Moab Viewpoint

Reference Guide 9.0.1

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Welcome

Welcome to the *Moab Viewpoint Reference Guide* for version 9.0.1.

Viewpoint is a web application that, interacting with Moab Workload Manager, lets users manage jobs and resources without the complexities of maintaining Moab via the command line. Viewpoint uses a customizable portal which enables users to view and configure jobs and to compute node resources, principals, and roles. Viewpoint permissions allow system administrators to specify which pages, tools, and settings certain users or groups are permitted to use, manage, and view.

This guide is intended as a reference for system administrators *and* users. This guide is broken up into functional chapters to help you quickly navigate and use Viewpoint.

> ⓘ This guide contains all functional chapters. The actual functions that are available to you will vary depending on the rights and privileges associated with your user profile.

In this guide:

- Chapter 1 Viewpoint Configuration on page 3 – Provides the necessary information for you to set up and configure your Viewpoint portal.

- Chapter 2 Viewpoint Basics on page 41 – Gives a general overview of basic Viewpoint portal. This includes logging in/signning out and general navigation information.

- Chapter 3 Workload on page 47 – Gives a general overview of the Workload page and provides information on viewing and managing workloads.

- Chapter 4 Application Templates on page 67 – Gives a general overview of the Application Templates page and provides information on managing the application templates that are used predefine the job requirements available to users when creating jobs.

- Chapter 5 Nodes on page 135 – Gives a general overview of the Nodes page and provides information on viewing and managing nodes for your workload.

- Chapter 6 File Manager on page 145 – Gives a general overview of the File Manager page and provides information on using the RFS for file management.

- Remote Visualization Sessions on page 152 – Gives a general overview of the Sessions page and how you can view important aspects of your jobs while also freeing up valuable resources that could be used for other tasks.

Chapter 1 Viewpoint Configuration

The Configuration page lets you set up and configure your Viewpoint portal.

> ⚠️ Some Viewpoint functionality requires individual licenses. See Licensing for more information.

Viewpoint configuration involves:

1. Initial setup and configuration procedures crucial to the functionality of Viewpoint; performed when you first installed and configured Viewpoint. See Installing Moab Viewpoint in the *Moab HPC Suite Installation and Configuration Guide*.

2. Initial setup and configuration of RLM. Required if using Remote Visualization and/or Nitro Web Services. See Installing RLM Server in the *Moab HPC Suite Installation and Configuration Guide*.

3. Initial setup and configuration of Remote Visualization (if part of your system configuration). See Installing Remote Visualization in the *Moab HPC Suite Installation and Configuration Guide*.

4. Initial setup and configuration of Nitro and Nitro Web Services (if part of your system configuration). See Installing Remote Visualization in the *Moab HPC Suite Installation and Configuration Guide*.

5. Managing roles. Viewpoint, by default, includes an HPCAdmin and HPCUser role. See About Roles on page 13.

6. Managing principals. About Principals on page 30.

Related Topics

Configuration Page

> ⚠️ Only privileged users can see the Configuration page. In addition, the user's credentials determine which configuration functions are available.

The Configuration page lets you perform administrative functions for Viewpoint.

This topic describes the Configuration page information after Viewpoint has been installed or upgraded.

To access this page, select **Configuration** from the menu. You can also click ⚙ next to where you sign out.

The Configuration page has these functional pages:

- **Basic Configuration** – This is the default view when you access the Configuration page.

  This page is primarily used only when installing or upgrading Viewpoint. See Installing Moab Viewpoint or Upgrading Moab Viewpoint (RPM) in the *Moab HPC Suite Installation and Configuration Guide* for more information.

  However, you can reset the default roles using this page. See Resetting Default Roles on page 13 for more information.

  See Basic Configuration Page on page 5 for more information about this page.

- **Roles** – Available when you click **Roles** from the left pane. This page lets you manage roles and role permissions. See Role Management Page on page 15 for more information about this page.

- **Principals** – Available when you click **Principals** from the left pane. This page lets you assign users, groups, *or* OUs to roles. See Principal Management Page on page 30 for more information about this page.

- **Remote Visualization Services** – Available when your system includes Remote Visualization. Click **Remote Visualization Services** from the left pane to view this page.

  This page is primarily used only when installing and configuring Remote Visualization. See Installing Remote Visualization in the *Moab HPC Suite Installation and Configuration Guide* for more information.

  See Remote Visualization Configuration Page on page 34 for more information about this page.

- **Nitro Services** – Available when your system includes Nitro Web Services. Click **Nitro Services** from the left pane to view this page.

  This page is primarily used only when installing and configuring Nitro Web Services. See Installing Nitro Web Services (manual install method) or Installing Nitro Web Services (RPM install method) in the *Moab HPC Suite Installation and Configuration Guide* for more information

  See Nitro Services Page on page 35 for more information about this page.

- **Licensed Features** – Available when you click **Licensed Features** from the left pane. This page lets you view the features available on your Moab license. See Licensed Features Page on page 37 for more information about this page.

Related Topics

Basic Configuration Page

This topic provides an example of the Basic Configuration page and describes its layout and available information.

> ⓘ This page is primarily used only after Viewpoint is installed or upgraded.
>
> This page also lets you, at any time, reset the default roles.

To access this page click **Configuration** from the menu.

In this topic:

- Page Example on page 5
- Available Fields on page 6

Page Example

The following image is an example of the Basic Configuration page.
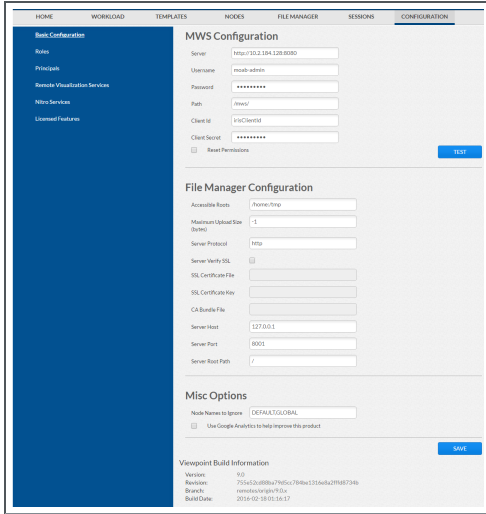
Available Fields

The following table describes the fields on the Basic Configuration page.

Field	Description
MWS Configuration	
Server	IP address or the server name and the port number of the MWS Server Host to which Viewpoint connects (for example, "http://server:8080"). ⓘ If your configuration uses a secure the connection between Viewpoint and MWS, the full URL must contain "https" and the secure port. See Securing the Connection between Viewpoint and MWS on page 11 for more information.
Username	Name of the admin user (for example, "moab-admin"). This is the user who is given MWS access and access to all Viewpoint pages as the default. However, this user is typically not a LDAP/PAM user and does not have operating system permissions (like creating application templates). This user can assign users to roles, including the HPCAdmin role (for LDAP/PAM users). This is the "auth.defaultUser.username"specified when MWS Server was installed. This information is stored in the `mws-config.groovy` file.
Password	Password authentication for the admin user. This is the "auth.defaultUser.password" specified when MWS Server was installed. This information is stored in the `mws-config.groovy` file.
Path	Path prefix of the Moab Web Services URL. This will almost always be "/mws/".

Field	Description
Client ID	ID used to authorize Viewpoint as a client in MWS. This is the "OAuth clientId" specified when Viewpoint was installed. This information is stored in the `mws-config.groovy` file.
Client Secret	Permission (secret) used to authorize Viewpoint as client in MWS. This is the "OAuth clientSecret" specified when Viewpoint was installed. This information is stored in the `mws-config.groovy` file.
Reset Permissions	Resets the HPCAdmin and HPCUser roles back to their default settings. See Resetting Default Roles on page 13 for more information about this check box.
Test	Tests the connection to Moab Web Services. If successful, appears outside the Server field.
File Manager Configuration	

Accessible Roots	The root folders that users can access from the File Manager page. This can be used to limit users' access to certain directories, without giving them access to the "/" folder on the remote file system (RFS). Separate root folders with a colon (:).
	
	For example, if you define /home and /user/share/groups as accessible roots, although users will be able to see a tree similar to the following, the users will not be able to see (access) anything inside /usr other than "share" and anything inside "share" other than "groups".
	
	<pre>|
	|- /home/
	    |
	    user1/
	    user2/
	    youruser/
	|- /usr/
	    |
	     - share/
	          |
	          groups/</pre>

Maximum Upload Size (bytes)	Total amount of data that can be uploaded in a single file. A value of '-1' means unlimited.
Server Protocol	The connection protocol (either http or https).

Field	Description
Server Verify SSL	When enabled: • The client SSL certificate will be verified. • Viewpoint will use the given certificate when connecting to File Manager Service.
SSL Certificate File	The location of the SSL certificate file on the Viewpoint Server. Usually, `/opt/viewpoint/lib/viewpoint/webdav_client/client-cert.pem`.
SSL Certificate Key	The location of the SSL certificate key on the Viewpoint Server. Usually, `/opt/viewpoint/lib/viewpoint/webdav_client/client-key.pem`.
CA Bundle File	The location of the CA bundle file on the Viewpoint Server. Usually, `/opt/viewpoint/lib/viewpoint/webdav_client/ca-cert.pem`.
Server Host	The name of the Moab Server host on which you installed the File Manager Service.
Server Port	The port number for the File Manager Service.
Server Root Path	The root URL path where File Manager Service publishes its API (usually it is simply "/").
Misc Options	
Node Names to Ignore	Names of nodes for which you want to be ignored when submitting jobs. Separate names with a comma. For example, to prevent jobs from accessing the DEFAUT and GLOBAL nodes, type "DEFAULT,GLOBAL".
Use Google Analytics to help improve this product	Indicates whether you want to track usage through Google Analytics.

Related Topics

Configuring Viewpoint to Use SSL

Adaptive Computing strongly recommends using Viewpoint on a secure channel (SSL).

This topic explains how to enable SSL for Viewpoint.

> ⓘ The steps in this topic must be performed before you set up the connection to MWS.

Do the following in order:

- [Create a Self-Signed Certificate](#)
- [Enable SSL for Viewpoint](#)

Create a Self-Signed Certificate

Do the following:

1. Generate a private key.

```
[root]# openssl genrsa -out server.key 1024
```

> ⓘ This will create an unencrypted private key. It is recommended that this private key has only root privileges.
>
> If you want to encrypt this private key (add a passphrase), do the following:
>
> ```
> [root]# openssl genrsa -des3 -out server.key 1024
> ```

2. Generate the certificate signing request from the private key (what is used to create a self-signed certificate).

```
[root]# openssl req -new -key server.key -out server.csr
```

   a. If you encrypted the private key, enter the passphrase when prompted.

   b. Enter the certificate metadata when prompted. For example:

```
...
Country Name (2 letter code) [XX]:US
State or Province Name (full name) []:Utah
Locality Name (eg, city) [Default City]:Provo
Organization Name (eg, company) [Default Company Ltd]:Adaptive Computing
Enterprises, Inc.
Organizational Unit Name (eg, section) []:Engineering
Common Name (eg, your name or your server's hostname)
[]:test1.adaptivecomputing.com
...
```

3. Generate the self-signed certificate from the CSR.

```
[root]# openssl x509 -req -in server.csr -signkey server.key -out server.crt
```

You should have both a private key (server.key) and a certificate (server.crt).

Enable SSL for Viewpoint

Do the following:

1. Install the Apache SSL Module.

   - Red Hat 6-based or Red Hat 7-based systems

   ```
   [root]# yum install mod_ssl
   ```

2. Install the private key and certificate you generated earlier in this topic.

   ```
   [root]# chmod 400 server.key server.crt
   [root]# chown root:root server.key server.crt
   [root]# cp -p server.key server.crt /etc/httpd
   ```

3. Edit `/etc/httpd/conf.d/viewpoint.conf` as follows:

   ```
   Listen 443
   LoadModule ssl_module modules/mod_ssl.so

   <VirtualHost *:443>

       SSLEngine On
       SSLCertificateKeyFile /etc/httpd/server.key
       SSLCertificateFile /etc/httpd/server.crt


       ---

   </VirtualHost>
   ```

   > ⓘ Viewpoint needs its own VirtualHost on its own port. Therefore, if Apache is serving pages or applications besides Viewpoint over SSL, choose a port for Viewpoint besides 443.

4. Start or restart Apache.

   - Red Hat 6-based systems

   ```
   [root]# service httpd restart
   ```

   - Red Hat 7-based systems

   ```
   [root]# systemctl restart httpd.service
   ```

Related Topics

- Chapter 1 Viewpoint Configuration on page 3

Securing the Connection between Viewpoint and MWS

Adaptive Computing strongly recommends using Viewpoint on a secure channel (SSL). See Configuring Viewpoint to Use SSL on page 8.

Optionally, and depending on your system requirements, you can secure the connection between Viewpoint and MWS.

This topic explains how secure the connection between Viewpoint and MWS.

> ℹ The steps in this topic must be performed before you set up the connection to MWS.

Secure the Connection between Viewpoint and MWS

Do the following:

1. Configure the MWS Server for HTTPS. See Securing Client Connections to MWS in the *Moab Web Services Reference Guide* for more information.

2. Import the MWS Server Certificate.

   > ℹ If the MWS server is using a certificate signed by a certificate authority, skip this step.

   Import the MWS server certificate by running the following command on the Viewpoint server:

   ```
   [root]# openssl s_client -showcerts -connect <hostname>:<secure_port> < /dev/null
   2> /dev/null |
       sed -n -e '/-BEGIN CERTIFICATE-/,/-END CERTIFICATE-/p' \
       >> $(python -m requests.certs)
   ```

   Where *<hostname>* is the MWS host name and *<secure_port>* is the secured port number defined in the certificate.

3. Precede with instructions to set up the connection to MWS (see), noting that:

   - you must use the full secure URL for MWS. For example: https://mws.example.com:8443

   - the host name must match the Common Name (CN) of the MWS server certificate.

   - the Viewpoint server must be able to resolve the host name using /etc/hosts or DNS.

Related Topics

- Chapter 1 Viewpoint Configuration on page 3

About Roles

A role in Viewpoint is simply a collection of permissions. Once permissions are assigned, a role is assigned to users or user groups in a principal. This means that each user in the principal will be bound by the role permissions.

This section describes the features and functions available to manage roles.

In this section:

Related Topics

Default Roles

Viewpoint is delivered with these default roles:

- **HPCAdmin** – Global administrative role that grants users operating system and most Viewpoint page permissions. By default, this role does not enable users to create or edit roles; they can only see existing roles that can be assigned to principals.

- **HPCUser** – Global user role that enables permissions for users to perform non-administrative workload tasks.

> ℹ Viewpoint lets you reset permissions for the default roles and restore the default roles if deleted. See Resetting Default Roles on page 13 and Restoring Default Roles on page 15, respectively.

Related Topics

Resetting Default Roles

Viewpoint comes configured with the HPCAdmin and HPCUser default roles and offers the ability to reset these roles back to their original default settings at

any time.

You can choose whether to:

- reset the permissions and remove principals.
- reset the permissions only.

This topic provides the information on the different options available to reset the default roles.

Reset Permissions and Remove Principals

Do the following:

1. If you have not already done so, log in to the Viewpoint portal. This can be the moab-admin user or any user granted permission to reset roles from the Roles page.

2. Click **Configuration** from the menu. The Basic Configuration page displays.

3. In the MWS Configuration area, click the Reset Permissions check box. A warning appears informing you that this will reset the defaults.

4. Click **Save**. Once the permissions have finished resetting, you will be logged out of the Viewpoint portal and will need to log in again.

5. Go to the Principals page and reassign the principals to the default roles, as needed.

Reset Permissions Only

Do the following:

1. If you have not already done so, log in to the Viewpoint portal. This can be the moab-admin user or any user granted permission to reset roles from the Roles page.

2. If you have not already done so, access the Role Management page. (Click **Configuration** from the menu, then click **Roles** from the left pane.)

3. Click ⬚ next to the default role for which you want to reset permissions.

   The Roles page displays.

4. Click **RESET**.

5. When a message appears asking to your confirm the reset, click **OK**; otherwise, click **Cancel**.

Related Topics

Restoring Default Roles

In addition to being able to reset the default permissions for the default roles (HPCAdmin or HPCUser), Viewpoint lets you restore the role if it was deleted. Restoring a default role, automatically restores it with the default permissions.

Do the following:

1. If you have not already done so, access the Role Management page. (Click **Configuration** from the menu, then click **Roles** from the left pane.)

2. Click ⚠RECREATE BASE ROLES .

Related Topics

Role Management Page

The Role Management page displays the default and custom roles available for your Viewpoint configuration. Using this page you can create, edit, and delete roles. Click 🔄 at any time to refresh the page display.

To access this page, click **Configuration** from the menu and then click **Roles** from the left pane.

The following image is an example of the Role Management page.
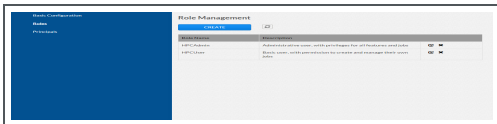
Related Topics

Roles Page

The Roles page lets you manage the permissions for the specified role.

To access this page, click **Configuration** from the menu, click **Roles** from the left pane, and then click either **Create** to add a new role *or* click ☑ next to

the role you want to edit.

This topic provides an example of the Roles page and describes its layout and available information.

In this topic:

Page Example

The following image is an example of the Roles page.
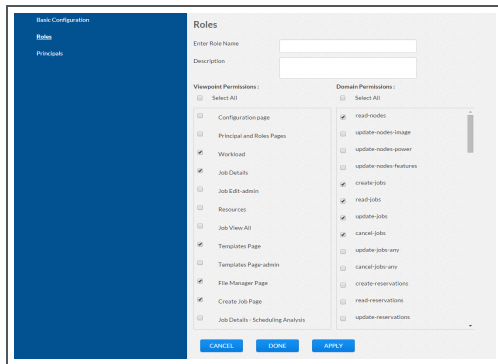
Available Fields

The following table identifies fields in the Roles page.

Field	Description
Enter Role Name	Lets you specify the name of the role. The name you specify appears in the list of roles on the Role Management page and in the list of role options when you edit a principal. The name must be alpha-numeric but may contain dashes (-), periods (.), and underscores (_). ℹ️ You cannot modify the role name after creating a role.
Description	Lets you specify/modify the text description of the role. This description appears in the list of roles on the Role Management page.
Viewpoint Permissions	These fields let you specify the Viewpoint page permissions you want to set for the role. See Role Permissions for more information.
Domain Permissions	These fields let you specify the MWS domain permissions you want to set for the role. See Role Permissions for more information.

Page Actions

These buttons let you perform actions on this page:

- **CANCEL** – Closes the page without saving any changes.
- **DONE** – Saves the changes and closes the page.
- **APPLY** – Saves the changes but does not close the page.
- **RESET** – For the default (HPCAdmin and HPCUser) roles only. Resets the role back to the default settings and stays on the page. This does *not* remove principals from the role. The "Reset Permissions" check box on the Basic Configuration page will reset the role back to the default settings and remove all principals assigned to the role. See Resetting Default Roles on page 13 for more information.

Related Topics

Role Permissions

This topic describes the different permissions you can manage for a role.

In this topic:

- About Permissions on page 17
- Viewpoint Permissions on page 17
- Domain Permissions on page 20

About Permissions

Viewpoint uses permissions to let you control user access. For example, you can grant a user the ability be see a feature, but not edit it. Permissions are broken into two areas: Viewpoint and Domain. The Viewpoint permissions control access to the various pages and the Domain permissions control access to specific functions on that page.

Viewpoint Permissions

The following table describes each of the Viewpoint permissions. For ease of use, the permissions are listed in this topic in alphabetical order.

Permission	Description
Configuration Page	Lets the user access the Configuration page. This permission should only be set for administrators.
Create Job Page	Lets the user access the Create Job page.
File Manager Page	Lets the user access the File Manager page. When applied, the File Manager page becomes active and the user is able to upload or download files.
Home Page	Indicates whether "Home" appears in the menu bar for the user.
Job Details	Lets the user access the Job Details page to view additional information about the job details.
Job Details - Priority Analysis	Lets the user see or modifying the prioritization factors for the job. This permission also requires the associated read-priority or update-priority Domain permission. See Priority on page 55 for more information about the priority information for a job. Also requires the user to have the Job Details and Job Edit-admin permissions.
Job Details - Scheduling Analysis	Lets the user view the available nodes for job scheduling. When applied, the "More Information" button appears on the Job Details page. Click this button to view the Scheduling Analysis pop-up window. See Scheduler Analysis on page 53 for more information on the window. Also requires the user to have the Job Details and Job Edit-admin permissions.
Job Edit-admin	Lets the user edit job information for any job; not limited to only the jobs the user (others in the user's principal) submitted. Also requires the user to have the Job Details permission.
Job View All	Lets the user see all jobs in the workload; not limited to only the jobs the user (others in the user's principal) submitted. Also requires the user to have the read-insight-priviledged Domain permission.
Nitro Configuration	Lets users access and configure Nitro Services.
Nitro Jobs	Lets users view the Nitro Details section for Nitro Jobs. Without this permission, Nitro jobs will not display statistics when viewing job details.
Nitro Jobs-admin	Lets users view the Nitro details section for Nitro jobs that they do not own.
Nitro Jobs-create	Lets users request application templates of type "Nitro Application".

