

# Moab Viewpoint

Reference Guide 9.1.0

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*Scan to open online help*

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# Welcome

Welcome to the *Moab Viewpoint Reference Guide* for version 9.1.0.

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 that 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.

**i** 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 an overview of the Viewpoint portal, including logging in/signing out and general navigation information.
- [Chapter 3 Viewpoint Workload Overview on page 47](#) – Gives an overview of the Workload page and provides information on viewing and managing workloads.
- [Chapter 4 Application Templates on page 75](#) – Gives an overview of the Application Templates page and provides information on managing the application templates that are used to define job settings and options available to users when creating jobs.
- [Chapter 5 Nodes on page 227](#) – Gives an overview of the Nodes page and provides information on viewing and managing nodes for your workload.
- [Chapter 6 File Manager on page 239](#) – Gives an overview of the File Manager page and provides information on using the RFS for file management.
- [Chapter 7 Remote Visualization Sessions on page 247](#) – Gives an 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

Configuring Viewpoint requires several setup and configuration procedures before you can run Viewpoint:

 Some Viewpoint functionality requires individual licenses. See [Licensing](#) for more information.

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 [Nitro Integration](#) in the *Moab HPC Suite Installation and Configuration Guide*.

Once the initial setup and and configuration steps have been completed, Viewpoint provides a Configuration page that lets you complete set up and configuration of your Viewpoint portal. See [Configuration Page on page 4](#) for more information.

In this chapter:

- [Basic Configuration Page on page 5](#)
- [File Manager Configuration Page on page 8](#)
- [About Roles on page 10](#)
- [About Principals on page 22](#)
- [Remote Visualization Configuration Page on page 29](#)
- [Nitro Services Configuration Page on page 31](#)
- [Application Templates Configuration Page on page 32](#)
- [Licensed Features Page on page 34](#)

# 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 20](#) for more information.

See [Basic Configuration Page on page 5](#) for more information about this page.

- **File Manager** – Available when you click **File Manager** from the left pane. This page lets you configure servers and paths available in the File Manager. See [File Manager Configuration Page on page 8](#) 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 10](#) 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 22](#) 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 29](#) 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 Configuration Page on page 31](#) for more information about this page.

- **Application Templates** – Available when you click **Application Templates** from the left pane. This page lets you import and export application templates for creating jobs. See [Application Templates Configuration Page on page 32](#) for more information.
- **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 34](#) for more information about this page.

## Basic Configuration Page

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

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

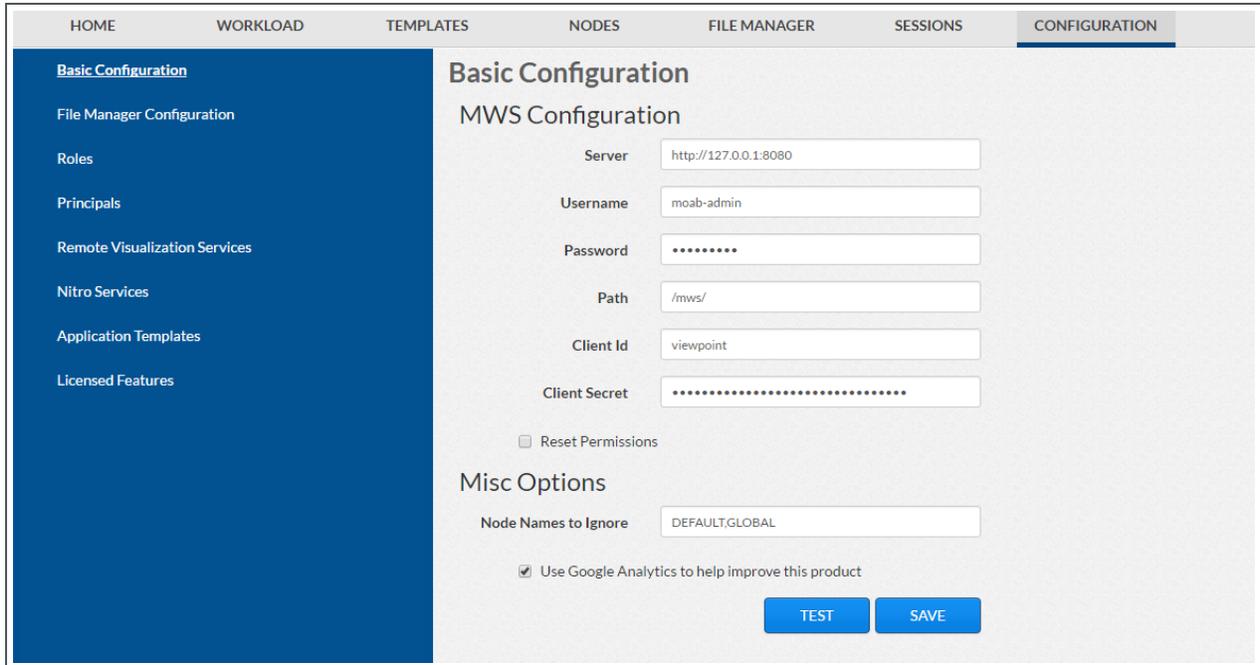
To access this page click **Configuration** from the menu.

In this topic:

- [Page Example on page 5](#)
- [Available Fields on page 6](#)
- [Page Actions on page 7](#)

### 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
<b>MWS Configuration</b>	
<b>Server</b>	<p>The URL for MWS on the Moab Server Host. For example: http://server:8080.</p> <div style="border: 1px solid #ccc; padding: 5px; margin-top: 10px;"> <p><b>i</b> If your configuration uses a secure the connection between Viewpoint and MWS, the URL must contain "https" and the secure port. See <a href="#">Securing the Connection between Viewpoint and MWS on page 38</a> for more information.</p> </div>
<b>Username</b>	<p>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 <code>/opt/mws/etc/mws-config.groovy</code> file.</p>
<b>Password</b>	<p>Password authentication for the admin user.</p> <p>This is the "auth.defaultUser.password" specified when MWS Server was installed. This information is stored in the <code>/opt/mws/etc/mws-config.groovy</code> file.</p>

Field	Description
<b>Path</b>	Path prefix of the Moab Web Services URL. This will almost always be "/mws/".
<b>Client ID</b>	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 <code>/opt/mws/etc/mws-config.groovy</code> file.
<b>Client Secret</b>	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 <code>/opt/mws/etc/mws-config.groovy</code> file.
<b>Reset Permissions</b>	Resets the default roles (HPCAdmin, HPCUser, NitroAdmin, NitroUser, RemoteVizAdmin, and RemoteVisUser) back to their default settings. See <a href="#">Resetting Default Roles on page 20</a> for more information about this check box.
<b>Misc Options</b>	
<b>Node Names to Ignore</b>	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 DEFAULT and GLOBAL nodes, type "DEFAULT,GLOBAL".
<b>Use Google Analytics to help improve this product</b>	Indicates whether you want to track usage through Google Analytics.

## Page Actions

These buttons let you perform actions on this page:

- **TEST** - Confirms the settings are correct.
- **SAVE** - Submits your settings.

Related Topics

- [Chapter 1 Viewpoint Configuration on page 3](#)
- [Configuration Page on page 4](#)
- [File Manager Configuration Page on page 8](#)

# File Manager Configuration Page

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

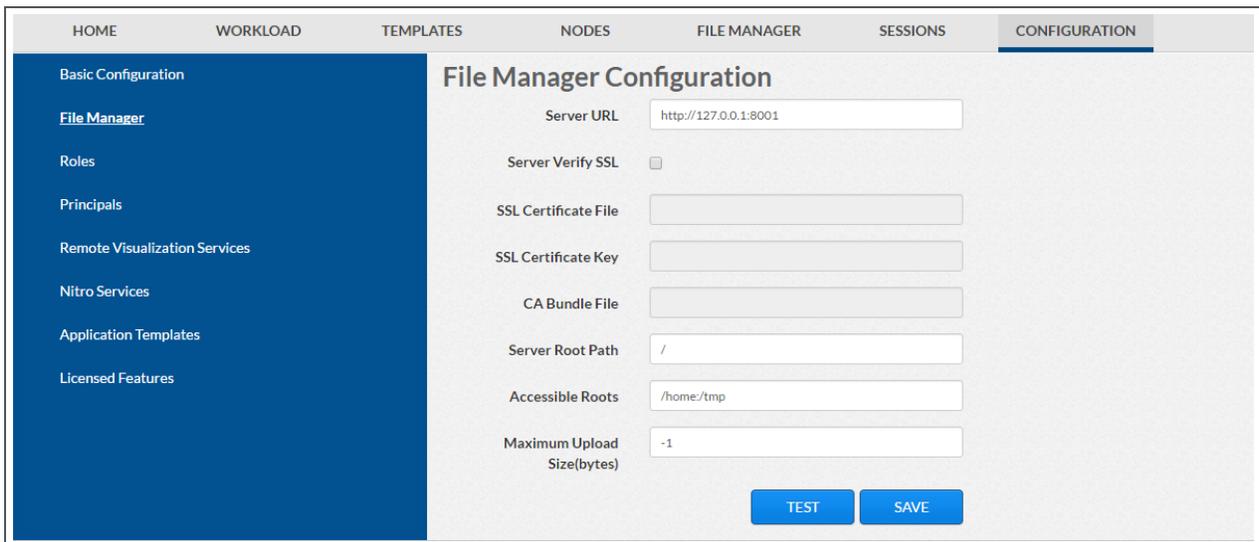
This topic provides an example of the File Manager page and describes its layout and available information.

In this topic:

- [Page Example on page 8](#)
- [Available Fields on page 8](#)
- [Page Actions on page 9](#)

## Page Example

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



## Available Fields

The following table describes the fields on the File Manager Configuration page.

Field	Description
<b>Server URL</b>	The name of the Moab Server host on which you installed the File Manager Service and the port number for the File Manager Service (for example, "https://server:8001").

Field	Description
<b>Server Verify SSL</b>	<p>When enabled:</p> <ul style="list-style-type: none"> <li>• The client SSL certificate will be verified.</li> <li>• Viewpoint will use the given certificate when connecting to File Manager Service.</li> </ul>
<b>SSL Certificate File</b>	The location of the SSL certificate file on the Viewpoint Server. Usually, <code>/opt/viewpoint/lib/viewpoint/webdav_client/client-cert.pem</code> .
<b>SSL Certificate Key</b>	The location of the SSL certificate key on the Viewpoint Server. Usually, <code>/opt/viewpoint/lib/viewpoint/webdav_client/client-key.pem</code> .
<b>CA Bundle File</b>	The location of the CA bundle file on the Viewpoint Server. Usually, <code>/opt/viewpoint/lib/viewpoint/webdav_client/ca-cert.pem</code> .
<b>Server Root Path</b>	The root URL path where File Manager Service publishes its API (usually it is simply <code>/</code> ).
<b>Accessible Roots</b>	<p>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 <code>/</code> folder on the remote file system (RFS). Separate root folders with a colon (for example, <code>/home:/usr/share/groups</code>).</p> <p>For example, if you define <code>/home</code> and <code>/usr/share/groups</code> 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 <code>/usr</code> other than "share" and anything inside "share" other than "groups".</p> <pre>   - /home/       - user1/   - user2/   - youruser/ - /usr/       - share/           - groups/                     </pre>
<b>Maximum Upload Size (bytes)</b>	Total amount of data that can be uploaded in a single file. A value of <code>'-1'</code> means unlimited.

