4TRESS™ FT2011 Out-of-Band Authentication and Juniper® Secure Access

RADIUS Channel Integration Handbook

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1.0 Introduction

The Juniper® Networks SA Series SSL VPN Appliances enable remote and mobile employees, customers, and partners to gain secure access to corporate Virtual Private Network resources and applications. Providing secure access via a VPN over existing Internet connections requires strong, two-factor authentication to protect resources. The HID Global Identity Assurance™ solutions that work with Juniper Networks incorporate SSL VPN solutions with versatile, strong authentication that is flexible, scalable, and simple to manage. HID Global Identity Assurance offers two solutions:

- 4TRESS™ AAA Server for Remote Access—Addresses the security risks associated with a mobile workforce remotely accessing systems and data.
- 4TRESS Authentication Server (AS)—Offers support for multiple authentication methods that are useful for diverse audiences across a variety of service channels (SAML, RADIUS, etc.), including user name and password, mobile and PC soft tokens, one-time passwords, and transparent Web soft tokens.

1.1 Scope of Document

This document explains how to set up 4TRESS FT2011 RADIUS out-of-band (OOB) authentication with the Juniper Networks Secure Access (SA) Series of appliances. Use this handbook to enable authentication via OOB short message service (SMS) and Email for use with a Juniper VPN.

1.2 Prerequisites

- 4TRESS FT2011.
- User phone numbers and Email addresses are stored in the LDAP server.
- Juniper SA version 7.1.x installed and configured.
- Users have static LDAP passwords.
- There is an existing Short Message Peer-to-Peer Protocol / Simple Mail Transfer Protocol (SMPP/SMTP) gateway to send one-time-password OOB codes to users.
- The Juniper login page has been customized.
- Ability to manage double authentication (LDAP, RADIUS) sequentially from the same sign-in page on the Juniper network.

Note: Using Juniper double authentication (an LDAP password plus an out-of-band, one-time password) is optional. You can configure the sign-in page so that users do not have to use static LDAP passwords.

2.0 Juniper Secure Access Configuration

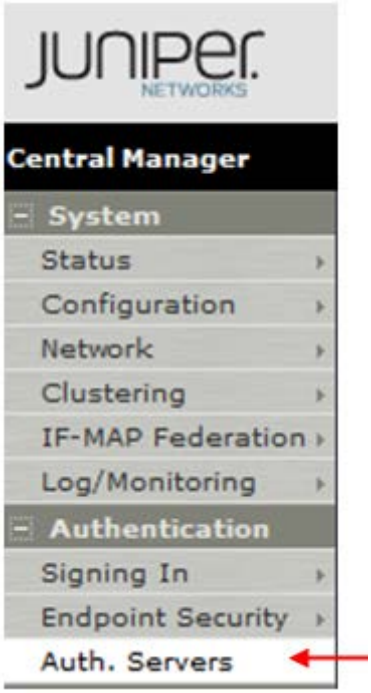
This chapter describes how to manage Juniper Secure Access. When a user signs into a Juniper SA Series appliance, the user specifies an authentication realm, which is associated with a specific authentication server. The Juniper SA Series appliance forwards the user's credentials to this authentication server to verify the user's identity.

You will create two authentication servers:

- LDAP Server to validate network passwords, and
- 4TRESS AAA RADIUS Server to validate one-time-passwords and the SMS activation code.

2.1 Procedure 1: Create New LDAP Server Instance

To define the LDAP Server instance, perform the following steps (this will create a new LDAP server instance on the SA Series SSL VPN appliance).

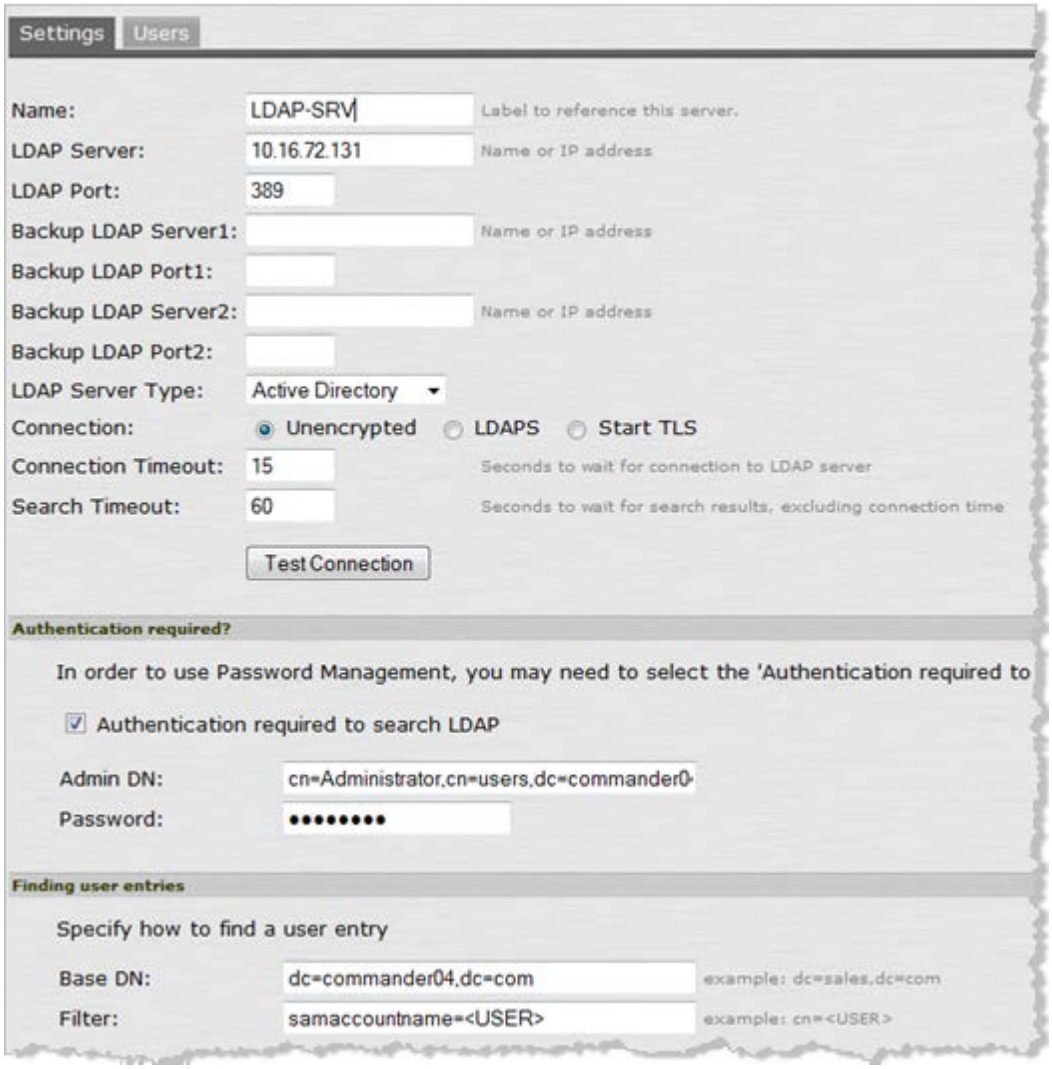


Getting Started

1. In the Admin console, expand the **Authentication** menu, and then click **Auth. Servers**.

2. From the **New** drop-down list, select LDAP Server, and then click **New Server**.

   The following dialog is displayed.



- **Name**—Specify a name to identify the server instance.
- **LDAP Server**—Specify the name or IP address of the LDAP server that the SA Series SSL VPN Appliance uses to validate your users.
- **LDAP Port**—Specify the port on which the LDAP server listens.
- **Backup servers and ports**—OPTIONAL—Specify parameters for backup LDAP servers.
- **LDAP Server Type**—Specify the type of LDAP server against which you want to authenticate users.
- **Connection, Connection Timeout, Search Timeout**—Accept the defaults.

