Managing authentication

Active IQ Unified Manager 9.7

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Managing authentication

You can enable authentication using either LDAP or Active Directory on the Unified Manager server and configure it to work with your servers to authenticate remote users.

Additionally, you can enable SAML authentication so that remote users are authenticated through a secure identity provider (IdP) before they can log into the Unified Manager web UI.

Enabling remote authentication

You can enable remote authentication so that the Unified Manager server can communicate with your authentication servers. The users of the authentication server can access the Unified Manager graphical interface to manage storage objects and data.

Before you begin

You must have the Application Administrator role.

> The Unified Manager server must be connected directly with the authentication server. You must disable any local LDAP clients such as SSSD (System Security Services Daemon) or NSLCD (Name Service LDAP Caching Daemon).

About this task

You can enable remote authentication using either Open LDAP or Active Directory. If remote authentication is disabled, remote users cannot access Unified Manager.

Remote authentication is supported over LDAP and LDAPS (Secure LDAP). Unified Manager uses 389 as the default port for non-secure communication, and 636 as the default port for secure communication.

> The certificate that is used to authenticate users must conform to the X.509 format.

Steps

1. In the left navigation pane, click **General** > **Remote Authentication**.
2. Check the box for **Enable remote authentication…**.
3. In the **Authentication Service** field, select the type of service and configure the authentication service.

For Authentication type…	Enter the following information…
Active Directory	• Authentication server administrator name in one of following formats: ◦ `domainname\username` ◦ `username@domainname` ◦ `Bind Distinguished Name` (using the appropriate LDAP notation) • Administrator password • Base distinguished name (using the appropriate LDAP notation)
Open LDAP	• Bind distinguished name (in the appropriate LDAP notation) • Bind password • Base distinguished name

If the authentication of an Active Directory user takes a long time or times out, the authentication server is probably taking a long time to respond. Disabling support for nested groups in Unified Manager might reduce the authentication time.

If you select the Use Secure Connection option for the authentication server, then Unified Manager communicates with the authentication server using the Secure Sockets Layer (SSL) protocol.

4. Add authentication servers, and test the authentication.
5. Click **Save**.

Disabling nested groups from remote authentication

If you have remote authentication enabled, you can disable nested group authentication so that only individual users, and not group members, can remotely authenticate to Unified Manager. You can disable nested groups when you want to improve Active Directory authentication response time.

Before you begin

- You must have the Application Administrator role.
- Disabling nested groups is only applicable when using Active Directory.

About this task

Disabling support for nested groups in Unified Manager might reduce the authentication time. If nested group support is disabled, and if a remote group is added to Unified Manager, individual users must be members of the remote group to authenticate to Unified Manager.

Steps

1. In the left navigation pane, click **General** > **Remote Authentication**.
2. Check the box for **Disable Nested Group Lookup**.
3. Click **Save**.

Setting up authentication services

Authentication services enable the authentication of remote users or remote groups in an authentication server before providing them access to Unified Manager. You can authenticate users by using predefined authentication services (such as Active Directory or OpenLDAP), or by configuring your own authentication mechanism.

Before you begin

- You must have enabled remote authentication.
- You must have the Application Administrator role.

Steps

1. In the left navigation pane, click **General** > **Remote Authentication**.
2. Select one of the following authentication services:

If you select…	Then do this…
Active Directory	a. Enter the administrator name and password. b. Specify the base distinguished name of the authentication server. For example, if the domain name of the authentication server is ou@domain.com, then the base distinguished name is `cn=ou,dc=domain,dc=com`.
OpenLDAP	a. Enter the bind distinguished name and bind password. b. Specify the base distinguished name of the authentication server. For example, if the domain name of the authentication server is ou@domain.com, then the base distinguished name is `cn=ou,dc=domain,dc=com`.

If you select…	Then do this…
Others	a. Enter the bind distinguished name and bind password. b. Specify the base distinguished name of the authentication server. For example, if the domain name of the authentication server is ou@domain.com, then the base distinguished name is `cn=ou,dc=domain,dc=com`. c. Specify the LDAP protocol version that is supported by the authentication server. d. Enter the user name, group membership, user group, and member attributes.

If you want to modify the authentication service, you must delete any existing authentication servers, and then add new authentication servers.

