

OnCommand® Workflow Automation 2.0

Help

NetApp, Inc.
495 East Java Drive
Sunnyvale, CA 94089 US
Telephone: +1 (408) 822-6000
Fax: +1 (408) 822-4501
Support telephone: +1 (888) 463-8277
Web: www.netapp.com
Feedback: doccomments@netapp.com

Part number: 215-07264_A0
December 2012

Contents

OnCommand Workflow Automation overview	5
Menu bar options	7
Tools	7
Export feature	7
Import feature	8
Log Viewer Directory window	8
Backup and Restore window	8
Users window	9
Client Preferences dialog box	13
WFA Configuration dialog box	14
Help	20
About dialog box	20
Designer	21
Workflows window	21
New Workflow window	23
Edit Workflow window	31
Execute Workflow dialog box	33
Workflow Preferences dialog box	33
Select FindChart dialog box	37
Preview Workflow dialog box	39
Monitoring window	39
Finders window	41
New Finder dialog box	43
Edit Finder dialog box	45
Clone Finder dialog box	46
Filters window	47
New Filter dialog box	49
Edit Filter dialog box	50
Clone Filter dialog box	51
Commands window	52
New Command Definition dialog box	54
Edit Command Definition dialog box	56

Clone Command Definition dialog box	58
Templates window	60
New Template dialog box	62
Edit Template dialog box	62
Clone Template dialog box	63
Categories window	63
New Category dialog box	65
Edit Category dialog box	66
Clone Category dialog box	66
Execution	68
Execution Status window	68
Data Sources window	71
New Data Source dialog box	76
Edit Data Source dialog box	77
Credentials window	78
Test Connectivity dialog box	80
New Credentials dialog box	80
Edit Credentials dialog box	81
Reservations window	82
Portal window	85
Copyright information	86
Trademark information	87
How to send your comments	88
Index	89

OnCommand Workflow Automation overview

OnCommand Workflow Automation (WFA) is a software solution that provides you with “one-click” automation for key storage processes. You can automate storage management tasks such as storage provisioning, migration, decommissioning, and cloning. You can use WFA to build workflows that do exactly what your processes specify.

A workflow is a repetitive and procedural task that consists of sequential steps. A workflow can include the following tasks:

- Provisioning, migrating, or decommissioning storage for databases or file systems
- Setting up a new virtualization environment, including storage switches and datastores
- Setting up storage for an application as part of an end-to-end orchestration process

These workflows can be defined by storage architects to precisely follow their organization's requirements and best practices, such as the following:

- Naming conventions
- Setting unique options for storage objects
- Selecting resources
- Integration with internal CMDB, ticketing applications

Defining workflows in WFA is a task that can be performed by your storage teams. WFA enables you to keep control on developing and maintaining automation and avoid costly custom software or scripting development.

Workflow Automation provides a history of all the executed workflows and their results enabling control of who executed what and when for audit and troubleshooting purposes.

Workflow Automation enables multiple execution options:

- Using the built-in portal
- Scheduling for a later date
- Using an orchestration tool or custom web page through web services

Workflow Automation can leverage information in multiple OnCommand Unified Manager deployments to assure that the automation process can be executed across environments and datacenters.

If WFA does not include the necessary "building blocks" (certified content that is developed and tested by NetApp or Product Services) that match your requirements as you develop workflows, you can add the required entities to the system on your own (by developing user-created content) or by collaborating with the WFA community (by sharing user-created content using the **Export** and **Import** features).

WFA integrates the following functional elements for creating, executing, and auditing workflows. Access to the capabilities available in each functional area is restricted based on the user's assigned role.

- **Built-in portal**

Using the Portal window, the storage operators are able to select any of the workflows that they are authorized to execute, enter the user input parameters, and let OnCommand Workflow Automation do the rest.

- **Audit feature**

Using the Monitoring window, the storage operator is able to audit (or track) the execution of a workflow and identify and troubleshoot any issues.

- **Designer section**

Available only to storage architects, this section of the application enables the construction and modification of workflows.

The architect selects the list of commands, which perform as the workflow steps, identifies the different execution options, and defines the resource selection options to complete the workflow. After defining the workflow, the architect can test the workflow and make it available to the storage operator.

- **Workflow Automation entities**

These entities, used as "building blocks" when developing your workflows, include various NetApp-related actions such as create volume, create vFiler unit, create Qtree, in addition to virtualization-related actions such as create datastore that are used to set up VLANs on Nexus switches and updating records in ticketing systems. These entities also aid in prioritizing the resources that have to be leveraged.

The included entities are as follows:

- **WFA**—developed and tested by NetApp
- **PS**—developed by NetApp technical support

Note: PS content is available only on custom installations made by NetApp technical support.

- **Samples**—developed by NetApp

If there are no entities that meet your requirements, you can develop your own content that you can eventually export to others or you can import content created by others that meets your requirements.

Menu bar options

Tools

Export feature

The **Export** feature enables you to share the content created by you such as workflows, filters, commands.

The **Export** feature enables you to save the content created by you as a .dar file. You cannot export the following types of certified content:

- WFA: content developed and tested by NetApp
- PS: content developed by NetApp technical support
- Samples: content developed by NetApp

You can export the entire content created by you or specific items such as workflows, finders, filters, dictionary terms, or commands. For example, when you are in the Workflows window (**Designer > Workflows**), you can select the required workflow that you have created and then select **Actions > Export** (or right-click the workflow and select **Export**) to save the selected workflow as a DAR file in a required location. Exporting content also exports the dependencies for the exported content. For example, exporting a workflow would also export the dependent commands, filters, and finders for the workflow.

Note: The **Save as type** field is automatically set to **DAR File**.

Exporting entire user-created content

To export the entire user-created content, you can use the following format for the file name:

```
definitions_MM_DD_YY__SS_HH_MM_auto-generated-serial-number
```

Example:

```
definitions_01_26_12__00_08_23_1944879637719688851
```

Exporting specific user-created entity

To export a specific user-created item, such as a workflow, finder, filter, dictionary term, or command, you can use the following format for the file name:

```
Object-Type_Object-Name
```

Example:

```
Finder_Find_a_certain_aggregate_by_resource_pool_and_capacity
```

Note: You can export locked objects and the objects are in the locked state when imported.

Import feature

The **Import** feature enables you to use user-created content such as workflows, finders, and commands.

You can use the **Import** feature to locate and import a saved .dar file. The .dar file might include the entire user-created content from another system or specific items such as workflows, finders, dictionary terms, and commands.

You cannot export or import the following types of certified content:

- WFA: content developed and tested by NetApp
- PS: content developed by NetApp technical support

Note: PS content is available only on custom installations made by NetApp technical support.

- Samples: content developed by NetApp

Note: You can export locked objects and the objects are in the locked state when imported.

Log Viewer Directory window

The Log Viewer Directory window lists all of the logs available in OnCommand Workflow Automation. You can access this window by selecting **Tools > Log Viewer**.

The Log Viewer Directory window lists the log files in alphabetical order, and includes the file size and date that each file was generated.

Note: This feature is not supported on Microsoft Windows Server 2003.

Backup and Restore window

The Backup and Restore window enables you to back up the OnCommand Workflow Automation (WFA) database, which contains the system configuration settings and cache information. You can also restore the saved database when upgrading or reinstalling WFA. You can access this window by selecting **Tools > Backup & Restore**.

Action link

Return to WFA Returns you to the WFA application from the Backup and Restore window.

Backup section

Backup Opens the File Download dialog box, which enables you to save the current database as a compressed file to a specified location.

Restore section

Browse Enables you to search for the backup database file.

Restore Reinstates the configuration settings and, if applicable, cache information from the backup database file into the current WFA configuration.

Upgrade certified definitions Enables you to upgrade the certified default definitions. By default, this check box is selected.

Note: Unless there is an overriding reason, you should accept the default setting.

Users window

The Users window enables you to view, create, edit, and delete OnCommand Workflow Automation (WFA) users. You can access this window by selecting **Tools > Users**.

Note: Depending on your role and account privileges, this window might not be available.

Users table

The Users window displays existing users. You can customize the table display by using the filtering and sorting features available for each column, as well as by rearranging the column order.

- To access filtering features, position your cursor over the column header and click the filter icon ().
- To disable the filtering feature for the entire table, click . A red "x" appears over the icon.
- To clear and reset the filtering selections, double-click .
- When using the , you can type partial entries that are separated with a space in the text box. The entries are not case-sensitive and can be entered in any order. If you enter multiple entries, only items that include all the search entries are displayed.
- To access the sorting feature, click the column header to toggle between ascending and descending order. You can identify the applied sort order by the sort arrows ( for ascending and  for descending).
- To rearrange the location of columns, you can drag and drop columns to place them in any required order. However, you cannot hide or delete any of these columns.

The users table contains the following columns:

Username	Displays the user name for the account. You can search for users by entering the user name in the Search filter text box.
Role	Displays the assigned role for the user. Roles can include any of the following: • Guest This user can only view the status of a workflow execution or can be notified of a change in the status of a workflow execution. • Operator This user is allowed to preview and execute workflows for which the user is given access. • Architect This user has full access to create workflows, but is restricted from modifying global WFA server settings. • Admin This user has complete access to the WFA server. Note: You must configure at least one admin user. • Backup This user is the only user who can remotely generate backups of the WFA server; however, they are restricted from all other access. You can search for users by selecting the required role option check box from the filter list.
Categories	Displays the workflow category assigned to an operator, which provides workflow authorization and privileges to the designated operator. This authorization setting is set through the Designer > Categories option. You can search for users by entering the category in the Search filter text box.
E-mail	Displays the email address for the user. You can use this email for notification about workflow status. You can search for users by entering the email address in the Search filter text box.
Notifications Enabled	Indicates whether the user is set to receive email notifications (true or false) regarding the status of workflow executions that were triggered by that user. You can search for users by selecting the desired notification option check box from the filter list.
LDAP	Indicates whether the user is provisioned through the External Active Directory server accessed by LDAP (true or false).

You can search for users by selecting the required LDAP option check box from the filter list.

Actions menu

You can perform various functions from the **Actions** menu. These actions can also be accessed from the right-click menu in the window.

New Opens the New User dialog box.

Edit Opens the Edit User dialog box.

Delete Opens the Delete User confirmation dialog box, which enables you to delete the selected credential.

New User dialog box

The New User dialog box enables you to create a new user account. You can access this dialog box by selecting **Action > New** from the Users window.

Account settings

Username Specify the user name.

Role Enables you to select one of the following user roles:

- **Guest**—This user can only view the status of a workflow execution or can be notified of a change in the status of a workflow execution.
- **Operator**—This user is allowed to preview and execute workflows for which the user is given access.
- **Architect**—This user has full access to create workflows, but is restricted from modifying global WFA server settings.
- **Admin**—This user has complete access to the WFA server.
- **Backup**—This user is the only user who can remotely generate backups of the WFA server; however, they are restricted from all other access

E-mail Enables you to specify the email address for the user to which notifications are sent if the **Notify On** option is selected.

Note: This field is required if you select the **Notify On** option.

Password Specify the password for the user. There are no limits regarding the length or characters allowed for the password.

Confirm Specify the password again.

Notify On Enables you to select when the account user is notified by email during the workflow execution process triggered by that user. When this check box is selected, you can select any combination of the following options:

Workflow Execution Started	Notifies the user when the workflow execution begins.
Workflow Execution Failed	Notifies the user if the workflow execution fails.
Workflow Execution Completed Successfully	Notifies the user when the workflow execution is completed successfully.
Workflow Execution Waiting for Approval	Notifies the user if the workflow execution is waiting for approval from either an Operator or Architect user, depending on the WFA configuration setting.

Command buttons

Save	Saves the configuration settings and closes the dialog box.
Cancel	Does not save any changes and closes the dialog box.

Edit User dialog box

The Edit User dialog box enables you to view and modify user account settings. You can access this dialog box by selecting a user from the Users window and then selecting **Action > Edit**.

Note: Depending on your account privileges and role, you might not have access to the Users window. However, you can edit the setting for your own account by selecting **Tools > Account Settings**.

Account settings

Note: The fields that are available for you to edit depend on your assigned role and account privileges.

Name	Displays the user name for the user account.
Role	Displays the assigned role for the user account.
E-mail	Specifies the email for the user account to which notifications are sent if the Notify On option is selected.
Change password	Enables you to change the current password for the user account. When this check box is selected, the following fields are required: New Password Specify the new password. There are no limits regarding the length or characters allowed for the password.

Confirm Specify the new password again.

Notify On Enables you to select when the account user is notified by email during the workflow execution process triggered by this user. When this check box is selected, you can select any combination of the following options:

Workflow Execution Started Notifies the user when the workflow execution begins.

Workflow Execution Failed Notifies the user if the workflow execution fails.

Workflow Execution Completed Successfully Notifies the user when the workflow execution is completed successfully.

Workflow Execution Waiting For Approval Notifies the user if the workflow execution is waiting for approval from either an **Operator** or **Architect** user, depending on the WFA configuration setting.

Command buttons

Save Saves the configuration settings and closes the dialog box.

Cancel Does not save any changes and closes the dialog box.

Client Preferences dialog box

The Client Preferences dialog box enables you to view and modify the refresh and logging options for all of the clients associated with the specific Workflow Automation (WFA) server. You can access this dialog box by selecting **Tools > Client Preferences**.

General tab

The **General** tab enables you to select the refresh options for the clients as well as maximum sizes for the listed tables.

Note: The options available on your tab depend on your assigned role and account privileges.

Enable Auto Refresh Enables you to choose the automatic refresh of the client, which is triggered by the server. When selected, the following WFA tables are refreshed automatically:

- Execution Status
- Data Sources
- Reservations

If not selected, the tables are not updated until you click **Refresh**.

Refresh Interval (seconds)	Enables you to select the refresh interval.
Max Table Size	Enables you to click the value in the Max Size column and modify the number of rows that the server retrieves and displays to the user per list type. For example, the Workflow Execution setting displays the number of past history executions to the user.