## Page Actions

These buttons let you perform actions on this page:

- **TEST** - Confirms the settings are correct.
- **SAVE** - Submits your settings.

#### Related Topics

- [Chapter 6 File Manager on page 239](#)
- [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:

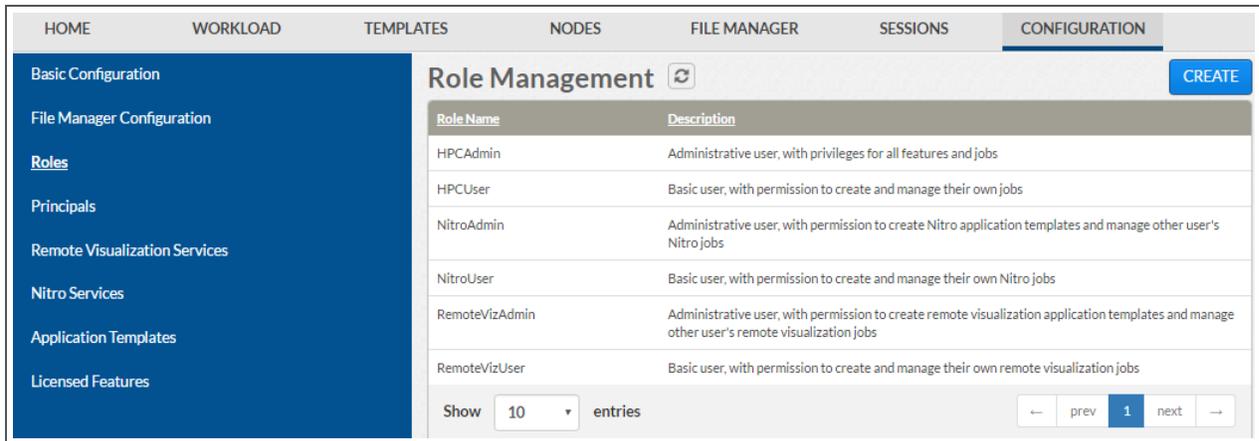
- [Role Management Page on page 10](#)
- [Roles Page on page 11](#)
- [Role Permissions on page 13](#)
- [Default Roles on page 17](#)
- [Creating or Editing Roles on page 19](#)
- [Deleting Roles on page 20](#)

## 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

- [About Roles on page 10](#)
- [Creating or Editing Roles on page 19](#)
- [Deleting Roles on page 20](#)

## 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 the name of the role you want to edit.

**i** The Roles page will display Create Role or Update Role depending on whether you are creating or editing, respectively.

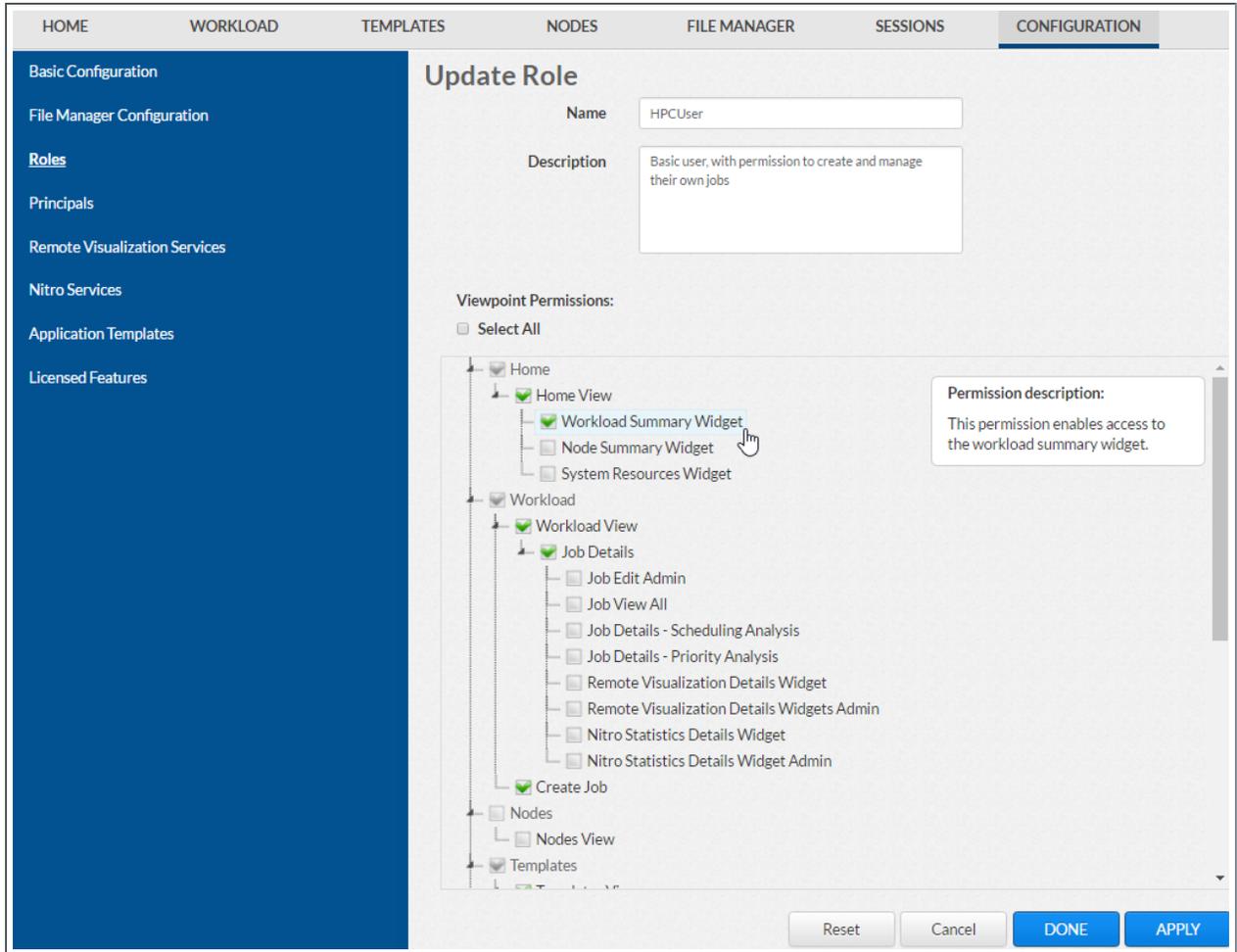
This topic provides an example of the Roles page and describes its layout and available information.

In this topic:

- [Page Example on page 11](#)
- [Available Fields on page 12](#)
- [Page Actions on page 13](#)

## 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
<b>Name</b>	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. Role names are case sensitive and may include letters, numbers, dashes (-), periods (.), and underscores (_).  <div style="border: 1px solid #ccc; border-radius: 5px; padding: 5px; background-color: #e6f2ff;"> <span style="font-size: 1.2em; font-weight: bold;">i</span> You cannot modify the role name after creating a role.                 </div>
<b>Description</b>	Lets you specify/modify the text description of the role. This description appears in the list of roles on the Role Management page.
<b>Viewpoint Permissions</b>	These fields let you specify the Viewpoint page permissions you want to set for the role. See <a href="#">Role Permissions</a> 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** – Displayed only when editing one of the default roles (HPCAdmin, HPCUser, NitroAdmin, NitroUser, RemoteVizAdmin, and RemoteVisUser). 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 20](#) for more information.

Related Topics

- [About Roles on page 10](#)
- [Role Management Page on page 10](#)
- [Role Permissions on page 13](#)
- [Creating or Editing Roles on page 19](#)

## Role Permissions

Viewpoint organizes roles based on Viewpoint pages, as grouped by the Menu bar. For example, the Home View permission lets a user access the Viewpoint Home page. Other permissions let the user access various widgets on the Home page. This topic describes the different permissions you can manage for a role.

In this topic:

- [About Permissions on page 13](#)
- [Viewpoint Permissions on page 14](#)

## About Permissions

Viewpoint uses permissions to let you control user access. For example, you can grant a user the ability to see a feature, but not edit it. The Viewpoint permissions control access to the various pages and specific functions on that page.

Some permissions are dependent on other permissions. For example, the Job Edit Admin permission lets you manage jobs created by other users. When you grant this permission, Viewpoint also automatically grants the Job Details

permission, which lets you view details for your own jobs, and the Workload View permission, which lets you access the Workload 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.

### Home Permissions

Permission	Description
<b>Home View</b>	Lets you view the home page.
<b>Node Summary Widget</b>	Lets you view the node summary widget, which provides a graphical overview of the total nodes within your Viewpoint configuration and their status.
<b>System Resources Widget</b>	Lets you view the global system resources widget, which 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.
<b>Workload Summary Widget</b>	Lets you view the workload summary widget, which provides a graphical overview of the total jobs within your Viewpoint configuration and their status.

### Workload Permissions

Permission	Description
<b>Create Job</b>	Lets you access the Create Job page and to create jobs.
<b>Job Details</b>	Lets you access the Job Details page to view job details for your own jobs (or others in your principal). The Job Edit Admin permission is required to actually change job information.
<b>Job Details - Priority Analysis</b>	Lets you see or modify the priority of a job while the job is waiting to be scheduled. See <a href="#">Priority on page 56</a> for more information about the priority information for a job. Also requires the Job Details and Job Edit Admin permissions.
<b>Job Details - Scheduling Analysis</b>	Lets you 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 <a href="#">Scheduler Analysis on page 54</a> for more information on the window. Also requires the Job Details and Job Edit-admin permissions.

Permission	Description
<b>Job Edit Admin</b>	Lets you edit job information for any job, not just the jobs you (or others in your principal) submitted. Also requires the Job Details permission.
<b>Job View All</b>	Lets you see all jobs in the workload, not just the jobs you (or others in your principal) submitted.
<b>Nitro Statistics Details Widget</b>	Lets you the Nitro Details section to view job statistics for your Nitro Jobs. Without this permission, Nitro jobs will not display statistics when viewing job details.
<b>Nitro Statistics Details Widget Admin</b>	Enables access to the Nitro Details section to view job statistics for other users' Nitro jobs.
<b>Remote Visualization Details Widget</b>	Enables access to your Remote Visualization jobs.
<b>Remote Visualization Details Widgets Admin</b>	Enables access to Remote Visualization jobs for all users.
<b>Workload View</b>	Lets you view the Workload page. Admins will see all jobs; non-admins will only see their jobs, or the jobs within their principal (user group).

