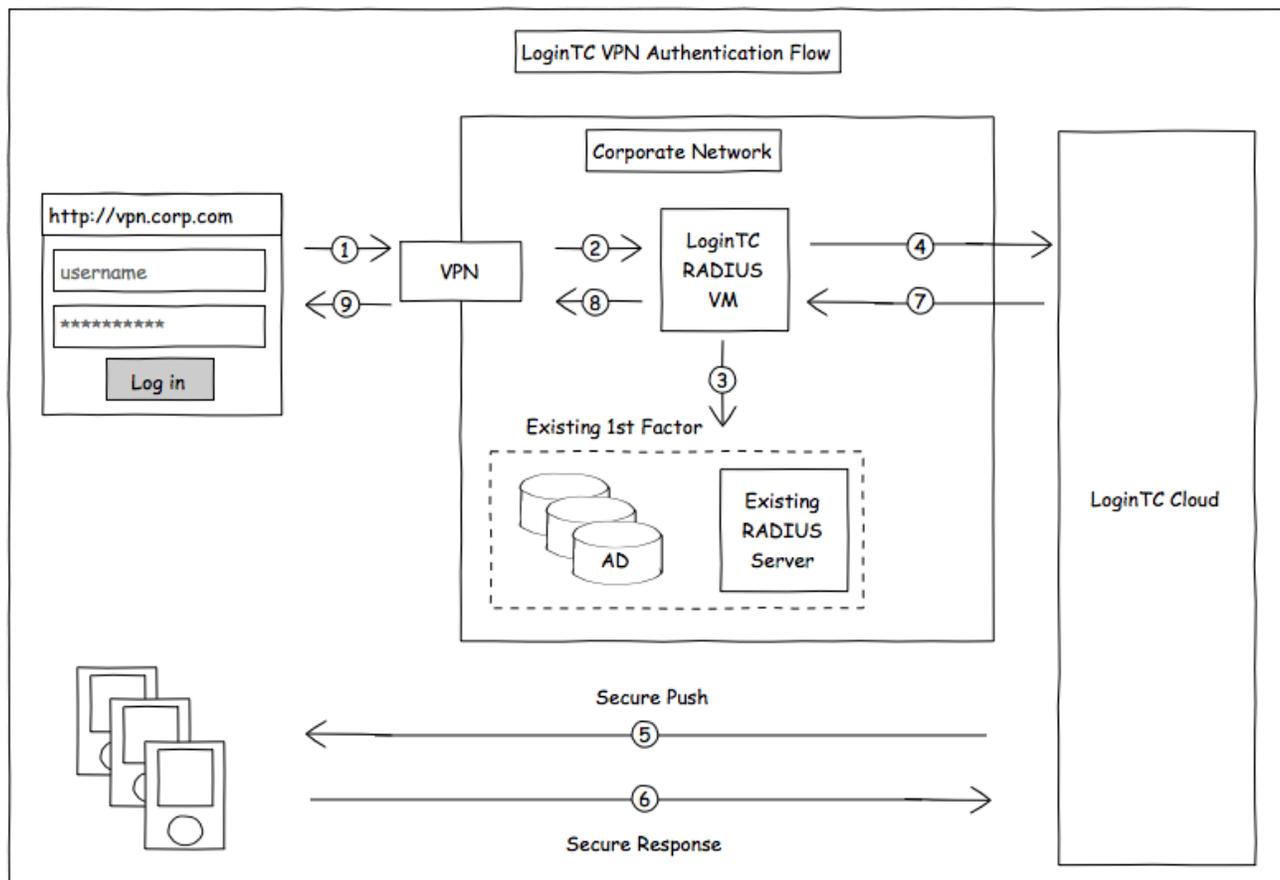


# Two factor authentication for Check Point appliances

[logintc.com/docs/connectors/check-point.html](http://logintc.com/docs/connectors/check-point.html)

The LoginTC RADIUS Connector is a complete two-factor authentication virtual machine packaged to run within your corporate network. The LoginTC RADIUS Connector enables Check Point appliances to use LoginTC for the most secure two-factor authentication.



## Compatibility

Check Point appliance compatibility:

- Check Point 600 Series
- Check Point 1100 Series
- Check Point 2200 Appliance
- Check Point 4000 Series
- Check Point 12000 Series
- Check Point 13000 Series
- Check Point 21000 Series
- Check Point Next Generation Firewalls (NGW)
- Check Point appliances supporting RADIUS authentication

Check Point VPN client compatibility:

- Check Point Endpoint Security VPN E80.60 and later

Appliance not listed?

We probably support it. [Contact us](#) if you have any questions.

## Compatibility Guide

Check Point appliances which have configurable RADIUS authentication are supported.

## Prerequisites

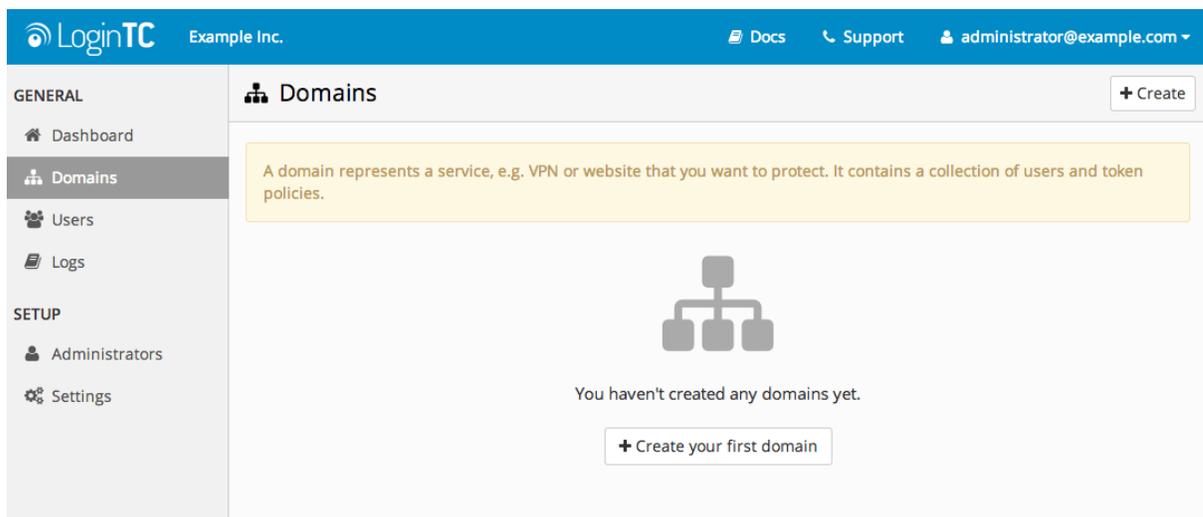
Before proceeding, please ensure you have the following:

## RADIUS Domain Creation

Create a RADIUS domain in [LoginTC Admin](#). The domain represents a service (e.g. VPN) that you want to protect with LoginTC. It will contain token policies and the users that access your service.

If you have already created a LoginTC domain for your LoginTC RADIUS Connector, then you may skip this section and proceed to [Installation](#).

1. [Log in](#) to LoginTC Admin
2. Click **Domains**:
3. Click **Create Domain**:



4. Enter domain information:

## Installation

The LoginTC RADIUS Connector runs CentOS 6.8 with SELinux. A firewall runs with the following open ports:

Port	Protocol	Purpose
22	TCP	SSH access
1812	UDP	RADIUS authentication
1813	UDP	RADIUS accounting
8888	TCP	Web interface
443	TCP	Web interface
80	TCP	Web interface
80	TCP	Package updates (outgoing)
123	UDP	NTP, Clock synchronization (outgoing)

### Note: Username and Password

`logintc-user` is used for SSH and web access. The default password is `logintcradius`. You will be asked to change the default password on first boot of the appliance and will not be

able to access the **web interface** unless it is change.

The `logintc-user` has `sudo` privileges.

## Configuration

---

Configuration describes how the appliance will authenticate your RADIUS-speaking device with an optional first factor and LoginTC as a second factor. Each configuration has **4**

### Sections:

#### 1. LoginTC

This section describes how the appliance itself authenticates against LoginTC Admin with your LoginTC organization and domain. Only users that are part of your organization and added to the domain configured will be able to authenticate.

#### 2. First Factor

This section describes how the appliance will conduct an optional first factor. Either against an existing LDAP, Active Directory or RADIUS server. If no first factor is selected, then only LoginTC will be used for authentication (since there are 4-digit PIN and Passcode options that unlock the tokens to access your domains, LoginTC-only authentication this still provides two-factor authentication).

#### 3. Passthrough

This section describes whether the appliance will perform a LoginTC challenge for an authenticating user. The default is to challenge all users. However with either a static list or Active Directory / LDAP Group you can control whom gets challenged to facilitate seamless testing and rollout.

#### 4. Client and Encryption

This section describes which RADIUS-speaking device will be connecting to the appliance and whether to encrypt API Key, password and secret parameters.

## Data Encryption

---

It is strongly recommended to enable encryption of all sensitive fields for both PCI compliance and as a general best practice.