Client Log tab

The **Client Log** tab enables you to set logging options for the clients.

Note: The options available on your tab depend on your assigned role and account privileges.

Execution debug log	Enables you to select execution logging in the Debug level.
Buffer Size (rows)	Enables you to select the number of messages that are allowed to accumulate on the client before the client sends messages to the server.
Max Buffer Size (rows)	Enables you to select the number of messages that are allowed to accumulate on the client before older messages are deleted from the client. This number must be equal to or larger than the value set for the Buffer size option.
Log Level	Enables you to select the level or type of log file that is generated. The levels that are available include the following: • All • Debug • Info • Warn • Error • Fatal

Command button

Close	Saves the configuration settings and closes the dialog box.
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WFA Configuration dialog box

The WFA Configuration dialog box enables you to view and configure various configuration settings, such as AutoSupport, LDAP, Mail, SNMP, Syslog, and Other. You can access this dialog box by selecting **Tools > WFA Configuration**.

Note: Depending on your role and account privileges, this window might not be available.

- [AutoSupport tab](#) on page 15
- [LDAP tab](#) on page 16
- [Mail tab](#) on page 17
- [SNMP tab](#) on page 18
- [Syslog tab](#) on page 19
- [Other tab](#) on page 19

AutoSupport tab

The **AutoSupport** tab enables you to modify the default AutoSupport (ASUP) server configuration, and to configure scheduling and content of AutoSupport messages.

Enable AutoSupport	Enables the AutoSupport feature, which sends a zip file containing AutoSupport information to the NetApp AutoSupport team. By default, this check box is selected.
Protocol	Enables you to modify the protocol setting for the AutoSupport server. The following options are available: • HTTP • HTTPS • SMTP HTTPS is selected by default.
Destination	Displays the destination of the AutoSupport file.
Sender	Enables you to modify the account from where the AutoSupport file is sent. You must specify an account to complete AutoSupport configuration. The default account is wfa@netapp.com.
Proxy Host	If you use a proxy server to connect to the Internet, enables you to specify the address of the proxy server and send the AutoSupport file.
Proxy Port	If you use a proxy server to connect to the Internet, enables you to specify the port number of the proxy server.
Content	Enables you to modify the content of the AutoSupport zip file. The following options are available: • Send only configuration data • Send configuration and cache data • Send configuration and cache extended data Send configuration and cache data is selected by default.
Schedule	Enables you to modify the sending schedule of the AutoSupport file. The following options are available:

- Sunday
- Monday
- Tuesday
- Wednesday
- Thursday
- Friday
- Saturday

Ensure that the **Send Every** check box is selected to use scheduling. Monday is selected by default.

Site	Enables you to specify the installation site name of the WFA server. You must specify a site name. However, this box is populated with the name you entered during installation. The content of this field is displayed in the lower-right corner of the status bar.
Company	Enables you to specify the name of your company. You must specify the name of your company. However, this box is populated with the name you entered during installation.
System ID	Displays the unique identification of the OnCommand Workflow Automation (WFA) server. This ID is used when you restore the configuration on a different system.
Operating System	Displays the name and version of the operating system that is running the WFA server.
Server Name	Displays the name of the host that is running the WFA server.
Action buttons	The following buttons are applicable to the AutoSupport tab only: Download Opens the File Download dialog box to enable you to generate and save the AutoSupport message to a specified location. Send Now Sends the AutoSupport message to the AutoSupport server immediately.

LDAP tab

The **LDAP** tab enables you to configure WFA authentication and authorization to use an external Lightweight Directory Access Protocol (LDAP) server.

Enable LDAP	Enables the use of the LDAP server for user authentication. The check box is cleared by default.
User Name Attribute	Enables you to specify the LDAP attribute, which is used to identify the required user names.

Group Membership Attribute	Enables you to specify the LDAP attribute, which is used to identify the required groups.
Mail Attribute	Enables you to specify the LDAP attribute, which is used to identify the email address that can be used for email notification. WFA can use this email address from the LDAP server for notifications.
Distinguished Name Attribute	Enables you to specify the LDAP attribute, which holds the distinguished name.
TimeOut (s)	Enables you to specify the length of time (in seconds) the WFA server waits for a response from the LDAP server before timing out and sending an error message. The default value is 2 seconds.
LDAP Servers	Enables you to specify the comma-separated list of LDAP server URIs. The LDAP server URI is formatted as follows: <pre>ldap://ldap_server_address[:port]</pre>
WFA Admins Groups	Enables you to specify a comma separated list of LDAP groups that identify users as being assigned the <code>Admin</code> role.
WFA Architects Groups	Enables you to specify a comma separated list of LDAP groups that identify users as being assigned the <code>Architect</code> role.
WFA Operators Groups	Enables you to specify a comma separated list of LDAP groups that identify users as being assigned the <code>Operator</code> role.
WFA Guests Groups	Enables you to specify a comma separated list of LDAP groups that identify users as being assigned the <code>Guest</code> role.

Mail tab

The **Mail** tab enables you to specify the mail server configuration, and to configure email notifications regarding workflow operations such as workflow started or workflow failed, as well as sending AutoSupport information.

Mail Host	Enables you to specify the host address of the mail relay used for sending email notifications. You should use this field in conjunction with the Protocol set to SMTP on the AutoSupport tab.
Sender	Enables you to modify the account from which notifications are sent.
Username	Enables you to specify a user name if the mail relay requires authentication.
Password	Enables you to specify a password for the user name if the mail relay requires authentication.
Action button	The following button is applicable to the Mail tab only:

Send test mail	Opens the Test Connection dialog box to enable you to send a sample email to the specified email address, which verifies that the mail settings are correct and there is network connectivity.
-----------------------	--

Enable Email Notifications	Enables the email notification feature, which provides email notifications to the user regarding the status of workflow executions.
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SNMP tab

The **SNMP** tab enables you to specify the management application server configuration, and to configure Simple Network Management Protocol (SNMP) notifications regarding workflow operations.

Enable SNMP	Enables the SNMP notification feature, which provides email notifications regarding the status of workflow executions. The check box is cleared by default.
--------------------	---

Management Host	Enables you to specify the management host name, if the Enable SNMP check box is selected.
------------------------	---

Management Port	Enables you to modify the content and specify the management port. By default, the recommended port 162 is provided.
------------------------	--

Notify On	Enables you to select when the account user should be notified by email during the workflow execution process. When this check box is selected, you can select any combination of the following options:
------------------	--

Workflow Execution Started	Notifies the user when the workflow execution begins.
-----------------------------------	---

Workflow Execution Completed Successfully	Notifies the user when the workflow execution is completed successfully.
--	--

Workflow Execution Failed	Notifies the user if the workflow execution fails.
----------------------------------	--

Workflow Execution Waiting for Approval	Notifies the user if the workflow execution is waiting for approval from either an Operator or Architect user, depending on the WFA configuration setting.
--	--

Action button	The following button is applicable to the SNMP tab only:
----------------------	--

Send Test Notification	Sends a sample notification using the specified management host, which verifies that the settings are correct and there is network connectivity.
-------------------------------	--

Syslog tab

The **Syslog** tab enables you to specify the Syslog server configuration.

- | | |
|----------------------|--|
| Enable Syslog | Enables the Syslog logging feature that sends the log data to the specified Syslog server. The check box is cleared by default. |
| Syslog Host | Enables you to specify the Syslog host name, if the Enable Syslog check box is selected. |
| Syslog Level | Enables you to select the level or type of log data that is generated. The levels that are available include the following: <ul style="list-style-type: none"> • INFO • WARN • ERROR • FATAL |

Other tab

The **Other** tab enables you to specify various general configuration settings.

- | | |
|--|---|
| Enable reservation for certified commands | Enables the Reservation feature. By default, this check box is selected. |
| Reservation Expiration (H) | Enables you to modify the length of time in hours that a reservation is displayed on the Reservation table. The default values is 4 hours. |
| Failed Workflow Expiration (D) | Enables you to modify the length of time in days that a failed workflow expires. After this time, workflow execution can be resumed but reservations are not guaranteed for successful completion of the workflow execution. The default value is 2 days. |
| Allow Operators to approve workflows | Enables you to allow an Operator user to approve the workflow execution at the approval point in the execution, if applicable. Otherwise, if not selected, only an admin or architect user can approve the workflow at the approval point. |
| Enable snapshot caching | Enables Snapshot caching from OnCommand Unified Manager on the WFA server. |
| Show example workflows in portal | Enables you to see the WFA workflow examples on the Portal window. |

Command buttons

- | | |
|---------------|---|
| Save | Saves the configuration settings and closes the dialog box. |
| Cancel | Does not save any changes and closes the dialog box. |

Related references

[Reservations window](#) on page 82

Help

About dialog box

The About dialog box displays details about the current version of the installed WFA application.

WFA version information

Version	Displays the current version number of the installed WFA application. The version number consists of the following format: <i>A.B.C.D.E</i> • <i>A.B.C</i> reflects the Major.Minor.Maintenance release numbers • <i>D</i> reflects the changes to certified content that involve API changes • <i>E</i> reflects the changes to certified content that does not involve API changes and upgrades For example: 2 . 0 . 0 . 29 . 1
Certified Content Version	Displays the current certified content version number of the installed WFA application.
Build Number	Displays the specific build number of the installed WFA application.
Created on	Displays the factory-set date and time that the WFA software was compiled.
Flash Player version	Displays the version of the Flash Player installed on the system that is used to access the WFA server.

Designer

Workflows window

The Workflows window displays all of the available workflows, in alphabetical order. You can access this window by selecting **Designer > Workflows**.

Note: Depending on your role and account privileges, this window might not be available.

- [Workflows table](#) on page 21
- [Actions menu](#) on page 23

Workflows table

The Workflows table lists the available workflows. Each entry is identified as one of the following:

- Sample () - sample content
- User-created (no icon, empty cell) - content created by users
- Locked () - content created by users that is locked

You can customize the table display by using the filtering and sorting features available for each column, as well as by rearranging the column order.

- To access filtering features, position your cursor over the column header and click the filter icon ().
 - To disable the filtering feature for the entire table, click . A red "x" appears over the icon.
 - To clear and reset the filtering selections, double-click .
 - When using the , you can type partial entries that are separated with a space in the text box. The entries are not case-sensitive and can be entered in any order. If you enter multiple entries, only items that include all the search entries are displayed.
- To access the sorting feature, click the column header to toggle between ascending and descending order. You can identify the applied sort order by the sort arrows ( for ascending and  for descending).
- To rearrange the location of columns, you can drag and drop columns to place them in any required order. However, you cannot hide or delete any of these columns.

The Workflows table contains the following columns:

Certified	Indicates whether the finder is sample () , user-created (no icon, empty cell), or locked (). You can search for finders by selecting the required option check boxes from the filter list.
Name	Displays the name of the workflow. You can search for a workflow by entering its name in the Search filter text box.
Scheme	Displays the schemes associated with workflows. A scheme is a table that contains data relevant to your environment. For example, a vc scheme contains data relevant to your virtual environment such as virtual machines, hosts, datastores. You can search for a workflow by entering one of its scheme in the Search filter text box.
Description	Displays the description of the workflow. You can search for a workflow by entering its description in the Search filter text box.
Categories	Displays the user-defined labels associated with workflows. Categories are used to organize collections of workflows. For example, to help distinguish workflows, there might be a separate category for provisioning tasks, a category for maintenance tasks, and a category for decommissioning tasks. In addition, categories are used to restrict workflow execution for specific operators. You can search for workflows by entering a category in the Search filter text box.
Last Updated On	Displays the date and time that the workflow was last updated. You can search for workflows by selecting the required time category from the filter drop-down list.
Updated By	Displays the user who updated the workflow. You can search for workflows by entering the user name in the Search filter text box.
Locked By	Displays the user who locked the workflow. You can search for workflows by entering the user name in the Search filter text box.
Ready for production	Identifies whether the workflow is marked ready for production (true or false).

You can search for workflows by selecting the required production option check box from the filter list.

Actions menu

You can perform various functions from the **Actions** menu. These actions can also be accessed from the right-click menu in the window.

- New** Opens the New Workflow window and the Workflow Preferences dialog box.
- Edit** Opens the workflow editor for the selected workflow. You can also double-click the workflow to open the workflow editor.
- Clone** Opens the New Workflow <selected_workflow_name> - copy window, which enables you to create a clone or copy of the selected workflow.
- Lock** Opens the Lock Workflow confirmation dialog box, which enables you to lock the selected workflow. This option is enabled only for the workflows you have created.
- Unlock** Opens the Unlock Workflow confirmation dialog box, which enables you to unlock the selected workflow. This option is enabled only for the workflows locked by you. However, administrators can unlock workflows locked by other users.
- Delete** Opens the Delete Workflow confirmation dialog box, which enables you to delete the selected workflow. This option is enabled only for the workflows you have created.
- Export** Opens the File Download dialog box, which enables you to save the selected workflow as a .dar file. This option is enabled only for the workflows you have created.
- Execute** Opens the Execute Workflow <selected_workflow_name> dialog box for the selected workflow, which enables you to execute the workflow.

New Workflow window

The New Workflow window displays the newly created workflow and its associated commands. You can access this window after you provide the required information in the Workflow Preferences dialog box, which is displayed when you select **Actions > New** from the Workflows window.

New Workflow

The New Workflow window displays the name of the workflow in the header of the window. The associated commands are displayed as blue boxes in columns that are presented in the sequential order of execution—read left to right, top to bottom. The variables and objects for each command are displayed as gray boxes in the column of the command. The New Workflow window displays the commands that you have defined using the Workflow Preferences dialog box.

Mouseover menu

You can perform various functions on the New Workflow window using the mouseover menu.