Permission	Description
Nitro Templates	Lets users manage Nitro Application Templates.
Principal and Roles Pages	Lets the user view and manage roles and principals. This permission also requires the Configuration page permission. This permission should only be set for administrators.
Remote Visualization Configuration	Lets users access and configure Remote Visualization Services.
Remote Visualization Jobs	Lets users view the Remote Visualization Details section for Remote Visualization jobs. Without this permission, Remote Visualization jobs will not display the connection area and screenshot preview section when viewing job details.
Remote Visualization Jobs-admin	Lets users view the Remote Visualization Details section for Remote Visualization jobs they do not own.
Remote Visualization Jobs-create	Lets users request application templates of type "Remote Visualization Application".
Remote Visualization Templates	Lets users manage Remote Visualization Application Templates.
Resources	Lets users view available resources (read list of nodes). When applied, the Node Details page becomes active.
Sessions Page	Lets users view and manage a list of their active Remote Visualization Sessions.
Sessions Page-admin	Lets users view and manage a list of everyone's active Remote Visualization sessions, as well as create administrative Remote Visualization sessions. Administrative sessions bypass the regular scheduling process and, by default, are arbitrarily placed on the session server with the least amount of remote visualization sessions.
Templates Page	Lets the user view the application templates applicable to him/her and make small changes.
Templates Page-admin	Lets the user view and manage application templates (for the system).

Permission	Description
Workload	Lets the user see jobs. Admins will see all jobs; non-admins will only see their jobs, or the jobs within their principal (user group). ⚠ This permission is required for all roles.

Domain Permissions

This section describes each of the Domain permissions. Domain permissions are global in scope. For ease of use, the permissions are listed in this topic by resource type.

In this section:

- Accounting
- Credentials
- Diagnostics
- Events
- Insight
- Jobs
- Job-Arrays
- Metric-types
- Nodes
- Notifications
- Permissions
- Plugins
- Plugin-Types
- Policies
- Principals
- Priority
- Reports
- Reservations
- Resource-Types
- Roles

- Standing-Reservations
- Virtual Containers (VCs)

Accounting

Name	Description	Action	Resource
balances-account-ing-funds	Permission to read accounting funds balances.	read	accounting/funds/balances
quote-accounting-usage-record	Permission to access quote usage-record.	read	accounting/usage-records
read-accounting-accounts	Permission to read accounting accounts.	read	accounting/accounts
read-accounting-allocations	Permission to read accounting alloc-ations.	read	accounting/allocations
read-accounting-charge-rates	Permission to read accounting charge rates.	read	accounting/charge-rates
read-accounting-funds	Permission to read accounting funds.	read	accounting/funds
read-accounting-liens	Permission to read accounting liens.	read	accounting/liens
read-accounting-organizations	Permission to read accounting organ-izations.	read	accounting/organizations
read-accounting-quotes	Permission to read accounting quotes.	read	accounting/quotes
read-accounting-transactions	Permission to read accounting trans-actions.	read	accounting/transactions
read-accounting-usage-records	Permission to read accounting usage-record.	read	accounting/usage-records
read-accounting-users	Permission to read users in the accounting system (MAM users).	read	accounting/users
statement-account-ing-funds	Permission to read account funds statement.	read	accounting/funds/reports/statement

Credentials

Name	Description	Action	Resource
read-credentials	Permission to read credentials.	read	credentials
update-credentials	Permission to update credentials.	update	credentials

Diagnostics

Name	Description	Action	Resource
read-diagnostics	Permission to read diagnostics.	read	diag

Events

Name	Description	Action	Resource
read-events	Permission to read events.	read	events

Insight

Name	Description	Action	Resource
read-insight	Permission to read insight-specific URLs.	read	insight
read-insight-privileged	Permission to read insight-admin URLs.	read	insight
read-insight-user	Permission to read insight-user URLs.	read	insight

Jobs

Name	Description	Action	Resource
cancel-jobs	Permission to cancel (delete) your jobs. Depending on the user's principal setting, other users within the same user group/account may also be able to cancel the jobs.	delete	jobs
cancel-jobs-any	Permission to cancel (delete) any job, regardless of who created it.	delete	jobs

Name	Description	Action	Resource
create-jobs	Permission to create jobs for any tenant.	create	jobs
read-jobs	Permission to read jobs.	read	jobs
read-job-templates	Permission to read job (application) templates.	read	jobs
update-jobs	Permission to update your jobs. Depending on the user's principal setting, other users within the same user group/account may also be able to update your jobs.		
update-jobs-any	Permission to update any job, regardless of who created it.	update	jobs

Job-Arrays

Name	Description	Action	Resource
create-job-arrays	Permission to create job arrays.	create	job-arrays

Metric-types

Name	Description	Action	Resource
read-metric-types	Permission to read metric types.	read	metric-types

Nodes

Name	Description	Action	Resource
read-nodes	Permission to read nodes.	read	nodes
update-nodes-features	Permission to update node features.	update	nodes
update-nodes-image	Permission to update node images.	update	nodes
update-nodes-power	Permission to power node on/off.	update	nodes

Notifications

Name	Description	Action	Resource
read-notifications	Permission to read notifications.	update	notifications
update-notifications	Permission to update notifications.	read	notifications

Permissions

Name	Description	Action	Resource
create-permissions	Permission to create permissions.	create	permissions
delete-permissions	Permission to delete permissions.	delete	permissions
read-permissions	Permission to read permissions.	read	permissions

Plugins

Name	Description	Action	Resource
create-plugins	Permission to create plugins.	create	plugins
delete-plugins	Permission to delete plugins.	delete	plugins
read-plugins	Permission to read plugins.	read	plugins
read-plugins-rm	Permission to read resource manager plugin.	read	plugins/rm
update-plugins	Permission to update plugins.	update	plugins

Plugin-Types

Name	Description	Action	Resource
read-plugin-types	Permission to read plugin types.	read	plugin-types
update-plugin-types	Permission to create or update plugin types.	update	plugin-types

Policies

Name	Description	Action	Resource
read-policies	Permission to read policies.	read	policies
update-policies	Permission to update policies.	update	policies

Principals

Name	Description	Action	Resource
create-principals	Permission to create principals.	create	principals
delete-principals	Permission to delete principals.	delete	principals
read-principals	Permission to read principals.	read	principals
update-principals	Permission to update principals.	update	principals

Priority

Name	Description	Action	Resource
read-priority	Permission to read the priority of a job.	read	priority
update-priority	Permission to update the priority of a job.	update	priority

Reports

Name	Description	Action	Resource
create-reports	Permission to create reports.	create	reports
delete-reports	Permission to delete reports.	delete	reports
read-reports	Permission to read reports.	read	reports
read-report-datapoints	Permission to read datapoints.	read	reports/datapoints
update-reports	Permission to update reports.	update	reports

Reservations

Name	Description	Action	Resource
create-reservations	Permission to create reservations.	create	reservations
delete-reservations	Permission to delete reservations.	delete	reservations
read-reservations	Permission to read reservations.	read	reservations
update-reservations	Permission to update reservations.	update	reservations

Resource-Types

Name	Description	Action	Resource
read-resource-types	Permission to read resource types.	read	resource-types

Roles

Name	Description	Action	Resource
create-roles	Permission to create roles.	create	roles
delete-roles	Permission to delete roles.	delete	roles
read-roles	Permission to read roles.	read	roles
update-roles	Permission to update roles.	update	roles

Standing-Reservations

Name	Description	Action	Resource
read-standing-reservations	Permission to read standing reservations.	read	standing-reservations

Virtual Containers (VCs)

Name	Description	Action	Resource
create-vcs	Permission to create virtual containers.	create	vcs
delete-vcs	Permission to delete virtual containers.	delete	vcs
read-vcs	Permission to read virtual containers.	read	vcs
update-vcs	Permission to update virtual containers.	update	vcs

Related Topics

Creating or Editing Roles

Use the Role Management page to create new roles or edit existing roles and their permissions.

Do the following:

1. If you have not already done so, access the Role Management page. (Click **Configuration** from the menu, then click **Roles** from the left pane.)

2. Click **Create** to add a new role *or* click next to the role you want to edit.

   The Roles page displays.

3. If you are creating a role, enter the name of the role.

4. Add or modify the role description if needed.

5. Select and/or clear permissions for the role's purpose and use. See Role Permissions on page 17 for permission descriptions.

6. When finished, click **DONE** to save your changes and close the page; otherwise, click **CANCEL** to discard the changes and close the page. **APPLY** will save your changes, but does not close the page.

> ⓘ If you are editing a default role (HPCAdmin or HPCUser), the "RESET" button displays. Click this button to reset the role back to the default settings. This will not close the page. In addition, this will *not* remove principals from the role. The "Reset Permissions" check box on the Basic Configuration page will reset the role back to the default settings and remove all principals assigned to the role. See Resetting Default Roles on page 13 for more information.

Related Topics

Role Permissions on page 17

About Roles on page 13

Deleting Roles

Use the Role Management page to delete existing roles.

> ℹ️ You cannot delete roles if the roles have been selected in principals.

To delete roles, do the following:

1. If you have not already done so, access the Role Management page. (Click **Configuration** from the menu, then click **Roles** from the left pane.)

2. Click [✖] next to the role you want to remove.

3. When the window appears asking you to confirm the delete, click **OK** to delete the role; otherwise, click **Cancel**.

> ⚠️ If you removed a default role (HPCAdmin or HPCUser), a RECREATE BASE ROLES button appears on this page. You can click this button to restore the default role (with its default permissions); *however*, this action also affects the other default role. This action resets the permissions for *both* default roles (but not the assigned principals for the still existing role).

Related Topics

About Roles on page 13

About Principals

Principals is the term used to describe the assignment of users to roles. Users, groups, *or* OUs are assigned to one or more roles to create a principal.

> ⓘ LDAP or PAM must be configured in MWS. See LDAP Configuration using mws-config.groovy or PAM (pluggable authentication module) configuration using mws-config.groovy in the *Moab Web Services Reference Guide* for details.

This section describes the features and functions available to manage principals.

In this section:

- Principal Management Page on page 30
- Principals Page on page 31
- Creating or Editing Principals on page 32
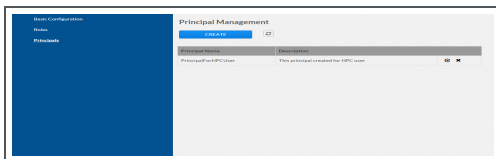- Deleting Principals on page 33

Principal Management Page

The Principal Management page displays the defined principals for your Viewpoint configuration. Using this page you can create, edit, and delete principals.

This page also provides access to the Principals page that lets you specify the users, groups, *or* OUs and their applicable roles for a principal configuration.

To access this page, click **Configuration** from the menu and then click **Principals** from the left pane.

The following image is an example of the Principal Management page.

Click ⟳ at any time to refresh the page display.

Related Topics

Creating or Editing Principals on page 32

Deleting Principals on page 33

Principals Page

The Principals page lets you specify the users, groups, *or* organizational units and their applicable roles for a principal configuration.

To access this page click **Configuration** from the menu, click **Principals** from the left pane, and then click either **Create** to add a new principal *or* click ☑ next to the principal you want to edit.
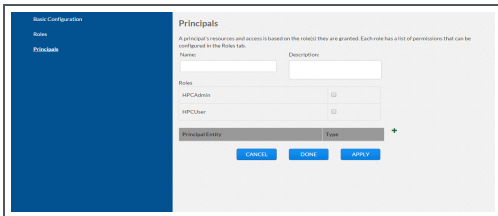
This topic provides an example of the Principals page and describes its layout and available information.

In this topic:

- Page Example on page 31
- Available Fields on page 31
- Page Actions on page 32

Page Example

The following image is an example of the Principals page.

Available Fields

The following table identifies fields in the Principals page.

Field	Description
Name	Lets you specify the name of the principal. The name you specify appears in the list of principals on the Principal Management page. ⓘ You cannot modify the principal name after creating a principal.
Description	(Optional) Lets you specify a text description of the principal.

Field	Description
Roles	Lets you select which roles are assigned to the principal. ⓘ Only roles defined for your Viewpoint configuration will appear in the selection list. See Creating or Editing Roles for details on creating roles.
Principal Entity	Lets you specify an LDAP or PAM entity with this principal. ⓘ If this principal entity is listed under an LDAP group or organizational unit, you must provide the entire distinguished name; PAM group names represent the UNIX group on the underlying server. Click ✚ to add or click ✖ to remove entities.
Type	Specifies whether the principal entity is an LDAP user name, group, or organizational unit *or* a PAM user name or group.

Page Actions

These buttons let you perform actions on this page:

- **CANCEL** – Closes the page without saving any changes.
- **DONE** – Saves any changes and closes the page.
- **APPLY** – Saves the changes but does not close the page.

Related Topics

Creating or Editing Principals

Use the Principal Management page to create new principals or edit existing principals. When creating principals, you can select the type

Do the following:

1. If you have not already done so, access the Principal Management page. (Click **Configuration** from the menu, then click **Principals** from the left pane.)

2. Click **CREATE** to add a new principal *or* click [☑] next to principal you want to edit.

The Principals page displays. See Principals Page for more information.

3. If you are creating a principal, enter the name of the principal.

4. Add or modify the principal description if needed.

5. Select and/or clear the roles assigned to this principal.

6. To *add* a new principal entity, do the following:

   a. Click ⊞ to add a new line.

   b. Enter the name for this principal.

   c. Enter a description of this principal (optional).

   d. Select the roles permitted by this principal.

   e. Enter the LDAP or PAM entity associated with this principal. If the entity is an LDAP group or organizational unit, you must provide the entire distinguished name; PAM group names represent the UNIX group on the underlying server.

   f. Select the type that reflects the entity you just entered.

7. To *delete* a principal entity, click ⊠ next to the entity you wish to remove.

8. When finished, click **DONE** to save the changes and close the page; otherwise, click **CANCEL** to discard the changes and close the page.

> ⓘ APPLY will save the changes, but does not close the page.

Related Topics

Principals Page on page 31

About Principals on page 30

Deleting Principals

Use the Principal Management page to delete existing principals.

Do the following:

1. If you have not already done so, access the Principal Management page. (Click **Configuration** from the menu, then click **Principals** from the left pane.)

2. Click ⊠ next to the principal you want to remove.

3. When the window appears asking you to confirm the delete, click **OK** to delete the principal; otherwise, click **Cancel**.

Related Topics

About Principals on page 30

Remote Visualization Configuration Page

> ℹ️ Remote Visualization uses the FastX product.

> ⚠️ This topic is provided for reference only as the actual Remote Visualization configuration is set up when installing Remote Visualization. See Installing Remote Visualization in the *Moab HPC Suite Installation and Configuration Guide* for detailed instructions.

Once you have configured Remote Visualization, the Sessions page is available to maintain sessions used to display the job details in the Job Details page. See Sessions Page on page 153 for more information.

To access this page, select **Configuration** from the menu and then click **Remote Visualization Services** from the left pane.
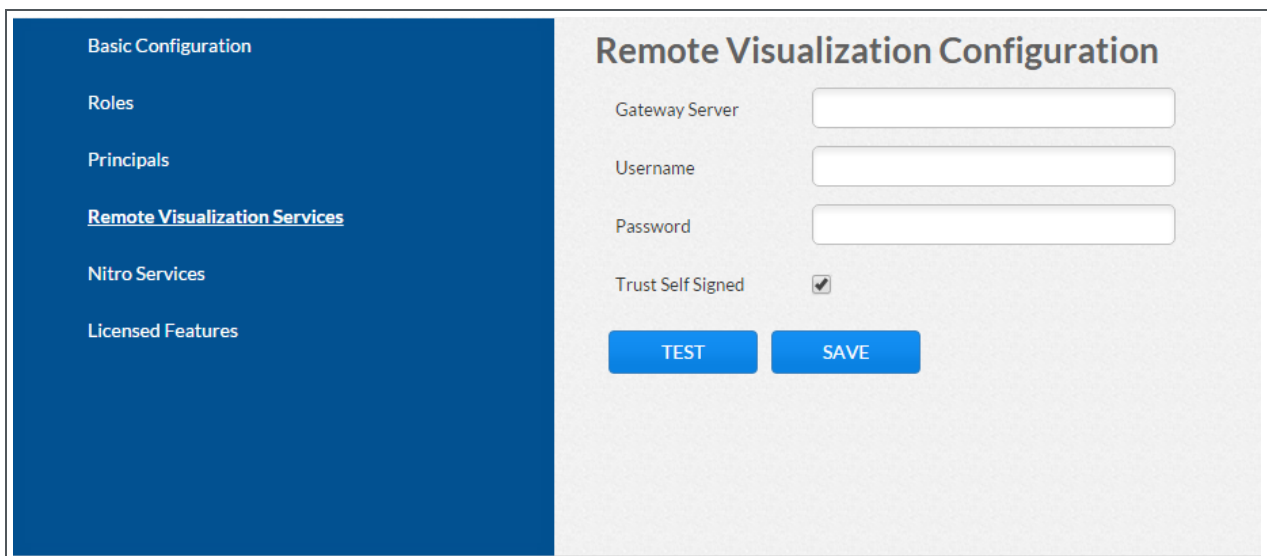
This topic provides an example of the Remote Visualization page and describes its layout and available information.

In this topic:

- Page Example on page 34
- Available Fields on page 35
- Page Actions on page 35

Page Example

The following image is an example of the Remote Visualization Configuration page.

Available Fields

The following table describes the fields on the Remote Visualization page.

Field	Description
Gateway Server	Hostname (or IP address) and port number for the FastX gateway server. For example, https://<server>:3443.
Username	Name of the FastX admin user you specified when you installed the Remote Visualization Server. For example, ace.
Password	The FastX admin user's password.
Trust Self Signed	Indicates whether the Remote Visualization was set up using self-signed certificates.

Page Actions

These buttons let you perform actions on this page:

- **TEST** - Tests the connection to the Remote Visualization (gateway) Server.
- **SAVE** - Saves the changes.

Related Topics

Nitro Services Page

⚠ This topic is provided for reference only as the actual Nitro Services configuration is set up when installing Nitro Web Services. See Installing Nitro Web Services (manual install method) or Installing Nitro Web Services (RPM install method) in the *Moab HPC Suite Installation and Configuration Guide* for detailed instructions.

Once you have configured Nitro Services, you can view your Nitro job information in the Job Details page. See Nitro Details on page 56 for more information.

To access this page, select **Configuration** from the menu and then click **Nitro Services** from the left pane.

This topic provides an example of the Nitro Services page and describes its layout and available information.

In this topic:

- Page Example on page 36
- Available Fields on page 36
- Page Actions on page 36

Page Example

The following image is an example of the Nitro Services page.

Click at any time to refresh the page display.
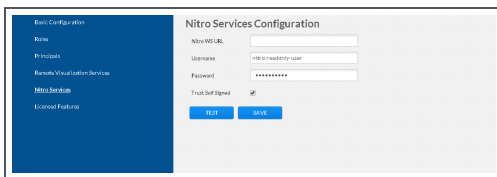
Available Fields

The following table identifies fields in the Nitro Services page.

Field	Description
Nitro WS URL	Hostname (or IP address) and port number for the host on which you installed Nitro Web Services. For example, https://*<hostname>*:9443
Username	Name of the user. This typically nitro-readonly-user.
Password	The user's password.

Page Actions

These buttons let you perform actions on this page:

- **TEST** - Tests the connection to Nitro Web Services.
- **SAVE** - Saves the changes.

Related Topics

- Chapter 1 Viewpoint Configuration on page 3

Licensed Features Page

> ⚠️ Instructions on how to obtain and install the licenses are provided during the Viewpoint install or upgrade process. See Installing Moab Viewpoint or Upgrading Moab Viewpoint (RPM) in the *Moab HPC SuiteInstallation and Configuration Guide* for detailed instructions.

The Licensed Features page shows all of the licensed Viewpoint and Moab features for your system configuration.

To access this page, click **Configuration** from the menu and then click **Licensed Features** from the left pane.

The Licensed Features page has two tab options:

- **Viewpoint License** – This is the default view when you access the Licensed Features page. This tab displays a visual listing of the Viewpoint license file. configuration information.

- **Moab License** – This tab displays a visual listing of the Moab license file. This license file is populated with a valid connection to MWS.

This topic provides an example of the Viewpoint License tab and the Moab License tab and describes the layout and available information in the tab.

