

BIG-IQ[®] Centralized Management: Access

Version 5.0



Table of Contents

BIG-IQ Configuration Management: Access Overview.....	7
About Access.....	7
Access configuration workflow.....	7
What are Access groups?	7
What is a source device?	8
What is a non-source device?	8
About the types of resources that Access imports.....	8
About shared resources.....	8
How do shared resources work in the configuration?.....	8
About device-specific resources.....	8
How do device-specific resources work in the configuration?	9
Reporting configuration workflow.....	9
Users, User Groups, and Roles.....	11
About users, user groups, and roles	11
User roles in the Access configuration workflow.....	11
User roles in the reporting configuration workflow.....	12
Adding a BIG-IQ user.....	12
Creating a user group.....	12
User role access descriptions.....	13
BIG-IP Devices, HA Pairs, and Clusters.....	15
Preliminary tips for putting an Access group together.....	15
Things to know about machine accounts.....	15
Things to know about bandwidth controller configurations.....	15
Access requirements for HA pairs and clusters.....	16
Managing Access Groups.....	17
How do I start to centrally manage APM configurations from BIG-IQ?.....	17
What is the best way to create an Access group?.....	17
Adding devices to the BIG-IQ inventory.....	17
Discovering the LTM and APM service configurations.....	19
Importing the LTM service configuration.....	19
Importing the APM configuration into an Access group	20
Creating an Access group.....	20
Adding a device to an existing Access group.....	21
Changing the source device for an Access group	22
Removing a device from an Access group.....	22

Viewing and Editing the Access Configuration.....	23
Finding a device-specific resource.....	23
Device-specific resources: User interface.....	23
Shared resources: User interface	24
Editing a device-specific resource.....	24
Sharing a device-specific resource.....	25
Returning a shared resource to device-specific resources.....	25
Viewing an access policy.....	26
About the access policy display.....	26
Evaluating and Deploying Changes.....	27
How do I evaluate changes made to managed objects?.....	27
How do I deploy changes made to managed objects?.....	27
How does deployment to devices in a cluster work?.....	28
Evaluating Access configuration changes.....	28
Evaluating LTM configuration changes.....	29
Deploying LTM configuration changes.....	31
Deploying the Access configuration.....	31
Access deployment errors and warnings: causes and resolutions.....	32
Managing Ongoing Change.....	35
How to manage ongoing configuration change.....	35
How does re-import impact the device-specific resources?.....	35
Guidelines for making changes to the Access configuration.....	36
Re-discovering and re-importing the APM service configuration.....	37
Re-discovering and re-importing the LTM service configuration.....	37
Managing Configuration Snapshots.....	39
What is snapshot management?.....	39
Creating a snapshot.....	39
Managing Event Logs in Access	41
Managing Event Logs for BIG-IQ Access.....	41
How do I manage event logs with a Logging Node?.....	41
What is a BIG-IQ Logging Node?.....	42
Managing Configuration Snapshots.....	52
What is snapshot management?.....	52
Reporting.....	55
About Access and SWG reports	55
Setup requirements for Access and SWG reports	55
What data goes into Access reports for the All Devices option?	55

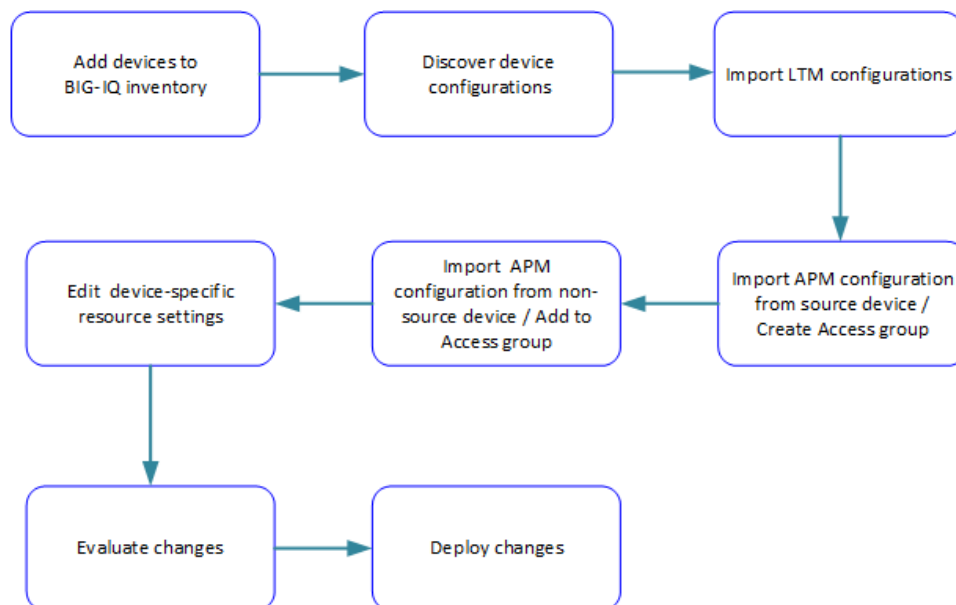
Running Access reports.....	56
Getting the details that underlie an Access report	56
Stopping sessions on BIG-IP devices from Access.....	57
Running SWG reports.....	58
Getting the details that underlie an SWG report	58
About the maximum number records for Access and SWG reports	59
Setting the timeframe for your Access or SWG report.....	59
Access report problems: causes and resolutions.....	60
What can cause logging nodes to become unavailable?	60
Reference.....	61
About iApps and Access.....	61
Shared configuration resources.....	61
Device-specific configuration resources.....	65
Legal Notices.....	69
Legal notices.....	69

BIG-IQ Configuration Management: Access Overview

About Access

The BIG-IQ® system offers you centralized management for BIG-IP® Access Policy Manager® (APM) and F5 Secure Web Gateway (SWG) configurations. Centralized management gives you easy-to-deploy sets of access policies, and access policy configuration objects. This means you don't need to repeat the configuration on each BIG-IP system individually. Access also offers you centralized reporting, which allows you to compare and monitor BIG-IP APM® usage across many groups of devices.

Access configuration workflow



What are Access groups?

Each *Access group* is a group of BIG-IP® devices across which you plan to share the same Access configuration. When you import an APM service configuration from a device, the device must join an Access group.

What is a source device?

A *source device* is the foundation of the shared configuration for other devices in an Access group.

What is a non-source device?

Any *non-source device* is a member of an Access group that accepts the shared configuration from the source device.

About the types of resources that Access imports

When you import an APM[®] service configuration from a device, the device must join an Access group.

- If the device joins a new Access group, the device becomes the source of the shared configuration for the group; Access imports both shared resources and device-specific resources from the source device.
- If the device joins an existing Access group, Access imports only the device-specific resources from the device.

About shared resources

In an Access group on the BIG-IQ[®] system, *shared resources* are a set of configuration objects that are expected to be the same on every device in an Access group.

How do shared resources work in the configuration?

Initially, shared resources are imported with the APM[®] service configuration from the source device. After import, they are read-only on the BIG-IQ[®] system. The deployment process configures the shared resources on all non-source devices in the Access group. This can result in major configuration changes on the non-source devices, with resources being overwritten, deleted, or added on them.

About device-specific resources

In an Access group on the BIG-IQ[®] system, *device-specific resources* are a set of configuration objects that are expected to exist on every device in the Access group. However, the properties of these resources can differ from device to device.

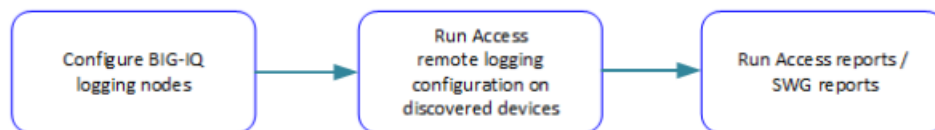
For example, an access policy could use an Active Directory server for user authentication. Device `apm_north_america.xyz.com` must use an Active Directory server configured in a North American domain or data center, while device `apm_south_america.xyz.com` must use an Active Directory server configured in a South American domain or data center.

How do device-specific resources work in the configuration?

When you add a device to an Access group, device-specific resources are created from the device's APM® service configuration. Or, if particular resources do not exist on a non-source device, Access creates device-specific resources that match those in the source device configuration. After import, you are instructed to review and change device-specific resources if needed; in addition, you can change them at your option. You can also make a device-specific resource shared, so that its properties can only be configured in the shared resources. At deployment, device-specific resources are configured on the specific devices.

Reporting configuration workflow

BIG-IQ logging nodes are required for Access and SWG reporting. To set up a discovered device so that it sends report data to a logging node, you must run the remote logging configuration. Then, you can run reports.



Users, User Groups, and Roles

About 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 who 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.

User roles in the Access configuration workflow

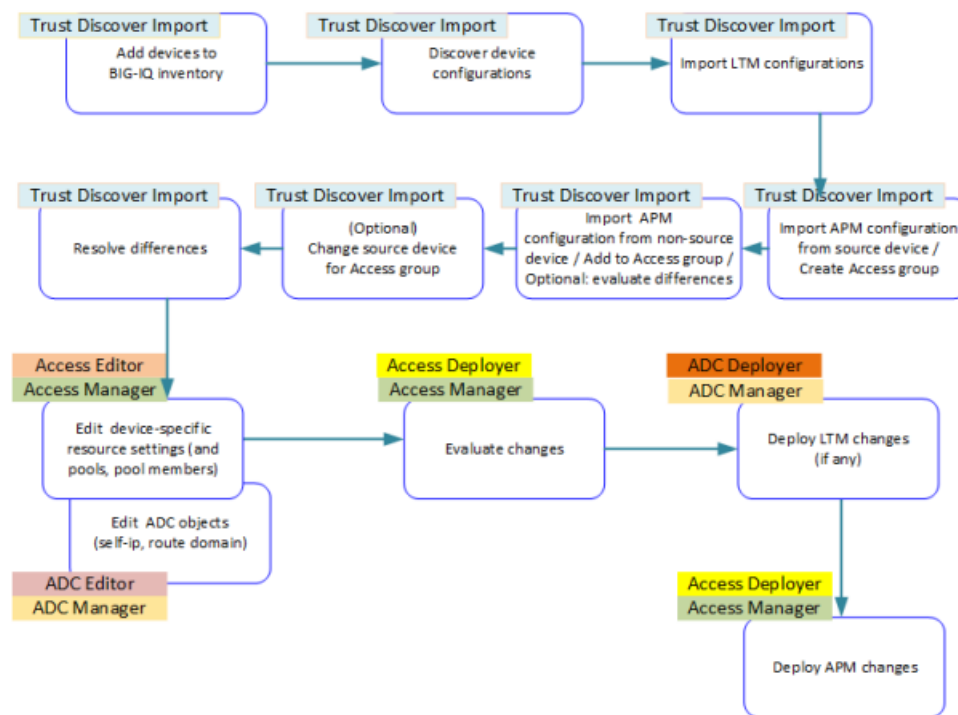


Figure 1: Access configuration workflow with possible user roles

User roles in the reporting configuration workflow

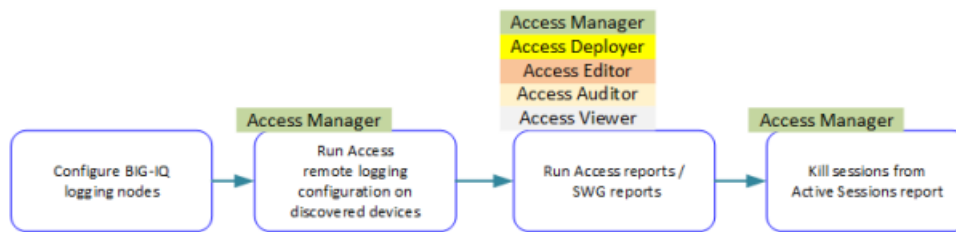


Figure 2: Reporting workflow with possible user roles

Adding a BIG-IQ user

Create a user to provide access to the BIG-IQ system.

1. Log in to the BIG-IQ[®] system with your user name and password.
2. At the top left of the screen, select **System Management** from the BIG-IQ menu.
3. On the left, click **USER MANAGEMENT > Users**.
The inventory of users defined on this BIG-IQ opens.
4. Click the **Add** button.
5. In the **User Name** field, type the user name for this new user.
6. 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.
7. In the **Password** and **Confirm Password** fields, type the password for the new user.
8. To associate this user with an existing user group, select the group from the **User Groups** list.
To associate the user with additional groups, click the plus [+] icon and select another group.
9. From the **User Roles** list, select a user role to associate with this user.
Each role has a set of unique privileges.
To associate the user with additional roles, click the plus [+] icon and select another role.
10. Click the **Save** button at the bottom of the screen.

Creating a user group

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

1. Log in to the BIG-IQ[®] system with your user name and password.
2. At the top left of the screen, select **System Management** from the BIG-IQ menu.

3. At the left, click **USER MANAGEMENT > User Groups**.
The User Groups screen opens.
4. Click **Add**.
5. In the **Name** field, type a name for this new user group.
6. From the **Auth Provider** list, select **local (Local)**.
7. From the **Users** list, select a user to add to this group.
To add additional users, click the plus [+] icon.
8. From the **User Roles** list, select a user role to give its associated system access to this user group.
To add additional roles, click the plus [+] icon.
9. Click the **Save** button at the bottom of the screen.

User role access descriptions

The table lists standard BIG-IQ® system user roles you might need to assign to your users, depending on their responsibilities in working with Access.

Role	Role Description / Access
Access Auditor	This role provides access to BIG-IQ® Access reports.
Access Deployer	This role has deploy access to Access configuration objects. This role cannot discover and edit devices or policies.
Access Editor	This role has edit access to Access configuration objects. This role cannot discover and deploy devices or policies. This role includes the ability to add, update, and delete pools and pool members from the Access configuration object editor.
Access Manager	This role has deploy and edit access to Access configuration objects, and has access to Access Reports and Dashboard. This role cannot add or remove devices and device groups, and cannot discover, import or delete services.
Access Viewer	This role has view-only access to Access configuration objects and tasks for Access devices that have been discovered. This role cannot edit, discover, or deploy devices or policies.
ADC Deployer	This role has deploy access to ADC configuration objects. This role cannot discover and edit devices or configuration objects. At deployment, Access notifies you if it finds changes in ADC that you must deploy first,
ADC Editor	This role has edit access to ADC configuration objects. A user needs this role to be able to edit or create a self-IP address or a route domain and to view other ADC configuration objects. This role includes the ability to add, update, and delete pools and pool members from ADC; however, you can configure pools and pool members within Access without having this role.
ADC Manager	This role manages the ADC module with full privilege. This role works for a user who needs to: Deploy ADC; edit or create a self-IP address or a route domain; view other ADC configuration objects. This role includes the ability to add, update, and delete pools and pool members from ADC; however, you can configure pools and pool members within Access without having this role.
ADC Viewer	This role permits read-only access to the ADC module. A user who needs to view configuration objects from ADC needs this role.