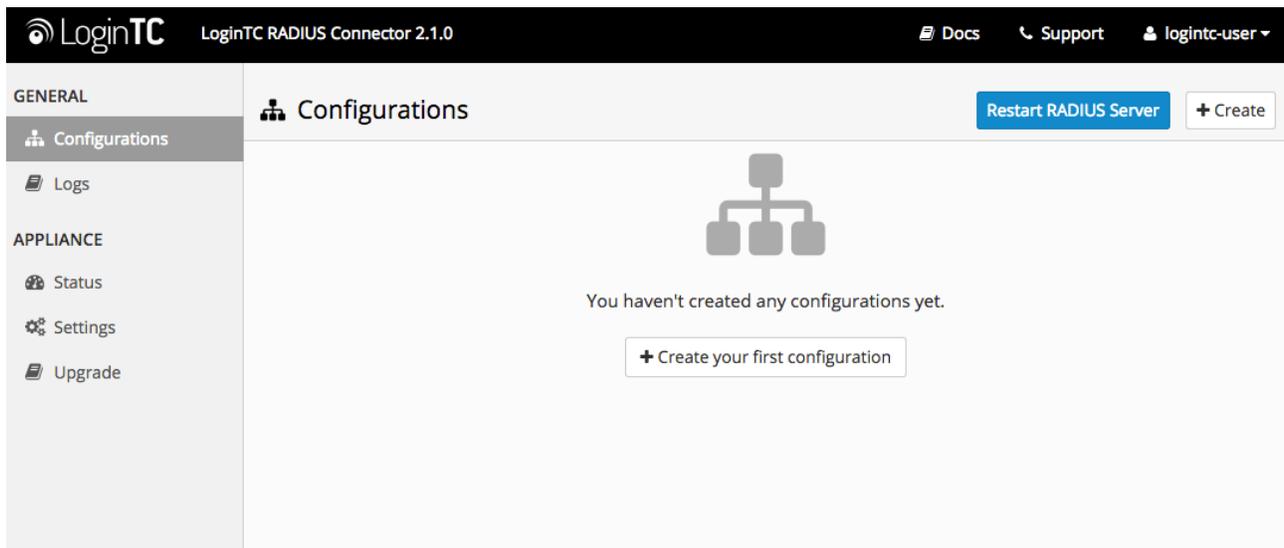
The **web interface** makes setting up a configuration simple and straightforward. Each section has a **Test** feature, which validates each input value and reports all potential errors. Section specific validation simplifies troubleshooting and gets your infrastructure protected correctly faster.

## First Configuration

---

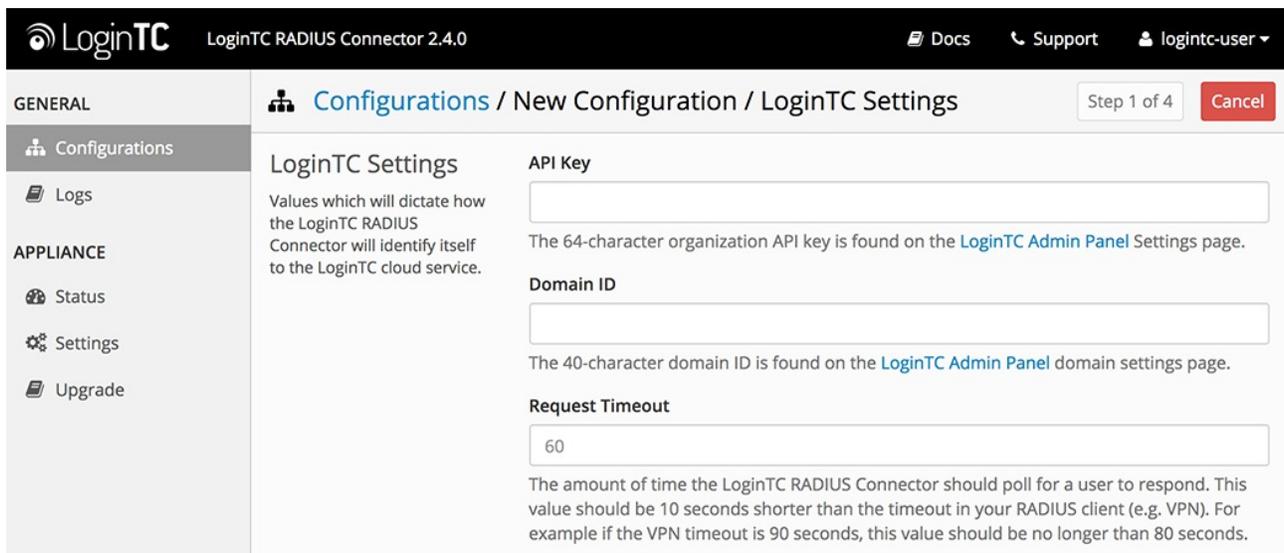
Close the console and navigate to your appliance **web interface** URL. Use username `logintc-user` and the password you set upon initial launch of the appliance. You will now configure the LoginTC RADIUS Connector.

Create a new configuration file by clicking **+ Create your first configuration**:



## LoginTC Settings

Configure which LoginTC organization and domain to use:



Configuration values:

Property	Explanation
<code>api_key</code>	The 64-character organization API key
<code>domain_id</code>	The 40-character domain ID

The API key is found on the LoginTC Admin Settings page. The Domain ID is found on your domain settings page.

Click **Test** to validate the values and then click **Next**:

The screenshot shows the 'New Configuration / LoginTC Settings' page in the LoginTC interface. The page is titled 'Step 1 of 4' and has a 'Cancel' button. The left sidebar shows 'GENERAL' with options for 'Configurations', 'Logs', 'APPLIANCE' with options for 'Status', 'Settings', and 'Upgrade'. The main content area is titled 'LoginTC Settings' and contains the following fields and instructions:

- API Key:** A text input field containing 'vZkDw7l6Z3tApwZJXERseKdR0s5RNNqjMxXIwvxpWwJOa9oJXi9b5tdvPyFsqzWJ'. Below it, a note states: 'The 64-character organization API key is found on the [LoginTC Admin Panel](#) Settings page.'
- Domain ID:** A text input field containing '9120580e94f134cb7c9f27cd1e43dbc82980e152'. Below it, a note states: 'The 40-character domain ID is found on the [LoginTC Admin Panel](#) domain settings page.'

At the bottom of the form, there are two buttons: 'Test' and 'Next'. Below the buttons is a green success message: 'Test successful, click Next to continue'.

## First Authentication Factor

Configure the first authentication factor to be used in conjunction with LoginTC. You may use Active Directory / LDAP or an existing RADIUS server. You may also opt not to use a first factor, in which case LoginTC will be the only authentication factor.

The screenshot shows the 'New Configuration / First Factor' page in the LoginTC interface. The page is titled 'Step 2 of 4' and has a 'Cancel' button. The left sidebar is the same as in the previous screenshot. The main content area is titled 'First Factor' and contains the following options and fields:

- First Factor:** Radio buttons for 'LDAP' (selected), 'Active Directory', 'RADIUS', and 'None'. Below it, a note states: 'Select the first way users will authenticate prior to LoginTC. Connect to an existing LDAP server for username / password verification.'
- LDAP Server Details:**
  - Host:** A text input field. Below it, a note states: 'The LDAP host and port information. Host name or IP address of the LDAP server. Examples: ldap.example.com or 192.168.1.42'
  - Port (optional):** A text input field containing '389'. Below it, a note states: 'Port if LDAP server uses non-standard port.'
- Bind Details:** Radio buttons for 'Bind with credentials' (selected) and 'Anonymous'.

## Active Directory / LDAP Option

Select **Active Directory** if you have an AD Server. For all other LDAP-speaking directory services, such as OpenDJ or OpenLDAP, select **LDAP**:

 LoginTC RADIUS Connector 2.1.0
 
[Docs](#)
[Support](#)
logintc-user ▾

---

**GENERAL**

- Configurations
- Logs

**APPLIANCE**

- Status
- Settings
- Upgrade

Step 2 of 4
Cancel

### New Configuration / First Factor

**First Factor**     LDAP     Active Directory     RADIUS     None

Select the first way users will authenticate prior to LoginTC.    Connect to an existing Active Directory server for username / password verification.

---

**AD Server Details**

The Active Directory host and port information.

**Host**

Host name or IP address of the LDAP server. Examples: ad.example.com or 192.168.1.42

**Port (optional)**

Port if Active Directory server uses non-standard port.

---

**Bind Details**     Bind with credentials     Anonymous

Configuration values:

Property	Explanation	Examples
<code>host</code>	Host or IP address of the LDAP server	<code>ldap.example.com</code> or <code>192.168.1.42</code>
<code>port</code> (optional)	Port if LDAP server uses non-standard (i.e., <code>389</code> / <code>636</code> )	<code>4000</code>
<code>bind_dn</code>	DN of a user with read access to the directory	<code>cn=admin,dc=example,dc=com</code>
<code>bind_password</code>	The password for the above <code>bind_dn</code> account	<code>password</code>
<code>base_dn</code>	The top-level DN that you wish to query from	<code>dc=example,dc=com</code>
<code>attr_username</code>	The attribute containing the user's username	<code>sAMAccountName</code> or <code>uid</code>
<code>attr_name</code>	The attribute containing the user's real name	<code>displayName</code> or <code>cn</code>
<code>attr_email</code>	The attribute containing the user's email address	<code>mail</code> or <code>email</code>
<code>Group Attribute</code> (optional)	Specify an additional user group attribute to be returned the authenticating server.	<code>4000</code>
<code>RADIUS Group Attribute</code> (optional)	Name of RADIUS attribute to send back	<code>Filter-Id</code>
<code>LDAP Group</code> (optional)	The name of the LDAP group to be sent back to the authenticating server.	<code>SSLVPN-Users</code>
<code>encryption</code> (optional)	Encryption mechanism	<code>ssl</code> or <code>startTLS</code>
<code>cacert</code> (optional)	CA certificate file (PEM format)	<code>/opt/logintc/cacert.pem</code>

Click **Test** to validate the values and then click **Next**.

### Existing RADIUS Server Option

If you want to use your existing RADIUS server, select **RADIUS**:

The screenshot shows the configuration page for the LoginTC RADIUS Connector. The 'First Factor' section has radio buttons for LDAP, Active Directory, RADIUS (selected), and None. Below this, the 'RADIUS Server Details' section has input fields for Host, Port (optional), and Secret. The Host field is empty, Port (optional) is 1812, and Secret is empty. The interface also shows a sidebar with 'GENERAL' and 'APPLIANCE' sections, and a top navigation bar with 'LoginTC', 'LoginTC RADIUS Connector 2.1.0', 'Docs', 'Support', and 'logintc-user'.

