]/RASHTML5Gateway/sso/idp_3/i` [Copy icon]
- Logon URL:** `https://ras-l[redacted]/RASHTML5Gateway/sso/idp_3/i` [Copy icon]
- Logout URL:** `https://ras-l[redacted]/RASHTML5Gateway/sso/idp_3/i` [Copy icon]
- SP certificate:** A text area containing a certificate starting with '-----BEGIN CERTIFICATE-----' and ending with '-----END CERTIFICATE-----'. Below the text area are 'Export Certificate...' and 'Regenerate' buttons.

At the bottom left, there is a link: [Export SP metadata to file](#). At the bottom right, there are 'OK', 'Cancel', and 'Help' buttons.

- 16** Go back to the PingOne administration console to complete the new SAML application configuration. Read on.

## Complete the SAML Application Configuration

After you exported the SP metadata to a file, you need to upload it PingOne and complete the SAML application configuration.

In the PingOne administration console:

- 1** Go back to the **2. Application Configuration** page.
- 2** Set the **Protocol Version** property to **SAML v2.0** (see the screenshot below).

- 3 To upload the SP metadata that you saved in RAS Console earlier, click the **Select File** button to select the XML file.

**2. Application Configuration**

**I have the SAML configuration** | **I have the SSO URL**

You will need to download this SAML metadata to configure the application:

Signing Certificate PingOne Account Origination Certificate

SAML Metadata [Download](#)

Provide SAML details about the application you are connecting to:

Protocol Version ☒ SAML v 2.0 ☐ SAML v 1.1

Upload Metadata Uploaded file: Ping.xml

[Select File](#) [Or use URL](#)

Assertion Consumer Service (ACS)

Entity ID

Application URL

Single Logout Endpoint

Single Logout Response Endpoint

Single Logout Binding Type ☐ Redirect ☒ Post

Primary Verification Certificate [Choose file](#) No file chosen

[saml20metadata.cer](#)

Secondary Verification Certificate [Choose file](#) No file chosen

Encrypt Assertion ☒

Signing ☒ Sign Assertion ☐ Sign Response

Signing Algorithm

Force Re-authentication ☐

Keep the following in mind when creating your connection:

1. Both SP- and IdP-Initiated SSO are allowed
2. Map SAML\_SUBJECT in your attribute contract, plus any attributes (configure them in PingOne later)

- 4 Set the rest of the application properties as follows:
- **Application URL:** Paste the **Logon URL** link found on the **SP** tab of the IdP properties dialog in the RAS Console (that's the link we asked you to copy or save in the previous section).

- **Single Logout Response Endpoint:** Copy the link from the **Single Logout Endpoint** field and paste it here.
- **Single Logout Binding Type:** Select the **Post** option.
- **Encrypt Assertion:** Clear the checkbox.
- **Signing:** Select the **Sign Assertion** option.
- **Signing Algorithm:** Set to **RSA\_SHA256**.
- **Force Re-authentication:** Clear the checkbox.

5 Click **Continue to Next Step**.





6 On the **3. SSO Attributes Mapping** page, click the **Add new attribute** button.

**3. SSO Attribute Mapping**

Map the necessary application provider (AP) attributes to attributes used by your identity provider (IdP).

	Application Attribute	Identity Bridge Attribute or Literal Value		Required	
1	<input type="text" value="email"/>	<input type="text" value="Email"/> <input type="checkbox"/> As Literal <input type="button" value="Advanced"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="button" value="X"/>

**NEXT: Group Access**

	Parallels 	SAML	Active	<input type="button" value="Yes"/>	<input type="button" value="Remove"/>	<input type="button" value="▶"/>
	Parallels SAML 	SAML	Active	<input type="button" value="Yes"/>	<input type="button" value="Remove"/>	<input type="button" value="▶"/>

7 In the **Application Attribute** field, type "email" and then select **Email** in the **Identity Bridge Attribute** field.

8 Click **Continue to Next Step**.



- 9 On the **4. Group Access** page, assign users or groups for the new application as needed.

**4. Group Access**

Select all user groups that should have access to this application. Users that are members of the added groups will be able to SSO to this application and will see this application on their personal dock.

Group Name	
Users@directory	<input type="button" value="Remove"/>
Domain Administrators@directory	<input type="button" value="Add"/>

NEXT: Review Setup

- 10 Click **Continue to Next Step**.

- 11 On the last page of the wizard, review your settings and click **Finish**.

