BIG-IQ® Centralized Management: Device

Version 4.6

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Legal notices

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This Class A digital apparatus complies with Canadian ICES-003.

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This product conforms to the IEC, European Union, ANSI/UL and Canadian CSA standards applicable to Information Technology products at the time of manufacture.

BIG-IQ Centralized Management Overview

Overview: BIG-IQ Centralized Management

The BIG-IQ® system is a tool that streamlines the management of F5 devices in your network. Because it is based on the same platform as BIG-IP® devices, it includes full product support, security patches, and internal and external security audits (AuthN and AuthZchecks).

Firewall managers use the BIG-IQ system to manage security firewalls for multiple devices from a central location. Firewall management includes discovering, editing, and deploying firewall configurations, as well as consolidating shared firewall objects. Once a firewall device is designated for central management, it is no longer managed locally unless there is an exceptional need.

Web-Application Security managers also use the BIG-IQ system to centrally manage policy files and attack-signature files. Multiple BIG-IP® devices can share the same policy and attack-signature files for filtering HTTP, HTTPS, and other web traffic for known attack patterns.

Network administrators use BIG-IQ Device to interact with all of the managed F5 devices in their network. This centralized management includes the ability upgrade F5 devices, update configurations, and reallocate licenses as needed.

Application Delivery Controller (ADC) offers you the flexibility to deploy software images, and configurations, and monitor and distribute licenses and license pools for managed BIG-IP devices.

Additional resources and documentation for BIG-IQ systems

You can access all of the following BIG-IQ® system documentation from the AskF5™ Knowledge Base located at `http://support.f5.com/`.

Document	Description
BIG-IQ® Centralized Management Virtual Editions Setup guides	BIG-IQ® Virtual Edition (VE) runs as a guest in a virtual environment using supported hypervisors. Each of these guides is specific to one of the hypervisor environments supported for the BIG-IQ system.
BIG-IQ® Centralized Management: Licensing and Initial Setup	This guide provides the network administrators with basic BIG-IQ system concepts and describes the tasks required to license and set up the BIG-IQ system in their network, including how to add users and assign roles to those users.
BIG-IQ® Centralized Management: Device	This guide provides details about how to deploy software images, licenses, and configurations to managed BIG-IP® devices.
BIG-IQ® Centralized Management: ADC	This guide provides details about how to centrally manage BIG-IP® Local Traffic Manager™ applications.
BIG-IQ®Centralized Management: Security	This guide contains information used to centrally manage BIG-IP® firewalls, policies, rule lists (as well as other shared objects), and users.
Platform Guide: BIG-IQ® 7000 Series	This guide provides information about setting up and managing the BIG-IQ 7000 hardware platform.

Document	Description
Release notes	Release notes contain information about the current software release, including a list of associated documentation, a summary of new features, enhancements, fixes, known issues, and available workarounds.
Solutions and Tech Notes	Solutions are responses and resolutions to known issues. Tech Notes provide additional configuration instructions and how-to information.

About the BIG-IQ system user interface

The BIG-IQ® system interface is composed of panels. Each panel contains objects that correspond to a BIG-IQ feature. Depending on the number of panels and the resolution of your screen, some panels may be collapsed and show as colored bars on either side of the screen. You can cursor over the collapsed panels to locate the one you want, and click the panel to open. To associate items from different panels, click an object, and drag and drop it onto the object with which you want to associate it.

Filtering for associated objects

The BIG-IQ® system helps you easily see an object's relationship to another object, even if the objects are in different panels.

1. To display only items associated with a specific object, hover over the object, click the gear icon, and then select **Show Only Related Items**.
   The screen refreshes to display only associated objects in each panel.
2. To highlight only items associated with a specific object, hover over the object, click the gear icon, and then select **Highlight Related Items**.
   The screen refreshes, highlighting only associated objects in each panel, and displaying unassociated objects in a gray font.
3. To remove a filter, click the **X** icon next to the filtered object in a panel or click **Clear All** to clear all of the filters.

Searching for specific objects

The BIG-IQ® system interface makes it easy to search for a specific object. This can be especially helpful as the number of objects increase when you add more users, applications, servers, and so forth.

1. To search for a specific object, in the Filter field at the top of the screen, type all or part of an object's name.
2. Click the **Apply** button.
   The screen refreshes to display only the objects associated with the term you typed in the Filter field.
3. To further refine the filter, type another term into the Filter field, and click the **Apply** button again.
4. To remove a filter term, click the **X** icon next to it.

Customizing panel order

You can customize the BIG-IQ® system interface by reordering the panels.

1. Click the header of a panel and drag it to a new location, then release the mouse button. The panel displays in the new location.
2. Repeat step 1 until you are satisfied with the order of the panels.

Device Discovery

About device discovery and management

You use BIG-IQ® Device to centrally manage resources on BIG-IP® devices.

The first step to managing devices is making BIG-IQ Device aware of them through the discovery process. To discover a device, you provide BIG-IQ Device the device IP address, user name, and password. Alternatively, you can upload a CSV file to discover a large number of devices. When you discover a device you place it into a group. These groups help you organize devices with similar features, like those in a particular department or running a certain software version.

After you discover devices, you can view and export inventory details about those devices for easy asset management, and you can modify device configurations as required without having to log in to each device individually.

Discovering devices

Important: *If the BIG-IP devices are running a version prior to 11.4, you must upgrade the legacy device.*

Discovering BIG-IP devices is the first step to managing them.

1. Log in to BIG-IQ Device with the administrator user name and password.
2. Hover over the Devices header, click the + icon when it appears, and then select **New Device**.
   The Devices panel expands to show the New Device screen.
3. In the **User Name** and **Password** fields, type the user name and password for the managed device.
4. Click **Save**.

The BIG-IQ system populates the properties of the device that you added, and displays the device in the Devices panel and its configuration files display in the Configuration panel.

Discovering a device from the BIG-IQ inventory

If you have discovered a device for another BIG-IQ feature (such as ADC), you can select that device from the BIG-IQ inventory to manage it from BIG-IQ Device.

Discovering devices is the first step to managing them.

1. Log in to BIG-IQ Device with the administrator user name and password.
2. Hover over the Devices header, click the + icon when it appears, and then select **New Device**.
   The Devices panel expands to show the New Device screen.
3. For Source, select **BIG-IQ Inventory**.
4. From the Device Group, select a group to filter the available BIG-IP devices.
5. Click the arrow next to the device you want to discover in the **Available** box to move it to the **Include** box.

6. Click the Save button.
   The BIG-IQ system discovers the device and displays it in the Devices panel.

Discovering a large group of devices

After you license and perform the initial configuration for the BIG-IQ® system, you can discover BIG-IP® devices running version 11.4 or later. You can discover BIG-IQ devices from the management IP address or the self IP address. For proper communication, port 22 and 443 must be open on the IP address you use for discovery. If you do not specify the required network communication route between the devices, then device discovery fails. If you are logged in as a Device Manager role, you must first create a group before you can discover a device.