### Nodes Permissions

Permission	Description
<b>Nodes View</b>	Lets you view the Nodes page.

### Templates Permissions

Permission	Description
<b>Nitro Templates</b>	Lets you manage Nitro application templates.
<b>Remote Visualization Templates</b>	Lets you manage Remote Visualization application templates.

Permission	Description
<b>Templates Admin</b>	Lets you manage other users' application templates.
<b>Templates View</b>	Lets you manage your own application templates.

### File Manager Permissions

Permission	Description
<b>File Manager View</b>	Lets you access the File Manager page.

### Sessions Permissions

Permission	Description
<b>Sessions Admin</b>	Lets you manage all Remote Visualization sessions on the Sessions page and launch on-demand Remote Visualization sessions.
<b>Sessions View</b>	Lets you access the Sessions page.

### Configuration Permissions

Permission	Description
<b>Application Templates</b>	Lets you access the Application Templates tab on the Configuration to view, deploy, export, and restore the provided application templates.
<b>Basic Configuration</b>	Lets you access the Basic Configuration tab on the Configuration page.
<b>File Manager Configuration</b>	Lets you access the File Manager tab on the Configuration page to upload or download files.
<b>Licensed Features</b>	Lets you access the Licensed Features tab on the Configuration page to view license information.
<b>Nitro Services</b>	Lets you access the Nitro Services tab on the Configuration page to configure Nitro services.
<b>Principals</b>	Lets you access the Principals tab of the Configuration page to view and manage roles and principals. This permission should only be set for administrators.

Permission	Description
<b>Remote Visualization Services</b>	Lets you access the Remote Visualization Services tab on the Configuration page to configure Remote Visualization services.
<b>Roles</b>	Lets you access the Roles tab on the Configuration page to view and manage roles and permissions. This permission should only be set for administrators.

#### Related Topics

- [About Roles on page 10](#)
- [Roles Page on page 11](#)
- [Creating or Editing Roles on page 19](#)

## Default Roles

Viewpoint is delivered with these default roles:

- **HPCAdmin** – Global administrative role that grants users all Viewpoint permissions.
- **HPCUser** – Global user role that enables permissions for users to perform non-administrative workload tasks.
- **NitroAdmin** – Administrative user role with permissions to create Nitro application templates and manage other users' Nitro jobs
- **NitroUser** – Basic user role with permission to create and manage their own Nitro jobs.
- **RemoteVizAdmin** – Administrative user role with permissions to create remote visualization application templates and manage other users' Remote Visualization jobs
- **RemoteVizUser** – Basic user role with permissions to create and manage their own Remote Visualization jobs.

**i** Viewpoint lets you reset permissions for the default roles and restore the default roles if deleted. See [Resetting Default Roles on page 20](#) and [Restoring Default Roles on page 21](#), respectively.

#### Related Topics

- [About Roles on page 10](#)
- [Resetting Default Roles on page 20](#)

- [Restoring Default Roles on page 21](#)

## 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 the name of the role you want to edit. The Roles page displays.
3. If you are creating a role, enter the name of the role and the role description.
4. If you are editing an existing role, change the role name and/or description, if desired.
5. Select and/or clear permissions for the role's purpose and use. See [Role Permissions on page 13](#) 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. Clicking **APPLY** will save your changes, but does not close the page.

**i** If you are editing a default role (HPCAdmin, HPCUser, NitroAdmin, NitroUser, RemoteVizAdmin, or RemoteVisUser), 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 20](#) for more information.

### Related Topics

- [About Roles on page 10](#)
- [Roles Page on page 11](#)
- [Role Permissions on page 13](#)

## Deleting Roles

Use the Role Management page to delete existing roles.

 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. Hover the mouse over the name of the role you want to remove, click the menu icon  that appears, and click **Delete**.
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, HPCUser, NitroAdmin, NitroUser, RemoteVizAdmin, or RemoteVisUser), 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 roles. This action resets the permissions for *all* default roles (but not the assigned principals for the existing roles).

### Related Topics

- [About Roles on page 10](#)
- [Role Management Page on page 10](#)

## Resetting Default Roles

Viewpoint comes configured with several default roles (HPCAdmin, HPCUser, NitroAdmin, NitroUser, RemoteVizAdmin, and RemoteVisUser) 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 the name of the default role for which you want to reset permissions. The Roles page displays.
4. Click **RESET** at the bottom of the page.
5. When a message appears asking to your confirm the reset, click **OK**; otherwise, click **Cancel**.

Related Topics

- [About Roles on page 10](#)
- [Default Roles on page 17](#)
- [Restoring Default Roles on page 21](#)

## Restoring Default Roles

In addition to being able to reset the default permissions for the default roles (HPCAdmin, HPCUser, NitroAdmin, NitroUser, RemoteVizAdmin, and RemoteVisUser), 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 . (Button does not appear unless one of the default roles has been deleted.)

#### Related Topics

- [About Roles on page 10](#)
- [Default Roles on page 17](#)
- [Resetting Default Roles on page 20](#)

## 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.

**i** LDAP or PAM must be configured in MWS. See LDAP Configuration Using `/opt/mws/etc/mws-config.groovy` or PAM (Pluggable Authentication Module) Configuration Using `/opt/mws/etc/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 22](#)
- [Principals Page on page 23](#)
- [Edit Users/Groups Pop-up on page 25](#)
- [Creating or Editing Principals on page 28](#)
- [Deleting Principals on page 28](#)

## Principal Management Page

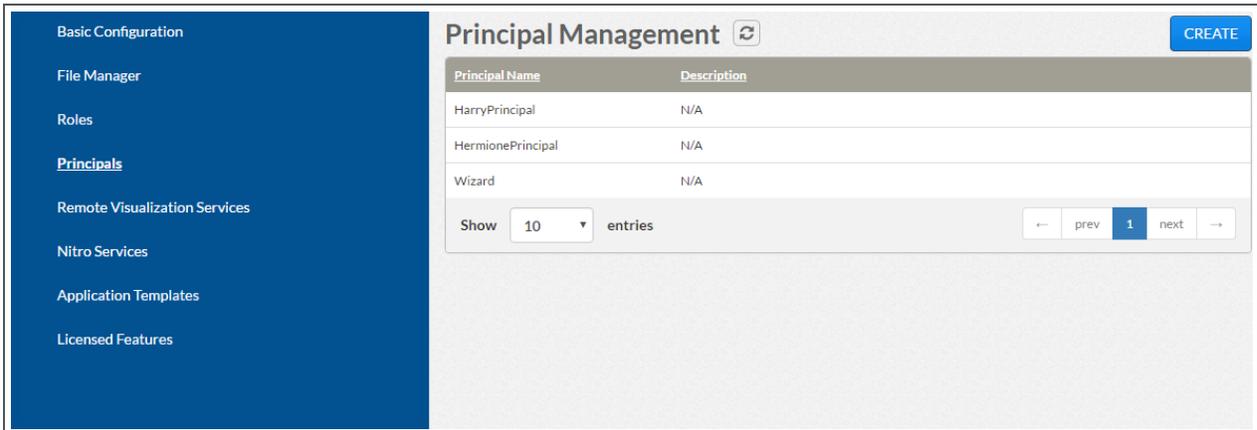
The Principal Management page displays the defined principals for your Viewpoint configuration. Using this page you can create, edit, and delete principals.

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.



Principal Name	Description
HarryPrincipal	N/A
HermionePrincipal	N/A
Wizard	N/A

#### Related Topics

- [About Principals on page 22](#)
- [Creating or Editing Principals on page 28](#)
- [Deleting Principals on page 28](#)

## 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.

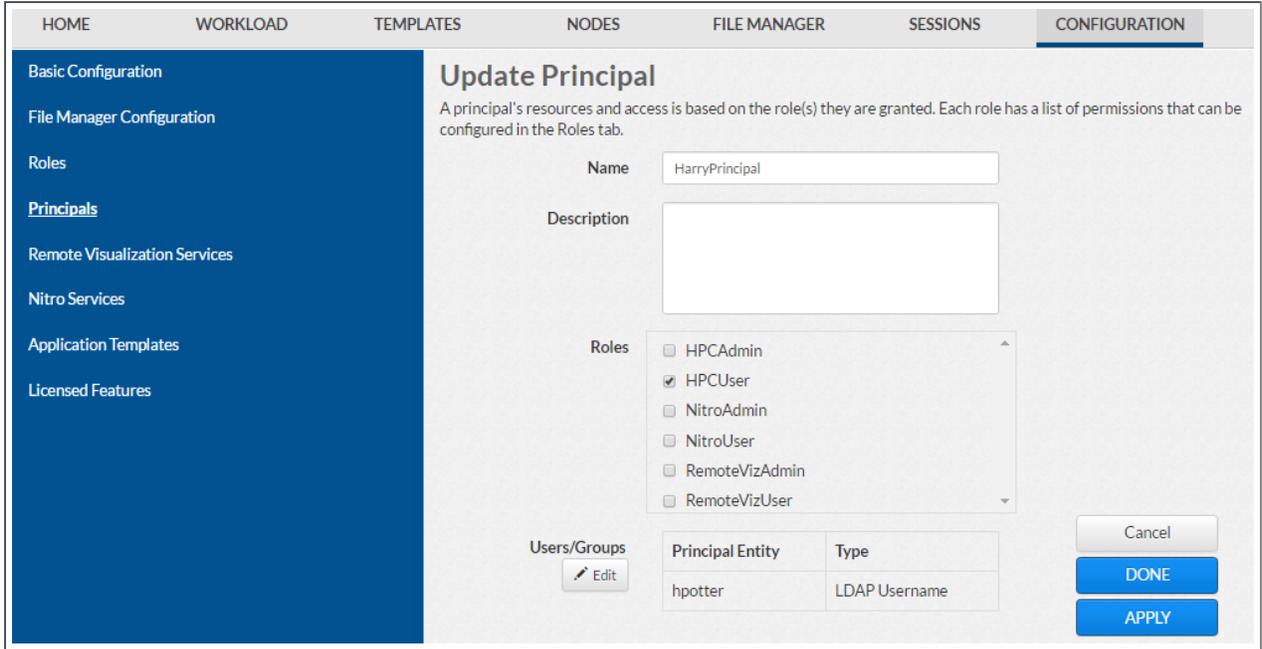
This topic provides an example of the Principals page and describes its layout and available information.

