



Use

Data Center Automation Premium 2017.05

Document Release Date: May 2017

Software Release Date: May 2017



This document is an export from the HPE Software Documentation Portal. For the latest documentation, refer <https://docs.software.hpe.com>.

Legal Notices

Warranty

The only warranties for Hewlett Packard Enterprise products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. Hewlett Packard Enterprise shall not be liable for technical or editorial errors or omissions contained herein. The information contained herein is subject to change without notice.

Restricted Rights Legend

Confidential computer software. Valid license from Hewlett Packard Enterprise required for possession, use or copying. Consistent with FAR 12.211 and 12.212, Commercial Computer Software, Computer Software Documentation, and Technical Data for Commercial Items are licensed to the U.S. Government under vendor's standard commercial license.

Copyright Notice

© Copyright 2017 Hewlett Packard Enterprise Development LP

Trademark Notices

Adobe® is a trademark of Adobe Systems Incorporated.

AMD is a trademark of Advanced Micro Devices, Inc.

Intel® and Intel® Itanium® are trademarks of Intel Corporation in the U.S. and other countries.

Linux® is the registered trademark of Linus Torvalds in the U.S. and other countries.

Microsoft®, Windows®, and Windows Server® are U.S. registered trademarks of Microsoft Corporation.

Oracle and Java are registered trademarks of Oracle and/or its affiliates.

Red Hat® is a registered trademark of Red Hat, Inc. in the United States and other countries.

UNIX® is a registered trademark of The Open Group.

Documentation Updates

To check for recent updates or to verify that you are using the most recent edition of a document, go to: <https://softwaresupport.hpe.com/>. You will also receive updated or new editions if you subscribe to the appropriate product support service. Contact your HPE sales representative for details.

Support

Visit the HPE Software Support web site at: <https://softwaresupport.hpe.com/>. Most of the support areas require that you register as an HPE Passport user to sign in. Many also require a support contract. To register for an HPE Passport ID, click Register on HPE Support site or click Create an Account on the HPE Passport login page.

Table of Contents

1	Legal Notices	2
2	Use	9
3	Login	9
3.1	Related topics	9
4	Resource types	10
4.1	View resource types	10
4.2	Search for a resource type	10
4.3	Filter resource types	11
4.4	Sort resource types	11
4.5	View tags associated with a resource type	11
4.6	Associate a tag with a resource type	12
4.7	Disassociate a tag from a resource type	13
4.7.1	Related topics	13
5	Templates.....	13
5.1	Author	14
5.1.1	View templates.....	14
5.1.2	Search for a template	14
5.1.3	Sort templates.....	14
5.1.4	View tags associated with a template.....	15
5.1.5	Associate a tag with a template	16
5.1.6	Disassociate a tag from a template.....	16
5.2	Resource Management	17
5.2.1	View templates.....	17
5.2.2	Search for a template	17
5.2.3	Sort templates.....	17
5.2.4	View tags associated with a template.....	18
5.2.5	Associate a tag with a template	19
5.2.6	Disassociate a tag from a template.....	19

5.2.7	Deploy a template.....	19
5.2.7.1	Related topics	20
6	Controls	21
6.1	View controls	21
6.2	Search for a control.....	21
6.3	Sort controls.....	22
6.4	Add a new control	22
6.5	Edit a control	22
6.6	Delete a custom control	22
6.6.1	Related topics	23
6.7	Control scripts and script parameters	23
6.7.1	Example - Define a script for a new control.....	23
6.7.1.1	Overview of the control hierarchy.....	23
6.7.1.2	Create the new control	24
6.7.1.3	Related topics	26
7	Benchmarks	26
7.1	View benchmarks.....	26
7.2	Search for a benchmark	27
7.3	Sort benchmarks.....	27
7.4	Add a new benchmark	27
7.5	Edit a benchmark	27
7.6	Clone an existing benchmark.....	28
7.7	Delete a benchmark.....	28
7.8	Run a compliance scan for benchmark	28
7.9	View benchmark scan results.....	29
7.9.1	Related topics	29
7.10	Benchmark requirements and subrequirements.....	30
7.10.1	Add a new (sub)requirement.....	30
7.10.2	Edit a (sub)requirement.....	30
7.10.3	Remove a (sub)requirement.....	30
7.10.3.1	Related topics	31

7.11	Benchmark rules	31
7.11.1	Add a new rule.....	31
7.11.2	Edit a rule.....	31
7.11.3	Remove a rule.....	32
7.11.3.1	Related topics	32
8	Policies.....	32
8.1	View policies.....	33
8.2	Search for a policy.....	34
8.3	Sort policies.....	34
8.4	Add a new policy	34
8.5	Scan a resource attached to a policy	35
8.6	Remediate a resource attached to a policy	36
8.7	Edit a policy	37
8.8	Associate a benchmark to an existing policy	37
8.9	Disassociate a benchmark from an existing policy	37
8.10	Delete a policy	37
8.10.1	Related topics	37
9	Deployments	38
9.1	View deployments.....	38
9.2	Search for a deployment	38
9.3	Filter deployments.....	39
9.4	Sort deployments.....	39
9.5	View tags associated with a deployment	40
9.6	Associate a tag with a deployment	41
9.7	Disassociate a tag from a deployment	41
9.8	Change the template associated with a deployment	41
9.8.1	Related topics	42
10	Resources	42
10.1	Import resources.....	43

10.1.1	CSV file for resource import	43
10.1.2	Sample CSV file	44
10.1.3	Resource attributes	44
10.1.4	Import resources from SA.....	46
10.1.5	Import resources using DCA console	46
10.1.6	Import resources using import script	46
10.2	View resources	47
10.3	Search for a resource	48
10.4	Filter resources.....	49
10.5	Sort resources	50
10.6	Discover contained resources	50
10.7	Associate a template with a resource	51
10.8	Associate a credential with a resource	52
10.9	Run compliance scan for a resource.....	52
10.10	Run a remediation job for a resource	53
10.11	View compliance scan or remediation job status	54
10.12	View compliance scan results	55
10.13	Power off virtual machines.....	55
10.13.1	Related topics	55
11	Resource groups	56
11.1	View resource groups.....	56
11.2	Search for a resource group	56
11.3	Sort resource groups	56
11.4	Create a resource group	57
11.4.1	Set a maintenance schedule to the resource group	57
11.4.2	Attach a policy to the resource group.....	58
11.4.2.1	Related topics	59
12	Compliance	59
12.1	View compliance status	59
12.2	View compliance details	60

12.3	Search for a compliance	60
12.4	Filter compliance	61
12.4.1	Sort compliance	61
12.4.1.1	Related topics	62
13	Activity	62
13.1	View jobs.....	63
13.2	Search for an activity	63
13.3	Filter activities	63
13.4	Sort activities	64
13.5	Run ad hoc compliance remediation.....	64
13.5.1	Related topics	64
14	Credentials	64
14.1	View credentials	65
14.2	Add a credential	65
14.3	Edit a credential	65
14.4	Delete a credential	65
14.4.1	Related topics	66
15	ChatOps	66
15.1	Related topics	66
15.2	get deployment.....	66
15.2.1	Parameters.....	66
15.2.2	Usage	67
15.2.3	Output.....	67
15.2.3.1	Sample output	67
15.3	get resource.....	69
15.3.1	Parameters.....	69
15.3.2	Usage	69
15.3.3	Output.....	69
15.3.3.1	Sample output	70
15.4	list watches.....	70

- 15.4.1 Parameters 70
- 15.4.2 Usage 71
- 15.4.3 Output..... 71
- 15.4.3.1 Sample output 71
- 15.5 unwatch deployment..... 72
- 15.5.1 Parameters..... 72
- 15.5.2 Usage 72
- 15.5.3 Output..... 72
- 15.5.4 Sample output 72
- 15.5.4.1 Output of a deployment for which a watch has been set 73
- 15.5.4.2 Output of a deployment for which a watch has not been set..... 73
- 15.5.4.3 Output of deployments with the same name..... 73
- 15.5.4.4 Related topics 73
- 15.6 watch deployment 73
- 15.6.1 Parameters..... 73
- 15.6.2 Usage 74
- 15.6.3 Output..... 74
- 15.6.3.1 Sample output 74
- 16 Send documentation feedback..... 76

Use

DCA offers a multitude of features and capabilities to help you streamline your day-to-day interactions with your data center. You can leverage these capabilities to effectively monitor and manage the resources within your IT infrastructure; from provisioning and deploying resources to ensuring infrastructure compliance and remediation. This topic provides information that you can use to learn more about these capabilities and make the best use of DCA.

Use this information to perform routine data center operations while working with:

- [Login](#)
- [Resource types](#)
- [Templates](#)
- [Controls](#)
- [Benchmarks](#)
- [Policies](#)
- [Deployments](#)
- [Resources](#)
- [Resource groups](#)
- [Compliance](#)
- [Activity](#)
- [Credentials](#)
- [ChatOps](#)

Login

After successful installation of DCA, log into the [DCA console](#) to start deploying, configuring, and managing your data center infrastructure. All features and functionalities of DCA can be accessed through single sign-on.

To log into the DCA console, follow these steps:

1. In the address bar of your browser window, type the following URL:

```
https://<dca_host>:33081
```

2. On the login page, enter your user name and password. The default passwords are stored in [DCA Premium 2017.05 Password Management](#) document on the HPE Software support website (<https://softwaresupport.hpe.com/>).
3. Click **Log In**. The [DCA console](#) is displayed.

Related topics

[The DCA console](#)

[Author](#)

[Resource Management](#)

Settings

Resource types

A resource type is an entity (OS, software, database, docker image, etc) contained within a template that is to be deployed on a selected target. Every resource type is identified by a unique name and has a set of pre-defined attributes.

Using DCA, you can perform the following tasks on the resource types:

- [View resource types](#)
- [Search for a resource type](#)
- [Filter resource types](#)
- [Sort resource types](#)
- [View tags associated with a resource type](#)
- [Associate a tag with a resource type](#)
- [Disassociate a tag from a resource type](#)

View resource types

To view the available resource types, follow these steps:

1. From the [DCA console](#), go to the resource type list page (**Author > Resource Types**). All the resource types are displayed.
2. Select a resource type to view its details. The following details about the resource type are displayed:
 - A brief description of the resource type.
 - The actions that can be performed on the resource type.
 - The predefined attributes of the resource type.

Search for a resource type

You can search for a resource type by its name or by an associated tag. To search for a resource type, follow these steps:

1. From the [DCA console](#), go to the resource type list page (**Author > Resource Types**).
2. In the search box, select **Name** or **Tag**, and start typing a search keyword. The search results display a list of all resource types that match the keyword.




Note

While searching by tags, you can use the keyword **none** to search for resource types that are not associated with any tag.


Filter resource types

You can filter the resource type list to view only the resource types that match the filter criteria. To filter the resource type list, follow these steps:

1. From the [DCA console](#), go to the resource type list page (**Author > Resource Types**), and then click .
2. In the **Filter** area, under **Status**, select a filter criteria. Only the resource types that match the selected filter criteria are displayed.






Note

You can see the labels of all applied filters below the search box. To remove a filter, click  on the filter label.

Sort resource types

You can sort the resource type list alphabetically in ascending or descending order by a selected sort criteria. To sort the resource type list, follow these steps:

1. From the [DCA console](#), go to the resource type list page (**Author > Resource Types**).
2. Click .
3. In the **Filter** area, under **Sort**, select a sort criteria. The resource type list is sorted by the selected criteria.
4. To arrange the sorted list in ascending or descending order, click  or .



Note

When you sort the resource type list by tags, the resource types that are not associated with any tag are grouped under the category **none** and are displayed at the bottom of the list.

View tags associated with a resource type

Tags enable you to distinctly identify and categorize the resource types within your infrastructure. You can [associate a tag](#) with multiple resource types or associate multiple tags to a single resource type. This helps you to quickly [search for](#) or [sort](#) the resource types by the associated tags.

A tag can either be an [out-of-the box tag](#) or a user defined tag. Out-of-the-box tags are shipped with DCA and are indicative of the commonly used tags. These tags become available for use immediately after DCA


installation. By default, appropriate out-of-the-box tags are associated with the out-of-the-box resource types. See the [list of out-of-the-box tags](#) to know which tags are shipped with DCA.

On the other hand, user-defined tags are created by a user while [associating a tag](#) with a resource type.

 **Note**

All tags and their associations are retained when you upgrade DCA. However, when you uninstall DCA, all user-defined tags are lost.

To view the tags associated with a resource type, follow these steps:




1. From the [DCA console](#), go to the resource type list page (**Author > Resource Types**).
2. Select a resource type to open the resource type details page.
3. Click **Actions > Manage tags** . The **Associated Tags** page appears that displays a list of all associated tags.

 **Note**


The resource types that are not associated with any tag are automatically associated with a **none** tag. The **none** tag is not visible in the **Associated Tags** page but can be used for [searching](#) and [sorting](#) the resource types by tags.

Associate a tag with a resource type

To associate a tag with a resource type, follow these steps:



1. From the [DCA console](#), go to the resource type list page (**Author > Resource Types**).
2. Select a resource type to open the resource type details page.
3. Click **Actions > Manage tags** . The **Associated Tags** page appears.
4. Click . A list of all available tags are displayed.
5. In the search box, type a tag name or select a tag from the list and then click . The tag is associated with the resource type.

 **Note**

When you start typing a tag name, the search results display a list of all tags matching your input. If no tag matches your input, clicking  creates a new tag and associates it. Please note that, though you can create a tag, it is not possible to edit or delete any tag.

Disassociate a tag from a resource type

To disassociate a tag from a resource type, follow these steps:

1. From the [DCA console](#), go to the resource type list page (**Author > Resource Types**).
2. Select a resource type to open the resource type details page.
3. Click **Actions > Manage tags** . The **Associated Tags** page appears.
4. Click  next to a tag name to disassociate it.



Note

You can only disassociate a tag from a resource type. You cannot delete a tag from DCA even if it is a user-defined tag.

Related topics

[Templates](#)

[Deployments](#)

[Resources](#)

Templates

A template is a prototype for a deployment that defines infrastructure resources, attributes, parameters, and benchmarks. A template consists of multiple resource types. The resources in a template are built in a sequence as defined by the order of resource types in the template. DCA comes with pre-designed templates that are read-only. Each template is associated with benchmarks, which cannot be edited.