Role	Role Description / Access
Trust Discover Import	This role can add and delete devices, discover services and import them, and remove services.
Administrator	This role has access to all aspects of the BIG-IQ system, which can include BIG-IQ Security, BIG-IQ System, and BIG-IQ ADC management. This access includes areas involved in adding individual users, assigning roles, device discovery, installing updates, activating licenses, and configuring a BIG-IQ high availability (HA) configuration.

BIG-IP Devices, HA Pairs, and Clusters

Preliminary tips for putting an Access group together

As you start to think about how to group BIG-IP® devices into Access groups that share a configuration, there are a few things you might want to keep in mind. When you select the source device for an Access group, you are selecting the shared configuration for all of the devices in the group. (You can change the source device if needed.)

When you add BIG-IP devices to an Access group, Access evaluates the differences between the source device and the other devices in the group. Access reports the differences for your information. If you need to make configuration changes on any of the devices, Access lets you know which non-source device to change, and which object to update, delete, or add.

Things to know about machine accounts

Machine accounts support Microsoft Exchange clients that use NTLM authentication. An NTLM Auth Configuration object refers to a machine account. If the APM® configurations on the BIG-IP® systems include machine accounts, you might want to be aware of the following information.

In an Access group, the machine accounts on the source and non-source devices must each have been created with the same name. If this is not the case, the deployment fails. The deployment differences will include the names of the devices on which you must reconfigure the machine accounts before you can successfully deploy.

Things to know about bandwidth controller configurations

On a BIG-IP® device, bandwidth controller configuration objects (policies and priority groups) are configured at the system level. In APM®, they are used to provide traffic shaping for Citrix clients that support MultiStream ICA. In an access policy, a *BWC policy* item refers to a bandwidth controller policy. If the APM configurations on the BIG-IP systems refer to bandwidth controller objects, you should be aware of the following information.

The bandwidth controller configuration objects on the source device are treated as if they were part of the Access shared configuration. That means when you import the APM service configuration from a source device, the bandwidth controller objects are imported and cannot be updated in the BIG-IP® system. When you deploy the configuration, deployment creates the bandwidth controller objects on the non-source devices.

Access requirements for HA pairs and clusters

For BIG-IP® system high availability, APM® supports two devices in a Sync-Failover group; these devices can also be referred to as an *HA pair*.

Access has these requirements for HA pairs on BIG-IQ® system configuration:

- If you import a device that is part of an HA pair, you must import the other device in the pair as well. Access must manage the configuration for both devices.
- When you import the devices that are an HA pair, you must place both devices in a cluster that contains only that pair.

Note: *This is not enforced when you add devices to a cluster. But when you try to deploy the configuration, Access reports errors and deployment fails.*

- When you add devices to an Access group, you must add both members of a cluster to the same Access group. (You can add all clusters to one Access group or add clusters to multiple Access groups.)

Note: *Access enforces this requirement.*

To avoid problems after you create Access configurations on the BIG-IQ system, you should know which devices constitute each HA pair.

Important: *F5® recommends that you make a list of HA pairs, and keep it available for ready reference while you work in the BIG-IQ system.*

Managing Access Groups

How do I start to centrally manage APM configurations from BIG-IQ?

Here is an overview of your first steps for setting up an Access Policy Manager® (APM®) configuration once, and then being able to deploy that configuration from the BIG-IQ® system to other BIG-IP® devices.

Step 1. Add the BIG-IP device to the inventory list on the BIG-IQ system. You enter the IP address and credentials of the BIG-IP device you're adding, and associate it with a cluster (if applicable).

Step 2. Discover the APM and the Local Traffic Manager™ (LTM) configurations. You must discover LTM first, because APM uses some resources that are managed by LTM.

Step 3. Import the LTM configuration into the BIG-IQ system.

Step 4. Import the APM configuration into the BIG-IQ system. Importing the APM configuration requires that the device be added to an Access Group. You can create a new Access Group with the device as source-device, or you can add the device to another Access Group as non-source device.

What is the best way to create an Access group?

After you add devices to the BIG-IQ® system and discover them, you can create an Access group in either of two ways. Use whichever you prefer, based on your requirements.

- From the Access user interface, you can add multiple devices to an Access group at once. Using this method, you select multiple devices, with one device specified as the source device. Access then imports configurations from the devices, and creates the Access group.
- From the Device Management user interface, you can add one device at a time to an Access group when you import the APM service from each device.

Adding devices to the BIG-IQ inventory

Before you can add BIG-IP® devices to the BIG-IQ® inventory:

- The BIG-IP device must be located in your network.
- The BIG-IP device must be running a compatible software version. Refer to <https://support.f5.com/kb/en-us/solutions/public/14000/500/sol14592.html> for more information.
- Port 22 and 443 must be open to the BIG-IQ management address, or any alternative IP address used to add the BIG-IP device to the BIG-IQ inventory. These ports and the management IP address are open by default on BIG-IQ.

Note: A BIG-IP device running versions 10.2.0 - 11.4.1 is considered a legacy device and cannot be discovered from BIG-IQ version 5.0. If you were managing a legacy device in previous version of BIG-IQ and upgraded to version 5.0, the legacy device displays as impaired with a yellow triangle next to it in the

BIG-IP Devices inventory. To manage it, you must upgrade it to 11.5.0 or later. For instructions, refer to the section titled, [Upgrading a Legacy Device](#).

Note: Access supports BIG-IP system software version 12.1 only.

You add BIG-IP devices to the BIG-IQ system inventory as the first step to managing them.

1. Log in to the BIG-IQ[®] system with your user name and password.
2. At the top left of the screen, select **Device Management** from the BIG-IQ menu.
3. Click the **Add Device** button.
4. In the **IP Address** field, type the IPv4 or IPv6 address of the device.
5. In the **User Name** and **Password** fields, type the user name and password for the device.
6. To add this device to a new cluster:

Important: *If a device is not a member of a Sync-Failover group that you configured to support an Active-Standby configuration for APM, do not add it to a cluster.*

If the device is the first member of a Sync-Failover group that you have added to the BIG-IQ system, add it to a new cluster. It does not matter whether this device is the Active or the Standby member of the group.

- a) From the **Cluster Display Name** list, select **Create New**, and then type a new name for this new cluster.

A cluster name must be unique on the BIG-IQ system. It does not need to match the name of the Sync-Failover group on the BIG-IP device. However, ensuring some similarity between the names might be useful to you, because when you add the second member of the group, you must add it to the same cluster.
- b) Select an option from the **Deployment Settings**:
 - **Initiate BIG-IP DSC sync when deploying configuration changes (Recommended)** Select this option to prompt BIG-IQ to start the DSC synchronization process so that any configuration change made to this device is synchronized with other members of the DSC. This option makes sure all members of the DSC have the most current configuration.
 - **Ignore BIG-IP DSC sync when deploying configuration changes** Select this option to have BIG-IQ deploy any configuration changes for this device to all cluster members. Use this option only if this device is not configured in a DSC Sync-Failover device group, or if any members of the cluster are disabled.

7. To add this device to an existing cluster:

If the device is the second member of a Sync-Failover group that you have added to the BIG-IQ system, add the device to the existing cluster for that Sync-Failover group.

- a) From the **Cluster Display Name** list, select **Use Existing**, and then select the cluster from the list.
- b) Select an option from the **Deployment Settings**:
 - **Initiate BIG-IP DSC sync when deploying configuration changes (Recommended)** Select this option to prompt BIG-IQ to push any configuration changes to this device to other members of the DSC. This option makes sure all members of the DSC have the most current configuration.
 - **Ignore BIG-IP DSC sync when deploying configuration changes** Select this option to have BIG-IQ deploy any configuration changes for this device to all cluster members. Use this option only if this device is not configured in a DSC Sync-Failover device group, or if any members of the cluster are disabled.

8. Click the **Add** button at the bottom of the screen.

The BIG-IQ system opens communication to the BIG-IP device, and checks its framework.

***Note:** The BIG-IQ system can properly manage a BIG-IP device only if the BIG-IP device is running a compatible version of the REST framework.*

9. Click the **Add** button at the bottom of the screen.
When complete, a popup screen displays a status and options to discover service configurations immediately.
10. To discover configurations for APM® and LTM® now, select **Access Policy Manager (APM)**, and the **Local Traffic Manager (LTM)** check box is selected automatically; click **Discover**.
You can discover service configurations now or do it later.
BIG-IQ discovers the configurations for the APM and LTM services.

BIG-IQ displays a discovering message in the Services column of the inventory list.

Discovering the LTM and APM service configurations

Before you can import configurations from a device, you must first discover them. To prepare to create an Access configuration on the BIG-IQ® system, you must discover the Local Traffic Manager™ (LTM®) service configuration, and then discover the Access Policy Manager® (APM) service configuration.

1. Log in to the BIG-IQ® system with your user name and password.
2. At the top left of the screen, select **Device Management** from the BIG-IQ menu.
3. Click the name of the device you want to discover the service configuration from.
4. On the left, click **Services**.
5. For Local Traffic Manager (LTM), click **Discover**.
You must wait for discovery to complete before you continue.
6. For Access Policy Manager (APM), click **Discover**.

Importing the LTM service configuration

You must discover a service configuration before you can import it.

Before you can import the Access Policy Manager® (APM) service configuration from a discovered device, you must import the Local Traffic Manager™ (LTM®) service configuration.

***Important:** You, or any other BIG-IQ system user, cannot perform any tasks on the BIG-IQ system while it is importing a service configuration. Large configurations can take a while to import, so let other BIG-IQ users know before you start this task.*

1. Log in to the BIG-IQ® system with your user name and password.
2. At the top left of the screen, select **Device Management** from the BIG-IQ menu.
3. Click the name of the device you want to import the service configuration from.
4. On the left, click **Services**.
5. For Local Traffic Manager (LTM), select the **Create a snapshot of the current configuration before importing** check box to save a copy of the device's current configuration.

You're not required to create a snapshot, but it is a good idea in case you have to revert to the previous configuration for any reason.

6. For Local Traffic Manager (LTM), click **Import**.

The LTM service configuration is imported.

Importing the APM configuration into an Access group

You must discover a service configuration before you can import it.

You import Access Policy Manager® (APM) configuration objects from a device to manage the device configuration from the BIG-IQ® system. As part of the import process, you select an Access group.

Important: *You, or any other BIG-IQ system user, cannot perform any tasks on the BIG-IQ system while it is importing a service configuration. Large configurations can take a while to import, so let other BIG-IQ users know before you start this task.*

1. Log in to the BIG-IQ® system with your user name and password.
2. At the top left of the screen, select **Device Management** from the BIG-IQ menu.
3. Click the name of the device you want to import the service configuration from.
4. On the left, click **Services**.
5. For Access Policy (APM), select the **Create a snapshot of the current configuration before importing** check box to save a copy of the device's current configuration.

You're not required to create a snapshot, but it is a good idea in case you have to revert to the previous configuration for any reason.

6. For Access Policy (APM), click **Import**.
7. On the Add to Access Group popup screen, specify either a new or existing Access group:
 - Select **Create New**, in the **Name** field, type a name, and click **Add**.
 - Select **Add to existing**, select a name from the **Name** list, and click **Add**.

Important: *You must add both members of an HA pair to the same Access group.*

The device in the **Group Source Device** provides the shared configuration for all devices in the Access group.

If you add the device to a new Access group, it becomes the source device; its shared resources and device-specific resources are imported. If you add the device to an existing Access group, it becomes a non-source device; its device-specific resources are imported.

The APM service configuration is imported.

Creating an Access group

Before you can create an Access group, you must have at least one device discovered. You must have imported the LTM® service configuration from a device before you can add that device to an Access group.

You create an Access group to start to manage the Access configuration for a group of devices.

Note: When you create an Access group, the service configurations for the devices are imported.

Important: You, or any other BIG-IQ system user, cannot perform any tasks on the BIG-IQ system while it is importing a service configuration. Large configurations can take a while to import, so let other BIG-IQ users know before you start this task.

1. Log in to the BIG-IQ® system with your user name and password.
2. At the top left of the screen, select **Access** from the BIG-IQ menu.
3. Click the **Create** button.
The New Group screen opens.
4. In the **Name** field, type a name for the Access group.
5. From **Source Device**, select the device to be the source of the shared configuration for other devices in the group.
6. If there are devices in the **Managed BIG-IP APM Devices** setting that you want to add to the group now, move them to the **Selected** list.
7. Click **Create & Import**.
The Access Groups screen opens. Progress information displays in the Status column.
8. If the system discovers differences between a source device and non-source devices, you can see them by clicking the **View Differences** link in the Status column.

Adding a device to an existing Access group

Before you start, you must have at least one device with the APM® service discovered. You must also have imported the LTM® service configuration from the device before you can add that device to an Access group.

You add a device to an Access group so you can manage its configuration from Access. When you add a device to an existing Access group, its device-specific configuration resources are imported into Access. Access also creates any device-specific resources that it is missing, from the source device configuration.

1. Log in to the BIG-IQ® system with your user name and password.
2. At the top left of the screen, select **Access** from the BIG-IQ menu.
3. Click the name of the Access group you want to change.
The properties screen for that group opens, listing the devices in the Access group.
4. Click **Add**.
An Add Devices popup screen opens.
5. Move the devices you want to add to the **Selected** list.
6. Click **Select**.
The popup screen closes, showing the Access Groups screen. Progress information displays in the Status column.
7. If the system discovers differences between a source device and non-source devices, you can see them by clicking the **View Differences** link in the Status column.

Changing the source device for an Access group

You might need to make a change when the existing source device is going to be decommissioned. Or, you might do this if the source device is down and a configuration change must be made and deployed in an emergency.