3. Click **Test Connection** to verify the connection between the SA Series SSL VPN appliance and the specified LDAP server(s).
4. Select the option, **Authentication required to search LDAP**, and enter the appropriate **Admin DN** and **Password**.

5. In the **Finding user entries** section, specify a **Base DN** from which to begin searching for user entries, and make sure that the **Filter** is correct (for example: `samaccountname=<USER>`).
6. At the bottom of the dialog, click **Save Changes** (not illustrated).

2.2 Procedure 2: Create New RADIUS Authentication Server

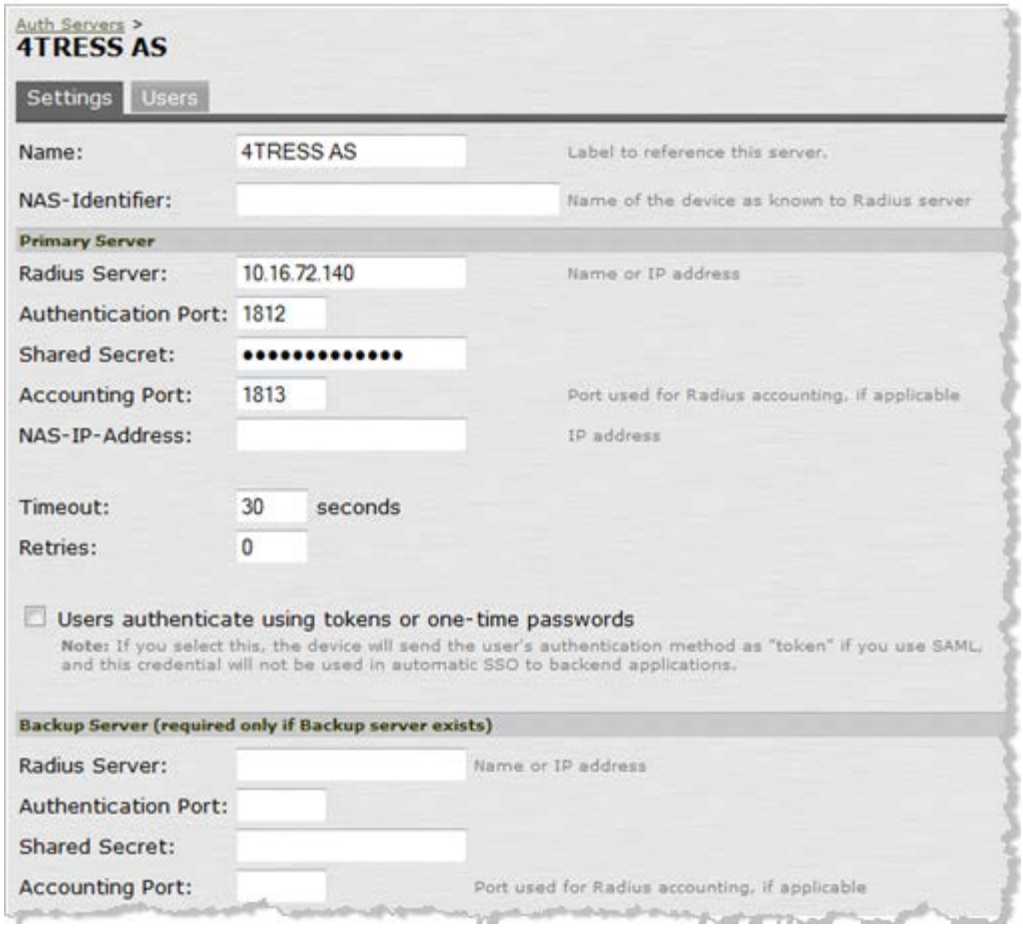
When using an external RADIUS server to authenticate Juniper SA users, you must configure the server to recognize the Juniper SA as a client and specify a shared secret for the RADIUS server to use to authenticate the client request. To configure a connection to the RADIUS server on an SA Series SSL VPN appliance, perform the following steps.

Getting Started

1. In the Admin console, expand the **Authentication** menu, and then click **Auth. Servers.**

2. From the **New** drop-down list, select Radius Server, and then click **New Server**.

   The following dialog is displayed.



3. On the **Settings** tab, enter the following attributes.
    - **Name**—Specify a name to identify the server instance.
    - **Radius Server**—Specify the name or IP address.
    - **Authentication Port**—Enter the authentication port value for the RADIUS server. Typically, this port is 1812.
    - **Shared Secret**—Enter a string. You will also enter this string when configuring the RADIUS server to recognize the SA Series SSL VPN appliance as a client.
    - **Accounting Port**—Accept the default,1813.
    - **Timeout**—Accept the default, 30 seconds.
    - **Retries**—Accept the default, 0 seconds.

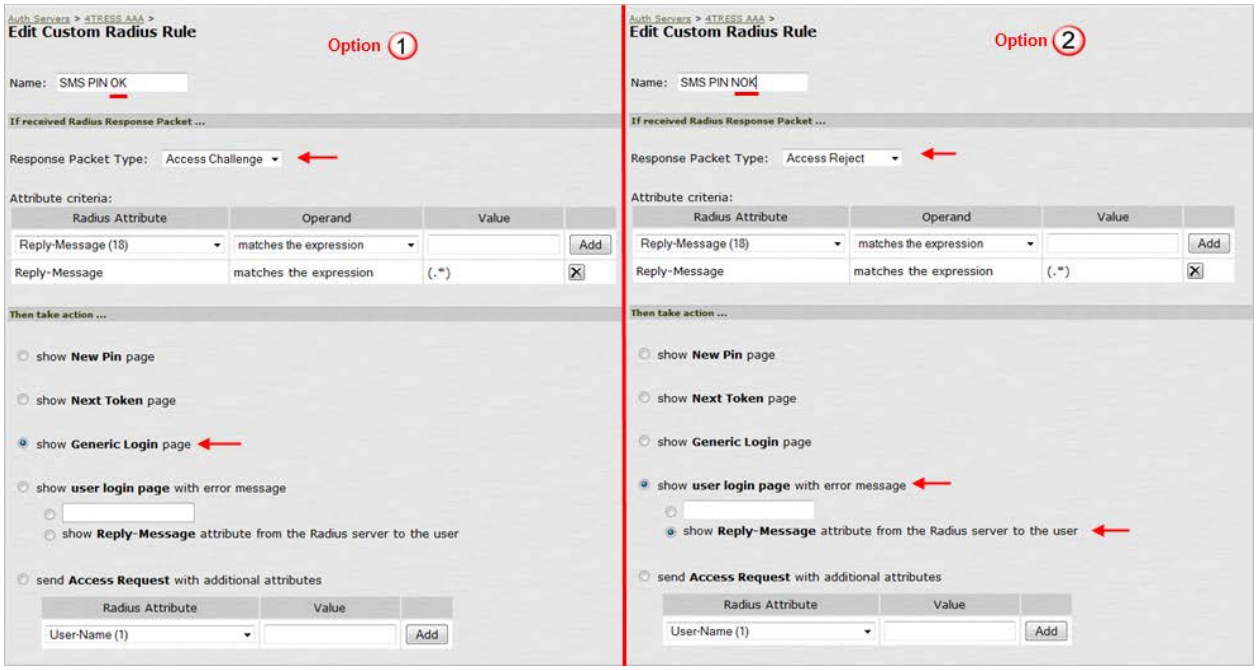
4. In the **Custom Radius Rules** section, click **New Radius Rule**. When a person enters a username and password, the initial authorization request is sent to the server. The server may respond with either a Challenge or Reject packet.