You can perform tasks with the templates from the [Author](#) page or from the [Resource Management](#) page:

- [Author](#)
 - [View templates](#)
 - [Search for a template](#)
 - [Sort templates](#)
 - [View tags associated with a template](#)
 - [Associate a tag with a template](#)
 - [Disassociate a tag from a template](#)
- [Resource Management](#)
 - [View templates](#)
 - [Search for a template](#)
 - [Sort templates](#)
 - [View tags associated with a template](#)

- [Associate a tag with a template](#)
- [Disassociate a tag from a template](#)
- [Deploy a template](#)

Author

View templates

To view the available templates, follow these steps:

1. From the [DCA console](#), go to the template list page (**Author > Templates**). All available templates are displayed.
2. Select a template to view its details. The following details about the template are displayed:
 - The list of resource types in the template.
 - The list of policies attached to the template.

Search for a template

You can search for a template by its name or by an associated tag. To search for a template, follow these steps:

1. From the [DCA console](#), go to the template list page (**Author > Templates**).
2. In the search box, select **Name** or **Tag**, and start typing a search keyword. The search results display a list of all templates that match the keyword.




Note



While searching by tags, you can use the keyword **none** to search for templates that are not associated with any tag.

Sort templates

You can sort the template list alphabetically in ascending or descending order by a selected sort criteria. To sort the template list, follow these steps:

1. From the [DCA console](#), go to the template list page (**Author > Templates**), and then click .
2. In the **Filter** area, under **Sort**, select a sort criteria:
 - Name
 - Created Time
 - Tag

The template list is sorted by the selected criteria.

- To arrange the sorted list in ascending or descending order, click  or .



Note

When you sort the template list by tags, the templates that are not associated with any tag are grouped under the category **none** and are displayed at the bottom of the list.

View tags associated with a template

Tags enable you to distinctly identify and categorize the templates within your infrastructure. You can [associate a tag](#) with multiple templates or associate multiple tags to a single template. This helps you to quickly [search for](#) or [sort](#) the templates by the associated tags.

A tag can either be an [out-of-the box tag](#) or a user defined tag. Out-of-the-box tags are shipped with DCA and are indicative of the commonly used tags. These tags become available for use immediately after DCA installation. By default, appropriate out-of-the-box tags are associated with the out-of-the-box templates. See the [list of out-of-the-box tags](#) to know which tags are shipped with DCA.


On the other hand, user-defined tags are created by an user while [associating a tag](#) with a template.



Note

All tags and their associations are retained when you upgrade DCA. However, when you uninstall DCA, all user-defined tags are lost.

To view the tags associated with a template, follow these steps:

- From the [DCA console](#), go to the template list page (**Author > Templates**).
- Select a template to open the template details page.
- Click **Actions > Manage tags** . The **Associated Tags** page appears that displays a list of all associated tags.






Note

The templates that are not associated with any tag are automatically associated with a **none** tag. The **none** tag is not visible in the **Associated Tags** page but can be used for [searching](#) and [sorting](#) the templates by tags.


Associate a tag with a template

To associate a tag with a template, follow these steps:

1. From the [DCA console](#), go to the template list page (**Author > Templates**).
2. Select a template to open the template details page.
3. Click **Actions > Manage tags** . The **Associated Tags** page appears.
4. Click . A list of all available tags are displayed.
5. In the search box, type a tag name or select a tag from the list and then click . The tag is associated with the template.





Note

When you start typing a tag name, the search results display a list of all tags matching your input. If no tag matches your input, clicking  creates a new tag and associates it. Please note that, though you can create a tag, it is not possible to edit or delete any tag.

Disassociate a tag from a template

To disassociate a tag from a template, follow these steps:

1. From the [DCA console](#), go to the template list page (**Author > Templates**).
2. Select a template to open the template details page.
3. Click **Actions > Manage tags** . The **Associated Tags** page appears.
4. Click  next to a tag name to disassociate it.



Note

You can only disassociate a tag from a template. You cannot delete a tag from DCA even if it is a user-defined tag.

Resource Management

View templates

To view the available templates, follow these steps:

1. From the [DCA console](#), go to the template list page (**Resource Management > Templates**). All available templates are displayed.
2. Select a template to view its details. The following details about the template are displayed:
 - The compliance prediction of the template.
 - The list of resource types in the template.
 - The list of policies attached to the template.
 - The most recent deployments implemented using the template.

Search for a template

You can search for a template by its name or by an associated tag. To search for a template, follow these steps:

1. From the [DCA console](#), go to the template list page (**Resource Management > Templates**).
2. In the search box, select **Name** or **Tag**, and start typing a search keyword. The search results display a list of all templates that match the keyword.




Note

While searching by tags, you can use the keyword **none** to search for templates that are not associated with any tag.

Sort templates

You can sort the template list alphabetically in ascending or descending order by a selected sort criteria. To sort the template list, follow these steps:

1. From the [DCA console](#), go to the template list page (**Resource Management > Templates**), and then click .
2. In the **Filter** area, under **Sort**, select a sort criteria:
 - Name
 - Created Time
 - Tag

The template list is sorted by the selected criteria.

3. To arrange the sorted list in ascending or descending order, click  or .



Note

When you sort the template list by tags, the templates that are not associated with any tag are grouped under the category **none** and are displayed at the bottom of the list.

View tags associated with a template

Tags enable you to distinctly identify and categorize the templates within your infrastructure. You can [associate a tag](#) with multiple templates or associate multiple tags to a single template. This helps you to quickly [search for](#) or [sort](#) the templates by the associated tags.

A tag can either be an out-of-the box tag or a user defined tag. Out-of-the-box tags are shipped with DCA and are indicative of the commonly used tags. These tags become available for use immediately after DCA installation. By default, appropriate out-of-the-box tags are associated with the out-of-the-box templates. See the [list of out-of-the-box tags](#) to know which tags are shipped with DCA.


On the other hand, user-defined tags are created by a user while [associating a tag](#) with a template.



Note

All tags and their associations are retained when you upgrade DCA. However, when you uninstall DCA, all user-defined tags are lost.

To view the tags associated with a template, follow these steps:

1. From the [DCA console](#), go to the template list page (**Resource Management > Templates**).
2. Select a template to open the template details page.
3. Click **Actions > Manage tags** . The **Associated Tags** page appears that displays a list of all associated tags.






Note


The templates that are not associated with any tag are automatically associated with a **none** tag. The **none** tag is not visible in the **Associated Tags** page but can be used for [searching](#) and [sorting](#) the templates by tags.

Associate a tag with a template

To associate a tag with a template, follow these steps:



1. From the [DCA console](#), go to the template list page (**Resource Management > Templates**).
2. Select a template to open the template details page.
3. Click **Actions > Manage tags** . The **Associated Tags** page appears.
4. Click . A list of all available tags are displayed.
5. In the search box, type a tag name or select a tag from the list and then click . The tag is associated with the template.

Note

When you start typing a tag name, the search results display a list of all tags matching your input. If no tag matches your input, clicking  creates a new tag and associates it. Please note that, though you can create a tag, it is not possible to edit or delete any tag.

Disassociate a tag from a template

To disassociate a tag from a template, follow these steps:

1. From the [DCA console](#), go to the template list page (**Resource Management > Templates**).
2. Select a template to open the template details page.
3. Click **Actions > Manage tags** . The **Associated Tags** page appears.
4. Click  next to a tag name to disassociate it.

Note

You can only disassociate a tag from a template. You cannot delete a tag from DCA even if it is a user-defined tag.


Deploy a template


Before you deploy a template, make sure that you have performed the following tasks:

1. [Import resources](#)
2. [Associate a credential with the target server](#)

3. [Verify target system requirements](#)
4. [Copy database of software binaries](#)

To deploy a template, follow these steps:

1. From the [DCA console](#), go to the template list page (**Resource Management > Templates**). All available templates are displayed.
2. Click a template. The details of the template are displayed.
3. Click **Deploy**  and specify the following:

Field	Description
Name	Type a name to identify the deployment.
Description	Provide a brief description about the deployment.
Resource Types	<ol style="list-style-type: none"> a. Click  next to a resource type. b. Enter the deployment parameters. c. Click Optional to specify the optional parameters. d. Click OK. e. Repeat the above steps for every resource type in the template.



Note

- For the deployment to be successful, the target server on which the template is to be deployed must be [associated with a credential](#).
- For Docker host compliance, the target server must be an RHEL server with Docker installed on it. DCA supports Docker versions 1.6, 1.7, 1.8, and 1.11. Note that the latest Docker versions may not be compatible with all RHEL versions.
- While you deploy a Docker image, ensure that you enter the correct values of the [supported Docker images](#) in the **Docker Image ID** and **Docker Image Tag** fields.

4. Click **Deploy**.

Related topics

[Resource types](#)

[Policies](#)

[Deployments](#)

[Resources](#)

Controls

A control is a reusable, shared function or test used in a [benchmark](#) to create a rule, and it is associated with benchmark requirements through rules. Controls define what to measure, how to evaluate compliance, and how to remediate non-compliance. The same control can be used multiple times in the same benchmark. For example, a generic control that checks the status of a service can be used for multiple requirements within a benchmark to check whether many different services are enabled or disabled. In another example, one control may work across multiple RHEL versions, but you may want to use a different value for evaluation for RHEL 6 than used for RHEL 7.

A control can be broken down into a script that is associated with a rule. When you scan a resource, scripts are run in the background and based on the results of the scripts, scan results are determined. Controls are associated with rules and this association happens out-of-the-box in this version of DCA.

Controls are of the following types:

- **Evaluation:** Used for evaluating the compliance of a resource
- **Evaluation and Remediation:** Used for evaluating the compliance of a resource and for the remediation of a non-compliant resource.

To learn more about the control scripts, see [Control scripts and script parameters](#).

Using DCA, you can perform the following tasks with the controls:

- [View controls](#)
- [Search for a control](#)
- [Sort controls](#)
- [Add a new control](#)
- [Edit a control](#)
- [Delete a custom control](#)

View controls

To view the available controls, follow these steps:

1. From the [DCA console](#), go to the control list page (**Author > Controls**). The list of available controls is displayed.
2. Select a control to view its details and the script parameters used.


Search for a control

You can search for a control by its name. To search for a control, follow these steps:

1. From the [DCA console](#), go to the control list page (**Author > Controls**).
2. In the search box, start typing a search keyword. The search results display a list of all controls that match the keyword.

Sort controls

You can sort the control list alphabetically in ascending or descending order by a selected sort criteria. To sort the control list, follow these steps:

1. From the [DCA console](#), go to the control list page (**Author > Controls**), and then click .
2. In the **Filter** area, under **Sort**, select a sort criteria:
 - Modified Date
 - Name

The control list is sorted by the selected criteria.

3. To arrange the sorted list in ascending or descending order, click or .

Add a new control

To add a new control, follow these steps:

1. From the [DCA console](#), go to the control list page (**Author > Controls**), and then click .
2. On the **Add Control** page, specify a name, description, category, and the type of control to create.
3. Click next to **Applicable Scope**.
4. In the **Applicable Scope** panel, specify the range of targets to which this control applies. Click the right arrow next to a scope to select specific subsopes for the control.
5. Close the **Applicable scope** panel to go back to the **Add Control** page.
6. In the Scripts area, click to define the script content and parameters.
Ensure that the reason for non-compliance is printed to the `stdout` inside the script. If there is nothing printed to the `stdout`, the compliance scan status is reported as **Failed** and not as **Not Compliant**.
7. Click **OK** to go back to the **Add Control** page and click **Save**.

Edit a control

You can only edit the [user-created](#) controls. The out-of-the-box controls installed with DCA cannot be edited. To edit a control, follow these steps:

1. From the [DCA console](#), go to the control list page (**Author > Controls**).
2. Click the custom control that you want to change.
3. Click **Actions > Edit**.
4. On the **Edit Script** page, change the required details then click **Save**.

Delete a custom control

You can only delete [user-created](#) controls. The out-of-the-box controls installed with DCA cannot be deleted. To delete a control, follow these steps:

1. From the [DCA console](#), go to the control list page (**Author > Controls**).

2. Click the control that you want to delete.
3. Click **Actions > Edit**.
4. On the **Edit Benchmark** page, click **Remove**.

Related topics

[Control scripts and script parameters](#)

[Benchmarks](#)

[Policies](#)

Control scripts and script parameters

A [benchmark](#) is a collection of requirement rules that evaluate and remediate non-compliant [deployments](#). The rules of a requirement are made up of a control and the scope to which it applies. In turn, each DCA control is governed by a Python script and its parameters. Together they define how and what to measure during compliance scans and remediation.

DCA controls can use one of the following types of scripts:

- **Evaluation script:** Uses script parameters that evaluate the compliance of a deployment.
- **Evaluation and remediation script:** Uses script parameters that evaluate compliance, then remediate any non-compliant deployments.

Example - Define a script for a new control

Let us assume you want to update the existing **Company Internal Regulations** benchmark with a new requirement to ensure users have permissions to their Public HTML files. To do this, create a new control and attach it to the rule of a requirement in the **Company Internal Regulations** benchmark. You can then use the benchmark to run a compliance scan on a target/server. DCA uses the benchmark control to expose any users without the required permissions and give them missing permissions to the files in the the **public_html** folder.

Overview of the control hierarchy

The new **Ensure all users have access to /home/<username>/public_html/*** control will have the following details:

Benchmark: Company Internal Regulations

Requirement: All Users Have Access to Public HTML files

Rule: Check File and Directory Permissions

Control: Ensure all users have access to /home/<username>/public_html/*

Control Script: Python content for evaluation and remediation scripts

Script Parameters: Path, File Permission and Directory Permission

Create the new control

To create the **Ensure all users have access to `/home/<username>/public_html/*`** control:

1. From the [DCA console](#), go to **Author > Controls**, and click the Add icon on the top right side of the page.
2. On the **Add Control** page, enter **Ensure all users have access to `/home/<username>/public_html/*public_html/*`** in the **Name** field.
3. Add an alternative description for the control.
4. In the **Category** field, select **Platform Custom Script**.
5. In the **Type** field, select **Evaluation and Remediation**.
6. Click next to the **Applicable Scope** section and ensure only the **Unix > Linux > RHEL 7 Compatibles** option is enabled.



Note

The applicable scope of the control must be compatible with the applicable scope of the benchmark rule.

7. In the **Scripts** section, add the following content and parameters for the Evaluation script: Ensure that the reason for non compliance is printed to the `stdout` inside the script. If there is nothing printed to the `stdout`, the compliance scan status is reported as "Failed" and not as "Not Compliant".