1. Log in to the BIG-IQ® system with your user name and password.
2. At the top left of the screen, select **Access** from the BIG-IQ menu.
3. Click the name of the Access group that you want to change.
The properties screen for that group opens, listing the devices in the Access group.
4. Select a non-source device.
An asterisk marks the name of the source device
5. Click **Make Source**.
A screen displays, prompting you to confirm the source change.
6. Click **Save**.
The Access Group screen displays while the shared configuration is imported from the newly selected source device. Access evaluates the configuration.
7. If the **Status** field shows that differences were found, click the **View Differences** link to review them, and accept or deny the changes:
 - Click **Accept** to update the Access group with the configuration changes.
 - Click **Deny** to not update the Access group with the configuration changes.

Removing a device from an Access group

You remove a device from an Access group if you no longer want to manage the Access configuration for the device, or if you want to add the device to a different Access group.

1. Log in to the BIG-IQ® system with your user name and password.
2. At the top left of the screen, select **Access** from the BIG-IQ menu.
3. Click the name of the Access group you want to change.
The properties screen for that group opens, listing the devices in the Access group.
4. Select the check box for that device and click **Remove**.
A confirmation popup screen opens.
5. Confirm that you want to remove the device.
The device no longer displays in the Access group. The APM service configuration on the device is no longer managed.

Before you can see new data from the device in Access reports or add the device to another Access group, you must discover the APM service configuration on the device.

Viewing and Editing the Access Configuration

Finding a device-specific resource

In BIG-IQ® Access, you can find a device-specific resource on the left, under **Shared resources** if it has been marked **shared**, or under the specific device to which it belongs.

1. To search for a resource among the shared resources, on the left expand the Access group name and click **Shared resources**.
2. In the Filter field, type all or part of the name of the object, and press Enter.
The screen displays each shared object type, with the number of matching resources it has found, marked in parentheses. For example, **Access Profiles list (1)**, **CAPTCHA Configuration List (0)**, and so on.
3. To search among device-specific resources, on the left expand the Access group name, click the name of a device, then use the **Filter** field to sort the resources.
4. If you do not know the name of the resource you want to find, to find it you must browse through the shared resource types and device-specific resource types for non-source devices.

Device-specific resources: User interface

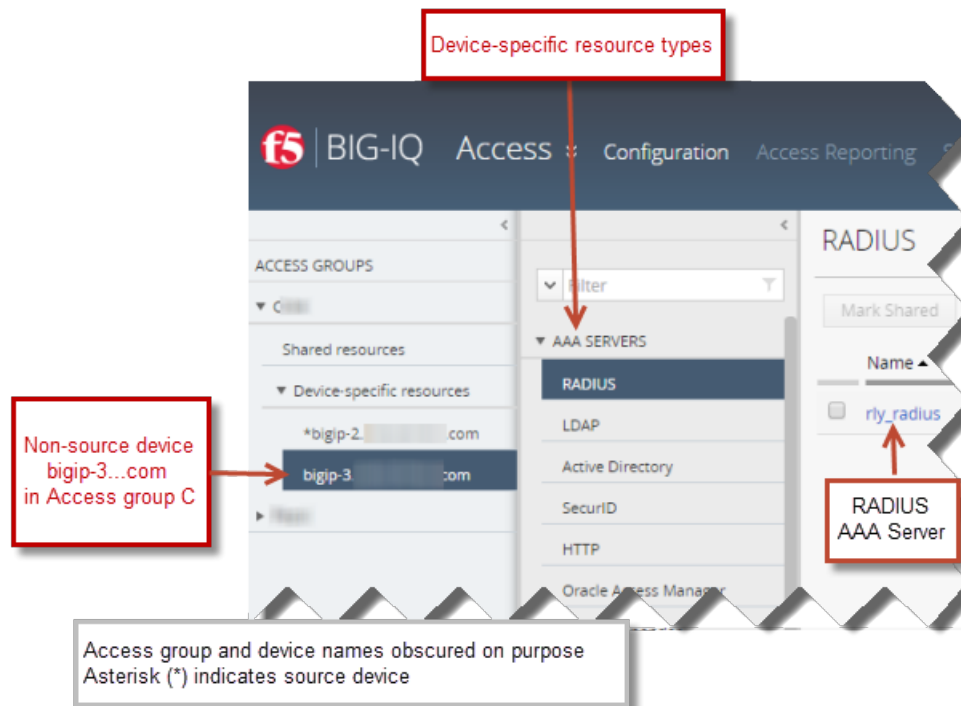


Figure 3: Device-specific resources for a device in an Access group

Shared resources: User interface

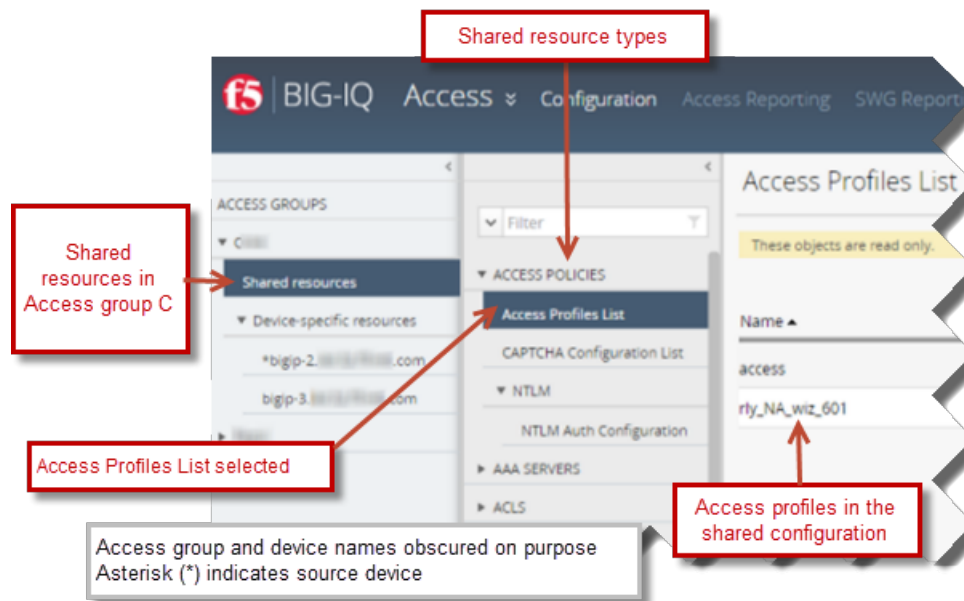


Figure 4: Shared resources in an Access group

Editing a device-specific resource

In BIG-IQ® Access, you can update the properties of a device-specific resource in the working configuration.

1. At the top left of the screen, select **Access** from the BIG-IQ menu.
2. On the left, expand an Access group and click the name of the device.
The screen displays a list of resource types.
3. Expand the resource types and select the particular type of resource that you want to change.
A the screen displays a list of resources displays.
4. Click the name of the resource that you want to edit.
The properties screen for that resource opens.
5. Edit the resource properties.

Note: Click the question mark (?) icon for help on each property.

6. Click **Save**.

The change is distributed to the BIG-IP® device when you deploy the configuration.

Sharing a device-specific resource

In BIG-IQ® Access, you can make a device-specific resource act like a shared resource.

***Note:** When you make a device-specific resource shared, the resource takes the properties defined for it on the source device*

1. At the top left of the screen, select **Access** from the BIG-IQ menu.
2. On the left, expand the name of the Access group that interests you.
3. Under **Device-specific resources**, click any device name.
The screen displays a list of resource types.
4. Select the type of resource that you want to change.
The screen displays a list of resources of that type on the right.
5. From the list, select the check box for the resource that you want to make shared.
6. Click **Mark Shared**.
The resource no longer displays on the list of device-specific resources.

You can now find the resource on the **Shared resources** list.

Returning a shared resource to device-specific resources

If you made a device-specific resource into a shared resource, you can return it to device-specific resources and configure its properties for each device in the Access group.

***Note:** Device-specific resources are a system-defined subset of shared resources. Not all shared resources can be made device-specific.*

1. At the top left of the screen, select **Access** from the BIG-IQ menu.
2. On the left, expand the name of the Access group that interests you.
3. Click **Shared resources**.
The screen displays a list of resources, with **ACCESS POLICIES** selected.
4. Select the type of resource that you want to change.
The screen displays a list of resources of that type on the right.
5. From the list, select the resource that you want to return to its device-specific state.
6. Click **Make Device Specific**.
The resource no longer displays on the list of shared resources.

The resource is now located with the device in **Device-specific resources**. The resource properties now match those from the source device.

You can now change the resource properties to meet the device-specific requirements that you have.

Viewing an access policy

After you've imported a source device, you can view the access policies that are configured on it.

Note: *These are the access policies that will be deployed to all the devices in the Access group. You can view the flow of actions in the policy, but not the properties of the actions.*

1. Log in to the BIG-IQ® system with your user name and password.
2. At the top left of the screen, select **Access** from the BIG-IQ menu.
3. On the left, expand the name of the Access group that interests you.
4. In the screen on the right, click the name of an access policy.
A new screen displays the policy's properties.
5. To view different sections of an access policy, you can scroll left, right, up, and down.
6. To move to another section of a large access policy more quickly than scrolling allows, somewhere in the policy hold the right mouse button down and drag the mouse to move around the policy .
7. To close the screen, click **Cancel**.

About the access policy display

When you view an access policy in BIG-IQ® Access, the items in the policy are of a constant size. If an access policy item name is unusually long and does not include spaces, the name of the policy item will be truncated.

Evaluating and Deploying Changes

How do I evaluate changes made to managed objects?

To change the object settings on a managed device, there are four tasks to perform.

This figure illustrates the workflow you perform to manage the objects on BIG-IP® devices. Evaluating the changes you have made is the third step in this process.



Figure 5: Overview of evaluating changes made to managed objects

Note: If you need to make an urgent change, you can skip the evaluation step. However, we highly recommend evaluation in all but emergency situations. See *Making an urgent deployment* for details.

How do I deploy changes made to managed objects?

Deploying changes applies the revisions that you have made on the BIG-IQ® to the managed BIG-IP® devices.

Note: Before the BIG-IQ deploys configuration changes, it first reimports the configuration from the managed device to ensure there are no unexpected differences. If there are issues, the default behavior is to discard any changes made on the managed device and then deploy the configuration changes.

- To accept the default, proceed with the deployment. The settings from the managing BIG-IQ overwrite the settings on the managed BIG-IP device.
- To override the default, rediscover the device and reimport the service. Any changes that have been made using the BIG-IQ are overwritten with the settings from the managed BIG-IP device.

This figure illustrates the workflow you perform to manage the objects on BIG-IP devices. Deploying the settings is the last step in this process.



Figure 6: Change managed object workflow

How does deployment to devices in a cluster work?

When you created a cluster in BIG-IQ® inventory, you chose a deployment option for the devices in that cluster.

If you chose to initiate BIG-IP® DSC® sync, and the Sync-Failover group on the BIG-IP system is configured for manual sync, after deployment to either device in the HA pair, Access kicks off manual sync to the other device. If manual sync succeeds, the deployment is successful. Otherwise, the deployment status shows an error.

If you chose to initiate BIG-IP DSC sync and the Sync-Failover group on the BIG-IP system is configured for automatic sync, after deploying to either device in the HA pair, automatic sync propagates the configuration to the other device. If automatic sync succeeds, the deployment is successful. Otherwise, the deployment status shows an error.

If you chose to ignore BIG-IP DSC sync, you must deploy the configuration from BIG-IQ to both devices in the cluster.

Note: *It is possible that after this, conflicts in DSC sync for these devices will occur.*

Evaluating Access configuration changes

Evaluating your changes gives you a chance to spot critical errors and review your revisions one more time before deploying them.

Note: *Critical errors are issues with a configuration change that cannot be deployed successfully. Verification warnings are less serious in that they may not cause the deployment to fail, but should be reviewed nonetheless.*

Note: *If you have Local Traffic & Network (LTM) changes to deploy, deploy the LTM changes before deploying changes to other components, or those deployments may fail.*

1. Log in to the BIG-IQ system with your user name and password.

Important: *You must log in as a user with Administrator or Access Manager or Access Deployer access to perform this task.*

2. At the top left of the screen, select **Change Management** from the BIG-IQ menu.
3. On the left, expand **EVALUATE & DEPLOY**.
4. Under **EVALUATE & DEPLOY**, select **Access**.
The screen opens a list of Access evaluations and deployments that have been created on this device.
5. Under Evaluations, click **Create**.
The Create Evaluation screen opens.
6. In the **Name** field, type in a name for the evaluation task you are creating.
7. In the **Description** field, type in a brief description for the evaluation task you are creating.
8. For the **Source**, select what you want to evaluate.
 - To compare the object settings currently on the managed device with the object settings in the pending version, select **Current Changes**.

- To compare the object settings currently on the managed device with the object settings in a stored snapshot, select **Existing Snapshot**, then choose the snapshot you want to use.
9. In the **Target** settings, from the **Group** list, select the Access group that you want to evaluate. Devices in the group display in the **Available** field.
 10. Move the devices that you want to evaluate to the **Selected** field.

***Note:** If you are evaluating a device that is a member of a cluster set to initiate BIG-IP DSC sync at deployment, you can select either member of the HA pair.*

***Note:** If you are evaluating a device that is a member of a cluster set to ignore BIG-IP DSC sync, you should select both devices in the cluster.*

11. If you want to apply access policies on each BIG-IP device after deployment, select **Automatically apply policies after deployment**.
12. Review the evaluation to determine whether you are going to deploy it or not.
 - a) If there are critical errors, you cannot deploy these changes. Click each error to see what it is, and then go back to where you made the change to fix it.
After resolving any critical errors, you can come back and repeat the evaluation.
 - b) If there are verification warnings, you can still deploy your changes, but you will probably want to resolve the warnings first. Click each warning to see what it is, and then go back to where you made the change to fix it.
After resolving any verification warnings, you can come back and repeat the evaluation.
 - c) If there are no critical errors or verification warnings, review the changes by clicking the **Difference** link.
Each change is listed. You can review each one by clicking the name.
13. If the evaluation shows that you must evaluate and deploy Local Traffic configurations, do that before you deploy this evaluation.

To apply the object changes to the managed device, you must deploy them.