In this topic:

Viewpoint License Tab

The following image is an example of the Viewpoint License tab.
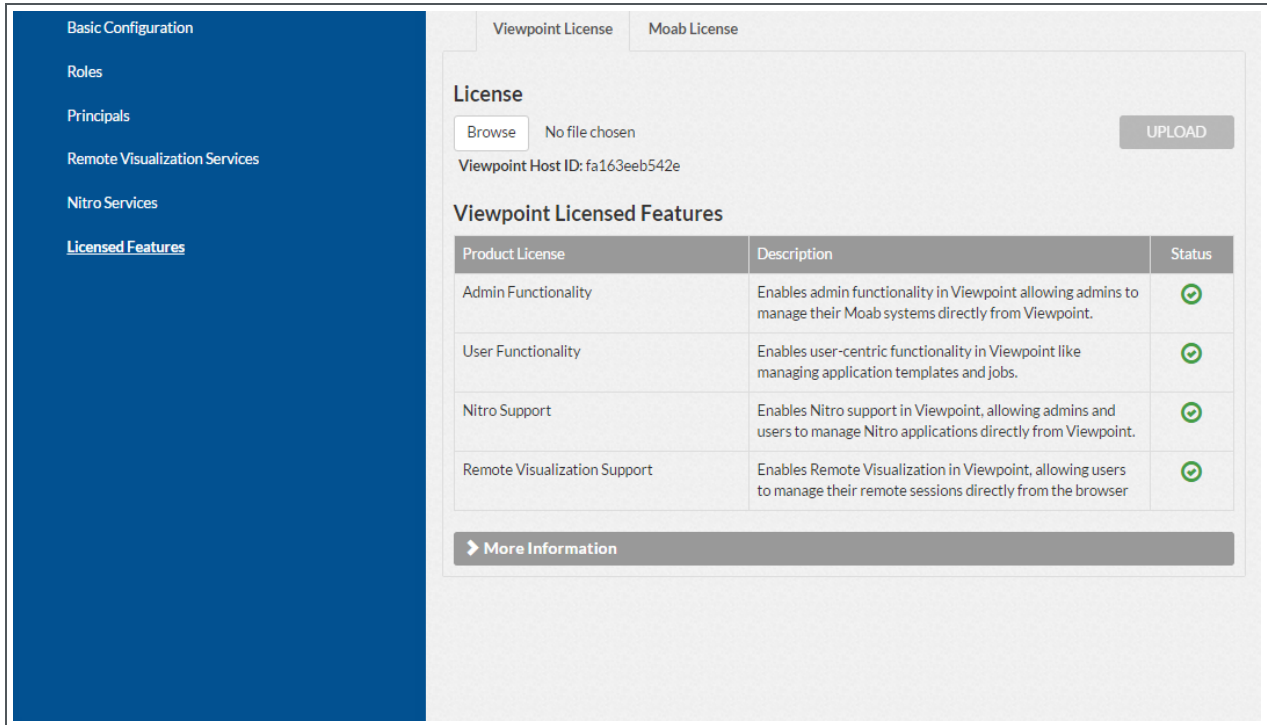
This tab provides a visual representation of the licensed features for your configuration. A green check mark in a circle indicates that feature is licensed; whereas, a red x in a circle indicates a feature is not licensed.

You can expand the More Information section to view when the licensed features will expire.

You can also browse or upload a new license. However, this is typically done only when you install or upgrade Viewpoint.

Moab License Tab

The following image is an example of the Moab License tab.

This tab provides a visual representation of the licensed features for your configuration. A green check mark in a circle indicates that feature is licensed; whereas, a red x in a circle indicates a feature is not licensed.

You can expand the More Information section to view when the licensed features will expire.

Related Topics

-

Chapter 2 Viewpoint Basics

This chapter provides a brief overview of Viewpoint, including the Viewpoint Home page and general navigation.

In this chapter:

Logging In/Signing Out

You must log in to Viewpoint from a web browser. For security purposes, it is important to log out (sign out) of Viewpoint after each use.

This topic provides information on how to successfully log in to and sign out of the Viewpoint portal. This topic assumes that the system administrator, or other authorized user, has set up the Viewpoint portal with user roles and permissions as described in Chapter 1 Viewpoint Configuration on page 3.

> ⓘ The Menu options available to a user will vary depending on the user's credentials.

Log In to Viewpoint

Do the following:

1. In a web browser, navigate to the Viewpoint Login page (http://*<viewpoint_host>*:8081). Where *<viewpoint_host>* is the IP address or name of the Viewpoint Host (actual machine on which Viewpoint was installed).

2. Enter your Username and Password into the respective fields.

3. Click **Login**.

   You will be redirected to the Viewpoint homepage. See The Viewpoint Home Page on page 42.

Sign Out of Viewpoint

Do the following:

1. Locate the Sign Out link in the top right corner of the page.
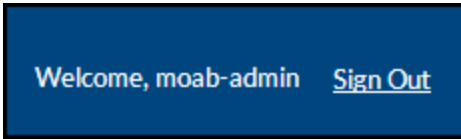
2. Click **Sign Out**.

    You will be redirected to the login page.

Navigating Viewpoint

The menu bar is fixed at the top of every page.

At any time you can select a menu item to open directly to that page. You can also use the Homepage widgets to navigate to certain pages. See The Viewpoint Home Page for more information.

> ℹ If the logged-in user does not have permissions to access a particular page, the page link will not appear in the menu. If a user tries to access a page (by entering a URL) that he/she does not have permissions to see, Viewpoint disallows access.

Related Topics

-   1.1 Menu Bar

The Viewpoint Home Page

The Home page displays an overview of your system, including system utilization, a workload summary, and resource allocation. Once the Viewpoint portal has been configured, the Home page is the default view when logging in. You can also click **Home** from the menu to view the Home page.

This topic provides an example of the Home page and describes its layout and available information.

In this topic:

-    Page Example on page 43
-    Widgets on page 43

Page Example

The following image is an example of the Home page.
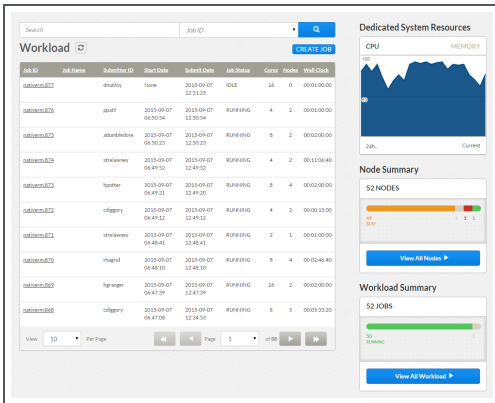
Widgets

The Home page comes configured with widgets that display different aspects of your system.

Specifically:

- Workload Widget
- Dedicated System Resources Widget
- Node Summary Widget
- Workload Summary Widget

Workload Widget

The Workload widget displays workload job information for your system. This workload display directly corresponds to the information provided from the Workload page. This widget includes a search bar to let you find specific job ID.

Using this widget lets you affect changes to the workload and view the results in the Workload Summary and Node Summary widgets without having to leave the Home page.

Dedicated System Resources Widget

The Dedicated System Resources widget provides a graphical ratio of resources dedicated to jobs compared to total resources. The graphical result is displayed based activity within the last 24 hours.

This widget uses these criteria:

- **CPU** – The percentage of processors dedicated to running jobs over the total processors in the cluster. For example if your cluster has 5,000

processors and 4,500 of those processors are dedicated to jobs, your CPU utilization is 90%.

- **Memory** – The percentage of memory dedicated to running jobs over the total amount of memory in the cluster. For example, if your cluster has 1,000 GB of memory and 850 GB of memory is dedicated to jobs, then your memory utilization is 85%.

You can hover the mouse over the graphical display to view additional information.

> ⓘ The user must be assigned to a role with "read-insight-privileged" permission selected to view information for this widget.

Node Summary Widget

The Node Summary widget provides a graphical overview of the total nodes within your Viewpoint configuration and their status.

Click on the status line to open the Nodes page to display only the nodes in that status. Using the Home page example provided earlier, click anywhere on the orange line to view the 45 nodes that are busy.

Click **View All Nodes** to open the Nodes page in default view (without specified selection criteria).

> ⓘ The user must be assigned to a role with "read-insight-privileged" permission selected to view information for this widget.

Workload Summary Widget

The Workload Summary widget provides a graphical overview of the total jobs within your Viewpoint configuration and their status.

Click on the status line to open the Workload page to display only the jobs in that status.

Click **View All Workload** to open the Workload page (without a status filter).

Related Topics

- [Chapter 2 Viewpoint Basics on page 41](#)

Accessing Online Help

You can access the Viewpoint online help (documentation) directly from the Viewpoint portal.

Click [icon] next to where you sign out to access the Viewpoint online help. The full Moab HPC Suite, including Viewpoint, is available at docs.adaptivecomputing.com.

Chapter 3 Workload

The Viewpoint Workload page provides information relating to job metrics. Specifically the Workload page provides access to:

- A detailed list of the jobs in the workload. Using this page you can view information about the job (for example, to see if the job is running correctly), change a job's status, or create a new job (using an application template).
- the Job Details page which provides additional details about a job.

Related Topics

Workload Page

The Workload page offers a place to determine the status of jobs in your workload. You can also change a job's status or create a new job (using an application template).

To access this page, click **WORKLOAD** from the menu.

This topic provides an example of the Workload page and describes its layout and available information.

In this topic:

- Page Example on page 47
- Selection Criteria Area on page 48
- Workload View Details on page 49

Page Example

The following image is an example of the Workload page.

Selection Criteria Area

The right side of this page provides selection criteria you can use to limit what is displayed in the workload view.

You can choose to display:

- Specific jobs based on the job id or the user who submitted the job (submitter ID). Select the value from the Current Search drop-down, in the Narrow Search box, enter the specific information, and then click 🔍.

- Jobs matching a specific status (state). Select the status from the Select Job State drop-down and then click **Filter**.

- Only job arrays or only regular jobs. The job arrays option is only applicable for arrays reported directly from Moab. Arrays reported using Torque will only display as a single (combined) job. Select the job type from the Select Job Type drop-down and then click **Filter**.

- Jobs within a given start date range or within a wallclock range. Selecting Start Date or Wall Clock will provide additional fields to specify the range. Specify the desired range and then click **Filter**.

> ℹ You can utilize multiple selection criteria options; however, only the jobs that match all of the defined options will be shown in the workload view.

Click **Reset** at any time to remove all defined selection criteria options (restore the page defaults).

Workload View Details

The following information explains the layout and additional information available in the workload view.

- **Display Refresh** – You can refresh the information displayed in the workload view (including specified search and filter criteria) to reflect the latest information about the jobs. At the top of the workload view, click ⟳ .

- **Job Creation** – The CREATE JOB button at the top of the workload view lets you create a new job based on available application templates. See Creating a Job on page 64 for detailed instructions.

- **Columns** – The workload view displays the data in a column format. Column titles that are underlined indicate that you can sort (ascending or descending) the column contents.

  The following table describes the different columns and their contents. You can hover the mouse over a column's contents to view additional information.

Column Heading	Description

Job ID	Unique identifier given to a job by Moab (or the resource manager) . In this column you can also:
	
	  ◦ Use the [•••] icon to change the status of a non-completed job (as displayed in the Job Status column). See Changing a Job's State.
	
	  ◦ Display additional information about a job. Click a job ID to open the Job Details page. See Viewing Job Details on page 65.
	
	  ◦ See job array information. For a Moab job array, you will see the job array ID and then you can expand it to see the jobs within the job array. See Job Arrays on page 62. Job arrays sent through Torque will be treated as a single job.

Job Name	Name of the job provided by the user; also called the friendly name.
Submitter ID	Name of the user that submitted the job.
Start Date	Date and time when the job is scheduled to start or has started.
Submit Date	Date and time that the job was submitted.

Column Heading	Description
Queue Status	Current state of the job (for example, ELIGIBLE, COMPLETE, ACTIVE, IDLE).
Cores	Number of allocated cores.
Nodes	Number of allocated nodes. A zero indicates the job has not yet run or executed.
Wall Clock	Amount of time requested for the job. This represents the maximum amount of time the job is expected to run and is specified when the job is submitted. It does *not* represent the amount of time for which the job actually ran (if the job is in COMPLETED status). Wall clock time uses the following format: Days:Hours:Minutes:Seconds. For example, 01:02:03:04 means the owner of the job requested the job run for one day, two hours, three minutes, and four seconds. Jobs that exceed their wall clock limits are subject to the corrective action specified in the Moab WCVIOLATIONACTION parameter.

- **Page Controls** – Page controls are available at the bottom of the workload view to let you customize how many jobs appear per page. The page controls also include options for selecting which page to display.

Related Topics

Job Details Page

The Job Details page shows additional information about a job and allows you to make certain modifications to a given job.

To access this page, from the Workload view, click on the Job ID link for the job.

This topic provides an example of the Job Details page and describes its layout and functional areas.

In this topic:

Page Example

The following image is an example of the Job Details page.
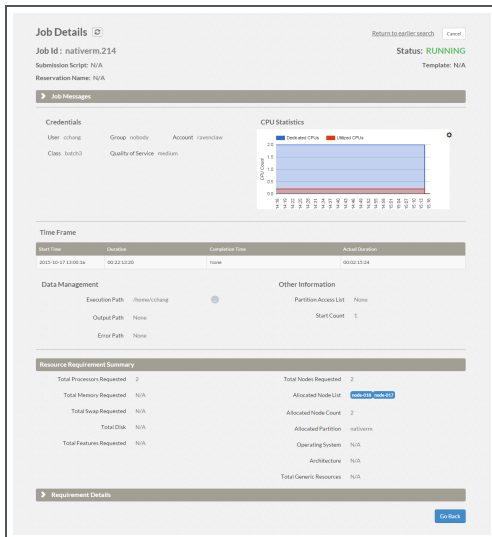
Page Actions and Navigation

These buttons let you perform actions on this page:

- **Go Back** – Returns to the Workload page; if you have authorization to make changes, this will discard any unsaved changes.
- **Done** – Submits any job changes to Moab Workload Manager and returns to the Workload page.
- **Apply** – Submits any job changes to Moab Workload Manager and stays on the Job Details page.

At the right of the page there are two floating buttons that can be pressed to navigate to the top and the bottom of the page.

Click to navigate to the top of the page.

Click to navigate to the bottom of the page.

Functional Areas

This section describes the different functional areas, including field descriptions, available on the Job Details page.

To expand and display a functional area, click on the title of the desired area.

> ℹ The information contained in, and the actions you can perform using, the Job Details page will vary based on the job's status, the user's role permissions and/or the fields available from the application template.

In this section:

Job Actions and Basic Information

At the top of the Job Details page you will find basic information and actions pertaining to the job.

The following image is an example of the Job Actions and Basic Information area.
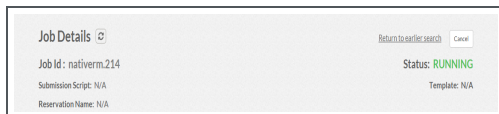
Job Actions

At the upper right of the page, you find several links and buttons to perform actions. These are separate from the page-related actions identified later in this topic.

- The "Return to earlier search" link takes you to the Workload page with the search and filter criteria you specified.
- The "Cancel" button, appears for a running or idle job, lets you cancel the job.
- The "Hold" button, appears for an idle job, lets you place the job in idle status.

- The "More Information" button, appears based on the user's permissions, lets you view the Schedule Analysis window. See Scheduler Analysis on page 53.

Job Basic Information

At the upper left and right of the page, you will find several fields displaying basic information.

- **Job Id** – ID given to the job by Moab or the resource manager.
- **Submission Script** – Name of the script used to generate the job. For jobs sent directly from Moab or the resource manager, this will be "N/A".
- **Template** – Name of the application template used to create the job information. For jobs sent directly from Moab or the resource manager, this will be "N/A".
- **Reservation Name** – Name of the reservation, if applicable, associated with the job.

Scheduler Analysis

> ℹ The Scheduler Analysis requires the "Job Details - Scheduling Analysis" Viewpoint permission and applicable domain permissions. See Role Permissions on page 17 for more information about the available permissions you can set.

When Scheduler Analysis is enabled, the "More Information" button appears under the Status information when the job is blocked. Click this button to view the Schedule Analysis pop-up window.

This window provides information useful in debugging why Moab is not running the job.

The following image is an example of the Scheduler Analysis window.

Scheduler Analysis

> **Block Reasons**

> **Warning Messages**

∨ **Node Analysis**

Showing 1 to 10 of 50 entries

Search: _____

Node Name ▲	Message
node-001	node-001 available: 2 tasks supported
node-002	node-002 available: 2 tasks supported
node-003	node-003 available: 2 tasks supported
node-004	node-004 rejected: State (Busy)
node-005	node-005 rejected: State (Busy)
node-006	node-006 rejected: State (Busy)
node-007	node-007 rejected: State (Busy)
node-008	node-008 rejected: State (Busy)
node-009	node-009 rejected: State (Busy)
node-010	node-010 rejected: State (Busy)

Show 10 ▼ entries

Previous 1 2 3 4 5 Next

Close

Priority

> ℹ The Priority area requires the "Job Details - Priority" Viewpoint permission and applicable domain permissions. See Role Permissions on page 17 for more information about the available permissions you can set.

The Priority area lists the priority factors applied to the job for scheduling purposes. Expand the area to view the prioritization factors.

Expand the Priority area to view the additional information. Click ⟳ to refresh the priority information.

The following image is an example of the Priority area.

The Priority area is organized as follows:

The top area shows the cumulative value for these prioritization areas:

- **User Job Priority** – User defined priority factors. See Job Priority Factors in the *Moab Workload Manager Administrator Guide* for more information on the available factors.

  > ℹ This feature requires the User Priority field to be enabled in the application template *and* the Moab ENABLENEGJOBPRIORITY server parameter must be set to "TRUE". See Advanced Settings on page 78 for more information on the User Priority field.

- **System Priority** – Factors that are used to override Moab Workload Manager's start priority to allow jobs to start sooner than they would ordinarily. See mjobctl in the *Moab Workload ManagerAdministrator Guide* for more information on the available factors.

- **Start Priority** –Moab's defined start priority.

- **Job Start Count** – Number of times Moab has requeued the job after a job failure or preemption.

The second area provides details about how Moab calculated the start priority. The different start priority groups are listed and are also broken down into each factor within the group. The cumulative weight for the group and the how that breaks down into the different factors are provided.

Job Messages

The Job Message area lists any messages reported by Moab. These are the same messages you can view in Moab using checkjob -v -v.

Expand the Job Messages area to view the reported messages, if any. Click [icon] to refresh the job message information.

The following image is an example of the Job Messages area.
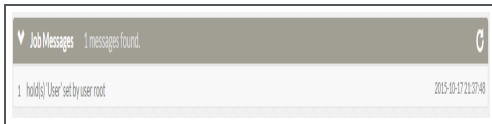
Nitro Details

> ℹ The Nitro Details area is only available if you have integrated with Nitro and enabled Nitro Web Services.

The Nitro Details area lists information pertaining to Nitro jobs.

The following image is an example of the Nitro Details area.

Job Array

> ℹ The Job Array area is present when the job is the parent job in a job array.

The Job Array area lists the child jobs within the job array. You can click on any of the child jobs to view job details for that child job.

The following image is an example of the Job Array area.

See for more information about job arrays.

Credentials and CPU Statistics

The following image is an example of the Credentials and CPU Statistics areas.
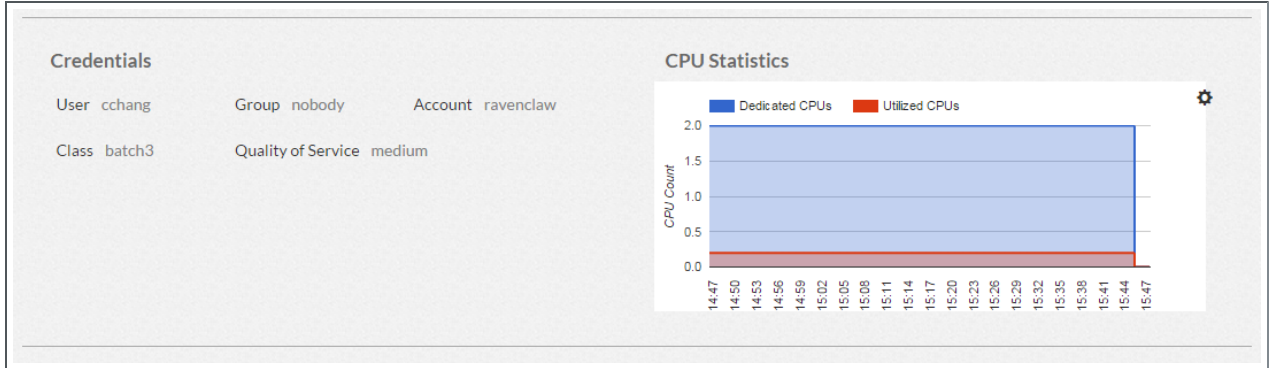
Credentials Area

The Credentials area displays information about the user who created/submitted the job.

The following table describes the fields in the Credentials area.

Field	Description
User	The user that submitted a job.
Group	Displays the group credential, which represents an aggregation of users. User-to-group mappings are often specified by the operating system or resource manager and typically map to a user's UNIX group ID. However, user-to-group mappings may also be provided by a security and identity management service, or you can specify such directly within Moab.
Account	Displays the account credential. This credential is generally associated with a group of users along the lines of a particular project for accounting and billing purposes.
Class	Displays the job class. The concept of the class credential is derived from the resource manager class or queue object. Classes differ from other credentials in that they more directly impact job attributes. In standard HPC usage, a user submits a job to a class and this class imposes a number of factors on the job. The attributes of a class may be specified within the resource manager or directly within Moab.
Quality of Service	Quality of service status applied to the job (for example, low, medium, or high).

CPU Statistics Area

The CPU Statics area contains a graph depicting the CPU statistics of the job. Click ⚙ to open a pop-window to specify the range and refresh intervals for the displayed statistics. You can also manually update the display.

Time Frame

The Time Frame area provides information on the job's start and completion times as well as duration information.

The following image is an example of the Time Frame area.

The following table describes the fields in the Time Frame area.

Field	Description
Start Time	The date and time that the job started.
Duration	The amount of time requested for the job in seconds. This represents the maximum amount of time the job is expected to run and is specified when the job is submitted. This does not represent the amount of time the job actually ran if the job is completed. Jobs that exceed their wallclock limits are subject to the corrective action specified in the Moab WCVIOLATIONACTION parameter.
Completion Time	The date and time that the job completed; "None" if the job is running or idle.
Actual Duration	The amount of time the job has been running (or ran if the job is completed).

Data Management and Other Information

The following image is an example of the Data Management and Other Information areas.

Data Management Area

The Data Management area displays the file paths defined for the job. Click

 to open the File Manager page to change folder paths.

The following table describes the fields in the Data Management area.

Field	Description
Execution Path	Directory path where the job was executed. This is typically the user's home directory.
Output Path	Directory path where the standard output file is stored. This is typically the user's home directory.
Error Path	Directory path where the error file is stored. This is typically the user's home directory.