Evaluation Script Content

```
import os, glob, sys
paths = glob.glob(sys.argv[1])
for item in paths:
    actual_value = oct(os.stat(item).st_mode & 0777)
    expected_value = sys.argv[2] if os.path.isfile(item) else sys.argv[3]
    if actual_value != expected_value:
        nbytes = sys.stdout.write("Non compliant")
        sys.exit(1)
sys.exit(0)
```

Evaluation Script Parameters

Name: Path
 Data Type: String
 Value: `/home/*/public_html/*`

Name: File permission


```
Data Type: String
Value: 0664

Name: Directory permission
Data Type: String
Value: 0755
```

- Click **OK** on the **Add Script** page, then add the following content and parameters for the Remediation script:

```
Remediation Script Content

import os, glob, stat, sys
paths = glob.glob(sys.argv[1])
for item in paths:
    if os.path.isfile(item):
        os.chmod(item, int(sys.argv[2], 8))
    if os.path.isdir(item):
        os.chmod(item, int(sys.argv[3], 8))
```

```
Remediation Script Parameters

Name: Path
Data Type: String
Value: /home/*/public_html/*

Name: File permission
Data Type: String
Value: 0664

Name: Directory permission
Data Type: String
Value: 0755
```

- From the [DCA console](#), go to **Author > Benchmarks**, and choose your **Company Internal Regulations** benchmark to attach the new control.
- Click **Action > Edit** to display the **Edit Benchmark** page.
- Click next to the **Requirements** section and create the **All Users Have Access to Public HTML files** requirement.
- Specify a description and a severity for the requirement, and then click **Done**.
- Click next to the **Rules** section and enter the **Ensure all users have access to /home/<username>/public_html/*** in the **Name** field.
- Click the Edit icon next to the **Control** section. This displays the search pane where you can search for an existing control to attach to the benchmark rule.
- In the Search box, type **Ensure all users have access to /home/<username>/public_html/***.
- Select the control from the list of results, then click **Add**.

17. Ensure that your control uses the applicable scope compatible with the applicable scope of the benchmark rule and click **Save** on the requirement page.
18. Click **OK**, and then click **Save** on the **Edit Benchmark** page.

Related topics

[Controls](#)

Benchmarks

A benchmark is a system representation of a corporate-regulatory or a government policy. In DCA, each benchmark has a hierarchy of requirements, with each requirement comprising one or more rules. You can create your own benchmarks or use the out-of-the box benchmarks, which become available after installing DCA. The following types of benchmarks are available in DCA:

- Best practices
- Regulatory

Using DCA, you can perform the following tasks with the benchmarks:

- [View benchmarks](#)
- [Search for a benchmark](#)
- [Sort benchmarks](#)
- [Add a new benchmark](#)
- [Edit a benchmark](#)
- [Clone an existing benchmark](#)
- [Delete a benchmark](#)
- [Run a compliance scan for benchmark](#)
- [View benchmark scan results](#)

View benchmarks

To view the available benchmarks, follow these steps:

1. From the [DCA console](#), go to the benchmark list page (**Author > Benchmarks**). A list of all available benchmarks is displayed.
2. Select a benchmark to view its details. The following details are displayed:
 - Name of the benchmark
 - Benchmark type (can be either Best practices or Regulatory)
 - Description of the benchmark
 - All the requirements that this benchmark consists of. Requirements are defined out-of-the-box in DCA. Click any requirement to view the rules it comprises.


Search for a benchmark

You can search for a benchmark by its name. To search for a benchmark, follow these steps:

1. From the [DCA console](#), go to the benchmark list page (**Author > Benchmarks**).
2. In the search box, start typing a search keyword. The search results display a list of all benchmarks that match the keyword.

Sort benchmarks

You can sort the benchmark list alphabetically in ascending or descending order by a selected sort criteria. To sort the benchmark list, follow these steps:



1. From the [DCA console](#), go to the benchmark list page (**Author > Benchmarks**), and then click .
2. In the **Filter** area, under **Sort**, select a sort criteria:
 - Benchmark type
 - Name

The benchmark list is sorted by the selected criteria.

3. To arrange the sorted list in ascending or descending order, click or .

Add a new benchmark

To add a new benchmark, follow these steps:

1. From the [DCA console](#), go to the benchmark list page (**Author > Benchmarks**), and then click .
2. On the **Add Benchmark** page, specify a name, description, and select the type of benchmark that you want to create.
3. Click **Save** to save the benchmark details.
4. Click  next to **Requirements**.
5. Specify a name, description, and severity for the first requirement, then click **Save**.
6. Add the required subrequirements and rules, and then click **Done**.
7. Go back to the **Add Benchmark** page, and then click **Save** to save your changes.

Edit a benchmark

You can change a benchmark's details, requirements and rules. You cannot change the benchmark type or reorder its requirements and rules. To edit a benchmark, follow these steps:

1. From the [DCA console](#), go to the benchmark list page (**Author > Benchmarks**).
2. Select a benchmark to open the benchmark details page.
3. Click **Actions > Edit**.

4. On the **Edit Benchmark** page, change the required details, and then click **Save**. If you make changes to requirements, DCA displays a yellow banner showing the number of unsaved changes. Click **OK** on the requirement page and then go back to the **Edit Benchmark** page to save your changes.

Clone an existing benchmark

Clone an existing benchmark to make a copy of that benchmark and its entire configuration. By default, clones use the following naming convention **Copy <clone number> of <name of the original benchmark>**. To clone a benchmark, follow these steps:

1. From the [DCA console](#), go to the benchmark list page (**Author > Benchmarks**).
2. Select the benchmark that you want to clone.
3. Click **Actions > Clone**. This displays the **Clone Benchmark** page.
4. Edit the benchmark details and/or requirements to customize your version of the cloned benchmark.
5. Click **Save** to save your changes and return to the benchmark summary page.

Delete a benchmark

To delete a benchmark

1. From the [DCA console](#), go to the benchmark list page (**Author > Benchmarks**).
2. Select the benchmark that you want to delete.
3. Click **Actions > Edit**.
4. On the **Edit Benchmark** page, click **Remove**.

Run a compliance scan for benchmark


To run a compliance scan on a resource against the selected benchmark, follow these steps:

1. From the [DCA console](#), go to the benchmark list page (**Author > Benchmarks**).
2. Select the benchmark against which you want to run a compliance scan.
 - a. Click the **Actions > Ad Hoc Compliance Scan**. This displays a list of all the resources.
 - b. Select a resource and click .

This option becomes available only when you select a resource to scan. You can also search the available resources list using the search box. The benchmark details page displays a banner below the benchmark name indicating the scan status. The banner displays one of the following statuses:

Status	Description
Completed	The job has executed successfully in the scheduler.
Running	The job has started executing.

Failed	The job has failed to execute due to errors in the scheduler.
Not Started	The job is created, but not started.
Scheduled	The job is scheduled to run based on a policy.
No maintenance window found	A job cannot be scheduled based on the maintenance window associated with the resource group for the resource being scanned.

- c. You can trigger multiple compliance scans. Select any other resource for scan and click  again. The banner now displays the status of the most recent resource being scanned. Repeat for as many resources you would like to scan for compliance.
3. Click **Show Details** on the banner to view the status of compliance scan. This displays the status of the compliance scan job in the [Activity](#) page.

View benchmark scan results

To view compliance scan results, follow these steps:

1. [Run a benchmark scan](#) on a resource from the benchmark details page.
2. Click **Show Details** on the banner to view the status of the compliance scan. This displays the status of compliance scan job in the [Activity](#) page. The following fields are displayed:
 - Start Date: Lists the date on which the compliance scan was run
 - End Date: Lists the date on which the compliance scan was completed
 - Benchmark: Lists the benchmark against which the scan was run
 - Job Type: Lists the job type as Ad Hoc Scan Compliance.
 - Target: Lists the resource.
 - Result indicating the status of the scan.

Related topics

[Benchmark requirements and subrequirements](#)

[Benchmark rules](#)

[Policies](#)

[Run compliance scan for a resource](#)

[Run a remediation job for a resource](#)

[Dashboard](#)



Benchmark requirements and subrequirements

When editing a benchmark, you can also perform the following tasks:

- [Add a new \(sub\)requirement](#)
- [Edit a \(sub\)requirement](#)
- [Remove a \(sub\)requirement](#)

Add a new (sub)requirement

To add a new requirement or subrequirement, follow these steps:

1. In the [DCA console](#), go to **Author > Benchmarks**.
2. Click the benchmark for which you want to add a new requirement or subrequirement.
3. Click **Actions > Edit** to display the **Edit Benchmark** page.
4. Click the Add  icon next to **Requirements**. To add a subrequirement, select the relevant requirement, and click , next to the **Subrequirements** section.
5. Add a name, description and severity, and then click **Done**.
6. Go back to the **Edit Benchmark** page to save your pending changes.

Edit a (sub)requirement

To edit a requirement or subrequirement, follow these steps:

1. In the [DCA console](#), go to **Author > Benchmarks**, and click the benchmark for which you want to edit an existing requirement or subrequirement.
2. Click **Actions > Edit** to display the Edit Benchmark page.
3. Click the requirement or drill down to the subrequirement you want to edit, and then click the Edit icon.
4. Add a name, description and severity, and then click **Done**.
5. Go back to the **Edit Benchmark** page to save your pending changes.

Note

You cannot reorder the requirements of a benchmark.

Remove a (sub)requirement

To remove a requirement or subrequirement, follow these steps:

1. In the [DCA console](#), go to **Author > Benchmarks**, and click the benchmark whose requirement or subrequirement you want to delete.
2. Click **Actions > Edit** to display the **Edit Benchmark** page.

3. Click the requirement or the subrequirement you want to delete, and then click **Remove**.
4. Select **OK**.

Go back to the **Edit Benchmark** page to save your pending changes.

Related topics

[Benchmarks](#)

[Dashboard](#)

Benchmark rules

When editing a benchmark, you can perform the following tasks:

- [Add a new rule](#)
- [Edit a rule](#)
- [Remove a rule](#)

Add a new rule

1. In the [DCA console](#), go to **Author > Benchmarks**.
2. Click the benchmark with which you want to associate the new rule.
3. Click **Actions > Edit**.
4. On the **Edit Benchmark** page, click the requirement or drill down to the subrequirement for which you want to add the rule.
5. In the **Rules** area, click the Add icon.
6. Add any required rule details and evaluation input parameters then click **Done**.
7. Go back to the **Edit Benchmark** page to save your pending changes.

Edit a rule

You cannot change the rule type, scope and control. Rules cannot be reordered either.

1. In the [DCA console](#), go to **Author > Benchmarks**, and click the benchmark whose rules you want to edit.
2. Click **Actions > Edit**.
3. Click the requirement that the rule is associated with.
4. Click the rule.
5. Edit the rule name or evaluation input parameters, as required.
6. Click **OK** then go back to the **Edit Benchmark** page to save your pending changes.

Remove a rule

1. In the [DCA console](#), go to **Author > Benchmarks**, and click the benchmark whose rule you want to delete.
2. Click **Actions > Edit**.
3. On the **Edit Benchmark** page, click the requirement that the rule is associated with. If you want to delete a rule associated with a subrequirement, select the relevant subrequirement instead.
4. In the **Rules** area, select the rule then click **Remove**.
5. Select **OK**.
6. Go back to the **Edit Benchmark** page to save your pending changes.

Related topics

[Benchmarks](#)

[Benchmark requirements and subrequirements](#)

Policies

A policy defines the set of compliance rules ([benchmarks](#)) against which the compliance checks are run on [resources](#), frequency of the checks, and the action to be performed when a non-compliance is detected. A policy comprises benchmarks, the measurement service level objective (SLO), and the remediation SLO. SLO is the time measurement, which defines when a compliance job or remediation job has to be performed at a given time interval. The SLO can be set by month, week, and day. For example, if a measurement SLO is set as a month, DCA runs a compliance scan at least once in a month.

DCA comes with the following out-of-the box policies:

- Center for Internet Security (CIS)
- Payment Card Industry Data Security Standard (PCI DSS)
- Federal Information Security Management Act (FISMA) Special Publication 800-53 (SP800-53)
- Health Insurance Portability and Accountability Act of 1996 (HIPAA)

The following table shows the supported policies for each [resource type](#):

Resource type	CIS	PCI DSS	FISMA SP800-53	FISMA SP800-66
Microsoft Windows Server 2008	✓	✓	✓	✓
Microsoft Windows Server 2008 R2	✓	✓	✓	✓
Microsoft Windows Server 2012	✓	✓	✓	✓
Microsoft Windows Server 2012 R2	✓	✓	✓	✓

Microsoft Windows Server 2016	✓	✗	✗	✗
Redhat Enterprise Linux Server 5	✓	✓	✓	✓
Redhat Enterprise Linux Server 6	✓	✓	✓	✓
Redhat Enterprise Linux Server 7	✓	✓	✓	✓
SuSE Enterprise Linux Server 11	✓	✓	✓	✓
SuSE Enterprise Linux Server 12	✗	✓	✓	✓
Ubuntu Server 14.04	✗	✓	✓	✓
Ubuntu Server 16.04	✗	✓	✓	✓
Oracle Solaris 11	✓	✓	✓	✓
Oracle Solaris 11 SPARC	✓	✓	✓	✓
Oracle 10g	✓	✗	✗	✗
Oracle 11g	✓	✗	✗	✗
Oracle 12c	✓	✗	✗	✗
IBM DB2 10.5	✓	✗	✗	✗
IBM DB2 11	✓	✗	✗	✗
Docker 1.11	✓	✓	✓	✓

Using DCA, you can perform the following tasks with the policies:

- [View policies](#)
- [Search for a policy](#)
- [Sort policies](#)
- [Add a new policy](#)
- [Scan a resource attached to a policy](#)
- [Remediate a resource attached to a policy](#)
- [Edit a policy](#)
- [Associate a benchmark to an existing policy](#)
- [Disassociate a benchmark from an existing policy](#)
- [Delete a policy](#)

View policies

To view the available policies, follow these steps:

1. From the [DCA console](#), go to the policy list page (**Author > Policies**). A list of all policies is displayed.
2. Select a policy to view its details. The following details are displayed:
 - Name of the policy
 - Description of the policy
 - Measurement SLO
 - Remediation SLO
 - Benchmarks associated with the policy
 - Non compliance action


Search for a policy

You can search for a policy by its name. To search for a policy, follow these steps:





1. From the [DCA console](#), go to the policy list page (**Author > Policies**).
2. In the search box, start typing a search keyword. The search results display a list of all policies that match the keyword.