## Testing Connectivity


### SP initiated


- 1 Open HTML5 Portal page in your web browser, e.g. <https://ras-01.westeurope.cloudapp.azure.com/RASHTML5Gateway>. Use the Theme you associated with the SAML application.
- 2 If everything is correct, you will be redirected to the PingOne identity portal where you can proceed with signing in.


### IdP initiated


To check the IdP initiated SAML authentication directly from PingOne, click on the application under the **Applications** menu.


Application Name	Type	Status	Enabled
New	SAML	Active	<input type="checkbox"/> Yes <input type="button" value="Remove"/>

Icon 

Name  New


Description  Parallels RAS SAML2.0


Category  Other


Connection ID 


(Optional) Click the link below to invite this SaaS Application's Administrator to register their SaaS Application with PingOne.  
[Invite SaaS Admin](#)


These parameters may be needed to configure your connection

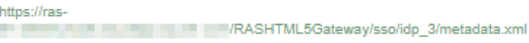
saasid 

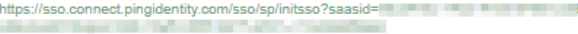
Issuer  https://pingone.com/idp/


idpid 

Protocol Version  SAML v 2.0

ACS URL  https:///RASHTML5Gateway/sso/idp\_3/assert


entityId  https://ras- /RASHTML5Gateway/sso/idp\_3/metadata.xml


Initiate Single Sign-On (SSO) URL  https://sso.connect.pingidentity.com/sso/sp/initssso?saasid=


Single Sign-On (SSO) Relay State  https://pingone.com/1.0/


Signing Certificate [Download](#)


SAML Metadata [Download](#)


Single Logout Endpoint  https://ras-0 /RASHTML5Gateway/sso/idp\_3/logout

Single Logout Response Endpoint  https://ras-0 /RASHTML5Gateway/sso/idp\_3/logout

Signing  Assertion

Signing Algorithm  RSA\_SHA256

Encrypt Assertion  false

Force Re-authentication  false

[Click the link below to open the Single Sign-On page.](#)  
[Single Sign-On](#)

[Edit](#)

Click the link below to open the **Single Sign-On** page and you will be redirected to the authentication page on the RAS HTML5 portal.

## CHAPTER 6

# Gemalto SafeNet Trusted Access Integration via SAML 2.0

### In This Chapter

Create a Generic SAML Application.....	43
Configure Parallels RAS as a Service Provider .....	50
Test Connectivity.....	53

## Create a Generic SAML Application

To create a generic SAML application:


- 1 Login to SafeNet Trusted Access portal with administrator credentials.
- 2 Switch to **Applications** and click the **+** icon to add a new application.
- 3 On the **Add Application** page, type "SAML".
- 4 Click the magnifying glass icon and search for "GenericTemplate". When found, click the plus-sign icon.

### Add Application

Select an application to add

×

Q

 **GenericTemplate**


SAML OIDC

+

- 5 In the **Display Name** field, type a name for the application, then select **SAML** and click **Add**.

## Add Application


**Application Details**





**Display Name**

**Integration Protocol**

Specify which integration protocol you would like to use:

☐ SAML 

☐ OIDC 

See [Help Documentation](#)  for details.

- 6 On the **Step 01: GenericTemplate Setup** page, click the **Download metadata file** button and save the file on your local drive (e.g. mydocs\Safanet.xml).

7 Click **Next**.

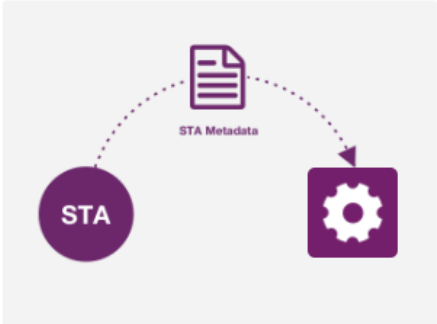
SAML

new

Configure

Assign

### Step 01: GenericTemplate Setup



**Download the STA metadata file. Import the file into GenericTemplate.**  
See [Help Documentation](#) for details.

Download metadata file

Switch to Manual Configuration



Next Step


### Step 02: STA Setup


- 8 When you reach the **Step 02: STA Setup** page, you need to go to the RAS Console and create a new IdP Provider. This step is described in detail in the **Configure SP Configuration in the RAS Console** section (p. 50). Please perform the steps described in that section and then return here.