- Add Row** Adds a new row below the selected row in the workflow.
- You can place your cursor over a row number and click  to add a new row.
- You can also click  to add a row below the last available row.
- Remove Row** Deletes the selected row from the workflow.
- You can place your cursor over a row number and click  to delete a row.
- Copy Row** Copies the selected row from the workflow and saves it to the clipboard.
- Copying a row does not copy the repetition details set for the row.
- You can place your cursor over a row number and click  to cut a row.
- Paste Row** Places the last item saved to the clipboard into a new row below the selected row. Unique names are used for variables; however, variables in expressions are not changed.
- You can place your cursor over a row number and click .
- Repeat Row** Opens the Row Repetition Details dialog box.
- You can place your cursor over a row number and click  to open the Row Repetition Details dialog box.
- Edit Row Loop** Opens the Row Repetition Details dialog box to enable you to modify the **Repeat Row** action set for the selected row.
- You can place your cursor over a row number that is set to repeat and click  to open the Row Repetition Details dialog box.
- Delete Row Loop** Cancels the **Repeat Row** action set in the Row Repetition Details dialog box for the selected row.
- You can place your cursor over a row number that is set to repeat and click  to cancel row repetition.
- Add Approval Point** Opens the Approval Point Comment dialog box and adds an approval point before the execution of the required command.



You can place your cursor before a command header and click  to add a new approval point.

Edit Approval Point

Opens the Approval Point Comment dialog box and enables you to edit the approval point comment.

You can place your cursor over an approval point that is displayed as a blue bar



and click  to edit the approval point comment.

Remove Approval Point

Removes an approval point before the execution of the command.

You can place your cursor over an approval point that is displayed as a blue bar



and click  to remove the approval point.

Add Command Parameters

Adds parameters for a command at the selected row.

You can place your cursor below the selected command, at the required row, and



click  to open the Parameters for <command_name> dialog box.

Edit Command Parameters

Opens the Parameters for <command_name> dialog box to enable you to modify the selected parameters for a command.

You can place your cursor over the gray box that you want to edit and click to open the Parameters for <command_name> dialog box.

Delete Command Parameters

Removes the parameter.

You can click the “X” on the top right corner of the gray box that you want to delete.

Command buttons

The command buttons are also available in the **Actions** menu.

You can perform various functions from the **Actions** menu. These actions can also be accessed from the right-click menu in the window.

Find Chart List

Opens the Select Find Chart dialog box. You can use the find chart list to create workflows, if you are not using the simplified workflow feature.

Preferences

Opens the Workflow Preferences dialog box to enable you to access the workflow attributes and configuration.

Preview	Opens the Preview Workflow dialog box to enable you to specify user input attributes.
Save	Saves the workflow.
Close	Closes the window. In the process, if any changes were made to the configuration, opens a Save Changes confirmation dialog box, prompting you to either save the changes, close the window without saving changes, or cancel the closing action.

Related references

- [Workflow Preferences dialog box](#) on page 33
- [Select FindChart dialog box](#) on page 37
- [Preview Workflow dialog box](#) on page 39

Parameters for commands dialog box

You can specify parameters and other settings for the execution of commands through the Parameters for commands dialog box.

The dialog box displays one or more dictionary object tabs and the following tabs:

- Other parameters
- Advanced

<Dictionary objects> tabs

Define <dictionary object>	Enables you to specify the command parameters that are mapped to the dictionary object by specifying attributes, using a previously defined object, or searching for an existing object.
by filling-in attributes	Enables you to enter attributes for this variable. You can use the Resource Selection dialog box for fields marked with  . Optionally, you can use a template that includes pre-defined values for certain attributes of the object. You can view and use additional attributes by clearing the Show only attributes used by <dictionary object> check box. The box next to Define <dictionary object> displays the default name of the selected variable. You can edit the name of the variable. The mandatory attributes are marked with an asterisk (*) and red border for the box.

by using a previously defined <dictionary object>	Enables you to select a previously defined variable. You can select the previously defined dictionary object in the box next to Define <dictionary object> .
by searching for an existing <dictionary object>	Enables you to define a variable by searching for an existing dictionary object. You can specify the search criteria for the dictionary object. You can specify one of the following action if the dictionary object is found: • Abort workflow • Disable the command • Fill-in attributes for the <dictionary object> and execute the command Note: This option is similar to the by filling-in attributes option.

Other Parameters

Enables you to specify the command parameters that are not mapped to any dictionary object for the execution of the command.

Advanced

Enables you to specify conditions for the execution of the command and provide a description.

Execute this command	Always	Executes the command unconditionally.
	If the following variable was found	Enables you to execute a command only when the specified variable is found. You can specify the variable in the adjacent box.
	If the following variable was not found	Enables you to execute a command only when the specified variable is not found. You can specify the variable in the adjacent box.
	If the following expression is TRUE	Enables you to execute a command only when the specified MVFLEX Expression Language (MVEL) expression is “true”. You can specify the expression in the adjacent box.

Description	Enables you to enter a description for the command.
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Resource Selection dialog box

The Resource Selection dialog box enables you to search for resources and map the resources to a command.

- [Select <dictionary object> by tab](#) on page 28
- [Advanced tab](#) on page 28

Select <dictionary object> by tab

The **Select <dictionary object> by** tab enables you specify a finder or filters as the search criteria and enter the attributes for the selected search criteria. You can also save the selected filters as a finder.

Finder	Enables you to select a finder from the list. None is selected by default. Filters are displayed below the finder list. You cannot select filters if you have selected a finder.	
Parameters	Enables you to enter the values for the selected finder or filters. You must enter all the required values to complete the search criteria.	
Command buttons	Save As Finder	Saves the selected filters as a finder.
	OK	Saves the configurations settings and closes the dialog box.
	Cancel	Does not save any changes, if any, and closes the dialog box.

Advanced tab

The **Advanced** tab enables you to specify when the search should be performed and allows you to sort the resource attributes and the status of the resource attributes.

Execute this search always	Executes the search without any restriction when the command is executed.
Execute search only when the following expression evaluates to TRUE	Executes the search only when the value of the optional attribute specified in the box is “true”. You can use MVFLEX Expression Language (MVEL) syntax to specify the optional attribute.
Sorting table	Displays the attributes and the sort order for the filters selected in the Select <dictionary object> by tab. The sort order is significant for resource selection—for example, if you selected descending as the sort order for aggregates, the aggregate with maximum <i>available_space</i> is selected as

the resource. To change the sort order for an attribute, you can click the status column of the attribute and select the required sort order from the list.

Command buttons	UP	Moves the selected entry up one row in the Sorting table.
	Down	Moves the selected entry down one row in the Sorting table.

Incremental Naming Wizard

The Incremental Naming Wizard enables you to define the value of an attribute based on a search for an existing parameter.

Search criteria for existing <dictionary object>	Opens the Resource Selection dialog box, which enables you to specify a search criteria for the dictionary object.	
Enter a value for <attribute> if no <dictionary object> matches the above search criteria	Enables you to specify a value for the <attribute> when the <dictionary object> is not found using the specified search criteria.	
If <dictionary object> was found using above search criteria, set value for <attribute> by	Enables you to specify a value for the <attribute> when the <dictionary object> is not found using the specified search criteria.	
Enter a value for <attribute> if no <dictionary object> matches the above search criteria	Enables you to select a method for setting the value for the <attribute> if the <dictionary object> is found using the specified search criteria.	
	providing an increment value and suffix	Enables you to enter a numeric value for the increments and optionally enter a suffix of the attribute name.
	providing a custom expression	Enables you to enter a custom expression for the value of the attribute. You can use MVFLEX Expression Language (MVEL) syntax to specify the value.

Row Repetition Details dialog box

The Row Repetition Details dialog box enables you to specify how the parameters in the row should be repeated.

Repeats

Enables you to select the required type of repeat option. The **Number of times** option is selected by default.

- Number of times**

Enables you to specify the following:
 - The number of times the specific row should be executed
 - Variable index
 - Variables
- No. of Times**

Enables you to specify a numeral for the number of times the specific row should be executed.
- Show Variables**

Shows the variables table, if selected. The check box is cleared by default.
- Variable Index**

Enables you to specify the index for row repetition.
- Variables table**

Shows the variables table, if selected. Enables you to include additional variables that needs to be used during row repetition. The check box is cleared by default.
- Add**

Adds a new row in the variables table.
- Remove**

Removes the selected row from the variables table.

Member in group Enables you to specify a finder and repeat execution for all the objects returned by the finder.

- Finder Type**

Enables you to select a finder type.
- Finder**

Enables you to select a finder. The ... button enables you to view details about the selected finder.
- Member Variable**

Enables you to enter a name for the member variable.
- Group Size Variable**

Enables you to enter a name for the group size variable.
- Finder Parameters table**

Displays the parameters for the selected finder and enables you to specify the value for each parameter.

Command buttons

- OK** Saves the settings and closes the dialog box.
- Cancel** Does not save any changes, if any, and closes the dialog box.

Edit Workflow window

The Edit Workflow window displays the selected workflow and its associated commands and parameters. You can access this window by selecting **Actions > Edit** from the Workflows window.

Edit Workflow window

The Edit Workflow window displays the workflow name in the header of the window. The associated commands are displayed as blue boxes in columns that are presented in the sequential order of execution—read left to right. The variables and objects for each command are displayed as gray boxes below the command.

Mouseover menu

You can perform various functions on the New Workflow window using the mouseover menu.

Add Row

Adds a new row below the selected row in the workflow.

You can place your cursor over a row number and click  to add a new row.

You can also click  to add a row below the last available row.

Delete Row

Deletes the selected row from the workflow.

You can place your cursor over a row number and click  to delete a row.

Copy Row

Copies the selected row from the workflow and saves it to the clipboard. Copying a row does not copy the repetition details set for the row.

You can place your cursor over a row number and click  to cut a row.

Paste Row

Places the last item saved to the clipboard into a new row below the selected row.

You can place your cursor over a row number and click .

Repeat Row

Opens the Row Repetition Details dialog box.

You can place your cursor over a row number and click  to open the Row Repetition Details dialog box.

Edit Row Loop Opens the Row Repetition Details dialog box to enable you to modify the **Repeat Row** action set for the selected row.

You can place your cursor over a row number that is set to repeat and click



to open the Row Repetition Details dialog box.

Delete Row Loop Cancels the **Repeat Row** action set in the Row Repetition Details dialog box for the selected row.

You can place your cursor over a row number that is set to repeat and click



to cancel row repetition.

Add Approval Point Opens the Approval Point Comment dialog box and adds an approval point before the execution of the required command.

You can place your cursor before a command header and click



to add a new approval point.

Edit Approval Point Opens the Approval Point Comment dialog box and enables you to edit the approval point comment.

You can place your cursor over an approval point that is displayed as a blue bar



and click to edit the approval point comment.

Remove Approval Point Removes an approval point before the execution of the command.

You can place your cursor over an approval point that is displayed as a blue bar



and click to remove the approval point.

Add Parameters Adds parameters for a command at the selected row.

You can place your cursor below the selected command, at the required row, and

click  to open the Parameters for <command_name> dialog box.

Edit Parameters Opens the Parameters for <command_name> dialog box to enable you to modify the selected parameters for a command.

You can place your cursor over the required parameters that is displayed as a gray box and click to open the Parameters for <command_name> dialog box.

Command buttons

The command buttons are also available in the **Actions** menu.

You can perform various functions from the **Actions** menu. These actions can also be accessed from the right-click menu in the window.

Find Chart List	Opens the Select Find Chart dialog box.
Preferences	Opens the Workflow Preferences dialog box to enable you to access the workflow attributes and configuration.
Preview	Opens the Preview Workflow dialog box to enable you to specify user input attributes.
Save	Saves the configurations settings.
Close	Closes the window. In the process, if any changes were made to the configuration, opens a Save Changes confirmation dialog box, prompting you to either save the changes, close the window without saving changes, or cancel the closing action.

Execute Workflow dialog box

The Execute Workflow dialog box enables you to specify the required user inputs, time for execution, and execution comment for a workflow.

User Inputs

Enables you to specify the inputs for the workflow. The mandatory attributes are marked with an asterisk (*) and the border for the boxes are in red.

Options

Enables you to specify the time for the workflow execution.

Execute now	Enables you to execute the workflow immediately.
Choose date and time for execution	Enables you to schedule the execution of the workflow.

Execution Comment

Enables you to specify a comment for the workflow execution. This comment is displayed in the Execution Status window.

Workflow Preferences dialog box

The Workflow Preferences dialog box enables you to create and configure a new workflow. You can access this dialog box by selecting **Actions > New** from the Workflows window.

- [General tab](#) on page 34
- [Commands Configuration tab](#) on page 34

- [User Input tab](#) on page 35
- [Constants tab](#) on page 36
- [Return Parameters tab](#) on page 37

General tab

The **General** tab enables you to provide general information about the workflow.

Workflow name	Enables you to specify the name of the workflow using an alphanumeric string.
Categories	Displays the associated category for the workflow. You can assign a workflow to a category from the Category window.
Workflow Description	Enables you to enter a description of the workflow. You can click in the field to open an Edit Description dialog box.
Ready for production	Enables you to mark the workflow ready for production, which allows the workflow to be executed and listed in the Portal window.
Consider Reserved Elements	Enables you to set the workflow to take advantage of the reservation feature, when selected resources are available for the workflow until the reservation expiration period you have configured. The reservation feature enables excluding resources reserved by other workflows during resource selection. Note: Do not select this check box, if you require the filters to search only content of the persistent cache without considering reservations made by other workflows.
Enable element existence validation	Enables you to validate the existence of elements and avoid failure of certain actions during the execution of workflows. For example, you can avoid creating a new volume in an array with the same name as that of an existing volume.
Command buttons	OK Saves the configurations settings and closes the dialog box. Cancel Does not save any changes, if any, and closes the dialog box.

Commands tab

The **Commands** tab enables you to select and use the commands that were defined using the Commands window (**Designer > Commands**), as well as to customize the command display name.

Available Commands	Provides a list of available commands, including any customized commands. You can search for commands by entering the command name, scheme, or both in the Search filter text box.
Selected Commands	Lists your selection of commands. Enables you to customize the command name by clicking a selected cell in the Display Name column and modifying that entry. You must specify a unique name for each command.