Before you discover a large group of devices, you must save the information in a `.csv` file in one of the following formats:

- `[address],[userName],[password],[automaticFrameworkUpdate?],[rootUser],[rootPassword]`, for example: `192.168.2.xxx,admin,password,true,root,password` Use this option if you want BIG-IQ Device to automatically update the framework required to manage the devices.
- `[address],[userName],[password]`, for example: `192.168.2.xxx,admin,password`

If you have a large number of devices to discover, discovering them in a group saves you a significant amount of time, because you are not required to provide the device identification details for each individual device. Instead, you can upload a CSV file that contains the IP address, user name, and password for the devices you want to discover.

1. Log in to BIG-IQ Device with your administrator user name and password.
2. At the top of the screen, click **Provisioning**.
3. Hover over the Devices header, click the + icon when it appears, and then select **Import Devices**.
4. From the **Group Name** list select the group to which you want to add the imported devices.
5. Click the **Choose File** button and select the CSV file to which you exported the device list.
   Alternatively, you can navigate to the CSV file on your computer and drag and drop it to the Import Devices screen.
6. Click the **Discover** button to complete the discovery process.
   If there was a format error for the data in the .csv file, discovery fails and BIG-IQ Device returns an error.

The BIG-IQ system populates the properties of the device that you added, and displays the device in the Devices panel and its configuration files display in the Configuration panel.

Viewing and exporting device inventory details

You can view detailed data about the managed devices in your network. Information includes associated IP addresses, platform type, license details, software version, and so forth. In addition to viewing this information, you can also export it to a CSV file and edit the data as required to create reports for asset management.

1. Log in to BIG-IQ Device with your administrator user name and password.
2. In the Devices panel, click the gear icon next to the device you want to view, and then select **Properties**.
   The panel expands to display device properties.

Modifying device configurations

You must first discover a device before you can modify its configuration.

Note: *The BIG-IQ Device REST proxy is enabled by default to allow you to edit configurations. If you have disabled the REST proxy, re-enable it by clicking the gear icon for the* ***Device****, clicking* ***Permissions****, and selecting the* ***Enable REST Proxy*** *check box.*

With BIG-IQ® Device, you can easily view and modify configuration details for a device from one central location. For example, after you discover several devices, you might want to review the network settings for those devices to ensure that they are correctly configured. To do this, you start by filtering objects. *Filtering* network objects by their associated devices helps you refine the view to show only those you want to see. You can then select the particular properties you want to modify. This centralized configuration management saves time, because you are not required to physically interface with individual devices in your network.

1. Log in to BIG-IQ Device with your administrator user name and password.
2. To display only items associated with a specific object, hover over the object, click the gear icon, and then select **Show Only Related Items**.
   The screen refreshes to display only associated objects in each panel.
3. To search for a specific object, in the Filter field at the top of the screen, type all or part of an object's name.
4. Click the **Apply** button.
   The screen refreshes to display only the objects associated with the term you typed in the Filter field.
5. To further refine the filter, type another term into the Filter field, and click the **Apply** button again.
6. To remove a filter term, click the **X** icon next to it.
7. Once you have located items associated for a particular configuration, click the gear icon next to the object you want to modify, and then click **Properties**.
8. Modify the editable fields as required.
9. Click the **Save and Deploy** button.

   Valid changes you make to this object become effective on the managed device immediately after you click the **Save and Deploy** button.

   If the changes you make are invalid, BIG-IQ Device displays an error and allows you to re-edit the property.
10. To add a new object:
    a) Hover on the panel header and click the + sign when it appears.

       The + sign appears only if you are permitted to add that object.

    b) Specify the properties of the new object.
    c) Click the **Add and Deploy** button.

       Settings you specify for this object become effective on the managed device immediately after you click the **Add and Deploy** button.

11. Click the **Save** button.

About managing BIG-IP devices in a device service clustering

Device service clustering, or DSC®, is an underlying architecture within BIG-IP® Traffic Management Operation System (TMOS®). DSC provides synchronization and failover of BIG-IP system configuration data at user-defined levels of granularity, among multiple BIG-IP devices on a network. When your network includes BIG-IP devices running version 11.4 and later that are configured in a DSC, BIG-IQ® Device populates the DSC Groups panel with the device's details when you discover those devices.

Note: *For specific information about BIG-IP DSC groups, refer to the BIG-IP® Device Service Clustering: Administration guide.*

Viewing properties and state of BIG-IP in a device service clustering

You must discover BIG-IP devices configured in a DSC before you can manage them from BIG-IQ Device. If you add a BIG-IP device to a DSC group after you discover it, you must hover on the Clusters header and click the refresh button when it appears. After you refresh the panel, BIG-IQ Device populates the panel with the BIG-IP devices you added to the DSC group.

BIG-IQ Device provides you a way to centrally view properties about BIG-IP devices configured in a cluster. These properties include sync and fail over settings and status, trust domain details, participating BIG-IP devices, and associated traffic groups. Viewing these properties from BIG-IQ Device eliminates the need for you to log on to each BIG-IP device in the cluster.

Important: *BIG-IQ Device can discover only BIG-IP devices running version 11.5 or later when configured in a cluster.*

1. Log in to BIG-IQ Device with your administrator user name and password.
2. At the top of the screen, click **Cluster Management**.
3. On the Clusters header, click the refresh button.

   Refreshing this panel ensures you have the most recent configuration for the devices in the DSC group.
4. Click the gear icon next to the DSC group you want to view, and then click **Properties**.
   The panel expands to display the properties for this DSC.
5. To validate the trust certificate associated with this DSC group, click the **View Details** button.
   A window opens to display the trust domain details.
6. To view the devices included in this DSC, click **Devices**.
7. To view the traffic groups associated with this DSC, click **Traffic Groups**.
8. To close the panel, click the **Close** button.

Viewing and synchronizing configurations for BIG-IP devices in a DSC

You must discover BIG-IP devices configured in a DSC before you can manage them from BIG-IQ Device. If you add a BIG-IP device to a DSC group after you discover it, you must hover on the Clusters header and click the refresh button when it appears. After you refresh the panel, BIG-IQ Device populates the panel with the BIG-IP devices you added to the DSC group.

BIG-IQ Device provides you a way to view and synchronize configuration changes for BIG-IP devices in a DSC active-standby or active-active configuration. Synchronizing configurations from BIG-IQ Device eliminates the need for you to log on to each BIG-IP device in the DSC.

1. Log in to BIG-IQ Device with your administrator user name and password.
2. At the top of the screen, click **Cluster Management**.
3. On the Clusters header, click the refresh button.