In this topic:

- [Page Example on page 24](#)
- [Available Fields on page 24](#)
- [Page Actions on page 25](#)

## 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
<b>Name</b>	Lets you specify the name of the principal. The name you specify appears in the list of principals on the Principal Management page. <div style="border: 1px solid #ccc; padding: 5px; margin-top: 5px;"> <span style="font-size: 1.2em; font-weight: bold;">i</span> You cannot modify the principal name after creating a principal.                 </div>
<b>Description</b>	(Optional) Lets you specify a text description of the principal.
<b>Roles</b>	Lets you select which roles are assigned to the principal. <div style="border: 1px solid #ccc; padding: 5px; margin-top: 5px;"> <span style="font-size: 1.2em; font-weight: bold;">i</span> Only roles defined for your Viewpoint configuration will appear in the selection list. See <a href="#">Creating or Editing Roles</a> for details on creating roles.                 </div>

Field	Description
<b>Principal Entity</b>	<p>Lets you specify an LDAP or PAM entity with this principal.</p> <div style="border: 1px solid #0070C0; border-radius: 10px; padding: 10px; background-color: #E6F2FF;"> <p><b>i</b> 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.</p> </div> <p>Click <input type="checkbox"/> to add or click <input type="checkbox"/> to remove entities.</p>
<b>Type</b>	Specifies whether the principal entity is an LDAP user name, group, or organizational unit <i>or</i> 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 on page 28](#)
- [Principal Management Page on page 22](#)
- [About Principals on page 22](#)

## Edit Users/Groups Pop-up

- [Page Example on page 25](#)
- [Editing Users/Groups on page 26](#)
- [Page Actions on page 27](#)

## Page Example

The following image is an example of the Edit Users/Groups pop-up.

### Edit users/groups ✕

Principal Entity	Type
<input type="text" value="hpotter"/>	<input type="text" value="LDAP Username"/> <span>▼</span> <span>✕</span>
<input type="text" value="ou=hogwarts,ou=people,dc=test1"/>	<input type="text" value="LDAP Group"/> <span>▼</span> <span>✕</span>

## Editing Users/Groups

Use the Edit Users/Groups pop-up to add users or groups to principal assignments.

Do the following:

1. If you have not already done so, access the Edit Users/Groups pop-up. (Click **Configuration** from the menu, then click **Principals** from the left pane.)
2. Click **CREATE** to add a new principal *or* click the name of the principal you want to edit.

The Principals page displays. See [Principals Page on page 23](#) for more information.

3. Click Edit under Users/Groups to open the Edit Users/Groups pop-up.
4. To *add* a new principal assignment, do the following:
  - a. Click  to add a new line.
  - b. Enter the LDAP group, organizational unit, or user name associated with this principal.

 If the entity is an LDAP group or organizational unit, you must provide the entire distinguished name. If the entity is an LDAP user, you may provide just the user name.

- c. Select the type that reflects the entity you just entered.
5. To *delete* a principal entity, click  next to the entity you wish to remove.
  6. When finished, click **SAVE** to save the changes and close the page; otherwise, click **CLOSE** to discard the changes and close the page.

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

## Page Actions

These buttons let you perform actions on this page:

- **CLOSE** – Closes the page without saving any changes.
- **SAVE** – Saves the changes and closes the page.

Related Topics

- [Creating or Editing Principals on page 28](#)
- [Principal Management Page on page 22](#)
- [About Principals on page 22](#)

## Creating or Editing Principals

Use the Update Principal or Create Principal pages to create new principals or edit existing principals.

Do the following:

1. If you have not already done so, access the Update Principal or Create Principal page. (Click **Configuration** from the menu, then click **Principals** from the left pane.)
2. Click **CREATE** to add a new principal *or* click the name of the principal you want to edit.  
The Principals page displays. See [Principals Page on page 23](#) 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. Add or delete users or groups associated with the principal. See [Edit Users/Groups Pop-up on page 25](#) for more information.
7. When finished, click **DONE** to save the changes and close the page; otherwise, click **CANCEL** to discard the changes and close the page.

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

Related Topics

- [About Principals on page 22](#)
- [Principal Management Page on page 22](#)
- [Principals Page on page 23](#)
- [Edit Users/Groups Pop-up on page 25](#)

## 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. Hover the mouse over the name of the principal you want to remove, click the menu icon  that appears, and click **Delete**
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 22](#)
- [Principal Management Page on page 22](#)

## Remote Visualization Configuration Page

 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 247](#) for more information.

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

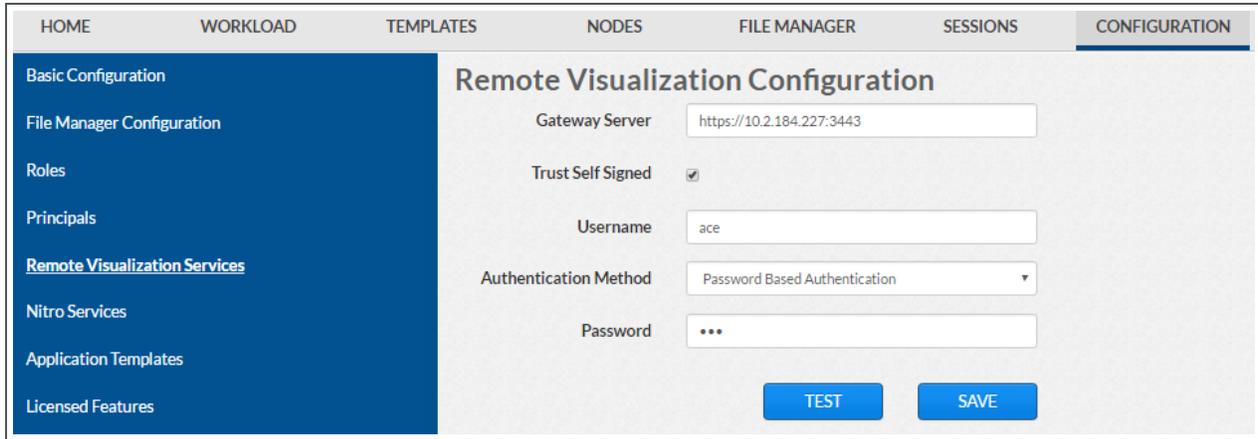
This topic provides an example of the Remote Visualization page and describes its layout and available information.

In this topic:

- [Page Example on page 29](#)
- [Available Fields on page 30](#)
- [Page Actions on page 30](#)

### 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.
Trust Self Signed	Indicates whether the Remote Visualization was set up using self-signed certificates.
Username	User name to log into FastX.
Authentication Method	Specifies whether a password or shared secret key is required to authenticate. <ul style="list-style-type: none"> <li>• If using password-based, enter the FastX admin user’s password in the Password field.</li> <li>• If using key-based, click <b>UPLOAD KEY</b> and and navigate to the copy of the generated .ssh/id_rsa file.</li> </ul>

## 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

- [Authenticating Remote Visualization on page 39](#)
- [Sessions Page on page 247](#)

- [Chapter 1 Viewpoint Configuration on page 3](#)

## Nitro Services Configuration 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 63](#) for more information.

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

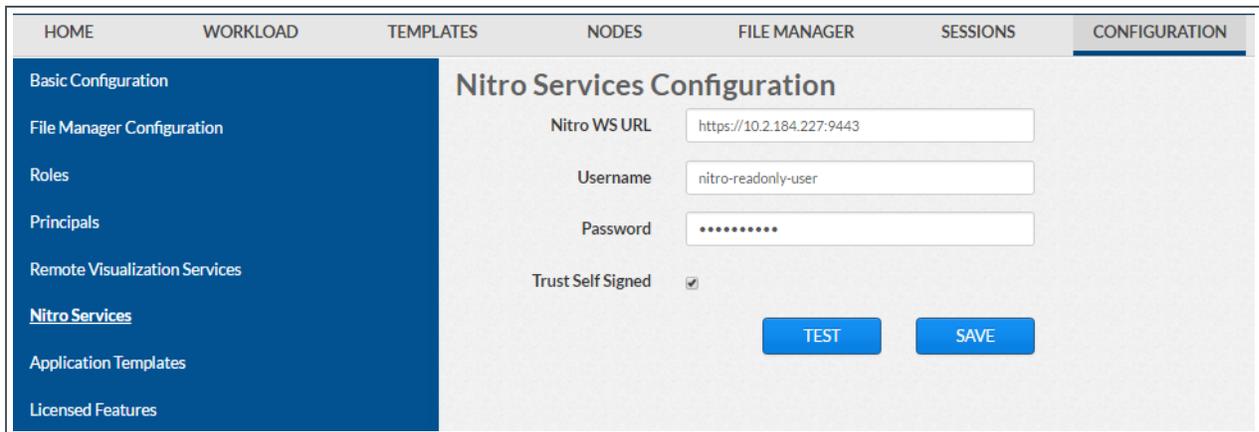
This topic provides an example of the Nitro Services page and describes its layout and available information.

In this topic:

- [Page Example on page 31](#)
- [Available Fields on page 32](#)
- [Page Actions on page 32](#)

### Page Example

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



## Available Fields

The following table identifies fields in the Nitro Services page.

Field	Description
<b>Nitro WS URL</b>	Hostname (or IP address) and port number for the host on which you installed Nitro Web Services. For example, <code>https://&lt;hostname&gt;:9443</code>
<b>Username</b>	Name of the user. This typically nitro-readonly-user.
<b>Password</b>	The user's password.
<b>Trust Self Signed</b>	Indicates whether Nitro Web Services was set up using self-signed certificates.

## 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](#)

## Application Templates Configuration Page

The Application Templates Configuration page lets you deploy and export application templates. Application templates are used to predefine the job requirements available to users when creating jobs.

See [Chapter 4 Application Templates on page 75](#) for more information about application templates.

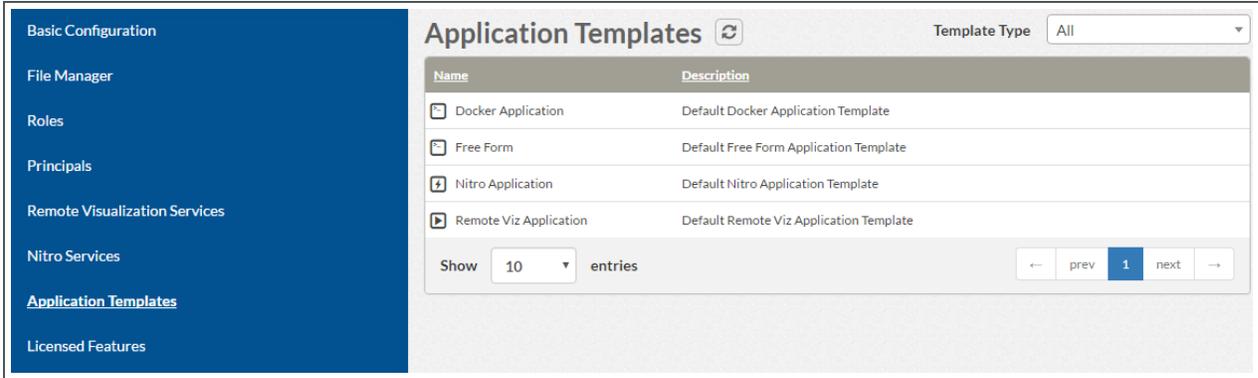
To access this page, select **Configuration** from the menu and then click **Application Templates** from the left pane.