Sort policies

You can sort the policy list alphabetically in ascending or descending order by name. To sort the policy list, follow these steps:

1. From the [DCA console](#), go to the policy list page (**Author > Policies**), and then click .
2. In the **Filter** area, under **Sort**, click or to arrange the sorted list in ascending or descending order.

Add a new policy

1. From the [DCA console](#), go to the policy list page (**Author > Policies**), and then click .
2. On the **Add Policy** page, specify a name, description, measurement SLO, and remediation SLO.
3. Click **Done** to create the policy and return to policy list page. A new policy is created with no benchmark associated with it.
4. Select the policy. The policy details page is displayed.
5. Click  in the **Benchmarks** area and then click .
6. Select a benchmark from the list and then click .
 - The list displays only the benchmarks that are not associated with any policy.
 - You can also use the search option to find a specific benchmark.
7. Associate as many benchmarks as required and then click  to return to the associated benchmarks page.
8. Click in the **Non Compliance Actions** area to set action when the policy-based compliance scan results in non-compliant resources.

9. Click in the **Non Compliance Actions** area and select one the following options:
- **Remediate in next Maintenance Window:** Select this option to remediate the non-compliant resources in the next maintenance window.
 - **Remediate immediately:** Select this option to remediate the non-compliant resources immediately, in the same maintenance window.

 The remediation action does not work for this release of DCA.

You can set only one non compliance action in a policy.


10. Click **OK** to return to Non Compliance Actions page.
11. Click to return to the policy details page.

 **Note:**

- For information about attaching a policy to the resource groups, see [Attach a policy to the resource group](#).
- For information on creating a schedule for compliance scan and remediation, see [Set a maintenance schedule to the resource group](#).

Scan a resource attached to a policy

To perform an ad hoc compliance scan on a resource attached to a policy, follow these steps:

1. From the [DCA console](#), go to the policy list page (**Author > Policies**).
2. Select a policy.
3. Click **Actions > Ad Hoc Compliance Scan**. A list of available resources is displayed.
4. Select a resource and then click . This option becomes available only when you select a resource. You can also search for a resource using the search box. The policy details page displays a banner below the policy name indicating one of the following scan status:

Status	Description
Completed	The job has executed successfully in the scheduler.
Running	The job has started executing.
Failed	The job has failed to execute due to errors in the scheduler.
Not Started	The job is created, but not started.
Scheduled	The job is scheduled to run based on a policy.

No maintenance window found	A job cannot be scheduled based on the maintenance window associated with the resource group for the resource being scanned.
-----------------------------	--

- Click **Show Details** on the banner after the compliance scan is completed. The compliance scan results is displayed in the [Activity](#) page. The following fields are displayed:
 - **Start Date:** Lists the date on which the scan job was run
 - **End Date:** Lists the date on which the scan job was completed
 - **Policy:** Lists the policy against which the scan job was run
 - **Job Type:** Lists the job type as Ad Hoc Compliance Scan
 - **Target:** Lists the resource.

Remediate a resource attached to a policy

To run a remediation job on a resource after you run a [compliance scan on a resource attached to a policy](#), follow these steps:

- Click **Show Details** on the banner after the compliance scan is completed. The compliance scan result page is displayed in the [Activity](#) page.
- Click **Actions > Ad Hoc Compliance Remediate**. The policy details page displays a banner indicating the remediation status. The banner displays one of the following status:

Status	Description
Completed	The job has executed successfully in the scheduler.
Running	The job has started executing.
Failed	The job has failed to execute due to errors in the scheduler.
Not Started	The job is created, but not started.
Scheduled	The job is scheduled to run based on a policy.
No maintenance window found	A job cannot be scheduled based on the maintenance window associated with the resource group for the resource being scanned.

- Click **Show Details** on the banner after the remediation job is completed. The remediation job result is displayed in the [Activity](#) page. The following fields are displayed:
 - **Start Date:** Lists the date on which the remediation job was run
 - **End Date:** Lists the date on which the remediation job was completed
 - **Policy:** Lists the policy against which the remediation job was run
 - **Job Type:** Lists the job type as Ad Hoc Compliance Remediate
 - **Target:** Lists the resource.





Edit a policy

You can change the name, description, measurement SLO, and remediation SLO of a policy. To edit a policy, follow these steps:

1. From the [DCA console](#), go to the policy list page (**Author > Policies**), and then select a policy.
2. Click **Actions > Edit**.
3. On the **Edit Policy** page, change the required details, and then click **Save**.



Associate a benchmark to an existing policy

To associate a benchmark to an existing policy, follow these steps:

1. From the [DCA console](#), go to the policy list page (**Author > Policies**), and then select a policy.
2. On the policy details page, click  in the Benchmarks area.
3. Click .
4. Select a benchmark from the list and then click .
 - The list displays only the benchmarks that are not associated with any policy.
 - You can also use the search option to find a specific benchmark.
5. Add as many benchmarks as required and then click  to return to the policy details page.

Disassociate a benchmark from an existing policy

To disassociate a benchmark from an existing policy, follow these steps:

1. From the [DCA console](#), go to the policy list page (**Author > Policies**), and then select a policy.
2. On the policy details page, click  in the Benchmarks area.
3. Click  next to the benchmark that you want to disassociate.

Delete a policy

1. From the [DCA console](#), go to the policy list page (**Author > Policies**), and then select a policy.
2. Click **Actions > Edit**.
3. On the **Edit Policy** page, click **Remove**. Confirm at the prompt to delete the policy.
4. Click **Save**.

Related topics

[Benchmarks](#)

[Templates](#)

Resources

Resource groups

[Run compliance scan for a resource](#)

[Run a remediation job for a resource](#)

Deployments

A deployment consists of all the processes involved in getting a new software or hardware up and running properly in the infrastructure. It includes processes such as installing, configuring, testing, and making changes, if required.

Using DCA, you can perform the following tasks with the deployments:

- [View deployments](#)
- [Search for a deployment](#)
- [Filter deployments](#)
- [Sort deployments](#)
- [View tags associated with a deployment](#)
- [Associate a tag with a deployment](#)
- [Disassociate a tag from a deployment](#)
- [Change the template associated with a deployment](#)

View deployments

To view the available deployments, follow these steps:

1. From the [DCA console](#), go to the deployment list page (**Resource Management > Deployments**). All the deployments are displayed.
2. Select a deployment to view its details. The following details about the deployment are displayed:
 - Name of the template
 - The status of the deployment

Search for a deployment

You can search for a deployment by its name or by an associated tag. To search for a deployment, follow these steps:


1. From the [DCA console](#), go to the deployment list page (**Resource Management > Deployments**).
2. In the search box, select **Name** or **Tag**, and start typing a search keyword. The search results display a list of all deployments that match the keyword.

**Note**

While searching by tags, you can use the keyword **none** to search for deployments that are not associated with any tag.


Filter deployments

You can filter the deployment list to view only the deployments that match the filter criteria. To filter the deployment list, follow these steps:

1. From the [DCA console](#), go to the deployment list page (**Resource Management > Deployments**), and then click .
2. In the **Filter** area, under **Status**, select a filter criteria:
 - All
 - Success
 - Running
 - Failed


Only the deployments that match the selected filter criteria are displayed.

**Note**



You can see the labels of all applied filters below the search box. To remove a filter, click  on the filter label.

Sort deployments

You can sort the deployment list alphabetically in ascending or descending order by a selected sort criteria. To sort the deployment list, follow these steps:

1. From the [DCA console](#), go to the deployment list page (**Resource Management > Deployments**), and then click .
2. In the **Filter** area, under **Sort**, select a sort criteria:
 - Deployment Name
 - Template Name
 - Start Time
 - Compliance Status
 - Tag

The deployment list is sorted by the selected criteria.

3. To arrange the sorted list in ascending or descending order, click  or .



Note

When you sort the deployment list by tags, the deployments that are not associated with any tag are grouped under the category **none** and are displayed at the bottom of the list.

View tags associated with a deployment

Tags enable you to distinctly identify and categorize the deployments within your infrastructure. You can [associate a tag](#) with multiple deployments or associate multiple tags to a single deployment. This helps you to quickly [search for](#) or [sort](#) the deployments by the associated tags.

A tag can either be an [out-of-the box tag](#) or a user defined tag. Out-of-the-box tags are shipped with DCA and are indicative of the commonly used tags. These tags become available for use immediately after DCA installation. See the [list of out-of-the-box tags](#) to know which tags are shipped with DCA.


On the other hand, user-defined tags are created by a user while [associating a tag](#) with a deployment.



Note

All tags and their associations are retained when you upgrade DCA. However, when you uninstall DCA, all user-defined tags are lost.

To view the tags associated with a deployment, follow these steps:

1. From the [DCA console](#), go to the deployment list page (**Resource Management > Deployments**).
2. Select a deployment to open the deployment details page.
3. Click **Actions > Manage tags** . The **Associated Tags** page appears that displays a list of all associated tags.






Note


The deployments that are not associated with any tag are automatically associated with a **none** tag. The **none** tag is not visible in the **Associated Tags** page but can be used for [searching](#) and [sorting](#) the deployments by tags.

Associate a tag with a deployment

To associate a tag with a deployment, follow these steps:



1. From the [DCA console](#), go to the deployment list page (**Resource Management > Deployments**).
2. Select a deployment to open the deployment details page.
3. Click **Actions > Manage tags** . The **Associated Tags** page appears.
4. Click . A list of all available tags are displayed.
5. In the search box, type a tag name or select a tag from the list and then click . The tag is associated with the deployment.

Note

When you start typing a tag name, the search results display a list of all tags matching your input. If no tag matches your input, clicking  creates a new tag and associates it. Please note that, though you can create a tag, it is not possible to edit or delete any tag.

Disassociate a tag from a deployment

To disassociate a tag from a deployment, follow these steps:

1. From the [DCA console](#), go to the deployment list page (**Resource Management > Deployments**).
2. Select a deployment to open the deployment details page.
3. Click **Actions > Manage tags** . The **Associated Tags** page appears.
4. Click  next to a tag name to disassociate it.

Note

You can only disassociate a tag from a deployment. You cannot delete a tag from DCA even if it is a user-defined tag.

Change the template associated with a deployment

You can change the template associated with an existing deployment and redeploy it using a new template. This enables you to patch the deployment from the existing template to the target template. The target

template must be compatible with the existing template to enable appropriate mapping of the related resource types. A template is compatible when the following conditions are satisfied:

- The target template is a higher version of the existing template
- The number of resource types in the target template are the same as that of the existing template
- The sequence of resource types in the target template is the same as that of the existing template

DCA supports patching for the following templates:

Existing template	Target template
CIS Compliant Oracle 11.2.0.4.0 on existing RHEL 6.4	CIS Compliant Oracle 11.2.0.4.0 with patch Id 24006111 on existing RHEL 6.4
CIS Compliant Oracle 12.1.0.2.0 on existing RHEL 7.1, with single database	CIS Compliant Oracle 12.1.0.2 with latest patch, on existing RHEL 7.1
MSSQL 2014 on existing Windows 2012R2	MSSQL 2014 with latest patch on existing Windows 2012R2

To change the template associated with a deployment, follow these steps:

1. From the [DCA console](#), go to the deployment list page (**Resource Management > Deployments**).
2. Click a deployment to open the deployment details page.
3. Click **Change Template**. The **Deploy** page appears.
4. From the **Target Template** list, select a compatible template. The resource types associated with the target template are automatically mapped to the existing template.
5. Click **Deploy**. The resource is redeployed with the new template.

Related topics

[Templates](#)

[Target system requirements](#)

[Copy database software binaries](#)

[Resources](#)

[Compliance](#)

[Credentials](#)

Resources

A resource is a compute or a software resource that can be managed by DCA. A **discovered resource** is one that is imported by DCA but is not attached to any template. A discovered resource can be associated with a

template to convert it into a managed resource. A **managed resource** is one that is deployed using an infrastructure template, or a discovered resource that is associated with a template. A **contained resource** is an application resource or a child resource that is associated with a resource.

Using DCA, you can perform the following tasks with the resources:

- [Import resources](#)
- [View resources](#)
- [Search for a resource](#)
- [Filter resources](#)
- [Sort resources](#)
- [Discover contained resources](#)
- [Associate a template with a resource](#)
- [Associate a credential with a resource](#)
- [Run compliance scan for a resource](#)
- [Run a remediation job for a resource](#)
- [View compliance scan or remediation job status](#)
- [View compliance scan results](#)
- [Power off virtual machines](#)

Import resources

Before you can deploy a template, you must import the base resources (servers on which the templates will be deployed) into DCA from your infrastructure. You can import resources using one of the following methods:

- [Import resources from SA](#)
- [Import resources using DCA console](#)
- [Import resources using import script](#)

CSV file for resource import

For importing resources either using the [DCA console](#) or using the script, you must create a CSV file containing the following information:

- In the header row, enter the UCMDB CI type attributes of the resources separated by commas. You can add any number of CI type attributes from UCMDB.
- In the subsequent rows, enter the corresponding values of the resources separated by commas. You can skip a value by adding two consecutive commas between the values immediately preceding and following the skipped value.



Note

- Commas are not allowed within the values of resources as they are used to separate two distinct values.

- If you want to map credentials to the imported resources, note down the credential IDs from the Credentials page (**Settings > Credentials**). Enter the credential IDs under the `credential_id` attribute in the CSV file.
- You can skip the credential mapping for all resources, by removing the `credential_id` attribute from the header row. Alternatively, you can choose to skip credential mapping for select resources by skipping the value of the credential ID for the corresponding resource.

