Managing user access

Snap Creator Framework

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Managing user access

Snap Creator provides security features such as role-based access control (RBAC), which enables you to manage user access within Snap Creator.

RBAC involves users, roles, permissions, operations, and profiles. The users, roles, and permissions can be defined by Snap Creator users.

Users

- Users are uniquely identified by a user name and password.
- A user can be assigned and unassigned to one or more roles and profiles.
- The SNAPCREATOR_USER in the snapcreator.properties file is added as a user when the Snap Creator Server is started.
- The SNAPCREATOR_USER in the snapcreator.properties file is assigned the Default Administrator role when the user is created during startup.

Roles

Roles have one or more permissions. The assigned permissions determine the actions a user can perform and also which GUI elements the user can access. There are three built-in roles:

- **ADMINISTRATOR**

  Has full access to all the APIs. This is the only role which can create, edit, and delete users.

- **OPERATOR**

  This role is configured to be a super user and has access to all the APIs except RBAC.

- **VIEWER**

  Has very limited access. This role has access to read-only Snap Creator API calls.

These built-in roles cannot be added, removed, or modified.

Permissions

Permissions are a set of operations the user is authorized to perform. The following are built-in permissions:

- **BACKUP**

  Required to perform a backup or clone operation.

- **CONFIGURATION**

  Required to create, read, update, and delete configuration files.

- **CUSTOM**

Required to start a custom plug-in operation.

- **EXTENDED_REPOSITORY**

  Required to perform catalog (also known as extended repository) operations.

- **GLOBAL**

  Required to create, edit, and delete global configuration files.

- **POLICY_ADMIN**

  Required to call policy operations (for example, addPolicy, updatePolicy, removePolicy).

- **POLICY_VIEWER**

  Required for read-only policy operations.

- **RBAC_ADMIN**

  Required to manage users (for example, create, update, delete users, and roles; also to assign and unassign roles, permissions).

- **RBAC_VIEW**

  Required to view user accounts, assigned roles, and assigned permissions.

- **RESTORE**

  Required to perform restore operations.

- **SCHEDULER**

  Required to perform scheduler operations.

- **VIEWER**

  Provides authorization for read-only operations.

Operations

Operations are the base values that Snap Creator checks for authorization. Some examples of operations are getTask, fileCloneCreate, createTask, dirCreate, and so on.

Operations cannot be added, removed, or modified.

Profiles

- Profiles are assigned to users.
- Profiles in RBAC are created in the profile directory on the file system.
- Certain Snap Creator APIs check if a user is assigned to a profile and also check the permissions for operations.

For example, if a user wants a job status, RBAC verifies if the user has authorization to call SchedulergetJob and then checks if the profile associated with the job is assigned to the user.

- If a user, who is assigned the Operator role, creates a profile, then that profile is automatically assigned to the user.

Managing user access for storage controllers

If you are not using the Active IQ Unified Manager proxy, you need a user name and password to communicate with the storage controllers. Passwords can be encrypted for security.

You should not use the root user or the admin/vsadmin user. Best practice is to create a backup user with the necessary API permissions.

Network communications are through HTTP (80) or HTTPS (443), so you must have one or both of these ports open between the host where Snap Creator runs and the storage controllers. A user must be created on the storage controllers for authentication. For HTTPS, you must ensure that the user is enabled and configured on the storage controllers.

Creating Snap Creator users

You can create Snap Creator users and perform several actions, such as assigning profiles and roles to the users, by using the Snap Creator GUI.

1. From the Snap Creator GUI main menu, select **Users and Roles** > **User management**.
2. In the User management tab, click **Add**.
3. In the New User dialog box, enter a user name password; then click **Save**.

   The new user name is displayed in the **Users** pane, under **User Name**.

Assigning profiles to Snap Creator users

You can assign profiles to Snap Creator users by using the Snap Creator GUI.

1. From the Snap Creator GUI main menu, select **Users and Roles** > **User management**.
2. In the User management tab, select the desired user name, and then click **Assign Profiles**.
3. Move the desired profiles from the left column to the right column, and then click **Save**.

   You can select and drag the profiles between columns or click the arrow to move the profiles between columns.

4. Verify that the profile was assigned by selecting the user and viewing the assigned profile in the **Assigned Profiles and Roles** pane.