- 9 Back on the SafeNet portal, click the **Upload GenericTemplate Metadata** button and select the XML file that you exported in the RAS Console in the previous step.

SAML

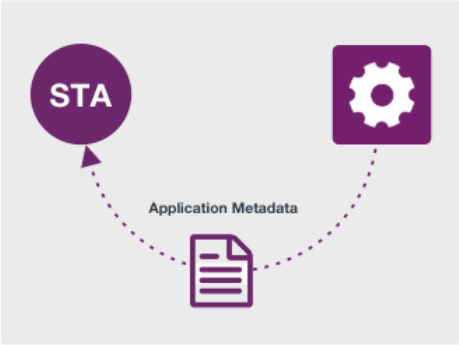
 new 

 Configure


 Assign

Step 01: GenericTemplate Setup

Step 02: STA Setup



Download the GenericTemplate metadata and import it into STA.  
See [Help Documentation](#) for details.

Upload GenericTemplate Metadata 

Switch to [Manual Configuration](#)

- 10 After the upload, the page is refreshed and you can continue configuring STA settings.

- 11** In the **Account Details** section, copy and paste the complete Logout URL found on the **SP** tab in the RAS Console.

The screenshot shows the RAS Console configuration page for a new SAML integration. The page is titled 'new' and has tabs for 'Configure' and 'Assign'. A message at the top states: 'The application is not ready for use until you Save the configuration'. The configuration is divided into two steps: 'Step 01: GenericTemplate Setup' and 'Step 02: STA Setup'. Under 'Step 02: STA Setup', there is a section for 'Account Details' which includes a link to 'Help Documentation'. Below this, there are three input fields: 'ENTITY ID' (containing 'https://[redacted]/RASHTML5Gateway/sso/ldp\_2/metadata.xml'), 'LOGOUT URL' (empty), and 'ASSERTION CONSUMER SERVICE URL' (containing 'https://[redacted]/RASHTML5Gateway/sso/ldp\_2/assert'). At the bottom, there is a 'SAML Certificates' section with a 'Request Signing Certificate' button and a 'Delete Certificate' button.

- 12** Populate other fields as follows (see the screenshot below):

- **User Login ID Mapping > Name ID:** Select **SAS user ID**.
- **Return Attributes > Return Attribute:** type "UPN".
- **Return Attributes > User Attribute:** Select **Email address**.
- **User Portal Settings > Service Login URL:** Copy and paste the URL from the **SP** tab in RAS Console.
- **Advanced Settings > Name ID Format:** select **Email**.
- **Enforce User Name:** Select **Use username from SAML request, if available**.

- **Signature Algorithm:** Select **RSA-SHA256**.

**User Login ID Mapping**  
Please select which attribute should be mapped to the NameID parameter. The NameID gets sent to the application as part of the authentication process and represents the login ID of the user on the application.

NAME ID  
SAS User ID

**Return Attributes**  
Map Service Provider SAML return attributes to user attributes for single sign-on.

RETURN ATTRIBUTE: UPN  
USER ATTRIBUTE: Email address  
Add Attribute

**User Portal Settings**  
Please configure the federation modes and if required the Service Login URL. These settings are optional but required to launch an application from the User Portal.

FEDERATION MODE: SP Initiated & IDP Initiated

SERVICE LOGIN URL: https://[redacted]/RASHTML5Gateway/sso/idp\_2/login

**Advanced Settings**

NAME ID FORMAT: Email

ENFORCE USER NAME:  
☒ Use username from SAML request, if available  
☐ Prompt user to enter a username

SIGNATURE ALGORITHM: RSA-SHA256

**13** Continue setting the options as follows (see the screenshot below):

- **Authentication Request Signature Validation:** Select **Skip request signature validation**.
- **Assertion Encryption:** Select **Assertion not encrypted**.
- **Response Signing:** Select **Sign Response**.
- **Binding Protocol:** Select **Enforce Post Binding**.
- **Signature Key Name:** Select **None**.
- **Idp Initiated Sso Relay State:** Leave it blank.
- **Logout Channel:** Select **Front**.