3. Click **Save**.

Adding authentication servers

You can add authentication servers and enable remote authentication on the management server so that remote users within the authentication server can access Unified Manager.

Before you begin

- The following information must be available:
  - Host name or IP address of the authentication server
  - Port number of the authentication server
- You must have enabled remote authentication and configured your authentication service so that the management server can authenticate remote users or groups in the authentication server.
- You must have the Application Administrator role.

About this task

If the authentication server that you are adding is part of a high-availability (HA) pair (using the same database), you can also add the partner authentication server. This enables the management server to communicate with the partner when one of the authentication servers is unreachable.

Steps

1. In the left navigation pane, click **General** > **Remote Authentication**.
2. Enable or disable the **Use secure connection** option:

If you want to…	Then do this…
Enable it	a. Select the **Use Secure Connection** option. b. In the Authentication Servers area, click **Add**. c. In the Add Authentication Server dialog box, enter the authentication name or IP address (IPv4 or IPv6) of the server. d. In the Authorize Host dialog box, click View Certificate. e. In the View Certificate dialog box, verify the certificate information, and then click **Close**. f. In the Authorize Host dialog box, click **Yes**. When you enable the **Use Secure Connection authentication** option, Unified Manager communicates with the authentication server and displays the certificate. Unified Manager uses 636 as default port for secure communication and port number 389 for non-secure communication.
Disable it	a. Clear the **Use Secure Connection** option. b. In the Authentication Servers area, click **Add**. c. In the Add Authentication Server dialog box, specify either the host name or IP address (IPv4 or IPv6) of the server, and the port details. d. Click **Add**.

The authentication server that you added is displayed in the Servers area.

3. Perform a test authentication to confirm that you can authenticate users in the authentication server that you added.

Testing the configuration of authentication servers

You can validate the configuration of your authentication servers to ensure that the management server is able to communicate with them. You can validate the configuration by searching for a remote user or remote group from your authentication servers, and authenticating them using the configured settings.

Before you begin

- You must have enabled remote authentication, and configured your authentication service so that the Unified Manager server can authenticate the remote user or remote group.

- You must have added your authentication servers so that the management server can search for the remote user or remote group from these servers and authenticate them.
- You must have the Application Administrator role.

About this task

If the authentication service is set to Active Directory, and if you are validating the authentication of remote users who belong to the primary group of the authentication server, information about the primary group is not displayed in the authentication results.

Steps

1. In the left navigation pane, click **General** > **Remote Authentication**.
2. Click **Test Authentication**.
3. In the **Test User** dialog box, specify the user name and password of the remote user or the user name of the remote group, and then click **Test**.

   If you are authenticating a remote group, you must not enter the password.

Editing authentication servers

You can change the port that the Unified Manager server uses to communicate with your authentication server.

Before you begin

You must have the Application Administrator role.

Steps

1. In the left navigation pane, click **General** > **Remote Authentication**.
2. Check the **Disable Nested Group Lookup** box.
3. In the **Authentication Servers** area, select the authentication server that you want to edit, and then click **Edit**.
4. In the **Edit Authentication Server** dialog box, edit the port details.
5. Click **Save**.

Deleting authentication servers

You can delete an authentication server if you want to prevent the Unified Manager server from communicating with the authentication server. For example, if you want to change an authentication server that the management server is communicating with, you can delete the authentication server and add a new authentication server.

Before you begin

You must have the Application Administrator role.

About this task

When you delete an authentication server, remote users or groups of the authentication server will no longer be able to access Unified Manager.

Steps

1. In the left navigation pane, click **General** > **Remote Authentication**.
2. Select one or more authentication servers that you want to delete, and then click **Delete**.
3. Click **Yes** to confirm the delete request.

   If the **Use Secure Connection** option is enabled, then the certificates associated with the authentication server are deleted along with the authentication server.

Authentication with Active Directory or OpenLDAP

You can enable remote authentication on the management server and configure the management server to communicate with your authentication servers so that users within the authentication servers can access Unified Manager.

You can use one of the following predefined authentication services or specify your own authentication service:

- Microsoft Active Directory

  You cannot use Microsoft Lightweight Directory Services.