Evaluating LTM configuration changes

Evaluating your changes gives you a chance to spot critical errors and review your revisions one more time before deploying them.

***Note:** Critical errors are issues with a configuration change that cannot be deployed successfully. Verification warnings are less serious in that they may not cause the deployment to fail, but should be reviewed nonetheless.*

***Note:** If you have Local Traffic & Network (LTM) changes to deploy, deploy the LTM changes before deploying changes to other components, or those deployments may fail.*

1. Log in to the BIG-IQ® system with your user name and password.

***Important:** You must log in as an Administrator, ADC Manager, or ADC Deployer to perform this task.*

2. At the top left of the screen, select **Change Management** from the BIG-IQ menu.

3. On the left, expand **EVALUATE & DEPLOY**.
4. Under **EVALUATE & DEPLOY**, select **Local Traffic & Network**.
The screen opens to show a list of LTM evaluations and deployments that have been created on this device.
5. Under Evaluations, click **Create**.
The Create Evaluation screen opens.
6. In the **Name** field, type in a name for the evaluation task you are creating.
7. In the **Description** field, type in a brief description for the evaluation task you are creating.
8. For the **Source**, select what you want to evaluate.
 - To compare the object settings currently on the managed device with the object settings in the pending version, select **Current Changes**.
 - To compare the object settings currently on the managed device with the object settings in a stored snapshot, select **Existing Snapshot**, then choose the snapshot you want to use.
9. For the **Target** setting, identify the devices for which you want to evaluate changes.
 - a) If the devices are in a device group, select **Group**, and select the group from the list.
 - b) If the devices are not in a device group, select **Device**.
 - c) Select the devices from the **Available** list, and use the arrow button to move the devices to the **Selected** list.

Important: If you deploy changes to a device that is in a DSC[®] cluster, you must include both devices before you can create the evaluation.

Important: If the device in the **Selected** list has a filled circle in front of it, a deployment is needed for the BIG-IP device configuration to match the BIG-IQ working configuration for that BIG-IP device. This notification occurs only when creating Web Application Security evaluations.

10. Click the **Create** button at the bottom of the screen.
The system adds the new evaluation to the list, and analyzes the changes for errors. When the configuration evaluation completes, you will see how many changes or errors the evaluation found.
11. Review the evaluation to determine whether you are going to deploy it or not.
 - a) If there are critical errors, you cannot deploy these changes. Click each error to see what it is, and then go back to where you made the change to fix it.
After resolving any critical errors, you can come back and repeat the evaluation.
 - b) If there are verification warnings, you can still deploy your changes, but you will probably want to resolve the warnings first. Click each warning to see what it is, and then go back to where you made the change to fix it.
After resolving any verification warnings, you can come back and repeat the evaluation.
 - c) If there are no critical errors or verification warnings, review the changes by clicking the **Difference** link.
Each change is listed. You can review each one by clicking the name.

To apply the object changes to the managed device, you must deploy them.

Deploying LTM configuration changes

When a BIG-IQ® system evaluation of the Access configuration advises you to, you should deploy LTM® before you deploy Access.

1. Log in to the BIG-IQ® system with your user name and password.

Important: You must log in as an Administrator or ADC Deploy to perform this task.

2. At the top left of the screen, select **Change Management** from the BIG-IQ menu.
3. On the left, expand **EVALUATE & DEPLOY**.
4. Under **EVALUATE & DEPLOY**, select **Local Traffic & Network**.
The screen displays a list of LTM evaluations and deployments defined on this device.
5. Click the name of the evaluation that you want to deploy.
The View Evaluation screen opens.
6. Specify whether you want to deploy the changes immediately or schedule deployment for later.
 - To deploy this change immediately:
 1. Select **Deploy Now**.
 2. Click **Deploy** to confirm.
 - To deploy this change later:
 1. Select **Schedule for later**.
 2. Select the date and time.
 3. Click **Schedule Deployment**.
 4. Click **Schedule Deployment** again to confirm.

The process of deploying changes can take some time, especially if there are a large number of changes. During this time, you can click **Cancel** to stop the deployment process.

Important: If you cancel a deployment, some of the changes may have already deployed. **Cancel** does not roll back these changes.

The evaluation you chose is added to the list of deployments on the bottom half of the screen.

- If you chose to deploy immediately, the changes begin to deploy and the Status column updates as it proceeds.
- If you choose to delay deployment, the Status column displays the scheduled date and time.

Deploying the Access configuration

To apply the Access configuration on the BIG-IQ system to your managed devices, you deploy the configuration.

1. Log in to the BIG-IQ® system with your user name and password.

Important: You must log in as an Administrator, Access Manager, or Access Deployer user to perform this task.

2. At the top left of the screen, select **Change Management** from the BIG-IQ menu.
3. On the left, expand **EVALUATE & DEPLOY**.
4. Under **EVALUATE & DEPLOY**, select **Access**.
The screen displays a list of Access evaluations and deployments defined on this device.
5. Click the name of the evaluation that you want to deploy.
The View Evaluation screen opens.
6. Specify whether you want to deploy the changes immediately or schedule deployment for later.
 - To deploy this change immediately:
 1. Select **Deploy Now**.
 2. Click **Deploy** to confirm.
 - To deploy this change later:
 1. Select **Schedule for later**.
 2. Select the date and time.
 3. Click **Schedule Deployment**.
 4. Click **Schedule Deployment** again to confirm.

The process of deploying changes can take some time, especially if there are a large number of changes. During this time, you can click **Cancel** to stop the deployment process.

Important: If you cancel a deployment, some of the changes may have already deployed. **Cancel** does not roll back these changes.

The evaluation you chose is added to the list of deployments on the bottom half of the screen.

- If you chose to deploy immediately, the changes begin to deploy and the Status column updates as it proceeds.
- If you choose to delay deployment, the Status column displays the scheduled date and time.

Access deployment errors and warnings: causes and resolutions

Problem	Description	Resolution
Access profile type mismatch	The deployment process imports an access profile from the source device to the other devices in the Access group. If an access profile of the same name exists on a non-source device, the access profile types must match. If it does not, a critical error occurs and deployment fails.	On the non-source BIG-IP® device, delete the access profile. Then, redeploy on the BIG-IQ® system.
Sandbox object outside of the /Common partition	If partitions exist on the source device in addition to the /Common partition, they contain sandbox objects by default. When the deployment process tries to create the sandbox objects, if the same partitions do not exist on the non-source devices, a critical error occurs and deployment fails.	On each non-source BIG-IP device, create the same partitions that exist on the source device. Then, redeploy on the BIG-IQ system.

Problem	Description	Resolution
Machine account	A machine account exists on the source device, but does not exist on a non-source device. A critical error occurs when the deployment process tries to create a machine account on non-source BIG-IP system.	On each non-source BIG-IP device, create a machine account of the same name as the one on the source device. Then, redeploy on the BIG-IQ system.
Non-Access objects	The deployment evaluation process finds that certain virtual servers, SSL profiles, and other objects are used by access policies on the source device but are not present on a non-source device. A critical error occurs because the deployment process cannot create objects not managed by Access.	Create the objects on the non-source BIG-IP devices where needed. Then, redeploy on the BIG-IQ system.
Pools, pool members, self IPs, route domains	Access objects refer to pools, pool members, self IP addresses, and route domains, all of which are managed in ADC. If any of these objects is not present on the source device, evaluation provides a warning that LTM® must be deployed before Access can be deployed. If the warning is ignored, Access deployment fails.	Deploy LTM. Then re-discover LTM before trying to deploy Access.
Adding or updating an OAM server	An Oracle Access Manager (OAM) AAA server exists on the source device. If the deployment process must add or update the OAM server on a non-source device, a message displays advising that the <code>eam</code> service on the BIG-IP device must be restarted. The deployment succeeds.	After the deployment completes, restart the <code>eam</code> service on the non-source BIG-IP device.

Managing Ongoing Change

How to manage ongoing configuration change

If you make changes on a BIG-IP® device before you have deployed the configuration from the BIG-IQ® system, configuration conflicts can occur. If conflicts do exist, when you deploy the configuration from the BIG-IQ system, you will have to choose between the configuration on the BIG-IQ or on the BIG-IP. You cannot keep both.

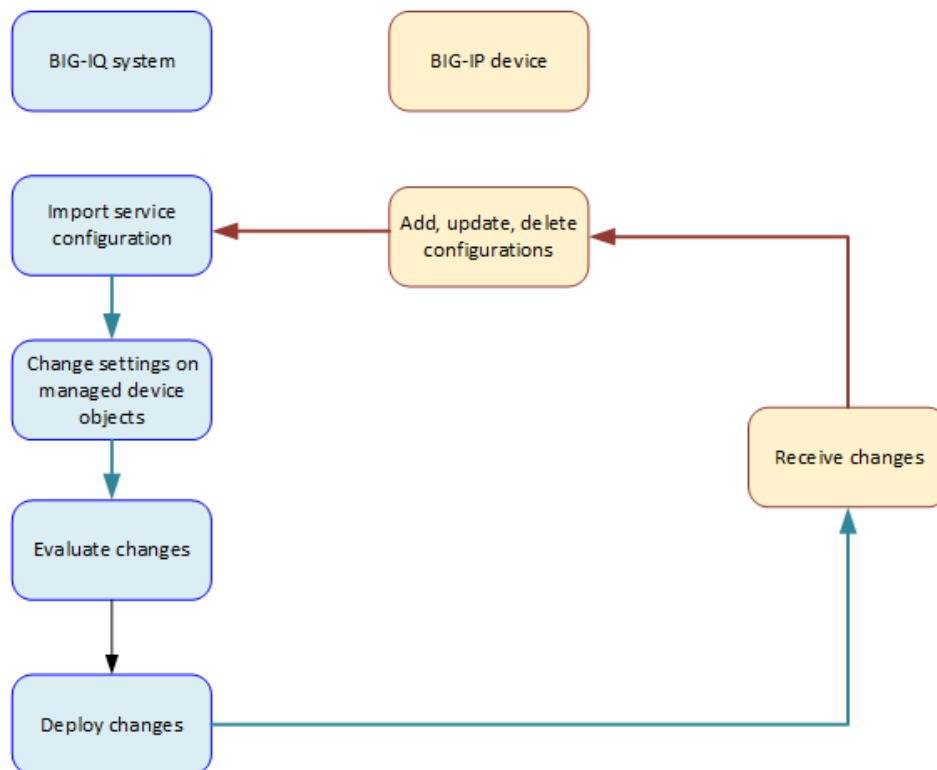


Figure 7: Ongoing change

How does re-import impact the device-specific resources?

When you re-import the APM® service configuration, the process adds and deletes any device-specific resources that were added and deleted on the source device for the Access group. The process, however, does not overwrite any existing device-specific resources on the BIG-IQ® system.

Device-specific resources are processed like this whether you import the APM service configuration from the Device Management user interface, or if you use the Re-import Source option for an Access group.

Guidelines for making changes to the Access configuration

These are general guidelines for updating the configuration:

- You should make any needed change that you can from the Access user interface.
- If you still need to make changes, you should make them on the BIG-IP® source device.

See the table for more specific guidelines.

Resource	Description
Access: Device-specific resource	<ul style="list-style-type: none"> • Modify device-specific resources on the BIG-IQ® system and deploy the changes. • Add or delete device-specific resources on the source device; then re-import the service configuration into the BIG-IQ system.
Access: Shared resource	Add, modify, and delete shared resources on the source device. Then re-import the service configuration into the BIG-IQ system.
Access: Pools and pool members	You can add and update pools and pool members when you configure some AAA servers in Access. Any changes you make are immediately available in ADC. To deploy these changes, you must deploy ADC before you deploy APM.
ADC: Pools and pool members	If you use ADC to add, update, or delete pools or pool members, you can create conflicts with the Access configuration. If you make changes in ADC, they are not available from Access.
ADC: Route domains and self-IP addresses	To add or edit route domains and self-IP addresses, do so in ADC. To make the changes available in Access, deploy the LTM® working configuration and then reimport the LTM configuration to the BIG-IQ system,
ADC: Virtual servers	<p>Access configuration objects do not refer to virtual servers; however, you probably want to know how to configure them. You can add and edit virtual servers in ADC, but you can configure Access-specific settings, such as specifying an access profile, only on the BIG-IP system. You can add or edit virtual servers in either of these ways:</p> <ul style="list-style-type: none"> • Add or edit virtual servers in ADC. Deploy the LTM configuration to one or more devices. Edit Access-specific settings on the BIG-IP systems. Reimport the LTM configuration to the BIG-IQ system. • Add or edit a virtual server on the BIG-IP system. Reimport the LTM configuration.

Resource	Description
ADC: iRule, nodes, interfaces, routes, VLANs, DNS resolvers	Access configuration objects do not refer to these objects directly. You do not need to worry about conflicts in the Access configuration.

Re-discovering and re-importing the APM service configuration

You can move any changes made to the Access Policy Manager® (APM®) service configuration on the source device into the working configuration for the BIG-IQ® system. You just re-import the source.

Note: When you use the **Reimport Source** option for an Access group, it re-discovers and re-imports the APM service configuration. It also detects whether changes were made to the LTM® service configuration and displays a message if you need to re-discover and re-import LTM first.

1. Log in to the BIG-IQ® system with your user name and password.
2. At the top left of the screen, select **Access** from the BIG-IQ menu.
3. In the Access Groups list on the right, click the name of the Access group.
The Properties screen displays.
4. Click **Reimport Source**.
A confirmation message displays.

Important: Reimporting the source can cause major changes to the working configuration.

5. To continue with re-discovery and re-import, click **Continue**.

The APM service configuration is imported. Importing the APM service configuration can change objects in the ADC configuration.

You need to move any changes made to the ADC configuration on the source device to the non-source devices too; deploy the LTM service configuration to the non-source devices.

Re-discovering and re-importing the LTM service configuration

You can move any changes made to the Local Traffic Manager™ (LTM®) service configuration on the source device into the working configuration for the BIG-IQ® system. You just re-discover and re-import the LTM service configuration.

Note: If changes made to Local Traffic configuration objects in ADC dictate that you deploy LTM first, the system displays a message telling you to do that.

Important: Do not re-import the LTM service configuration from a non-source device.