Viewing a list of Snap Creator users and assigned profiles by using the CLI

You can view a list of all Snap Creator user accounts that have profiles by using the

command line interface (CLI) only.

1. Enter the following command:

   ```
   snapcreator --server host_name --port port_number --user sc_user_name --passwd
   sc_passwd --profile profile_name --action userListForProfile --verbose
   ```

   Here is an example:

   ```
   snapcreator --server localhost --port 8080
   --user SCadmin --passwd passwd123 –profile FirstProfile
   --action userListForProfile --verbose
   ```

Creating Snap Creator roles

You can create Snap Creator roles by using the Snap Creator GUI.

1. From the Snap Creator GUI main menu, select **Users and Roles** > **Role management**.
2. In the Role management tab, click **Add**.
3. In the Add Role dialog box, enter the role name and description; then click **Save**.

   The new role is displayed in the **Roles** pane.

Assigning roles to Snap Creator users

You can assign roles to Snap Creator users by using the Snap Creator GUI.

1. From the Snap Creator GUI main menu, select **Users and Roles** > **User management**.
2. In the User management tab, select the desired user name, and then click **Assign Profiles**.
3. Move the desired roles from the left column to the right column, and then click **Save**.

   You can select and drag the roles between columns or click the arrow to move the roles between columns.

4. Verify that the role was assigned by selecting the user and viewing the assigned role in the **Assigned Profiles and Roles** pane.

Viewing a list of Snap Creator users and assigned roles

You can view a list of Snap Creator users and their assigned roles by using the Snap Creator GUI.

1. From the Snap Creator GUI main menu, select **Users and Roles** > **User management**.
2. View the list of users in the Assigned Profiles and Roles pane.
3. Select the desired user and view the assigned roles in the Assigned Profiles and Roles pane.

Viewing Snap Creator users assigned to a role by using the CLI

You can view a list of all the Snap Creator users assigned to each role by using the command-line interface (CLI) only.

1. Enter the following command:

   ```
   snapcreator --server host_name --port port_number --user sc_user_name --passwd
   sc_passwd --action userListAssigned --roleName role_name --verbose
   ```

   Here is an example:

   ```
   snapcreator --server localhost --port 8080 --user SCadmin
   --passwd passwd123 –-action userListAssigned
   –rolename ADMINISTRATOR –verbose
   ```

Creating Snap Creator permissions by using the CLI

You can create Snap Creator permissions that can be assigned to a role by using the command-line interface (CLI) only.

1. Create the permissions:

   ```
   snapcreator --server host_name --port port_number --user sc_user_name --passwd
   sc_passwd --action permAdd -permName permission_name --perDesc
   permission_description --verbose
   ```

   ```
   snapcreator --server localhost --port 8080 --user SCadmin
   --passwd passwd123 --action permAdd --permName backup
   --permDesc "Permission to run a backup" –verbose
   ```

Assigning permissions to Snap Creator roles

You can assign permissions to Snap Creator roles by using the Snap Creator GUI.

1. From the Snap Creator GUI main menu, select **Users and Roles** > **Role management**.
2. In the Role management tab, select the desired role and then click **Assign Permissions**.
3. Move the desired permissions from the left column to the right column and then click **Save**.

   You can select and drag the permissions between columns or click the arrow to move the permissions between columns.

4. Verify that the permission was assigned by selecting the role and viewing the assigned permission in the Roles and assigned permissions pane.

Creating a list of all Snap Creator permissions by using the CLI

You can create a list of all Snap Creator permissions that can be assigned to a role by using the command line interface (CLI) only.

1. Enter the following command:

   ```
   snapcreator --server host_name --port port_number --user sc_user_name --passwd
   sc_passwd --action permissionsList -verbose
   ```

   Here is an example:

   ```
   snapcreator --server localhost --port 8080 --user SCadmin
   --passwd passwd123 --action permList --verbose
   ```

Viewing Snap Creator permissions assigned to a role

You can view a list of all the Snap Creator permissions assigned to a role by using the Snap Creator GUI.

1. From the Snap Creator GUI main menu, select **Users and Roles** > **Role management**.
2. In the**Role management** tab, select the desired role.
3. Select the desired role and view the assigned permissions in the Role and assigned permissions pane.

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