AUTHENTICATION REQUEST SIGNATURE VALIDATION ⓘ

☐ Verify request signature

☒ Skip request signature validation

ASSERTION ENCRYPTION ⓘ

☒ Assertion not encrypted

☐ Encrypt assertion

RESPONSE SIGNING ⓘ

Sign Response

BINDING PROTOCOL ⓘ

☒ Enforce Post Binding

☐ Unspecified

GROUP RETURN ATTRIBUTE FORMAT ⓘ

☒ SAML attribute/value pair

☐ Comma separated list

SIGNATURE KEY NAME ⓘ

None

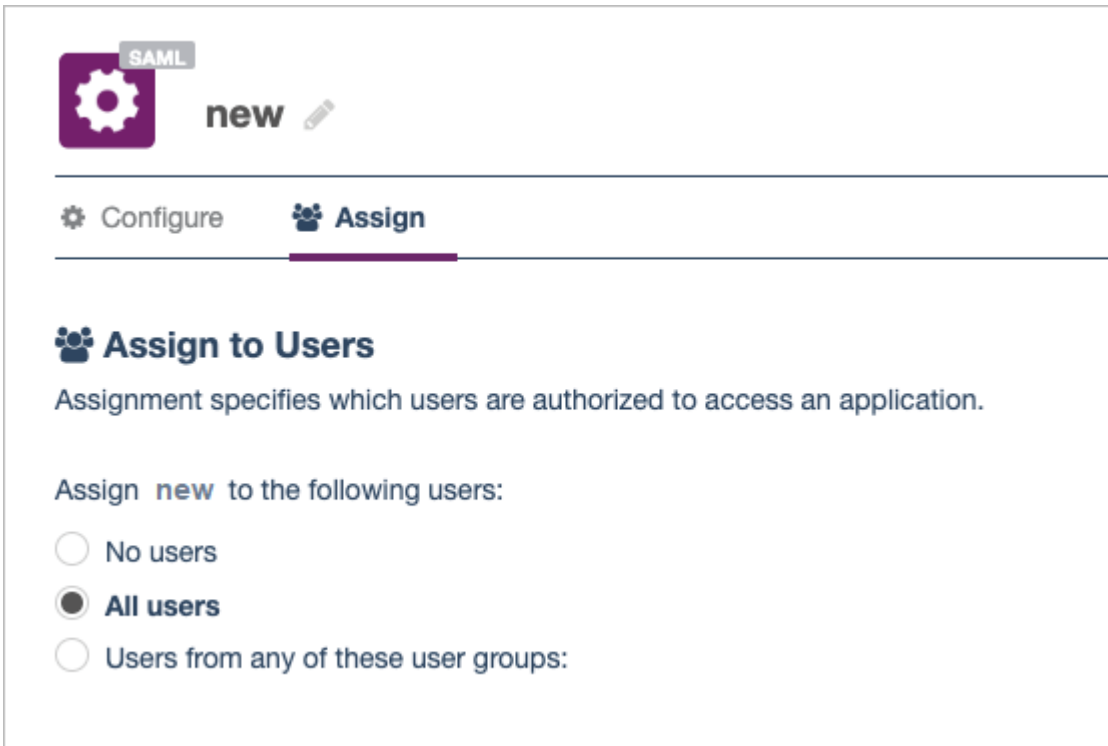
IDP INITIATED SSO RELAY STATE ⓘ

LOGOUT CHANNEL ⓘ

☒ Front

☐ Back

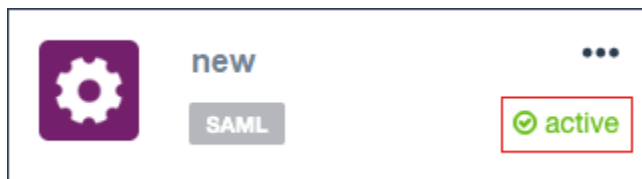
**14** Click **Save configuration** and switch to **Assign**.



The screenshot shows the 'Assign' configuration page for a SAML application. At the top, there is a header with a gear icon, the word 'SAML', and a 'new' button with a pencil icon. Below the header is a navigation bar with two tabs: 'Configure' (with a gear icon) and 'Assign' (with a group of people icon). The 'Assign' tab is selected and highlighted with a purple underline. The main content area is titled 'Assign to Users' with a group of people icon. Below the title is a description: 'Assignment specifies which users are authorized to access an application.' Further down, it says 'Assign new to the following users:'. There are three radio button options: 'No users', 'All users' (which is selected), and 'Users from any of these user groups:'. The 'All users' option is highlighted with a dark grey circle.

**15** Select **All users** or select a user/group and click **Save configuration**.

**16** Your application should now be displayed as **active**.



## Configure Parallels RAS as a Service Provider

In this step, you need to configure Parallels RAS as a service provider (SP) by adding SafeNet Trusted Access as the identity provider.