5. In the **Add** (or Edit) **Custom RADIUS Challenge Rule** window, select the packet type (Challenge or Reject), and then specify what action to take (used for OOB authentication and emergency access—4TRESS sends an SMS if a correct SMS PIN is entered = access-challenge).

6. To create a custom challenge rule, select the **Response Packet Type**:

- Access Challenge—sent by the RADIUS server requesting more information in order to allow access.
- Access Reject—sent by the RADIUS server rejecting access.

The following image illustrates two sample options.



7. Click **Save**.

Once you have saved your custom rule, it appears in the Custom RADIUS Authentication Rule section (illustrated next).

Note: To delete a rule, select the checkbox next to the rule, and then click **Delete**.

2.3 Procedure 3: Define Juniper User Role(s)

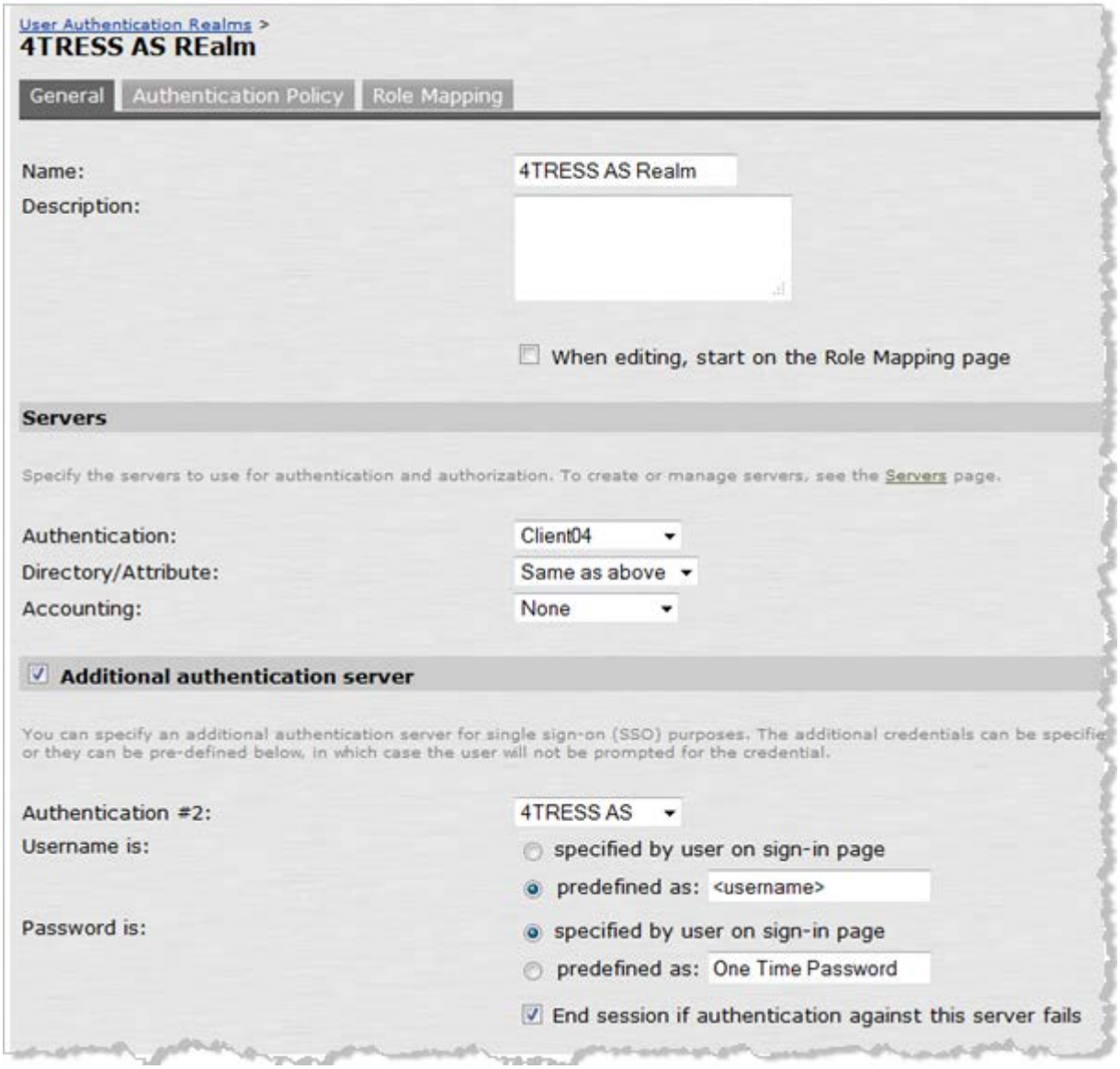
A user role is an entity that defines user session parameters, personalization settings, and enabled access features.

1. From the Admin console, expand the **Users** menu, point to **User Roles**, and then click **New User Role**.
2. Configure the new user role according to your requirements.

2.4 Procedure 4: Define Juniper Authentication Realm

An authentication realm specifies the conditions that users must meet in order to sign in to the SA Series appliance. A realm consists of a grouping of authentication resources.

1. From the Admin console, expand the **Users** menu, point to **User Realms**, and then click **New User Realm**.



2. On the **General** tab, enter the following attributes and select the following options.
    - **Name**—Enter a name to label this realm.
    - **Description**—Enter a meaningful description.
    - In the **Servers** section:
        - Select an option from the **Authentication** drop-down list to specify an authentication server to use for authenticating users who sign in to this realm (for example, the LDAP server).
        - Accept the default for **Directory/Attribute** (Same as above).
        - **Accounting**—Accept the default, None.

- To submit secondary user credentials to enable two-factor authentication to access the Secure Access device, select the option, **Additional authentication server**.
  - Authentication #2—Select 4TRESS AS from the drop-down list (the name of the authentication server might be different).
  - By default, Secure Access submits the <username> session variable that holds the same username used to sign in to the primary authentication server. To automatically submit a username to the secondary server, select the option, **predefined as**.
  - If you want to prompt the user to manually submit a password to the secondary server during the Secure Access sign-in process, then select the option, **Password is specified by user on sign-in page**.
  - Select the option, **End session if authentication against this server fails**.

3. At the bottom of the page, click **Save Changes**.
4. To configure one or more role mapping rules (based on the role defined previously), select the **Role Mapping** tab.