Command buttons	Up	Moves the selected entry up one row in the Selected Commands table.
	Down	Moves the selected entry down one row in the Selected Commands table.
	Remove	Removes the selected entry from the Selected Commands table.

User Inputs tab

The **User Inputs** tab enables you to view and define the value type for user input attributes that you created when you defined the workflow objects and created user inputs. The values for the user input attributes can be filled when you preview or execute the workflow.

You can customize the table display by using the sorting feature available for each column, as well as by rearranging the column order.

- To access the sorting feature, click the column header to toggle between ascending and descending order. You can identify the applied sort order by the sort arrows ( for ascending and  for descending).
- To rearrange the location of columns, you can drag and drop columns to place them in any required order. However, you cannot hide or delete any of these columns.

Name	Displays the name of the user input attribute.
Display Name	Enables you to specify a display name for the user input.
Description	Enables you to specify a description for the user input. The description appears as a tooltip when you execute or preview the workflow
Type	Enables you to select the type of user input. Available options include the following: - String – Regular expression for valid values—for example, a*. - Number – Range—for example 1-15. - Enum – Closed list of values. - Query – SQL query to obtain the result.
Values	Enables you to provide values for the user input. Multiple values for enum and query types display as a list.
Lock Values	Used with the Enum and Query type options. Enables you to set whether the user is allowed to input a value other than the query-returned values. Selecting the check box does not allow the user to provide a value, only the query-returned values can be selected.
Default Value	Enables you to set the default value of the user input.

Group	Enables you to group the user input attributes. The user input attributes are displayed in groups that you have defined when previewing or executing the workflow. For example, you can group the user input attributes related to Volume Details together.	
Expanded by default	Enables you to display all the user input attributes specified in a group.	
Mandatory	Enables you to specify that the user input is mandatory for the execution of the workflow.	
Command buttons	Up	Moves the selected entry up one row in the table.
	Down	Moves the selected entry down one row in the table.

Constants tab

The **Constants** tab enables you to define the value of the constants that can be used multiple times in the workflow. You can specify the following as the value of constants:

- Numbers
- Strings
- MVEL expressions
- Functions
- User inputs
- Variables

You can customize the table display by using the sorting features available for each column, as well as by rearranging the column order.

- To access the sorting feature, click the column header to toggle between ascending and descending order. You can identify the applied sort order by the sort arrows ( for ascending and  for descending).
- To rearrange the location of columns, you can drag and drop columns to place them in any required order. However, you cannot hide or delete any of these columns.

Name	Displays the name of the constant.	
Description	Enables you to specify a description for the constant.	
Value	Enables you to specify a value for the constant.	
Command buttons	Add	Adds a new row in the Constants table.
	Remove	Deletes the selected row from the Constants table.

Note: You can also right-click to use the copy and paste functionality.

Return Parameters tab

The **Return Parameters** tab enables you to define and provide a description of the return parameters for the workflow that can be viewed from the Monitoring window or from Web Services.

Parameter Value	Enables you to specify the parameter value.	
Parameter Name	Enables you to specify the parameter name.	
Description	Enables you to specify a description for the selected parameter.	
Command buttons	Add Row	Adds a new row in the Return Parameters table.
	Remove Row	Deletes the selected row from the Return Parameters table.

Related references

[Commands window](#) on page 52

[Monitoring window](#) on page 39

Select FindChart dialog box

The Select FindChart dialog box enables you to create new find charts, as well as to locate existing find charts, which you can clone, modify, or delete. You can access this dialog box by clicking **Find Chart List** in the New Workflows, Edit Workflows, and Edit Workflows... - copy windows.

A find chart is the “logic” construction used to create objects, which can then be mapped to a command. A find chart can be calculated using two methods: define the OnCommand Workflow Automation (WFA) objects or search for the WFA objects in the WFA-cached repositories.

A find chart can contain the following types of nodes:

Finder	Finds an object in the database with found or not found results.
Define	Defines a new WFA object.
Return	Returns from a find chart with success.
Error	Returns from a find chart with an error.

From the Select Find Chart dialog box, you can access the Edit Find Chart dialog box, which enables you to modify or define the variables and search for resources for the find chart.

The Select Find Chart dialog box lists the associated find charts for the workflow. You can customize the display by using the sorting features available for each column, as well as by rearranging the column order.

- To access the sorting feature, click the column header to toggle between ascending and descending order. You can identify the applied sort order by the sort arrows ( for ascending and  for descending).

- To rearrange the location of columns, you can drag and drop columns to place them in any required order. However, you cannot hide or delete any of these columns.

The Select Find Chart dialog box contains the following columns:

Name	Displays the name of the find chart.
Description	Displays the description of the find chart.
Finders	If the Show Details check box is selected, displays the finders used in the find chart.
User Inputs	If the Show Details check box is selected, displays the user inputs used in the find chart.
Defined Variables	If the Show Details check box is selected, displays the defined variables associated with the find chart.
Found Variables	If the Show Details check box is selected, displays the found variables associated with the find chart.
Return Node Variables	If the Show Details check box is selected, displays the return node variables defined in the find chart.
Show Details	Clearing the check box displays only the Name and the Description columns.

Right-click functionality

New	Opens the Edit Find Chart dialog box.
Edit	Opens the Edit Find Chart dialog box.
Clone	Opens the Edit Find Chart dialog box to enable you to copy the selected find chart and modify variables for the copy, as required.
Delete	Opens the Delete Find-Chart confirmation dialog box to enable you to delete the selected find chart.
Close	Closes the dialog box.

Command button

Close	Closes the dialog box.
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Related references

[Finders window](#) on page 41

Preview Workflow dialog box

The Preview Workflow dialog box enables you to specify values for user inputs associated with a workflow and then to preview the execution of that workflow with the specified values.

User Inputs values

The Preview Workflow dialog box displays the user inputs associated with the selected workflow and enables you to set the values for user inputs.

Command buttons

- | | |
|----------------|--|
| Preview | Opens the Monitoring window for the associated workflow. |
| Cancel | Closes the dialog box. |

Monitoring window

The Monitoring window displays the resulting details of the process—in the planning phase or the executing phase—of the workflow. This window includes tabs that display information; the content is read-only. You can access this window from various areas of the WFA application when selecting the **Details**, **Preview**, or **Execute** options.

- [Status area](#) on page 39
- [Flow tab](#) on page 40
- [Details tab](#) on page 40
- [Execution Plan tab](#) on page 40
- [User Inputs](#) on page 40
- [Return Parameters tab](#) on page 41
- [History tab](#) on page 41

Status area

The Status area above the tabs displays detailed information about the result of the planning or execution process.

- | | |
|------------------------|---|
| Workflow status | At the top of the window, a color-coded header displays the result of the planning or execution process: <ul style="list-style-type: none"> • Green indicates a successful action.
For example, Planning Completed or Execution Completed. • Red indicates failure.
For example, Planning Failed or Execution Failed. |
|------------------------|---|

Less/More info action	Available when the preview or execution process failed. This action link toggles between Less info and More info . Depending on the action, opens or closes the information box to show more or less information regarding the failed result.
Detailed status	Available when the preview or execution process failed. This box displays details of the planning or execution process. When a process fails, this box is open by default, and provides details of the cause of the failure.

Flow tab

The **Flow** tab provides a graphical presentation of the workflow.

Commands are positioned in the top row with their objects and variables displayed below. The status is presented during preview or execution using the following color-coded scheme:

- Green box: pass successfully
- Red box: failed
- Blue box: executing
- Gray box: Not executed
- Gray text: disabled command

You can view the logs by clicking  at the bottom of the boxes and you can view the command details by clicking on the command name.

Details tab

The **Details** tab provides more detailed information about the workflow than the **Flow** tab. The information is provided in table format, with the commands in the header row and the associated objects and variables listed below. This tab provides each command with all of its arguments and parameters.

This tab is useful when debugging a failed preview or execution of the workflow.

Execution Plan tab

The **Execution Plan** tab provides a translated list of the workflow commands and their arguments that are being executed (scripts or commands).

You can use this tab when debugging a failed preview or execution of the workflow.

User Inputs tab

The **User Inputs** tab displays the values that were entered for the user inputs during preview or execution of the workflow.

You can use the sort arrows ( or ) in the column header to sort the column entries in ascending or descending order.

Return Parameters tab

The **Return Parameters** tab lists the output of the workflow, by parameter name and parameter value.

These return parameters can be accessed by using web services.

History tab

The **History** tab lists change of statuses for the workflow, when the status change occurred, who initiated the action, and the message associated with the status change.

Command buttons

- Download Logs** Enables you to download a zip file of all the log files, including the specific execution logs.
- Column Visibility** Enables you to show or hide columns in the **Details** tab.
- OK** Closes the Monitoring window.

Finders window

The Finders window displays the available finders, in alphabetical order. You can access this window by selecting **Designer > Finders**.

Note: Depending on your role and account privileges, this window might not be available.

A finder is a search operation for locating resources. The finder, comprised of filtering rules that separate out irrelevant resources, looks for information about WFA objects in the WFA-cached repositories.

- [Finders table](#) on page 41
- [Actions menu](#) on page 43

Finders table

The Finders table lists the available finders. Each entry is identified as one of the following:

- WFA () - content developed and tested by NetApp
- PS () - content developed by NetApp technical support
- Sample () - sample content
- User-created (no icon, empty cell) - content created by users
- Locked () - content created by users that is locked

You can customize the table display by using the filtering and sorting features available for each column, as well as by rearranging the column order.

- To access filtering features, position your cursor over the column header and click the filter icon ().
- To disable the filtering feature for the entire table, click . A red "x" appears over the icon.
- To clear and reset the filtering selections, double-click .
- When using the , you can type partial entries that are separated with a space in the text box. The entries are not case-sensitive and can be entered in any order. If you enter multiple entries, only items that include all the search entries are displayed.
- To access the sorting feature, click the column header to toggle between ascending and descending order. You can identify the applied sort order by the sort arrows ( for ascending and  for descending).
- To rearrange the location of columns, you can drag and drop columns to place them in any required order. However, you cannot hide or delete any of these columns.

The Finders table contains the following columns:

Certified	Indicates whether the finder is WFA () , PS () , user-created (no icon, empty cell), or locked ().
	You can search for finders by selecting the desired option check boxes from the filter list.
Name	Displays the name of the finder.
	You can search for a finder by entering its name in the Search filter text box.
Scheme	Displays the scheme associated with the finders. A scheme is a table that contains data relevant to your environment. For example, a vc scheme contains data relevant to your virtual environment, such as virtual machines, hosts, and datastores.
	You can search for a finder by entering its scheme in the Search filter text box.
Type	Displays the dictionary object type of the finder (for example, aggregate array or CIFS).
	You can search for finders by entering the type in the Search filter text box.
Description	The description of the finder.
	You can search for a finder by entering its description in the Search filter text box.

Last Updated On	Displays the date and time that the finder was last updated. You can search for finders by selecting the required time category from the filter drop-down list.
Updated By	Displays the user who updated the finder. You can search for finders by entering the user name in the Search filter text box.
Locked By	Displays the user who locked the finder. You can search for finders by entering the user name in the Search filter text box.

Actions menu

You can perform various functions from the **Actions** menu. These actions can also be accessed from the right-click menu in the window.

New	Opens the New Finder window.
Edit	Opens the Edit Finder window for the selected finder. You can also double-click the finder to open the Edit Finder window.
Clone	Opens the Edit Finder <finder_name> - copy window to enable you to create a clone or copy of the selected finder.
Lock	Opens the Lock Finder confirmation dialog box to enable you to lock the selected finder.
Unlock	Opens the Unlock Finder confirmation dialog box to enable you to unlock the selected finder. This option is enabled only for the finders locked by you. However, administrators can unlock finders locked by other users.
Delete	Opens the Delete Finder confirmation dialog box to enable you to delete the selected user-created finder.

Note: You cannot delete a WFA, PS, or sample finder.

Export	Opens the Export Finder confirmation dialog box to enable you to export the selected user-created finder.
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Note: You cannot export a WFA, PS, or sample finder.

New Finder dialog box

The New Finder dialog box enables you to create new finders.

- [Properties tab](#) on page 44
- [Filters](#) on page 44
- [Returned Attributes tab](#) on page 44

Properties tab

The **Properties** tab enables you to specify a name for the finder, select the type of WFA dictionary object, and enter a description for the finder. The tab also displays the input parameters after a filter is selected in the **Filters** tab.

Name	Enables you to enter a name for the finder.
Type	Enables you to select the type of object from the list such as aggregate, igroup, and cluster. The filters for the selected object are displayed in the Filters tab.
Description	Enables you to enter a description for the finder.
Input Parameters table	Displays the input parameters for the selected filters.

Filters tab

Enables you to select the required filters from the available list of filters.

Available Filters	Displays the list of available filters for the selected object in the Properties tab.
Selected Filters	Displays the list of filters selected from the available filters.
Selection buttons	Moves the selected entry from one box to another.

Returned Attributes tab

Enables you to see details about the available filters, select the required attributes of the available filters, and specify the sort order for the attributes.

Available	Displays the available filters and the attributes for the filters.	
Selected	Displays the selected filters and the attributes, the aliases, and the sort order for the selected filters.	
Command buttons	Up	Moves the selected entry up one row in the Selected table.
	Down	Moves the selected entry down one row in the Selected table.
	Selection buttons	Moves the selected entry from one table to another.

Command buttons

Test	Enables you to test the finder that you have defined.
Save	Saves the finder and closes the dialog box.

Cancel Does not save the finder and closes the dialog box.

Edit Finder dialog box

The Edit Finder dialog box enables you to edit the finder.

- [Properties tab](#) on page 45
- [Filters](#) on page 45
- [Returned Attributes tab](#) on page 45

Properties tab

The **Properties** tab enables you to edit the name of the finder, the type of WFA dictionary object, and the description for the finder. The tab also displays the input parameters of the filter used in the finder.