- OpenLDAP

You can select the required authentication service and add the appropriate authentication servers to enable the remote users in the authentication server to access Unified Manager. The credentials for remote users or groups are maintained by the authentication server. The management server uses the Lightweight Directory Access Protocol (LDAP) to authenticate remote users within the configured authentication server.

For local users who are created in Unified Manager, the management server maintains its own database of user names and passwords. The management server performs the authentication and does not use Active Directory or OpenLDAP for authentication.

Enabling SAML authentication

You can enable Security Assertion Markup Language (SAML) authentication so that remote users are authenticated by a secure identity provider (IdP) before they can access the Unified Manager web UI.

Before you begin

- You must have configured remote authentication and verified that it is successful.
- You must have created at least one Remote User, or a Remote Group, with the Application Administrator role.
- The Identity provider (IdP) must be supported by Unified Manager and it must be configured.
- You must have the IdP URL and metadata.
- You must have access to the IdP server.

About this task

After you have enabled SAML authentication from Unified Manager, users cannot access the graphical user interface until the IdP has been configured with the Unified Manager server host information. So you must be prepared to complete both parts of the connection before starting the configuration process. The IdP can be configured before or after configuring Unified Manager.

Only remote users will have access to the Unified Manager graphical user interface after SAML authentication has been enabled. Local users and Maintenance users will not be able to access the UI. This configuration does not impact users who access the maintenance console, the Unified Manager commands, or ZAPIs.

Unified Manager is restarted automatically after you complete the SAML configuration on this page.

Steps

1. In the left navigation pane, click **General** > **SAML Authentication**.
2. Select the **Enable SAML authentication** checkbox.

   The fields required to configure the IdP connection are displayed.

3. Enter the IdP URI and the IdP metadata required to connect the Unified Manager server to the IdP server.

   If the IdP server is accessible directly from the Unified Manager server, you can click the **Fetch IdP Metadata** button after entering the IdP URI to populate the IdP Metadata field automatically.

4. Copy the Unified Manager host metadata URI, or save the host metadata to an XML text file.

   You can configure the IdP server with this information at this time.

5. Click **Save**.

   A message box displays to confirm that you want to complete the configuration and restart Unified Manager.

6. Click **Confirm and Logout** and Unified Manager is restarted.

Results

The next time authorized remote users attempt to access the Unified Manager graphical interface they will enter their credentials in the IdP login page instead of the Unified Manager login page.

After you finish

If not already completed, access your IdP and enter the Unified Manager server URI and metadata to complete the configuration.

When using ADFS as your identity provider, the Unified Manager GUI does not honor the ADFS timeout and will continue to work until the Unified Manager session timeout is reached. When Unified Manager is deployed on Windows, Red Hat, or CentOS, you can change the GUI session timeout using the following Unified Manager CLI command: `um option set absolute.session.timeout=00:15:00`This command sets the Unified Manager GUI session timeout to 15 minutes.

Identity provider requirements

When configuring Unified Manager to use an identity provider (IdP) to perform SAML authentication for all remote users, you need to be aware of some required configuration settings so that the connection to Unified Manager is successful.

You must enter the Unified Manager URI and metadata into the IdP server. You can copy this information from the Unified ManagerSAML Authentication page. Unified Manager is considered the service provider (SP) in the Security Assertion Markup Language (SAML) standard.

Supported encryption standards

- Advanced Encryption Standard (AES): AES-128 and AES-256
- Secure Hash Algorithm (SHA): SHA-1 and SHA-256

Validated identity providers

- Shibboleth
- Active Directory Federation Services (ADFS)

ADFS configuration requirements

- You must define three claim rules in the following order that are required for Unified Manager to parse ADFS SAML responses for this relying party trust entry.

Claim rule	Value
SAM-account-name	Name ID
SAM-account-name	urn:oid:0.9.2342.19200300.100.1.1
Token groups — Unqualified Name	urn:oid:1.3.6.1.4.1.5923.1.5.1.1

- You must set the authentication method to “Forms Authentication” or users may receive an error when logging out of Unified Manager . Follow these steps:
  a. Open the ADFS Management Console.

b. Click on the Authentication Policies folder on the left tree view.

c. Under Actions on the right, click Edit Global Primary Authentication Policy.

d. Set the Intranet Authentication Method to “Forms Authentication” instead of the default “Windows Authentication”.