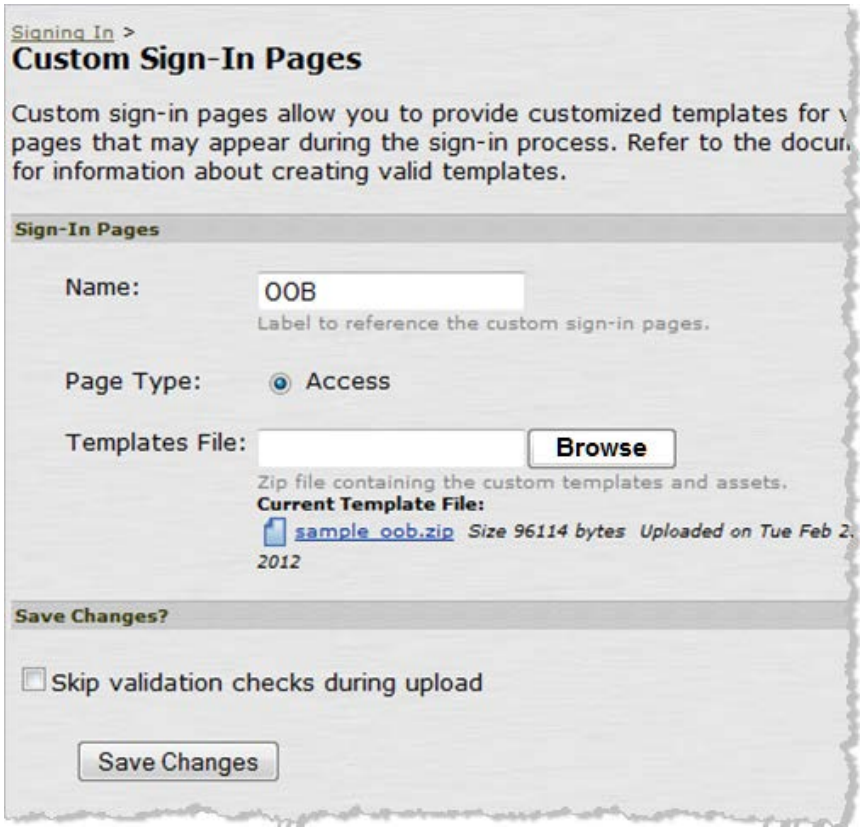
2.5 Procedure 5: Configure New Juniper Sign-In Page

1. From the Admin console, expand the **Authentication** menu, point to **Signing In**, and then click **Sign-in Pages**.

2. On the **Custom text** page, enter the following attributes.
    - **Welcome message**—Enter an appropriate salutation, such as *Welcome to the*.
    - **Portal name**—Enter a meaningful name. This will be what comes after *Welcome to the*.
    - **Submit button**—Customize as desired.
    - **Instructions**—Enter the text you want the user to see on the sign-in page.
    - **Username**—This is used by the realm to mask the secondary username on the sign-in page.
3. Accept the defaults for all other attributes.

4. **Optional**: You can modify Juniper custom sign-in pages to hide the SMS PIN (the activation code). If you do this, then all the users will use the same activation code. For details, call your HID Global Identity Assurance technical contact to obtain a sample page. After you obtain a custom file, you can upload it directly using the **Sign-in Pages** tab (illustrated next).

5. On the **Signing In** page, select the **Sign-in Pages** tab, and then click **Upload Custom Pages**.

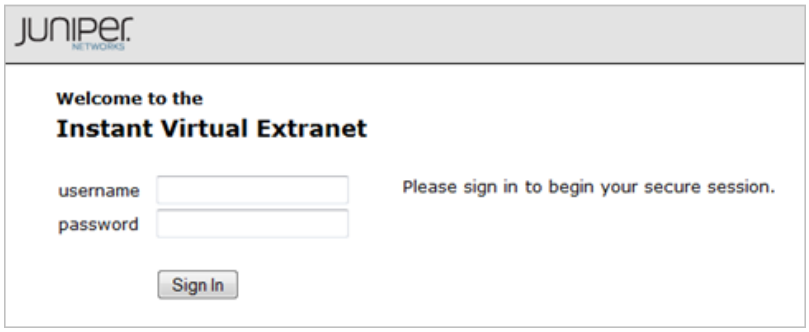


6. Enter an appropriate **Name**, select the **Access** option for **Page Type**, and then click the **Browse** button.

2.5.1 Examples of Custom Sign-In Pages

FIGURE 1: Sample Juniper Sign-In Page Before Customization

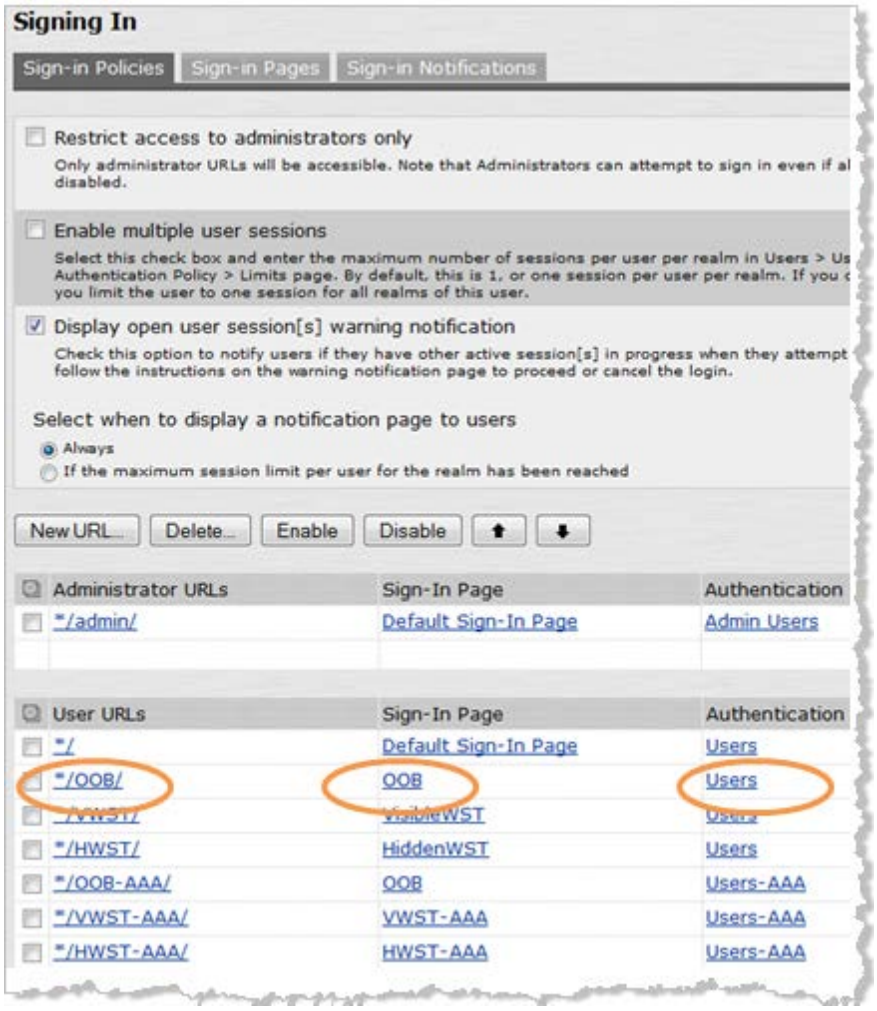
FIGURE 2: Sample Juniper Sign-In Page After Customization



2.6 Procedure 6: Juniper Sign-in Policies

User sign-in policies also determine the realm(s) that users can access.

1. To create or configure user sign-in policies, in the Admin console, expand the **Authentication** menu, point to **Signing In**, and then click **Sign-in Policies**.



2. To create a new sign-in policy, click **New URL**.
3. In the **Sign-in URL** field displayed, enter the URL that you want to associate with the policy. Use the format `<host>/<path>`, where `<host>` is the host name of the Secure Access device and `<path>` is any string you want users to enter.

4. For **Sign-in Page**, select the sign-in page that you want to associate with the policy.
5. For **Authentication realm**, specify which realm(s) map to the policy, and how users should pick from amongst realms.
6. Click **Save Changes**.

3.0 4TRESS AS Configuration

This chapter describes the procedures required to configure 4TRESS Authentication Appliance support for a RADIUS Front End (RFE) component installed on an Appliance.

You will perform these steps using the 4TRESS Management Console. Be sure you have the *ActivIdentity 4TRESS Authentication Appliance Administration Guide: Management Console* technical publication on hand. This chapter does not provide all the details.