Sample CSV file

```

type,name,host_server,type,os_family,extended_os_family,display_label,os_description,description,credential_id
node,resource1.domain.com,MANAGED,unix,LINUX,resource1.domain.com,Red Hat Enterprise Linux Server 6 X86_64,ItsLinuxOS,89baa815-cf60-40de-a5d6-b7a6fa9206e6
node,resource2.domain.com,MANAGED,unix,LINUX,resource2.domain.com,Red Hat Enterprise Linux Server 7 X86_64,ItsLinuxOS,89baa815-cf60-40de-a5d6-b7a6fa9206e6
node,resource3.domain.com,,UNPROVISIONED,,resource3.domain.com,,89baa815-cf60-40de-a5d6-b7a6fa9206e6
node,resource4.domain.com,MANAGED,windows,NT,resource4.domain.com,Windows Server 2008 R2 x64,ItsWindowsOS,693414a8-cece-4b1b-b188-56a82e26a3b6
node,resource5.domain.com,MANAGED,windows,NT,resource5.domain.com,Windows Server 2012 x64,ItsWindowsOS,693414a8-cece-4b1b-b188-56a82e26a3b6
node,resource6.domain.com,MANAGED,windows,NT,resource6.domain.com,Windows Server 2012 R2 x64,ItsWindowsOS,693414a8-cece-4b1b-b188-56a82e26a3b6
node,resource7.domain.com,MANAGED,unix,SUNOS,resource7.domain.com,SunOS 5.11 X86,ItsSolarisOS,693414a8-cece-4b1b-b188-56a82e26a3b6
node,resource8.domain.com,MANAGED,unix,SUNOS,resource8.domain.com,SunOS 5.11 X86,ItsSolarisOS,693414a8-cece-4b1b-b188-56a82e26a3b6

```

Note

You can also find a `sample_resources.csv` file on the DCA server in the following location:

```
/var/vols/itom/dca/dca-dca01/content/dca/api/resourceDiscovery
```

Resource attributes


The following table lists the the mandatory headers and the corresponding values of the resources for discovery of various servers (to be used as base resources for deployments):

Server	type	host_servicetype	os_family	extended_os_family	os_description
Red Hat Enterprise Linux Server 5	node	MANAGED	unix	LINUX	Red Hat Enterprise Linux Server 5 X86_64
Red Hat Enterprise Linux Server 6	node	MANAGED	unix	LINUX	Red Hat Enterprise Linux Server 6 X86_64
Red Hat Enterprise Linux Server 7	node	MANAGED	unix	LINUX	Red Hat Enterprise Linux Server 7 X86_64
SUSE Linux Enterprise Server 11	node	MANAGED	unix	LINUX	SuSE Linux Enterprise Linux Server 11 X86_64
SUSE Linux Enterprise Server 12	node	MANAGED	unix	LINUX	SuSE Linux Enterprise Linux Server 12 X86_64
Ubuntu Server 14.04	node	MANAGED	unix	LINUX	Ubuntu Server 14.04 X86_64
Ubuntu Server 16.04	node	MANAGED	unix	LINUX	Ubuntu Server 16.04 X86_64
Oracle Solaris 11	node	MANAGED	unix	SUNOS	Oracle Solaris 5.11 X86
Oracle Solaris 11 SPARC	node	MANAGED	unix	SUNOS	Oracle Solaris 5.11
Windows Server 2008	node	MANAGED	windows	NT	Windows Server 2008 x64
Windows Server 2008 R2	node	MANAGED	windows	NT	Windows Server 2008 R2 x64
Windows Server 2012	node	MANAGED	windows	NT	Windows Server 2012 x64
Windows Server 2012 R2	node	MANAGED	windows	NT	Windows Server 2012 R2 x64
Windows Server 2016	node	MANAGED	windows	NT	Windows Server 2016 x64


Unprovisioned server	no de	UNPROVISI ONED			
----------------------	----------	-------------------	--	--	--

Import resources from SA

If you have an existing SA installation, you can import the resources from SA by [integrating SA with DCA](#). After the configuration of SA with DCA through UCMDB integration, all managed and unprovisioned servers are synced from SA and made available in DCA.

 The ad hoc compliance scan and remediation job on the resources discovered through SA 10.50 will work only if the ROLLUP_10.50.002_71107 is applied to the SA 10.50.

Import resources using DCA console

1. Create a [CSV file](#) with the necessary information and save it your local computer.
2. From the DCA console, go to the resource list page (**Resource Management > Resources**).
3. Click  and then click **Choose file**.
4. In the **Open** dialog box, browse to the location where you saved the CSV file.
5. Select the CSV file and then click **Open**.
6. Click **OK**. The resources are imported into DCA.
After the import is successful, you can view these resources on the Resources page (**Resource Management > Resources**).

Import resources using import script

1. Based on your DCA setup, perform one of the following steps:
 - If DCA uses a [shared NFS server](#), go to the [export directory](#) on the master/worker node and run the following command:

```
cd content/dca/api/resourceDiscovery
```

- If DCA uses a [separate NFS server](#) on a multi-node cluster, mount the export directory on one of the worker nodes by running the following command:

```
mkdir /<directory_name>
mount <nfs-server-host>:<export_directory> /<directory_name>
cd <directory_name>/content/dca/api/resourceDiscovery
```

2. In the current directory, ensure that the **server.properties** file is configured correctly for your DCA server.

3. Create a [CSV file](#) with the necessary information and save it as **resources.csv** in the current directory.
4. Run the following script to begin the import process:

```
bash ./discover_resources.sh
```

5. When prompted for user name and password, enter the DCA login credentials.
6. After the import is successful, the following messages appear:
IDM Token Fetch Successful
Import Resource Request Successful
7. In case of shared NFS server, unmount the export directory by running the following command:

```
umount /<directory_name>
```

If you encounter any error during the import, see the following information:

Error/Warning message	Description	Resolution
resources.csv file does not exist in the path... exiting	The resources.csv file is not available in the location /var/vols/itom/dca/dca-dca01/content/dca/api/resourceDiscovery	Add a valid resources.csv file to the given location.
server.properties file does not exist in the path... exiting	The server.properties file is not available in the location /var/vols/itom/dca/dca-dca01/content/dca/api/resourceDiscovery	Add a valid server.properties file to the given location.





Note

For more details about these errors, you can also see the `discover_resources.log` file in the **resourceDiscovery** directory.

View resources


To view all available resources, follow these steps:

1. From the [DCA console](#), go to the resource list page (**Resource Management > Resources**). All the available resources are displayed.
At the top of the resource detail page, the following icons are available:

Icon	Description
	Search resources based on Name, Resource Type, Requirement Name, Benchmark, Parent, or Resource Group.
	Filter and sort resources based on Name, Resource Type, Requirement Name, Benchmark, Parent, or Resource Group.
	Select multiple resources.
	Import resources from a .csv file.

2. Select a resource to view its details. The following details are displayed:

- Resource Type: The resource type
- Template: The name of the template that the resource is attached to
- Deployment: The name of the deployment that the resource is part of
- Parent: The parent resource
- Compliance score: The compliance score displays the total number of variances (based on the number of rules that are complaint against the rules that are non-compliant)
 - The compliance score is displayed only when the compliance scan job is completed at least once.
 - The ad hoc compliance scan and ad hoc remediation job does not affect the compliance score.
- All Compliance: Click to view all compliance status in the **Resource Management > Compliance** page
- Attributes: The resource properties
- Contained Resources: The application resources that are associated with the resource.
- Parent Resource Groups: The list of resource groups the resource is part of.
- All Parent Resource Groups: Click to view **Resource Management > Resource Groups** page.
- Credentials: The credentials associated with the resource.
- Activity: The list of discover resource, ad hoc compliance jobs, and remediation jobs that are run on the resource.
- All Activity: Click to view all the jobs in **Resource Management > Activity** page..

 **Note**

The above listed fields will be empty for imported resources.

Search for a resource

You can search for a resource by one of the available search criteria. To search for a resource, follow these steps:

1. From the [DCA console](#), go to the resource list page (**Resource Management > Resources**).
2. In the search box, select a search criteria from the list:
 - Name
 - Resource Type
 - Requirement Name
 - Benchmark
 - Parent
 - Resource Group
3. Start typing a search keyword. The search results display a list of all resources that match the keyword.

Filter resources

You can filter the resource list to view only the resources that match the filter criteria. To filter the resource list, follow these steps:

1. From the [DCA console](#), go to the resource list page (**Resource Management > Resources**), and then click .
2. In the **Filter** area, select a filter criteria:
 - Under **Status**
 - All
 - Managed
 - Discovered
 - Under **Compliance Status**
 - All
 - Compliant
 - Not Compliant - High Risk
 - Not Compliant - Medium Risk
 - Not Compliant - Low Risk
 - Not Measured
 - No Policy

Only the resources that match the selected filter criteria are displayed.




Note


You can see the labels of all applied filters below the search box. To remove a filter, click on the filter label.

Sort resources

You can sort the resource list alphabetically in ascending or descending order by a selected sort criteria. To sort the resource list, follow these steps:

1. From the [DCA console](#), go to the resource list page (**Resource Management > Resources**), and then click .
2. In the **Filter** area, under **Sort**, select a sort criteria:
 - None
 - Utilization
 - Allocation
 - Optimization
 - Forecast

The resource list is sorted by the selected criteria.

3. To arrange the sorted list in ascending or descending order, click  or .



Note

- Sorting of the resource list by **Compliance Status** applies only to the managed resources. In addition, when you sort by **Compliance Status**, the filter option becomes unavailable.
- If you sort the resource list by **Utilization, Allocation, Optimization, or Forecast**, the options for further sorting by **CPU, Memory, or Storage** also become available.

Discover contained resources

To discover resources or applications associated with a single OS resource, follow these steps:

1. From the [DCA console](#), go to the resource list page (**Resource Management > Resources**).
2. Select the OS resource on which you want discover the contained resources.
3. Click **Actions > Discover Resources**.

Only the DCA managed applications are discovered. For a list of managed applications, see [Managed devices, systems, and applications](#).

The resource details page displays a banner below the resource name indicating the discovery status. It displays the job start time and job end time after the discovery is complete. The banner displays one of the following statuses:


Status	Description
Completed	The discovery job has executed successfully in the scheduler.

Running	The discovery job has started executing.
Failed	The discovery job has failed to execute due to errors in the scheduler.

After the discovery is complete, click **Show Details** on the banner to view the status in the Activity page.

- Go to resource list page and select the OS server to view the discovered resources.

To discover applications associated with multiple OS resources, follow these steps:

- Click  on the resource list page to enable selection of multiple resources.
- Select the check boxes next to the OS resources on which you want to perform application discovery.
- Click **Actions > Discover Resources**.

Only the DCA managed applications are discovered. For a list of managed applications, see [Managed devices, systems, and applications](#).

The resource details page displays a banner below the resource name indicating the discovery status. It displays the job start time and job end time after the discovery is complete. The banner displays one of the following statuses:

Status	Description
Completed	The discovery job has executed successfully in the scheduler.
Running	The discovery job has started executing.
Failed	The discovery job has failed to execute due to errors in the scheduler.

After the discovery is complete, click **Show Details** on the banner to view the status in the Activity page.

- Go to **Resource Management > Activity** to check the discovery status.
- Go to **Resource Management > Resources** and select the same OS server on which the Discover Resources was run.

The Contained Resources area in the resource details page displays top five contained resources or applications. If there are more than five contained resources, a link All Contained Resources is displayed. Click the All Contained Resources link to view all the contained resources for the selected OS resource in the resource listing page.

Associate a template with a resource

You can associate a template with a discovered resource and convert it into a **managed resource**. This enables you to [view the compliance states](#) of the resource.

To associate a template with a discovered resource, follow these steps:

- From the DCA console, go to the resource list page (**Resource Management > Resources**).
- Select a resource. The resource details page appears.
- Click **Actions > Associate Template**.
- Select a template from the list.

5. Click **Save**.

Associate a credential with a resource

After [creating a credential](#), you must associate it with a resource. When you associate it with a resource, a user who wants to log on to the resource must use the associated credentials to log on.

To associate a credential with a resource, follow these steps:

1. From the DCA console, go to the resource list page (**Resource Management > Resources**).
2. Select the resource to which you want to add the credentials.
3. Click next to the **Credentials** area.
4. In the **Select Credential** dialog box, select the credential that you want to associate with the resource.
5. Click **Save**.

Run compliance scan for a resource

You can run ad hoc compliance scan on a resource from the details page. The resource can either be an OS resource or an application resource (for example, a database).

Note

The ad hoc compliance scan and remediation job on the resources discovered through SA 10.50 will work only if the ROLLUP_10.50.002_71107 is applied to the SA 10.50.

Best practice

- Run an ad hoc compliance scan on 15 resources for the first run before increasing the number of ad hoc compliance scan jobs to 25.
- If the compliance scan fails, run the following command to check the Compliance logs for more details:


```
kubectl logs <itoc-core_pod_name> --namespace=dca01
```

The compliance scan logs, except debug logs, are also available in the itoc-core container located at **/opt/wildfly/standalone/log/**.


Note

Ensure that the **os_family** and **extended_os_family** attributes in the resource properties are set to the correct values as defined in the section [Resource attributes](#).

1. From the [DCA console](#), go to the resource list page (**Resource Management > Resources**).

2. Click the resource on which you want to run a compliance scan.
For an OS resource, the credentials must be defined, and for an application resource, the parent resource must have its credentials defined before running the compliance scan.
 - a. Click **Actions > Ad Hoc Compliance Scan**.
You can run compliance scan on a resource against a policy or a benchmark.
 - b. Select **Benchmarks** option to chose a benchmark or select **Policies** option to chose a policy. You can also search the available benchmarks list or policies list using the search box.
 - c. Click . This option becomes available only when you select a benchmark or a policy to run the scan against. The resource details page displays a banner below the resource name indicating the scan status. The resource details page displays a banner below the resource name indicating the ad hoc compliance scan job status. It displays the job start time and job end time after the ad hoc compliance scan is complete. The banner displays one of the following statuses:

Status	Description
Completed	The job has executed successfully in the scheduler.
Running	The job has started executing.
Failed	The job has failed to execute due to errors in the scheduler.
Not Started	The job is created, but not started.
Scheduled	The job is scheduled to run based on a policy.
No maintenance window found	A job cannot be scheduled based on the maintenance window associated with the resource group for the resource being scanned.

- The  option become unavailable when an ad hoc compliance scan job is running.
- d. After the discovery is complete, click **Show Details** on the banner to view the status in the Activity page.

Run a remediation job for a resource

You can run remediation job on non-compliant resource after a compliance scan job is complete.

Note

The ad hoc compliance scan and remediation job on the resources discovered through SA 10.50 will work only if the ROLLUP_10.50.002_71107 is applied to the SA 10.50.

1. Run a [compliance scan on a resource](#).
2. Click **Show Details** on the banner after the compliance scan is completed. The compliance scan results page is displayed.
3. Click the **Actions > Remediate**. The resource details page displays a banner below the resource name indicating the ad hoc remediation job status. It displays the job start time and job end time after the ad hoc remediation is complete. The banner displays one of the following statuses:

Status	Description
Completed	The job has executed successfully in the scheduler.
Running	The job has started executing.
Failed	The job has failed to execute due to errors in the scheduler.
Not Started	The job is created, but not started.
Scheduled	The job is scheduled to run based on a policy.
No maintenance window found	A job cannot be scheduled based on the maintenance window associated with the resource group for the resource being scanned.