1. Log in to the BIG-IQ® system with your user name and password.
2. At the top left of the screen, select **Device Management** from the BIG-IQ menu.
3. Click the name of the device you want to discover a service configuration from.
4. On the left, click **Services**.

5. For Local Traffic (LTM), click **Re-discover**.
If the current configuration on the BIG-IQ is different than the one on the BIG-IP® device, BIG-IQ displays a screen for you to resolve the conflicts.
6. If there are conflicts, select one of the following options for each object that is different, and then click the **Continue** button:
 - **Use BIG-IQ** to use the configuration settings stored on BIG-IQ.
 - **Use BIG-IP** to override the configuration setting stored on BIG-IQ with the settings from the BIG-IP device.
7. For Local Traffic (LTM), select the **Create a snapshot of the current configuration before importing** check box to save a copy of the device's current configuration.
You're not required to create a snapshot, but it is a good idea in case you have to revert to the previous configuration for any reason.
8. For Local Traffic (LTM), click **Re-import**.

The LTM service configuration is imported.

Managing Configuration Snapshots

What is snapshot management?

You can manage configuration snapshots for the configurations you have created on the BIG-IQ[®]. A *snapshot* is a backup copy of a configuration. Configuration snapshots are created automatically during the deployment process, and can also be created manually. This type of snapshot does not include events.

Creating a snapshot

You create a configuration snapshot to compare it to another configuration snapshot, or so you can save the working configuration and then restore from that snapshot if needed.

1. Log in to the BIG-IQ[®] system with your user name and password.
2. At the top left of the screen, select **Change Management** from the BIG-IQ menu.
3. Under **SNAPSHOT & RESTORE**, select **Access**.
The screen displays a list of Access snapshots that have been created on this device.
4. At the top of the screen, click **Create**.
The Create Snapshot screen opens.
5. Supply the values on the Create Snapshot screen, and click **Create**.

The system creates the snapshot and adds it to the list of snapshots on the Snapshot and Restore - screen, including information related to the snapshot, including the date it was created, what account created it, and any description.

Managing Event Logs in Access

Managing Event Logs for BIG-IQ Access

How do I manage event logs with a Logging Node?

Viewing the event logs as implemented on BIG-IQ® eases browsing of system event logs, and provides a way to obtain useful insights regarding the activity on applications and/or servers. The BIG-IQ platform enables a single view of all filters and log entries (and details for each entry) from multiple BIG-IP® devices.

It also provides a more intuitive navigation path through the log items.

To properly configure event log viewing:

- Discover and activate a BIG-IQ Logging Node.
- License and provision a BIG-IQ Logging Node.
- Define an external machine to which periodic data snapshots are sent.
- Configure a BIG-IP system to collect event logs and send them to the BIG-IQ Logging Node. Part of this configuration includes a virtual server configured with a logging profile.
- Configure a logging profile on BIG-IQ, assign it to a virtual server, and deploy it to the BIG-IP device that has been configured to collect log events.

A *logging profile* is used to determine which events the system logs, and where, and the format of these events. It then directs security events to a BIG-IQ Logging Node, and the BIG-IQ system retrieves them from that node.

Logging Node uses a search engine that requires separate services for management and traffic. Keeping those services on separate networks reduces unnecessary congestion. The network designs described here are not required, but considered best practice.

BIG-IQ Networks

- A cluster management network to perform Elasticsearch configuration and status operations
- A cluster traffic network for inter-node communication

Logging Node Networks

- A cluster management network to perform Elasticsearch configuration and status operations
- A cluster traffic network for inter-node communication
- A listener network to handle inbound data traffic

This figure illustrates the network topology required to deploy a logging node for your event logs.

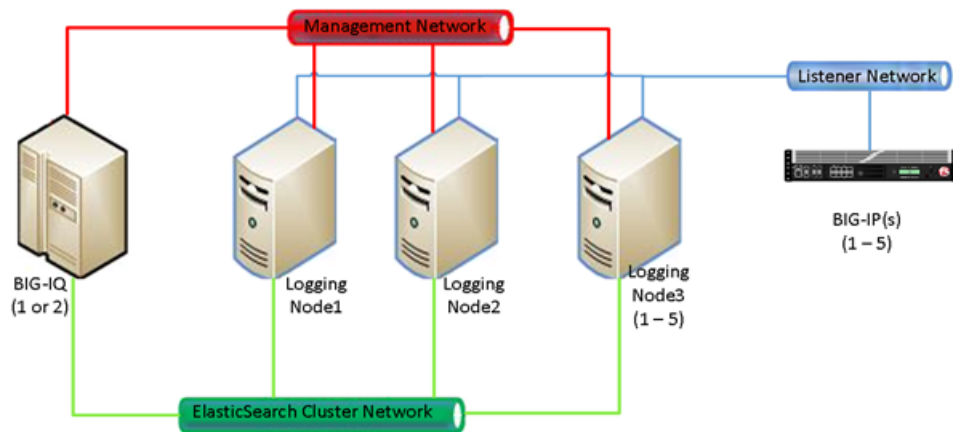


Figure 8: Logging Node network topology

Important: F5 Networks strongly recommends that the Listener Network and Management Networks be separate. This separation, can help with data protection and management network availability in case the Listener Network is flooded with data.

What is a BIG-IQ Logging Node?

A *BIG-IQ Logging Node* is a specially-provisioned BIG-IQ® system, that runs the same software version as the BIG-IQ device that you use to manage your security, and the rules that determine your alert responses. After you provision the BIG-IQ Logging Node, you discover it from BIG-IQ and then add the service. Once you configure a logging profile, the Logging Node stores events related to security and application policies from one or more BIG-IP® systems. The BIG-IQ system can then retrieve and manage those logging events.

Note: The software version on the Logging Node must be the same as the version on its partner BIG-IQ system. If you need to upgrade the Logging Node, follow the instructions in *Upgrading BIG-IQ Systems*.

Discovering and activating a logging node

Using BIG-IQ® System Management, you can discover a Logging Node and add it to the Logging Group. The BIG-IQ can then access all event on the discovered Logging Node. You can then collect these event from multiple BIG-IP® systems. This unified view makes browsing easier, and provides a complete view of application event activity.

1. Log in to BIG-IQ system with your administrator user name and password.
2. At the top left of the screen, select **System Management** from the BIG-IQ menu.
3. On the left, expand **BIG-IQ LOGGING**.
4. Under **BIG-IQ LOGGING**, select **Logging Nodes**.
5. Click **Add Node**.
6. On the New Logging Device screen, fill in as appropriate:
 - a) In **IP Address**, type the management IP address.
 - b) In **User Name**, type the user name for an administrator on the Logging Node (for example, admin).
 - c) In **Password**, type the password for an administrator on the Logging Node (for example, admin).
 - d) In **Transport Address**, type the IP address of the logging node internal self IP address.

- e) For **Transport Port**, the default value is 9300. The BIG-IQ uses this port for internal polling and communication with the logging nodes.
7. Click the **Add** button at the bottom of the screen to add the Logging Node to the system. Or, click **Discard** to cancel the operation.

Note: This operation might take a minute or two.

8. Repeat these 7 steps for each Logging Node you want to configure.
9. To activate this logging node for the service you want to monitor, in the Services column, click **Add Services**.
The Logging Node Services screen opens.
10. For the service you want to add, confirm that the **Listener Address** correctly specifies the external self IP address of the Logging Node, and click **Activate**.
When the service is successfully added, the **Service Status** changes to *Active*.
11. Click **Close**.

Once discovered and activated, this logging node collects the event generated by the configured BIG-IP systems. Thus, BIG-IQ provides a single view of all event log entries.

*Important: The **Total Document Count** is not a report of the number of alerts sent to the Logging Node. Instead, it is a sum of various document types sent to the Logging Node. Alerts are included in this list, but this total includes other document types as well.*

Modifying event log indices

Event log indices determine the physical characteristics of what is sent to the Logging Node.

1. Log in to the BIG-IQ® system with your user name and password.
2. At the top left of the screen, select **System Management** from the BIG-IQ menu.
3. On the left, select **Logging Configuration**.
The Logging Configuration screen opens to display the current state of the logging node cluster defined for this device.
4. In the Access row in the bottom half of the screen, click the **Configure** button.
The Access Indices screen opens.
5. For the **Rotation Type**, keep the default setting: **Size Based**.
6. For the **Max Index Size**, type the maximum size of the indices you want to send to the logging node.
For example, if you type 1000, when the event log data reaches a size of 1 Gig, it is sent to the logging node.
7. For the **Retained Index Count**, type the total number of indexes you want to store on the logging node.
The maximum amount of data stored on the Logging Node is the product of the **Max Index Size** and the **Retained Index Count**. When the amount of data reaches this size, the oldest event log data is overwritten.
8. Click **Save** to save the indices configuration settings.

Defining event log snapshot storage locations

Before you can configure the snapshot storage location, you need the following information on the machine you will use to store the event log snapshots:

- storage-machine-IP-address
- storage-file-path
- Read/Write permissions for the storage file path

You need snapshots of indices and alert data to perform software upgrades, hotfix upgrades, and alert restoration for FPS.

When event log snapshots are created, they need to be stored on a machine other than the Logging Node that stores the event logs. You define the location for the snapshot by editing the `fstab` file on your Logging Node machines and on the BIG-IQ[®] and HA peer devices.

Important: *You must perform this task on each Logging Node device, on the BIG-IQ device, and on the BIG-IQ HA peer.*

1. On the first device, in the folder `/var/config/rest/elasticsearch/data/`, create a new folder named `essnapshot`.

```
mkdir /var/config/rest/elasticsearch/data/essnapshot
```
2. Edit the `/etc/fstab` file to add `/var/config/rest/elasticsearch/data/essnapshot`.
For example, `//<storage machine ip-address>/<storage-file-path>/var/config/rest/elasticsearch/data/essnapshot cifs iocharset=utf8,rw,noauto,uid=elasticsearch,gid=elasticsearch, 0 0`
3. Run the `mount` command to mount the snapshot storage location to the new folder.
For example, from `/var/config/rest/elasticsearch/data` type: `mount essnapshot`.
4. Confirm that the `essnapshot` folder has full read, write and execute permissions, (specifically `Chmod 777 essnapshot`), and that the owner and group are `elasticsearch` for this folder.
For example, `ls-l` would yield: `drwxrwxrwx 3 elasticsearch elasticsearch 0 Apr 25 11:27 essnapshot`.
5. Create a test file to confirm that the storage file-path has been successfully mounted.
For example: `touch testfile`.
The test file should be created on the storage machine at the location storage file path.
6. Repeat these five steps for each Logging Node, the BIG-IQ, and the BIG-IQ HA peer.

The storage location should now be accessible to the BIG-IQ devices and to the logging node machines.

Defining event log database snapshot schedules

Before you define snapshot schedules, you must have defined the snapshot storage locations.

Snapshots of the event logs sent to your Logging Nodes are an essential safeguard for your data. If the machine that stores the event logs fails, the data can be restored using these snapshots. These snapshots are created based on the snapshot schedules you define. F5 recommends that you schedule snapshots at least every 6 hours and retain at least 4 snapshots.

1. Log in to BIG-IQ system with your administrator user name and password.
2. At the top left of the screen, select **System Management** from the BIG-IQ menu.
3. On the left, expand **BIG-IQ LOGGING**.
4. Under **BIG-IQ LOGGING**, select **Logging Configuration**.
5. For the **Snapshot Schedules** setting, click **Create**.
The New Logging Snapshot screen opens.
6. For the **Snapshot Name Prefix**, type the string that you want to use to identify the snapshots created by this schedule.
For example `snapshot_`.

7. In **Snapshots to Keep**, specify the number of snapshots that you want to accumulate before they are deleted for space constraints.
- For example, if you specify 25, then the system will retain a maximum of 25 snapshots before it starts to delete older snapshots as new snapshots are created. You can save up to 100.
8. Define how you want the snapshots scheduled.
- | Option | Description |
|--|--|
| Schedule the interval at which you want to create snapshots: | <p>You schedule the system to take snapshots indefinitely. Snapshots are created at the frequency you specify.</p> <ol style="list-style-type: none"> 1. Select Repeat Interval. 2. Specify the Snapshot Frequency. 3. Select a time increment. <p>For example, if you set the frequency to 6 and Hours, the first log event data snapshot is taken immediately (on Save). Subsequent snapshots are taken every 6 hours.</p> |
| Schedule specific days on which you want to create snapshots: | <p>You schedule the system to take snapshots on specific days.</p> <ol style="list-style-type: none"> 1. Select Days of the Week. 2. For the Days of the Week setting, select the days on which you want backups to occur. 3. For the Start Date, select the time (date, hour, minute, and AM or PM) on which you want backups to start. |
9. Click **Save** to save the new schedule.

How do I license and do the basic setup to start using a Logging Node?

The BIG-IQ® Logging Node runs as a virtual machine in supported hypervisors, or on the BIG-IQ 7000 series platform. You license the Logging Node using the base registration key you purchased. The *base registration key* is a character string that the F5 license server uses to provide access to Logging Node features.

You license Logging Node in one of the following ways:

- If the system has access to the internet, you can have the Logging Node contact the F5 license server and automatically activate the license.
- If the system is not connected to the internet, you can manually retrieve the activation key from a system that is connected to the internet, and transfer it to the Logging Node.
- If your Logging Node is in a closed-circuit network (CCN) that does not allow you to export any encrypted information, you must open a case with F5 support.

When you license the Logging Node, you:

- Specify a host name for the system.
- Assign a management port IP address.
- Specify the IP address of your DNS server and the name of the DNS search domain.
- Specify the IP address of your Network Time Protocol (NTP) servers and select a time zone.
- Change the administrator's default admin and root passwords.

Automatically licensing BIG-IQ and performing initial setup

You must have a base registration key before you can license the BIG-IQ® system. If you do not have a base registration key, contact the F5 Networks sales group (<http://www.f5.com>).

If the BIG-IQ® system is connected to the public internet, you can follow these steps to automatically perform the initial license activation and perform the initial setup.

1. Use a browser to log in to BIG-IQ by typing
`https://<varname><management_IP_address><varname>`, where `<management_IP_address>` is the address you specified for device management.
2. Log in to the BIG-IQ® system with your user name and password.
3. Click **Activate**.
 The Base Registration Key field is added to the screen.
4. In the **Base Registration Key** field, type or paste the BIG-IQ registration key.