   Refreshing this panel ensures you have the most recent configuration for the devices in the DSC group.
4. Click the device for which you want to perform synchronization.
5. For the Sync Option setting, select one of the following options:
   - **Device to Group** - Select this option to prompt BIG-IQ Device to push this device's configuration out to every other device in this DSC group. When you select this option, BIG-IQ Device warns you if the configuration on this device is not as current as the configuration on the rest of the DSC group devices.
   - **Group to Device** - Select this option you add a new BIG-IP device to the DSC group and you want BIG-IQ Device to pull the group's configuration and load it onto that new DSC group member. When you select this option, BIG-IQ Device warns you if the configuration on this device is more current than the configuration on the rest of the DSC group devices.
6. Click the **Sync** button.

   If a BIG-IP device in a DSC configuration was detected in your network, but not discovered from BIG-IQ Device, it displays with the Sync button unavailable. You must discover BIG-IP devices in a DSC configuration from BIG-IQ Device before you can synchronize configurations.
7. To close the panel, click the **Close** button.

About static and dynamic device groups

To help you manage a large number of BIG-IP® devices, you can organize them into groups. You can create two different types of device groups:

- Static group
- Dynamic group

A *static group* contains a specific set of devices. You may want to create a static group for devices hosting certain applications, in a certain geographical location, or running specific version of BIG-IP software. In contrast, a *dynamic group* is essentially a saved query on against a static group. For example, if you create a static group that contained all of your managed BIG-IP devices and you wanted to view only those devices running a specific version of software, you would create a dynamic group with that parameter.

If you delete a managed BIG-IP device from the static group, that change reflects in the dynamic group when you view it.

Creating static group of managed devices

You must license and discover BIG-IP® devices before you can place them into a group.

To help you manage a large number of devices, you can organize them into groups. For example, you could group devices by applications, geographical location, or department.

1. Log in to BIG-IQ Device with your administrator user name and password.

2. At the top of the screen, click **Configuration**.
3. Hover over the Devices header, click the + icon when it appears, and then select **New Group**.
4. In the **Display Name** field, type the name you want to use to identify this group.

   This name is displayed in the Devices panel. You can change this name at any time, after you save this group.
5. In the **Description** field, type a description for this group.

   For example, `BIG-IP devices located in Seattle`.

   You can change this name at any time, after you save this group.
6. For the **Group Type** setting, select **Static Group**.
7. From the **Parent Group** list, select the source for the group you are creating.
8. Click **Save**.

The associated managed devices now display in the Device panel, within the group you created.

If you want to further filter specific devices from within this group, you can create a dynamic group.

Creating a dynamic group of managed devices

You must license, discover devices, and create a static group before you can create a dynamic group.

To filter a static group on specific parameters, you can create a dynamic group. For example, if you have a static group for all devices located in a particular city, you might want to view only those running a specific version of software.

1. Log in to BIG-IQ Device with your administrator user name and password.
2. At the top of the screen, click **Configuration**.
3. Hover over the Devices header, click the + icon when it appears, and then select **New Group**.
4. In the **Display Name** field, type the name you want to use to identify this group.

   This name is displayed in the Devices panel. You can change this name at any time, after you save this group.
5. In the **Description** field, type a description for this group.

   For example, `BIG-IP devices located in Seattle`.

   You can change this name at any time, after you save this group.
6. For the **Group Type** setting, select **Dynamic Group**.
7. For the **Source Group** setting, select the static group on which you want to query for results.
8. In the **Search Filter** field, type a term on which you want to filter the group.

   You can filter on a single term or, if you want to filter on more than one parameter, use the standard Open Data Protocol (OData) format.
9. Click **Save**.

This dynamic group displays in the Device panel as a child of the associated static group.

License Management

Overview: Licensing options

You can centrally manage BIG-IP® virtual edition (VE) licenses for a specific set of F5 offerings (for example, BIG-IP LTM® 25M, BIG-IP LTM 200G, and BIG-IP LTM 1G). When a device is no longer needed, you can revoke the license instance and assign it to another BIG-IP VE device. This flexibility keeps operating costs fixed, and allows for a variety of provisioning options. There are three types of options:

- *Pool licenses* are purchased once, and you assign them to a number of concurrent BIG-IP VE devices, as defined by the license. These licenses do not expire.
- *Utility licenses* are purchased as you need them, and billed at a specific interval (hourly, daily, monthly, or yearly).
- *Volume licenses* are prepaid for a fixed number of concurrent devices, for a set period of time.

About pool licenses

Pool licenses are purchased for a particular product offering for a fixed number of devices, but are not permanently tied to a specific device. As resource demands change, you can use BIG-IQ® Device to revoke and reassign those licenses to other BIG-IP® VE devices as required. Pool licenses do not expire.

Automatically activating a pool license

You must have a base registration key before you can activate a pool license.

Activating a license make it available for assignment to BIG-IP® devices in your network. If the BIG-IQ® system on which you are activating licensing is connected to the public internet, you can automatically activate the pool license.

1. Log in to BIG-IQ Device with your administrator user name and password.
2. At the top of the screen, click **Provisioning**.
3. Hover over the Licenses header, click the + icon when it appears, and then click **Add New Pool License**.
4. In the **License Name** field, type the name you want to use to identify this license.
5. In the **Base Registration Key** field, type or paste the BIG-IQ registration key.
6. In the **Add-on Keys** field, paste any additional license key you have.
7. For the **Activation Method** setting, select **Automatic**, and click the **Activate** button.
   The License Agreement displays.
8. To accept the License Agreement, click the **Agree** button.
9. Click the **Activate** button.

   If the license does not display as activated in the Licenses panel after several minutes, click the arrow next to the license to contract the list, then click it again to expand. The screen should refresh and display the license as activated.

You can now assign this license to another BIG-IP® device.

Manually activating a pool license

You must have a base registration key before you can activate the pool license.

Activating a license make it available for assignment to BIG-IP® devices in your network. If the BIG-IQ® system on which you are activating licensing is not connected to the public internet, you can activate the pool license manually.

1. Log in to BIG-IQ Device with your administrator user name and password.
2. At the top of the screen, click **Provisioning**.
3. Hover over the Licenses header, click the + icon when it appears, and then click **Add New Pool License**.
4. In the **License Name** field, type the name you want to use to identify this license.
5. In the **Base Registration Key** field, type or paste the BIG-IQ registration key.
6. In the **Add-on Keys** field, paste any additional license key you have.
7. For the **Activation Method** setting, select **Manual** and click the **Generate Dossier** button.
   The BIG-IQ system refreshes and displays the dossier in the **Device Dossier** field.
8. Copy the text displayed in the **Device Dossier** field, and click the **Click here to access F5 Licensing Server** link.

   Alternatively, you can navigate to the F5 license activation portal at `https://activate.f5.com/license/`.
9. Paste the dossier into the **Enter your dossier** field, and then click the **Next** button.
   After a pause, the license key text will display.
10. To accept the License Agreement, click the **Agree** button.
11. Click the **Activate** button.

    If the license does not display as activated in the Licenses panel after several minutes, click the arrow next to the license to contract the list, then click it again to expand. The screen should refresh and display the license as activated.

You can now assign this license to another BIG-IP® device.