Configuration values:

Property	Explanation	Examples
host	Host or IP address of the RADIUS server	radius.example.com or 192.168.1.43
port (optional)	Port if the RADIUS server uses non-standard (i.e., 1812 )	1812
secret	The secret shared between the RADIUS server and the LoginTC RADIUS Connector	testing123

## RADIUS Vendor-Specific Attributes

Common Vendor-Specific Attributes (VSAs) found in the FreeRADIUS dictionary files will be relayed.

Click **Test** to validate the values and then click **Next**.

## Passthrough

Configure which users will be challenged with LoginTC. This allows you to control how LoginTC will be phased in for your users. This flexibility allows for seamless testing and roll out.

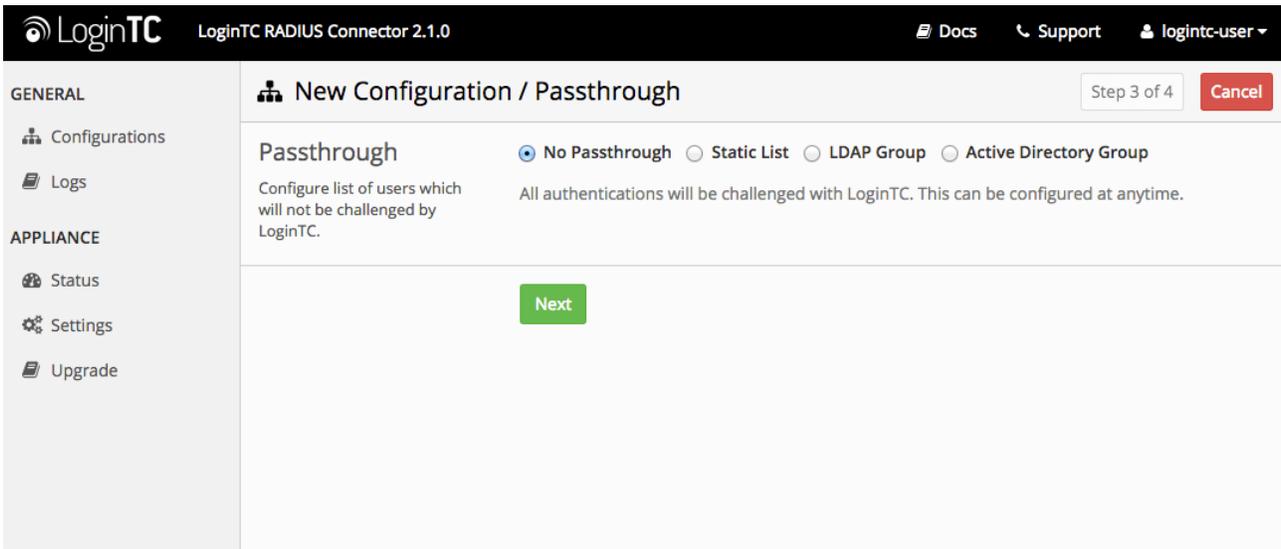
For example, with smaller or proof of concept deployments select the Static List option. Users on the static list will be challenged with LoginTC, while those not on the list will only be challenged with the configured First Authentication Factor. That means you will be able to test LoginTC without affecting existing users accessing your VPN.

For larger deployments you can elect to use the Active Directory or LDAP Group option. Only users part of a particular LDAP or Active Directory Group will be challenged with LoginTC. As your users are migrating to LoginTC your LDAP and Active Directory group policy will ensure

that they will be challenged with LoginTC. Users not part of the group will only be challenged with the configured First Authentication Factor.

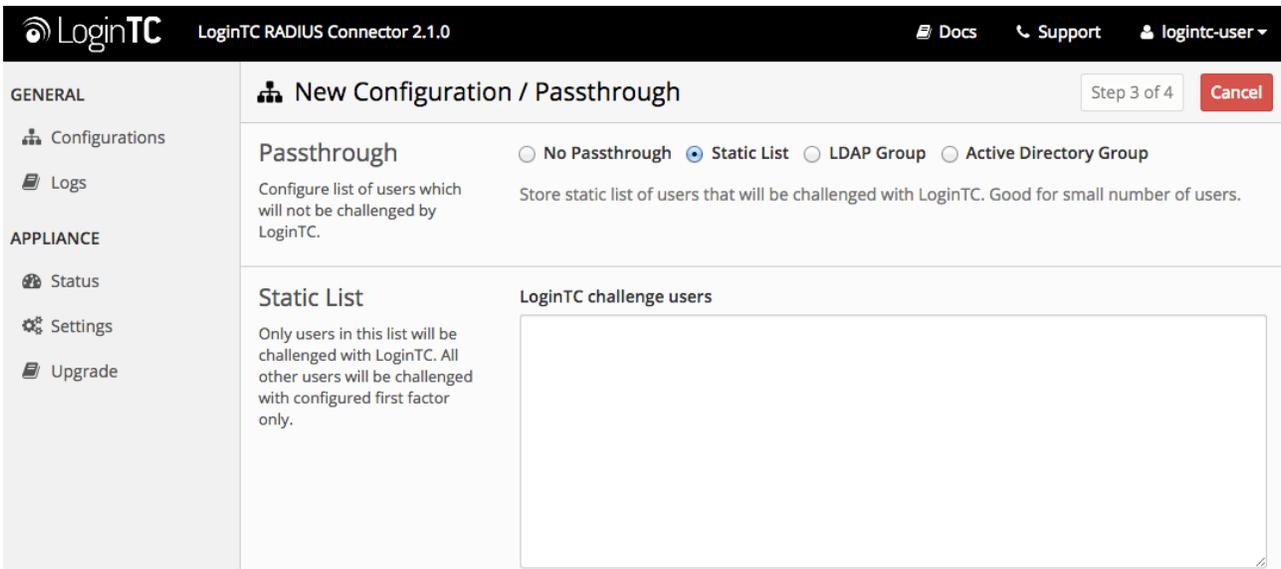
### No Passthrough (default)

Select this option if you wish every user to be challenged with LoginTC.



### Static List

Select this option if you wish to have a static list of users that will be challenged with LoginTC. Good for small number of users.



LoginTC challenge users: a new line separated list of usernames. For example:

```
jane.doe
jane.smith
john.doe
john.smith
```

### Active Directory / LDAP Group

Select this option if you wish to have only users part of a particular Active Directory or LDAP group to be challenged with LoginTC. Good for medium and large number of users.

Configuration values:

Property	Explanation	Examples
<code>loginTC_challenge_auth_groups</code>	Comma separated list of groups for which users will be challenged with LoginTC	<code>SSLVPN-Users</code> or <code>two-factor-users</code>
<code>host</code>	Host or IP address of the LDAP server	<code>ldap.example.com</code> or <code>192.168.1.42</code>
<code>port</code> (optional)	Port if LDAP server uses non-standard (i.e., <code>389</code> / <code>636</code> )	<code>4000</code>
<code>bind_dn</code>	DN of a user with read access to the directory	<code>cn=admin,dc=example,dc=com</code>
<code>bind_password</code>	The password for the above <code>bind_dn</code> account	<code>password</code>
<code>base_dn</code>	The top-level DN that you wish to query from	<code>dc=example,dc=com</code>
<code>attr_username</code>	The attribute containing the user's username	<code>sAMAccountName</code> or <code>uid</code>
<code>attr_name</code>	The attribute containing the user's real name	<code>displayName</code> or <code>cn</code>
<code>attr_email</code>	The attribute containing the user's email address	<code>mail</code> or <code>email</code>
<code>encryption</code> (optional)	Encryption mechanism	<code>ssl</code> or <code>startTLS</code>
<code>cacert</code> (optional)	CA certificate file (PEM format)	<code>/opt/loginTC/cacert.pem</code>

### Configuration Simplified

If Active Directory / LDAP Option was selected in First Authentication Factor the non-sensitive values will be pre-populated to avoid retyping and potential typos.

Click **Test** to validate the values and then click **Next**.

## Client and Encryption

Configure RADIUS client (e.g. your RADIUS-speaking VPN):

The screenshot shows the 'New Configuration / Client and Encryption' page in the LoginTC RADIUS Connector 2.1.0. The interface is divided into a left sidebar and a main content area. The sidebar has sections for 'GENERAL' (Configurations, Logs) and 'APPLIANCE' (Status, Settings, Upgrade). The main content area is titled 'Client Settings' and includes a description: 'Settings for your RADIUS client (e.g. a RADIUS-speaking VPN) to connect to the LoginTC RADIUS Connector.' It features three input fields: 'Name' (with a note that it should be alphanumeric with hyphens), 'IP Address' (with a note that it's the client's IP), and 'Secret' (with a note that it's shared between client and connector). Below these is an 'Encryption' section with a checked checkbox for 'Encrypt all passwords and API keys' and a note: 'It is strongly recommended to encrypt all sensitive fields.'