View compliance scan or remediation job status

To view compliance scan or remediation job status:

1. Run a [compliance scan](#) or a [remediation job](#).
2. The following options are available to view job status:
 - The Activity field in the Resource details page displays the job status.
 - Click **Show Details** on the banner after the compliance scan or remediation job is completed. This displays Activity page. Click the job to view details.
 - Click **All Activity** in the Resource details page to display the Activity page. Click the job to view details.
 - Go to **Resource Management > Activity** and click the job in the Activity page to view details. The following fields are displayed in the job details page:

Field	Description
Start Date	Lists the date on which the compliance scan was run
End Date	Lists the date on which the compliance scan was completed
Job Type	Lists the job type as Ad Hoc Scan Compliance or Ad Hoc Scan Remediate.

Target	Lists the resource.
--------	---------------------

3. Go to the resource list page and click the resource listed in the Target field to view the compliance scan or remediation job results.

View compliance scan results

To view compliance scan results:

1. Run a [compliance scan](#).
When the scan job is complete, the status is listed as Complete in the banner.
2. Move the mouse pointer over the **Compliance Score** in the Resource details page to view the variance. The variance is based on the number of rules that are complaint against the rules that are non-compliant.
 - The compliance score is displayed only when the compliance scan job is completed at least once.
 - The ad hoc compliance scan and ad hoc remediation job does not affect the compliance score.
3. Click **All compliance** to view compliance results in the Compliance page. See [View compliance status](#) for details on compliance scan results.

Power off virtual machines

You can power off a virtual machine resource by clicking **Actions > Power Off** on a resource details page. The **Power Off** button appears only if the resource is a virtual machine and if the virtual machine is available in Cloud Optimizer database.

Related topics

[Credentials](#)

[Benchmarks](#)

[Policies](#)

[Resource Groups](#)

[Compliance](#)

[Activity](#)

[The DCA Console](#)

Resource groups

Resource groups are used to manage the resources based on a logical set. Grouping of resources helps in attaching maintenance schedules and policies to enable you perform policy based compliance scans and remediation.

Using DCA, you can perform the following tasks with the resource groups:

- [View resource groups](#)
- [Search for a resource group](#)
- [Sort resource groups](#)
- [Create a resource group](#)

View resource groups

From the [DCA console](#), go to resource group list page (**Resource Management > Resource Groups**), to view all the resource groups.


Search for a resource group

You can search for a resource group by one of the available search criteria. To search for a resource group, follow these steps:



1. From the [DCA console](#), go to the resource group list page (**Resource Management > Resource Groups**).
2. In the search box, select a search criteria from the list:
 - Name
 - Parent
 - Child Resource
3. Start typing a search keyword. The search results display a list of all resource groups that match the keyword.

Sort resource groups

You can sort the resource group list alphabetically in ascending or descending order by a selected sort criteria. To sort the resource group list, follow these steps:



1. From the [DCA console](#), go to the resource group list page (**Resource Management > Resources**), and then click .
2. In the **Filter** area, under **Sort**, select a sort criteria:
 - Name
 - Created time

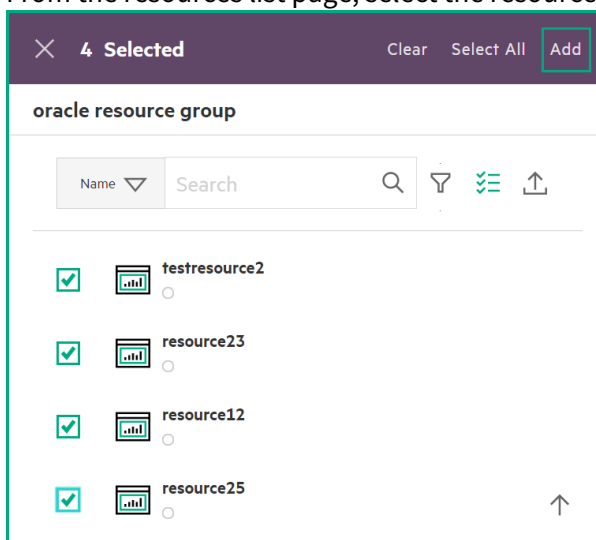
The resource group list is sorted by the selected criteria.

3. To arrange the sorted list in ascending or descending order, click  or .

Create a resource group

To create a resource group, follow these steps:

1. From the [DCA console](#), go to resource group list page (**Resource Management > Resource Groups**).
2. Click .
3. Type the name and add a description for the resource group.
4. Associate a parent resource group (if applicable).
5. Click **Done**. The resource group details page is displayed.
The Child Resource Group details are displayed only if you view a parent resource group.
6. Click  next to Resources section to attach resources to the group.
7. From the resources list page, select the resources and click **Add**.





A confirmation message is displayed. Close it to go back to the resource group details page.

8. [Set a maintenance schedule](#) for this resource group.
9. Attach a policy to the resource group.

A compliance scan is run at the scheduled time. The compliance scan result updates the data displayed on the [dashboard](#).



Set a maintenance schedule to the resource group

1. From the [DCA console](#), go to **Resource Management > Resource Groups** to view all the resource groups.
 2. From the list, click on a resource group.
 3. From the resource group details page, click  next to Maintenance Schedules section.
 4. From the maintenance schedules details page, click .
- The **Add Maintenance Schedule** window is displayed.
5. Specify the Maintenance Schedule details like name, description, schedule time, and recurrence pattern.


- **Maintenance Window Type:** Select **Read** or **Write**. Based on the selection, a read/write operation can be performed on the resources during the maintenance period.
For example,
If you select **Read**, only a compliance scan can run in the maintenance period.
If you select **Write**, a remediation and compliance scan can run in the maintenance period.

 **Note**



For this release, remediation is not supported through the maintenance schedule. However, you can run a policy based remediation. For more information, see [Remediate a resource attached to a policy](#).



- **Schedule Time:** The start and end time should be calculated by UTC standard. For example, if your system time is 5 PM IST (UTC + 5:30) and you want to start the schedule at 10 PM IST, use  to set the Start Time to 16:30.
 - **Recurrence Pattern:** You can set the maintenance to the required option: Weekly, Daily, or Never.
In the **Weekly** option, you can also set the maintenance schedule to be performed in a pattern. For example, you can have a maintenance schedule to run every 3 weeks on a Tuesday.
Use the **Never** option to run the maintenance schedule on a specific date. Ensure that the UTC standard time calculation is taken into account while specifying the date.
6. Click **Save**.
 7. Click  to go back to the resource group details page.
The new maintenance schedule is displayed in the resource group details page.

Attach a policy to the resource group

 **Note**

To initiate a compliance scan immediately after a policy is attached to the resource group outside of the regular scheduled maintenance window, create a maintenance window for a few hours. For example, if you want to check compliance for the resource group, schedule a scan to start in the next 15 mins and set an end time that is later than 4 or 5 hrs from the start time. Ensure that the policy is attached to the resource group before the scan start time.

1. From the [DCA console](#), go to **Resource Management > Resource Groups** to view all the resource groups.
2. From the list, click on a resource group.
3. From the resource group details page, click  next to Policies section.
4. Click  next to Policies section.

5. From the policies list page, select a policy and click .
6. Click  to go back to the resource group details page.

Related topics

[Policies](#)

[Benchmarks](#)

[Resources](#)

[Dashboard](#)

Compliance

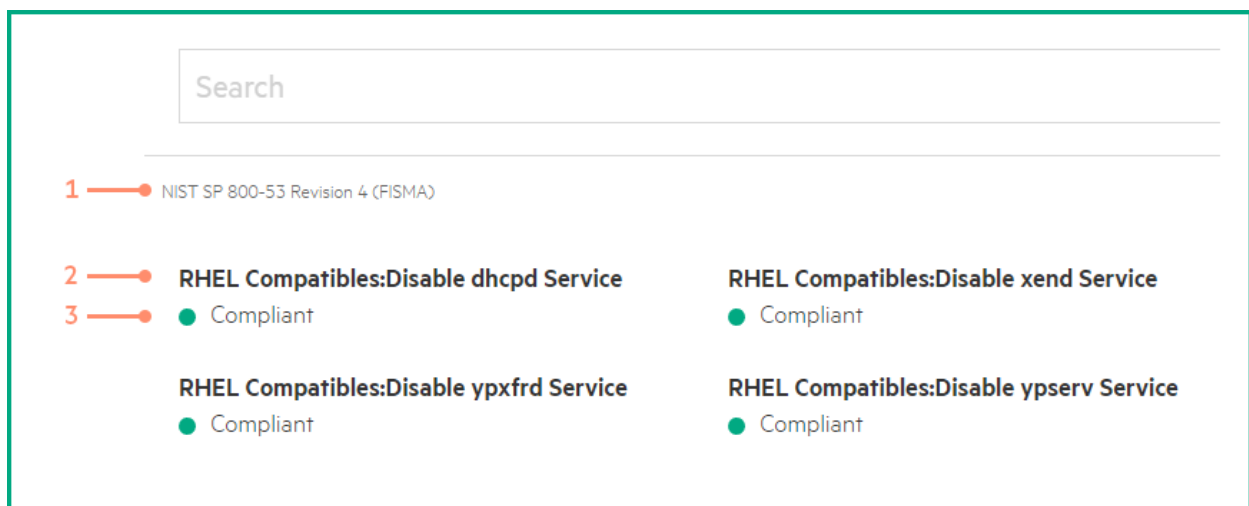
You can view the compliance status of all the deployment instances and resources for a particular benchmark.

Using DCA, you can perform the following tasks with the compliance:

- [View compliance status](#)
- [View compliance details](#)
- [Search for a compliance](#)
- [Filter compliance](#)

View compliance status

To view the compliance status on DCA, go to compliance list page (**Resource Management > Compliance**). The compliance status of all the deployment instances and resources for a particular benchmark is displayed as follows:



The following table lists the information displayed in the page:

Legend	Item	Description
1	Benchmark	Benchmark that the rule for which the compliance is displayed, belongs to. DCA displays all the deployments and resources that are associated with the benchmark.
2	Rule	Rule for which the compliance status is displayed. The rule is associated with a requirement which in turn is associated with a benchmark. See Benchmarks for more information about requirements and rules. For example, if the compliance status is "Failed", it means that the requirement that the rule is associated with has not been met and therefore the compliance has failed.
3	Compliance status	The compliance status is indicated as follows: <ul style="list-style-type: none"> • Red - Indicates that the compliance has not been met • Green - Indicates that the compliance has been met • Grey - Indicates that no scan was run on a benchmark; therefore, the compliance has not been measured and no compliance information exists

View compliance details

You can click on a rule to display the compliance details of the rule. The following details are displayed:

UI element	Description
Compliance status	The following colors indicate the compliance status: <ul style="list-style-type: none"> • Red - Compliance has failed • Green - Compliance has passed • Grey - Compliance is not measured
Benchmark	Benchmark for which the compliance status is displayed
Requirement	Requirement associated with the rule
Control	Control that is associated with the rule which determines the compliance

Search for a compliance

You can search for a compliance by its name. To search for a compliance, follow these steps:


1. From the [DCA console](#), go to the compliance list page (**Resource Management > Compliance**).
2. In the search box, start typing a search keyword. The search results display a list of all compliance that match the keyword.

**Note**

While searching by tags, you can use the keyword **none** to search for compliance that are not associated with any tag.


Filter compliance

You can filter the compliance list to view only the compliance that match the filter criteria. To filter the compliance list, follow these steps:

1. From the [DCA console](#), go to the compliance list page (**Resource Management > Compliance**), and then click .
2. In the **Filter** area, under **Status**, select a filter criteria:
 - All
 - Compliant
 - Non-compliant In RSLO
 - Non-compliant Out RSLO
 - Not Measured
 - Failed


Only the compliance that match the selected filter criteria are displayed.

**Note**

You can see the labels of all applied filters below the search box. To remove a filter, click  on the filter label.

Sort compliance

You can sort the compliance list alphabetically in ascending or descending order by a selected sort criteria. To sort the compliance list, follow these steps:

1. From the [DCA console](#), go to the compliance list page (**Resource Management > Compliance**), and then click .
2. In the **Filter** area, under **Sort**, select a sort criteria:
 - None
 - Requirement
 - Resource
 - Benchmark

The compliance list is sorted by the selected criteria.

3. To arrange the sorted list in ascending or descending order, click  or .

Related topics

[Dashboard](#)

[Benchmarks](#)

[Policies](#)

[Resources](#)



















Activity

The Activity page lists the status of compliance, remediation, and resource discovery jobs performed over the last seven days.

Following are the job types displayed:

- DCA Resource Discovery
- Policy Compliance Scan
- Adhoc Compliance Scan
- Adhoc Compliance Remediate

Following are the job statuses displayed:

Job status	Description	Discovery	Compliance	Remediation
Completed	The job has executed successfully in the scheduler.			
Running	The job has started executing.			
Failed	The job has failed to execute due to errors in the scheduler.			
Not Started	The job is created, but not started.			
Scheduled	The job is scheduled to run based on a policy.			
No maintenance window found	A job cannot be scheduled based on the maintenance window associated with the resource group for the resource being scanned.			

On the Activities page, you can perform the following operations:

- [View jobs](#)
- [Search for an activity](#)

- [Filter activities](#)
- [Sort activities](#)
- [Run ad hoc compliance remediation](#)

View jobs

You can view compliance scan and remediation jobs in the Activity page.

To view activities, follow these steps:

1. From the [DCA console](#), go to the activity list page (**Resource Management > Activity**).
2. Select an activity to view its details. The following details are displayed:
 - Start Date
 - End Date
 - Job Name
 - Job Type
 - Target
 - Compliance Score


Search for an activity

You can search for an activity by its name. To search for an activity, follow these steps:

1. From the [DCA console](#), go to the activity list page (**Resource Management > Activity**).
2. In the search box, start typing a search keyword. The search results display a list of all activities that match the keyword.

Filter activities




You can filter the activities list to view only the activities that match the filter criteria. To filter the activity list, follow these steps:

1. From the [DCA console](#), go to the activity list page (**Resource Management > Activity**), and then click .
2. In the **Filter** area, under **Job Types**, select a filter criteria:
 - All
 - Ad Hoc Compliance scan
 - Ad Hoc Compliance Remediate
 - Compliance Remediate
 - Resource Discovery

Only the activities that match the selected filter criteria are displayed.