Assigning a pool license to a BIG-IP VE

Before you can assign a pool license to a BIG-IP® VE device, you must activate the license on the BIG-IQ® system and discover the BIG-IP VE device to which you want to assign the license.

Pool licenses provide you with the flexibility to easily manage resources and operating costs. Use this procedure if you have activated a pool license, but have not yet assigned it to a BIG-IP VE.

1. Log in to BIG-IQ Device with your administrator user name and password.
2. At the top of the screen, click **Provisioning**.
3. On the Devices panel, expand the device group that contains the device you want to license by clicking the arrow next to it.
   The panel expands to display the list of devices contained in this group.
4. Click the gear icon next to the device you want to license, and then click **License Device**.
5. In the **Name** field, type a name for this license.
6. From the **Licensing** list, select **Use a Pool License**.
7. From the **Pool License** list, select the pool license you want to assign to this device.

8. Click the **Deploy** button.
9. To confirm that the license was successfully deployed, click the gear icon next to the license you deployed, click **Properties**, and then click **Assignments**.
   The device you licensed displays with the license status and the last contact from the BIG-IQ system.

Revoking a pool license from a BIG-IP VE

If traffic decreases to the applications on some of your managed BIG-IP® devices, you can use BIG-IQ® Device to revoke those licenses and assign them to other resources as needed.

1. Log in to BIG-IQ Device with your administrator user name and password.
2. At the top of the screen, click **Provisioning**.
3. On the Devices panel, expand the device group that contains the device for which you want to revoke a license by clicking the arrow next to it.
4. Click the gear icon next to the device for which you want to revoke a license, and then click **License Device**.
5. From the **Licensing** list, select **Revoke a License**.
6. Click the **Deploy** button.

You can now assign this license to another BIG-IP® device.

About utility licenses

You are charged for utility licenses only for the duration that the license is activated. You can activate any number of licenses as you need them, specifying the interval (an hour, a day, a month, or a year) at which you want to be billed for each. BIG-IQ® Device tracks license usage in each billing period, and sends that data directly to F5. When a resource is no longer required, you revoke its license and are no longer charged for that instance until you reassign it to another BIG-IP VE device. Utility licenses can be particularly useful when traffic to certain applications increases for a short period of time, for example, during fiscal year end.

Automatically activating a utility license

You must have a base registration key before you can activate the utility license.

If the resources you are licensing are connected to the public internet, you can automatically activate the utility license.

1. Log in to BIG-IQ Device with your administrator user name and password.
2. At the top of the screen, click **Provisioning**.
3. Hover over the Licenses header, click the + icon when it appears, and then click **Add New Utility License**.
4. In the **License Name** field, type the name you want to use to identify this license.
5. In the **Base Registration Key** field, type or paste the BIG-IQ registration key.
6. For the **Activation Method** setting, select **Automatic**, and click the **Activate** button.
   The License Agreement displays.
7. To accept the License Agreement, click the **Agree** button.

8. Click the **Activate** button.

   If the license does not display as activated in the Licenses panel after several minutes, click the arrow next to the license to contract the list, then click it again to expand. The screen should refresh and display the license as activated.

You can now assign this utility license to a BIG-IP® device.

Manually activating a utility license

You must have a base registration key before you can activate the utility license.

Activating a utility license is the first step to making it available for assignment to BIG-IP® devices in your network. If the BIG-IQ® system on which you are activating licensing is not connected to the public internet, you can activate the utility license manually.

1. Log in to BIG-IQ Device with your administrator user name and password.
2. At the top of the screen, click **Provisioning**.
3. Hover over the Licenses header, click the + icon when it appears, and then click **Add New Utility License**.
4. In the **License Name** field, type the name you want to use to identify this license.
5. In the **Base Registration Key** field, type or paste the BIG-IQ registration key.
6. For the **Activation Method** setting, select **Manual** and click the **Generate Dossier** button.
   The BIG-IQ system refreshes and displays the dossier in the **Device Dossier** field.
7. Copy the text displayed in the **Device Dossier** field, and click the **Click here to access F5 Licensing Server** link.

   Alternatively, you can navigate to the F5 license activation portal at `https://activate.f5.com/license/`.
8. Paste the dossier into the **Enter your dossier** field, and then click the **Next** button.
   After a pause, the license key text will display.
9. Select the check box next to the Accept User Legal Agreement to agree to the license terms, and then click the **Next** button.
   The license key displays
10. Copy the license key.
11. In the **License Text** field on the BIG-IQ Device, paste the license key text.
12. Click the **Apply** button at the top of the panel.

You must now activate each individual utility license offering.

Manually activating offering licenses

Before you can activate the individual offering licenses, you must first activate the license itself.

Activating the offering licenses makes them available for assignment.

1. Log in to BIG-IQ Device with your administrator user name and password.
2. At the top of the screen, click **Provisioning**.
3. On the Licenses panel, click the arrow next to the license you previously activated.
   The list expands to display the license offerings associated with this license.
4. Hover over an offering license and click the gear icon when it appears.

5. Copy the text displayed in the **Device Dossier** field, and click the **Click here to access F5 Licensing Server** link.

   Alternatively, you can navigate to the F5 license activation portal at `https://activate.f5.com/license/`.
6. Paste the dossier into the **Enter your dossier** field, and then click the **Next** button.
   After a pause, the license key text will display.
7. Copy the license key.
8. In the **License Text** field on the BIG-IQ Device, paste the license key text.
9. Click the **Apply** button at the top of the panel.

You can now assign this offering license to a BIG-IP® VE device.

Assigning a utility license to a BIG-IP device

Before you can assign a utility pool to a BIG-IP® VE device, you must activate the utility license on the BIG-IQ® system and discover the BIG-IP VE device to which you want to assign a pool license.

Using a utility license for a BIG-IP VE device provides you with the flexibility to easily manage resources and operating costs by choosing a specific billing term for licenses.

1. Log in to BIG-IQ Device with your administrator user name and password.
2. At the top of the screen, click **Provisioning**.
3. On the Devices panel, expand the device group that contains the device you want to license by clicking the arrow next to it.
   The panel expands to display the list of devices contained in this group.
4. Click the gear icon next to the device you want to license, and then click **License Device**.
5. In the **Name** field, type a name for this license.
6. From the **Licensing** list, select **Use a Utility License**.
7. From the **Utility License** list, select the license you want to assign to this device.
8. From the **Offering License** list, select the specific product offering you want to assign to this device.
9. From the **Unit Of Measure** list, select the interval at which you want to be billed for this license.
10. Click the **Deploy** button.

Downloading a utility license usage report

You must assign a utility license to a device before you can create a utility usage report for that license.

You can use this report to augment your internal licensing management and budget planning. You also have the option to submit this report manually to F5 for billing purposes.

Note: *If you would like to manually submit this report to F5 for billing purposes instead of automatically, contact F5 Support.*

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1. Log in to BIG-IQ Device with your administrator user name and password.
2. At the top of the screen, click **Provisioning**.
3. On the Licenses panel, click the gear icon for the utility license for which you want to download a usage report, and then click **Create Usage Report**.