Other Information Area

The Other Information area displays additional Moab-related information job.

The following table describes the fields in the Other Information area.

Field	Description
Partition Access List	List of available partitions on which the job can run.
Start Count	Number of times Moab requeued the job after a job failure or preemption.

Resource Requirement Summary

The Resource Requirement Summary area provides information on the resources requested/required for the job.

The following image is an example of the Resource Requirement Summary area.
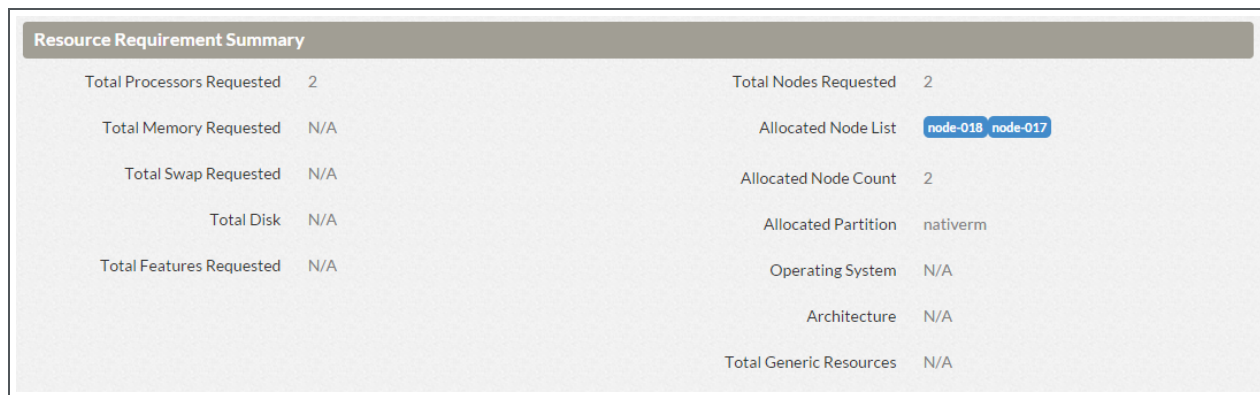
The following table describes the fields in the Resource Requirement Summary area.

Field	Description
Total Processors Requested	Maximum dedicated processors allocated for the node.
Total Memory Requested	Maximum memory made available for the job.
Total Swap Requested	Amount of swap memory made available for the job.
Total Disk	Amount of disk space available for the job.
Total Features Requested	Maximum number of supported node features.
Total Nodes Requested	Number nodes requested at job submission.
Allocated Node List	List of nodes allocated for the job.
Allocated Node Count	Number of nodes actually allocated for the job.
Allocated Partition	Partition allocated for the job.
Operating System	Operating system on which the node can run.
Architecture	Node's processor architecture.
Total Generic Resources	Number of generic resources available.

Requirement Details

The Requirement Details area provides task-specific details about the job.

If the job has more than one task definition, this area will list each task separately. In addition, if generic resources were defined, the generic resources field will contain a table listing the name of the resource and its used count.

Related Topics

Job Arrays

Viewpoint supports Moab job arrays and displays information on the child jobs and the parent job in the job array.

> ℹ Job arrays sent from Torque are treated as a single job (parent job).

This topic provides information specific to Moab job arrays in Viewpoint.

In this topic:

Viewing Job Arrays

Job array information is viewable from the Workload page. However, with the job array, instead of the Job ID, the job array ID is listed in the Job ID column and the information in the rest of the columns is the parent job information.

Expand the job ID to see a listing of the child jobs in the job array.

The following image shows an example of the expanded job array.

Viewing Job Array Details

Job detail information for a parent or child job in the job array is viewable using the Job Details page.

- For the parent job, select the job array ID in the Job ID column.
- For a child job, select the link for the child job from the expanded job array.

Once you have selected the job, the Job Details page displays. This page is similar to the Job Details page for non-job arrays, with these differences:

- Parent job:
  - The Job Array area is present. Expand this area to view the child jobs for this job array.

  - You cannot make changes to, hold, or cancel the parent job.

    > ℹ️ If you cancel a parent job, all child jobs will be canceled. However, if you hold the parent job, all the child jobs continue as normal.

- Child job:
  - The parent job ID is listed under the Job Id field. Click the parent job ID to return to the parent job.
  - The Job Array area is not present, as this is a child job.
  - You can make changes to, hold, or cancel the child job.

Creating Job Arrays

Viewpoint also lets you create job arrays.

> ℹ️ The user must have the "create-job-arrays" Domain Permission" applied. The user must also have access to an application template that has the "Job Arrays" label enabled and visible and/or editable and which includes a script with the "Moab Array Env Variables". See Role Permissions on page 17 and Application Template Details on page 70.

You use the Create Job page to also create a job array; however you must choose an application template that enables creation of a job array.

When the Create Job page displays, you will see the job array-specification fields in the Basic Job Settings area. For example:

> ℹ️ The "From" number is the first number you want appended to the job for the child job. The "To" number is the maximum number of child job. For example, if you specified the range as From 0 To 3. The job array will have four child jobs: jobID[0], jobID[1], jobID[2], and jobID[3].

Creating a Job

Viewpoint lets you create a job directly from the Workload page.

> ℹ You must have been granted the "Create Job Page" Viewpoint permissions to create a job.

Do the following:

1. If you have not already done so, display the Workload view. (Select **WORKLOAD** from the menu; depending on your user credentials you may also access the Workload view from the Home page.)

2. Click **Create Job**.

3. Select the applicable application template from the Template pop-up window.

   The Create Job page appears with the fields from the selected application template.

4. Enter the necessary information for the new job.

5. Click **Create** to submit the information; otherwise, click **Cancel** to return to the Workload view.

Related Topics

Changing a Job's State

Viewpoint lets you request a state change for non-completed jobs directly from the Workload view. For example, if a job is idle, can request Moab to cancel the job.

Do the following:

1. If you have not already done so, display the Workload view. (Select **WORKLOAD** from the menu; depending on your user credentials you may also access the Workload view from the Home page.)

2. In the workload view, hover your mouse over the Job ID for a non-completed job and click the ⋯ icon.

   Depending on the current state of the job, the available request options appear. For example, if the job state is IDLE, the Hold and Cancel options are displayed.

3. Select desired change request option for the job.

   Once the state change request has been passed to Moab, a message appears indicating it has been changed and the job's new state appears in Job Status column.

Related Topics

Viewing Job Details

Viewpoint lets you view the job details for any job within your workload. This functionality uses both the Workload page and the Job Details page.

> ⓘ The detailed information available for a job will vary. See Job Details Page on page 50 for more information.

View Job Details

Do the following:

1. If you have not already done so, access the Workload page. (Click **Workload** from the menu.)

2. Enter the search and/or filter criteria as needed to limit the jobs displayed. See Selection Criteria Area on page 48 for more information.

3. Click on the Job ID of the job for which you want to view details. The Job Details page displays and shows information about that job. For the Job Details page you can view and/or edit job information. See Job Details Page on page 50 for more information.

Related Topics

Chapter 4 Application Templates

Application templates are used to predefine the job requirements available to users when creating jobs. Specifically:

- the Application Templates page (default) lists the application templates available to you when creating a job. Depending on how the application template was setup, you can also make small changes to the application template at job submission.

If your credentials include the "Templates Page-admin" Viewpoint permission you can view and edit every application template in your Viewpoint configuration. You can also create and import application templates using this page. Viewpoint is delivered with the Free Form application template for you to use as a guide for creating application templates. You may also modify the Free Form application template for use in your Viewpoint configuration. However, this application template does not come defined with a job script. See Job Submission Script on page 84 for information.

> ⓘ The admin user (for example, "moab-admin") can perform application template functions programmatically in Viewpoint; instead of using the Application Templates page in the portal. See Application Template API.

Related Topics

Application Templates Page

The Application Templates page lets you manage application templates for your Viewpoint configuration.

To access this page, click **Templates** from the menu.

This topic provides an example of the Application Templates page and describes its layout and available information.

In this topic:

- Page Example on page 68
- Page Details on page 68
- Additional Functions on page 70

Page Example

The following image is an example of the Application Templates page.
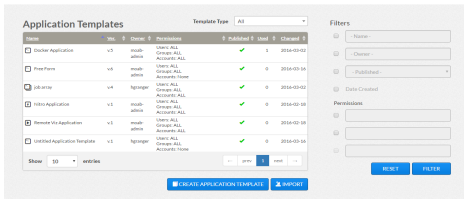
Page Details

This section describes the functional areas of the Application Templates page.

In this section:

New Application Template Creation

Viewpoint lets you create a new application template or import an existing application template you can use when creating jobs. To enable this functionality, two buttons are available towards the bottom of this page.

- **CREATE APPLICATION TEMPLATE** – Opens up a blank application template. See .
- **IMPORT** – Opens up a pop-window that lets you import an existing application template. See .

Filters

Filters let you specify what is displayed in the list of application templates on the main pane.

To use a filter, click the check box next to the filter to activate it, enter in the information, and then click **Filter**. You can click **Reset** at any time to restore the page default view.

The following table describes the different filters.

Filter	Description
Name	Name used to identify the application template.
Owner	The owner of the application template.

Filter	Description
Published	Whether you want to display applications templates that are published *or* unpublished.
Date Created	Date range during which the application template was created. When this filter is selected, additional information appears letting you specify the date range.
User	Name of the user or users given permission to use this application template.
Group	User group given permission to use this application template.
Account	Account given permission to use this application template.

Application Templates List

The main pane of the Application Templates page lists the application templates and their corresponding information in a column format.

> ℹ Column titles that are underlined indicate that you can sort (ascending or descending) the column contents. Hover the mouse over a column's contents to view additional information.

Page controls are available at the bottom of the application templates list to let you customize how many application templates appear at a time in the list. These controls also include options for moving between pages of listed application templates.

The following table describes the different columns and their contents.

Column Heading	Description
Name	Name used to identify the application template. Click on the application template's name to open the application template and view additional information about the application template.
Version	The current version of the template.
Owner	Name of the individual who created the application template.
Permissions	User, Group, and Account permissions granted for this application template.
Published	Indicates whether the application template is published.

Column Heading	Description
Used	Number of times the application template has been used (the number of jobs submitted using this application template).
Changed	Date on which the application template was last changed.

Additional Functions

The Templates page also includes a drop-down menu with shortcuts to perform additional application template-related functions. To access the shortcuts, hover the mouse near the application template name to display [≡], and then click this icon to display the drop-down.

From this drop-down, you can:

- Go directly to the Create Job page to create a job using this application template.
- Open the Edit Application Template page to modify this application template.
- Toggle this application template between published and unpublished status.
- Export this application template.
- Copy this application template.
- Delete this application template.

Related Topics

Application Template Details

This topic identifies how the application template information is organized and the available fields and functions available when creating or editing an application template.

On the Application Templates page, click **CREATE APPLICATION TEMPLATE** or click on an application template name in the list to open the Create/Edit Application Templates page. The following is an example of the Create

Application Template page. This page displays if you clicked
CREATE TEMPLATE. If you clicked on an application template name, the page
displays as Edit Application Template.

In this topic:

- Page Actions and Navigation on page 72 - Provides information about navigating the Template Details page.

- Application Template Name on page 72 – Identifies the name for the application template.

- Application Template Type on page 72 - Identifies the type for the application template.

- Template History on page 72 - Identifies the version for the application template. Provides information on saving a template as a new version, viewing a template's history, and reverting to previous template versions.

- Available Fields on page 73 – Provides information on the available fields and how the fields are organized.

- Field Information and Actions on page 82 – Provides a general explanation of the field functions; including how to show or hide fields.

- Application Template Permissions on page 83 – Provides information on how to restrict the users who have access to this application template.

- Published/Unpublished Application Template on page 84 – Provides information regarding the difference between published and unpublished application templates.

- Job Submission Script on page 84 – Explains how to access and use the Script Builder window to manage the job submission script for the application template.

Page Actions and Navigation

These buttons let you perform actions on this page:

- **EXPORT TEMPLATE** – Export the current template for use.
- **SAVE TEMPLATE** – Save any changes made to the current template.
- **SAVE AND CLOSE** – Save any changes made to the current template and return to the Template Page.

At the right of the page there are two floating buttons that can be pressed to navigate to the top and the bottom of the page.

Click to navigate to the top of the page.

Click to navigate to the bottom of the page.

Application Template Name

The name of the application template appears towards the top of this page. Using the example in this topic, the application template title is "Untitled Application Template". The application template name is displayed in the application template list shown in the Application Templates page.

To edit the template name, click on the name label and enter the desired name.

Application Template Type

Directly under the application template name, you can specify the template type. To choose, select one of the options from the drop-down menu.

Template History

To the right of the template type drop-down, you can provide a version description. To specify your version, click inside of the version description box, and edit it accordingly.

Every time a template is saved, a new version is created. When a template has been saved at least once since it's initial creation, a new button appears in the editing field labeled **HISTORY**. The following image is an example of an application template header after it has been saved at least once.

Edit Application Template

Docker Application

Template Type [HPC Application ▼]   **Version Description** [Default Docker Application Tem...] [⊘ HISTORY]

To view the template history, click on the **HISTORY** button. A window will open displaying details on each of the changes made to the template.

You can edit the description of a template version by clicking on the description of the version you wish to change.

Template History Manager   ✕

Name	Version	Changed By	Date	Description	Operations
Docker Application	v. 5 (CURRENT)	hgranger	2016-03-02 15:52:35	another version	✖ ⊕
Docker Application	v. 4	hgranger	2016-03-02 15:52:27	v.4	➔ ✖ ⊕
Docker Application	v. 3	hgranger	2016-03-02 15:52:10	Docker Application Template	➔ ✖ ⊕
Docker Application	v. 2	hgranger	2016-03-02 15:37:51	Default Docker Application Template	➔ ✖ ⊕
Docker Application	v. 1	moab-admin	2016-02-18 18:56:07	Default Docker Application Template	➔ ✖ ⊕

Show [10 ▼] entries   [←] [prev] [1] [next] [→]

[Close]

From this menu, you can choose any of the following options:

- Restore a previous version of the template by clicking the ➔ icon.

- Delete a template version by clicking the ✖ icon.

- Export a template version by clicking the ⊕ icon.

Available Fields

The available fields used for creating/editing application templates are grouped into four areas. Specifically:

Expand an area to view its fields. This section provides information on these different areas and their associated fields. See Field Information and Actions on page 82 for information on using the fields.

Application Description

This area allows you to provide a description for your application template. Use this area to tell users any necessary information to use or access this template. This field provides multiple options for styling and formatting, among other ways to make your description more detailed.

The following image shows the Application Description area.
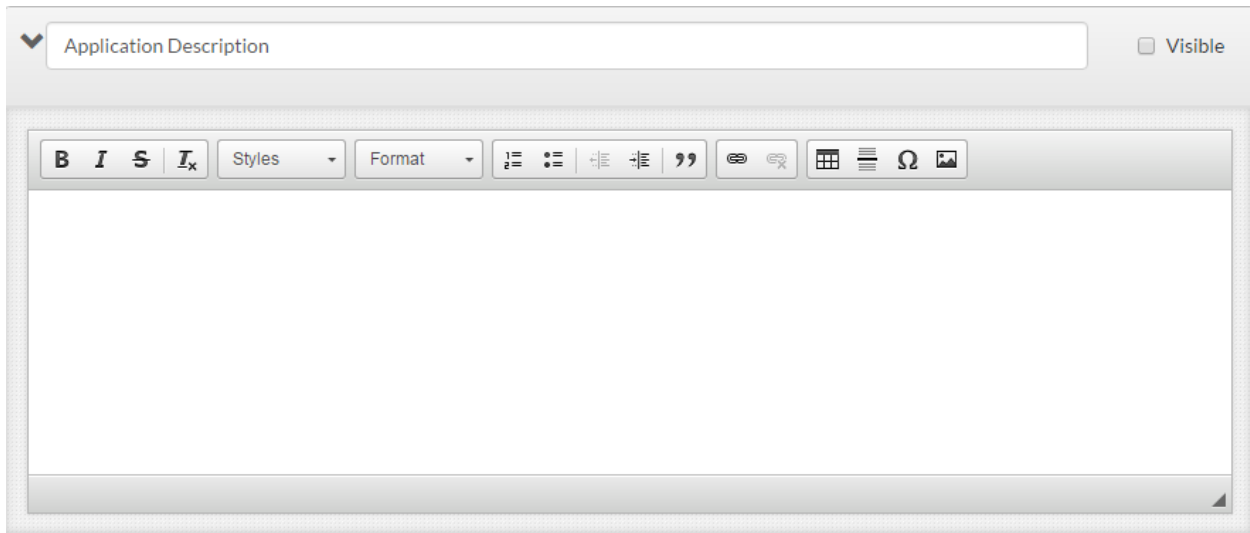
Basic Settings

This area, as well as the Advanced Settings area, contains Moab-specific input for the job. For example, in the Basic Settings area, you can specify whether this application template will be used for creating job arrays.

This area breaks the basic setting information into functional groups. The information will also be grouped similarly on the Job Details page.

The following images are examples of the functional groups.

- Basic Job

Basic Job Settings

Label | Name

Variable Name | NAME

Default Value |

☑ Enabled ☑ Visible ☑ Editable

Label | Submission Script

Variable Name | SCRIPT

Default Value | Customize Script

☐ Visible ☐ Editable

- Time Management

- ## Credentials

- ## Resources

- Data Management

Advanced Settings

This area contains advanced inputs that can be requested to Moab for the job such as whether to include Moab environment variables at job submission time.

The following image is an example of the Advanced Settings area.

> ⓘ When enabled, the User Priority field requires the Moab ENABLENEGJOBPRIORITY server parameter set to "TRUE". This Moab parameter should have been set when Viewpoint was installed. See Moab Parameters in the *Moab Workload Manager Administrator Guide* for more information on this parameter.

Node Policy Settings

This area contains policies that can be requested to Moab for the job such as whether to include Moab environment variables at job submission time.

The following image is an example of the Node Policies Settings area.

Image Selection

This area lets you add any pictures that you need to the application template. This field is only available if you are editing a template.

Custom Settings

This area lets you add any custom settings to your new template. This field is only available if you are creating a new template.

Field Information and Actions

This section describes the different information and actions available for the fields in the Basic Settings, Advanced Settings, and Custom Settings areas of the application template.
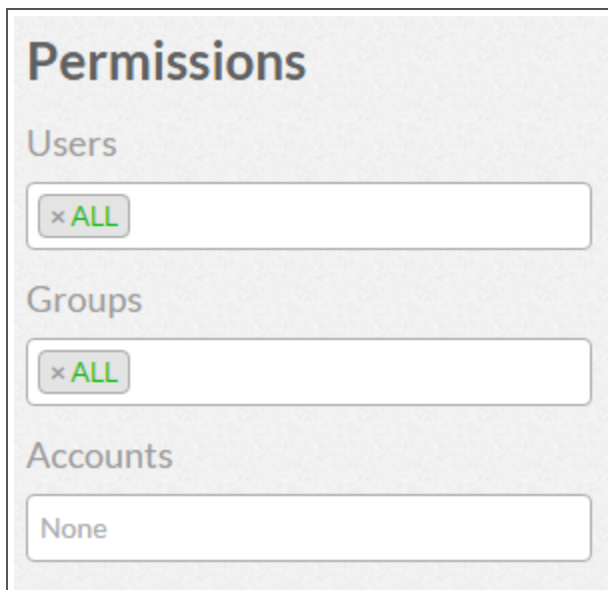
- **Label** – User-friendly name shown for the field on the Create/Edit Job page. This is typically similar to the variable name.

- **Variable Name** – Actual name of the variable widget that will contain the user's input. For Basic and Advanced Settings areas, this is the Moab variable for that field and cannot be changed. For the Custom Settings area, this variable can be any name that does not conflict with a Moab input variable. See Job Submission Script on page 84 for a list of Moab variable widgets.

- **Default Value** – Lets you specify a default value that will be used when creating/editing a job. Depending on the type of variable for this field, this can be a selection list, a drop-down to select a date/time, or a space to write in the value. If it is a date/time or write-in value, leave this empty if you do not want to assign a default value to the widget's variable and input fields.

- **Enabled, Visible, Editable check boxes** – These three check boxes control if and how fields are used in the application template.

- **Enabled** – When checked, this field is activated; meaning that this information is reported. At this time only two fields (Job Arrays and User Priority) require activation. If Job Arrays is enabled, then only job arrays can be created using this application template. If User Priority is enabled, users are able to make changes to the user priority information for the job (this option requires additional configuration, see Advanced Settings on page 78).

- **Visible** – When checked, this field will be displayed on the Create/Edit Job page. This check box requires the Enabled check box, if present, to be checked.

- **Editable** – When checked, users can provide information for this field when creating/editing a job. This check box requires the Visible check box to be checked.

Application Template Permissions

In addition to being able to restrict which fields the user may see or edit, you can also restrict who has access to the application template itself. This is done using the Permissions area at the top right of the page.

The following image is an example of the Permissions area.

Using this area you can restrict access by:

- Users. In the Users field, type the IDs of the users. Viewpoint will check if the users you added are valid; that is, has a valid operating system account. If the user is valid, the user name turns green; otherwise it turns red. Use "ALL" to remove restrictions.

- Group associations. In the Groups field, type the IDs of the groups. Viewpoint will check if the groups you added are valid; that is, has a valid operating system account. If the group is valid, the group ID turns green; otherwise it turns red. Use "ALL" to remove restrictions.

- Account associations. In the Accounts field, select from the available accounts listed in the drop-down. Leave blank to remove restrictions.