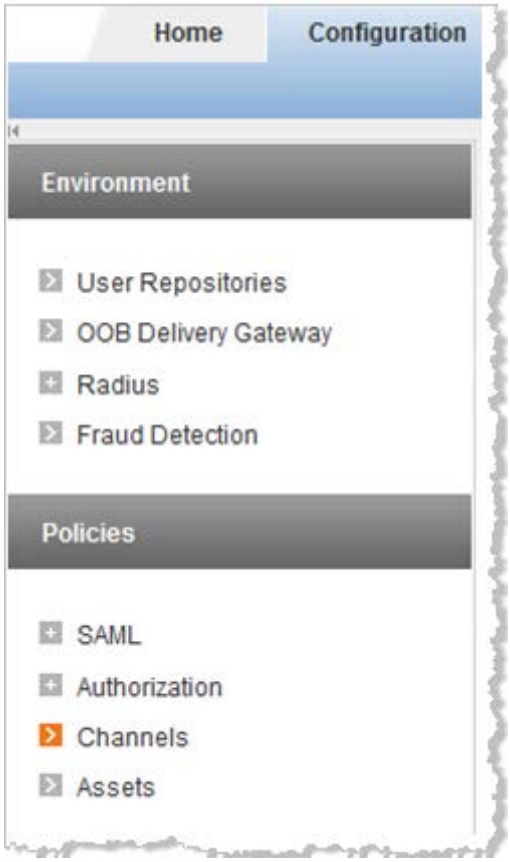
3.1 Configure RADIUS Channel

A RADIUS channel for the RFE deployment defines a group of access controllers and specifies how to handle authentication requests.

Using a policy configured for the channel, you will filter the requests according to the IP address or hostname of the access controllers.

1. Launch the 4TRESS Management Console.

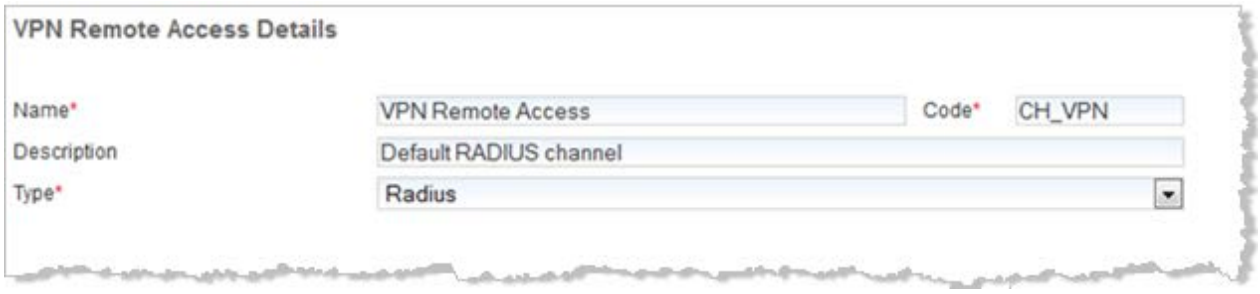
2. When prompted, enter your **User name** and **Password**, and then click **Submit**.



3. Select the **Configuration** tab, and then in the pane to the left under **Policies**, click **Channels**.

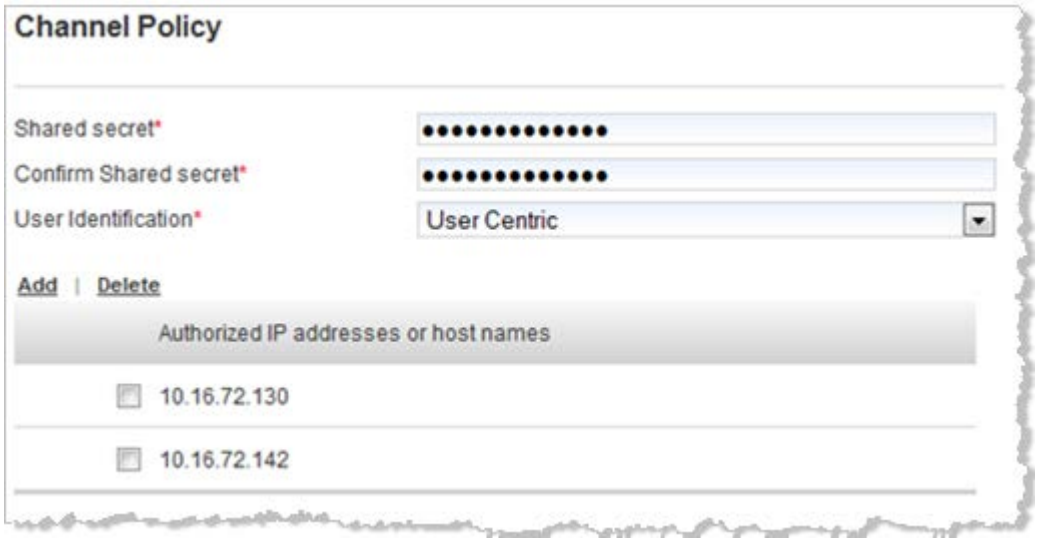
Important: To configure the RADIUS channel policy, you can either create a new channel using the **Add** or **Copy** options, or edit an existing channel by clicking the channel name in the list displayed to the right of the page. HID Global Identity Assurance recommends that you use the Remote Access channel—this is the pre-defined RADIUS channel.

4. In the list displayed to the right when you click **Channels**, click the **VPN Remote Access** channel.



5. In the **VPN Remote Access Details** section displayed, accept the default for **Description**, or change it. Make sure the **Name**, **Type**, and **Code** are correct.

6. Click **Channel Policy** to expand the section and display the configuration options.



7. Enter and confirm the **Shared secret**.

   The **Shared secret** encrypts the information exchanges between the appliance(s) and the access controllers.

   The secret must be the same for each controller configured in the channel policy. The secret must not exceed 40 characters. By default, the secret for a pre-defined gate is ActivIdentity.

8. Click **Add**.

   The **Add Authorized IP addresses or host names** list is displayed. Use these settings to configure the access controllers that are authorized to use the gate for authentication.

Important: You can select either a host name—and then enter the name of the machine hosting the access controller—or you can enter an IP address, and then enter an address and range of the access controller. HID Global Identity Assurance recommends that you use an IP address rather than a host name. If the DNS cannot translate the host name, then the RFE will not restart.

9. For an IP address, enter the valid network range (for example, 192.168.0.0/24).
10. Click **Save**.

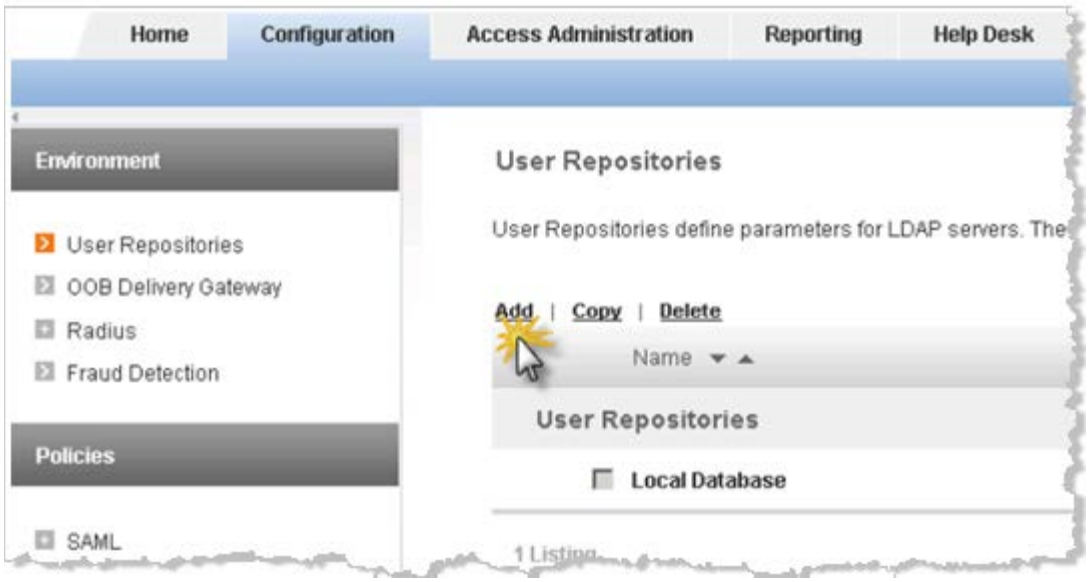
    The access controller is displayed in the **Channel** page. Now, it is authorized to use the gate for authentication requests.