4. For the **Period** setting, in the **From** and **To** fields, type the date range for the report. Alternatively, click the calendars and navigate to the dates.
5. Select a format option for the report.
6. Click the **Download** button and select an option to open the file, or save the file.

Automatically submitting a utility license usage report to F5

You must assign a utility license to a device before you can submit and save a usage report.

You provide this report to F5 Networks for billing purposes, as per the terms and conditions of your contract.

1. Log in to BIG-IQ Device with your administrator user name and password.
2. At the top of the screen, click **Provisioning**.
3. On the Licenses panel, click the gear icon for the utility license that you want to submit for billing, and then click **Create Usage Report**.
4. For the usage submission method, select **Automatically submit report to F5**.
5. Click the **Submit** button.
   BIG-IQ Device sends a report directly to F5, and saves a copy on BIG-IQ Device.

Revoking a utility license from BIG-IP VE

If traffic decreases to the applications on some of your managed BIG-IP® devices, you can use BIG-IQ® Device to revoke those licenses and assign them to other resources as needed.

1. Log in to BIG-IQ Device with your administrator user name and password.
2. At the top of the screen, click **Provisioning**.
3. On the Devices panel, expand the device group that contains the device for which you want to revoke a license by clicking the arrow next to it.
4. Click the gear icon next to the device for which you want to revoke a license, and then click **License Device**.
5. From the **Licensing** list, select **Revoke a License**.
6. Click the **Deploy** button.

You can now assign this license to another BIG-IP® device.

About volume licenses

With volume licenses, you can flexibly manage BIG-IP® VE devices by purchasing a number of prepaid, concurrent licenses. If your needs change throughout the year, you have the option of purchasing more prepaid licenses in increments of 50. BIG-IQ® Device helps you track and distribute these various licenses as required by the applications your customers are using, and notifies you when you reach your prepaid limit. When you revoke a license, you can then assign it to another BIG-IP VE device.

Automatically activating a volume license

You must have a base registration key before you can activate the volume license.

If the resources you are licensing are connected to the public internet, you can automatically activate the volume license.

1. Log in to BIG-IQ Device with your administrator user name and password.
2. At the top of the screen, click **Provisioning**.
3. Hover over the Licenses header, click the + icon when it appears, and then click **Add New Volume License**.
4. In the **License Name** field, type the name you want to use to identify this license.
5. In the **Base Registration Key** field, type or paste the BIG-IQ registration key.
6. For the **Activation Method** setting, select **Automatic**, and click the **Activate** button.
   The License Agreement displays.
7. To accept the License Agreement, click the **Agree** button.
8. Click the **Activate** button.

   If the license does not display as activated in the Licenses panel after several minutes, click the arrow next to the license to contract the list, then click it again to expand. The screen should refresh and display the license as activated.

You can now assign this volume license to a BIG-IP® device.

Manually activating a volume license

You must have a base registration key before you can activate the volume license.

If the resources you are licensing are not connected to the public internet, you can still activate the utility license manually.

1. Log in to BIG-IQ Device with your administrator user name and password.
2. At the top of the screen, click **Provisioning**.
3. Hover over the Licenses header, click the + icon when it appears, and then click **Add New Volume License**.
4. In the **License Name** field, type the name you want to use to identify this license.
5. In the **Base Registration Key** field, type or paste the BIG-IQ registration key.
6. For the **Activation Method** setting, select **Manual** and click the **Generate Dossier** button.
   The BIG-IQ system refreshes and displays the dossier in the **Device Dossier** field.
7. Copy the text displayed in the **Device Dossier** field, and click the **Click here to access F5 Licensing Server** link.

   Alternatively, you can navigate to the F5 license activation portal at `https://activate.f5.com/license/`.
8. Paste the dossier into the **Enter your dossier** field, and then click the **Next** button.
   After a pause, the license key text will display.
9. Select the check box next to the Accept User Legal Agreement to agree to the license terms, and then click the **Next** button.
   The license key displays
10. Copy the license key.

11. In the **License Text** field on the BIG-IQ Device, paste the license key text.
12. Click the **Add** button.
    The unactivated volume license displays in the Licenses panel.
13. Click the arrow next to the volume license you created to expand the list of licenses.
14. Click the volume license you want to activate.
15. Copy the license key.
16. In the **License Text** field on the BIG-IQ Device, paste the license key text.
17. To accept the License Agreement, click the **Agree** button.
18. Click the **Activate** button.

    If the license does not display as activated in the Licenses panel after several minutes, click the arrow next to the license to contract the list, then click it again to expand. The screen should refresh and display the license as activated.

You can now assign this volume license to a BIG-IP® VE device.

Manually activating offering licenses

Before you can activate the individual offering licenses, you must first activate the license itself.

Activating the offering licenses makes them available for assignment.

1. Log in to BIG-IQ Device with your administrator user name and password.
2. At the top of the screen, click **Provisioning**.
3. On the Licenses panel, click the arrow next to the license you previously activated.
   The list expands to display the license offerings associated with this license.
4. Hover over an offering license and click the gear icon when it appears.
5. Copy the text displayed in the **Device Dossier** field, and click the **Click here to access F5 Licensing Server** link.

   Alternatively, you can navigate to the F5 license activation portal at `https://activate.f5.com/license/`.
6. Paste the dossier into the **Enter your dossier** field, and then click the **Next** button.
   After a pause, the license key text will display.
7. Copy the license key.
8. In the **License Text** field on the BIG-IQ Device, paste the license key text.
9. Click the **Apply** button at the top of the panel.

You can now assign this offering license to a BIG-IP® VE device.

Assigning a volume license to a BIG-IP VE

Before you can assign a volume license to a BIG-IP® VE device, you must activate the volume license on the BIG-IQ® system and discover the BIG-IP VE device to which you want to assign a volume license.

Using a volume license for a BIG-IP VE device provides you with the flexibility to easily manage resources and operating costs by choosing only those features you want to use on the managed BIG-IP VE device.

1. Log in to BIG-IQ Device with your administrator user name and password.
2. At the top of the screen, click **Provisioning**.

3. On the Devices panel, expand the device group that contains the device you want to license by clicking the arrow next to it.
   The panel expands to display the list of devices contained in this group.
4. Click the gear icon next to the device you want to license, and then click **License Device**.
5. In the **Name** field, type a name for this license.
6. From the **Licensing** list, select **Use a Volume License**.
7. Click the **Deploy** button.

Revoking a volume license from a BIG-IP VE

If traffic decreases to the applications on some of your managed BIG-IP® devices, you can use BIG-IQ® Device to revoke those licenses and assign them to other resources as needed.

1. Log in to BIG-IQ Device with your administrator user name and password.
2. At the top of the screen, click **Provisioning**.
3. On the Devices panel, expand the device group that contains the device for which you want to revoke a license by clicking the arrow next to it.
4. Click the gear icon next to the device for which you want to revoke a license, and then click **License Device**.
5. From the **Licensing** list, select **Revoke a License**.
6. Click the **Deploy** button.