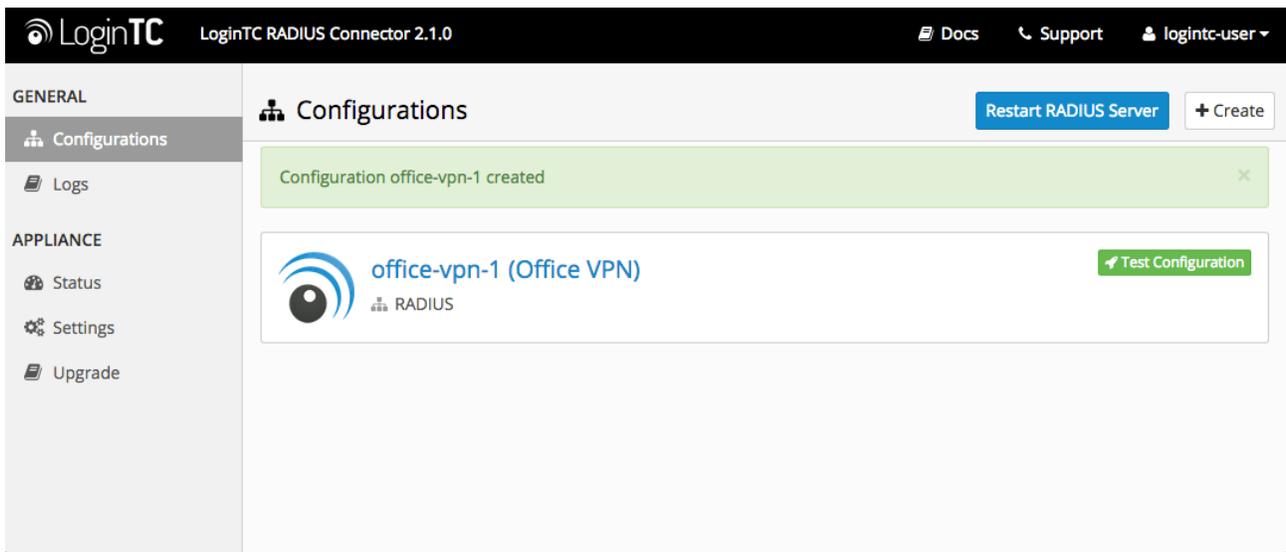
Client configuration values:

Property	Explanation	Examples
<code>name</code>	A unique identifier of your RADIUS client	<code>CorporateVPN</code>
<code>ip</code>	The IP address of your RADIUS client (e.g. your RADIUS-speaking VPN)	<code>192.168.1.44</code>
<code>secret</code>	The secret shared between the LoginTC RADIUS Connector and its client	<code>bigsecret</code>

## Data Encryption

It is strongly recommended to enable encryption of all sensitive fields for both PCI compliance and as a general best practice.

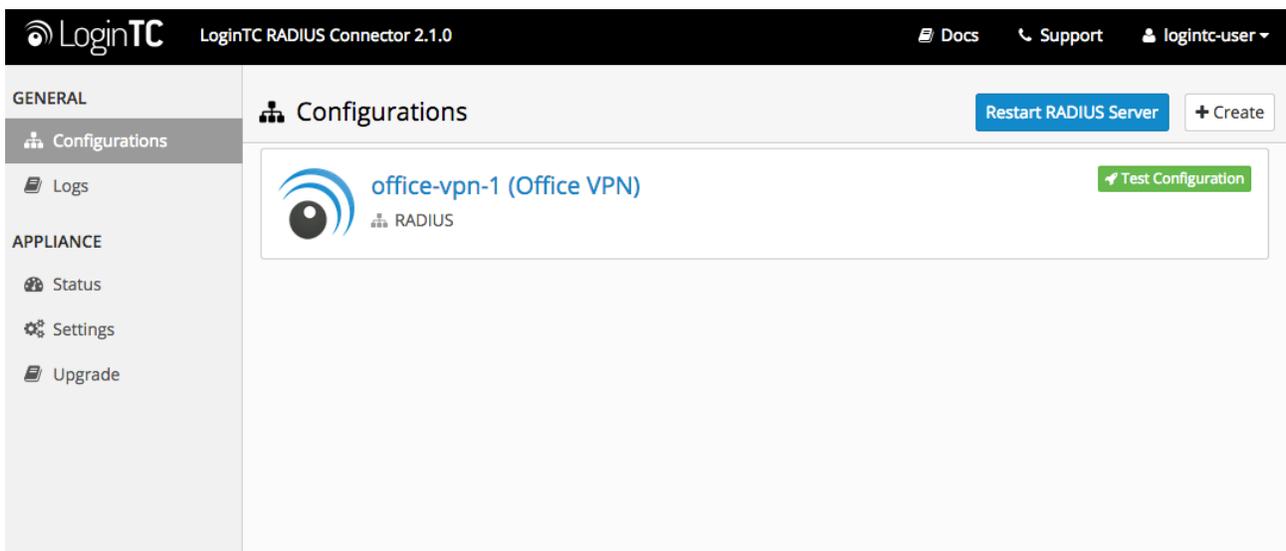
Click **Test** to validate the values and then click **Save**.



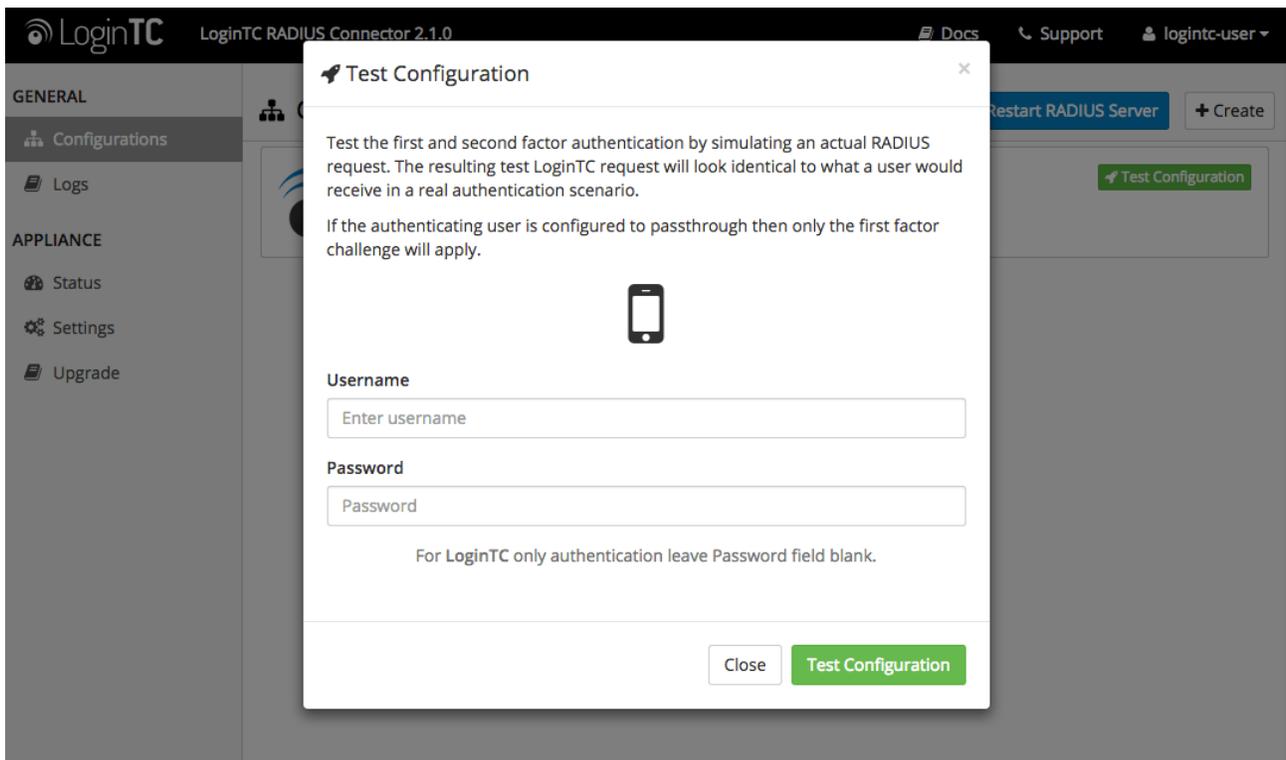
## Testing (Connector)

When you are ready to test your configuration, create a LoginTC user (if you haven't already done so). The username should match your existing user. Provision a token by following the steps:

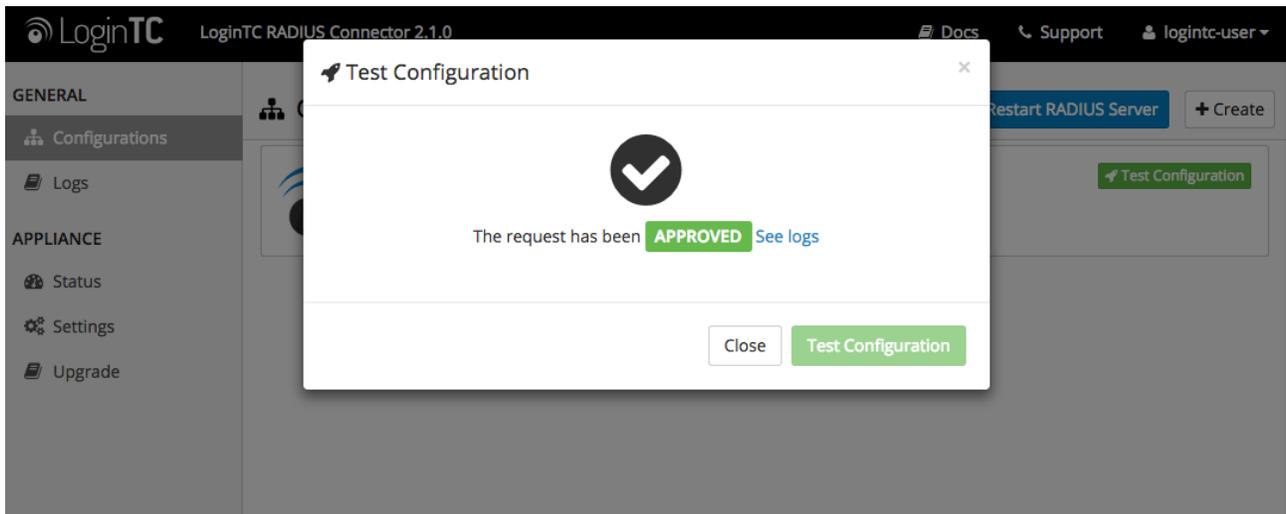
When you have loaded a token for your new user and domain, navigate to your appliance **web interface URL**:



Click **Test Configuration**:

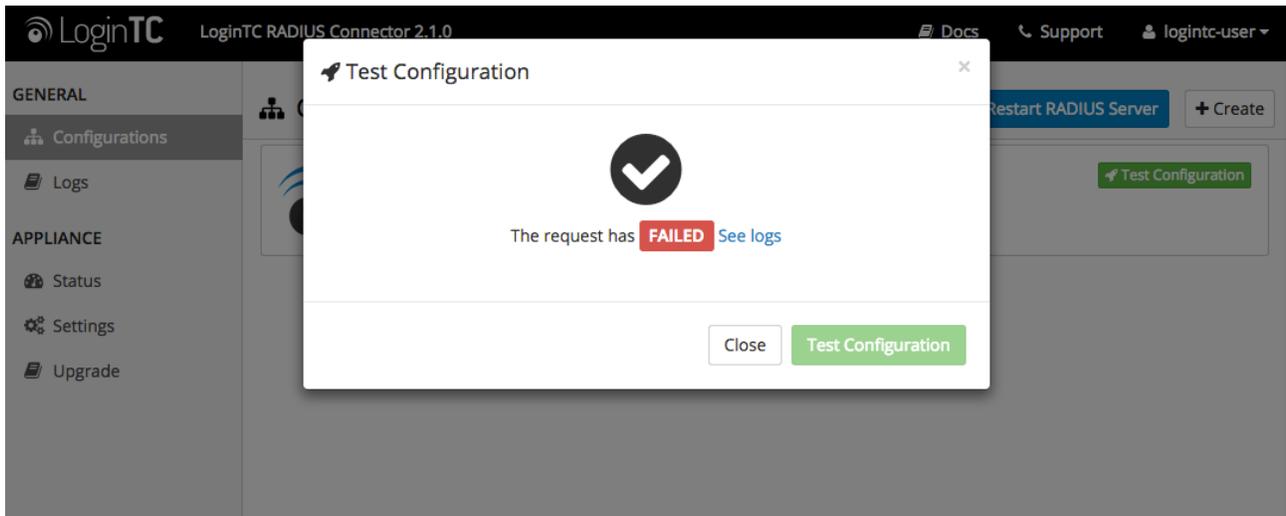


Enter a valid username and password; if there is no password leave it blank. A simulated authentication request will be sent to the mobile or desktop device with the user token loaded. Approve the request to continue:

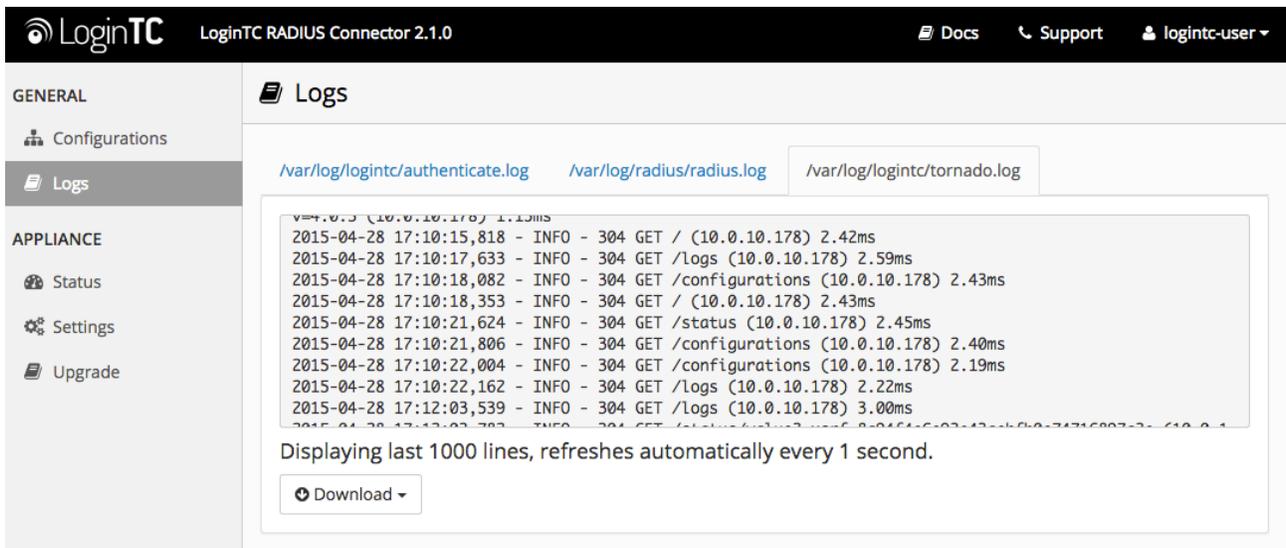


Congratulations! Your appliance can successfully broker first and second factor authentication. The only remaining step is to configure your RADIUS device!

If there was an error during testing, the following will appear:



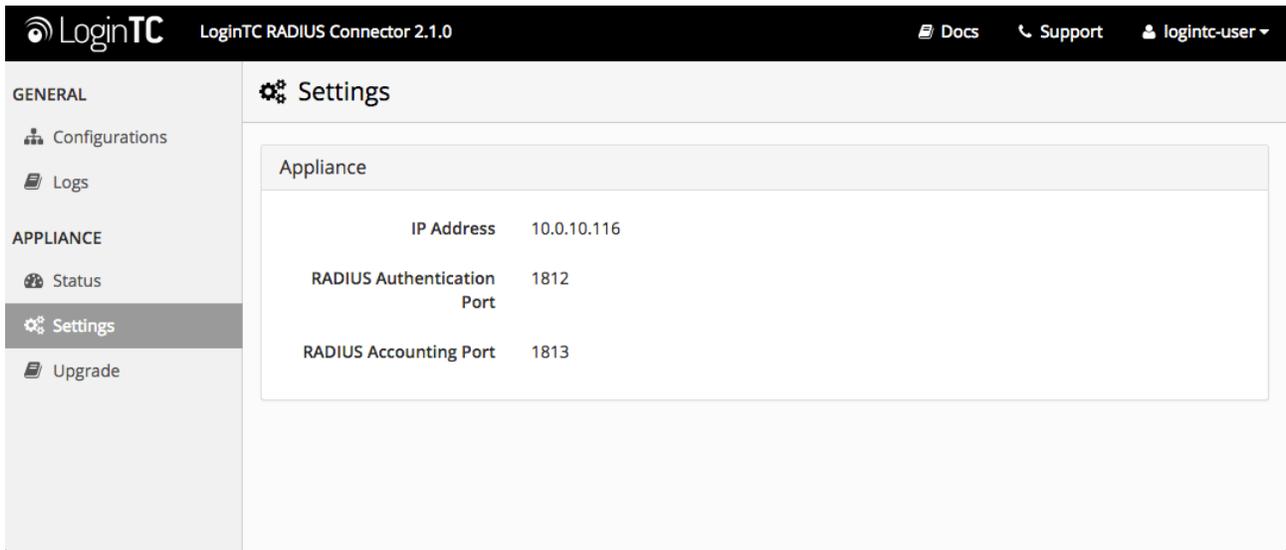
In this case, click **See logs** and then click the `/var/log/logintc/authenticate.log` tab to view the log file and troubleshoot:



## Check Point Quick Config Guide

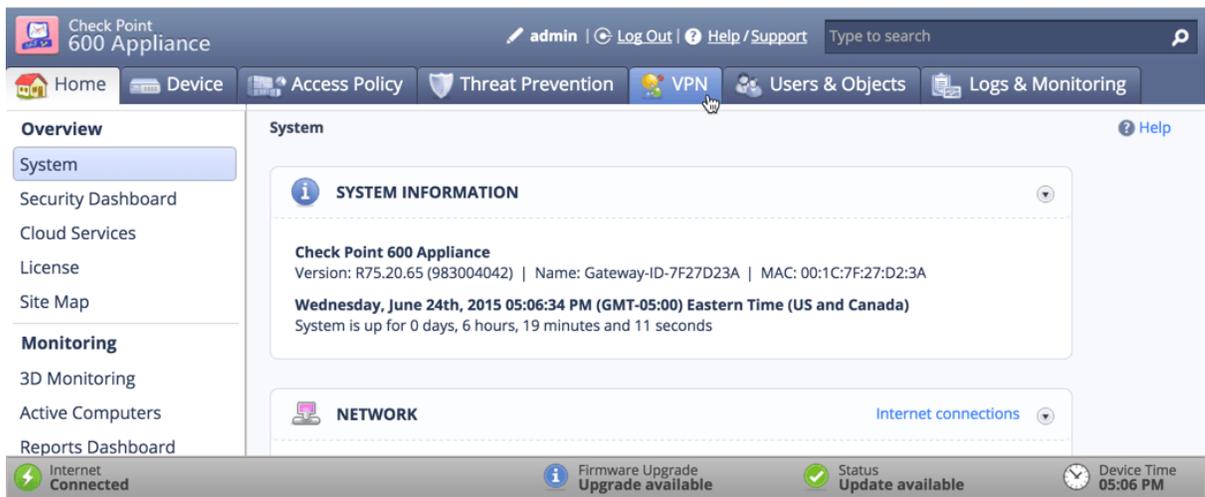
Once you are satisfied with your setup, configure your Check Point Appliance to use the LoginTC RADIUS Connector.