In this topic:

- [Page Example on page 33](#)
- [Page Actions on page 33](#)

## Page Example

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

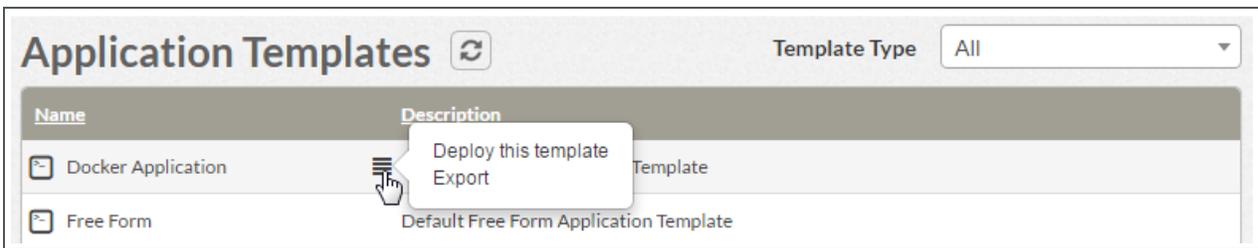


The Application Templates Configuration page displays a list of available application templates. Click  at any time to refresh the page display. If you have many application templates, you can apply a filter to view templates of a specific type by selecting a template type from the *Template Type* drop-down.

Page controls are available at the bottom of the application template 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 template.

## Page Actions

As shown in the following image, hovering the mouse to the left of a template description displays a menu of operations you can perform on a template.



Select *Deploy* to make a template available for editing and *Export* to create a template file that can be used to copy a template to another Viewpoint server. You can use *Deploy* to restore one of the provided templates that has been deleted.

#### Related Topics

- [Chapter 1 Viewpoint Configuration on page 3](#)
- [Chapter 4 Application Templates on page 75](#)

## 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 Suite Installation 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.

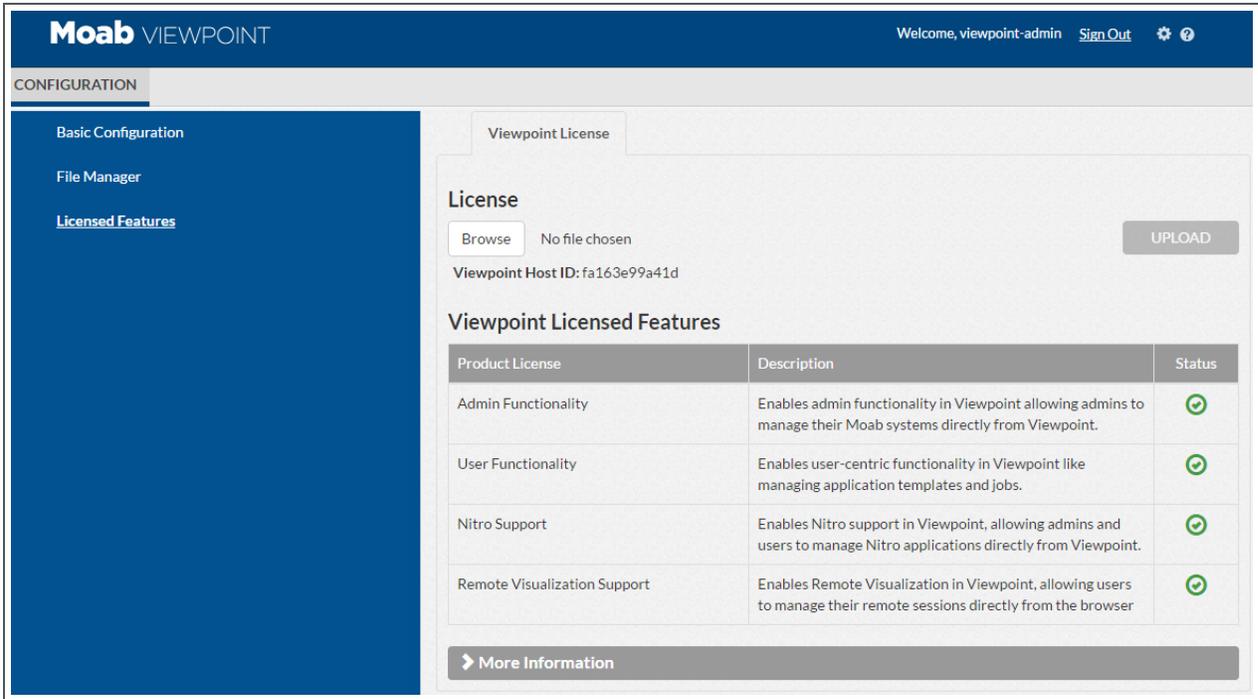
This topic provides an example of the Viewpoint License tab and the Moab License tab and describes the layout and available information in the tab.

In this topic:

- [Viewpoint License Tab on page 34](#)
- [Moab License Tab on page 35](#)

### 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.

Product License	Description	Status
Accounting	Accounting management for usage tracking and charging	✔
Adaptive HPC	Provisioning of Operating Systems	✔
Advanced Resource Management	Policies and capabilities that control resources	✔
Elastic Computing	Elastically add to or remove resources from a cluster / dynamically provision the OS	✔
Grid	Unify management of multiple clusters	✔
Group Sharing	Policy management for groups to use and share the cluster	✔
Power Management	Workload-aware power optimization management	✔
Workflow	Automate both end-to-end workload and system processes	✔

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 1 Viewpoint Configuration on page 3](#)

## 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.

**i** 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
```

**i** 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>
```

**i** 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 36](#).

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. Proceed with instructions to set up the connection to MWS (see [Basic Configuration Page on page 5](#)), 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](#)
- [Basic Configuration Page on page 5](#)

## Authenticating Remote Visualization

Beginning with the 9.0.2 release, Viewpoint supports two Remote Visualization methods: password-based and key-based.

To set up the Remote Visualization authentication, do the following:

1. Log into Viewpoint as the MWS administrative user.
  2. Access the Remote Visualization page. (Click **Configuration** from the menu and then click **Remote Visualization Services** from the left pane.)
  3. Enter the hostname (or IP address) and port number for the FastX gateway server in the Gateway Server field. For example, `https://<server>:3443`.
  4. If your Remote Visualization configuration was set up using self-signed certificates, confirm the Trust Self Signed check box is selected.
  5. Enter the FastX admin user you specified when you installed the Remote Visualization Server in the Username field. For example, `ace`.
  6. Do one of the following:
    - If your configuration will authenticate using the password-based method, do the following:
      - a. Select Password Based Authentication from the Authentication Method box.
      - b. Enter the FastX admin user's password in the Password field.
-  The `/etc/ssh/sshd_config` file on each Session server must be configured to enable password authentication. See [Install Remote Visualization](#) in the Moab HPC Suite Installation and Configuration Guide for more information.
- If your configuration will authenticate using the key-based method, do the following:
    - a. Select Key Based Authentication from the Authentication Method box.
    - b. Click **UPLOAD KEY** and navigate to the copy of the generated `.ssh/id_rsa` file.
7. Click **TEST** to confirm your settings are correct.
  8. Click **SAVE** to submit your settings.

#### Related Topics

- [Sessions Page on page 247](#)
- [Remote Visualization Configuration Page on page 29](#)
- [Chapter 1 Viewpoint Configuration on page 3](#)

## Chapter 2 Viewpoint Basics

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

In this chapter:

- [The Viewpoint Home Page on page 41](#)
- [Menu Bar on page 44](#)
- [Navigating Viewpoint on page 44](#)
- [Logging In/Signing Out on page 45](#)
- [Accessing Online Help on page 46](#)

### 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 41](#)
- [Widgets on page 42](#)

#### Page Example

The following image is an example of the Home page.

The screenshot displays the Moab Viewpoint dashboard with the following components:

- Navigation Bar:** HOME, WORKLOAD, TEMPLATES, NODES, FILE MANAGER, SESSIONS, CONFIGURATION. User: Welcome, moab-admin. Sign Out.
- Search Bar:** Search input field with a magnifying glass icon.
- Workload Widget:**
  - Refresh Interval: 60s
  - Table with columns: Job ID, Job Name, Submitter ID, Start Date, Submit Date, Queue Status, Cores, Nodes, Wall Clock.
  - Table Data:
 

Job ID	Job Name	Submitter ID	Start Date	Submit Date	Queue Status	Cores	Nodes	Wall Clock
nativerm.72	None	cdiggory	N/A	2016-10-05 11:35:14	ELIGIBLE	4	0	00:05:33:20
nativerm.71	None	cdiggory	2016-10-05 11:34:42	2016-10-05 11:26:42	ACTIVE	8	2	00:05:33:20
nativerm.70	None	triddle	2016-10-05 11:26:10	2016-10-05 11:26:10	ACTIVE	8	3	00:05:33:20
nativerm.69	None	ppatil	2016-10-05 11:25:38	2016-10-05 11:25:38	ACTIVE	4	3	00:22:13:20
nativerm.68	None	triddle	2016-10-05 11:25:06	2016-10-05 11:25:06	ACTIVE	8	4	00:01:00:00
nativerm.67	None	ntonks	2016-10-05 11:24:35	2016-10-05 11:24:35	ACTIVE	4	2	00:01:00:00
nativerm.66	None	hgranger	2016-10-05 11:24:05	2016-10-05 11:24:04	ACTIVE	8	3	00:02:46:40
nativerm.65	None	hgranger	2016-10-05 11:23:32	2016-10-05 10:25:30	ACTIVE	16	4	00:02:46:40
nativerm.64	None	cdiggory	2016-10-05 10:25:05	2016-10-05 10:25:05	COMPLETED	8	3	00:01:00:00
nativerm.63	None	cchang	2016-10-05 10:24:34	2016-10-05 10:24:34	COMPLETED	4	3	00:01:00:00
  - Footer: Show 10 entries, pagination (prev, 1, 2, 3, 4, 5, 6, 7, next).
- Dedicated System Resources Widget:** CPU and MEMORY usage graphs. Y-axis scale 0-100. X-axis scale 24h... Current.
- Node Summary Widget:**
  - 136 NODES
  - Donut chart showing node status: BUSY (22), DRAINED (110), IDLE (1), RUNNING (1).
  - View All Nodes button.
- Workload Summary Widget:**
  - 16 JOBS
  - Donut chart showing job status: ELIGIBLE (1), ACTIVE (15).
  - View All Workload button.

## 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 manage 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 Systems Resources Widget 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 Node Summary Widget 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).

**i** The user must be assigned to a role with Workload Summary Widget permission selected to view information for this widget.

Related Topics

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

## Menu Bar

The Menu bar appears just above the selected page and displays all of the pages available to the signed in user.

Select a menu item to open directly to that page.