Published/Unpublished Application Template

Viewpoint also lets you configure whether this application template is available (published) for use.

> ℹ When an application template is marked "Unpublished" only the creator of the application template or template admins can view/edit the application template; regardless of the Permissions settings. In addition, the application template does not appear in the application templates list when a user creates a job.

On the Create/Application Template page, under the "Permissions" area, select the appropriate radio button for the publish status.

You can also change the publish status directly from the drop-down menu in the Application Templates page. See .

Job Submission Script

Viewpoint provides a Submission Script widget on the Application Template Details page (in the Basic Job Settings area). This widget provides a Script Builder window where you can create/edit, upload, or export the script information.

> ℹ In order for users to submit jobs using the application template, the application template must have a defined job submission script. As with any field in the application template, you can choose whether to make the script visible and editable by the user when creating a job.

Click **Customize Script** (located in the Default Value area in the Submission Script field) to access the Script Builder window.

The following image is an example of the Script Builder window.
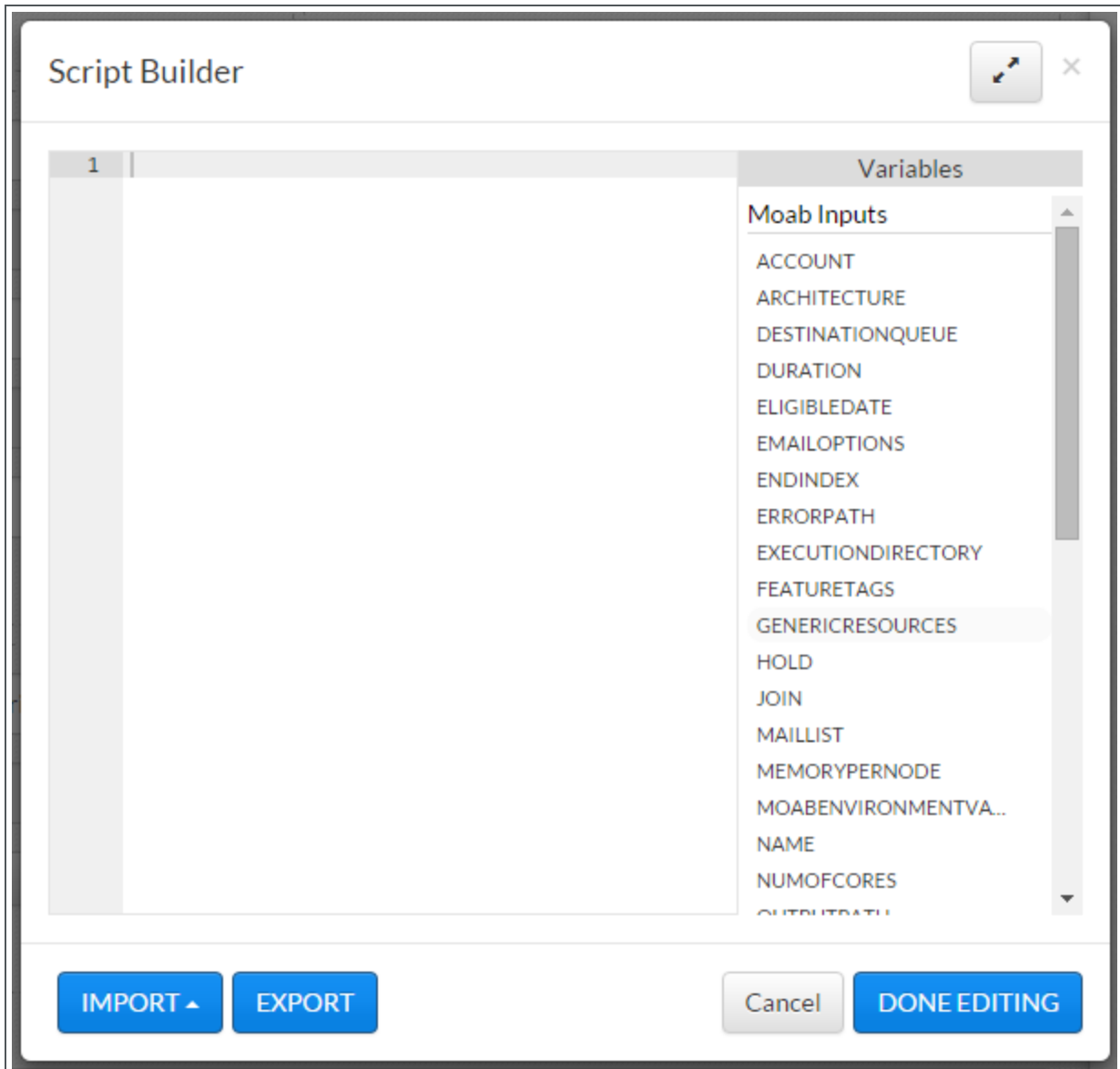
Using this window you can:

- Create/edit a script.

  1. Add/edit the lines for the script in the left pane.

     ◦ You can drag and drop the available variables from the right pane into the left pane. Hover the mouse over the variable to view its description. When used in the script, the variables shown in the right pane are highlighted and the number of times the variable is used in this script is displayed.

- ○ From inside the left pane, click Ctrl+Space to access to a list of variables. You can select the variables directly in this list instead of having to drag them from the right pane.

2. Click **DONE EDITING** to save the script and close the window.

- Import an existing script. You can import a script from your local computer or from your RFS.

- Export the script. Exporting a script lets you export a copy of your script to your RFS. Then you can import the script for a additional application templates to use.

Related Topics

Creating or Editing an Application Template

Viewpoint lets you create and edit application templates that users may use when creating jobs.

Create or Edit an Application Template

To create or edit an application template, do the following:

1. If you have not already done so, access the Application Templates page. (Click **TEMPATE** from the menu.)

2. Click **CREATE APPLICATION TEMPLATE** to create a new application template *or* click on an application template name to edit an existing application template.

   The Create/Edit Application Templates page displays with the application template fields.

3. Fill in the necessary information or make the necessary changes. See Application Template Details on page 70 for more information.

4. Click **SAVE TEMPLATE** to save the application template and stay on this page *or* click **SAVE AND CLOSE** to save the application template and close this page.

Related Topics

Importing an Application Template

Importing a Single Application Template

Do the following:

1. If you have not already done so, access the Application Templates page. (Click **Templates** from the menu.)

2. Click **IMPORT**.

    The Import Template pop-up window appears.
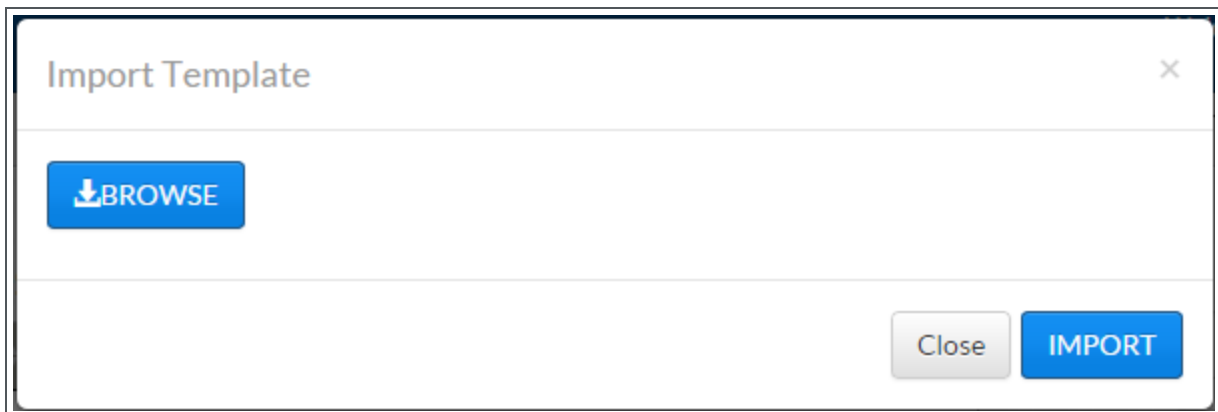
3. Click **BROWSE** and navigate to where the application template file is saved.

4. Select the application template file and then click **Open**.

5. When the application template appears in the Import Template window, click **IMPORT**. The application template appears in the application template list and can be edited as needed.

Importing Multiple Application Templates

Do the following:

1. If you have not already done so, access the Application Templates page. (Click **Templates** from the menu.)

2. Click **IMPORT**.

    The Import Template pop-up window appears.

3. Click **BROWSE** and navigate to where the application template file is saved.

4. Select all of the application template files you wish to import by pressing *shift* and then clicking on each file. Once you have chosen which files to include, click **OPEN**.

5. When the application template appears in the Import Template window, click **IMPORT**. The application template appears in the application template list and can be edited as needed.

Related Topics

Application Template API

Application Template API lets the admin user (for example, "moab-admin") perform application template functions programmatically in Viewpoint instead of using the Application Templates page in the portal.

This section provides information and example of the supported methods and how to authenticate against the Viewpoint application template API.

In this section:

-
-

Supported Methods

The table that follows shows the supported methods for the Viewpoint application template API. Detailed information about each method is provided

later in this section.

Resource	GET	PUT	POST	DELETE	PATCH
/api/templates/	Get All Templates	---	Create Template	---	---
/api/templates/<id>/	Get Single Template	Modify Template	---	Delete Template	Modify Template Attributes

Related Topics

Create Template

In this topic:

-
-
    -
    -

URL

```
POST /api/templates/
```

Example

```
POST /api/templates/
```

Request Body

Request Body

```
{
  "name": "Template Name",
  "published": true,
  "widgets": [
    {
      "default_value": "",
      "label": "Name",
      "variable_name": "NAME",
      "visible": true,
      "editable": true,
      "properties": [
        {
          "name": "id",
          "value": "name"
        }
      ],
      "tooltip": "Allows you to specify a more friendly name (note: name must be
alphanumeric)"
    },
    {
      "default_value": 0,
      "label": "Duration",
      "variable_name": "DURATION",
      "visible": true,
      "editable": true,
      "properties": [
        {
          "name": "id",
          "value": "duration"
        }
      ],
      "tooltip": "The amount of time the job is expected to run for"
    },
    {
      "default_value": "",
      "label": "Job Arrays",
      "variable_name": "arrays",
      "visible": true,
      "editable": true,
      "properties": [
        {
          "name": "id",
          "value": "arrays"
        },
        {
          "name": "enable",
          "value": "true"
        },
        {
          "name": "start-value",
          "value": "0"
        },
        {
          "name": "end-value",
          "value": "1"
        },
        {
          "name": "start-variable",
          "value": "STARTINDEX"
        },
        {
          "name": "end-variable",
          "value": "ENDINDEX"
        }
```

```
      ]
    },
    {
      "default_value": 0,
      "label": "Delay Start By",
      "variable_name": "ELIGIBLEDATE",
      "visible": false,
      "editable": false,
      "properties": [
        {
          "name": "id",
          "value": "eligibledate"
        }
      ],
      "tooltip": "Declares the time after which the job is eligible for execution"
    },
    {
      "default_value": "0",
      "label": "User Priority",
      "variable_name": "USERPRIORITY",
      "visible": false,
      "editable": false,
      "properties": [
        {
          "name": "id",
          "value": "priority"
        },
        {
          "name": "enable",
          "value": "false"
        }
      ],
      "tooltip": "Defines the priority of the job"
    },
    {
      "default_value": "",
      "label": "Submission Script",
      "variable_name": "SCRIPT",
      "visible": true,
      "editable": true,
      "properties": [
        {
          "name": "id",
          "value": "script"
        }
      ]
    },
    {
      "default_value": "",
      "label": "Account",
      "variable_name": "ACCOUNT",
      "visible": false,
      "editable": true,
      "properties": [
        {
          "name": "id",
          "value": "account"
        }
      ],
      "tooltip": "Defines the account associated with the job"
    },
    {
      "default_value": "",
      "label": "Queue / Class",
      "variable_name": "DESTINATIONQUEUE",
```

```
      "visible": false,
      "editable": true,
      "properties": [
        {
          "name": "id",
          "value": "destinationQueue"
        }
      ],
      "tooltip": "Defines the destination queue / class of the job"
    },
    {
      "default_value": "",
      "label": "Quality of Service",
      "variable_name": "QOS",
      "visible": false,
      "editable": true,
      "properties": [
        {
          "name": "id",
          "value": "qos"
        }
      ],
      "tooltip": "Defines the desired QoS for the job"
    },
    {
      "default_value": "",
      "label": "Number of Cores",
      "variable_name": "NUMOFCORES",
      "visible": true,
      "editable": true,
      "properties": [
        {
          "name": "id",
          "value": "cpupernode"
        }
      ],
      "tooltip": "Defines the resources that are required by the job and
establishes a limit to the amount of resource that can be consumed"
    },
    {
      "default_value": "0.5",
      "label": "Total Memory (GB)",
      "variable_name": "MEMORYPERNODE",
      "visible": true,
      "editable": true,
      "properties": [
        {
          "name": "id",
          "value": "memorypernode"
        }
      ],
      "tooltip": "Defines the resources that are required by the job and
establishes a limit to the amount of resource that can be consumed"
    },
    {
      "default_value": "",
      "label": "Architecture",
      "variable_name": "ARCHITECTURE",
      "visible": true,
      "editable": true,
      "properties": [
        {
          "name": "id",
          "value": "architecture"
        }
```

```
      ],
      "tooltip": "Defines the resources that are required by the job and
establishes a limit to the amount of resource that can be consumed"
    },
    {
      "default_value": "",
      "label": "Execution Path",
      "variable_name": "EXECUTIONDIRECTORY",
      "visible": false,
      "editable": true,
      "properties": [
        {
          "name": "id",
          "value": "exedir"
        }
      ],
      "tooltip": "Your job's execution directory"
    },
    {
      "default_value": "",
      "label": "Error Path",
      "variable_name": "ERRORPATH",
      "visible": false,
      "editable": true,
      "properties": [
        {
          "name": "id",
          "value": "errorpath"
        }
      ],
      "tooltip": "Defines the path to be used for the standard error stream of the
job"
    },
    {
      "default_value": "",
      "label": "Output Path",
      "variable_name": "OUTPUTPATH",
      "visible": false,
      "editable": true,
      "properties": [
        {
          "name": "id",
          "value": "outputpath"
        }
      ],
      "tooltip": "Defines the path to be used for the standard output stream of the
job"
    },
    {
      "default_value": "false",
      "label": "Merge Streams",
      "variable_name": "JOIN",
      "visible": false,
      "editable": false,
      "properties": [
        {
          "name": "id",
          "value": "join"
        }
      ],
      "tooltip": "Merge stderr and stdout streams?"
    },
    {
      "default_value": "false",
      "label": "Hold Job",
```

```
          "variable_name": "HOLD",
          "visible": false,
          "editable": false,
          "properties": [
             {
                "name": "id",
                "value": "hold"
             }
          ],
          "tooltip": "Specifies that a user hold be applied to the job at submission
time"
       },
       {
          "default_value": "",
          "label": "Script Shell",
          "variable_name": "SHELL",
          "visible": false,
          "editable": false,
          "properties": [
             {
                "name": "id",
                "value": "shell"
             }
          ],
          "tooltip": "Declares the shell that interprets the job script, e.g.
/bin/bash"
       },
       {
          "default_value": "true",
          "label": "Moab Environment Variables",
          "variable_name": "MOABENVIRONMENTVARIABLES",
          "visible": false,
          "editable": false,
          "properties": [
             {
                "name": "id",
                "value": "moabenvironmentvariables"
             }
          ],
          "tooltip": "Push Moab environment variables to job?"
       },
       {
          "default_value": "",
          "label": "Email Notification List",
          "variable_name": "MAILLIST",
          "visible": false,
          "editable": false,
          "properties": [
             {
                "name": "id",
                "value": "maillist"
             }
          ],
          "tooltip": "Specifies the list of users to whom mail is sent by the execution
server. Overrides the EMAILADDRESS specified on the USERCFG [credential]"
       },
       {
          "default_value": "",
          "label": "Email Options",
          "variable_name": "EMAILOPTIONS",
          "visible": false,
          "editable": false,
          "properties": [
             {
                "name": "id",
```

```
            "value": "emailoptions"
          }
        ],
        "tooltip": "A list of requested email options"
      },
      {
        "default_value": "",
        "label": "Generic Resources",
        "variable_name": "GENERICRESOURCES",
        "visible": false,
        "editable": false,
        "properties": [
          {
            "name": "id",
            "value": "genericresources"
          }
        ],
        "tooltip": "Allows for specification of additional job attributes"
      },
      {
        "default_value": "",
        "label": "Feature Tags",
        "variable_name": "FEATURETAGS",
        "visible": false,
        "editable": false,
        "properties": [
          {
            "name": "id",
            "value": "featuretags"
          }
        ],
        "tooltip": "The feature tags of compute node"
      }
    ],
    "sections": [
      {
        "name": "defaults",
        "value": "Basic Job Settings"
      },
      {
        "name": "timeManagement",
        "value": "Time Management"
      },
      {
        "name": "credentials",
        "value": "Credentials"
      },
      {
        "name": "resources",
        "value": "Resources"
      },
      {
        "name": "dataManagement",
        "value": "Data Management"
      },
      {
        "name": "custom",
        "value": "Custom Settings"
      },
      {
        "name": "basic",
        "value": "Basic Settings"
      },
      {
        "name": "advanced",
```

```
        "value": "Advanced Settings"
    }
  ],
  "permissions": [
    {
      "name": "ALL",
      "type": "user"
    },
    {
      "name": "ALL",
      "type": "group"
    },
    {
      "name": "ALL",
      "type": "account"
    }
  ]
}
```

Response

Response

```
{
  "url": "http://localhost:8080/api/templates/8/",
  "assigned": "ALL",
  "date": "2015-09-01",
  "id": 8,
  "name": "Template Name",
  "owner": "hpotter",
  "permissions": [
    {
      "name": "ALL",
      "type": "account"
    },
    {
      "name": "ALL",
      "type": "group"
    },
    {
      "name": "ALL",
      "type": "user"
    }
  ],
  "published": true,
  "sections": [
    {
      "name": "defaults",
      "value": "Basic Job Settings"
    },
    {
      "name": "timeManagement",
      "value": "Time Management"
    },
    {
      "name": "credentials",
      "value": "Credentials"
    },
    {
      "name": "resources",
      "value": "Resources"
    },
    {
      "name": "dataManagement",
      "value": "Data Management"
    },
    {
      "name": "custom",
      "value": "Custom Settings"
    },
    {
      "name": "basic",
      "value": "Basic Settings"
    },
    {
      "name": "advanced",
      "value": "Advanced Settings"
    }
  ],
  "use": 0,
  "widgets": [
    {
      "default_value": "",
      "editable": true,
      "label": "Name",
      "variable_name": "NAME",
      "visible": true,
```

```
        "properties": [
          {
            "name": "id",
            "value": "name"
          }
        ]
      },
      {
        "default_value": "0",
        "editable": true,
        "label": "Duration",
        "variable_name": "DURATION",
        "visible": true,
        "properties": [
          {
            "name": "id",
            "value": "duration"
          }
        ]
      },
      {
        "default_value": "",
        "editable": true,
        "label": "Job Arrays",
        "variable_name": "arrays",
        "visible": true,
        "properties": [
          {
            "name": "id",
            "value": "arrays"
          },
          {
            "name": "enable",
            "value": "true"
          },
          {
            "name": "start-value",
            "value": "0"
          },
          {
            "name": "end-value",
            "value": "1"
          },
          {
            "name": "start-variable",
            "value": "STARTINDEX"
          },
          {
            "name": "end-variable",
            "value": "ENDINDEX"
          }
        ]
      },
      {
        "default_value": "0",
        "editable": false,
        "label": "Delay Start By",
        "variable_name": "ELIGIBLEDATE",
        "visible": false,
        "properties": [
          {
            "name": "id",
            "value": "eligibledate"
          }
        ]
```

```
      },
      {
        "default_value": "0",
        "editable": false,
        "label": "User Priority",
        "variable_name": "USERPRIORITY",
        "visible": false,
        "properties": [
          {
            "name": "id",
            "value": "priority"
          },
          {
            "name": "enable",
            "value": "false"
          }
        ]
      },
      {
        "default_value": "",
        "editable": true,
        "label": "Submission Script",
        "variable_name": "SCRIPT",
        "visible": true,
        "properties": [
          {
            "name": "id",
            "value": "script"
          }
        ]
      },
      {
        "default_value": "",
        "editable": true,
        "label": "Account",
        "variable_name": "ACCOUNT",
        "visible": false,
        "properties": [
          {
            "name": "id",
            "value": "account"
          }
        ]
      },
      {
        "default_value": "",
        "editable": true,
        "label": "Queue / Class",
        "variable_name": "DESTINATIONQUEUE",
        "visible": false,
        "properties": [
          {
            "name": "id",
            "value": "destinationQueue"
          }
        ]
      },
      {
        "default_value": "",
        "editable": true,
        "label": "Quality of Service",
        "variable_name": "QOS",
        "visible": false,
        "properties": [
          {
```

```
        "name": "id",
        "value": "qos"
      }
    ]
  },
  {
    "default_value": "",
    "editable": true,
    "label": "Number of Cores",
    "variable_name": "NUMOFCORES",
    "visible": true,
    "properties": [
      {
        "name": "id",
        "value": "cpupernode"
      }
    ]
  },
  {
    "default_value": "0.5",
    "editable": true,
    "label": "Total Memory (GB)",
    "variable_name": "MEMORYPERNODE",
    "visible": true,
    "properties": [
      {
        "name": "id",
        "value": "memorypernode"
      }
    ]
  },
  {
    "default_value": "",
    "editable": true,
    "label": "Architecture",
    "variable_name": "ARCHITECTURE",
    "visible": true,
    "properties": [
      {
        "name": "id",
        "value": "architecture"
      }
    ]
  },
  {
    "default_value": "",
    "editable": true,
    "label": "Execution Path",
    "variable_name": "EXECUTIONDIRECTORY",
    "visible": false,
    "properties": [
      {
        "name": "id",
        "value": "exedir"
      }
    ]
  },
  {
    "default_value": "",
    "editable": true,
    "label": "Error Path",
    "variable_name": "ERRORPATH",
    "visible": false,
    "properties": [
      {
```

```
            "name": "id",
            "value": "errorpath"
          }
        ]
    },
    {
      "default_value": "",
      "editable": true,
      "label": "Output Path",
      "variable_name": "OUTPUTPATH",
      "visible": false,
      "properties": [
          {
            "name": "id",
            "value": "outputpath"
          }
        ]
    },
    {
      "default_value": "false",
      "editable": false,
      "label": "Merge Streams",
      "variable_name": "JOIN",
      "visible": false,
      "properties": [
          {
            "name": "id",
            "value": "join"
          }
        ]
    },
    {
      "default_value": "false",
      "editable": false,
      "label": "Hold Job",
      "variable_name": "HOLD",
      "visible": false,
      "properties": [
          {
            "name": "id",
            "value": "hold"
          }
        ]
    },
    {
      "default_value": "",
      "editable": false,
      "label": "Script Shell",
      "variable_name": "SHELL",
      "visible": false,
      "properties": [
          {
            "name": "id",
            "value": "shell"
          }
        ]
    },
    {
      "default_value": "true",
      "editable": false,
      "label": "Moab Environment Variables",
      "variable_name": "MOABENVIRONMENTVARIABLES",
      "visible": false,
      "properties": [
          {
```

```
            "name": "id",
            "value": "moabenvironmentvariables"
          }
       ]
     },
     {
       "default_value": "",
       "editable": false,
       "label": "Email Notification List",
       "variable_name": "MAILLIST",
       "visible": false,
       "properties": [
          {
            "name": "id",
            "value": "maillist"
          }
       ]
     },
     {
       "default_value": "",
       "editable": false,
       "label": "Email Options",
       "variable_name": "EMAILOPTIONS",
       "visible": false,
       "properties": [
          {
            "name": "id",
            "value": "emailoptions"
          }
       ]
     },
     {
       "default_value": "",
       "editable": false,
       "label": "Generic Resources",
       "variable_name": "GENERICRESOURCES",
       "visible": false,
       "properties": [
          {
            "name": "id",
            "value": "genericresources"
          }
       ]
     },
     {
       "default_value": "",
       "editable": false,
       "label": "Feature Tags",
       "variable_name": "FEATURETAGS",
       "visible": false,
       "properties": [
          {
            "name": "id",
            "value": "featuretags"
          }
       ]
     }
   ]
}
```