Important: The registration key you use must support a Logging Node capable license.

5. In the **Add-On Keys** field, paste any additional license key you have.
6. To add another additional add-on key, click the + sign and paste the additional key in the new **Add-On Keys** field.
7. For the **Activation Method** setting, select **Automatic**, and click the **Activate License** button.
 The End User Software License Agreement (EULA) displays.
8. To accept the license agreement, click the **Agree** button.
9. Click the **Next** button at the right of the screen.
 If the license you purchased supports both Logging Node and BIG-IQ Central Management Console, the License Feature Selection popup screen opens. Otherwise the Management Address screen opens.
10. If you are prompted with the License Feature Selection, select **BIG-IQ Logging Node**, and then click **OK**. If you are not prompted, proceed to the next step.

Important: This choice cannot be undone. Once you license a device as a Logging Node, you cannot change your mind and license it as a BIG-IQ Management Console.

The Management Address screen opens.

11. In the **Host Name** field, type a fully-qualified domain name (FQDN) for the system.
 You cannot change this name after you add it. The FQDN can consist of letters and numbers, as well as the characters underscore (_), dash (-), or period (.).
12. In the **Management Port IP Address** field, type the IP address for the management port IP address.

Note: The management port IP address must be in Classless Inter-Domain Routing (CIDR) format. For example: 10.10.10.10/24.

13. In the **Management Port Route** field that the system creates, type the IP address for the management port route.
14. Specify what you want the BIG-IQ to use for the **Discovery Address**.
 - To use the management port, select **Use Management Address**.
 - To use the internal self IP address, select **Self IP Address**, and type the IP address.

Important: If you are configuring a Logging Node device, you must use the internal self IP address.

Note: The self IP address must be in Classless Inter-Domain Routing (CIDR) format. For example: 10.10.10.10/24.

15. Click the **Next** button at the right of the screen.
16. In the **DNS Lookup Servers** field, type the IP address of your DNS server.
You can click the **Test Connection** button to verify that the IP address is reachable.
17. In the **DNS Search Domains** field, type the name of your search domain.
The DNS search domain list allows the BIG-IQ system to search for local domain lookups to resolve local host names.
18. In the **Time Servers** fields, type the IP addresses of your Network Time Protocol (NTP) servers.
You can click the **Test Connection** button to verify that the IP address is reachable.
19. From the **Time Zone** list, select your local time zone.
20. Click the **Next** button at the right of the screen.
21. In the **Old Password** fields, type the default admin and root passwords, and then type a new password in the **Password** and **Confirm Password** fields.
22. Click the **Next** button at the right of the screen.

Manually licensing BIG-IQ and performing initial setup

You must have a base registration key before you can license the BIG-IQ® system. If you do not have a base registration key, contact the F5 Networks sales group (<http://www.f5.com>).

If the BIG-IQ® system is not connected to the public internet, use this procedure to manually activate the license and perform the initial setup.

1. Use a browser to log in to BIG-IQ by typing
`https://<varname><management_IP_address><varname>`, where `<management_IP_address>` is the address you specified for device management.
2. Log in to the BIG-IQ® system with your user name and password.
3. Click **Activate**.
The Base Registration Key field is added to the screen.
4. In the **Base Registration Key** field, type or paste the BIG-IQ registration key.

Important: The registration key you use must support a Logging Node capable license.

5. In the **Add-On Keys** field, paste any additional license key you have.
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. Select and copy the text displayed in the **Device Dossier** field.
8. Click the **Access F5 manual activation web portal** link.
The Activate F5 Product site opens.
9. Into the **Enter your dossier** field, paste the dossier.
Alternatively, if you saved the file, click the **Choose File** button and navigate to it.
After a pause, the license key text displays.
10. Click the **Next** button.
The Accept User Legal Agreement screen opens.
11. To accept the license agreement, select the **I have read and agree to the terms of this license**, and click **Next** button.

The licensing server creates the license key text.

12. Copy the license key.
13. In the **License Text** field on BIG-IQ, paste the license text.
14. Click the **Activate License** button.
15. Click the **Next** button at the right of the screen.
If the license you purchased supports both Logging Node and BIG-IQ Central Management Console, the License Feature Selection popup screen opens. Otherwise the Management Address screen opens.
16. If you are prompted with the License Feature Selection, select **BIG-IQ Logging Node**, and then click **OK**. If you are not prompted, proceed to the next step.

Important: This choice cannot be undone. Once you license a device as a Logging Node, you cannot change your mind and license it as a BIG-IQ Management Console.

The Management Address screen opens.

17. In the **Host Name** field, type a fully-qualified domain name (FQDN) for the system.
You cannot change this name after you add it. The FQDN can consist of letters and numbers, as well as the characters underscore (_), dash (-), or period (.).
18. In the **Management Port IP Address** field, type the IP address for the management port IP address.

Note: The management port IP address must be in Classless Inter-Domain Routing (CIDR) format. For example: 10.10.10.10/24.

19. In the **Management Port Route** field that the system creates, type the IP address for the management port route.
20. Specify what you want the BIG-IQ to use for the **Discovery Address**.
 - To use the management port, select **Use Management Address**.
 - To use the internal self IP address, select **Self IP Address**, and type the IP address.

Important: If you are configuring a Logging Node device, you must use the internal self IP address.

Note: The self IP address must be in Classless Inter-Domain Routing (CIDR) format. For example: 10.10.10.10/24.

21. Click the **Next** button to save your configuration.
22. In the **DNS Lookup Servers** field, type the IP address of your DNS server.
You can click the **Test Connection** button to verify that the IP address is reachable.
23. In the **DNS Search Domains** field, type the name of your search domain.
The DNS search domain list allows the BIG-IQ system to search for local domain lookups to resolve local host names.
24. In the **Time Servers** fields, type the IP addresses of your Network Time Protocol (NTP) servers.
You can click the **Test Connection** button to verify that the IP address is reachable.
25. From the **Time Zone** list, select your local time zone.
26. Click the **Next** button at the right of the screen.
27. In the **Old Password** fields, type the default admin and root passwords, and then type a new password in the **Password** and **Confirm Password** fields.
28. Click the **Next** button at the right of the screen.

Configuring remote logging

BIG-IP® devices that you configure for remote logging send Access reporting and SWG log report data to the BIG-IQ® Logging Node for storage and management.

1. Log in to BIG-IQ system with your administrator user name and password.
2. At the top left of the screen, select **Access** from the BIG-IQ menu.
3. At the top of the screen, click **Access Reporting**.
4. On the left, expand **REMOTE LOGGING CONFIGURATION** and click **Logging Profiles**.
The Remote Logging Configuration screen opens to display all of the discovered BIG-IP devices that are provisioned with the Access service.
5. Select the BIG-IP devices for which you want to enable remote logging, and then click **Configure**.
The hostname of the primary logging node is displayed, and the status changes to let you know whether the enable request was successful.

Restoring event log database snapshots

To submit the REST API calls required by this task, you must provide the administrator user name and password.

The BIG-IQ® user interface does not currently support restoring the event log snapshots. However, if a logging node fails, you can manually restore the data up to the last snapshot.

Please note the following:

- The restore operation requires a down time during which no BIG-IQ or Logging Node work is performed.
- During the restore operation, no event log data sent to the Logging Node is retained.
- The restore operation restores only the data from the chosen snapshot. Data from the chosen snapshot to the current time is not restored.
- The restore operation restores only the data from the chosen snapshot. Data from the chosen snapshot to the current time is not restored.
- Before initiating a snapshot restore, make sure that sufficient disk space is allocated to the /var folder on the device to which you are restoring the snapshot.

1. Log in to BIG-IQ system with your administrator user name and password.
2. At the top left of the screen, select **System Management** from the BIG-IQ menu.
3. On the left, expand **BIG-IQ LOGGING** and select **Logging Configuration**.
The Logging Configuration screen opens.
4. Click the **View History** button.
The BIG-IQ Logging Snapshots screen opens.
5. Browse through the list to get an idea of which snapshot you want to restore.
6. From a browser window, use a REST API request to get the list of available snapshots retained by the system.

For example,

```
GET: https://<BIG-IQ Machine
Address>/mgmt/cm/shared/esmgmt/es-snapshots?$orderby=snapshotDateTime desc
```

The GET request returns a list of snapshots from which data can be restored. The most recent snapshots are listed first.

7. Determine which snapshot you want to restore from the returned list. Identify the selfLink of the snapshot that you want.
8. From a browser window, use a REST API POST request to initiate the restore.
For example:

```
POST:
https://<BIG-IQ Machine
Address>/BIG-IQ/mgmt/cm/shared/esmgmt/es-restore-task
{
  "snapshotReference" : {
    "link": "<paste the selfLink selected in Step #6 here>"
  }
}
```

The restore process begins. The time it takes to perform this process depends on the size of the snapshot, but assume at least 10 minutes.

9. To determine when the restore operation is complete, monitor the `restjavad.0.log` file (using a `tail` command).
For example:

```
tail -f /var/log/restjavad.0.log
```

When the message `ES Restore completed successfully` displays, the BIG-IQ and Logging Node are again ready to resume operation.

10. After the restore is completed, log in to each logging node and restart the `restjavad` process.
For example:

```
restart restjavad
```

Logging Node management

There are a number of useful concepts to consider when you manage Logging Nodes for off-box log storage. This reference material might prove helpful in setting up and maintaining your Logging Node configuration.

Logging Node sizing guide

Logging Nodes are specialized BIG-IQ® devices designed to provide sufficient CPU, memory, and disk capacity to store and search logging data from BIG-IP® devices. The underlying technology to provide these services is Elasticsearch. (Information about general Elasticsearch comments can be found on their website: https://www.elastic.co/guide/en/elasticsearch/reference/current/_basic_concepts.html)

Logging Nodes managed by BIG-IQ provide an Elasticsearch (ES) cluster that can scale horizontally (more nodes = more capacity), but each node in that cluster has limits on disk space. To mitigate that, there are a number of configuration elements that control how much disk is used by the system.

Logging Node Minimum Recommended Configuration

CPU	8 Cores
Memory	32 GB
Disk	10 GB (/var file system)

The `/var` file system on the Logging Node (which includes ES data) is only 10GB in size. To store more data on the file system, you need to extend the size. Refer to *Index rotation policy* for details on managing the data requirements. Extending the file system to 500GB is straightforward, assuming overall disk allocation on the BIG-IQ virtual machine is adequate. Log in as `root` to the Logging Node, and run the following commands.

1. `tmsh show sys disk directory`

The system response will be similar to this:

Directory Name	Current Size	New Size
-----	-----	-----
/config	1048576	-
/shared	10240000	-
/var	10485760	-
/var/log	7168000	-

2. `tmsh modify sys disk directory /var new-size 100000000`

`tmsh show sys disk directory`

The system response will be similar to this:

Directory Name	Current Size	New Size
-----	-----	-----
/config	1048576	-
/shared	10240000	-
/var	10485760	500000000
/var/log	7168000	-

3. Reboot the system, and then confirm the size disk size.

`tmsh show sys disk directory`

The system response will be similar to this:

Directory Name	Current Size	New Size
-----	-----	-----
/config	1048576	-
/shared	10240000	-
/var	500003840	-
/var/log	7168000	-

Index rotation policy

The optimum settings used to configure your logging node indices depend on a number of factors. Some of the key factors are discussed here.

The system provides the ability to dynamically create new indices based either on a specified interval or on a specified size. The primary goal to consider when you make these decisions is how to maintain a maximum disk allocation for the Logging Node data while maintaining capacity for new data that flows in.

Secondary considerations include search optimization, and the ability to optimize old indices to reduce their size.

Generally, the best policy is one that does not create unnecessary indices. The more indices, the lower the overall performance, because your searches have to deal with more shards. For example, if a module knows that it has a low indexing volume (thousands/day) then it makes the most sense to have a large aggregation per rotation (5 days or 30 days). For modules like ASM™ that probably have high indexing volumes, it makes more sense to rotate every 8 hours (which reduces the number of retained indices).

Index rotation also allows changing sharding and replica counts by changing the template on a given index type. New indices created from that template will contain the new shard and replica count properties.

This table shows the default configuration values for each index running on the BIG-IQ®. These values are based on anticipated data ingestion rates and typical usage patterns.

Module	Index Name	Minimum Number of Logging Nodes	Rotation Policy	Retained Index Count	Approximate time window	Size of /var file system
Access	access-event-logs	2	Time/5 days	19	95 days	500 GB
Access	access-stats	2	Time/5 days	19	95 days	500 GB
ASM	asmindex	5	Size/100000 MB	5	N/A	500 GB
FPS	websafe	2	Time/30 days	100	8 years	10 GB

If multiple modules are running on a given Logging Node or if you have higher inbound data rates, you might have to adjust these values to keep the /var file system from filling up (there is a default alert to warn of this when the file system becomes 80% full).

The simplest resolution is to revise the retained index count; lowering this value will reduce the disk space requirements but it will also reduce the amount of data available for queries. For details on changing this setting, refer to *Modifying event log indices*.

Managing Configuration Snapshots

What is snapshot management?

You can manage configuration snapshots for the configurations you have created on the BIG-IQ®. A *snapshot* is a backup copy of a configuration. Configuration snapshots are created automatically during the deployment process, and can also be created manually. This type of snapshot does not include events.

Comparing snapshots

You can compare two snapshots to view their differences.

1. Log in to the BIG-IQ® system with your user name and password.
2. At the top left of the screen, select **Change Management** from the BIG-IQ menu.
3. Under **SNAPSHOT & RESTORE**, select **Access**.
The screen displays a list of Access snapshots that have been created on this device.
4. Select the check box to the left of each of the two snapshots to be compared.
5. Click **Compare**.

The Differences screen opens.

6. Analyze the configuration differences between the two snapshots, When you are finished, click **Cancel** to close the Differences screen, then click **Close**.

The screen closes and you return to the Snapshot and Restore - screen.

Reporting

About Access and SWG reports

Access reports focus on session and logging data from Access devices (managed devices with APM licensed and provisioned). SWG reports focus on user requests (for URLs or applications, for example) from Access devices with SWG provisioned.

Access reports and SWG reports provide the following features.