For your reference, the appliance **web interface Settings** page displays the appliance IP address and RADIUS ports:

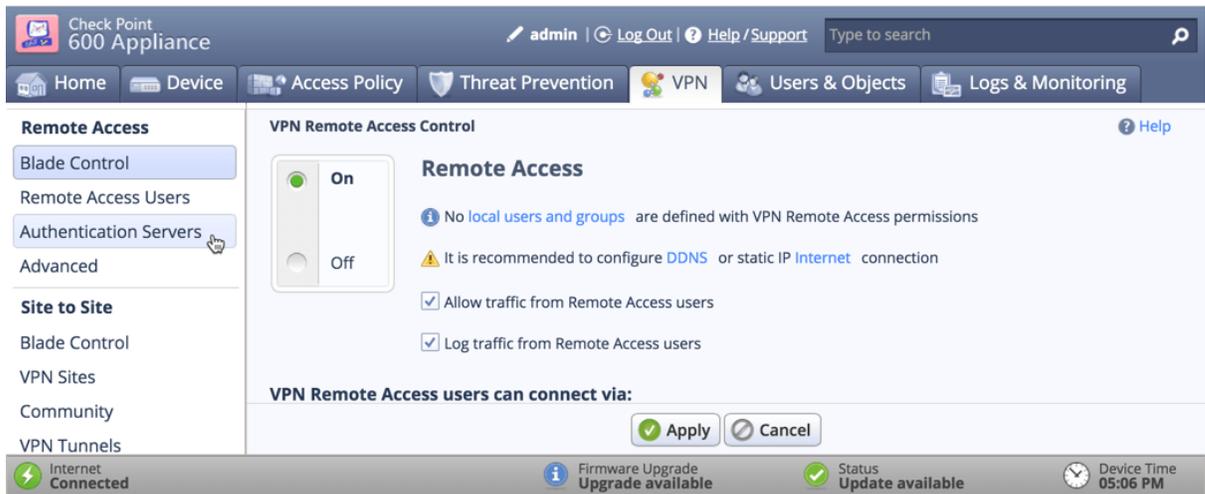


The following are quick steps to get VPN access protected with LoginTC. The instructions can be used for existing setups as well. Although these were performed on Check Point 600, the same is true for other Check Point appliances.

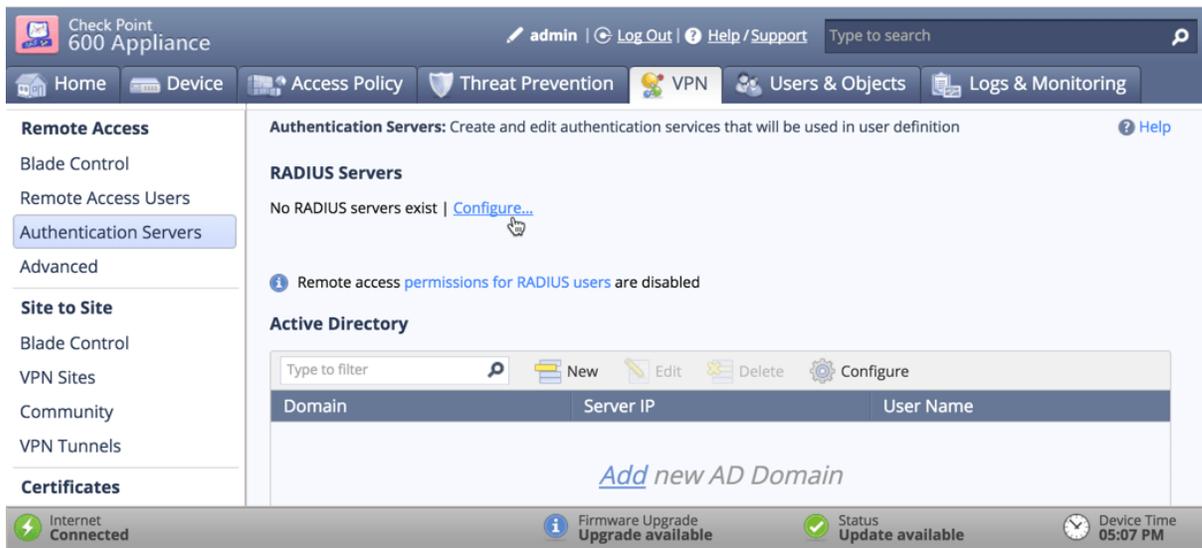
1. Log into your **Check Point Web UI**
2. Click on the **VPN** tab



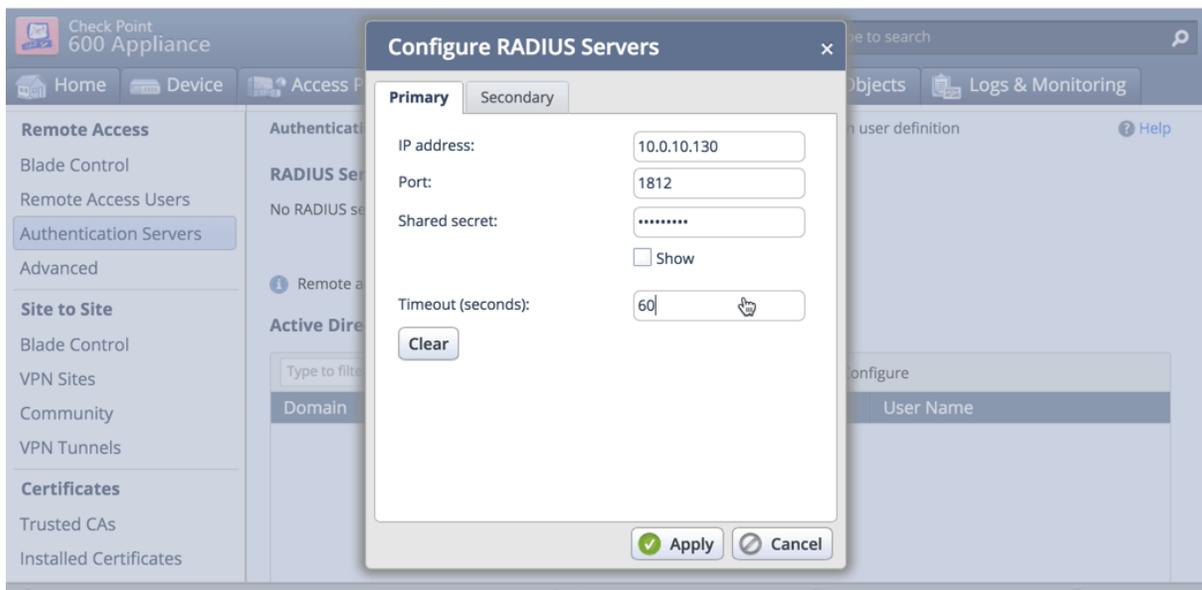
3. Under **Remote Access**, select **Authentications Servers** from the left-hand menu



4. Under **RADIUS Servers**, click **configure**



5. Complete the **Configure RADIUS Servers Form**



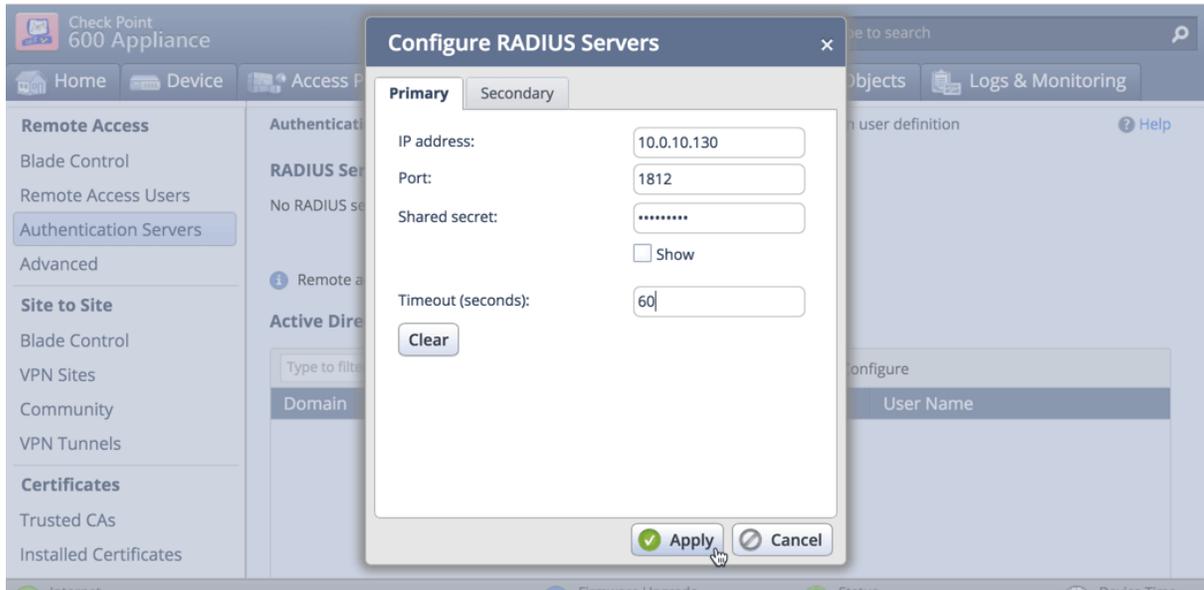
Property	Explanation	Example
IP Address	Address of LoginTC RADIUS Connector	10.0.10.130
Port	RADIUS authentication port. Must be 1812.	1812
Secret	The secret shared between the LoginTC RADIUS Connector and its client	bigsecret
Timeout (seconds)	Amount of time in seconds to wait. At least 90s.	90