Name	Enables you to edit the name of the finder.
Type	Enables you to select the type of WFA dictionary object from the list such as aggregate, igroup, and cluster. The filters for the selected object are displayed in the Filters tab.
Description	Enables you to edit the description for the finder.
Input Parameters table	Displays the input parameters of the selected filters.

Filters tab

Enables you to select the required filters from the available list of filters.

Available Filters	Displays the list of available filters for the selected object in the Properties tab.
Selected Filters	Displays the list of filters selected from the available filters.
Selection buttons	Moves the selected entry from one box to another.

Returned Attributes tab

Enables you to see details about the available filters, select the required attributes of the available filters, and specify the sort order for the attributes.

Available	Displays the available filters and the attributes for the filters.
Selected	Displays the selected filters and the attributes, the aliases, and the sort order for the selected filters.
Command buttons	Up Moves the selected entry up one row in the Selected table.

Down	Moves the selected entry down one row in the Selected table.
Selection buttons	Moves the selected entry from one table to another.

Command buttons

Test	Enables you to test the finder that you have selected to edit.
Save	Saves the changes and closes the dialog box.
Cancel	Does not save the changes, if any, and closes the dialog box.

Clone Finder dialog box

The Clone Finder dialog box enables you to create a copy of the finder and edit the finder.

- [Properties tab](#) on page 46
- [Filters](#) on page 46
- [Returned Attributes tab](#) on page 47

Properties tab

The **Properties** tab enables you to edit the name of the finder, the type of object, and the description for the finder. The tab also displays the input parameters of the filter used in the finder.

Name	Enables you to edit the name of the finder. The name of the finder you have selected to clone is used as the name for the clone and appended with - copy by default.
Type	Enables you to select the type of object from the list. The filters for the selected object are displayed in the Filters tab.
Description	Enables you to edit the description for the finder.
Input Parameters table	Displays the input parameters of the selected filters.

Filters tab

Enables you to select the required filters from the available list of filters.

Available Filters	Displays the list of available filters for the selected object in the Properties tab.
Selected Filters	Displays the list of filters selected from the available filters.
Selection buttons	Enables you to move the selected entry from one box to another.

Returned Attributes tab

Enables you to see the details of the available filters, select the required attributes of available filters, and specify the sort order for the attributes.

Available	Displays the available filters and the attributes for the filters.	
Selected	Displays the selected filters and the attributes, the aliases, and the sort order for the selected filters.	
Command buttons	Up	Moves the selected entry up one row in the Selected table.
	Down	Moves the selected entry down one row in the Selected table.
	Selection buttons	Moves the selected entry from one table to another.

Command buttons

Test	Enables you to test the finder that you have selected to clone.
Save	Saves the finder and closes the dialog box.
Cancel	Does not save the finder and closes the dialog box.

Filters window

The Filters window displays the available filters, in alphabetical order. You can access this window by selecting **Designer > Filters**.

Note: Depending on your role and account privileges, this window might not be available.

Filters, used to develop a finder, are query rules that separate out irrelevant resources during the query search for locating resources.

- [Filters table](#) on page 47
- [Actions menu](#) on page 49

Filters table

The Filters table lists the available filters. Each entry is identified as one of the following:

- WFA () - content developed and tested by NetApp
- PS () - content developed by NetApp technical support
- Sample () - sample content
- User-created (no icon, empty cell) - content created by users

- Locked () - content created by users that is locked

You can customize the table display by using the filtering and sorting features available for each column, as well as by rearranging the column order.

- To access filtering features, position your cursor over the column header and click the filter icon () .
- To disable the filtering feature for the entire table, click  . A red "x" appears over the icon.
- To clear and reset the filtering selections, double-click  .
- When using the  , you can type partial entries that are separated with a space in the text box. The entries are not case-sensitive and can be entered in any order. If you enter multiple entries, only items that include all the search entries are displayed.
- To access the sorting feature, click the column header to toggle between ascending and descending order. You can identify the applied sort order by the sort arrows ( for ascending and  for descending).
- To rearrange the location of columns, you can drag and drop columns to place them in any required order. However, you cannot hide or delete any of these columns.

The Filters table contains the following columns:

Certified	Indicates whether the filter is WFA () , PS () , user-created (no icon, empty cell), or locked (). You can search for filters by selecting the desired option check boxes from the filter list.
Name	Displays the name of the filter. You can search for a filter by entering its name in the Search filter text box.
Scheme	Displays the scheme associated with filters. A scheme is a table that contains data relevant to your environment. For example, a vc scheme contains data relevant to your virtual environment, such as virtual machines, hosts, and datastores. You can search for a filter by entering its scheme in the Search filter text box.
Type	Displays the dictionary object type of the filter (for example, aggregate array or CIFS). You can search for filters by entering the type in the Search filter text box.
Description	Displays the description of the filter. You can search for a filter by entering its description in the Search filter text box.

Last Updated On	Displays the date and time that the filter was last updated. You can search for filters by selecting the required time category from the filter drop-down list.
Updated By	Displays the user who updated the filter. You can search filters by entering the user name in the Search filter text box.
Locked By	Displays the user who locked the filter. You can search for filters by entering the user name in the Search filter text box.

Actions menu

You can perform various functions from the **Actions** menu. These actions can also be accessed from the right-click menu in the window.

New	Opens the New Filter window.
Edit	Opens the Edit Filter window for the selected filter. You can also double-click the filter to open the Edit Filter window.
Clone	Opens the Edit Filter <filter_name> - copy window to enable you to create a clone or copy of the selected filter.
Lock	Opens the Lock Filter confirmation dialog box to enable you to lock the selected filter.
Unlock	Opens the Unlock Filter confirmation dialog box to enable you to unlock the selected filter. This option is enabled only for the filters locked by you. However, administrators can unlock filters locked by other users.
Delete	Opens the Delete Filter confirmation dialog box to enable you to delete the selected user-created filter.

Note: You cannot delete a WFA, PS, or sample filter.

Export	Opens the Export Filter confirmation dialog box to enable you to export the selected user-created filter.
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Note: You cannot export a WFA, PS, or sample filter.

New Filter dialog box

You can use the New Filter dialog box to create a new filter. You can use the filter to develop finders.

- [Properties tab](#) on page 50
- [Query tab](#) on page 50

Properties tab

The **Properties** tab enables you to specify a name for the filter, select a dictionary object, and enter a description for the filter.

Name	Enables you to enter a name for the filter.
Type	Enables you to select a dictionary object from the list.
Description	Enables you to enter a description for the filter.

Query tab

Enables you to enter an SQL query, and edit the label and the description for the attributes.

SQL Query	Enables you to enter an SQL query for the filter.
Input Parameters table	Displays the list of parameters from the SQL query that you have entered which require user input when the filter is used. You can click the Label or the Description column of a parameter to edit the label or enter a description.
Returned Attributes table	Displays the list of returned attributes from the SQL query.

Command buttons

Test	Enables you to test the filter that you have defined.
Refresh	Populates the Input Parameters table and the Returned Attributes table with changed values, if any.
Save	Saves the filter and closes the dialog box.
Cancel	Does not save the filter and closes the dialog box.

Edit Filter dialog box

The Edit Filter dialog box enables you to edit a filter.

- [Properties tab](#) on page 50
- [Query tab](#) on page 51

Properties tab

The **Properties** tab enables you to edit the name of the filter, select a dictionary object, and edit the description for the filter.

Name	Enables you to edit the name of the filter.
Type	Enables you to select a dictionary object from the list.

Description Enables you to edit the description for the filter.

Query tab

Enables you to edit the SQL query, the label, and the description for the attributes.

SQL Query Enables you to edit the SQL query of the filter.

Input Parameters table Displays the list of parameters from the SQL query that you have entered which require user input when the filter is used. You can click the **Label** or the **Description** column of a parameter to edit the label or the description.

Returned Attributes table Displays the list of returned attributes from the SQL query.

Command buttons

Test Enables you to test the filter.

Refresh Populates the **Input Parameters** table and the **Returned Attributes** table with changed values, if any.

Save Saves the filter and closes the dialog box.

Cancel Does not save the changes, if any, and closes the dialog box.

Clone Filter dialog box

The Clone Filter dialog box enables you to copy a filter and edit the filter.

- [Properties tab](#) on page 51
- [Query tab](#) on page 51

Properties tab

The **Properties** tab enables you to edit the name of the filter, select a dictionary object, and edit the description for the filter.

Name Enables you to edit the name of the filter. The name of the filter you have selected to clone is used as the name for the clone and appended with **_copy** by default.

Type Enables you to select a dictionary object from the list.

Description Enables you to edit the description for the filter.

Query tab

Enables you to edit the SQL query, the label, and the description for the attributes.

SQL Query Enables you to edit the SQL query of the filter.

Input Parameters table	Displays the list of parameters from the SQL query that you have entered which require user input when the filter is used. You can click the Label or the Description column of a parameter to edit the label or the description.
Returned Attributes table	Displays the list of returned attributes from the SQL query.

Command buttons

Test	Enables you to test the filter.
Refresh	Populates the Input Parameters table and the Returned Attributes table with changed values, if any.
Save	Saves the filter and closes the dialog box.
Cancel	Does not save the filter and closes the dialog box.

Commands window

The Commands window displays the available commands, in alphabetical order. You can access this window by selecting **Designer > Commands**.

Note: Depending on your role and account privileges, this window might not be available.

A command is defined as an action taken as part of a workflow.

- [Commands table](#) on page 52
- [Actions menu](#) on page 54

Commands table

The Commands table lists the available commands. Each entry is identified as one of the following:

- WFA () - content developed and tested by NetApp
- PS () - content developed by NetApp technical support
- Sample () - sample content
- User-created (no icon, empty cell) - content created by users
- Locked () - content created by users that is locked

You can customize the table display by using the filtering and sorting features available for each column, as well as by rearranging the column order.

- To access filtering features, position your cursor over the column header and click the filter icon ().

- To disable the filtering feature for the entire table, click . A red "x" appears over the icon.
- To clear and reset the filtering selections, double-click .
- When using the , you can type partial entries that are separated with a space in the text box. The entries are not case-sensitive and can be entered in any order. If you enter multiple entries, only items that include all the search entries are displayed.
- To access the sorting feature, click the column header to toggle between ascending and descending order. You can identify the applied sort order by the sort arrows ( for ascending and  for descending).
- To rearrange the location of columns, you can drag and drop columns to place them in any required order. However, you cannot hide or delete any of these columns.

The Commands table contains the following columns:

Certified

Indicates whether the command is WFA (, PS (, user-created (no icon, empty cell), or locked ().

You can search for commands by selecting the required option check boxes from the filter list.

Name

Displays the name of the command.

You can search for commands by entering the name in the **Search** filter text box.

Scheme

Displays the scheme associated with commands. A scheme is a table that contains data relevant to your environment. For example, a vc scheme contains data relevant to your virtual environment, such as virtual machines, hosts, and datastores.

You can search for a command by entering its scheme in the **Search** filter text box.

Description

Displays the description of the command.

You can search for commands by entering the description in the **Search** filter text box.

Last Updated On

Displays the date and time that the command was last updated.

You can search for commands by selecting the required time category from the filter drop-down list.

Updated By

Displays the user who updated the command.

You can search for commands by entering the user name in the **Search** filter text box.

Locked By	Displays the user who locked the command. You can search for commands by entering the user name in the Search filter text box.
Command Language	Displays the programming language in which the command is written (Perl or PowerShell). You can search for commands by selecting the required option check boxes from the filter list.
Mandatory Parameters	Displays the parameters selected as mandatory for the command. You can search for commands by entering the type in the Search filter text box.

Actions menu

You can perform various functions from the **Actions** menu. These actions can also be accessed from the right-click menu in the window.

New	Opens the New Command Definition window.
Edit	Opens the Edit Command Definition window for the selected command. You can also double-click the command to open the Edit Command Definition window.
Clone	Opens the Edit Command Definition <command_name> - copy window to enable you to create a clone or copy of the selected command.
Lock	Opens the Lock Command confirmation dialog box to enable you to lock the selected command. This option is enabled only for the commands you have created.
Unlock	Opens the Unlock Command confirmation dialog box to enable you to unlock the selected command. This option is enabled only for the commands locked by you. However, administrators can unlock commands locked by other users.
Delete	Opens the Delete Command confirmation dialog box to enable you to delete the selected user-created command.

Note: You cannot delete a WFA or PS command.

Export	Opens the Export Command confirmation dialog box to enable you to export the selected user-created command.
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Note: You cannot export a WFA or PS command.

New Command Definition dialog box

The New Command Definition dialog box enables you to define a new command.

- [Properties tab](#) on page 55
- [Code tab](#) on page 55

- [Parameters Definition tab](#) on page 55
- [Parameters Mapping tab](#) on page 56

Properties tab

The **Properties** tab enables you to specify the properties of the command, such as the name, description, and scripting language.

Name	Enables you to enter a name for the command. You must enter a name to save the command.				
Description	Enables you to enter a description for the command.				
Language	Enables you to select from one of the following scripting languages: • PowerShell (default) • Perl				
String Representation	Enables you to specify a string representation for the command using MVEL syntax. You must specify the string representation to save the command. The string representation is evaluated and displayed during planning on the command details.				
Timeout (s)	Enables you to specify the timeout value (in seconds) for the command. The default value is 600 seconds.				
Command Type	Enables you to specify the type of execution for the command. <table> <tr> <td>Standard execution</td><td>Enables the command to be executed without any waiting period. Standard execution is selected by default.</td></tr> <tr> <td>Wait for condition</td><td>Enables you to specify the time (in seconds) for the command to wait before execution. The default value is 60 seconds.</td></tr> </table>	Standard execution	Enables the command to be executed without any waiting period. Standard execution is selected by default.	Wait for condition	Enables you to specify the time (in seconds) for the command to wait before execution. The default value is 60 seconds.
Standard execution	Enables the command to be executed without any waiting period. Standard execution is selected by default.				
Wait for condition	Enables you to specify the time (in seconds) for the command to wait before execution. The default value is 60 seconds.				