You can now assign this license to another BIG-IP® device.

BIG-IP Software Upgrades

About upgrading BIG-IP software

A key feature of BIG-IQ® Device is the ability to manage software images from one location, allowing you to deploy software without having to log in to individual BIG-IP® devices. Software images can contain new software, upgrades, or hot fixes.

Downloading a software image from F5 Networks

Downloading a software image is the first step to making it available for new installations, upgrades, or hot fixes.

1. Log in to the F5 Downloads site, `https://downloads.f5.com`, and click the **Find a Download** button.
2. Click the name of the product line.
3. Click the product version name you want to download.
4. Read the End User Software License and click the **I Accept** button if you agree with the terms.
5. Click the file name of the file you want to download.
6. Click the name of the closest geographical location to you.
   The software image downloads to your local system

The software image is now available for you to upload to the BIG-IQ system and make it available for managed devices.

Uploading a software image to the BIG-IQ system

Before you can upload a software image to the BIG-IQ system, you must download it from the `https://downloads.f5.com` site.

Upload a software image to make it available for new installations, upgrades, or hot fixes.

1. Log in to BIG-IQ Device with the administrator user name and password.
2. At the top of the screen, click **Provisioning**.
3. Hover over the Images panel, and click the + icon when it appears, and then click **New Software Image**.
4. Click the **Choose File** button and navigate to the location to which you downloaded the image, and click it to upload it to BIG-IQ Device.
   The software image appears in the Images panel.

The software image is now available for you to deploy.

Upgrading a legacy device (version 10.2.0 - 11.3.0)

Before you can upgrade a legacy device, you must download the software image from the F5 Downloads site, `https://downloads.f5.com`, and upload it to the BIG-IQ system's Images panel.

BIG-IQ Device can manage BIG-IP devices running version 11.4.0 and later. You must upgrade BIG-IP devices running versions 10.2.0 - 11.3.0 before you can manage it. Upgrades are installed to a new volume. If the upgrade does not go as planned, you can boot to the previous volume and restore the configuration. While the software image runs, you can continue to perform other administrative tasks.

1. Log in to BIG-IQ Device with your administrator user name and password.
2. At the top of the screen, click **Provisioning**.
3. Hover on the Devices panel header, click the + sign when it appears, and then click **Upgrade Legacy Device**.
4. In the **IP Address** field, type the IP address for the legacy device that you want to upgrade from a version prior to 11.4.0.
5. In the **Admin User Name** and **Admin Password** fields, type the administrator's user name and password.
6. In the **Root User Name** and **Root Password** fields, type the user name and password for the root user.
7. From the **Software Version** list, select the software image to which you want to upgrade this device.
   This list includes both software images and hot fix images.
8. Click the **Upgrade** button to install the new software image on the target device.

You can now discover and start managing this device.

Deploying a software image (new installation, upgrade, or hotfix)

Before you can install a software image onto a device, you must download it from the F5 Downloads site, `https://downloads.f5.com`, and upload it to the BIG-IQ system's Images panel. To apply a hot fix, you must have the base software image, as well as the hot fix, uploaded to the BIG-IQ system's Images panel.

Important: *You can deploy software images to BIG-IP devices running version 11.4.0 or later. Before you can install a software image on a legacy BIG-IP device running version 10.2.0 - 11.3.0, you must upgrade it*

You can deploy software images to managed devices from BIG-IQ Device. Upgrades are installed to a new volume. If the upgrade does not go as planned, you can boot to the previous volume and restore the configuration. While the software image runs, you can continue to perform other administrative tasks.

Note: *Install a software image during a maintenance window when you are not directing traffic to the target BIG-IP device.*

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1. Log in to BIG-IQ Device with your administrator user name and password.
2. At the top of the screen, click **Provisioning**.
3. Click the arrow next to the BIG-IQ device group that contains the device onto which you want to install this software.
4. Hover on the device on which you want to install software, click the gear icon, and click **Install Software**.
5. In the **Deployment Name** field, type a name to identify this software installation deployment.

This is the name that displays in the Deployment panel after you click the **Install** button to deploy the image.

6. From the **Software Images** list, select the software image you want to install on the target device.

   To apply a hot fix, you must have the base software image downloaded to the BIG-IQ system's Images panel.

7. From the **Target Volume** list, select the volume to which you want to install the selected software image.
8. To prompt BIG-IQ Device to reboot the BIG-IP device to the target volume immediately after the software installs, select the **Reboot into Target Volume** check box.

   You must reboot the BIG-IP device before you can use the newly-installed software. If you do not select this check box, you must reboot directly on the BIG-IP device.

9. Click the **Install** button to immediately deploy the software to the BIG-IP device.

   Alternatively, you can click the **Save** button to deploy the software at a later time. If you select this option, the software installation job displays in the Deployment panel in the **Pending** list.

The software installation deployment job displays in the **Pending** list of the Deployments panel until BIG-IQ Device finished the software installation. If you saved the software installation deployment job, it remains in the **Pending** list until you deploy it.

All managed devices must have the most recent framework installed. To start managing this BIG-IP device, you must rediscover it and update the framework. If you did not select the **Reboot into Target Volume** check box, you must reboot directly from the BIG-IP device before you can use the newly-installed software. If you saved the software installation job, you must deploy it from the Deployment panel.

Templates for Configuration Management

About configuration templates

BIG-IQ® Device can manage multiple devices simultaneously. These devices can be located in several data centers that may be located in many different locations. To help you easily manage required configuration changes (such as changes to DNS, default gateways, route domains, NTP, or SNMP) for a large number of devices, you can use configuration templates. You define changes once in the configuration template, then push the template out to specified devices. This can save a significant amount of time because you are not required to log in to each device individually.

Creating a configuration template

You can create a configuration template to deploy a specific configuration to one or more managed devices. Centrally managing these deployments from BIG-IQ Device eliminates the need to log in to each device individually to specify or update a configuration.

1. Log in to BIG-IQ Device with your administrator user name and password.
2. At the top of the screen, click **Provisioning**.
3. Hover over the Config Templates panel, click the + icon when it appears, and then click **Create Config Template**.
4. In the **Name** and **Description** fields, type a name and a short description to identify this template.
5. From the **Add New Object** list, select the object you want to add to this template, and then click the **Add** button.
   The screen refreshes to display the property fields for the object.
6. In each property field, define the new object property's values.

   You can add additional values for some properties by clicking the + sign next to the property field.

   For specific information about the configuration options for BIG-IP, refer to the BIG-IP system documentation.
7. For each property, select one of the following:

Option	Description
Fixed	The value you define for this option is fixed. A user cannot change this value when deploying the template.
Optional	The value you define for this option is the default. A user can leave this default or specify their own value when deploying the template.
Required	You do not define a value for this option. The user must specify a value when they deploy the template.