**Warning: Connection Timeouts**

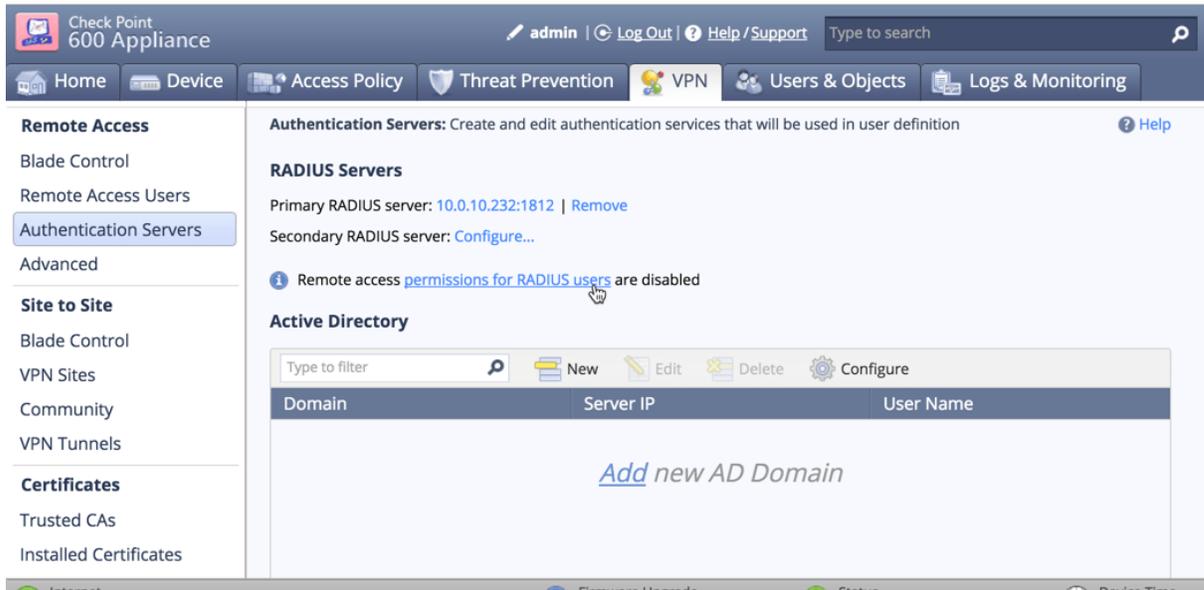
Some Check Point appliances do not respect the RADIUS Timeout setting. For a workaround see: [RADIUS Timeout Workaround](#).

**Note:** you can also configure a Secondary Radius Server to provide failover. This prevents the RADIUS Server from dropping authentication requests if it goes offline or receives too many requests.

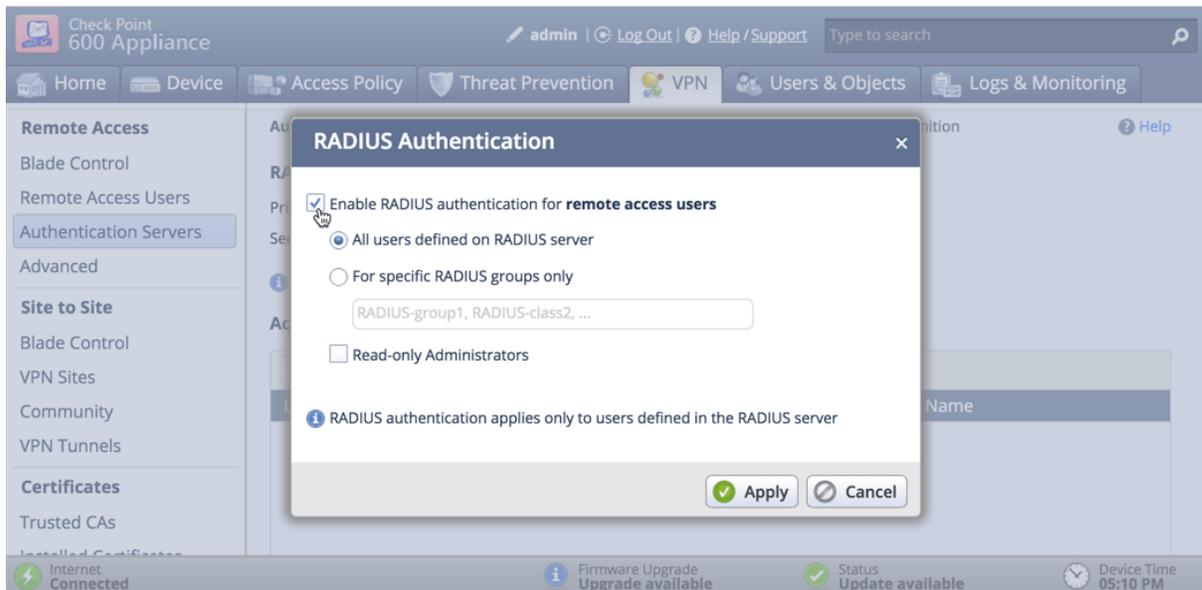
6. Click **Apply**



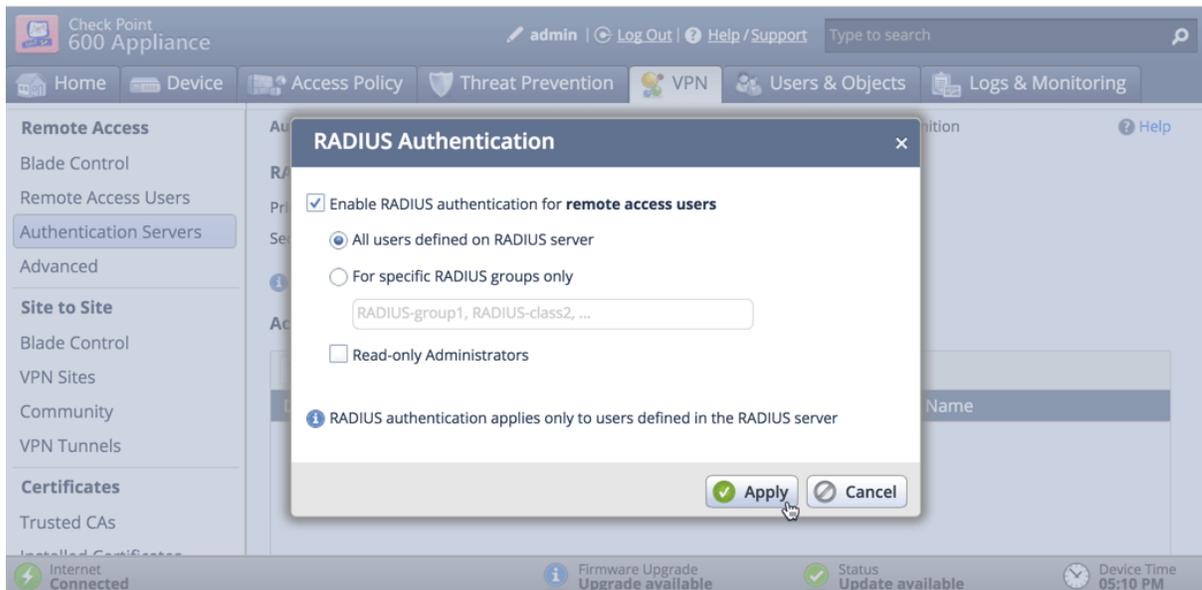
7. Click on the **permissions for RADIUS users** link



8. Check **Enable RADIUS authentication for Remote Access Users**



## 9. Click **Apply**



You are now ready to start testing your configuration.

## RADIUS Timeout Workaround

A few Check Point appliances do not respect the RADIUS server timeout settings. As a result, all requests are rejected after 15-20 seconds. The following appliances have been reported as having this issue:

- Check Point 600 Series
- Check Point 1100 Series
- Check Point 1200R Series

In order to ensure the timeout is properly set on appliances experiencing the issue follow these steps:

1. SSH into the Check Point Appliance

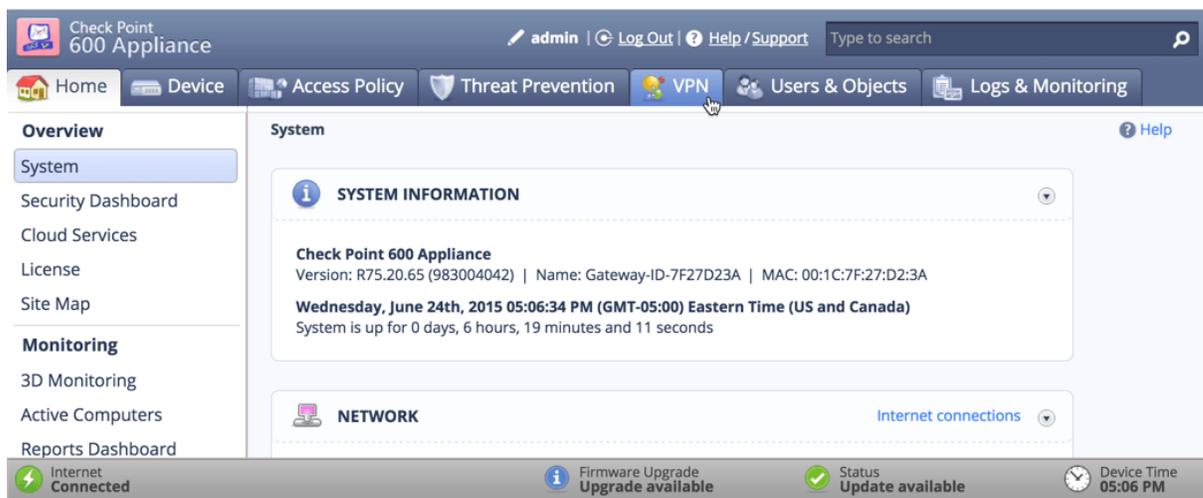
2. Enter **expert** mode
3. `vi $FWDIR/conf/local.cfg.conv`
4. Add the following line below `:global_props (props :`  
`:radius_retrant_timeout (90)`
5. `mv $FWDIR/conf/local.cfg.conv.post $FWDIR/conf/local.cfg.conv.post.orig`
6. `runAllFeatures.lua`

Wait a few minutes for the change to take effect.