Related Topics

Delete Template

In this topic:

URL

```
DELETE /api/templates/<id>/
```

Parameters

Parameter	Required	Type	Description	Example
id	Yes	Integer	Numerical identifier of the template.	1

Example

```
DELETE /api/templates/2/
```

Related Topics

Get All Templates

In this topic:

URL

```
GET /api/templates/
```

Parameters

Page Control

Parameter	Required	Type	Description	Example
page_size	No	Integer	Specifies count of templates per page.	`page_size=3`
page	No	Integer	Specifies number of page.	`page=2`

Filter

Parameter	Required	Type	Description	Example
name	No	String	Specifies name of template for filtering	`name=Free Form`
owner	No	String	Specifies owner's name for filtering	`owner=moab-admin`
published	No	Boolean	Specifies status of template for filtering	`published=True`
permissions__user_name_in	No	List	Specifies list of users that template should contain	`permissions__user__name__in=-=hpotter,hgranger`
permissions__group_name_in	No	List	Specifies list of groups that template should contain	`permissions__group__name__in=-=hpotter,hgranger`
permissions__account_name__in	No	List	Specifies list of accounts that template should contain	`permissions__account__name__in=DEFAULT,QA`
date_gte	No	Date	Specifies the date before which the template was created	`date__gte=2015-09-01`
date_lte	No	Date	Specifies the date after which the template was created	`date__lte=2015-09-16`

Example

```
GET /api/templates/?page_size=1&published=True
```

Response

Response

```
GET /api/templates/?page_size=1&published=True
---------------------------------

{
    "count": 7,
    "next": "http://localhost:8080/api/templates/?page=2&page_
size=1&published=True",
    "previous": null,
    "results": [
        {
            "url": "http://localhost:8080/api/templates/2/",
            "assigned": "ALL",
            "date": "2015-08-07",
            "id": 2,
            "name": "asdasd",
            "owner": "hpotter",
            "permissions": [
                {
                    "name": "ALL",
                    "type": "account"
                },
                {
                    "name": "ALL",
                    "type": "group"
                },
                {
                    "name": "ALL",
                    "type": "user"
                }
            ],
            "published": true,
            "sections": [
                {
                    "name": "defaults",
                    "value": "Basic Job Settings"
                },
                {
                    "name": "timeManagement",
                    "value": "Time Management"
                },
                {
                    "name": "credentials",
                    "value": "Credentials"
                },
                {
                    "name": "resources",
                    "value": "Resources"
                },
                {
                    "name": "dataManagement",
                    "value": "Data Management"
                },
                {
                    "name": "custom",
                    "value": "Custom Settings"
                },
                {
                    "name": "basic",
                    "value": "Basic Settings"
                },
                {
                    "name": "advanced",
                    "value": "Advanced Settings"
                }
```

```
                ],
            "use": 0,
            "widgets": [
                {
                    "default_value": "",
                    "editable": true,
                    "label": "Name",
                    "variable_name": "NAME",
                    "visible": true,
                    "properties": [
                        {
                            "name": "id",
                            "value": "name"
                        }
                    ]
                },
                {
                    "default_value": "0",
                    "editable": true,
                    "label": "Duration",
                    "variable_name": "DURATION",
                    "visible": true,
                    "properties": [
                        {
                            "name": "id",
                            "value": "duration"
                        }
                    ]
                },
                {
                    "default_value": "",
                    "editable": false,
                    "label": "Job Arrays",
                    "variable_name": "arrays",
                    "visible": false,
                    "properties": [
                        {
                            "name": "id",
                            "value": "arrays"
                        },
                        {
                            "name": "enable",
                            "value": "false"
                        },
                        {
                            "name": "start-value",
                            "value": "0"
                        },
                        {
                            "name": "end-value",
                            "value": "1"
                        },
                        {
                            "name": "start-variable",
                            "value": "STARTINDEX"
                        },
                        {
                            "name": "end-variable",
                            "value": "ENDINDEX"
                        }
                    ]
                },
                {
                    "default_value": "0",
                    "editable": false,
```

```
                        "label": "Delay Start By",
                        "variable_name": "ELIGIBLEDATE",
                        "visible": false,
                        "properties": [
                                {
                                        "name": "id",
                                        "value": "eligibledate"
                                }
                        ]
                },
                {
                        "default_value": "0",
                        "editable": false,
                        "label": "User Priority",
                        "variable_name": "USERPRIORITY",
                        "visible": false,
                        "properties": [
                                {
                                        "name": "id",
                                        "value": "priority"
                                },
                                {
                                        "name": "enable",
                                        "value": "false"
                                }
                        ]
                },
                {
                        "default_value": "",
                        "editable": true,
                        "label": "Script",
                        "variable_name": "SCRIPT",
                        "visible": true,
                        "properties": [
                                {
                                        "name": "id",
                                        "value": "script"
                                }
                        ]
                },
                {
                        "default_value": "",
                        "editable": true,
                        "label": "Account",
                        "variable_name": "ACCOUNT",
                        "visible": false,
                        "properties": [
                                {
                                        "name": "id",
                                        "value": "account"
                                }
                        ]
                },
                {
                        "default_value": "",
                        "editable": true,
                        "label": "Queue / Class",
                        "variable_name": "DESTINATIONQUEUE",
                        "visible": false,
                        "properties": [
                                {
                                        "name": "id",
                                        "value": "destinationQueue"
                                }
                        ]
```

```
                },
                {
                    "default_value": "",
                    "editable": true,
                    "label": "Quality of Service",
                    "variable_name": "QOS",
                    "visible": false,
                    "properties": [
                        {
                            "name": "id",
                            "value": "qos"
                        }
                    ]
                },
                {
                    "default_value": "",
                    "editable": true,
                    "label": "Number of Cores",
                    "variable_name": "NUMOFCORES",
                    "visible": true,
                    "properties": [
                        {
                            "name": "id",
                            "value": "cpupernode"
                        }
                    ]
                },
                {
                    "default_value": "0.5",
                    "editable": true,
                    "label": "Total Memory (GB)",
                    "variable_name": "MEMORYPERNODE",
                    "visible": true,
                    "properties": [
                        {
                            "name": "id",
                            "value": "memorypernode"
                        }
                    ]
                },
                {
                    "default_value": "",
                    "editable": true,
                    "label": "Architecture",
                    "variable_name": "ARCHITECTURE",
                    "visible": true,
                    "properties": [
                        {
                            "name": "id",
                            "value": "architecture"
                        }
                    ]
                },
                {
                    "default_value": "",
                    "editable": true,
                    "label": "Execution Path",
                    "variable_name": "EXECUTIONDIRECTORY",
                    "visible": false,
                    "properties": [
                        {
                            "name": "id",
                            "value": "exedir"
                        }
                    ]
```

```
                },
                {
                        "default_value": "",
                        "editable": true,
                        "label": "Error Path",
                        "variable_name": "ERRORPATH",
                        "visible": false,
                        "properties": [
                                {
                                        "name": "id",
                                        "value": "errorpath"
                                }
                        ]
                },
                {
                        "default_value": "",
                        "editable": true,
                        "label": "Output Path",
                        "variable_name": "OUTPUTPATH",
                        "visible": false,
                        "properties": [
                                {
                                        "name": "id",
                                        "value": "outputpath"
                                }
                        ]
                },
                {
                        "default_value": "false",
                        "editable": false,
                        "label": "Merge Streams",
                        "variable_name": "JOIN",
                        "visible": false,
                        "properties": [
                                {
                                        "name": "id",
                                        "value": "join"
                                }
                        ]
                },
                {
                        "default_value": "false",
                        "editable": false,
                        "label": "Hold Job",
                        "variable_name": "HOLD",
                        "visible": false,
                        "properties": [
                                {
                                        "name": "id",
                                        "value": "hold"
                                }
                        ]
                },
                {
                        "default_value": "",
                        "editable": false,
                        "label": "Script Shell",
                        "variable_name": "SHELL",
                        "visible": false,
                        "properties": [
                                {
                                        "name": "id",
                                        "value": "shell"
                                }
                        ]
```

```
            },
            {
                "default_value": "true",
                "editable": false,
                "label": "Moab Environment Variables",
                "variable_name": "MOABENVIRONMENTVARIABLES",
                "visible": false,
                "properties": [
                    {
                        "name": "id",
                        "value": "moabenvironmentvariables"
                    }
                ]
            },
            {
                "default_value": "",
                "editable": false,
                "label": "Email Notification List",
                "variable_name": "MAILLIST",
                "visible": false,
                "properties": [
                    {
                        "name": "id",
                        "value": "maillist"
                    }
                ]
            },
            {
                "default_value": "",
                "editable": false,
                "label": "Email Options",
                "variable_name": "EMAILOPTIONS",
                "visible": false,
                "properties": [
                    {
                        "name": "id",
                        "value": "emailoptions"
                    }
                ]
            },
            {
                "default_value": "",
                "editable": false,
                "label": "Generic Resources",
                "variable_name": "GENERICRESOURCES",
                "visible": false,
                "properties": [
                    {
                        "name": "id",
                        "value": "genericresources"
                    }
                ]
            },
            {
                "default_value": "null",
                "editable": false,
                "label": "Feature Tags",
                "variable_name": "FEATURETAGS",
                "visible": false,
                "properties": [
                    {
                        "name": "id",
                        "value": "featuretags"
                    }
                ]
```

```
                    }
                ]
            }
        ]
    }
```

Related Topics

Get Single Template

In this topic:

URL

```
GET /api/templates/<id>/
```

Parameters

Parameter	Required	Type	Description	Example
id	Yes	Integer	Numerical identifier of the template.	1

Example

```
GET /api/templates/1/
```

Response

Response

```
{
    "url": "http://localhost:8080/api/templates/1/",
    "assigned": "ALL",
    "date": "2015-09-01",
    "id": 1,
    "name": "Free Form",
    "owner": "moab-admin",
    "permissions": [
        {
            "name": "ALL",
            "type": "account"
        },
        {
            "name": "ALL",
            "type": "group"
        },
        {
            "name": "ALL",
            "type": "user"
        }
    ],
    "published": true,
    "sections": [
        {
            "name": "defaults",
            "value": "Basic Job Settings"
        },
        {
            "name": "timeManagement",
            "value": "Time Management"
        },
        {
            "name": "credentials",
            "value": "Credentials"
        },
        {
            "name": "resources",
            "value": "Resources"
        },
        {
            "name": "dataManagement",
            "value": "Data Management"
        },
        {
            "name": "custom",
            "value": "Custom Settings"
        }
    ],
    "use": 3,
    "widgets": [
        {
            "default_value": "",
            "editable": true,
            "label": "Name",
            "variable_name": "NAME",
            "visible": true,
            "properties": [
                {
                    "name": "id",
                    "value": "name"
                }
            ]
        },
        {
```

```
                "default_value": "",
                "editable": true,
                "label": "Duration",
                "variable_name": "DURATION",
                "visible": true,
                "properties": [
                    {
                        "name": "id",
                        "value": "duration"
                    }
                ]
            },
            {
                "default_value": "",
                "editable": false,
                "label": "Job Arrays",
                "variable_name": "arrays",
                "visible": false,
                "properties": [
                    {
                        "name": "id",
                        "value": "arrays"
                    },
                    {
                        "name": "enable",
                        "value": "false"
                    },
                    {
                        "name": "start-value",
                        "value": "0"
                    },
                    {
                        "name": "end-value",
                        "value": "1"
                    },
                    {
                        "name": "start-variable",
                        "value": "STARTINDEX"
                    },
                    {
                        "name": "end-variable",
                        "value": "ENDINDEX"
                    }
                ]
            },
            {
                "default_value": "",
                "editable": true,
                "label": "Delay Start By",
                "variable_name": "ELIGIBLEDATE",
                "visible": true,
                "properties": [
                    {
                        "name": "id",
                        "value": "eligibledate"
                    }
                ]
            },
            {
                "default_value": "0",
                "editable": true,
                "label": "User Priority",
                "variable_name": "PRIORITY",
                "visible": true,
                "properties": [
```

```
                {
                    "name": "id",
                    "value": "priority"
                },
                {
                    "name": "enable",
                    "value": "true"
                }
            ]
        },
        {
            "default_value": "",
            "editable": true,
            "label": "Submission Script",
            "variable_name": "SCRIPT",
            "visible": true,
            "properties": [
                {
                    "name": "id",
                    "value": "script"
                }
            ]
        },
        {
            "default_value": "",
            "editable": true,
            "label": "Account",
            "variable_name": "ACCOUNT",
            "visible": true,
            "properties": [
                {
                    "name": "id",
                    "value": "account"
                }
            ]
        },
        {
            "default_value": "",
            "editable": true,
            "label": "Queue / Class",
            "variable_name": "DESTINATIONQUEUE",
            "visible": true,
            "properties": [
                {
                    "name": "id",
                    "value": "destinationQueue"
                }
            ]
        },
        {
            "default_value": "",
            "editable": true,
            "label": "Quality of Service",
            "variable_name": "QOS",
            "visible": true,
            "properties": [
                {
                    "name": "id",
                    "value": "qos"
                }
            ]
        },
        {
            "default_value": "",
            "editable": true,
```

```
                 "label": "Number of Cores",
                 "variable_name": "NUMOFCORES",
                 "visible": true,
                 "properties": [
                     {
                         "name": "id",
                         "value": "cpupernode"
                     }
                 ]
             },
             {
                 "default_value": "0.5",
                 "editable": true,
                 "label": "Total Memory (GB)",
                 "variable_name": "MEMORYPERNODE",
                 "visible": true,
                 "properties": [
                     {
                         "name": "id",
                         "value": "memorypernode"
                     }
                 ]
             },
             {
                 "default_value": "",
                 "editable": true,
                 "label": "Architecture",
                 "variable_name": "ARCHITECTURE",
                 "visible": true,
                 "properties": [
                     {
                         "name": "id",
                         "value": "architecture"
                     }
                 ]
             },
             {
                 "default_value": "",
                 "editable": true,
                 "label": "Execution Path",
                 "variable_name": "EXECUTIONDIRECTORY",
                 "visible": true,
                 "properties": [
                     {
                         "name": "id",
                         "value": "exedir"
                     }
                 ]
             },
             {
                 "default_value": "",
                 "editable": true,
                 "label": "Error Path",
                 "variable_name": "ERRORPATH",
                 "visible": true,
                 "properties": [
                     {
                         "name": "id",
                         "value": "errorpath"
                     }
                 ]
             },
             {
                 "default_value": "",
                 "editable": true,
```

```
                    "label": "Output Path",
                    "variable_name": "OUTPUTPATH",
                    "visible": true,
                    "properties": [
                        {
                            "name": "id",
                            "value": "outputpath"
                        }
                    ]
            },
            {
                    "default_value": "false",
                    "editable": true,
                    "label": "Merge Streams",
                    "variable_name": "JOIN",
                    "visible": true,
                    "properties": [
                        {
                            "name": "id",
                            "value": "join"
                        }
                    ]
            },
            {
                    "default_value": "false",
                    "editable": true,
                    "label": "Hold Job",
                    "variable_name": "HOLD",
                    "visible": true,
                    "properties": [
                        {
                            "name": "id",
                            "value": "hold"
                        }
                    ]
            },
            {
                    "default_value": "",
                    "editable": true,
                    "label": "Script Shell",
                    "variable_name": "SHELL",
                    "visible": true,
                    "properties": [
                        {
                            "name": "id",
                            "value": "shell"
                        }
                    ]
            },
            {
                    "default_value": "true",
                    "editable": true,
                    "label": "Moab Environment Variables",
                    "variable_name": "MOABENVIRONMENTVARIABLES",
                    "visible": true,
                    "properties": [
                        {
                            "name": "id",
                            "value": "moabenvironmentvariables"
                        }
                    ]
            },
            {
                    "default_value": "",
                    "editable": true,
```

```
            "label": "Email Notification List",
            "variable_name": "MAILLIST",
            "visible": true,
            "properties": [
                {
                    "name": "id",
                    "value": "maillist"
                }
            ]
        },
        {
            "default_value": "",
            "editable": true,
            "label": "Email Options",
            "variable_name": "EMAILOPTIONS",
            "visible": true,
            "properties": [
                {
                    "name": "id",
                    "value": "emailoptions"
                }
            ]
        },
        {
            "default_value": "",
            "editable": true,
            "label": "Generic Resources",
            "variable_name": "GENERICRESOURCES",
            "visible": true,
            "properties": [
                {
                    "name": "id",
                    "value": "genericresources"
                }
            ]
        },
        {
            "default_value": "",
            "editable": true,
            "label": "Feature Tags",
            "variable_name": "FEATURETAGS",
            "visible": true,
            "properties": [
                {
                    "name": "id",
                    "value": "featuretags"
                }
            ]
        }
    ]
}
```

Related Topics

Modify Template

> ⚠ The PUT method replaces the existing template with your modified template. To only change one or more specific attributes of an existing template, use the PATCH method. See Modify Template Attributes on page 123.

In this topic:

- URL on page 123
- Parameters on page 123
- Example on page 123

URL

```
PUT /api/templates/<id>/
```

Parameters

Parameter	Required	Type	Description	Example
id	Yes	Integer	Numerical identifier of the template.	1

Example

See the example information provided in Create Template on page 89.

Related Topics

Supported Methods on page 88

Modify Template Attributes

> ℹ The PATCH method lets you modify specific attributes of an existing template. To replace an existing template in its entirety with your modified template, use the PUT method. See Modify Template on page 123.

> ⚠ Please make sure that you specify a proper Content-Type when using the API. If the content type is not specified, the Viewpoint API will consider it as 'text/html' which might cause side effects in the request processing code.