   You provide specific self IP addresses when you deploy this template.
8. After you add all of the objects you want to this template, click the **Save** button located on the panel header.

This template is now available for deployment to managed BIG-IP® devices.

Applying a configuration template to a managed device

You must create a configuration template before you can apply it to a discovered device.

Applying a configuration template saves time when you want to make a similar change to several managed BIG-IP® devices.

1. Log in to BIG-IQ Device with your administrator user name and password.
2. At the top of the screen, click **Provisioning**.
3. On the Devices panel, expand the device group that contains the device to which you want to apply a configuration template by clicking the arrow next to it.
4. Click the gear icon next to the device you want to apply this template, and then click **Apply Config Template**.
5. From the **Name** field, select the name for this configuration template deployment.
6. Click the **Deploy** button.

BIG-IQ® Device applies this configuration to the specified BIG-IP devices.

UCS File Backup and Restoration

About UCS files

The configuration details of managed devices (including the BIG-IQ® system itself) are contained in a compressed user configuration set (UCS) file. The UCS file contains all of the information required to restore a device's configuration, such as:

- System-specific configuration files
- License
- User account and password information
- SSL certificates and keys

You can back up devices at regularly scheduled intervals and select the amount of time to save the backups.

Creating a backup UCS file for a managed device

It is best practice to create a backup of the UCS file for each device in your network (including the BIG-IQ® system itself, on a regular basis, and before performing a software upgrade. The UCS file backup provides your network with added stability in the event that a system needs to be restored. You can create backup UCS archives for managed devices on demand, or at scheduled intervals.

1. Log in to BIG-IQ Device with your administrator user name and password.
2. At the top of the screen, click **Configuration**.
3. Hover over the Backups panel, click the + icon when it appears, and then click **Add Backup**.
4. Type a name to identify this backup, and an optional description for it.

   The file name should match the name of the BIG-IP system. For example, if the name of the BIG-IP system is

   `bigip2`, then the name of the archive file should be `bigip2.ucs`.
5. From the **Device** list, select the device or device group for which you want to create the UCS file backup.
6. If you want to include the SSL private keys in the backup file, select the **Include Private Keys** check box.
7. To encrypt the backup file, select the **Encrypt Backup Files** check box, and type and verify the password.
8. To immediately create a backup of the selected device, for the **Schedule Backup** setting, select **Backup Now**.

   Use this option, for example, if you are going to make a significant configuration change that you might want to reverse, or before you upgrade a device.
9. To schedule a backup at regular intervals, select **Daily**, **Weekly**, or **Monthly** for the **Schedule Backup** setting.
   a) If you select **Weekly**, select the check box next to the day of the week you want BIG-IQ Device to create the UCS file backup.
   b) If you select **Monthly**, specify the day of the month you want BIG-IQ Device to create the UCS file backup.

10. For scheduled backups,specify the details:
    a) Use the **Start Date** calendar to indicate a day to start this schedule.
    b) In the associated field, type the time you want BIG-IQ Device to start this scheduled backup.
    c) To specify an end date for the scheduled backup, use the **End Date** field and click a date on the calendar, or run scheduled backups indefinitely, by selecting **No End Date**.

11. Use the **Local Retention Policy** setting to specify how you want to keep the backup files.
    - In the **Delete local backup copy** field specify the number of days to keep the backup copy before deleting it.
    - To retain copies of the UCS backup in the Backups panel indefinitely, select **Never Delete**.

    Important: *If the location you configure the BIG-IQ system to archive UCS backups is unavailable during the backup procedure, the BIG-IQ systems does not delete the local copy of the UCS backup file as defined by the local retention policy. If the archive server is frequently unavailable, you must navigate to the archive location and manually delete them to free up storage on the BIG-IQ system. By default, the UCS file is saved to the* `/shared/ucs_backups` *directory.*

12. To store copies of UCS backup archives permanently, select the **Store archive copy of backup** check box and provide credentials for the server to which you want BIG-IQ Device to archive a copy of the UCS file. This provides an extra level of protection by preserving the configuration data on a remote system. In the unlikely event that you need to restore the data and you are unable to access the archive in the BIG-IQ system directory, you still have a backup copy of the configuration data.
    a) Select **SCP** or **SFTP**.
    b) Specify the **Directory** and **IP Address**.
    c) Specify the **User Name** and **Password**.

    Tip: *Archived copies of UCS backups are retained permanently in the location you specify for the* ***Archiving*** *setting. If you want to clear space and remove archived copies of UCS backups you created, you must navigate to the archive location and manually delete them.*

13. Click the **Create** button

This UCS backup file is now available for restoration.

Restoring a UCS file backup to a managed device

You must create a backup of a device's UCS file before you can restore it.

In the event of a system failure or a requirement to roll back to a previous configuration, you can easily restore a backed up UCS file without having to recreate all of a device's content.

1. Log in to BIG-IQ Device with your administrator user name and password.
2. At the top of the screen, click **Provisioning**.
3. Hover on the Backups panel, click the gear icon next to the backup that you want to restore, and then click **Properties**.
4. Click the **Restore** button.

The BIG-IQ system restores the saved UCS backup file to the associated device.

Restoring the BIG-IQ system with a UCS file backup stored remotely

You must create a backup of a BIG-IQ system's UCS file and store it to a remote system before you can restore it. To perform these steps, you must have access to the command line of the BIG-IQ system.

If for any reason your BIG-IQ system becomes inoperable or corrupt, you can use a backup UCS file you stored remotely to restore the BIG-IQ system without having to recreate all of the BIG-IQ system's content.

Important: *Restoration might take several minutes, during which time the system might be unavailable. Restoring the system requires a reboot.*

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1. Using SSH, log in to the BIG-IQ system with the root user name and password.
2. From the BIG-IQ system you want to restore, open the Traffic Management Shell (tmsh) by typing, `tmsh`.
3. Choose the backup you want to restore, and copy it to `/var/local/ucs` by typing, `scp root@<IP address and port for UCS archive server>:<path of UCS file> /var/local/ucs/<backup name>.ucs`
4. Load the UCS file on the BIG-IQ system by typing, `load sys ucs <backup name>.ucs`
5. Restart rest javad by typing, `bigstart status restjavad`.

The BIG-IQ system is now running the backup configuration.

SSL Certificate Monitoring

About SSL certificate monitoring

When you manage BIG-IP® devices that load balance SSL traffic, you must monitor both their SSL traffic and SSL system certificates. *Traffic certificates* are server certificates that a device uses for traffic management tasks. *System certificates* are the web certificates that allow client systems to log in to the BIG-IP Configuration utility.

BIG-IQ® Device populates the Certificates panel with details about each certificate on every managed BIG-IP device you discover. This makes it easy to monitor the expiration dates all of your devices' SSL certificates from one location.

Monitoring SSL certificate expiration dates

You must discover at least one device for the Certificates panel to display a device's SSL certificate properties before you can monitor the certificates.

SSL certificates have a set expiry date, and do not automatically renew. For this reason, it is important to monitor the SSL certificate's expiration dates for your managed devices.