To add an identity provider:

- 1** In the RAS Console, select the **Connection** category.
- 2** Select the **SAML** tab.
- 3** Click **Tasks > Add**.

- 4 In the **Add Identity Provider** wizard, type a provider name and select an HTML5 Theme.
- 5 Select the **Import IdP metadata from file** option and specify the SAML metadata file that you've downloaded from the SafeNet Trusted Access portal earlier. See **Create a Generic SAML Application** (p. 43).

Add Identity Provider

Parallels®

Name: Safenet2

Use with Theme: <Default>

Select a method that the wizard will use to obtain the identity provider information.

☐ Import published IdP metadata

☒ Import IdP metadata from file

☐ Manually enter the IdP information

Example: https://www.contoso.com/metadata.xml

Example: c:\mydocuments\metadata.xml

< Back Next > Cancel Help

- 6 Click **Next**.

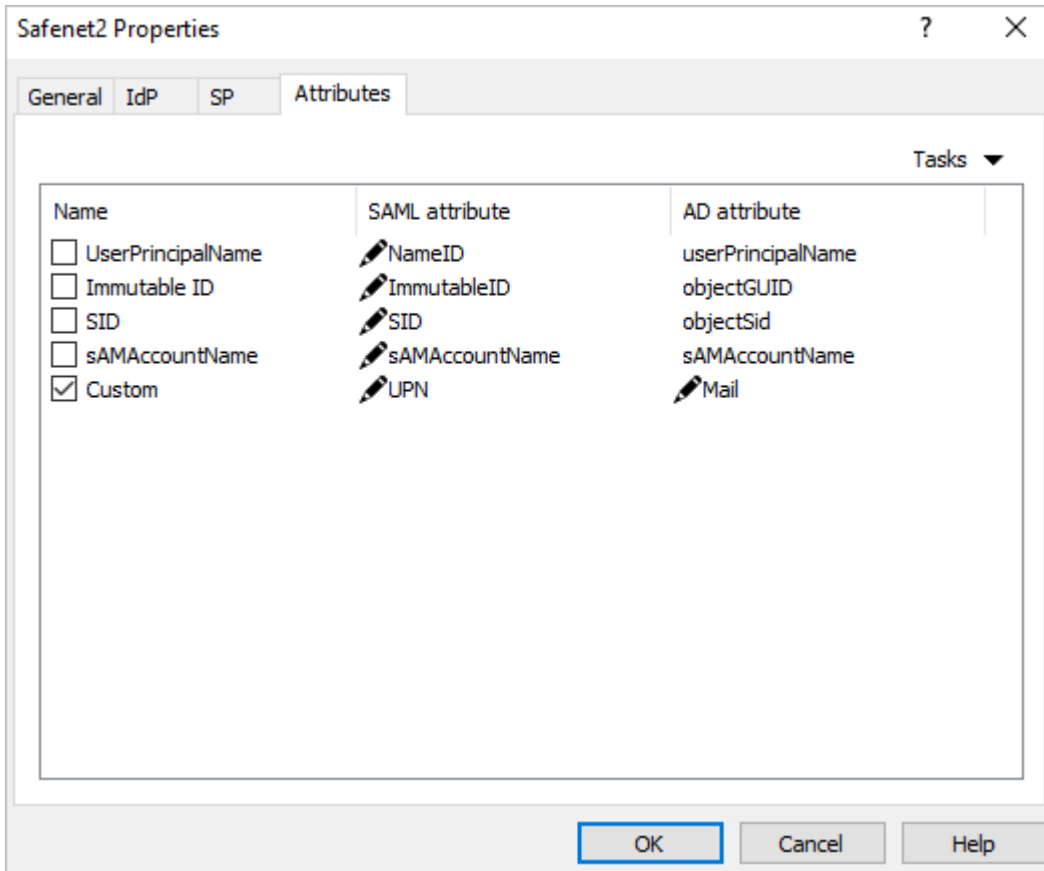
- 7 On the next page, the **IdP entity ID**, **IdP certificate**, **Logon URL**, and **Logout URL** fields will be populated automatically using the imported metadata.