In this topic:

URL

```
PATCH /api/templates/<id>
```

Parameters

Parameter	Required	Type	Description	Example
id	Yes	Integer	The ID of the template	1

JSON Structure

The following table identifies the template attributes that can be changed via PATCH call.

name	Yes	String	User friendly name
permissions	No	List	List of permissions. See corresponding section of this document for more details
published	No	Boolean	Template's status: published or unpublished. If the template unpublished then only owner can see it
sections	No	List	List of sections. See "Section" section bellow
widgets	No	List	List of widgets. See "Widget" section bellow

Example

This section provides an example of how to update template 1 with a new name and with the published tag unset.

```
PATCH /api/templates/1/
```

Request Body

```
{
  "name": "My New Name",
  "published": false
}
```

Response

Response

```
{
  "url": "http://localhost:8080/api/templates/1/",
  "assigned": "ALL",
  "date": "2015-09-01",
  "id": 1,
  "name": "My New Name",
  "owner": "hpotter",
  "permissions": [
    {
      "name": "ALL",
      "type": "account"
    },
    {
      "name": "ALL",
      "type": "group"
    },
    {
      "name": "ALL",
      "type": "user"
    }
  ],
  "published": false,
  "sections": [
    {
      "name": "defaults",
      "value": "Basic Job Settings"
    },
    {
      "name": "timeManagement",
      "value": "Time Management"
    },
    {
      "name": "credentials",
      "value": "Credentials"
    },
    {
      "name": "resources",
      "value": "Resources"
    },
    {
      "name": "dataManagement",
      "value": "Data Management"
    },
    {
      "name": "custom",
      "value": "Custom Settings"
    },
    {
      "name": "basic",
      "value": "Basic Settings"
    },
    {
      "name": "advanced",
      "value": "Advanced Settings"
    }
  ],
  "use": 0,
  "widgets": [
    {
      "default_value": "",
      "editable": true,
      "label": "Name",
      "variable_name": "NAME",
      "visible": true,
```

```
        "properties": [
          {
            "name": "id",
            "value": "name"
          }
        ]
      },
      {
        "default_value": "0",
        "editable": true,
        "label": "Duration",
        "variable_name": "DURATION",
        "visible": true,
        "properties": [
          {
            "name": "id",
            "value": "duration"
          }
        ]
      },
      {
        "default_value": "",
        "editable": true,
        "label": "Job Arrays",
        "variable_name": "arrays",
        "visible": true,
        "properties": [
          {
            "name": "id",
            "value": "arrays"
          },
          {
            "name": "enable",
            "value": "true"
          },
          {
            "name": "start-value",
            "value": "0"
          },
          {
            "name": "end-value",
            "value": "1"
          },
          {
            "name": "start-variable",
            "value": "STARTINDEX"
          },
          {
            "name": "end-variable",
            "value": "ENDINDEX"
          }
        ]
      },
      {
        "default_value": "0",
        "editable": false,
        "label": "Delay Start By",
        "variable_name": "ELIGIBLEDATE",
        "visible": false,
        "properties": [
          {
            "name": "id",
            "value": "eligibledate"
          }
        ]
```

```
        },
        {
          "default_value": "0",
          "editable": false,
          "label": "User Priority",
          "variable_name": "USERPRIORITY",
          "visible": false,
          "properties": [
            {
              "name": "id",
              "value": "priority"
            },
            {
              "name": "enable",
              "value": "false"
            }
          ]
        },
        {
          "default_value": "",
          "editable": true,
          "label": "Submission Script",
          "variable_name": "SCRIPT",
          "visible": true,
          "properties": [
            {
              "name": "id",
              "value": "script"
            }
          ]
        },
        {
          "default_value": "",
          "editable": true,
          "label": "Account",
          "variable_name": "ACCOUNT",
          "visible": false,
          "properties": [
            {
              "name": "id",
              "value": "account"
            }
          ]
        },
        {
          "default_value": "",
          "editable": true,
          "label": "Queue / Class",
          "variable_name": "DESTINATIONQUEUE",
          "visible": false,
          "properties": [
            {
              "name": "id",
              "value": "destinationQueue"
            }
          ]
        },
        {
          "default_value": "",
          "editable": true,
          "label": "Quality of Service",
          "variable_name": "QOS",
          "visible": false,
          "properties": [
            {
```

```
          "name": "id",
          "value": "qos"
        }
      ]
    },
    {
      "default_value": "",
      "editable": true,
      "label": "Number of Cores",
      "variable_name": "NUMOFCORES",
      "visible": true,
      "properties": [
        {
          "name": "id",
          "value": "cpupernode"
        }
      ]
    },
    {
      "default_value": "0.5",
      "editable": true,
      "label": "Total Memory (GB)",
      "variable_name": "MEMORYPERNODE",
      "visible": true,
      "properties": [
        {
          "name": "id",
          "value": "memorypernode"
        }
      ]
    },
    {
      "default_value": "",
      "editable": true,
      "label": "Architecture",
      "variable_name": "ARCHITECTURE",
      "visible": true,
      "properties": [
        {
          "name": "id",
          "value": "architecture"
        }
      ]
    },
    {
      "default_value": "",
      "editable": true,
      "label": "Execution Path",
      "variable_name": "EXECUTIONDIRECTORY",
      "visible": false,
      "properties": [
        {
          "name": "id",
          "value": "exedir"
        }
      ]
    },
    {
      "default_value": "",
      "editable": true,
      "label": "Error Path",
      "variable_name": "ERRORPATH",
      "visible": false,
      "properties": [
        {
```

```
            "name": "id",
            "value": "errorpath"
          }
        ]
      },
      {
        "default_value": "",
        "editable": true,
        "label": "Output Path",
        "variable_name": "OUTPUTPATH",
        "visible": false,
        "properties": [
          {
            "name": "id",
            "value": "outputpath"
          }
        ]
      },
      {
        "default_value": "false",
        "editable": false,
        "label": "Merge Streams",
        "variable_name": "JOIN",
        "visible": false,
        "properties": [
          {
            "name": "id",
            "value": "join"
          }
        ]
      },
      {
        "default_value": "false",
        "editable": false,
        "label": "Hold Job",
        "variable_name": "HOLD",
        "visible": false,
        "properties": [
          {
            "name": "id",
            "value": "hold"
          }
        ]
      },
      {
        "default_value": "",
        "editable": false,
        "label": "Script Shell",
        "variable_name": "SHELL",
        "visible": false,
        "properties": [
          {
            "name": "id",
            "value": "shell"
          }
        ]
      },
      {
        "default_value": "true",
        "editable": false,
        "label": "Moab Environment Variables",
        "variable_name": "MOABENVIRONMENTVARIABLES",
        "visible": false,
        "properties": [
          {
```

```
            "name": "id",
            "value": "moabenvironmentvariables"
          }
        ]
      },
      {
        "default_value": "",
        "editable": false,
        "label": "Email Notification List",
        "variable_name": "MAILLIST",
        "visible": false,
        "properties": [
          {
            "name": "id",
            "value": "maillist"
          }
        ]
      },
      {
        "default_value": "",
        "editable": false,
        "label": "Email Options",
        "variable_name": "EMAILOPTIONS",
        "visible": false,
        "properties": [
          {
            "name": "id",
            "value": "emailoptions"
          }
        ]
      },
      {
        "default_value": "",
        "editable": false,
        "label": "Generic Resources",
        "variable_name": "GENERICRESOURCES",
        "visible": false,
        "properties": [
          {
            "name": "id",
            "value": "genericresources"
          }
        ]
      },
      {
        "default_value": "",
        "editable": false,
        "label": "Feature Tags",
        "variable_name": "FEATURETAGS",
        "visible": false,
        "properties": [
          {
            "name": "id",
            "value": "featuretags"
          }
        ]
      }
    ]
}
```

Related Topics

Authenticate Against the Viewpoint Template API

The Viewpoint Template API requires users to authenticate to it using cookies.

This topic provides an example on how to authenticate using cURL to get a valid cookie that can be used to validate your access.

Do the following:

1. Create the following script:

```
#!/bin/bash

REQUEST_METHOD=$1
REQUEST_URL=$2

LOGIN_URL=http://localhost:8080/login/
YOUR_USER='moab-admin'
YOUR_PASS='changeme!'
COOKIES=cookies.txt
CURL_BIN="curl -s -c $COOKIES -b $COOKIES -e $LOGIN_URL"
echo "Django Auth: get csrftoken ..."
$CURL_BIN $LOGIN_URL > /dev/null
DJANGO_TOKEN="csrfmiddlewaretoken=$(grep cid $COOKIES | sed 's/^.*cid\s*//')"
echo "DJANGO TOKEN is $DJANGO_TOKEN"
echo "####################################################"
echo "Performing login..."
$CURL_BIN \
    -d "$DJANGO_TOKEN&uName=$YOUR_USER&pwd=$YOUR_PASS" \
    -X POST $LOGIN_URL
echo "####################################################"
echo "Request: $REQUEST_METHOD $REQUEST_URL"
$CURL_BIN \
    -d "$DJANGO_TOKEN&..." \
    -X $REQUEST_METHOD \
    -H "Accept:Application/json" \
    $REQUEST_URL \
    | python -m json.tool
rm $COOKIES
```

2. Consume the API by running this script:

```
./iris-curl.sh GET "http://localhost:8080/api/templates/"
```

Related Topics

Chapter 5 Nodes

Viewpoint lets you view all of the nodes reported to Moab by your resource manager. Specifically:

- the Nodes page (default) offers a place to determine the status of your compute nodes, how many jobs are running on each node, what features are on each node, and other information.
- the Node Details page provides additional details about a node.
- the Resource Job Timeline page is a sub-page of the Nodes page that displays information about the jobs and reservations that are running on a set of nodes.

Related Topics

Nodes Page

The Nodes page offers a place to determine the status of your compute nodes, how many jobs are running on each node, what features are on each node, and other information.

To access this page, click **Nodes** from the menu.

This topic provides an example of the Nodes page and describes its layout and available information.

In this topic:

Page Example

The following image is an example of the Nodes page.

Selection Criteria Area

The right side of this page provides selection criteria you can use to limit what is displayed in the nodelist view.

You can choose to display:

- Specific nodes or groups of nodes based on the Node ID, Class, or Feature information. Select the value from the Current Search drop-down, in the Narrow Search box, enter the specific information, and then click 🔍.

- Only nodes matching a specific status (state). Select the status from the Select Status drop-down and then click **Filter**.

- Only nodes within a given processor, job, CPU utilization, and/or memory utilization range. Select the minimum and maximum values and then click **Filter**.

> ℹ You can utilize multiple selection criteria options; however, only the nodes that match all of the defined options will be shown in the nodelist view.

Click **Reset** at any time to remove all defined selection criteria options (restore the page defaults).

Nodelist View Details

The following information explains the layout and additional information available in the nodelist view.

- **Display Refresh** – You can refresh the information displayed in the nodelist view (including specified search and filter criteria) to reflect the latest information about the nodes. At the top of the nodelist view, click ⟳ .

- **Columns** – The nodelist view displays the data in a column format. Column titles that are underlined indicate that you can sort (ascending or descending) the column contents.

  The following table describes the different columns and their contents. You can hover the mouse over a column's contents to view additional information).

Column Heading	Description
Node ID	Unique identifier for the node. You can click a node ID in the column's contents to view additional information about that node. See Node Details Page.
Status	State of the node (for example, BUSY, IDLE, or DOWN).
Class	Available classes on the node.
Feature	Current features available on this node.
Procs	Number of processors on this node displayed as available/configured; where configured is the number of processors being reported by the resource manager.
Jobs	Number of jobs running on this node.
CPU Utilization	Percentage of this node's CPU utilization; based on the node's operating system reported cpu load average.
Memory Utilization	Percentage of this node's memory that is dedicated to currently running jobs.

- **Page Controls** – Page controls are available at the bottom of the nodeslist view to let you customize how many nodes appear per page. The page controls also include options for selecting which page to display.

Related Topics

Node Details Page

The Node Details page shows additional information about a selected node.

To access this page, from the Nodes page, click on the Node ID link for the node.

> ℹ If you defined selection criteria on the Nodes page, when you are done with the Nodes Details page, click the "Return to earlier search" link to preserve the criteria; otherwise, click **Close** to return to the default state of the Nodes page.
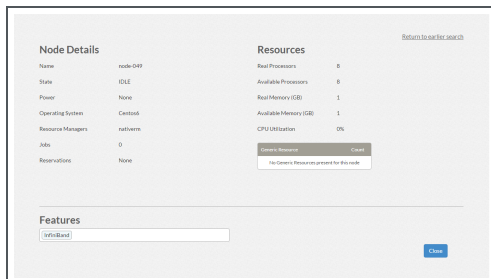
This topic provides an example of the Nodes Details page and describes its layout and available information.

In this topic:

- Page Example on page 138
- Page Details on page 138

Page Example

The following image is an example of the Node Details page.

Page Details

This section describes the different functional areas, including field descriptions, available on the Node Details page.

In this section:

- [Node Details](#)
- [Resources](#)
- [Features](#)
- [Node Jobs](#)

Node Details

The Node Details area displays specific information about the node. The following table describes the fields in the Node Details area.

Field	Description
Name	The ID of the node.
State	The current state of the node or resource (such as BUSY, IDLE, DOWN).
Power	The power state of the node.
Operating System	The name of the operating system currently running on this node.
Resource Managers	List of resource managers that report the node.
Jobs	The number of jobs running on this node.
Reservations	List of reservations that include this node.

Resources

The Resources area displays information about the node's available and allocated resources. The following table describes the fields in the Resources area.

Field	Description
Real processors	The number of processors on the node.
Available processors	The number of processors that are not dedicated to currently running jobs.
Real memory (GB)	The amount of memory (in GB) on the node.

Field	Description
Available memory (GB)	The amount of memory (in GB) that is available on the node.
CPU utilization	The current CPU utilization of the node; based on the node's operating system reported cpu load average.
Generic Resource with Count	The generic resources required by the node or resource.

Features

The Features area lists the reported and the configurable features for this node.

- Reported features are the node features that were reported by the resource manager or configured in the Moab configuration file. You cannot remove these features in the Features area.
- Configurable features are the node features that were added using the Viewpoint portal (additional features available through MWS). You can add/remove these features in the Features area.

Node Jobs

The Node Jobs area lists the job information for this node. See Workload Page on page 47 for more information on the job fields.

Related Topics

Resource Job Timeline Page

The Resource Job Timeline page is a sub-page of the Nodes page that displays information about the jobs and reservations that are running on a set of nodes. You can also utilize selection criteria to narrow the results shown graphically in the timeline view.

To access this page, from the Nodes page, click (the icon is greyed out

until it is selected).

> ⚠️ The Resource Job Timeline View, by default, is set is to show the last 24 hours and the next 4 hours when you first visit the page. Depending on how many jobs run in your cluster per day, and how many nodes you are viewing, that time window might contain too many objects for the browser to display. You can change the default setting. See Threshold Settings on page 144 more information.

This topic provides an example of the Resource Job Timeline page and describes its layout and available information.

In this topic:

- Page Example on page 141
- Selection Criteria Area on page 142
- Graphical Timeline View Details on page 142

Page Example

The following image is an example of the Resource Job Timeline page.
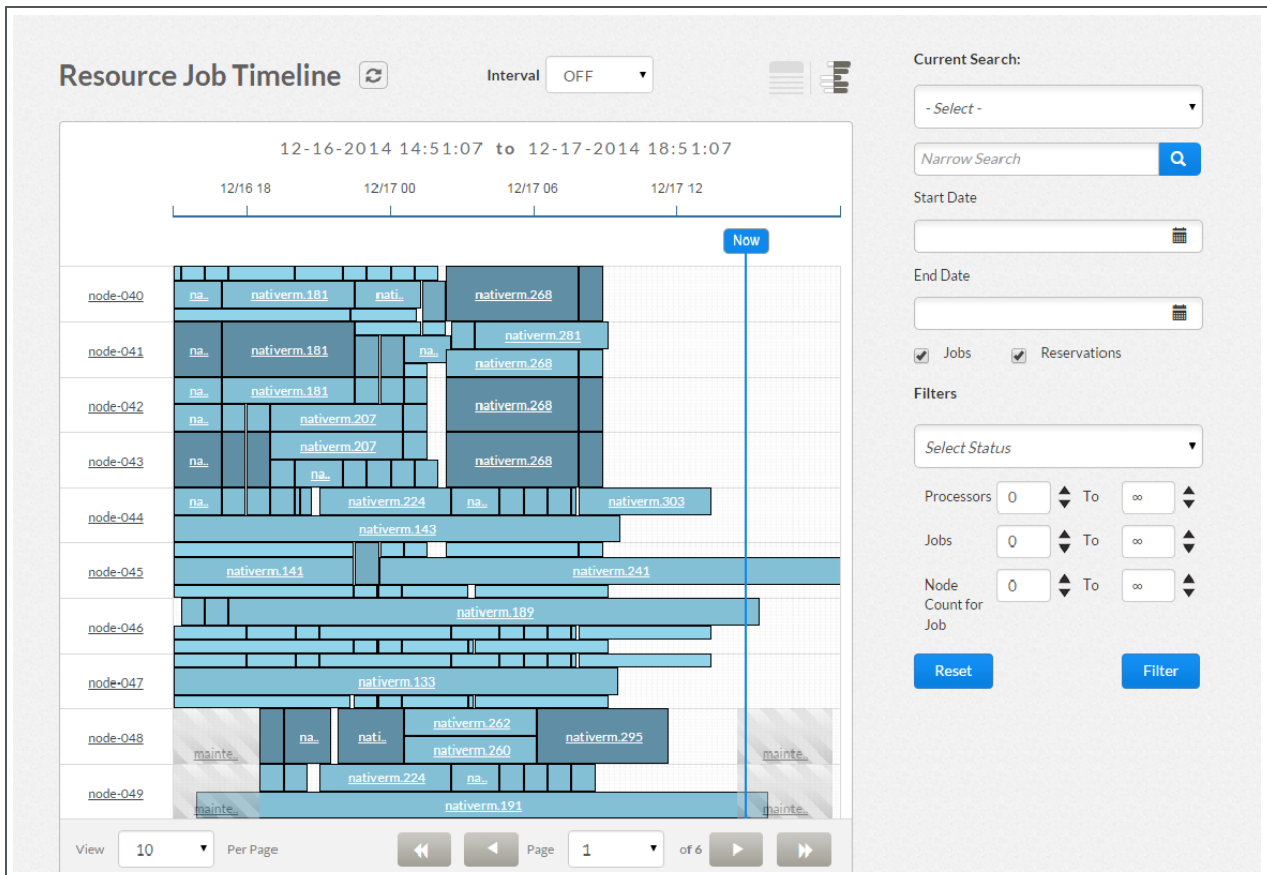
Selection Criteria Area

The right side of this page provides selection criteria you can use to limit what is displayed in the graphical timeline view.

You can choose to display:

- Specific jobs and/or reservations based on node, job and/or reservation ID information. Select the value from the Current Search drop-down, in the Narrow Search box, enter the specific information, and then click 🔍.

- Jobs and/or reservations within a given start and end date range. In the Start Date and End Date fields, select the desired dates, and then click **Filter**.

- Jobs, reservations, or both. Click the desired check boxes, and then click **Filter**.

> ℹ️ The Jobs check box is selected by default. If you chose to narrow the search by reservation ID, the Reservations check box is automatically selected. When both the Reservations check box and the Jobs check box are selected, and jobs and reservations co-exist in the same time frame and on the same node, the Reservation block overlaps the Job block on the timeline.

- Only nodes matching a specific status (state). Select the status from the job Select Status drop-down and then click **Filter**.

- Only nodes within a given processor, job, and/or node count. Select the minimum and maximum values and then click **Filter**.

> ℹ️ You can utilize multiple selection criteria options; however, only the nodes that match all of the defined options will be shown in the nodelist view.

Click **Reset** at any time to remove all defined selection criteria options (restore the page defaults).

Graphical Timeline View Details

The following information explains the layout and additional information available in the graphical timeline view.

- **Interval Refresh** – You can refresh the information displayed in the graphical timeline view to reflect the latest information about the jobs running on the nodes. The refresh options are at the top of the graphical time view.

   - The Interval field lets you select a time interval for which the graphical timeline view will automatically refresh.

- ◦ You can also click [⟳], at any time, to manually update the graphical timeline view.
- **List of Nodes** – The list of nodes (by node ID) is displayed on the vertical axis on the left.
    - ◦ Hover the mouse over the node ID to see the number of processors configured on the node.
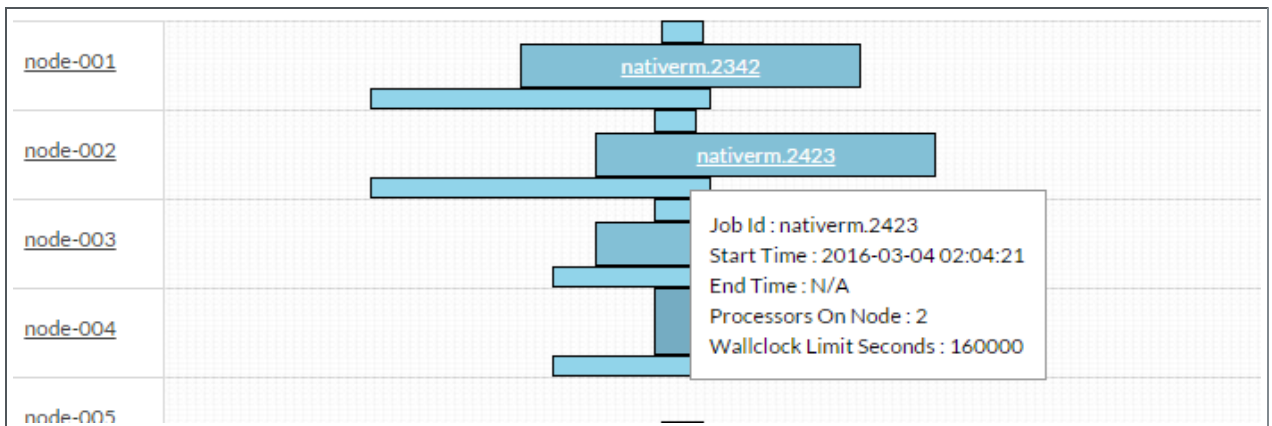
- ◦ Click on the node ID to view additional information about that node. See Node Details Page for more information.
- **Time Span** – The time span is displayed on the horizontal axis at the top. The vertical blue line with the "Now" label denotes the current time.
- **Jobs** – Only if the Jobs check box is selected. A job that is running on a particular node is displayed against the node on the timeline in the form of a blue block. The color shade of the job block indicates the number of processors used for the job. The darker shade indicates more processors and the lighter shade indicates fewer processors being used for the job (relative to your cluster's average job size). The vertical height of the block indicates the number of processors that the job is using on a particular node. For example, if a job is using 2 out of 4 processors on a particular node, then the job will take up 50 percent of the height of the Node ID row.
    - ◦ Hover the mouse over the job block to display additional information (such as the job's start and stop time and the number of processors that the job is occupying on the node).
    - ◦ Click on the job block to open the Job Details page to view additional information about that job on that node. See Job Details Page for more information.
- **Reservations** – Only if the Reservations check box was selected. A reservation that is running on a particular node is displayed against that node on the timeline in the form of a gray block. If a job and a reservation

co-exist in the same time frame and for the same node, then the reservation block is displayed over the job block.