1. Log in to BIG-IQ Device with your administrator user name and password.
2. At the top of the screen, click **Configuration**.
3. Review the Certificates panel.

   A yellow icon appears next to any SSL certificates that are either within 30 days of expiring, or have already expired.
4. Click the gear icon next to an SSL certificate to view its properties.

If an SSL certificate is about to expire, or has expired, immediately contact the owner of the device.

Users, User Groups, and Roles

Overview: Users, user groups, and roles

A *user* is an individual to whom you provide resources. You provide access to users for specific BIG-IQ® system functionality through authentication. You can associate a user with a specific role, or associate a user with a user group and then associate the group with a role.

A *role* is defined by its specific privileges. A *user group* is a group of individuals that have access to the same resources. When you associate a role with a user or user group, that user or user group is granted all of the role's corresponding privileges.

By default, the BIG-IQ® system provides the following default user types:

Default user type	Default password	Access rights
admin	admin	This user type can access all aspects of the BIG-IQ system from the system's user interface.
root	default	This user has access to all aspects of the BIG-IQ system from the system's console command line.

User types persist and are available after a BIG-IQ system failover. You can authenticate users locally on the BIG-IQ system or remotely through LDAP or RADIUS.

Changing the default password for the administrator user

You must specify the management IP address settings for the BIG-IQ® system to prompt the system to automatically create the administrator user.

After you initially license and configure the BIG-IQ system, it is important to change the administrator role password from the default, `admin`.

1. Log in to BIG-IQ System with your administrator user name and password.
2. At the top of the screen, click **Access Control**.
3. On the Users panel, for **Admin User**, click the gear icon and then **Properties**.
4. In the **Old Password** field, type the password.
5. In the **Password** and **Confirm Password** fields, type a new password.
6. Click **Save**.

Adding a locally-authenticated BIG-IQ user

You create a user so you can then associate that user with a particular role to define access to specific BIG-IQ® system resources.

1. Log in to BIG-IQ System with your administrator user name and password.

2. At the top of the screen, click **Access Control**.
3. Hover over the Users header, and click the + icon when it appears.
   The panel expands to display the User properties.
4. From the **Auth Type Provider** list, select **Local**.
5. In the **Full Name** field, type a name to identify this user.
   The full name can contain a combination of symbols, letters, numbers and spaces.
6. In the **Password** and **Confirm Password** fields, type the password for the new user.
7. Click the **Add** button.

You can now associate this user with a role.

Adding a remotely-authenticated LDAP user

You create a user so you can then associate that user with a particular role to define access to specific BIG-IQ® system resources.

1. Log in to BIG-IQ System with your administrator user name and password.
2. At the top of the screen, click **Access Control**.
3. Hover over the Users header, and click the + icon when it appears.
   The panel expands to display the User properties.
4. From the **Auth Type Provider** list, select **Remote LDAP**.
5. For the **Auth Provider** setting, select the remote LDAP server to use for authorization.
6. In the **Distinguished Name** field, type a name to identify this user.
   The full name can contain a combination of symbols, letters, numbers and spaces.
7. Click the **Add** button.

You can now associate this user with a role.

Adding a remotely-authenticated RADIUS user

You create a user so you can then associate that user with a particular role to define access to specific BIG-IQ® system resources.

1. Log in to BIG-IQ System with your administrator user name and password.
2. At the top of the screen, click **Access Control**.
3. Hover over the Users header, and click the + icon when it appears.
   The panel expands to display the User properties.
4. From the **Auth Type Provider** list, select **Remote RADIUS**.
5. For the **Auth Provider** setting, select the remote RADIUS server to use for authorization.
6. Click the **Add** button.

You can now associate this user with a role.

Creating a user group

Create a user group to offer individual users access to the same resources.

1. Log in to BIG-IQ System with your administrator user name and password.
2. At the top of the screen, click **Access Control**.
3. Hover on the User Groups header, click the + icon when it appears, then click **New User Group**.
4. In the **Name** field, type a name for this new user group.
5. For the **Auth Provider Type** setting, select the type of authorization provider for this user group.
   - If you selected **LDAP**, specify the group DN for the LDAP server. You must supply

     the fully distinguished name. For example, `cn=BIG-IQ_admin,dc=mgmt,dc=net` Alternatively, you can click **Search** and select the group DN from a list.
   - If you selected **RADIUS**, specify the key and value associated with users on the RADIUS server for this group.
6. Click the **Add** button.

You can now associate users with this user group, and the group with a role

About user roles

As a system manager, you need a way to differentiate between users and to limit user privileges based on their responsibilities. To assist you, the BIG-IQ® system has created a default set of roles you can assign to a user. Roles persist and are available after a BIG-IQ system failover.

Roles definitions

BIG-IQ® system ships with several standard roles, which you can assign to individual users.

Role	Description
Administrator	Responsible for overall administration of all licensed aspects of the BIG-IQ system. These responsibilities include adding individual users, assigning roles, discovering BIG-IP® systems, installing updates, activating licenses, and configuring a BIG-IQ high availability (HA) configuration.
Device Manager	Responsible for device administration including device discovery, group creation, licensing, and management of software images, UCS backups, templates, connectors, certificates, self IP addresses, VLANs, and interfaces. This role must first create a group before discovering and managing devices.
Network Security Deploy	Can view and deploy firewall configuration objects associated with managed firewall devices.
Network Security Edit	Can view and modify configuration objects associated with managed firewall devices, including the ability to create, modify, or delete all shared and firewall-specific objects.
Network Security Manager	Has all of the privileges assigned to the Network Security View, Network Security Edit, and Network Security Deploy roles.

Role	Description
Network Security View	Can only view configuration objects and tasks for all firewall devices under management.
Security Manager	Has all of the privileges assigned to the Network Security View, Network Security Edit, and Network Security Deploy roles.
Web App Security Manager	Responsible for administration of the individual components of web application security, including associated devices, policies, virtual servers, signature files, and deployments.

Associating a user or user group with a role

Before you can associate a user or user group with a role, you must create a user or user group.

When you associate a user or user group with a role, you define the resources users can view and modify. You can associate multiple roles with a given user.

1. Log in to BIG-IQ System with your administrator user name and password.
2. At the top of the screen, click **Access Control**.
3. On the Users or User Groups panel, click the name you want to associate with a role, and drag and drop it on a role on the Roles panel.
   A confirmation popup screen opens.
4. Click the **Confirm** button to assign the user or user group to the selected role.

This user or user group now has access to the resources associated with the role you specified.

Disassociating a user from a role

Use this procedure to disassociate a user from an assigned role.

1. Log in to BIG-IQ System with your administrator user name and password.
2. At the top of the screen, click **System >Users**.
3. Click the name of the user you want to edit.
4. For the User Roles property, delete the user role that you want to disassociate from this user.
5. Click the **Save** button to save your changes.

This user no longer has the privileges associated with the role you deleted.

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