Sort activities

You can sort the activity list chronologically in ascending or descending order by start times. To sort the activity list, follow these steps:

1. From the [DCA console](#), go to the activity list page (**Resource Management > Activity**), and then click .
2. In the **Filter** area, under **Sort**, select **Start Time**.
The activity list is sorted by the start times.
3. To arrange the sorted list in ascending or descending order, click  or .

Run ad hoc compliance remediation

To remediate a resource from the job status after you have performed [compliance scan on a resource](#), follow these steps:

1. From the [DCA console](#), go to the activity list page (**Resource Management > Activity**).
2. Click a job in the activity list page.
3. Click **Actions > Ad Hoc Compliance Remediate**.
The job details page displays a banner below the job name indicating the remediation status.

Related topics

[Benchmarks](#)

[Policies](#)

[Resources](#)

[Resource groups](#)

Credentials

A credential comprises a user name and password and is used to log on to a managed resource. Every resource is associated with a credential. It is the credential that determines whether a user can log on to a managed resource. When a user logs in to a managed resource, the user uses the user name and password (credentials) associated with the managed resource to log on. A credential can be associated with many resources.

Using DCA, you can perform the following tasks with credentials:

- [View credentials](#)
- [Add a credential](#)
- [Edit a credential](#)
- [Delete a credential](#)


View credentials

To view credentials, follow these steps:

1. From the [DCA console](#), go to the credentials list page (**Settings > Credentials**).
2. Select a credential to view its details. The following details about the credential are displayed:
 - Name of the credential
 - User name associated with the user who will log in to the resource
 - Password associated with the user

Add a credential

To add a credential, follow these steps:

1. From the [DCA console](#), go to the credentials list page (**Settings > Credentials**).
2. Click .
3. In the Add Credential page:
 - a. In the **Name** field, enter a name for the credential. This is a string used to identify the credential.
 - b. In the **Username** field, enter the user name of the user who will log in to the resource.
 - c. In the **Password** field, enter a password for the user.
 - d. In the **Confirm Password** field, reenter the password.
4. Click **Save**.

The credential that you created is displayed in the list of credentials.

Edit a credential

To edit a credential, follow these steps:

1. Click the credential that you want to edit. The credential details page appears.
2. In the credential details page, click **Edit**.
3. In the **Edit Credential** page, make the necessary change and click **Save**.

Delete a credential

To delete a credential, follow these steps:

1. Click the credential that you want to delete. The credential details page appears.
2. In the credential details page, click **Edit**.
3. In the **Edit Credential** page, click **Remove** to delete the credential.

Related topics

[Deployments](#)

[Resources](#)

[Associate a credential with a resource](#)

ChatOps

The following commands are available for use in DCA ChatOps. To use these commands, you need to:

1. Login to your Slack team.
2. Click the channel from which you want to run the commands.
3. Enter the ChatOps command that you want to run in the text box at the end of the page.

Command	Description
get deployment	Gets the summary of a deployment
watch deployment	Watches the compliance score of a resource or the status of a deployment
unwatch deployment	Stops watching a deployment
list watches	Gets a list of watches
get resource	Gets details of a resource

Related topics

[Configure ChatOps](#)

get deployment

The get deployment command gets the summary of a deployment.

Parameters

This command requires the following parameters:

Parameter	Description
deployment name	Name of the deployment that you requested for

Usage

```
@bot dca get deployment <deployment name>
```

Output

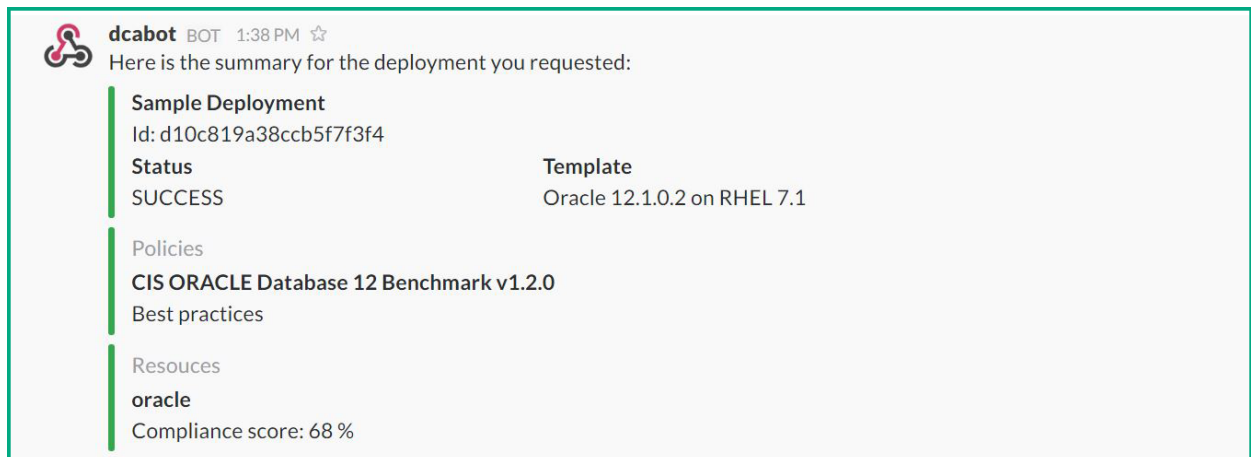
This command returns the following details:

- Name of the deployment
- Status of the deployment
- Template used by the deployment
- List of attached benchmarks (if available)
- List of resources (if available)

Sample output

The following examples are samples of the output returned by this command in different scenarios.

Output of a successful deployment

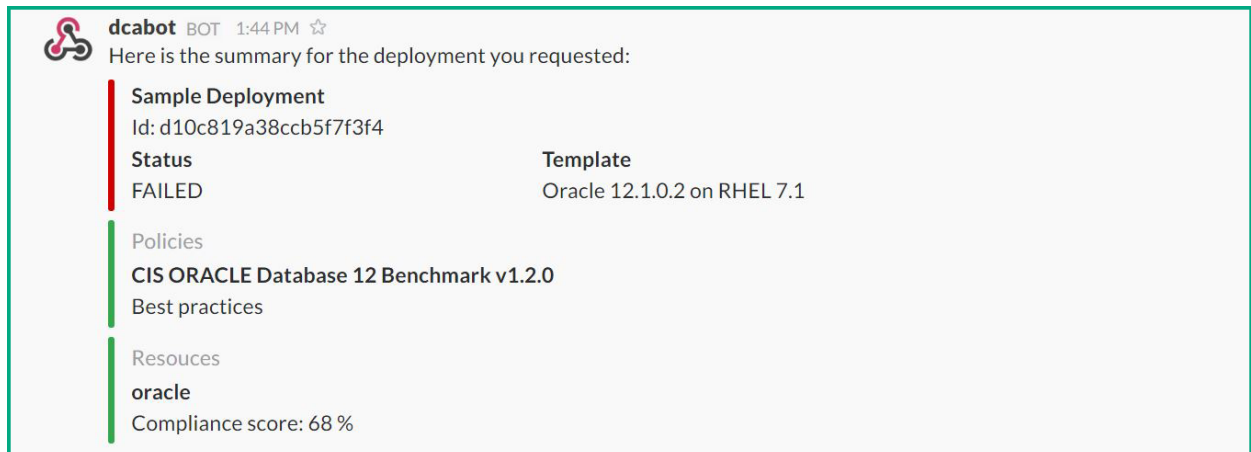


The screenshot shows a chat interface with a message from 'dcabot' at 1:38 PM. The message content is as follows:

dcabot BOT 1:38 PM ☆
Here is the summary for the deployment you requested:

- Sample Deployment**
 - Id: d10c819a38ccb5f7f3f4
- Status**: SUCCESS
- Template**: Oracle 12.1.0.2 on RHEL 7.1
- Policies**
 - CIS ORACLE Database 12 Benchmark v1.2.0**
 - Best practices
- Resources**
 - oracle**
 - Compliance score: 68 %

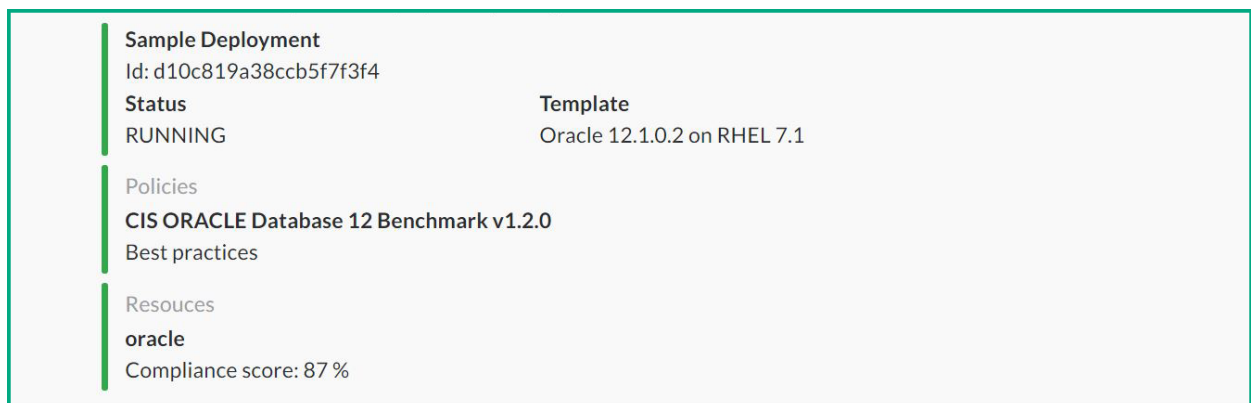
Output of a failed deployment



dcabot BOT 1:44 PM ☆
Here is the summary for the deployment you requested:

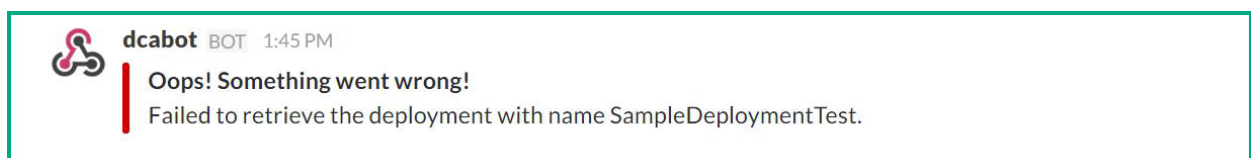
Sample Deployment	
Id: d10c819a38ccb5f7f3f4	
Status	Template
FAILED	Oracle 12.1.0.2 on RHEL 7.1
Policies	
CIS ORACLE Database 12 Benchmark v1.2.0	
Best practices	
Resouces	
oracle	
Compliance score: 68 %	

Output of a deployment that is currently running



Sample Deployment	
Id: d10c819a38ccb5f7f3f4	
Status	Template
RUNNING	Oracle 12.1.0.2 on RHEL 7.1
Policies	
CIS ORACLE Database 12 Benchmark v1.2.0	
Best practices	
Resouces	
oracle	
Compliance score: 87 %	

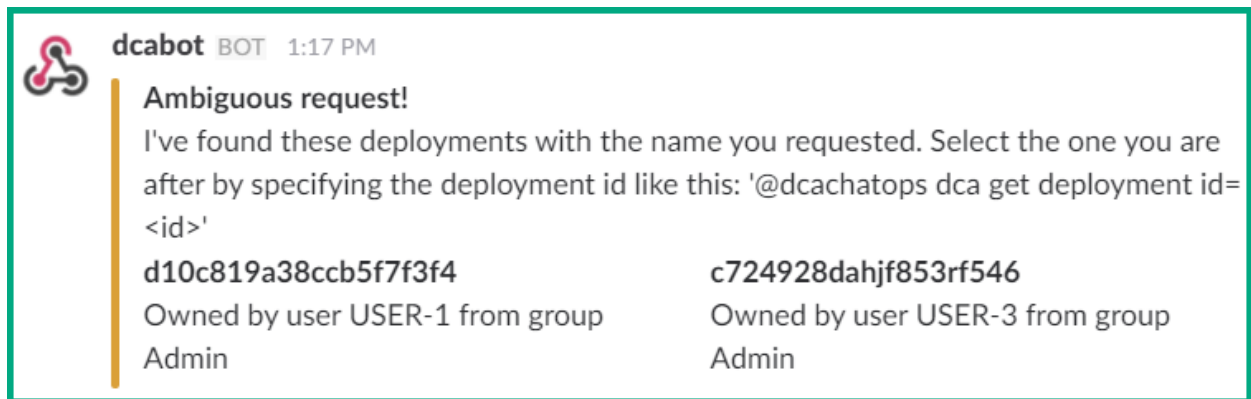
Output of an invalid deployment name



dcabot BOT 1:45 PM
Oops! Something went wrong!
Failed to retrieve the deployment with name SampleDeploymentTest.

Output of deployments with the same name

If there is more than one deployment with the same name, then the deployment IDs of all those deployments are returned and you must use the `get deployment` command once again specifying the deployment ID instead of the deployment name.



dcabot BOT 1:17 PM

Ambiguous request!
 I've found these deployments with the name you requested. Select the one you are after by specifying the deployment id like this: '@dcachatops dca get deployment id=<id>'

d10c819a38ccb5f7f3f4	c724928dahjf853rf546
Owned by user USER-1 from group Admin	Owned by user USER-3 from group Admin

Related topics

[ChatOps](#)

[Configure ChatOps](#)

get resource

The get resource command lists the details of a resource.