Related Topics

- [The Viewpoint Home Page on page 41](#)
- [1.1 Workload Page](#)
- [Application Templates Page on page 75](#)
- [Nodes Page on page 227](#)
- [File Manager Page on page 239](#)
- [Configuration Page on page 4](#)

## 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

- [Menu Bar on page 44](#)

## 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](#).

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

### Log In to Viewpoint

Do the following:

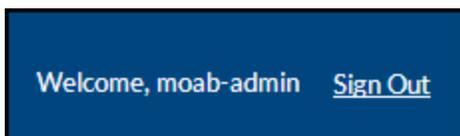
1. In a web browser, navigate to the Viewpoint Login page ([http://<viewpoint\\_host>:8081](http://<viewpoint_host>:8081)). Where *<viewpoint\_host>* is the IP address or name of the Viewpoint Host (actual machine on which Viewpoint was installed).
2. Enter your Username and Password into the respective fields.
3. Click **Login**.

You will be redirected to the Viewpoint homepage. See [The Viewpoint Home Page on page 41](#).

### 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.

## Accessing Online Help

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

Click  next to where you sign out to access the Viewpoint online help. The full Moab HPC Suite, including Viewpoint, is available at [Adaptive Computing Documentation Index](#).

## Chapter 3 Viewpoint Workload Overview

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.

In this chapter:

- [Workload Page on page 47](#)
- [Job Details Page on page 50](#)
- [Job Details–Functional Areas on page 56](#)
- [Job Details–Additional Areas on page 63](#)
- [Job Arrays on page 64](#)
- [Managing the Workload on page 67](#)
- [Creating a Job on page 67](#)
- [Creating or Editing a Job Submission Script on page 69](#)
- [Viewing Job Details on page 73](#)

### 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.

The screenshot shows the 'Workload' management interface. At the top, there is a 'Refresh Interval' set to 15s. Below this is a table of jobs with columns for Job ID, Job Name, Submitter ID, Start Date, Submit Date, Queue Status, Cores, Nodes, and Wall Clock. The first job, 'Moab.2', is in a 'COMPLETED' state. Below the table is a 'Job Array' section with a grid of links for subjobs (Moab.2[1] through Moab.2[10]). To the right of the table is a 'Current Search' area with a dropdown menu, a 'Narrow Search' box, and three filter dropdowns: 'Select Queue Status', 'Select Job Type', and another 'Select' dropdown. At the bottom of the filter area are 'RESET' and 'FILTER' buttons. Below the job table is a pagination control showing 'Show 5 entries' and a page number '1'.

## 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**.

 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 67](#) 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	<p>Unique identifier given to a job by Moab (or the resource manager) . In this column you can also:</p> <ul style="list-style-type: none"> <li>◦ Use the  icon to change the status of a non-completed job (as displayed in the Job Status column). See <a href="#">Changing a Job's State</a>.</li> <li>◦ Display additional information about a job. Click a job ID to open the Job Details page. See <a href="#">Viewing Job Details on page 73</a>.</li> <li>◦ 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 <a href="#">Job Arrays on page 64</a>. Job arrays sent through Torque will be treated as a single job.</li> </ul>
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 <i>not</i> 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

- [Creating a Job on page 67](#)
- [1.1 Changing a Job's State](#)
- [Viewing Job Details on page 73](#)
- [Job Arrays on page 64](#)
- [Job Details Page on page 50](#)
- [Chapter 3 Viewpoint Workload Overview on page 47](#)

## Job Details Page

The Job Details page shows additional information about a job and lets you 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 overall layout, with a detailed description of the job status information at the top of the page.

In this topic:

- [Page Example on page 51](#)
- [Page Actions and Navigation on page 52](#)
- [Job Actions and Basic Information on page 53](#)
- [Scheduler Analysis on page 54](#)

See [Job Details–Functional Areas](#) and [Job Details–Additional Areas](#) for information about other areas of the Job Details page.

## Page Example

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



**Status: ACTIVE**  
Job Status: RUNNING

**Job Details** 🔗

Job Id: nativerm.2298

Submission Script: N/A

Reservation Name: N/A

Template: N/A

[Return to earlier search](#) Cancel

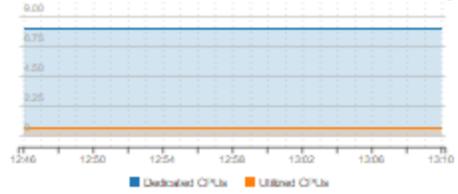
---

**Credentials**

User: cdiggory    Group: nobody    Account: hufflepuff

Class: batch3    Quality of Service:

**CPU Statistics**



---

**Time Frame**

Start Time	Duration	Completion Time	Actual Duration
2016-07-21 12:46:15	00:05:33:20	None	00:00:24:15

**Data Management**

Execution Path: /home/cdiggory/

Output Path: None

Error Path: None

**Other Information**

Partition Access List: nativerm

Start Count: 1

---

**Resource Requirement Summary**

Total Cores Requested: 8	Total Nodes Requested: 8
Total Memory Requested: N/A	Allocated Node List: <span style="background-color: #007bff; color: white; padding: 2px;">node-022</span> <span style="background-color: #007bff; color: white; padding: 2px;">node-020</span> <span style="background-color: #007bff; color: white; padding: 2px;">node-019</span>
Total Swap Requested: N/A	<span style="background-color: #007bff; color: white; padding: 2px;">node-012</span> <span style="background-color: #007bff; color: white; padding: 2px;">node-011</span>
Total Disk: N/A	Allocated Node Count: 5
Features: N/A	Allocated Partition: nativerm
	Operating System: N/A
	Architecture: N/A
	Total Generic Resources: N/A

---

[Requirement Details](#)

Go Back

## 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.

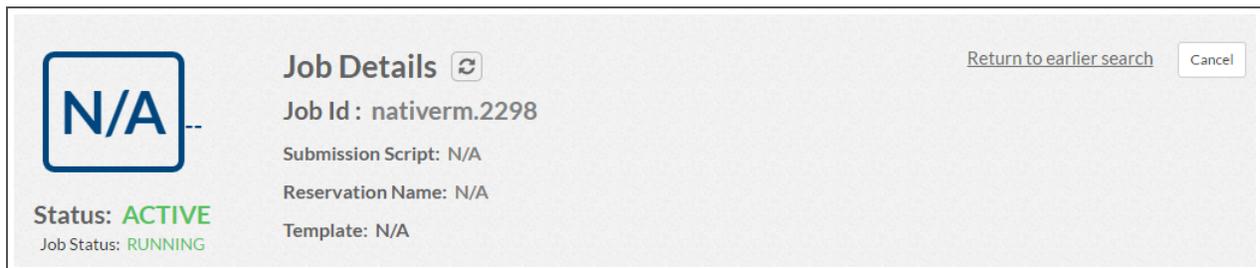
Click  to navigate to the bottom of the page.

**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.

## 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.



**N/A**

Status: **ACTIVE**  
Job Status: **RUNNING**

**Job Details** 

Job Id: nativerm.2298

Submission Script: N/A

Reservation Name: N/A

Template: N/A

[Return to earlier search](#)

### 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, and lets you cancel the job.
- The "Hold" button appears for an active job, and lets you place the job in idle status.
- The "Release" button appears for a job for which a hold has been applied, and lets you release the hold on the job and allow it to continue running.

- The "More Information" button appears for blocked jobs and, based on the user's permissions, lets you view the Schedule Analysis window. See [Scheduler Analysis on page 54](#).

### 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".
- **Reservation Name** – Name of the reservation, if applicable, associated with the job.
- **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".

## Scheduler Analysis

**i** The Scheduler Analysis requires the "Job Details - Scheduling Analysis" permission. See [Role Permissions on page 13](#) 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

Showing 0 to 0 of 0 entries Search:

Block Reason	Message
No block reasons found	

▼ Warning Messages

Showing 1 to 1 of 1 entries Search:

Message
job violates constraints for partition torque (partition torque not in job partition mask)

▼ Node Analysis

Showing 1 to 10 of 50 entries Search:

Node Name	Message
node-001	node-001 available: 1 tasks supported
node-002	node-002 rejected: State (Busy)
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 available: 2 tasks supported
node-008	node-008 rejected: State (Busy)
node-009	node-009 rejected: State (Busy)
node-010	node-010 rejected: State (Busy)

Show  entries

Previous  2 3 4 5 Next

Close

#### Related Topics

- [1.1 Workload Page](#)
- [Viewing Job Details on page 73](#)
- [Job Details–Functional Areas on page 56](#)
- [Job Details–Additional Areas on page 63](#)

## Job Details–Functional Areas

The Job Details page shows additional information about a job and lets you 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 describes functional areas, including field descriptions, available on the Job Details page. To expand and display a functional area, click  to the left of 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 topic:

- [Priority on page 56](#)
- [Job Messages on page 58](#)
- [Credentials and CPU Statistics on page 58](#)
- [Time Frame on page 59](#)
- [Data Management and Other Information on page 60](#)
- [Resource Requirement Summary on page 61](#)
- [Requirement Details on page 62](#)

### Priority

**i** The Priority area requires the "Job Details - Priority Analysis" permission. See [Role Permissions on page 13](#) 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.

Priority																																									
User Job Priority											System Priority											Start Priority					Job Start Count														
0											0											27					0														
Credential			Resource				Target	Service				Attribute			Fairshare					Usage			= PRIORITY																		
account	qos	user	group	node	procequivalent	prosecond	swap	memory	disk	proc	walltime	queuetime	xfactor	startcount	policyviolation	userprior	queuetime	deadline	bypass	xfactor	gres	attribute		jobname	state	jobid	paperuser	account	guser	qos	jobsperuser	gaccount	ggroup	user	jobrunningperuser	group	procpuser	userwacc	executiontime	consumed	percentconsumed
1			0				0	26				0			0					0			27																		
0			1				0	26				0			0					0																					

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 Reference Guide* for more information on the available factors.

 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 92](#) 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 Manager Reference 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.

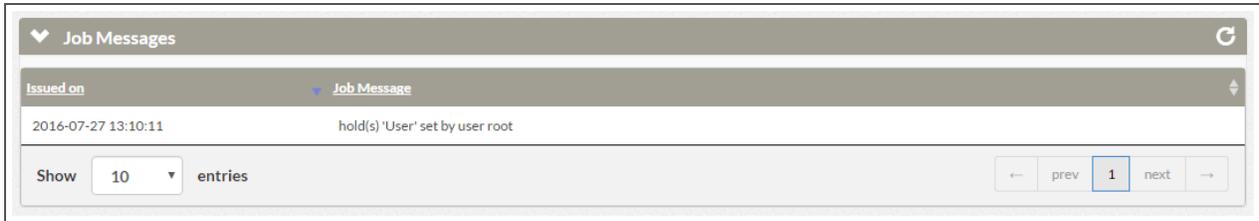
The second area provides details about how Moab calculated the start priority. The different start priority groups are listed and are also broken down into each factor within the group. The cumulative weight for the group and the how that breaks down into the different factors are provided.