- In some cases login through the IdP is rejected when the Unified Manager security certificate is CA-signed. There are two workarounds to resolve this issue:
  - Follow the instructions identified in the link to disable the revocation check on the ADFS server for chained CA cert associated relying party:

    http://www.torivar.com/2016/03/22/adfs-3-0-disable-revocation-check-windows-2012-r2/

  - Have the CA server reside within the ADFS server to sign the Unified Manager server cert request.

Other configuration requirements

- The Unified Manager clock skew is set to 5 minutes, so the time difference between the IdP server and the Unified Manager server cannot be more than 5 minutes or authentication will fail.

Changing the identity provider used for SAML authentication

You can change the identity provider (IdP) that Unified Manager uses to authenticate remote users.

Before you begin

- You must have the IdP URL and metadata.
- You must have access to the IdP.

About this task

The new IdP can be configured before or after configuring Unified Manager.

Steps

1. In the left navigation pane, click **General** > **SAML Authentication**.
2. Enter the new IdP URI and the IdP metadata required to connect the Unified Manager server to the IdP.

   If the IdP is accessible directly from the Unified Manager server, you can click the **Fetch IdP Metadata** button after entering the IdP URL to populate the IdP Metadata field automatically.

3. Copy the Unified Manager metadata URI, or save the metadata to an XML text file.
4. Click **Save Configuration**.

   A message box displays to confirm that you want to change the configuration.

5. Click **OK**.

After you finish

Access the new IdP and enter the Unified Manager server URI and metadata to complete the configuration.

The next time authorized remote users attempt to access the Unified Manager graphical interface they will enter their credentials in the new IdP login page instead of the old IdP login page.

Disabling SAML authentication

You can disable SAML authentication when you want to stop authenticating remote users through a secure identity provider (IdP) before they can log into the Unified Manager web UI. When SAML authentication is disabled, the configured directory service providers, such as Active Directory or LDAP, perform sign-on authentication.

About this task

After you disable SAML authentication, Local users and Maintenance users will be able to access the graphical user interface in addition to configured Remote users.

You can also disable SAML authentication using the Unified Manager maintenance console if you do not have access to the graphical user interface.

Unified Manager is restarted automatically after SAML authentication is disabled.

Steps

1. In the left navigation pane, click **General** > **SAML Authentication**.
2. Uncheck the **Enable SAML authentication** checkbox.
3. Click **Save**.

   A message box displays to confirm that you want to complete the configuration and restart Unified Manager.

4. Click **Confirm and Logout** and Unified Manager is restarted.

Results

The next time remote users attempt to access the Unified Manager graphical interface they will enter their credentials in the Unified Manager login page instead of the IdP login page.

After you finish

Access your IdP and delete the Unified Manager server URI and metadata.

Description of authentication windows and dialog boxes

You can enable LDAP authentication from the Setup/Authentication page.

Remote Authentication page

You can use the Remote Authentication page to configure Unified Manager to communicate with your authentication server to authenticate remote users who attempt to log into the Unified Manager web UI.

You must have the Application Administrator or Storage Administrator role.

After you select the Enable remote authentication checkbox, you can enable remote authentication using an authentication server.

- **Authentication Service**

  Enables you to configure the management server to authenticate users in directory service providers, such as Active Directory, OpenLDAP, or specify your own authentication mechanism. You can specify an authentication service only if you have enabled remote authentication.

  - **Active Directory**
    - Administrator Name

      Specifies the administrator name of the authentication server.

    - Password

      Specifies the password to access the authentication server.

    - Base Distinguished Name

      Specifies the location of the remote users in the authentication server. For example, if the domain name of the authentication server is ou@domain.com, then the base distinguished name is `cn=ou,dc=domain,dc=com`.

    - Disable Nested Group Lookup

      Specifies whether to enable or disable the nested group lookup option. By default this option is disabled. If you use Active Directory, you can speed up authentication by disabling support for nested groups.

    - Use Secure Connection

      Specifies the authentication service used for communicating with authentication servers.

  - **OpenLDAP**
    - Bind Distinguished Name

      Specifies the bind distinguished name that is used along with the base distinguished name to find remote users in the authentication server.

    - Bind Password

      Specifies the password to access the authentication server.