Code tab

Enables you to enter a code in the selected scripting language for the command.

Discover Parameters	Copies the parameters defined in the code to the Parameters Definition table and the Parameters Mapping table.
----------------------------	--

Parameters Definition tab

Displays the parameters defined in the code that you have entered in the **Code** tab.

Name	Displays the name of the parameter.
-------------	-------------------------------------

Description	Displays the description of the parameter.
Mandatory	Displays the mandatory parameters, indicated by a checked box.
Type	Displays the type of the parameter, such as string and enum.
Values	Displays the value that is set for the parameter.
Discover Parameters	Copies the parameters defined in the PowerShell code to the Parameters Definition table and the Parameters Mapping table.

Parameters Mapping tab

Enables you to map the parameters to dictionary objects, and specify the attribute and object name.

Name	Displays the name of the parameter.
Type	Enables you to select the dictionary object for the parameter.
Attribute	Enables you to specify the required attribute. You can select the attribute, if available, or enter the attribute.
Object Name	Enables you to enter a name for the object.

Command buttons

Test	Opens the Testing Command dialog box, which enables you to test the command.
Save	Saves the command and closes the dialog box.
Cancel	Does not save the command and closes the dialog box.

Edit Command Definition dialog box

The Edit Command Definition dialog box enables you to edit the selected command.

- [Properties tab](#) on page 56
- [Code tab](#) on page 57
- [Parameters Definition tab](#) on page 57
- [Parameters Mapping tab](#) on page 57

Properties tab

The **Properties** tab enables you to edit the properties of the command, such as the name, description, and scripting language.

Name	Enables you to edit the name of the command. You must enter a name to save the command.
Description	Enables you to edit the description for the command.

Language	Enables you to select from one of the following scripting languages: • PowerShell (default) • Perl				
String Representation	Enables you to specify a string representation for the command using MVEL syntax. You must specify the string representation to save the command.				
Timeout (s)	Enables you to specify the timeout value (in seconds) for the command. The default value is 600 seconds.				
Command Type	Enables you to specify the type of execution for the command. <table> <tr> <td>Standard execution</td><td>Enables the command to be executed without any waiting period. Standard execution is selected by default.</td></tr> <tr> <td>Wait for condition</td><td>Enables you to specify the time (in seconds) for the command to wait before execution. The default value is 60 seconds.</td></tr> </table>	Standard execution	Enables the command to be executed without any waiting period. Standard execution is selected by default.	Wait for condition	Enables you to specify the time (in seconds) for the command to wait before execution. The default value is 60 seconds.
Standard execution	Enables the command to be executed without any waiting period. Standard execution is selected by default.				
Wait for condition	Enables you to specify the time (in seconds) for the command to wait before execution. The default value is 60 seconds.				

Code tab

Enables you to edit the code for the command.

Discover Parameters	Copies the parameters defined in the code to the Parameters Definition table and the Parameters Mapping table.
----------------------------	--

Parameters Definition tab

Displays the parameters defined in the code that you have entered in the **Code** tab.

Name	Displays the name of the parameter.
Description	Displays the description of the parameter.
Mandatory	Displays the mandatory parameters, indicated by a checked box.
Type	Displays the type of the parameter, such as string and enum.
Values	Displays the value that is set for the parameter.
Discover Parameters	Copies the parameters defined in the code to the Parameters Definition table and the Parameters Mapping table.

Parameters Mapping tab

Enables you to map the parameters to dictionary objects, and specify the attribute and object name.

Name	Displays the name of the parameter.
-------------	-------------------------------------

Type	Enables you to select the dictionary object for the parameter.
Attribute	Enables you to specify the required attribute. You can select the attribute, if available, or enter the attribute.
Object Name	Enables you to enter a name for the object.

Command buttons

Test	Opens the Testing Command dialog box, which enables you to test the command.
Save	Saves the changes and closes the dialog box.
Cancel	Does not save the changes, if any, and closes the dialog box.

Clone Command Definition dialog box

The Clone Command Definition dialog box enables you to copy a command and edit the command.

- [Properties tab](#) on page 58
- [Code tab](#) on page 59
- [Parameters Definition tab](#) on page 59
- [Parameters Mapping tab](#) on page 59

Properties tab

The **Properties** tab enables you to edit the properties of the command, such as the name, description, and scripting language.

Name	Enables you to edit the name of the command. The name of the command you have selected to clone is used as the name for the clone and appended with - copy by default.
Description	Enables you to edit the description for the command.
Language	Enables you to select from one of the following scripting languages: • PowerShell (default) • Perl
String Representation	Enables you to specify a string representation for the command using MVFLEX Expression Language (MVEL) syntax. You must specify the string representation to save the command.
Timeout (s)	Enables you to specify the timeout value for the command in seconds. The default value is 600 seconds.
Command Type	Enables you to specify the type of execution for the command.

Standard execution	Enables the command to be executed without any waiting period. Standard execution is selected by default.
Wait for condition	Enables you to specify the time (in seconds) for the command to wait before execution. The default value is 60 seconds.

Code tab

Enables you to edit the code for the command.

Discover Parameters	Copies the parameters defined in the code to the Parameters Definition table and the Parameters Mapping table.
----------------------------	--

Parameters Definition tab

Displays the parameters defined in the code that you have entered in the **Code** tab.

Name	Displays the name of the parameter.
Description	Displays the description of the parameter.
Mandatory	Displays the mandatory parameters with a checked box.
Type	Displays the type of the parameter, such as string and enum.
Values	Displays the value set for the parameter.
Discover Parameters	Copies the parameters defined in the code to the Parameters Definition table and the Parameters Mapping table.

Parameters Mapping tab

Enables you to map the parameters to dictionary objects, and specify the attribute and object name.

Name	Displays the name of the parameter.
Type	Enables you to select the dictionary object for the parameter.
Attribute	Enables you to specify the required attribute. You can select the attribute, if available, or enter the attribute.
Object Name	Enables you to enter a name for the object.

Command buttons

Test	Opens the Testing Command dialog box, which enables you to test the command.
-------------	--

- Save** Saves the command and closes the dialog box.
- Cancel** Does not save the command and closes the dialog box.

Templates window

The Templates window displays, alphabetical order, the available templates. A template is a collection of settings, which can be used when creating workflows. You can use templates to create workflows quickly.

Note: Depending on your role and account privileges, this window might not be available.

Templates table

The Templates table lists the available templates. Each entry is identified as one of the following:

- Sample () - sample content
- User-created (no icon, empty cell) - content created by users
- Locked () - content created by users that is locked

You can customize the table display by using the filtering and sorting features available for each column, as well as by rearranging the column order.

- To access filtering features, position your cursor over the column header and click the filter icon ().
 - To disable the filtering feature for the entire table, click . A red "x" appears over the icon.
 - To clear and reset the filtering selections, double-click .
 - When using the , you can type partial entries that are separated with a space in the text box. The entries are not case-sensitive and can be entered in any order. If you enter multiple entries, only items that include all the search entries are displayed.
- To access the sorting feature, click the column header to toggle between ascending and descending order. You can identify the applied sort order by the sort arrows ( for ascending and  for descending).
- To rearrange the location of columns, you can drag and drop columns to place them in any required order. However, you cannot hide or delete any of these columns.

The Templates table contains the following columns:

- Certified** Indicates whether the template is sample (), user-created (no icon, empty cell), or locked ().

	You can search for templates by selecting the required check boxes from the filter list.
Name	Displays the name of the template. You can search for a template by entering its name in the Search filter text box.
Scheme	Displays the scheme associated with the template. A scheme is a table that contains data relevant to your environment. For example, a vc scheme contains data relevant to your virtual environment, such as virtual machines, hosts, and datastores. You can search for a template by entering its scheme in the Search filter text box.
Type	Displays the dictionary object type of the template (for example, volume and Snapshot_Policy). You can search for templates by entering the type in the Search filter text box.
Description	Displays the description of the template. You can search for a template by entering its description in the Search filter text box.
Last Updated On	Displays the date and time that the template was last updated. You can search for templates by selecting the required time category from the filter drop-down list.
Updated By	Displays the user who updated the template. You can search for templates by entering the user name in the Search filter text box.
Locked By	Displays the user who locked the template. You can search for templates by entering the user name in the Search filter text box.

Actions menu

You can perform various functions from the **Actions** menu. These actions can also be accessed from the right-click menu in the window.

New	Opens the New Template dialog box, which enables you to create a new template.
Edit	Opens the Edit Template dialog box for the selected template. You can also double-click the template to open the Edit Template dialog box.
Clone	Opens the New Template <template_name> - copy dialog box, which enables you to create a clone or copy of the selected template.

- Lock** Opens the Lock Template confirmation dialog box, which enables you to lock the selected template. This option is enabled only for the template that you have created.
- Unlock** Opens the Unlock Template confirmation dialog box, which enables you to unlock the selected template. This option is enabled only for the template that is locked by you. However, administrators can unlock templates locked by other users.
- Delete** Opens the Delete Template confirmation dialog box, which enables you to delete the selected user-created template.
- Note:** You cannot delete a sample template.
- Export** Opens the Export Template confirmation dialog box, which enables you to export the selected user-created template.
- Note:** You cannot export a sample template.

New Template dialog box

The New Template dialog box enables you to create a new template.

- Name** Enables you to enter a name for the template.
- Type** Enables you to select a dictionary object from the list.
- Description** Enables you to enter a description for the template.
- Attributes** Displays the attributes for the selected dictionary object and enables you to enter a value for each attribute, such as enum and function.

Command buttons

- Save** Saves the template and closes the dialog box.
- Cancel** Does not save the template and closes the dialog box.

Edit Template dialog box

The Edit Template dialog box enables you to edit a template.

- Name** Enables you to edit the name of the template.
- Type** Enables you to select a dictionary object from the list.
- Description** Enables you to edit the description for the template.
- Attributes** Displays the attributes for the selected dictionary object and enables you to enter a value for each attribute, such as enum and function.

Command buttons

- Save** Saves the changes and closes the dialog box.
- Cancel** Does not save the changes, if any, and closes the dialog box.

Clone Template dialog box

The Clone Template dialog box enables you to create a copy of the template and edit the template.

- Name** Enables you to edit the name of the template.
- Type** Enables you to select a dictionary object from the list. The name of the template you have selected to clone is used as the name for the clone and appended with - copy by default.
- Description** Enables you to edit the description for the template.
- Attributes** Displays the attributes for the selected dictionary object and enables you to enter a value for each attribute, such as enum and function.

Command buttons

- Save** Saves the template and closes the dialog box.
- Cancel** Does not save the template and closes the dialog box.

Categories window

The Categories window displays the available categories.

Note: Depending on your role and account privileges, this window might not be available.

A category is a set of workflows that enables you to complete a task. You can create a category by grouping a set of related workflows. You can also grant access to specific users to operate a category.

Categories table

The Categories table lists the available categories:

- Sample () - sample content
- User-created (no icon, empty cell) - content created by users
- Locked () - content created by users that is locked

You can customize the table display by using the filtering and sorting features available for each column, as well as by rearranging the column order.

- To access filtering features, position your cursor over the column header and click the filter icon ().
- To disable the filtering feature for the entire table, click . A red "x" appears over the icon.
- To clear and reset the filtering selections, double-click .
- When using the , you can type partial entries that are separated with a space in the text box. The entries are not case-sensitive and can be entered in any order. If you enter multiple entries, only items that include all the search entries are displayed.
- To access the sorting feature, click the column header to toggle between ascending and descending order. You can identify the applied sort order by the sort arrows ( for ascending and  for descending).
- To rearrange the location of columns, you can drag and drop columns to place them in any required order. However, you cannot hide or delete any of these columns.

The Categories table contains the following columns:

Certified	Indicates whether the category is sample () , user-created (no icon, empty cell), or locked ().
	You can search for categories by selecting the required option check boxes from the filter list.
Name	Displays the name of the category.
	You can search for a category by entering its name in the Search filter text box.
Description	Displays a description of the category.
	You can search for a category by entering its description in the Search filter text box.
Workflows	Displays the workflows that are available in the category.
Used for workflow authorization	Displays “true” for the categories available only for certain users with operator role for execution. Displays “false” for the categories available for all users with operator role for execution.
Users	Displays the name of the user with operator role who is authorized to execute the category.
Last Updated On	Displays the date and time that the category was last updated.
	You can search for categories by selecting the required time category from the filter drop-down list.
Updated By	Displays the user who updated the category.

You can search for categories by entering the user name in the **Search** filter text box.

Actions menu

You can perform various functions from the **Actions** menu. These actions can also be accessed from the right-click menu in the window.

- New** Opens the New Category dialog box, which enables you to create a new category.
- Edit** Opens the Category <category_name> dialog box for the selected category. You can also double-click the category to open the Category <category_name> dialog box.
- Clone** Opens the Category <category_name> - copy dialog box to enable you to create a clone or copy of the selected category.
- Delete** Opens the Delete Category confirmation dialog box, which enables you to delete the selected category.
- Export** Opens browser-specific dialog box, which enables you to export the selected category.

New Category dialog box

The New Category dialog box enables you to create a new workflow category.

Name	Enables you to enter a name for the category. You must enter a name to save the category.
Description	Enables you to enter a description for the category.
Available Workflows	Displays all the available workflows that are not moved to the Selected Workflows box.
Selected Workflows	Displays all the workflows that are selected for the category.
Category Used for Workflow Authorization	Enables you to select users with operator role who can execute the category. By default, the check box is not selected and the category is available for all users.
Available Operators	Displays all the users with operator role.
Selected Operators	Displays the users who are allowed to execute the category.

Command buttons

- Selection buttons** Enables you to move the selected entry from one box to another.
- Save** Saves the category and closes the dialog box.
- Cancel** Does not save the category and closes the dialog box.