Important: Make sure that each access controller is configured with the shared secret you specified above. If necessary, repeat the steps to authorize access for additional controllers.

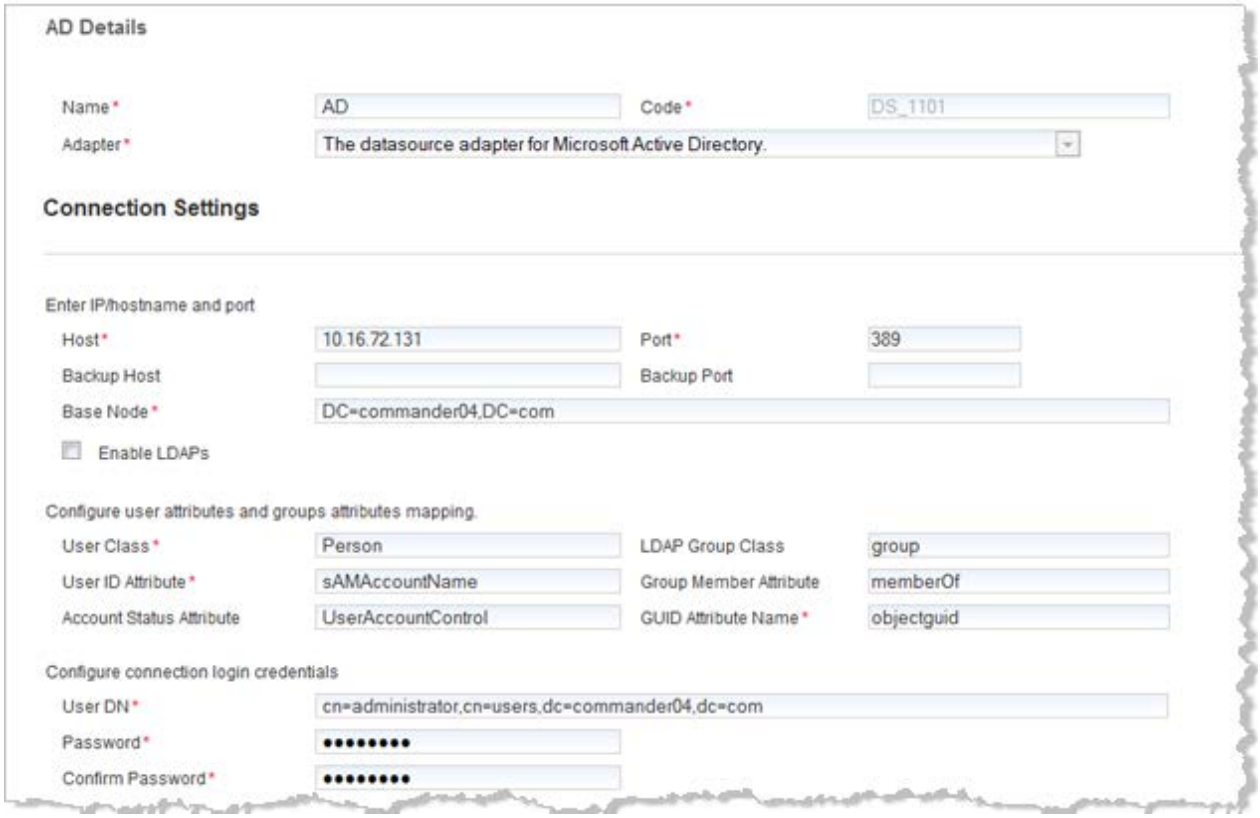
3.2 Create User Repository

The “User Repositories” function of the 4TRESS Management Console defines parameters for using LDAP servers as the source of user data for the appliance system. By configuring the appliance to communicate with your LDAP directory server, you enable access to user data for authentication purposes.

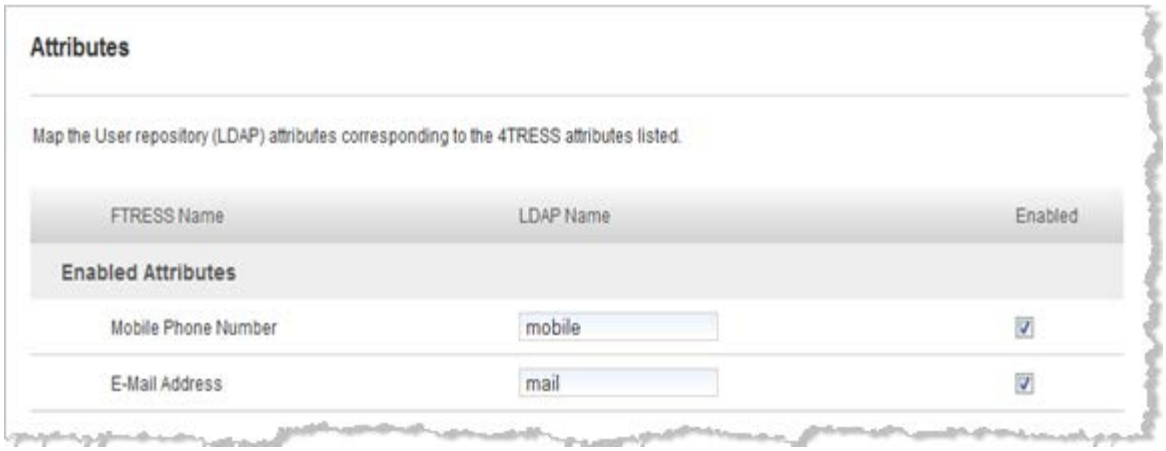
1. Logged into the 4TRESS Management Console, select the **Configuration** tab.
2. In the pane to the left, under **Environment**, click **User Repositories**.



3. In the page displayed to the right, click **Add**.



4. **Name**—Enter a meaningful name.
5. **Adapter**—Select the adapter from the drop-down list that corresponds to your directory type (either Novell® eDirectory or Microsoft® Active Directory).
6. **Host**—Enter the IP address or hostname of the server where your LDAP directory resides.
7. **Port**—Enter the Port (the LDAP directory server's listening port).
8. In the **Configure connection login credentials** section of the page, enter the user credentials that the appliance will use to access the LDAP database. Then, enter and confirm the user's **Password**. You MUST indicate the full **User DN**.
9. Expand the **Attributes** section, and then expand the **Available** section.



10. In the **Attributes** section, select the **Enabled** options next to the appliance attributes to be mapped to the LDAP attributes.
11. Click **Save**. A success message appears.

3.3 Configure Administration Groups, User Types, User Repositories, and Authentication Policies

Have the *ActivIdentity 4TRESS Authentication Appliance Administration Guide: Management Console* technical documentation on hand. This section summarizes the remaining procedures to perform before Web Soft Tokens can be activated. It does not provide the step-by-step instructions that are explained already in the core documentation.

1. Use the 4TRESS Management Console to create and update administration groups within user types. Then, you can add users to the administration groups.