    - Base Distinguished Name

Specifies the location of the remote users in the authentication server. For example, if the domain name of the authentication server is ou@domain.com, then the base distinguished name is `cn=ou,dc=domain,dc=com`.

- Use Secure Connection

  Specifies that Secure LDAP is used for communicating with LDAPS authentication servers.

- **Others**
  - Bind Distinguished Name

    Specifies the bind distinguished name that is used along with the base distinguished name to find remote users in the authentication server that you have configured.

  - Bind Password

    Specifies the password to access the authentication server.

  - Base Distinguished Name

    Specifies the location of the remote users in the authentication server. For example, if the domain name of the authentication server is ou@domain.com, then the base distinguished name is `cn=ou,dc=domain,dc=com`.

  - Protocol Version

    Specifies the Lightweight Directory Access Protocol (LDAP) version that is supported by your authentication server. You can specify whether the protocol version must be automatically detected or set the version to 2 or 3.

  - User Name Attribute

    Specifies the name of the attribute in the authentication server that contains user login names to be authenticated by the management server.

  - Group Membership Attribute

    Specifies a value that assigns the management server group membership to remote users based on an attribute and value specified in the user's authentication server.

  - UGID

    If the remote users are included as members of a GroupOfUniqueNames object in the authentication server, this option enables you to assign the management server group membership to the remote users based on a specified attribute in that GroupOfUniqueNames object.

  - Disable Nested Group Lookup

    Specifies whether to enable or disable the nested group lookup option. By default this option is disabled. If you use Active Directory, you can speed up authentication by disabling support for nested groups.

  - Member

    Specifies the attribute name that your authentication server uses to store information about the

individual members of a group.

- User Object Class

  Specifies the object class of a user in the remote authentication server.

- Group Object Class

  Specifies the object class of all groups in the remote authentication server.

- Use Secure Connection

  Specifies the authentication service used for communicating with authentication servers.

> If you want to modify the authentication service, ensure that you delete any existing authentication servers and add new authentication servers.

Authentication Servers area

The Authentication Servers area displays the authentication servers that the management server communicates with to find and authenticate remote users. The credentials for remote users or groups are maintained by the authentication server.

- **Command buttons**

  Enables you to add, edit, or delete authentication servers.

  - Add

    Enables you to add an authentication server.

    If the authentication server that you are adding is part of a high-availability pair (using the same database), you can also add the partner authentication server. This enables the management server to communicate with the partner when one of the authentication servers is unreachable.

  - Edit

    Enables you to edit the settings for a selected authentication server.

  - Delete

    Deletes the selected authentication servers.

- **Name or IP Address**

  Displays the host name or IP address of the authentication server that is used to authenticate the user on the management server.

- **Port**

  Displays the port number of the authentication server.

- **Test Authentication**

  This button validates the configuration of your authentication server by authenticating a remote user or

group.

While testing, if you specify only the user name, the management server searches for the remote user in the authentication server, but does not authenticate the user. If you specify both the user name and password, the management server searches and authenticates the remote user.

You cannot test the authentication if remote authentication is disabled.

SAML Authentication page

You can use the SAML Authentication page to configure Unified Manager to authenticate remote users using SAML though a secure identity provider (IdP) before they can to log into the Unified Manager web UI.

- You must have the Application Administrator role to create or modify the SAML configuration.
- You must have configured remote authentication.
- You must have configured at least one remote user or remote group.

After remote authentication and remote users have been configured, you can select the Enable SAML authentication checkbox to enable authentication using a secure identity provider.

- **IdP URI**

  The URI to access the IdP from the Unified Manager server. Example URIs are listed below.

  ADFS example URI:

  ```
  https://win2016-dc.ntap2016.local/federationmetadata/2007-
  06/federationmetadata.xml
  ```

  Shibboleth example URI:

  ```
  https://centos7.ntap2016.local/idp/shibboleth
  ```

- **IdP Metadata**

  The IdP metadata in XML format.

  If the IdP URL is accessible from the Unified Manager server, you can click the **Fetch IdP Metadata** button to populate this field.

- **Host System (FQDN)**

  The FQDN of the Unified Manager host system as defined during installation. You can change this value if necessary.

- **Host URI**

  The URI to access the Unified Manager host system from the IdP.

- **Host Metadata**

  The host system metadata in XML format.

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