- Reports on any combination of discovered devices, Access groups, and clusters.
- Graphs for typical areas of concern and interest, such as cross-geographical comparisons or top 10 issues.
- Tabular data to support the graphs.
- Ability to drill down from summarized data to details.
- Ability to save data to CSV files.

Setup requirements for Access and SWG reports

To produce Access reports and SWG reports, these tasks must already be complete.

- Set up the BIG-IQ[®] logging nodes.
- Add the BIG-IP[®] devices to BIG-IQ inventory.
- Discover the devices. Devices with the APM[®] service configuration are what you need.
- Run the remote logging configuration setup on the devices from the Access Reporting screen.

What data goes into Access reports for the All Devices option?

The **All Devices** option for Access reports includes data from the devices that are currently managed (discovered) in the BIG-IQ[®] system. This is in addition to data from devices that were managed at some point during the report timeframe, but that are not currently managed. With **All Devices** selected, if data from unmanaged devices exists, it displays in reports.

An unmanaged device might be unmanaged temporarily or permanently. Any time a configuration management change causes APM[®] to be undiscovered, the device and its data are moved to **All Devices** until APM is re-discovered on the device.

You cannot generate a report for an unmanaged device. However, you can generate a report for the timeframe when the device was managed, and then search the report for the unmanaged device name. In the Summary report, All Active Sessions includes the number of sessions that were active on the device when it became unmanaged. Those sessions stay in the Summary and in the Active sessions reports until the next session status update, which occurs every 15 minutes.

Running Access reports

For Access to have report data for a device, the device must have been added to the BIG-IQ® system, discovered, and had the Access remote logging configuration run for it.

You can create Access reports for any device with the APM® service configuration on it that has been discovered on the BIG-IQ system, whether or not the device is a member of Access group. To create a report, you can select any combination of Access groups, clusters, and devices.

1. Log in to the BIG-IQ® system with your user name and password.
2. At the top left of the screen, select **Access** from the BIG-IQ menu.
3. At the top of the screen, select **Access Reporting**.
A Summary report (for all devices and a default timeframe) starts to generate and display.
4. From the left, select any report that you want to run.
5. At the top left of the screen, from the **ACCESS GROUP/DEVICES** list, either select one of the first two options (**All Devices** and **All Managed Devices**) or, select one or more of the other options (*<Access group name>*, *<Cluster display name>*, and *<Device name>*).
 - **All Devices** Includes Access devices that are currently managed, and Access devices that were managed at one time but are not managed now. (A managed device is one that has been discovered with the APM service configuration.)
 - **All Managed Devices** Includes all Access devices that are currently discovered.
 - *<Access group name>* - Select to include all devices in the Access group.
 - *<Cluster display name>* - Select to include the devices in the cluster.
 - *<Device name>* - Select to include the device. You can select any device from **Managed Devices**, *<Access group name>*, or *<Cluster display name>*.
6. From the **TIMEFRAME** list, specify a time frame:
 - Select a predefined time period - These range from **Last hour** to **Last 3 months**.
 - Set a custom time period - Select **Between**, **After**, or **Before**, and click the additional fields that display the set dates and times that support your selection.
7. To save report data in a comma-separated values file, click the **CSV Report** button.
A CSV file downloads.

Getting the details that underlie an Access report

For Access to have report data for a device, the device must have been added to the BIG-IQ® system, discovered, and had the Access remote logging configuration run for it.

From the Summary report, and from most session reports, the initial display includes graphs that summarize the report data. You can get successively more detailed information by clicking a bar or a point on a graph or clicking a link if one is displayed on the screen.

1. Log in to the BIG-IQ system with your user name and password.
2. At the top left of the screen, select **Access** from the BIG-IQ menu.
3. At the top of the screen, click **Access Reporting**.
The Summary report is an example of the type of report that presents high-level data, and provides access to underlying data.

The Summary starts to generate and display. A timeline and some summaries display across the top of the screen. Graphs display under the summaries. Each graph provides different views of the data.

- Click anywhere in a summary to get more information.

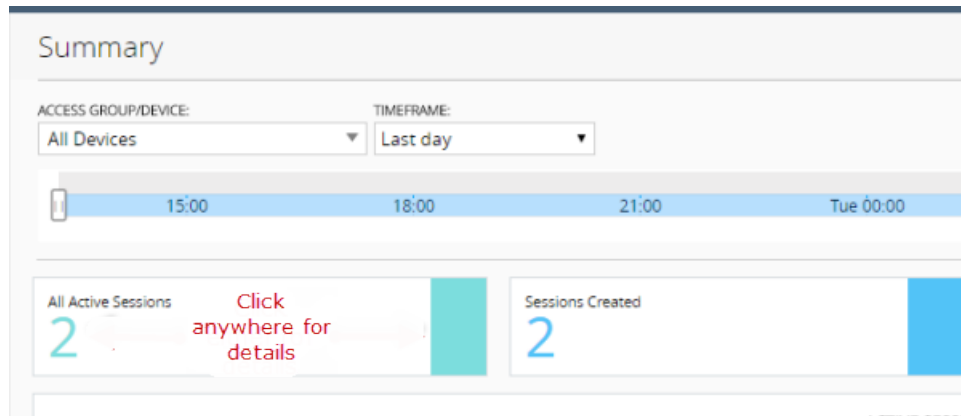


Figure 9: Top left portion of the Summary report display

Additional graphs display, and supporting data displays in a table at the bottom of the screen.

- If more details are available, click the bars in the graphs to display more details.
- Scroll down to the table to view the supporting data.
- If the table includes a **Session ID** field, click the link in that field to open the session details.

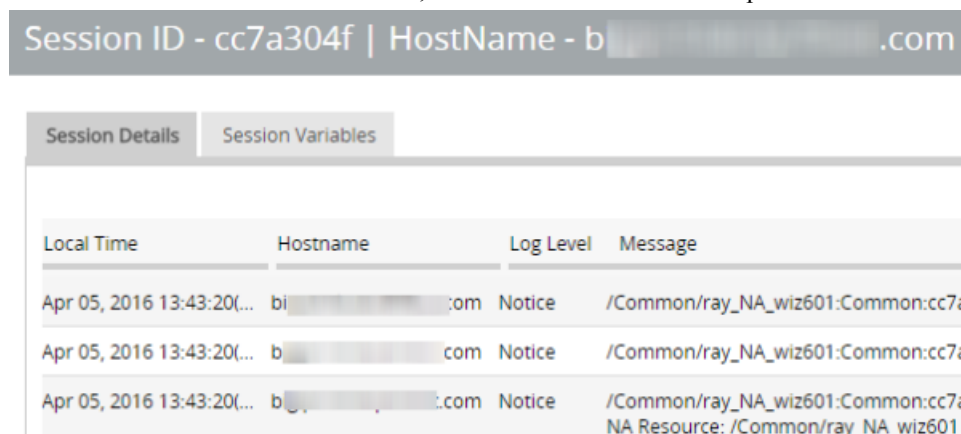


Figure 10: Session details popup screen (with addresses and host names blurred)

- To change which records display on this screen, select a log level from the **LOG LEVEL** list at the top of the screen.

Stopping sessions on BIG-IP devices from Access

For Access to have report data for a device, the device must have been added to the BIG-IQ® system, discovered, and had the Access remote logging configuration run for it.

You can stop currently active sessions on BIG-IP® devices, using the Active sessions report on the BIG-IQ system.

1. Log in to the BIG-IQ system with your user name and password.
2. At the top left of the screen, select **Access** from the BIG-IQ menu.
3. At the top of the screen, select **Access Reporting**.
A SUMMARY report starts to generate and display.
4. On the left, from **Sessions**, select **Active**.
The screen displays a list of active sessions for all devices.
5. To display sessions for particular devices, groups, or clusters only, select them from the **ACCESS GROUP/DEVICE** list at upper left.
The screen displays the active sessions for the selected devices.
6. To stop specific sessions only, select the sessions that you want to end and click **Kill Selected Sessions**.
7. To stop all sessions, click **Kill All Sessions**.

Running SWG reports

For Access to have report data for a device, the device must have been added to the BIG-IQ® system, discovered, and had the Access remote logging configuration run for it. Only a device with SWG provisioned on it can provide data for SWG reports.

You can create SWG reports for Access groups, clusters (in Access groups), or devices that you select from the Access groups and clusters (in Access groups) on the BIG-IQ system.

1. Log in to the BIG-IQ system with your user name and password.
2. At the top left of the screen, select **Access** from the BIG-IQ menu.
3. At the top of the screen, select **SWG Reporting**.
A Summary report (for the managed devices and a default timeframe) starts to generate and display.
4. From the left, select any report that you want to run.
5. From the **ACCESS GROUP/DEVICE** list at upper left, select **Managed Devices** or select one or more of these options:
 - **<Access group name>** - Select to include all devices in the Access group.
 - **<Cluster display name>** - Select to include the devices in the cluster.
 - **<Device name>** - Select to include the device. You can select any device from **Managed Devices**, **<Access group name>**, or **<Cluster display name>**.
6. From the **TIMEFRAME** list, specify a time frame:
 - Select a predefined time period - These range from **Last hour** to **Last 3 months**.
 - Set a custom time period - Select **Between**, **After**, or **Before**, and click the additional fields that display the set dates and times that support your selection.
7. To save report data in a comma-separated values file, click the **CSV Report** button.
A CSV file downloads.

Getting the details that underlie an SWG report

For Access to have report data for a device, the device must have been added to the BIG-IQ® system, discovered, and had the Access remote logging configuration run for it. Only a device with SWG provisioned on it can provide data for SWG reports.

From the Summary report, the initial display includes graphs that summarize the report data. You can get more detailed information by clicking a bar or a point on a graph to see additional graphs and tables with supporting entries.

1. Log in to the BIG-IQ® system with your user name and password.
2. At the top left of the screen, select **Access** from the BIG-IQ menu.
3. At the top of the screen, select **SWG Reporting**.
The Summary starts to generate and display. A timeline and some summaries display across the top of the screen. Graphs display under the summaries. Each graph provide different views of the data.
4. Click any bar in a graph on the display to get more information.
Additional graphs provide different views of the data, and supporting data displays in a table at the bottom of the screen.
5. If more details are available, click the bars in the graphs to display them.
6. Scroll down to the table to view the supporting data.

About the maximum number records for Access and SWG reports

When you run an Access report or an SWG report, Access can get up to 10,000 records to display to you. After you scroll to the end of those 10,000 records, Access displays a message. At that point, all you can do is select fewer devices or select a shorter timeframe.

Setting the timeframe for your Access or SWG report

For Access to have report data for a device, the device must have been added to the BIG-IQ® system, discovered, and had the Access remote logging configuration run for it.

Use the **TIMEFRAME** list at the top of any Access or SWG report to change the report time period.

1. Log in to the BIG-IQ® system with your user name and password.
2. At the top left of the screen, select **Access** from the BIG-IQ menu.
3. At the top of the screen, select **Access Reporting** or **SWG Reporting**.
4. To set a predefined timeframe, select one of these from the **TIMEFRAME** list: **Last hour**, **Last day**, **Last week**, **Last 30 days**, **Last 3 months**.
5. To set a custom timeframe, select one of these from the **TIMEFRAME** list:
 - **Between:** Click each of the additional fields that display to select dates and times. The report displays the records between those dates and times.
 - **Before:** Click the additional fields that display to select a date and a time. The report displays the records before that date and time.
 - **After:** Click the additional fields that display to select a date and a time. The report displays the records after that date and time.

Access report problems: causes and resolutions

Problem	Resolution
A session is over, but it continues to display in the Active sessions report.	If a session starts when logging nodes are up and working, but terminates during a period when logging nodes are unavailable, the session remains in the Active sessions report for 15 minutes. After 15 minutes, the session status is updated and the session is dropped from the report.
Active sessions are included in the Summary and Active sessions reports for a device that is no longer managed.	Sessions were active on a device when it was removed from an Access group and became unmanaged. Sessions that were active when the device became unmanaged remain counted in All Active Sessions on the Summary screen and stay in the Active sessions report until the next session status update, which occurs every 15 minutes.
A session is over, but Session Termination and Session Duration are blank in a session report.	If a session starts when logging nodes are up and working but terminates during a period when logging nodes are unavailable, the session termination is not recorded and the session duration cannot be calculated.

What can cause logging nodes to become unavailable?

Logging nodes are highly available, but it is still possible for them to become unavailable. This could occur, for example, if all logging nodes are on devices in the same rack in a lab, and the power to the lab shuts down.

Reference

About iApps and Access

On a BIG-IP® system, a configuration that is created using an iApp can be updated only by using the same iApp. Access does not support iApps®. Access does not import, manage, or deploy resources that were created using an iApp.

Shared configuration resources

The tables list configurations that are shared or can be made shared.