Parameters

This command requires the following parameters:

Parameter	Description
id	ID of the resource whose details you requested for

Usage

```
@bot dca get resource <resource_id>
```

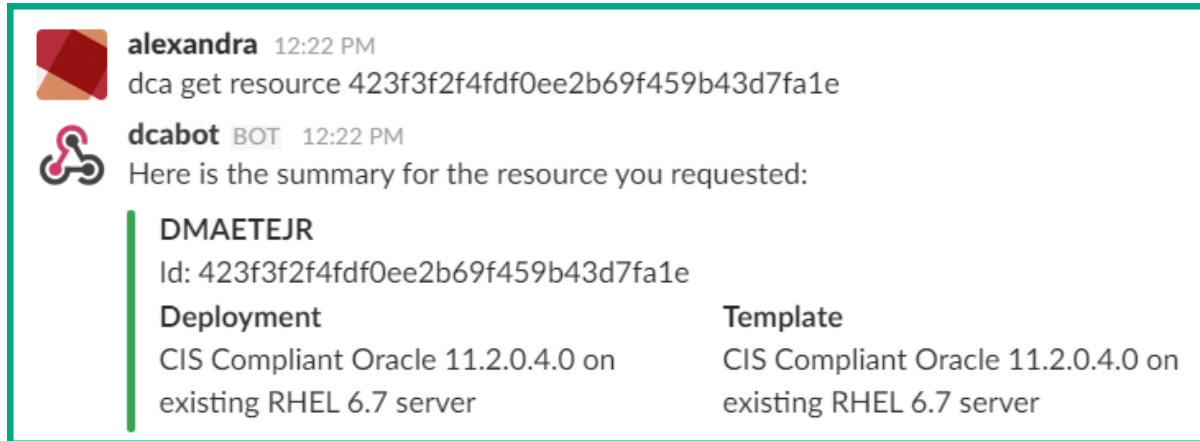
Output

This command returns the following details:

- Deployment name: Name of the deployment in which the resource is being used
- Template name: Name of the template in which the resource is being used
- Id: UUID of the resource

Sample output

Output of a valid command



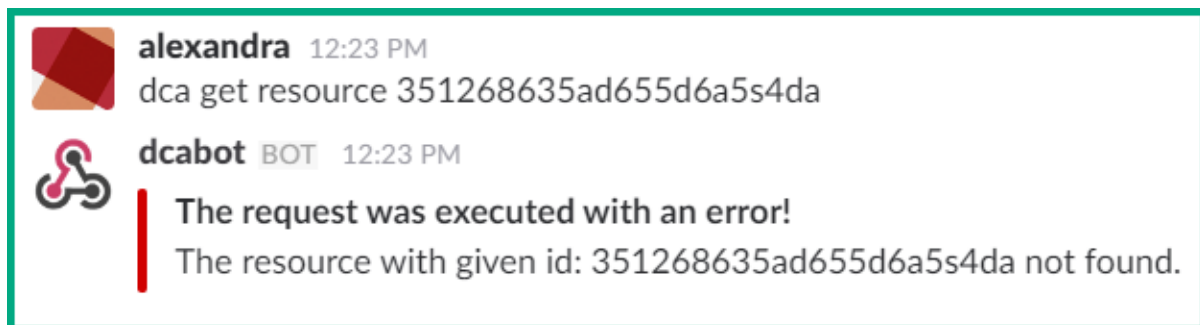
A screenshot of a chat interface with a green border. It shows a user named 'alexandra' at 12:22 PM sending the command 'dca get resource 423f3f2f4fdf0ee2b69f459b43d7fa1e'. A bot named 'dcabot' at 12:22 PM responds with a summary for the resource. The summary includes the resource ID, a table with 'Deployment' and 'Template' columns, and their respective values.

```
alexandra 12:22 PM
dca get resource 423f3f2f4fdf0ee2b69f459b43d7fa1e

dcabot BOT 12:22 PM
Here is the summary for the resource you requested:

DMAETEJR
Id: 423f3f2f4fdf0ee2b69f459b43d7fa1e
Deployment                               Template
CIS Compliant Oracle 11.2.0.4.0 on      CIS Compliant Oracle 11.2.0.4.0 on
existing RHEL 6.7 server                  existing RHEL 6.7 server
```

Output of an invalid resource ID



A screenshot of a chat interface with a green border. It shows a user named 'alexandra' at 12:23 PM sending the command 'dca get resource 351268635ad655d6a5s4da'. A bot named 'dcabot' at 12:23 PM responds with an error message stating that the resource was not found.

```
alexandra 12:23 PM
dca get resource 351268635ad655d6a5s4da

dcabot BOT 12:23 PM
The request was executed with an error!
The resource with given id: 351268635ad655d6a5s4da not found.
```

Related topics

[ChatOps](#)

[Configure ChatOps](#)

list watches

The list watches command gets a list of all the deployments that are being watched.

Parameters

This command does not require any parameters.

Usage

```
@bot dca list watches
```

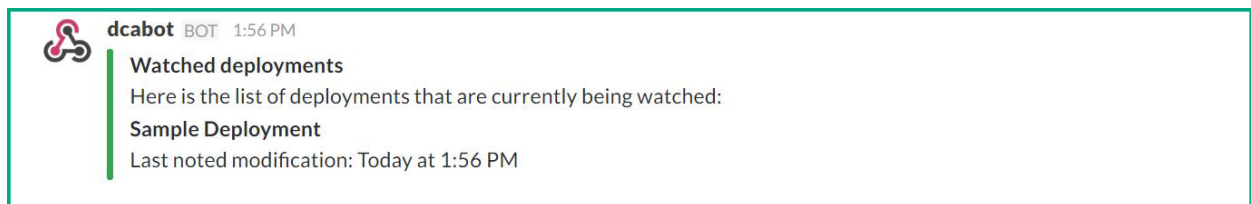
Output

This command returns the following details:

- Deployment name: Names of the deployments being watched
- Last noted modification: Date and time the deployment was last modified

Sample output

For one deployment being watched



A screenshot of a chat message from 'dcabot BOT' at 1:56 PM. The message content is:

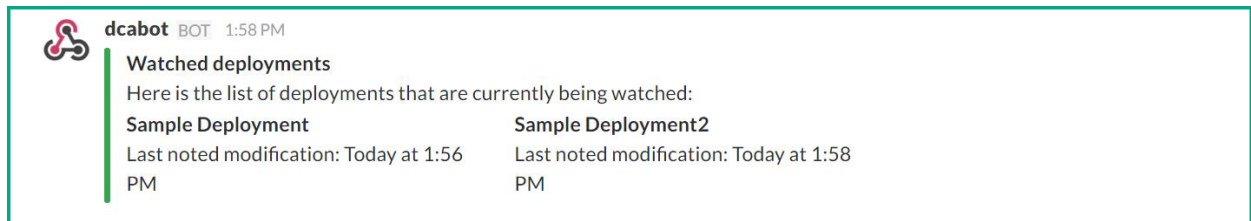
Watched deployments

 Here is the list of deployments that are currently being watched:

Sample Deployment

 Last noted modification: Today at 1:56 PM

For two deployments being watched



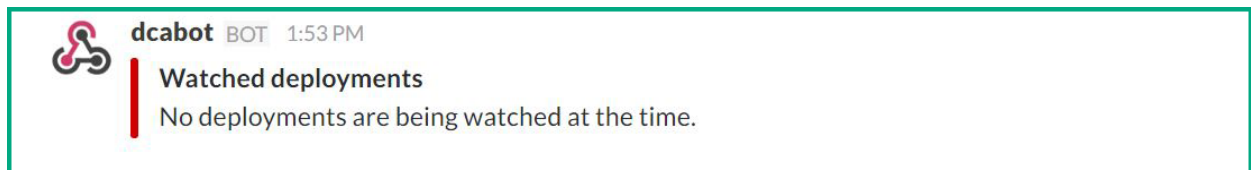
A screenshot of a chat message from 'dcabot BOT' at 1:58 PM. The message content is:

Watched deployments

 Here is the list of deployments that are currently being watched:

Sample Deployment	Sample Deployment2
Last noted modification: Today at 1:56 PM	Last noted modification: Today at 1:58 PM

For no deployments being watched



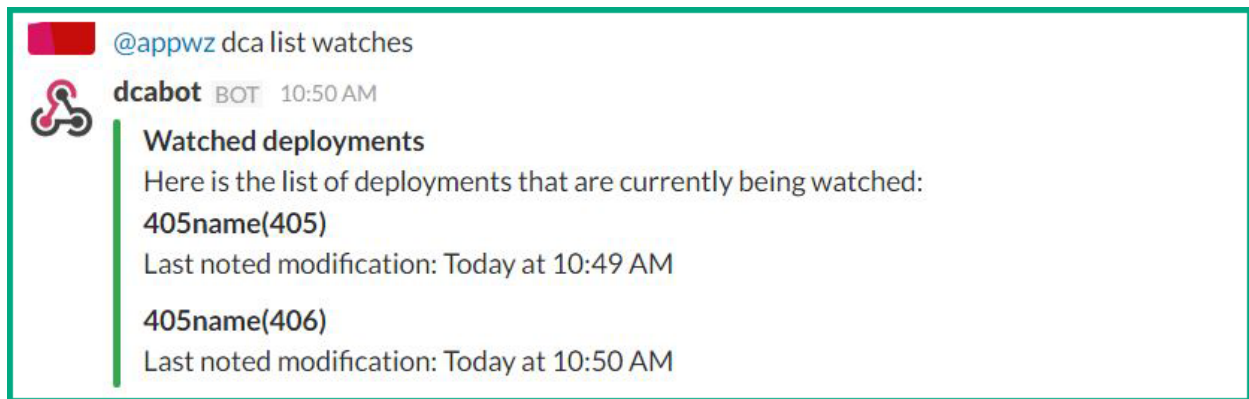
A screenshot of a chat message from 'dcabot BOT' at 1:53 PM. The message content is:

Watched deployments

 No deployments are being watched at the time.

For deployments of the same name being watched

If more than one deployment with the same name is being watched, the `list watches` command returns all those deployments along with their IDs.



Related topics

[ChatOps](#)

[Configure ChatOps](#)

unwatch deployment

The unwatch deployment command unwatches a deployment.

Parameters

This command requires the following parameters:

Parameter	Description
deployment name	Name of the deployment that you want to unwatch

Usage

```
@bot dca unwatch deployment <deployment name>
```

Output

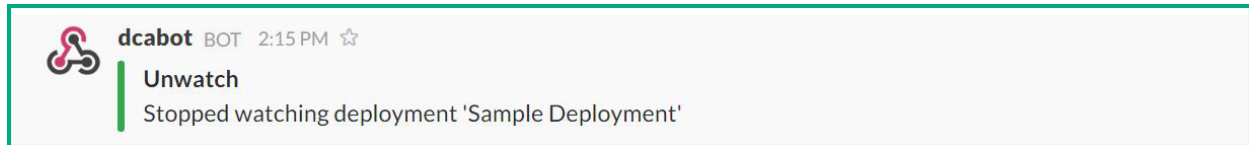
This command returns the following message:

```
Stopped watching deployment <deployment name>
```

Sample output

The following examples are samples of the output returned by this command in different scenarios.

Output of a deployment for which a watch has been set

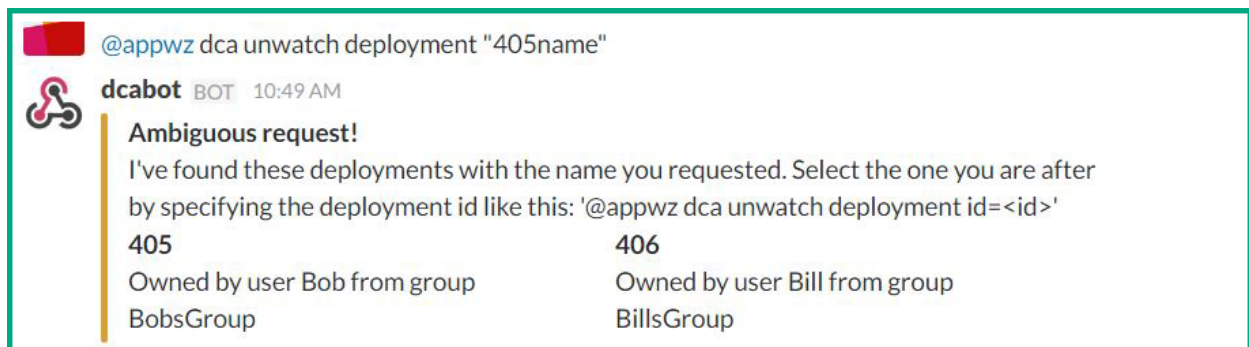


Output of a deployment for which a watch has not been set



Output of deployments with the same name

If there is more than one deployment with the same name, then the deployment IDs of all those deployments are returned and you must use the `unwatch deployment` command once again specifying the deployment ID instead of the deployment name.



Related topics

[ChatOps](#)

[Configure ChatOps](#)

watch deployment

The `watch deployment` command watches the compliance score of a resource or the status of a deployment.

Parameters

This command requires the following parameters:

Parameter	Description
deployment name	Name of the deployment that you want to watch

Usage

```
@bot dca watch deployment <deployment name>
```

Output

This command returns the following message:

```
All done. I will notify you once the compliance score of deployment
<deployment_name> changes.
```

Sample output

The following examples are samples of the output returned by this command in different scenarios.

Output notifying that a deployment is being watched

dcabot BOT 2:03 PM

Watch

All done. I will notify you once the compliance score or status of deployment 'Sample Deployment' changes.

The following resources are being watched:

oracle

Compliance score: 68 %

Output notifying that the compliance score has increased

Compliance score changes for Sample Deployment

oracle resource: the compliance score increased from 43% to 87%.

Output notifying that the compliance score has decreased

2:06 ☆ **Compliance score changes for Sample Deployment**

oracle resource: the compliance score decreased from 68% to 43%.

Output notifying that the status has changed from running to success

```

Status changes for deployment: Sample Deployment
The status changed from RUNNING to SUCCESS.
  
```

Output notifying that the status has changed from running to failed

```

Status changes for deployment: Sample Deployment
The status changed from RUNNING to FAILED.
  
```

Output notifying that the deployment is already being watched

```

dcbot BOT 2:05 PM
Warning!
The watch already exists for the deployment: 'Sample Deployment'
  
```

Output of deployments with the same name

If there is more than one deployment with the same name, then the deployment IDs of all those deployments are returned and you must use the `watch deployment` command once again specifying the deployment ID instead of the deployment name.

```

dcbot BOT 1:46 PM
Ambiguous request!
I've found these deployments with the name you requested. Select the one you are
after by specifying the deployment id like this: '@dchatops dca watch deployment
id=<id>'
d10c819a38ccb5f7f3f4          c724928dahjf853rf546
Owned by user USER-1 from group   Owned by user USER-3 from group
Admin                               Admin
  
```

Related topics

[ChatOps](#)

[Configure ChatOps](#)

Send documentation feedback

If you have comments about this document, you can contact the documentation team by email.

Add the following information in the subject line: Feedback on Data Center Automation 2017.05 - Premium

Just add your feedback to the email and send your feedback to docs.feedback@hpe.com.

We appreciate your feedback.