   User types define categories of users. A hierarchy of administration groups exists for each user type.

   For each user type, you can define:

   - User repositories relating to the user type,
   - Authentication policies accessible to users of this type, and
   - User attributes for users of this type.

   There are default user types. Installing the 4TRESS Appliance Server automatically sets up a number of user types. For each user type, there are pre-defined system users. Collectively, these sample users have all the required privileges to administer the system. You can use the base data set as provided, or modify it to meet your specific requirements.
2. Map the user repository to a user type.
3. Assign an authentication policy to a user type.
4. Map the user repository to an administration group.

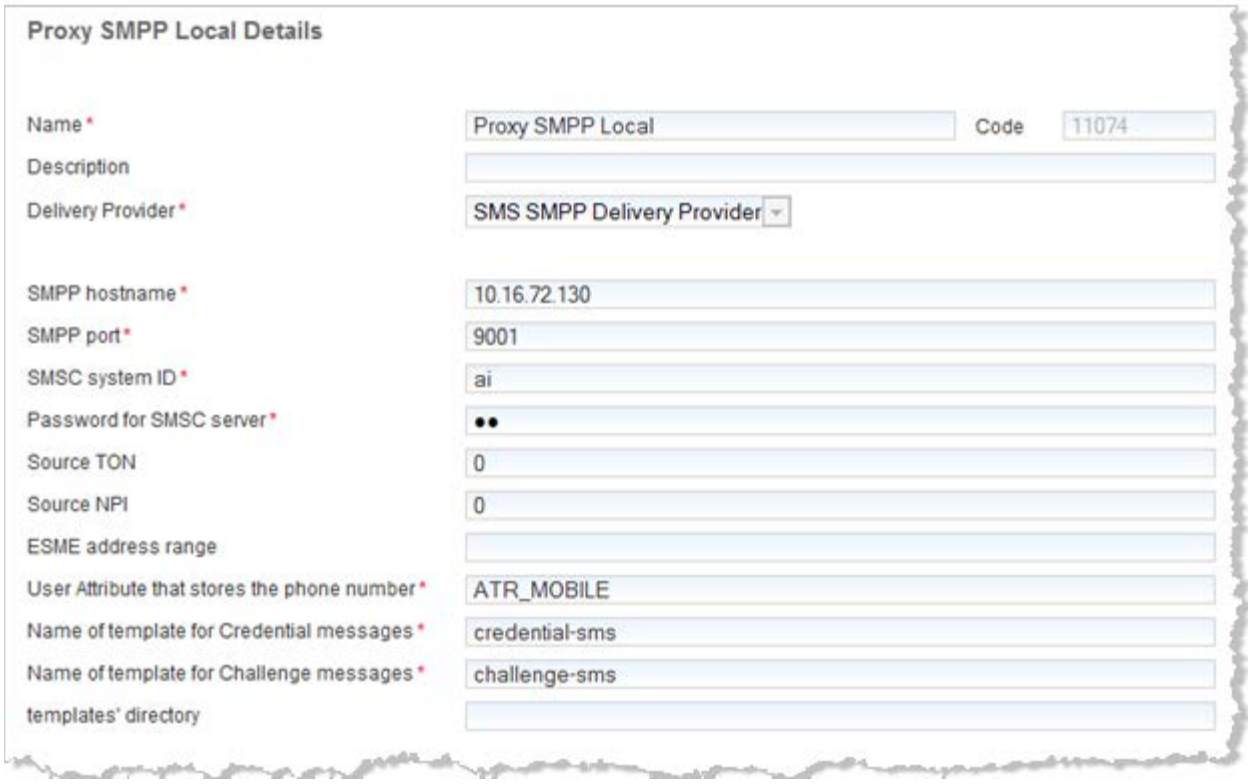
Administration groups provide a way to organize (partition) users for administrative purposes, as well as a way to assign permissions to users through membership of administration groups.

3.4 Create OOB Delivery Gateway

4TRESS supports two OOB authentication types: SMS (Phone) and Email. The actual SMS/Email OTP is a random number generated by the appliance and sent to the end user by SMS or Email through a delivery gateway.

1. Logged into the 4TRESS Management Console, select the **Configuration** tab.

2. In the pane to the left under **Environment**, click OOB Delivery Gateway.



3. Enter a **Name** and **Description**.
4. Select SMS SMPP Delivery Provider from the **Delivery Provider** drop-down list.
5. Click **Next** to display the set of the fields on the page.
    - **SMPP hostname**—Hostname or IP address of the SMPP provider.
    - **SMPP port**—Port number of the SMPP provider.
    - **SMSC system ID**—ID of the SMS Center.
    - **Password for SMSC server**—Password of the SMS Center.
    - **Source TON**—Obtain this value from your SMPP provider.
    - **Source NPI**— Obtain this value from your SMPP provider.
    - **ESME address range**— Obtain this value from your SMPP provider.
    - **User Attribute that stores the phone number**—User attribute for the phone number of the user registered.
    - **Name of template for Credential messages**—By default, it is pre-populated with `credentialemail`. Enter `credential-sms`.
    - **Name of template for Challenge messages**—Enter `challenge-sms`.
6. Click **Save**.

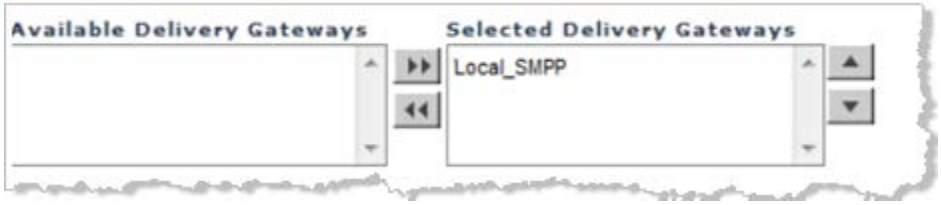
3.5 Assign An Out-of-Band Delivery Gateway

Have the main *ActivIdentity 4TRESS Authentication Appliance Administrator Guide: Configurer Portal* technical documentation handy for easy reference. This is a summary section only.

1. Launch the 4TRESS Configurer, log in, and then select the **Authentication Policies** tab.

Code	Name	Class	Encryption Key	Notes
AT_CSTEMVT	Customer EMV transaction	DEVICE	des	Customer EMV transaction
AT_CSTEPWD	Customer Emergency Password	LOGIN	des	Emergency password for customer authentication
AT_CUSTEMV	Customer EMV authentication	DEVICE	des	Customer EMV authentication
AT_CUSTMD	Customer Emergency Q&A	SQ	des	Emergency Q&A for customer authentication
AT_CUSTMW	Customer memorable word	LOGIN	des	Memorable word for supplementary authentication
AT_CUSTOOB	Customer OOB authentication	DEVICE	des	Out of the Band login for customer authentication
AT_CUSTOTP	Customer One Time Password	DEVICE	des	One time password login for customer authentication
AT_CUSTPIN	Customer PIN	LOGIN	des	Numeric PIN for customer authentication

2. Edit the AT_CUSTOTP **Customer One Time Password** authentication policy.

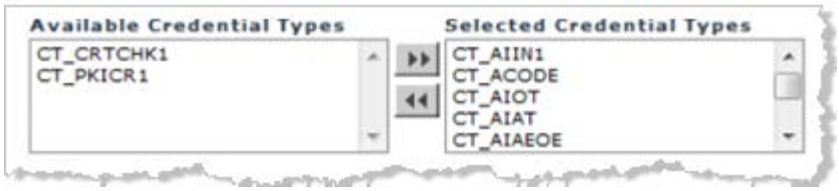


3. Add the new delivery gateway (for example, Local_SMPP) that you just created in the previous section of this document to the **Selected Delivery Gateways** box.
4. Update the authentication policy.