- **Page Controls** – Page controls are available at the bottom of the graphical timeline view to let you customize how many nodes appear per page.

Related Topics

Threshold Settings

This topic contains instructions on how to configure Insight and Viewpoint settings to adjust the amount of data displayed by Viewpoint.

- The Resource Job Timeline View, by default, is set is to show the last 24 hours and the next 4 hours when you first visit the page. Depending on how many jobs run in your cluster per day, and how many nodes you are viewing, that time window might contain too many objects for the browser to display.

  - You can change the default time window by editing PAST_HOURS and FUTURE_HOURS in /opt/viewpoint/etc/viewpoint.cfg.

  - You can change the default limit on the number of objects to display by editing RJTV_THRESHOLD in /opt/viewpoint/lib/viewpoint/config/config.json.

Related Topics

Chapter 6 File Manager

Viewpoint lets you connect to a remote file system (RFS) to upload and download files directly from the portal. For example, you can upload or download job submission scripts, access standard output or error files, and upload input files for your job. Specifically:

- the File Manager page (default) lists all of the folders and files that you can access. Using this page you can upload files, create folders, and perform various file and folder maintenance options (such as download, compress or delete).

> ⚠️ You can restrict system folder access using the Configuration page. To use the File Manager page, users must have an operating system account on the RFS and be assigned a role that has the "File Manager Page" Viewpoint Permission selected.

Related Topics

File Manager Page

The File Manager page lets users organize and manage files on the RFS. For example, you can upload a script or an application template, or you can save an output or error file.

To access this page, click **FILE MANAGER** from the menu.

This topic provides an example of the File Manager page and describes its layout and available information.

In this topic:

- Page Example on page 145
- Page Details on page 146
- Additional Functions on page 147

Page Example

The following image is an example of the File Manager page.
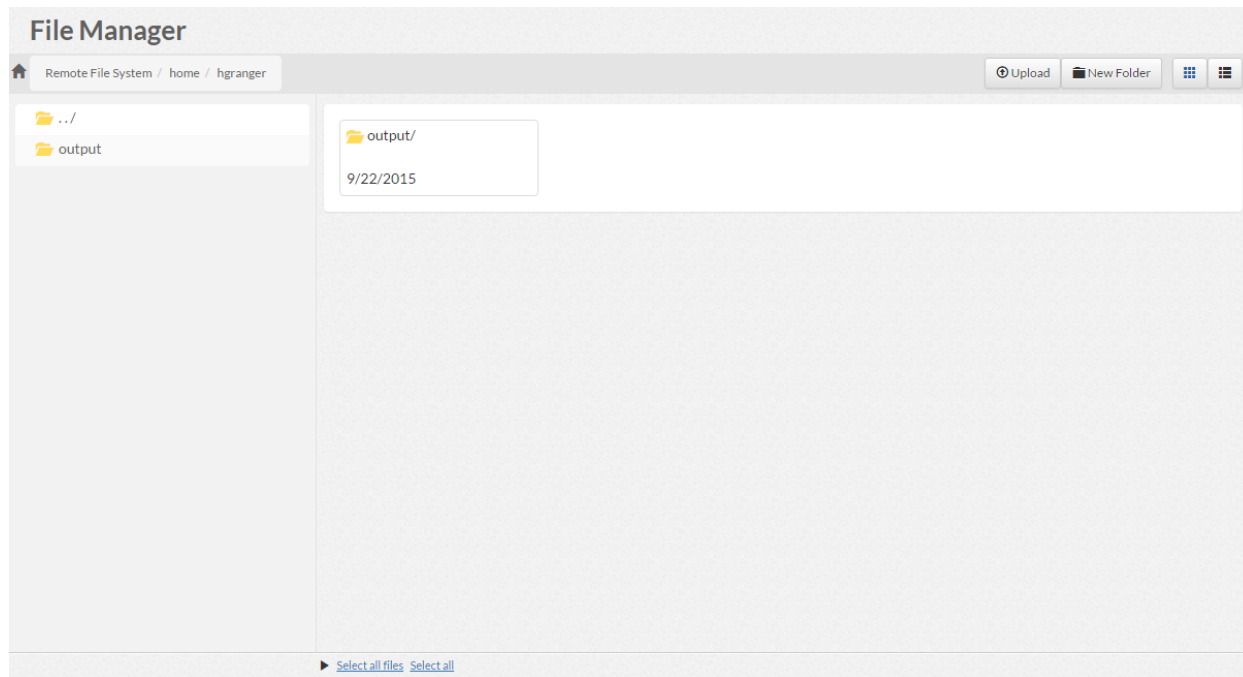
Page Details

This section describes the functional areas of the File Manager page.

In this section:

Directory Structure

At the top of the File Manager page you will see the Home icon and the directory path box. Using the File Manager page example provided earlier, you will see Remote File System/home/hgranger in the directory box.

The File Manager page uses a left pane to list the folders available in the selected directory. The main pane lists the folders *and* any files in that directory.

If you select a folder in the left pane, the directory path changes and the left and main panes display the applicable folders/files. Click the Home icon at any time to go directly to your home directory.

View Settings

You can change whether the main pane shows the directory contents in grid or list view by clicking the appropriate icon at the top right of the page.

> **ℹ** If you use the list view, the folders will have "/" at the end of their name and the files will have information in the Size column.

The following is an example of the directory list view.
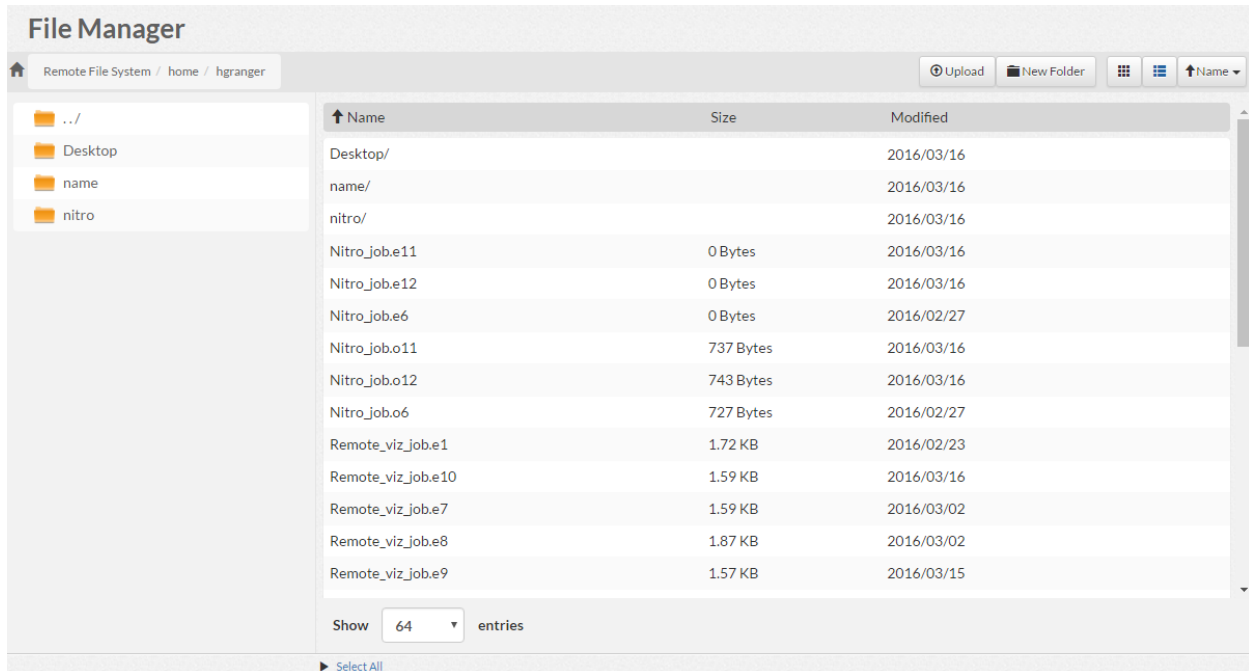
Folder/File Creation Buttons

Viewpoint lets you upload a file and/or create a new folder. To enable this functionality, two buttons are available towards the top of this page.

- **Upload** – Opens up a pop-window that lets you upload an existing file from the RFS. See Uploading Files on page 148.
- **New Folder** – Opens up a pop-window that lets you specify the name of the new folder. See Creating Folders on page 149.

> **ℹ** The new folder/file is saved in the active directory (shown in the directory box).

Additional Functions

The File Manager page also includes a drop-down with shortcuts to perform additional folder-/file-related functions. See Maintaining Files and Folders on page 149 for details.

Related Topics

Uploading Files

This topic provides information on how to upload files from the RFS.

Upload Files

Do the following:

1. If you have not already done so, access the File Manager page. (Click **File Manager** from the menu.)

2. Navigate to the directory in which you want the uploaded file to be contained.

3. At the top of the page, click **Upload**.

   The Upload file pop-up window appears.

   ![Upload file pop-up window with BROWSE and UPLOAD buttons]
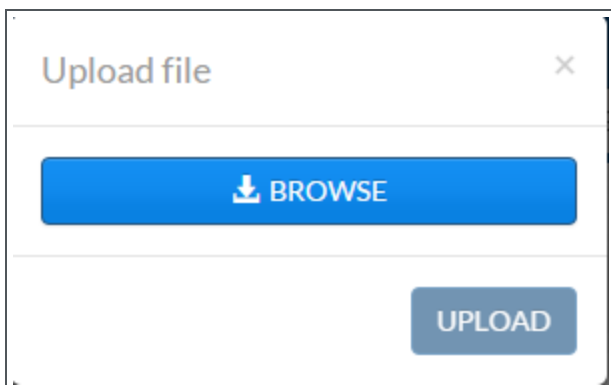
4. Click **BROWSE** and navigate to where the file is located on the RFS.

5. You can also select multiple files or folders using you operating systems respective functions used in selecting multiple files anywhere on the list. For example, control or shift clicking the files you wish to upload.

6. When the file content appears in the Upload file window, click **UPLOAD**.

Related Topics

Creating Folders

This topic provides information on how to add new folders.
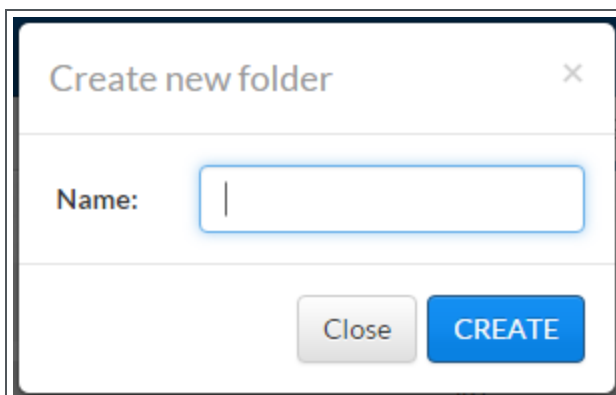
> ⓘ You can only create new folders in the directories to which you have been granted access.

Create Folders

Do the following:

1. If you have not already done so, access the File Manager page. (Click **File Manager** from the menu.)

2. Navigate to the directory in which you want the new folder to be contained.

3. Click **New Folder**.

   The Create new folder pop-window appears.

Create new folder	✕
Name:	

   [Close] [CREATE]

4. Enter the name for this folder and click **CREATE**; otherwise, click **Close** to exit this window without creating a folder.

Related Topics

Maintaining Files and Folders

This topic provides information on the different tasks available for maintaining files and folders, including where to access the maintenance options.

In this topic:
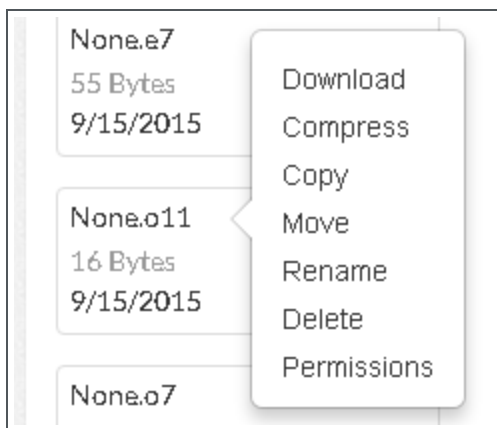
Available Maintenance Options

Viewpoint provides these options for maintaining files and folders:

- **Compress** – Lets you create a copy of the file/folder in a compressed (zipped) format.
- **Copy** – Lets you save a copy of the file/folder in another location.
- **Delete** – Removes the file/folder.
- **Download** – Lets you download the file/folder.
- **Move** – Lets you change the location of the folder/file (without creating a copy).
- **Permissions** – Lets you view the read/write/execute permissions for Owner/Group/Others. The owner of the folder/file can also change the permissions.
- **Rename** – Lets you change the name of the folder/file.

Access Maintenance Options

The File Manager page provides two places where you can access folder/file maintenance options.

- In the main pane. Hover over the folder/file to display ☰ . Click this icon to display a drop-down containing the available maintenance functions. For example:

> ℹ You can also apply the same maintenance option to several files/folders as the same time. Click Select All or Select All Files or use the Shift or Ctrl key commands to select multiple files/folders and then display the drop-down. The item you select from the drop-down is applied to all the selected folders/files.

- After you have selected an individual file (clicked the file name, not the icon for the drop-down on the main pane), the file information displays in the main pane. A preview of the file displays and the different maintenance options are represented by icons. For example:
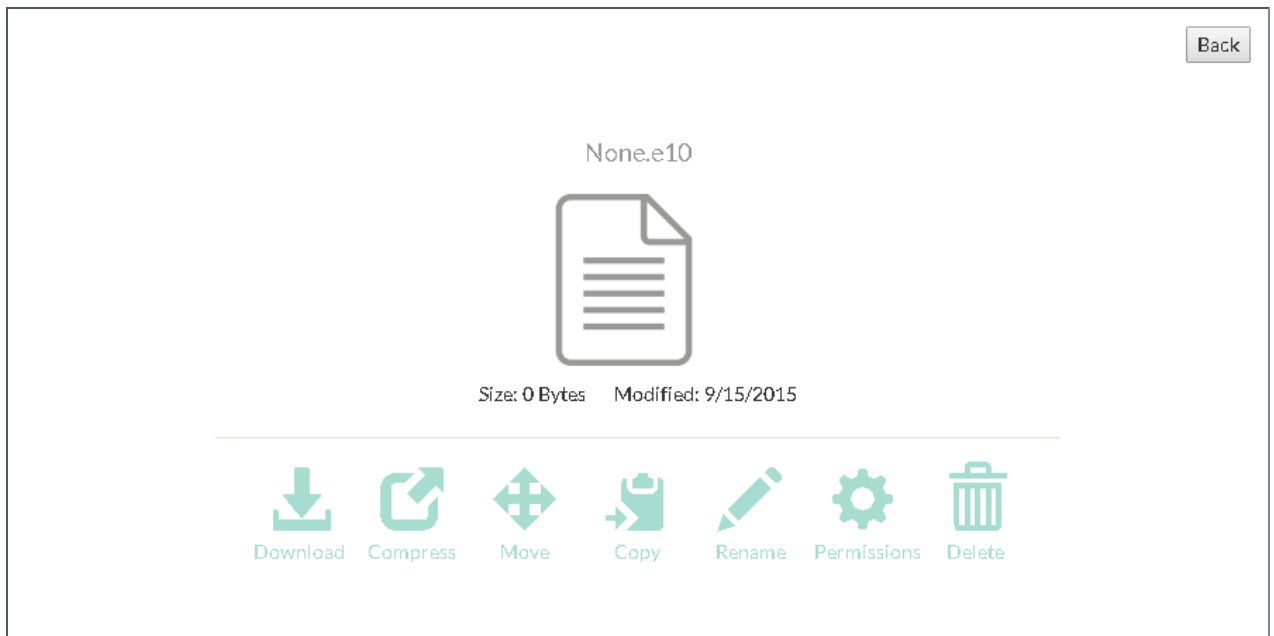
- You can also preview information about your file by clicking the ⚙ icon. Clicking this icon will bring up a menu which allows you to choose your preview mode as well as how many lines you wish to view.

Related Topics

Chapter 6 Remote Visualization Sessions

Viewpoint gives you a simple way to view important aspects of your jobs while also freeing up valuable resources that could be used for other tasks. This chapter provides information on the following aspects of remote visualization:

- The Sessions page (default) lists all of the remote sessions that you can access. Using this page you can create a session and perform various session maintenance options.

If you are an HPCAdmin, you can also create sessions that do not go through the regular scheduling process and a session will be allocated just for you. Admins can also see other user's sessions.

If you are a regular user, you will only be able to see your sessions and find jobs that represent each session.

Related Topics

Remote Visualization Sessions

Viewpoint gives you a simple way to view important aspects of your jobs while also freeing up valuable resources that could be used for other tasks. This chapter provides information on the following aspects of remote visualization:

- The Sessions page (default) lists all of the remote sessions that you can access. Using this page you can create a session and perform various session maintenance options.

If you are an HPCAdmin, you can also create sessions that do not go through the regular scheduling process and a session will be allocated just for you. Admins can also see other user's sessions.

If you are a regular user, you will only be able to see your sessions and find jobs that represent each session.

Related Topics

Sessions Page

> ℹ The Sessions page is only available when Remote Visualization is installed and configured. See Remote Visualization Configuration Page on page 34 for more information.

The Sessions page offers a place to create and manage sessions, view running sessions, running jobs, and other useful features.

- If you are a regular user, you will only be able to see your own sessions and find jobs that represent your sessions.
- Users with the HPCAdmin role or Session Page-admin role permission can create sessions that bypass the regular scheduling process.
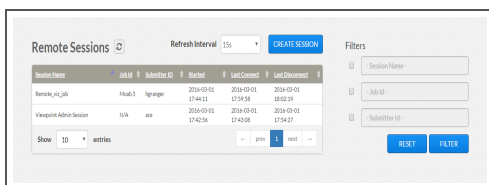
This topic provides an example of the Sessions page and describes its layout and available information.

In this topic:

- Page Example on page 153
- Filter Search Area on page 153
- Session List View Details on page 154
- Additional Functions on page 155

Page Example

The following image is an example of the Sessions page.

Filter Search Area

The right side of this page a filter search feature you can use to limit what is displayed in the session list view.

You can choose to display:

- Specific sessions or groups of sessions based on the Session name, Job ID, or Submitter ID.
- Click **Filter**.

Click **Reset** at any time to remove all defined selection criteria options (restore the page defaults).

Session List View Details

The following information explains the layout and additional information available in the session list view.

- **Display Refresh** – You can refresh the information displayed in the session list view (including specified search and filter criteria) to reflect the latest information about the nodes. At the top of the session list view, click ⟳ .

- **Columns** – The session list view displays the data in a column format. Column titles that are underlined indicate that you can sort (ascending or descending) the column contents.

  The following table describes the different columns and their contents. You can hover the mouse over a column's contents to view additional information).

Column Heading	Description
Session Name	Unique identifier for the session. You can click a Session Name in the column's contents to view additional information about that session.
Job ID	Identifier of the job running on the session.
Submitter ID	Identifier of the user that submitted the session.
Started	Time the session was initialized.
Last Connect	Time the session was last accessed.
Last Disconnect	Time the session was last disconnected from.

> ⓘ With the correct permissions, you can access the job details for a session if that session has a job associated with it by clicking the job id for the session you are interested in viewing.

- **Page Controls** – Page controls are available at the bottom of the session list view to let you customize how many sessions appear per page. The page controls also include options for selecting which page to display.

Additional Functions

The Sessions page also includes a drop-down with shortcuts to perform additional session-related functions. To access the shortcuts, hover the mouse near the application template name to display ☰ , and then click this icon to display the drop-down.

The following table lists the options you can use from the drop-down. From this drop-down, you can:

Sessions Page Option	Description
Connect	Connect to the chosen session.
Disconnect	Disconnect from a session. This option is only available when you are connected to the session. This option disconnects all users that are connected to the session.
Terminate	End the chosen session.

Related Topics

Creating a Session

Viewpoint lets you create and edit sessions that users may access to view information about your jobs.

Create or Terminate a Session

To create or terminate a session, do the following:

1. If you have not already done so, access the Sessions page. (Click **SESSIONS** from the menu.)

2. Click **CREATE SESSION** to create a new session.

   The Create Sessions page displays with the command and screen resolution fields.

3. Input the graphical command you want to run inside your remote visualization session. These include gnome-session, xterm, firefox, etc.

4. Click **START SESSION** to start the session and stay on this page.

5. Click **TERMINATE** to terminate the chosen session.

Related Topics

Connecting to a Session

To connect to a running session, do the following:

1. If you have not already done so, access the Sessions page. (Click **SESSIONS** from the menu.)

   > ℹ️ Remote Visualization sessions open in a separate browser window. To access your sessions, you must enable pop-up windows. Firefox will show you an icon next to the browser bar asking you if you trust the page to launch a pop-up window. Click on this to allow access to your session.

2. Hover over the session you would like to connect to and click **CONNECT** from the ☰ icon.

Related Topics