Table 1: Access policies and related resources

Resource	Description
Access policies	Access policies
Access profiles	Properties for the session
CAPTCHA configurations	Specifies the CAPTCHA service
NTLM Auth Configuration	Used to authenticate Exchange applications

Table 2: AAA servers

Resource	Description
RADIUS*	RADIUS accounting and RADIUS authentication
LDAP*	LDAP and LDAPS authentication; LDAP queries
Active Directory*	Active Directory authentication and query
Active Directory Trusted Domains	Authenticate users across all trusted domains or forests for a customer
SecurID*	RSA SecurID authentication
HTTP*	HTTPS authentication; HTTP Basic/NTLM authentication
Oracle Access Manager*	Native integration with Oracle Access Manager
OCSP Responder*	Machine certificate revocation status; user certificate revocation status
CRLDP*	Retrieve Certificate Revocation Lists from network locations (Distribution Points)
TACACS+*	TACACS+ authentication and accounting

Resource	Description
Kerberos*	Kerberos end-user login; basic or Kerberos authentication
SAML*	External SAML Identity Provider for the BIG-IP® system, as a SAML service provider, to communicate with
Endpoint Management Systems*	Server properties *This resource is device-specific but can be made shared

Table 3: ACLs

Resource	Description
User-defined ACLs*	ACLs that users create
All ACLs*	The order of system-defined and user-defined ACLs *This resource is device-specific but can be made shared

Table 4: SSO Configurations

Resource	Description
HTTP Basic	Single sign-on (SSO) using cached user identity and authorization header
NTLMV1	Challenge-response; proves user identity without sending password to server
NTLMV2	Challenge-response; proves user identity without sending password to server
Kerberos	Transparent authentication of users to Windows Web application servers (IIS) joined to Active Directory domain
Forms	Detects start URL match and uses cached user identity to construct and send HTTP form-based post request on behalf of the user
Forms - Client Initiated	Detects login page request, puts generated JavaScript code into login page, and returns it to client, where it is automatically submitted by the inserted JavaScript
SAML	SAML local Identity Provider (IdP) service is a type of SSO service that BIG-IP, configured as an IdP, provides

Table 5: SAML

Resource	Description
Local SP Services	BIG-IP system as Service Provider (SP) provides SP services

Resource	Description
External IdP Connectors	BIG-IP system as SP relies on external Identity Providers (IdPs) for authentication
Local IdP Services	BIG-IP system as IdP provides SSO authentication services
External SP Connectors	BIG-IP system as IdP works with external SPs
Artifact Resolution Services*	Supports SAML artifacts on a BIG-IP system configured as a SAML IdP
BIG-IP IdP Automation	Supports configuration automation
SAML Resources	Resources to support the SAML configuration
	*This resource is device-specific but can be made shared

Table 6: Local User DB

Resource	Description
Manage Instances	Local user database instances

Table 7: Hosted Content

Resource	Description
Manage Files	Hosted content files
Manage Profile Access	Access control for hosted content files using access profiles

Table 8: Webtops

Resource	Description
Webtops	Webtop used in Portal Access or Network Access
Webtop Links	Links for inclusion on a webtop
Webtop Sections	Sections to organize content on a webtop

Table 9: Secure Web Gateway

Resource	Description
URL Categories	URL categories
URL Filters	URL filters
Applications	System-defined list of applications
Application Filters	User-defined application filters
Report Settings	Sets up statistics (for use with SWG subscription service)

Table 10: Network Access

Resource	Description
Network Access resource*	A Network Access resource allows user access to the local network through a secure VPN tunnel
Lease Pools*	IPv4 or IPv6 lease pools associate a group of IP addresses with a Network Access resource
Client Traffic Classifiers*	Used to shape traffic for Network Access client connections from Windows
Client Rate Classes	Base and peak rates for traffic; associated with a client traffic classifier
	*This resource is device-specific but can be made shared

Table 11: Application Access

Resource	Description
App Tunnels*	Provide secure, application-level TCP/IP connections from a client to the network
Remote Desktops*	Allow users to access internal servers (Citrix, VMware View Connection, or Microsoft Remote Desktop) in virtual desktop sessions
VDI Profiles	Virtual desktop interface profile for a remote desktop configuration
Citrix Bundles	Hosted content used to deliver a Citrix Receiver client to a user's Windows computer
Microsoft Exchange	Profile for Microsoft Exchange application authentication
	*This resource is device-specific but can be made shared

Table 12: Portal Access

Resource	Description
Portal Access resources*	Provide user access to internal web applications with a web browser from outside the network
Rewrite profiles	An LTM profile treated as a shared resource
	*This resource is device-specific but can be made shared

Table 13: Resources that are not grouped in the user interface

Resource	Description
Per-Request Policies	Policies that run for requests made after a session is established
Secure Connectivity	Connectivity profile for remote access

Resource	Description
Event Logs Settings	Log settings for APM, components within APM, and SWG

Table 14: Bandwidth Controllers

Resource	Description
Policies	A resource configured outside of APM at the system level and that is treated as a shared resource in Access.
Priority Groups	A resource configured outside of APM at the system level and that is treated as a shared resource in Access.

Device-specific configuration resources

These tables list device-specific resources.

Table 15: AAA servers

Resource	Description
RADIUS*	RADIUS accounting and RADIUS authentication
LDAP*	LDAP and LDAPs authentication; LDAP queries
Active Directory*	Active Directory authentication and query
SecurID*	RSA SecurID authentication
HTTP*	HTTPS authentication; HTTP Basic/NTLM authentication
Oracle Access Manager*	Native integration with Oracle Access Manager
OCSP Responder*	Machine certificate revocation status; user certificate revocation status
CRLDP*	Retrieve Certificate Revocation Lists from network locations (Distribution Points)
TACACS+*	TACACS+ authentication and accounting
Kerberos*	Kerberos end-user login; basic or Kerberos authentication
SAML*	External SAML Identity Provider for the BIG-IP® system, as a SAML service provider, to communicate with
Endpoint Management Systems*	Server properties
	*This resource is device-specific but can be made shared

Table 16: ACLs

Resource	Description
User-defined ACLs*	ACLs that users create
All ACLs*	The order of system-defined and user-defined ACLs *This resource is device-specific but can be made shared

Table 17: SAML

Resource	Description
Artifact Resolution Services*	Supports SAML artifacts on a BIG-IP system configured as a SAML IdP *This resource is device-specific but can be made shared

Table 18: Network Access

Resource	Description
Network Access resource*	A Network Access resource allows user access to the local network through a secure VPN tunnel
Lease Pools*	IPv4 or IPv6 lease pools associate a group of IP addresses with a Network Access resource
Client Traffic Classifiers*	Used to shape traffic for Network Access client connections from Windows *This resource is device-specific but can be made shared

Table 19: Application Access

Resource	Description
App Tunnels*	Provide secure, application-level TCP/IP connections from a client to the network
Remote Desktops*	Allow users to access internal servers (Citrix, VMware View Connection, or Microsoft Remote Desktop) in virtual desktop sessions *This resource is device-specific but can be made shared

Table 20: Portal Access

Resource	Description
Portal Access resources*	Provide user access to internal web applications with a web browser from outside the network *This resource is device-specific but can be made shared

Table 21: Portal Access resources that can be device-specific or made shared

Resource	Description
Machine Account	For Microsoft Exchange clients that use NTLM authentication

Legal Notices

Legal notices

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Index

A

- Access Auditor role
 - defined 13
- Access configuration
 - planning for 15
 - viewing configuration differences 15
 - workflow diagram 7
- Access Deployer role
 - defined 13
- Access deployment errors
 - and causes 32
 - and resolutions 32
- Access Editor role
 - defined 13
- Access group
 - about creating 17
 - about creating at import 8
 - about creating during import 17
 - about importing multiple devices 17
 - adding 20
 - adding a device 21
 - changing the source device 22
 - creating 20
 - definition 7
 - removing device 22
 - unmanaging device 22
- Access Manager role
 - defined 13
- access objects
 - about managing centrally 7
- access policies
 - about managing centrally 7
- access policy
 - viewing 26
- access policy names
 - about display size 26
- Access reporting
 - about 7
 - about configuration workflow 9
 - about configuring BIG-IQ logging nodes 9
 - about running Access remote logging configuration 9
 - about running reports 9
- Access reports
 - about saving to CSV 55
 - about setting up 55
 - filtering 56
 - for Access groups 55
 - for all devices 55
 - for clusters 55
 - for discovered devices 55
 - for unmanaged devices 55
 - getting details from summaries 56
 - limits 59
 - saving to CSV 56
 - session duration missing 60
 - session termination missing 60
 - setting the timeframe 59

- Access reports *(continued)*
 - specifying the timeframe 56
 - terminated session in Active report 60
- active sessions
 - stopping from Access 57
- Active sessions report
 - using to stop active sessions 57
- ADC Deployer role
 - defined 13
- ADC Editor role
 - defined 13
- ADC Manager role
 - defined 13
- ADC Viewer role
 - defined 13
- APM access policy
 - viewing 26
- APM configuration objects
 - importing 20
- APM service configuration
 - about creating an Access group on import 17
 - about importing 8
 - about joining Access group 8
 - about joining an Access group on import 17

B

- bandwidth controller policy
 - about 15
 - about deploying to non-source device 15
 - about importing from source device 15
- base registration key
 - about 47
- BIG-IP devices
 - stopping active sessions 57
- BIG-IP logging profile
 - configuring 43, 49
- BIG-IQ inventory
 - adding devices to 17
- BIG-IQ Logging Node
 - about discovering 42
 - about management 50
 - and best practice 50
 - defined 42
- BIG-IQ system
 - about Access 7
 - about licensing and initial setup for Logging Node 45
- BWC, See bandwidth controller policy

C

- capacity planning
 - for Logging Node 50
- centralized reporting
 - about 7
- changes
 - about evaluating before deploying 27

- cluster
 - about adding to Access group [16](#)
 - about deploying members of [28](#)
 - about membership, impact on Access deployment [16](#)
 - about required members of [16](#)
 - creating or joining [17](#)
 - how deployment works [28](#)
- clusters
 - about Access requirements for [16](#)
 - for Access reporting [55](#)
- compare snapshots [52](#)
- configuration
 - and initial setup [46–47](#)
- configuration changes
 - about deploying [27](#)
 - deploying LTM [31](#)
 - deploying to a device [31](#)
 - evaluating [28–29](#)
 - managing [35](#)
 - on BIG-IP [35](#)
 - on BIG-IQ [35](#)
- configuration deployment
 - about [27](#)
- configuration resources
 - list of device-specific [65](#)
 - list of shared [61](#)
- configurations
 - discovering [19](#)
 - importing for services [19–20](#)
 - re-importing for services [37](#)
- configuration snapshots
 - about managing [39, 52](#)
- configuration workflow
 - about Access reporting [9](#)
 - about SWG reporting [9](#)
 - and Access user roles [11](#)
 - and ADC user roles [11](#)
 - and Trust Discover Import user role [11](#)
 - for Access configuration [7](#)
 - for reporting configuration and Access user roles [12](#)
- create snapshot [39](#)

D

- deployment
 - and DSC automatic sync [28](#)
 - and DSC manual sync [28](#)
 - error for sync failure [28](#)
 - of configuration changes [27, 31](#)
 - without DSC sync [28](#)
- deployment errors and warnings
 - listed with causes [32](#)
- device
 - about adding to cluster [16](#)
- device inventory
 - about [17](#)
- device management
 - about [17](#)
- devices
 - about adding [17](#)
 - about discovering [17](#)
 - adding to BIG-IQ inventory [17](#)

- devices (*continued*)
 - discovering [17](#)
- device-specific resources
 - about [8](#)
 - about editing [9](#)
 - about making shared [9](#)
 - about origin [9](#)
 - adding [36](#)
 - deleting [36](#)
 - editing [24](#)
 - example [8](#)
 - finding in device-specific resources [23](#)
 - finding in shared resources [23](#)
 - impact of re-importing source [35](#)
 - in the user interface [23](#)
 - list of [65](#)
 - making shared [25](#)
 - reimporting source [36](#)
 - returning from shared resources [25](#)
 - screenshot [23](#)
- discovery address
 - defined [46](#)
- discovery process
 - for service configuration [19](#)
- dossier
 - providing [46–47](#)

E

- Elasticsearch
 - and Logging Node [50](#)
- evaluation
 - of configuration changes [28–29](#)
- evaluation of changes
 - before deploying [27](#)
- event log indices
 - defined [43](#)
- event logs
 - about [41](#)
 - configuring snapshots [43](#)
 - configuring snapshot schedules [44](#)
 - configuring the logging profile [43, 49](#)
 - restoring snapshots [49](#)
- event log snapshots
 - restoring [49](#)

H

- HA pair
 - about adding to same Access group [16](#)
 - about avoiding deployment issues [16](#)
 - about creating a list for reference [16](#)
 - about importing to one cluster [16](#)

I

- iApps
 - about [61](#)
- import process
 - for service configuration [19–20](#)
- index rotation policy
 - about [51](#)

- index rotation policy (*continued*)
 - default configuration values 51
- initial configuration
 - for BIG-IQ system 46–47
 - performing automatically for BIG-IQ system 46
 - performing manually for BIG-IQ system 47
- IP addresses
 - for managed devices 17

L

- license
 - activating automatically 46
 - activating manually 47
- license activation
 - for BIG-IQ system 46–47
- Logging Node
 - about capacity planning 50
 - about discovering for BIG-IQ 42
 - about management 50
 - activating 42
 - adding to a Logging Group 42
 - defined 50
 - discovering 42
 - extending file size 50
 - recommended configuration 50
 - unavailable, cause 60
 - unavailable, impact on Access reports 60
- logging profile
 - configuring 43, 49
 - defined 41
 - sending events to Logging Node 43, 49

M

- machine accounts
 - about 15
 - and avoiding deployment issues 15
 - requirements 15
- managed devices
 - about discovering 17
- managed objects
 - about evaluating changes before deploying 27

N

- non-source device
 - about creating device-specific resources for 9
 - about deploying device-specific resources to 9
 - about impact of deployment on 8
 - defined 8

O

- online help
 - getting 24

P

- pools
 - configuring and deploying 36

R

- re-import process
 - for service configuration 37
- reports
 - running SWG 58
- roles
 - for users 11
- route domains
 - configuring and deploying 36

S

- self-IP addresses
 - configuring and deploying 36
- service configurations
 - about importing 17
- services
 - adding 19–20, 37
 - discovering 19
- setup
 - for BIG-IQ Logging Node 45
 - for BIG-IQ system 46–47
- shared resource
 - returning to device-specific resources 25
- shared resources
 - about 8
 - about deploying to non-source device 8
 - about impact on non-source devices 8
 - about importing from source device 8
 - adding 36
 - deleting 36
 - in user interface 24
 - list of 61
 - reimporting source 36
 - screenshot 24
 - updating 36
- snapshot
 - creating 39
- snapshot locations
 - defining 43
- snapshot management
 - about 39, 52
- snapshots
 - comparing 52
 - defining schedules 44
 - restoring 49
- snapshot schedules
 - defining 44
- snapshot storage
 - defining locations 43
- source device
 - changing 22
 - defined 8
 - when specified for Access group 8
- SWG reporting
 - about 7
 - about configuration workflow 9
- SWG reports
 - about saving to CSV 55
 - about setting up 55
 - going from summaries to details 58

Index

SWG reports *(continued)*

- limits [59](#)
- running [58](#)
- setting the timeframe [59](#)
- sync failure
 - and impact on deployment [28](#)
- system license
 - about [45](#)
- system user
 - adding [12](#)

T

- Trust Discover Import role
 - defined [13](#)

U

- unmanaged device
 - about [22](#)
- user groups
 - about [11](#)
 - creating [12](#)
- user roles
 - about [11](#)
 - in Access configuration workflow [11](#)
 - in reporting configuration workflow [12](#)
- users
 - adding [12](#)