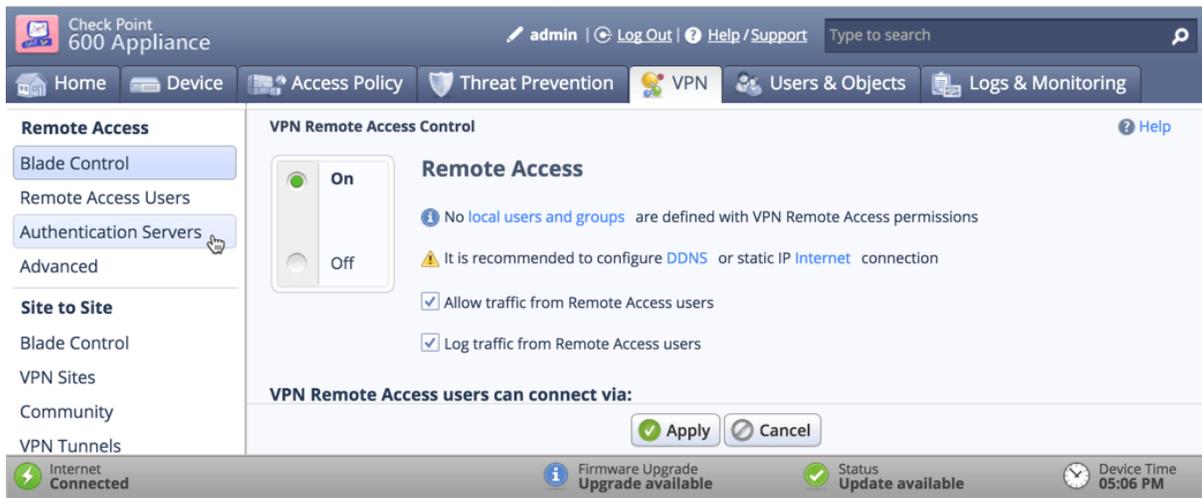
## Failover

Check Point appliances have built-in settings that makes it easy to configure a secondary RADIUS server to provide failover. To set up another RADIUS server, deploy the downloaded LoginTC Connector again (you can deploy it multiple times) and configure it using the same settings as the first one. [Click here](#) to review the Connector configuration process. Then, log into your **Check Point Web UI**

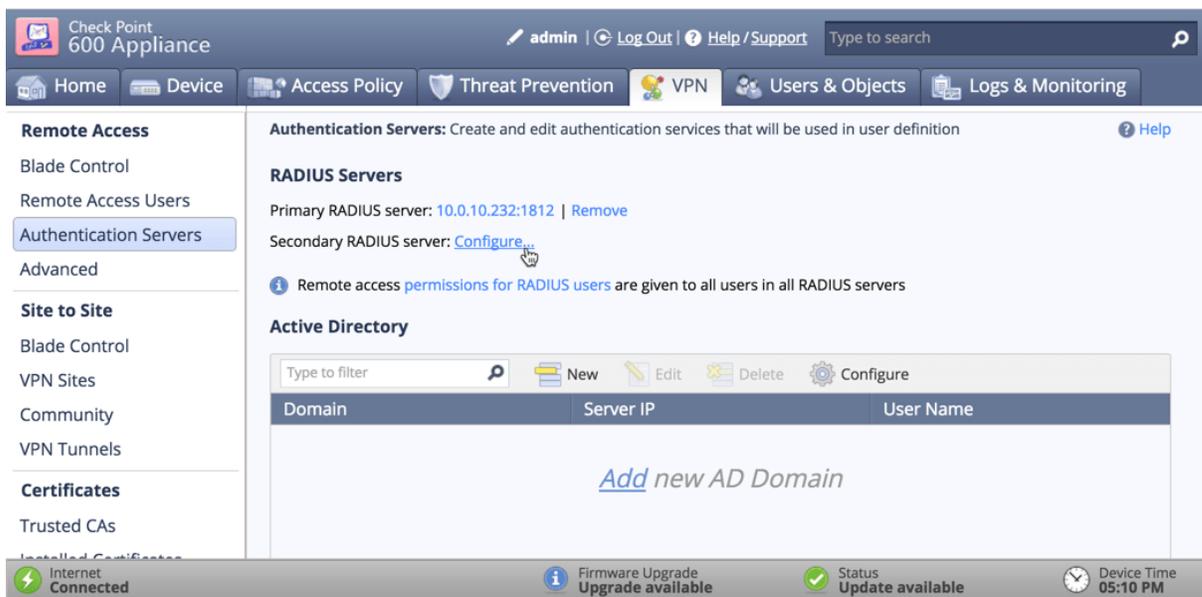
1. Log into your **Check Point Web UI**
2. Click on the **VPN** tab



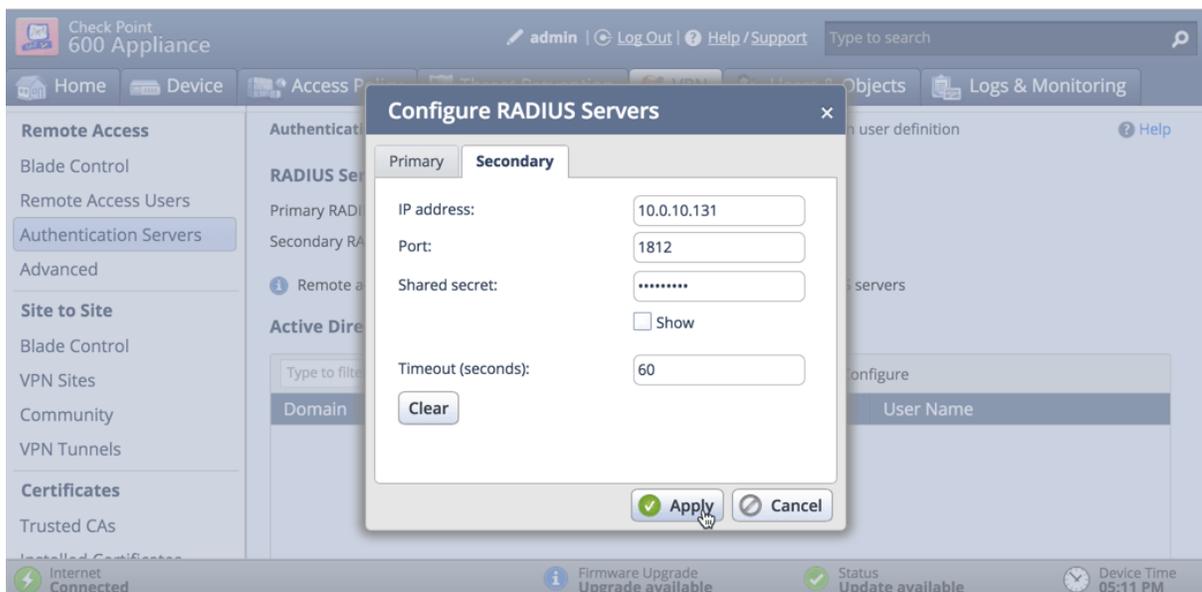
3. Under **Remote Access**, select **Authentications Servers** from the left-hand menu



4. Under **RADIUS Servers**, click the **Configure...** link next to **Secondary RADIUS Server**



5. Complete the **Configure RADIUS Servers** form using the same settings as the first one



Property	Explanation	Example
IP Address	Address of Secondary LoginTC RADIUS Connector	10.0.10.131
Port	RADIUS authentication port. Must be 1812.	1812
Secret	The secret shared between the LoginTC RADIUS Connector and its client	bigsecret
Timeout (seconds)	Amount of time in seconds to wait. At least 90s.	90

## Warning: Connection Timeouts

Some Check Point appliances do not respect the RADIUS Timeout setting. For a workaround see: [RADIUS Timeout Workaround](#).

6. Click **Apply**

## Troubleshooting

### Connection Times Out

If your connection times out after 15-20 seconds it is probably because some Check Point appliances do not respect the RADIUS Timeout setting. For a workaround see: [RADIUS Timeout Workaround](#).

### Not Authenticating

If you are unable to authenticate, navigate to your appliance **web interface** URL and click **Status**:

Ensure that all the status checks pass. For additional troubleshooting, click **Logs**:

LoginTC LoginTC RADIUS Connector 2.1.0 Docs Support logintc-user

GENERAL

- Configurations
- Logs

APPLIANCE

- Status
- Settings
- Upgrade

Logs

[/var/log/logintc/authenticate.log](#) [/var/log/radius/radius.log](#) [/var/log/logintc/tornado.log](#)

```
2015-04-28 17:10:15,818 - INFO - 304 GET / (10.0.10.178) 2.42ms
2015-04-28 17:10:17,633 - INFO - 304 GET /logs (10.0.10.178) 2.59ms
2015-04-28 17:10:18,082 - INFO - 304 GET /configurations (10.0.10.178) 2.43ms
2015-04-28 17:10:18,353 - INFO - 304 GET / (10.0.10.178) 2.43ms
2015-04-28 17:10:21,624 - INFO - 304 GET /status (10.0.10.178) 2.45ms
2015-04-28 17:10:21,806 - INFO - 304 GET /configurations (10.0.10.178) 2.40ms
2015-04-28 17:10:22,004 - INFO - 304 GET /configurations (10.0.10.178) 2.19ms
2015-04-28 17:10:22,162 - INFO - 304 GET /logs (10.0.10.178) 2.22ms
2015-04-28 17:12:03,539 - INFO - 304 GET /logs (10.0.10.178) 3.00ms
```

Displaying last 1000 lines, refreshes automatically every 1 second.

Download

## Email Support

For any additional help please email [support@cyphercor.com](mailto:support@cyphercor.com). Expect a speedy reply.