Edit Category dialog box

The Edit Category dialog box enables you to edit a workflow category.

Name	Enables you to edit the name of the category.
Description	Enables you to edit the description for the category.
Available Workflows	Displays all the available workflows that are not moved to the Selected Workflows box.
Selected Workflows	Displays all the workflows that are selected for the category.
Category Used for Workflow Authorization	Enables you to grant access to users with operator role to execute the category. The check box is not selected by default.
Available Operators	Displays all the users with operator role who do not have access to the category.
Selected Operators	Displays the users who are granted access to the category.

Command buttons

Selection buttons	Moves the selected entry from one box to another.
Save	Saves the category and closes the dialog box.
Cancel	Does not save the category and closes the dialog box.

Clone Category dialog box

The Clone Category dialog box enables you to copy a workflow category and edit the category.

Name	Enables you to edit the name for the category. The name of the category you have selected to clone is used as the name for the clone and appended with - copy by default.
Description	Enables you to enter a description for the category.
Available Workflows	Displays all the available workflows that are not moved to the Selected Workflows box.
Selected Workflows	Displays all the workflows you have selected for the category.
Category Used for Workflow Authorization	Enables you to select users with operator role who can execute the category. By default, the check box is not selected and the category is available for all users.
Available Operators	Displays all the users with operator role.
Selected Operators	Displays the users who are allowed to execute the category.

Command buttons

Selection buttons	Enables you to move the selected entry from one box to another.
Save	Saves the category and closes the dialog box.
Cancel	Does not save the category and closes the dialog box.

Execution

Execution Status window

The Execution Status window displays the status of the execution process for each workflow that has been submitted for execution. The window enables you to view details of the execution process, as well as control the execution of a workflow. You can access this window by selecting **Execution > Execution Status**.

- [Workflow table](#) on page 68
- [Actions menu](#) on page 70

Workflow table

The Workflow table lists the workflows submitted for execution. You can customize the table display by using the filtering and sorting features available for each column, as well as by rearranging the column order.

- To access filtering features, position your cursor over the column header and click the filter icon ().
- To disable the filtering feature for the entire table, click . A red "x" appears over the icon.
- To clear and reset the filtering selections, double-click .
- When using the , you can type partial entries that are separated with a space in the text box. The entries are not case-sensitive and can be entered in any order. If you enter multiple entries, only items that include all the search entries are displayed.
- To access the sorting feature, click the column header to toggle between ascending and descending order. You can identify the applied sort order by the sort arrows ( for ascending and  for descending).
- To rearrange the location of columns, you can drag and drop columns to place them in any required order. However, you cannot hide or delete any of these columns.

The Workflow table contains the following columns:

Job #	Displays the identification number of the job. The job identification number is unique and is assigned by the server when it starts the job. You can search for workflows by entering the job number in one of the following filter text boxes: • Greater than (>) • Less than (<)
--------------	--

- Equal to (=)

Name	Displays the name of the workflow. You can search for a workflow by entering its name in the Search filter text box.
Start Time	Displays the date and time the workflow was started. You can search for workflows by selecting the required time category from the filter drop-down list.
End Time	Displays the date and time the workflow ended. You can search for workflows by selecting the required time category from the filter drop-down list.
Status	The running status of the job. The status options are as follows: • All • Aborted • Aborting • Canceled • Completed • Start Execution • Failed • Obsolete • Waiting for Approval • Pending • Planning • Scheduled You can search for workflows by selecting the required status option check box from the filter list.
Completed	Displays the number of steps completed out of the total number of steps for the selected workflow. You can double-click this entry to see the details of the process. You can search for workflows by entering the step number in one of the following filter text boxes: • Greater than (>) • Less than (<) • Equal to (=)
Submitted By	Displays the user name of the user who submitted the workflow. You can search for workflows by entering the user name in the Search filter text box.

Submitted At	Displays the date and time that the workflow was submitted. You can search for workflows by selecting the required time category from the filter drop-down list.
Execution Comment	Displays the comment specified for the workflow execution. You can search for workflows by entering comment text in the Search filter text box.
Scheduled For	Displays the scheduled date and time for the execution of the workflow. You can search for workflows by selecting the required time category from the filter drop-down list.
Last Status Change	Displays the time at which a status was changed. You can search for workflows by selecting the required time category from the filter drop-down list.
Approval Point Comment	Indicates the message that is displayed to the user at the last approval point, if applicable, during the execution of the workflow. You can search for workflows by entering the message text in the Search filter text box.

Actions menu

You can perform various functions from the **Actions** menu. These actions can also be accessed from the right-click menu in the window.

Details	Opens the Monitoring window for the selected workflow, which contains the following tabs for detailed information about the workflow: • Flow • Details • Execution Plan • User Inputs • Return Parameters • History You can also double-click an entry in the table to open the Monitoring window to view detailed information.
Abort	This option is enabled for workflows that are in execution mode. Stops the execution process from continuing.

Reschedule	The option is enabled for workflows that are in the Scheduled state. Opens a Reschedule Workflow dialog box, which enables you to change the time of execution for the workflow.
Resume	The option is enabled for workflows that are in the Failed state. Opens a Resume Workflow dialog box, which enables you to resume the execution of the workflow after modifying environment issues (for example, wrong credentials to an array, missing licenses, or array is down).
Approve & Resume	This option is enabled for workflows that are in the Waiting For Approval state. Enables you to approve the execution of the workflow and continue the execution process.
Reject & Abort	This option is enabled for workflows that are in the Waiting For Approval state. Enables you to reject the execution of the workflow and stop the execution process.
Clean Reservation	Enables you to clean the resource reservation made for a workflow from the local cache. Clean reservation is available only for scheduled and failed workflows. You cannot resume reservation once it is cleaned.
Refresh	Refreshes the list of workflows. The view refreshes automatically. You can toggle auto refresh on and off by clicking  in the status bar.

Related references

[Monitoring window](#) on page 39

Data Sources window

The Data Sources window enables you to view, edit, and delete existing data sources, create new data sources, and acquire the data source. You can access this window by selecting **Execution > Data Sources**.

A data source is a read-only data structure that contains information about where the data in a specific database originates. Data sources must be defined before environments can be polled. For example, a data source can be either a DataFabric Manager database that contains information about a storage environment or a VMware database with information about a data center.

- [Data Sources table](#) on page 71
- [History table](#) on page 73
- [Actions menu](#) on page 75

Data Sources table

The Data Sources table lists existing data sources. You can customize the table display by using the filtering and sorting features available for each column, as well as by rearranging the column order.

- To access filtering features, position your cursor over the column header and click the filter icon ().
- To disable the filtering feature for the entire table, click . A red "x" appears over the icon.
- To clear and reset the filtering selections, double-click .
- When using the , you can type partial entries that are separated with a space in the text box. The entries are not case-sensitive and can be entered in any order. If you enter multiple entries, only items that include all the search entries are displayed.
- To access the sorting feature, click the column header to toggle between ascending and descending order. You can identify the applied sort order by the sort arrows ( for ascending and  for descending).
- To rearrange the location of columns, you can drag and drop columns to place them in any required order. However, you cannot hide or delete any of these columns.

The Data Sources table contains the following columns:

Name	Displays the name of the data source. You can search for data sources by entering the name in the Search filter text box.
Data Source Type	Displays the data source type. You can search for data sources by entering the type in the Search filter text box.
Host Name	Displays the host name or IP address for the data source. You can search for data sources by entering the host name in the Search filter text box.
Scheme	Indicates a table that contains data that is relevant to your environment. For example, a vm caching scheme contains data relevant to your virtual environment, such as virtual machines, hosts, and datastores. The relevant scheme information is obtained from the data source. You can search for data sources by entering the caching scheme in the Search filter text box.
Interval (minutes)	Displays the interval (in minutes) between two consecutive acquisitions of the data source. You can search for data sources by entering the interval in one of the following filter text boxes: • Greater than (>) • Less than (<) • Equal to (=)

Start Time	Displays the date and time that the data acquisition process was started. You can search for data sources by selecting the required time category from the filter drop-down list.
Duration (seconds)	Displays the length of time (in seconds) of the last acquisition process from the data source. You can search for data sources by entering the duration in one of the following filter text boxes: • Greater than (>) • Less than (<) • Equal to (=)
Status	Displays the status of the last data acquisition process or the current state of the acquisition process. The status options include the following: • All • Aborting • Canceled • Completed • Failed • Obsolete • Pending • Running • Scheduled You can search for data sources by selecting the required status option check box from the filter list.
Message	Displays the message of the error that was encountered during the data acquisition process, when the process stopped and could not continue. You can search for data sources by entering the error message text in the Search filter text box.

History table

The History table displays in the header the name of the data source selected in the Data Source table and lists the details of each acquisition process for the selected data source. The list of processes is updated dynamically, as acquisition processes occur. You can customize the table display by using the filtering and sorting features available for each column, as well as by rearranging the column order.

- To access filtering features, position your cursor over the column header and click the filter icon ().

- To disable the filtering feature for the entire table, click . A red "x" appears over the icon.
- To clear and reset the filtering selections, double-click .
- When using the , you can type partial entries that are separated with a space in the text box. The entries are not case-sensitive and can be entered in any order. If you enter multiple entries, only items that include all the search entries are displayed.
- To access the sorting feature, click the column header to toggle between ascending and descending order. You can identify the applied sort order by the sort arrows ( for ascending and  for descending).
- To rearrange the location of columns, you can drag and drop columns to place them in any required order. However, you cannot hide or delete any of these columns.

The History table contains the following columns:

Id	Displays the identification number of the data acquisition process. The identification number is unique and is assigned by the server when it starts the data acquisition process. You can search for the data acquisition processes by entering the process number in one of the following filter text boxes: • Greater than (>) • Less than (<) • Equal to (=)
Start Time	Displays the date and time that the data acquisition process was started. You can search for data acquisition processes by selecting the required time category from the filter drop-down list.
Duration (seconds)	Displays the length of time (in seconds) of the last acquisition process from the data source. You can search for data sources by entering the duration in one of the following filter text boxes: • Greater than (>) • Less than (<) • Equal to (=)
Planned Execution	Displays the scheduled date and time for the execution of the data acquisition process. You can search for data acquisition processes by selecting the required time category from the filter drop-down list.
Scheduling Type	Displays the type of schedule. The types include the following: • All

- Immediate
- Recurring
- Unknown

You can search for data acquisition processes by selecting the required schedule type option check box from the filter list.

Status Displays the status of the last data acquisition process or the current state of the acquisition process. The status options include the following:

- All
- Aborting
- Canceled
- Completed
- Failed
- Obsolete
- Pending
- Running
- Scheduled

You can search for data sources by selecting the required status option check box from the filter list.

Message Displays the message of the error that was encountered during the data acquisition process, when the process stopped and could not continue.

You can search for data sources by entering the error message text in the **Search** filter text box.

Actions menu

You can perform various functions from the **Actions** menu. These actions can also be accessed from the right-click menu in the window.

New Opens the New Data Source dialog box.

Edit Opens the Edit Data Source dialog box for the selected data source.

Delete Opens the Delete Data Source confirmation dialog box that enables you to delete the selected data source.

Acquire Now Opens the acquisition process for the selected data source.

New Data Source dialog box

The New Data Source dialog box enables you to add a new data source. You can access this dialog box by selecting **Actions > New** from the Data Sources window.

Data Source Configuration properties

Name	Enables you to specify a name for the data source.
Data Source Type	Enables you to select the data source type. For example, OnCommand Unified Manager (DFM), 4.0, 5.0.X, 5.1.X 7 mode (SYBASE). The selection of a type populates the Port, User name, Password, Database, and Timeout (sec) fields, as well as Scheduler Configuration properties, with associated data.
Host Name	Enables you to specify the host name or IP address for the data source.
Port	Populated with associated data, if any, for the selected data source type. You can modify the default and specify a port for the data source.
User name	Populated with the associated user name, if any, for the selected data source type. You can override the default and specify a user name for this data source. Note: For performance advisor, you must enter the user name of an OnCommand Unified Manager user who has read permission for the required arrays. For example, a user with GlobalRead permission.
Password	Populated with associated data, if any, for the selected data source type. You can modify the content and specify a password for the user name of this data source. Note: For performance advisor, you must enter the password of the OnCommand Unified Manager user that you have entered in the user name field.
Database	Populated with the default database name, if any, for the selected data source type. Enables you to specify the custom vCenter database name that you specified during the vCenter installation.
Timeout (sec)	Displays the time the WFA server waits for the acquisition to complete for script-based data sources. You can edit the timeout value only for performance advisor data source type. The default value for performance advisor is 600 seconds.

Scheduler Configuration properties

You can rearrange the order of the columns by dragging and dropping columns in the order you want.

Scheme	This property cannot be modified. The tables are associated with the Data Source Type selection, which are defined in Data Source Type .
---------------	---

Interval (minutes)	Enables you to click the value and select an interval (in minutes) using the up and down arrows. If the interval is set to zero (0), the automatic sampling is disabled.
---------------------------	--

Command buttons

Save	Saves the configurations settings and closes the dialog box.
Cancel	Does not save the new data source and closes the dialog box.

Related references

[Data Sources window](#) on page 71

Edit Data Source dialog box

The Edit Data Source dialog box enables you to modify an existing data source. You can access this dialog box by selecting **Actions > Edit** from the Data Sources window.

Data Source Configuration properties

Name	Enables you to modify the name of the data source.
Data Source Type	You cannot modify this field.
Host Name	Enables you to specify the host name or IP address for the data source.
Port	Populated with associated data, if any, for the selected data source type. You can modify the default and specify a port for the data source.
User name	Populated with the associated user name, if any, for the selected data source type. You can override the default and specify a user name for this data source.
Password	Populated with associated data, if any, for the selected data source type. You can modify the content and specify a password for the user name of this data source.
Database	Populated with the default database name, if any, for the selected data source type. Enables you to specify the custom vCenter database name that you specified during the vCenter installation.
Timeout (sec)	Displays the time the WFA server waits for the acquisition to complete for script-based data sources. You can edit the timeout value only for performance advisor data source type. The default value for performance advisor is 600 seconds.