## 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`.

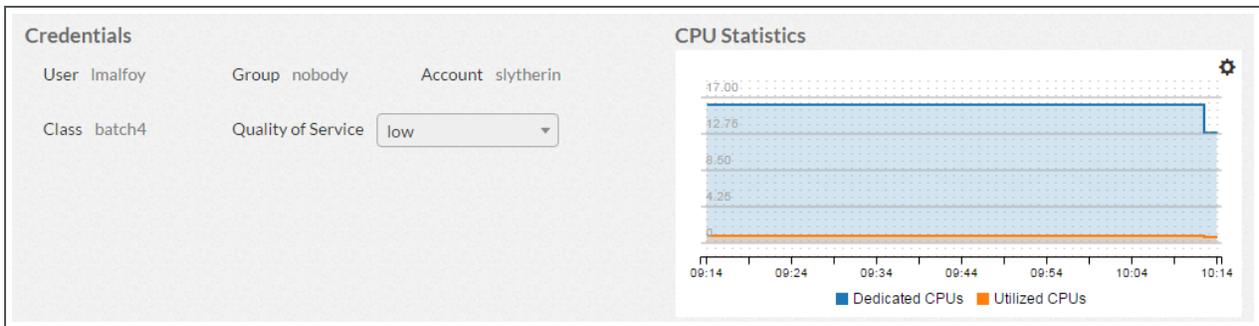
Expand the Job Messages area to view the reported messages, if any. Click  to refresh the job message information.

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



## 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
<b>User</b>	The user that submitted a job.
<b>Group</b>	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.

Field	Description
<b>Account</b>	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.
<b>Class</b>	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.
<b>Quality of Service</b>	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.

Time Frame			
Start Time	Duration	Completion Time	Actual Duration
2015-10-17 13:00:16	00:22:13:20	None	00:02:46:20

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

Field	Description
<b>Start Time</b>	The date and time that the job started.
<b>Duration</b>	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.

Field	Description
<b>Completion Time</b>	The date and time that the job completed; "None" if the job is running or idle.
<b>Actual Duration</b>	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
<b>Execution Path</b>	Directory path where the job was executed. This is typically the user's home directory.
<b>Output Path</b>	Directory path where the standard output file is stored. This is typically the user's home directory.
<b>Error Path</b>	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
<b>Partition Access List</b>	List of available partitions on which the job can run.
<b>Start Count</b>	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.

Resource Requirement Summary			
Total Cores Requested	4	Total Nodes Requested	2
Total Memory Requested	N/A	Allocated Node List	node-019 node-018
Total Swap Requested	N/A	Allocated Node Count	2
Total Disk	N/A	Allocated Partition	nativerm
Features	N/A	Operating System	N/A
		Architecture	N/A
		Total Generic Resources	N/A

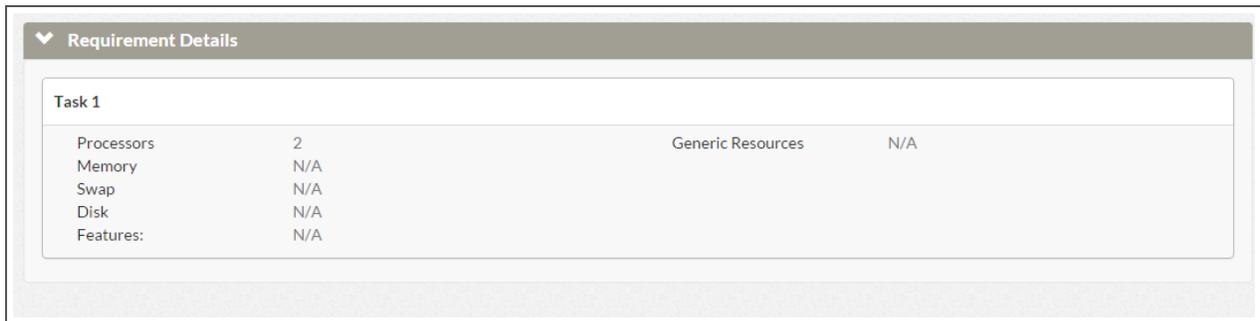
The following table describes the fields in the Resource Requirement Summary area.

Field	Description
<b>Total Cores Requested</b>	Maximum dedicated processors allocated for the node.
<b>Total Memory Requested</b>	Maximum memory made available for the job.
<b>Total Swap Requested</b>	Amount of swap memory made available for the job.
<b>Total Disk</b>	Amount of disk space available for the job.
<b>Features</b>	Maximum number of supported node features.

Field	Description
<b>Total Nodes Requested</b>	Number nodes requested at job submission.
<b>Allocated Node List</b>	List of nodes allocated for the job. The job coordinator node is displayed with a dark blue background. Job worker nodes are displayed on a light blue background.
<b>Allocated Node Count</b>	Number of nodes actually allocated for the job.
<b>Allocated Partition</b>	Partition allocated for the job.
<b>Operating System</b>	Operating system on which the node can run.
<b>Architecture</b>	Node's processor architecture.
<b>Total Generic Resources</b>	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

- [1.1 Workload Page](#)
- [Viewing Job Details on page 73](#)

- [Job Details Page on page 50](#)
- [Job Details–Additional Areas on page 63](#)

## Job Details–Additional Areas

The Job Details page shows additional information about a job and lets you 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 describes functional areas on the Job Details page that apply only to certain types of jobs.

In this topic:

- [Nitro Details on page 63](#)
- [Job Array on page 64](#)

### 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 Details** 🔄 Return to earlier search Cancel

**Job Id:** Moab.15 (Nitro\_job) **Status:** ACTIVE  
Job Status: RUNNING

**Submission Script:** N/A  
**Reservation Name:** N/A  
**Template:** Nitro Application (v.1 CURRENT)

**Job Messages**

**Nitro Statistics** ⚙️

**Progress**  
 30%

**State:** Running  
**Coordinator Host:** toi-901

**Task File:** /home/hgranger/nitro-medium.task ⋮  
**Task Log:** /home/hgranger/nitro/Moab.15/nitro\_Moab.15.tasklog.txt ⋮  
**Job Log:** /home/hgranger/nitro/Moab.15/nitro\_Moab.15.joblog.txt ⋮

**Tasks**

Pending	In Progress	Completed	Tasks / Sec
1,250	500	62,750	575.69
Total: 208,500			

**Worker Summary**

Workers	Task Threads	Avg. Asgmt. Duration	Avg. Task Duration
N/A	2	0.823	0.002

## 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.



You can click on **All Subjobs**, **Idle**, **Running**, **Blocked**, **Hold**, **Removed**, and **Completed** to view only jobs in each category.

See [Job Arrays on page 64](#) for more information about job arrays.

### Related Topics

- [1.1 Workload Page](#)
- [Viewing Job Details on page 73](#)
- [Job Details Page on page 50](#)
- [Job Details–Functional Areas on page 56](#)

## 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 on page 65](#)
- [Viewing Job Array Details on page 65](#)
- [Creating Job Arrays on page 66](#)

## 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.

Job ID	Job Name	Submitter ID	Start Date	Submit Date	Job Status	Cores	Nodes	Wall Clock
▼ <a href="#">Moab.10</a>	MyOtherArray	hgranger	None	2015-09-21 23:18:11	IDLE	1	0	99:23:59:59
<b>Job Array</b>			<a href="#">All Subjobs 5</a> <a href="#">Idle 0</a> <a href="#">Running 4</a> <a href="#">Blocked 0</a> <a href="#">Hold 0</a> <a href="#">Removed 1</a> <a href="#">Completed 0</a>					
<a href="#">Moab.10[0]</a>		<a href="#">Moab.10[2]</a>		<a href="#">Moab.10[4]</a>				
<a href="#">Moab.10[1]</a>		<a href="#">Moab.10[3]</a>						

## 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.

▼ Job Array								
<b>Subjobs</b>			<a href="#">All Subjobs 5</a> <a href="#">Idle 0</a> <a href="#">Running 4</a> <a href="#">Blocked 0</a> <a href="#">Hold 0</a> <a href="#">Removed 1</a> <a href="#">Completed 0</a>					
<a href="#">Moab.10[0]</a>		<a href="#">Moab.10[2]</a>		<a href="#">Moab.10[4]</a>				
<a href="#">Moab.10[1]</a>		<a href="#">Moab.10[3]</a>						

- You can make changes to, hold, or cancel the parent job.

**i** 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.

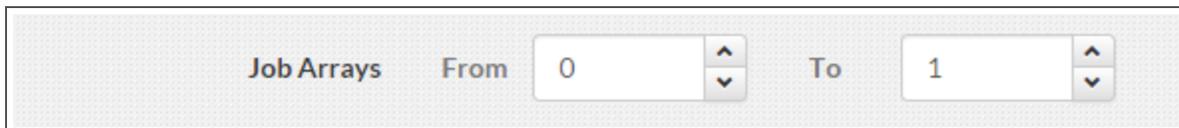
## Creating Job Arrays

Viewpoint also lets you create job arrays.

**i** The user must have the Create Job 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 13](#) and [Application Template Details on page 83](#).

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:



The image shows a UI element for specifying job arrays. It consists of the text "Job Arrays" followed by "From" and a spinner box containing the number "0". To the right of this is the text "To" and another spinner box containing the number "1". Both spinner boxes have up and down arrow buttons.

**i** 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].

Related Topics

- [1.1 Workload Page](#)

## Managing the Workload

Viewpoint lets you manage the state of non-completed jobs directly from the Workload view. For example, if a job is idle, you can place it on hold or cancel it.

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 options to change the job state appear. For example, if the job state is IDLE, the Hold and Cancel options are displayed.

3. Select the new state for the job.

Once the state change has been passed to Moab, a message appears indicating it has been changed and the new state appears in Queue Status column.