3.6 Assign An Out-of-Band Delivery Credential to An Existing Authentication Policy

Have the main *ActivIdentity 4TRESS Authentication Appliance Administrator Guide: Configurer Portal* technical documentation handy for easy reference. This is a summary section only.

1. Launch the 4TRESS Configurer, log in, and then select the **Authentication Policies** tab.
2. Edit the AT_CUSTOTP **Customer One Time Password** authentication policy by assigning the following credential types.



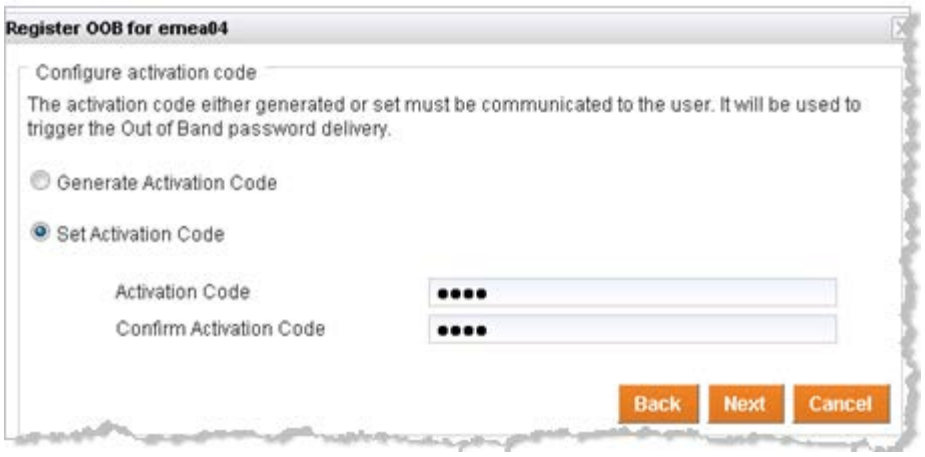
3. Assign the CT_ACODE and CT_OOB credential types to the **Selected Credential Types** box.
4. Update the authentication policy.

4.0 Assign SMS Token(s)

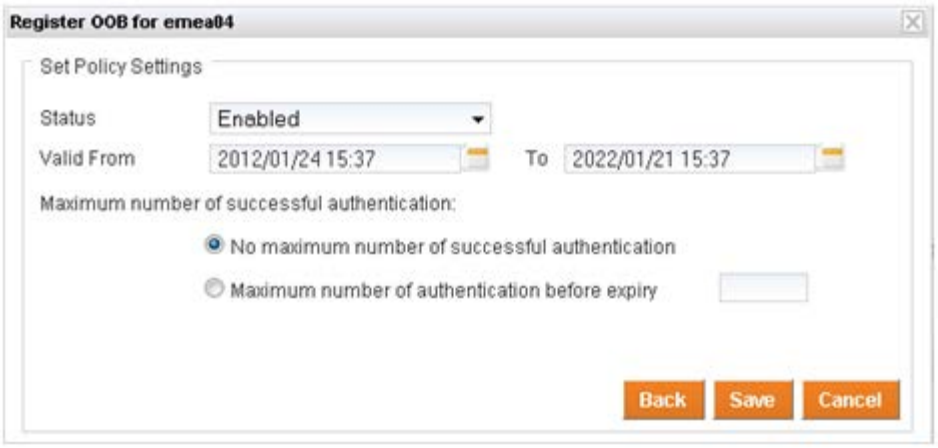
4.1 Prerequisite: Assign An SMS Token

1. Logged into the 4TRESS Management Console, search for the user.
2. To create an OOB record, click the **Register Out of Band** link.

3. Select Customer One Time Password from the **Authentication Policy** drop-down list.



4. Select the **Set Activation Code** option, and then enter and confirm an **Activation Code**.
5. Click **Next**.

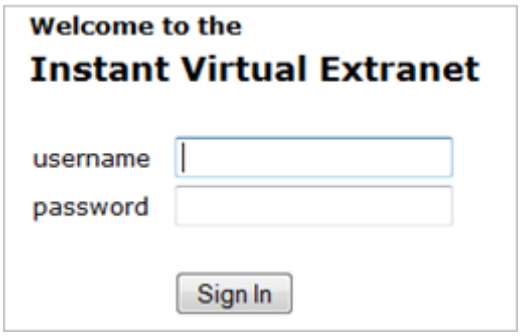


6. Check the **Set Policy Settings** dialog, and match it to the one illustrated.
7. Click **Save**. A success message is displayed (Out of Band created successfully).

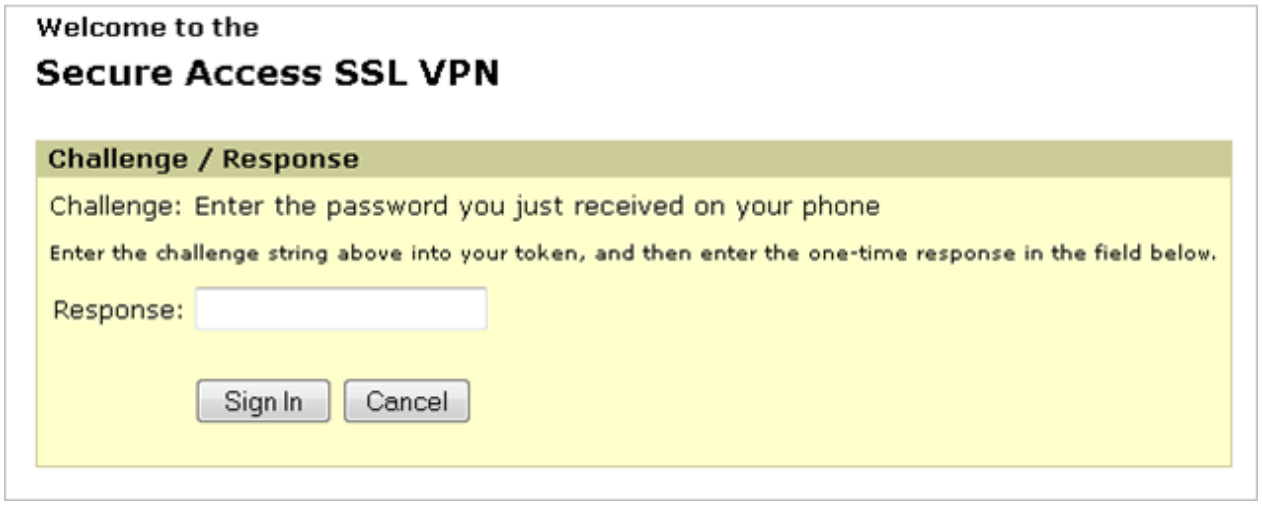
5.0 Sample Authentication Using Out-of-Band Authentication

1. The user authenticates to the Juniper Activation Realm with an OOB device (and optionally with an LDAP password). This depends on Juniper configuration.

   If you modify this page (the Juniper Custom sign-in page) to hide the SMS PIN (activation code), then all users will use the same activation code. Contact your HID Global Identity Assurance technical contact to obtain a sample page. For example:



After the user enters his/her credentials, s/he receives a one-time password via telephone or email message.



2. The user enters the password in the **Response** box, and then clicks **Sign In**.

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Revision History

Date	Author	Description	Document Version
May 2012	Eco-System Workgroup	Initial release	2.0
February 2013	Eco-System Workgroup	Rebranded for HID Global and changed copyright from ActivIdentity to HID Global	2.1
May 2013	Eco-System Workgroup	Updated copyright statement, rebranding to HID Global TP template	2.2

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