Scheduler Configuration properties

You can rearrange the order of the columns by dragging and dropping columns in the order you want.

Scheme	This property cannot be modified. The tables are associated with the Data Source Type selection, which are defined in Data Source Type .
Interval (minutes)	Enables you to click the value and select an interval (in minutes) using the up and down arrows. If the interval is set to zero (0), the automatic sampling is disabled.

Command buttons

Reset Scheme	Opens a Reset Scheme confirmation dialog box. Enables you to reset the cache storage, which occurs during the next data acquisition. You must ensure that the required scheme is selected before you perform reset. Attention: This reset process consists of deleting all of the cached data and building up the entire cache from start—all tables are dropped and re-created, all of the previous data is lost—during the next data acquisition.
Save	Saves the configurations settings and closes the dialog box.
Cancel	Does not save any changes, if any, and closes the dialog box.

Related references

[Data Sources window](#) on page 71

Credentials window

The Credentials window enables you to view, create, edit, and delete credentials. You can access this window by selecting **Execution > Credentials**.

A credential is information (such as IP or host name, user name and password) that is stored on a target system (server or controller) and which is used to connect to that specific system and to execute commands.

Credentials table

The Credentials window displays existing credentials in a table format. You can customize the table display by using the filtering and sorting features available for each column, as well as by rearranging the column order.

- To access filtering features, position your cursor over the column header and click the filter icon ().
- To disable the filtering feature for the entire table, click . A red "x" appears over the icon.
- To clear and reset the filtering selections, double-click .

- When using the , you can type partial entries that are separated with a space in the text box. The entries are not case-sensitive and can be entered in any order. If you enter multiple entries, only items that include all the search entries are displayed.
- To access the sorting feature, click the column header to toggle between ascending and descending order. You can identify the applied sort order by the sort arrows ( for ascending and  for descending).
- To rearrange the location of columns, you can drag and drop columns to place them in any required order. However, you cannot hide or delete any of these columns.

The Credentials table contains the following columns:

Type	Displays the type of credential. You can search for credentials by selecting the required option check box from the filter list.
Name/Ip Address	Displays the IP address for the credential.
Host Name	Displays the host name for the credential.
Login	Displays the user name associated with the credential.
Match	Displays the match type for the credential. Match types are as follows: • Exact: defines credentials for a specific IP or host name • Pattern: defines credentials for the entire subnet or IP range, or host name range Pattern is a regular expression that is used for matching a string—for example, 10.10.10.* matches any IP in the range 10.10.10.0–10.10.10.255 and host* matches host names starting with host. Note: IPV6 addresses are not supported.

Actions menu

You can perform various functions from the **Actions** menu. These actions can also be accessed from the right-click menu in the window.

Test Connectivity	Opens the Test Connectivity dialog box.
New	Opens the New Credentials dialog box.
Edit	Opens the Edit Credentials dialog box.
Delete	Opens the Delete Credentials confirmation dialog box, which enables you to delete the selected credential.

Test Connectivity dialog box

The Test Connectivity dialog box enables you to test the connection to the system associated with a credential. You can access this dialog box by selecting **Actions > Test Connectivity** from the Credentials window.

The test connectivity triggers the search path and first looks for an exact match, then a pattern match, and finally the LDAP service authentication.

Test Connectivity parameters

- | | |
|----------------|--|
| Type | Enables you to select the type of credential from the drop-down list. |
| Name/IP | Enables you to specify the host name or IP address for the credential. |

Command buttons

- | | |
|---------------|---|
| Test | Opens a connection attempt to the host name or IP address. |
| Cancel | Does not save any changes, if any, and closes the dialog box. |

Related references

[Credentials window](#) on page 78

New Credentials dialog box

The New Credentials dialog box enables you to create a new credential. You can access this dialog box by selecting **Actions > New** from the Credentials window.

Credential parameters

- | | |
|--------------|---|
| Match | <p>Enables you to select the match type of the credential, which defines the credential for either a specific IP address or host name, or an entire subnet or IP range. Available options include the following:</p> <ul style="list-style-type: none"> • Exact: defines credentials for a specific IP or host name • Pattern: defines credentials for the entire subnet or IP range, or host name range <p>Pattern is a regular expression that is used for matching a string—for example, 10.10.10.* matches any IP in the range 10.10.10.0–10.10.10.255 and host* matches host names starting with host.</p> |
|--------------|---|

Note: IPV6 addresses are not supported.

- | | |
|----------------|--|
| Type | Enables you to select the type of credential from the drop-down list. |
| Name/IP | Enables you to specify the host name or IP address for the credential. |

User Name Enables you to specify the user name for the credential.

Password Enables you to specify the password for the user name.

Command buttons

Test Opens a connection attempt to the host name or IP address and attempts to log in using the associated credentials.

Save Saves the configuration settings and closes the dialog box.

Cancel Does not save any changes, if any, and closes the dialog box.

Related references

[Credentials window](#) on page 78

Edit Credentials dialog box

The Edit Credentials dialog box enables you to modify an existing credential. You can access this dialog box by selecting a credential in the Credentials window and then selecting **Actions > Edit**.

Credential parameters

Match Enables you to select the match type of the credential, which defines the credential for either a specific IP address or host name or an entire subnet or IP range. Available options include the following:

- Exact: for a specific IP address or host name
- Pattern: for an entire subnet or IP range

Type Enables you to select the type of credential from the drop-down list.

Name/IP Enables you to specify the host name or IP address for the credential.

User Name Enables you to specify the user name for the credential.

Password Enables you to specify the password for the user name.

Command buttons

Test Opens a connection attempt to the host name or IP address and attempts to log in using the associated credentials.

Save Saves the configuration settings and closes the dialog box.

Cancel Does not save any changes, if any, and closes the dialog box.

Reservations window

The Reservations window displays each workflow that is marked for reservation. You can access this window by selecting **Execution > Reservations**.

A reservation guarantees that a selected resource will be available for a specific scheduled workflow, when that workflow is executed.

- [Reservations table](#) on page 82
- [Actions menu](#) on page 84

Reservations table

The Reservations table lists the workflows submitted for reservation. You can customize the table display by using the filtering and sorting features available for each column, as well as by rearranging the column order.

- To access filtering features, position your cursor over the column header and click the filter icon ().
 - To disable the filtering feature for the entire table, click . A red "x" appears over the icon.
 - To clear and reset the filtering selections, double-click .
 - When using the , you can type partial entries that are separated with a space in the text box. The entries are not case-sensitive and can be entered in any order. If you enter multiple entries, only items that include all the search entries are displayed.
- To access the sorting feature, click the column header to toggle between ascending and descending order. You can identify the applied sort order by the sort arrows ( for ascending and  for descending).
- To rearrange the location of columns, you can drag and drop columns to place them in any required order. However, you cannot hide or delete any of these columns.

The Reservations table contains the following columns:

Job #	Displays the identification number of the job. The job identification number is unique and is assigned by the server when it starts the job. You can search for reservations by entering the job number in one of the following filter text boxes: • Greater than (>) • Less than (<) • Equal to (=)
Workflow	Displays the workflow name.

	You can search for reservations by entering the workflow name in the Search filter text box.
Time of Execution	Displays the time that the job is scheduled to run or was executed. You can search for reservations by selecting the required time category from the filter drop-down list.
Time of reservation	Displays the time that the job was scheduled, which is the time when the reservation was created. You can search for reservations by selecting the required time category from the filter drop-down list.
Command Name	Displays the command for which the reservation was made. For example, for a workflow executing the command <code>Create Volume myVolume of size 20MB</code>, Create Volume is displayed. You can search for reservations by entering the command name in the Search filter text box.
Reservation	Displays the description of the reservation, which is generated from the reservation string representation of the command. You can search for reservations by entering the text in the Search filter text box.
Workflow Status	Displays the status of the workflow execution job. The status options are as follows: • All • Aborted • Aborting • Canceled • Completed • Start Execution • Failed • Obsolete • Waiting for Approval • Pending • Planning • Scheduled You can search for reservations by selecting the required status option check box from the filter list.
Cache Updated	Displays whether the reservation has been verified and reflected in the cached data (Yes or No). This cache update is performed by the data acquisition process.

You can search for reservations by selecting the required status option check box (ALL, YES, NO) from the filter list.

Last Error

Displays the error that is generated if simulating this reservation generates an error.

You can search for reservations by entering the error text in the **Search** filter text box.

Actions menu

You can perform various functions from the **Actions** menu. These actions can also be accessed from the right-click menu in the window.

Delete Opens the Delete Reservations confirmation dialog box, which enables you to delete the selected reservation from the list.

Refresh Refreshes the content of the table.

Portal window

The Portal window displays the workflows that are marked ready for production. You can edit or execute the workflows for which you have authorization. You can access this window by clicking the **Portal** tab.

Category pane

The category pane enables you to search for workflows by categories. If a workflow is not assigned to a category, the workflow is listed under **No Category**. To the right of the category heading, the total number of workflows within that category is displayed. This number includes workflows that are marked ready for production. For example, **Data Protection (4)** indicates that there are a total of four workflows ready for production within the **Data Protection** category.

Check boxes

Cluster-Mode	Shows or hides the Cluster-Mode workflows.
7-Mode	Shows or hides the 7-Mode workflows.

Workflow pane

Workflows that are marked ready for production are displayed as gray boxes on the workflow pane. The workflow boxes include the name of the workflow and an icon to indicate the supported mode of the workflow. You can click a workflow box to execute the workflow.

If you are an admin or an architect, you can edit a workflow by clicking the  icon. The  icon provides more information about the workflow.

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You can also contact us in the following ways:

- NetApp, Inc., 495 East Java Drive, Sunnyvale, CA 94089 U.S.
- Telephone: +1 (408) 822-6000
- Fax: +1 (408) 822-4501
- Support telephone: +1 (888) 463-8277

Index

A

About dialog box [20](#)
 automatic refresh [13](#)
 AutoSupport settings [14](#)

B

Backup and restore window [8](#)

C

Categories window [63](#)
 Client Preferences
 dialog box [13](#)
 modifying [13](#)
 Client refresh interval [13](#)
 clone category
 dialog box [66](#)
 clone command definition
 dialog box [58](#)
 clone filter
 dialog box [51](#)
 clone finder
 dialog box [46](#)
 clone template
 dialog box [63](#)
 Commands window [52](#)
 credential
 test [80](#)
 credentials
 edit [81](#)
 new [80](#)
 Credentials window [78](#)

D

Data Source
 creating new [76](#)
 editing [77](#)
 Data Sources window [71](#)
 dialog box
 About [20](#)
 Client Preferences [13](#)
 clone category [66](#)

clone command definition [58](#)
 clone filter [51](#)
 clone finder [46](#)
 clone template [63](#)
 edit category [66](#)
 edit command definition [56](#)
 Edit Credentials [81](#)
 Edit Data Source [77](#)
 edit filter [50](#)
 edit finder [45](#)
 edit template [62](#)
 Edit User [12](#)
 execute workflow [33](#)
 incremental naming wizard [29](#)
 new category [65](#)
 new command definition [54](#)
 New Credentials [80](#)
 New Data Source [76](#)
 new filter [49](#)
 new finder [43](#)
 new template [62](#)
 New User [11](#)
 Preview Workflow [39](#)
 resource selection [28](#)
 row repetition details [30](#)
 Select Find Chart [37](#)
 Test Connectivity [80](#)
 WFA Configuration [14](#)
 Workflow Preferences [33](#)

E

edit category
 dialog box [66](#)
 edit command definition
 dialog box [56](#)
 Edit Credentials dialog box [81](#)
 Edit Data Source dialog box [77](#)
 edit filter
 dialog box [50](#)
 edit finder
 dialog box [45](#)
 edit template
 dialog box [62](#)
 Edit User dialog box [12](#)
 Edit Workflow window [31](#)

execute workflow
 dialog box [33](#)
Execution Status window [68](#)
Export All feature [7](#)
Export feature [7](#)

F

Filters window [47](#)
find chart [37](#)
Finders window [41](#)

I

Import feature [8](#)
incremental naming wizard
 dialog box [29](#)

L

LDAP settings [14](#)
Log Viewer Directory window [8](#)
logs [8](#)

M

mail settings [14](#)
Monitoring window [39](#)

N

new category
 dialog box [65](#)
new command definition
 dialog box [54](#)
New Credentials dialog box [80](#)
New Data Source dialog box [76](#)
new filter
 dialog box [49](#)
new finder
 dialog box [43](#)
new template
 dialog box [62](#)
New User dialog box [11](#)
New Workflow window [23](#)

O

overview

Workflow Automation [5](#)

P

parameters
 commands [26](#)
 objects, workflow [26](#)
Portal window [85](#)
Preview Workflow dialog box [39](#)

R

Reservation settings [14](#)
Reservations window [82](#)
roles [9](#)
row repetition details
 dialog box [30](#)

S

search criteria
 resource selection [28](#)
Select Find Chart dialog box [37](#)
SNMP settings [14](#)

T

templates
 window [60](#)
Test Connectivity dialog box [80](#)

U

user inputs
 setting [39](#)
users
 window [9](#)

W

WFA Configuration dialog box [14](#)
window
 Backup and Restore [8](#)
 categories [63](#)
 Commands [52](#)
 Credentials [78](#)
 Data Sources [71](#)
 Edit Workflow [31](#)
 Execution Status [68](#)

- Filters [47](#)
- Finders [41](#)
- Log Viewer Directory [8](#)
- Monitoring [39](#)
- New Workflow [23](#)
- Portal [85](#)
- Reservations [82](#)
- templates [60](#)
- users [9](#)
- Workflows [21](#)
- Workflow Automation
 - overview [5](#)
- Workflow Preferences dialog box [33](#)
- workflows
 - edit [31](#)
 - new [23](#)
- Workflows window [21](#)