The screenshot shows the 'Add Identity Provider' dialog box in the Parallels RAS Console. The dialog has a red header with the Parallels logo. It contains the following fields and controls:

- IdP entity ID:** A text field containing the URL `https://[redacted]/auth/realms/nfb1cuziu2-sta`.
- IdP certificate:** A large text area containing a base64-encoded certificate string, with the visible portion ending in `VQQDE`. There are scroll bars on the right and bottom.
- Logon URL:** A text field containing the URL `https://[redacted]/auth/realms/nfb1cuziu2-sta/protocol/saml`.
- Logout URL:** A text field containing the URL `https://[redacted]/auth/realms/nfb1cuziu2-sta/protocol/saml`.
- Import Certificate...** A button located below the Logon and Logout URL fields.
- ☒ **Allow unencrypted assertion** A checked checkbox.
- Navigation buttons:** At the bottom, there are four buttons: '< Back', 'Finish' (highlighted with a blue border), 'Cancel', and 'Help'.

- 8 Click **Finish** and then click **Apply** in the RAS Console.
- 9 On the **SAML** tab, right-click the IdP provider that you just created and click **Properties**.
- 10 Switch to the **Attributes** tab and select the **Custom** attribute. Set the **SAML attribute** value to "UPN" and the AD attribute value to "Mail".

- 11 Clear the **UserPrincipalName** attribute if it's selected.



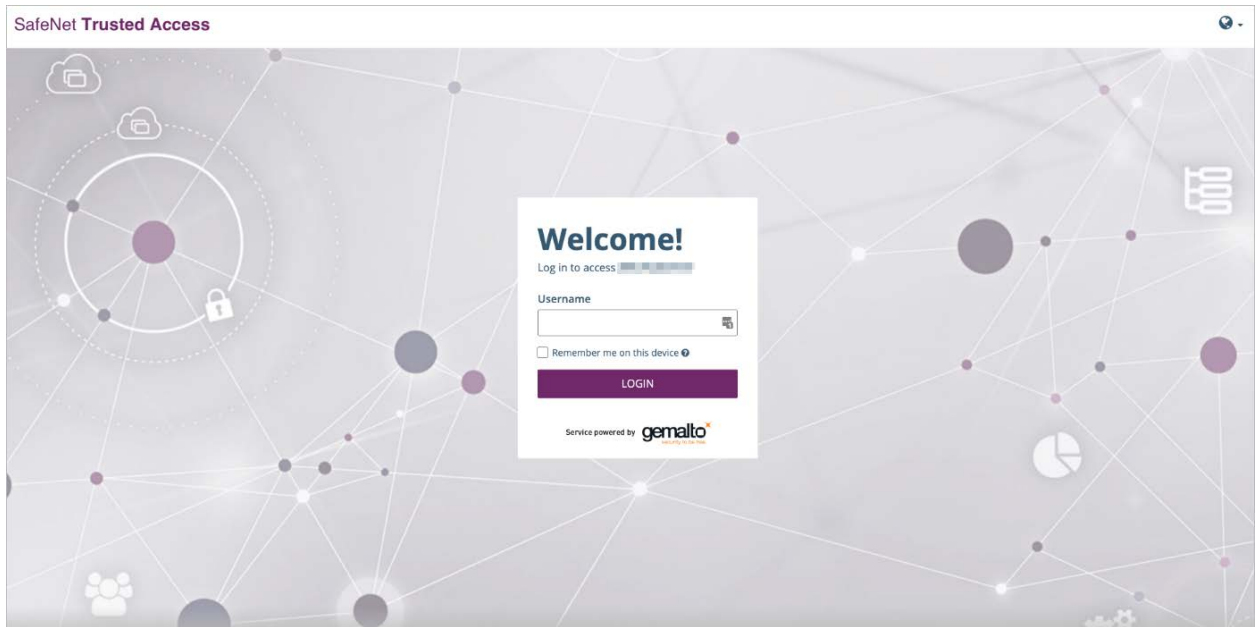
- 12 Click **OK** and then click **Apply** in the RAS Console.
- 13 Open the IdP provider **Properties** dialog again and switch to the **SP** tab.
- 14 Export the SP configuration to an XML file and save it on local drive. This is the file that you will need to import in the SafeNet Trusted Access portal as described in the **Create a Generic SAML Application** section (p. 43).

## Test Connectivity

### SP initiated

- 1 Open the RAS HTML5 portal in a web browser. Use the Theme that you associated with the SAML application.

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- 2 The user is redirected to SafeNet Trusted Access portal for authentication.



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- 3 On successful authentication, the application list is presented to the user.

### IdP initiated

- 1 Log in to the SafeNet Trusted Access portal and launch the assigned application.
- 2 The user is redirected to the HTML5 Portal using the assigned Theme and is presented with the application list.