Related Topics

- [Workload Page on page 47](#)

## Creating a Job

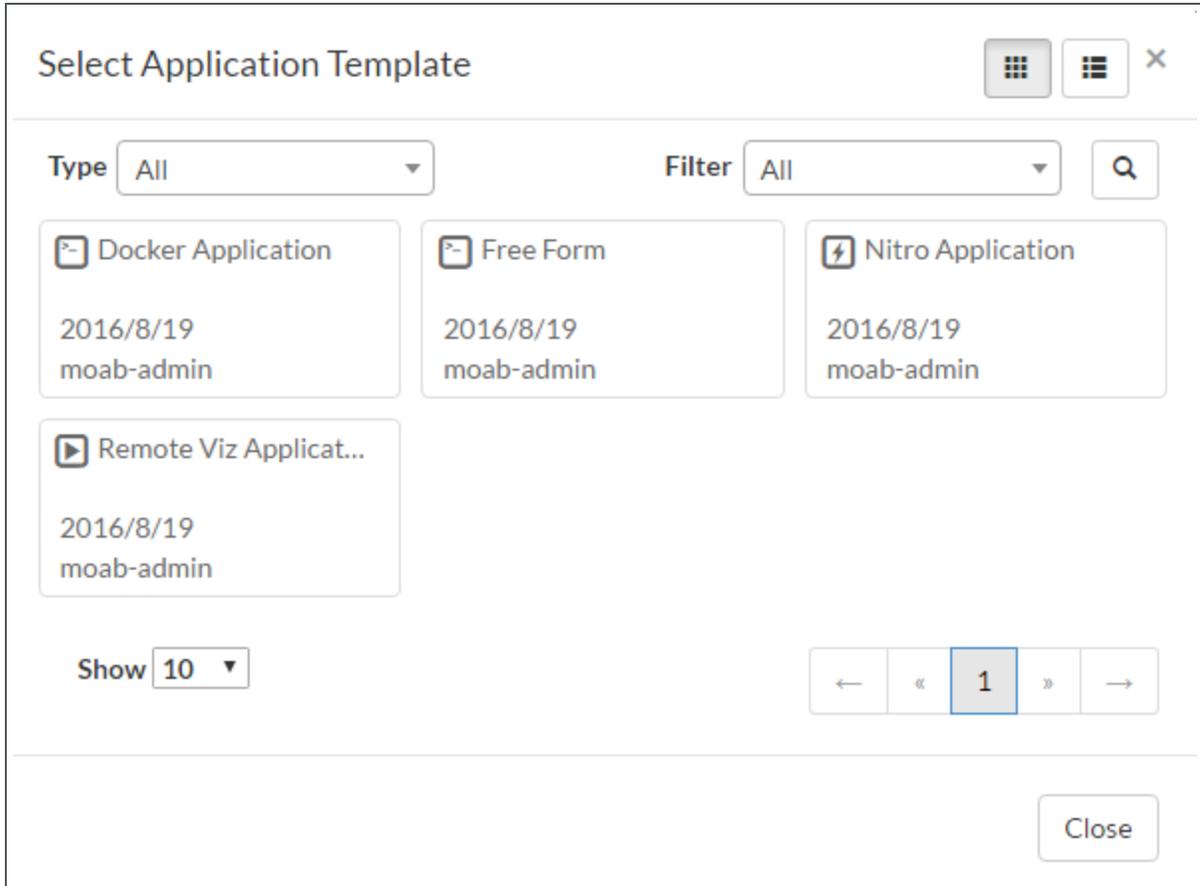
Viewpoint lets you create a job directly from the Workload page.

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

Do the following:

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

The Select Application Template pop-up window appears, showing a list of templates you can use to create a job.



You can toggle between a grid view and list view by clicking  and , respectively.

3. If desired, filter the application template results. For example,
  - Use the Type drop-down to limit by application template type.
  - Use the Filter drop-down to limit by its association to you:
    - **Shared With Me** – Created by another but shared with you (based on template permissions)
    - **Owned by Me** – Created by you
    - **All** – All templates shared with you or created by you

You can use the Type and Filter drop-downs in combination to further limit application template results (for example, to search for HPC Application templates you created).

Alternatively, you can click  to open a search box (replaces the filter box) that lets you enter the name of the application template you want to use.

Again, you can use the **Type** drop-down to further limit the application template results.

4. Click the application template you wish to use to create the job.

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

5. Enter the necessary information for the new job, such as the job name and submission script.

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.

6. Click **Create** to submit the information and create the job; otherwise, click **Cancel** to return to the Workload view.

Related Topics

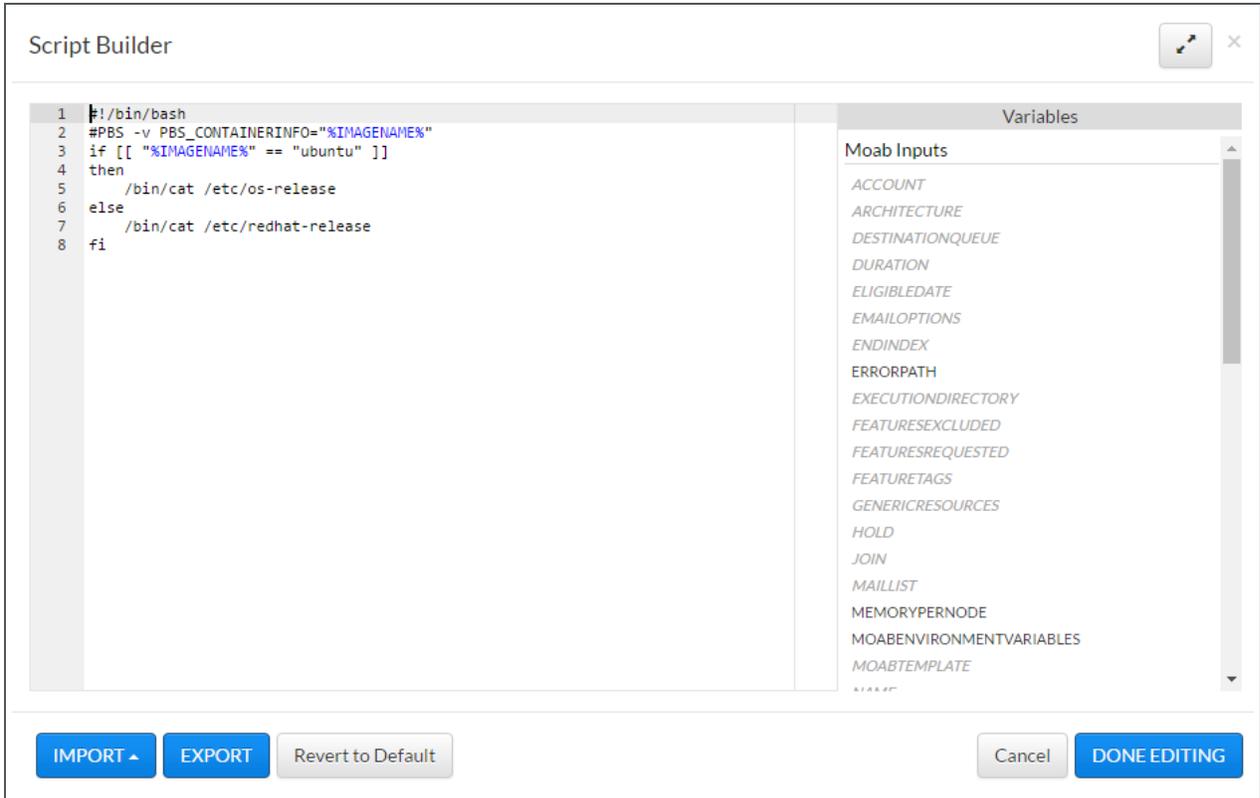
- [1.1 Workload Page](#)

## Creating or Editing a Job Submission Script

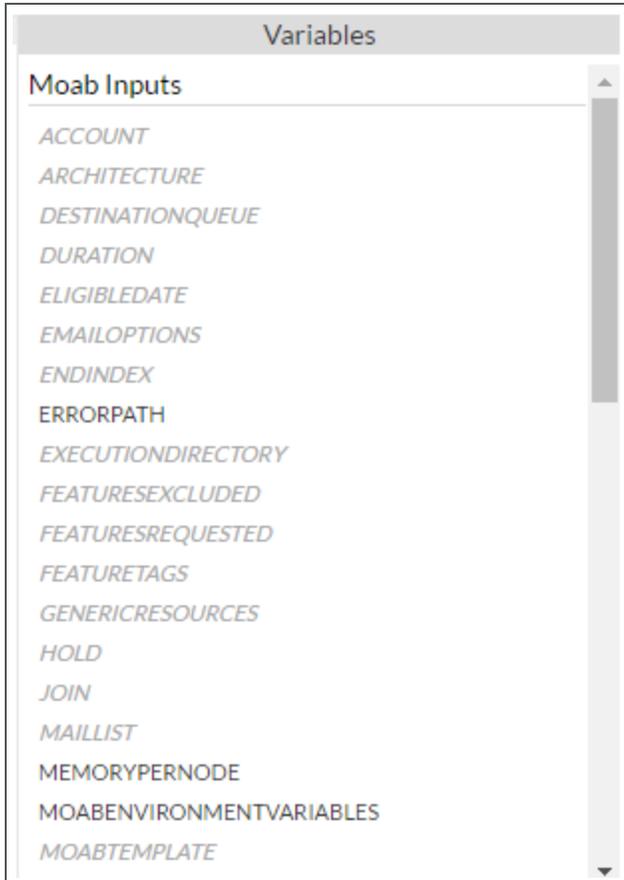
You may need to edit a job submission script when creating a job. If you have the Templates Page Viewpoint permission, you can also create a default job submission script associated with a job template. See [Job Submission Script](#) for more information.

Do the following:

1. If you have not already done so, click **Customize Script** on the Create Job page. The Script Builder appears.



2. Enter the script in the pane on the left side of the Script Builder. To assist you in building your script, there is a list of Moab variables on the right side of the Script builder that you can drag and drop into your script. 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.



Another method for adding variables to a script is to type Ctrl+Space when editing a script in the left pane. You can select the variables directly in this list instead of having to drag them from the right pane.

### Script Builder

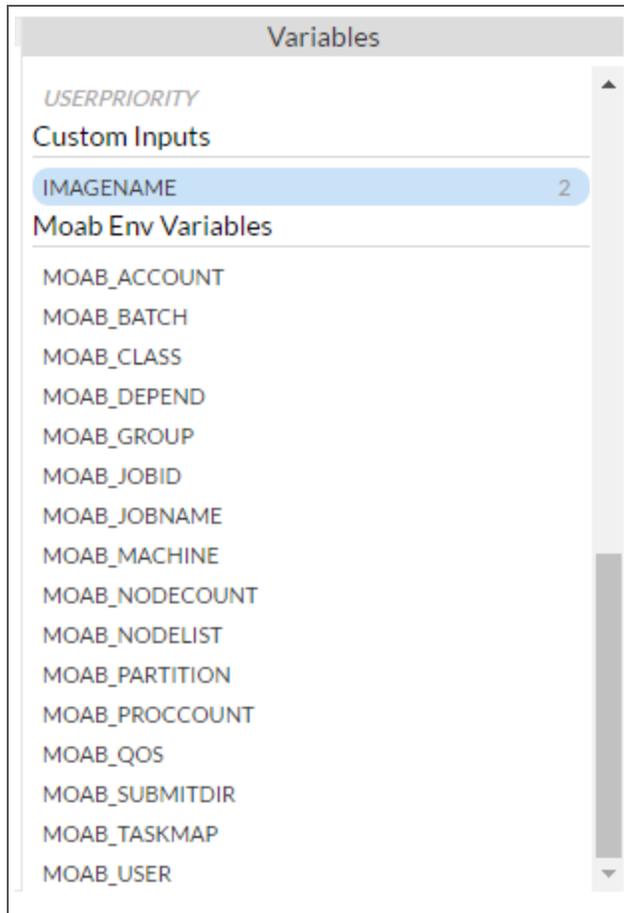
```

1 #!/bin/bash
2 #PBS -v PBS_CONTAINERINFO="%IMAGENAME%"
3 if [[ "%IMAGENAME%" == "ubuntu" ]]
4 then
5     /bin/cat /etc/os-release
6 else
7     /bin/cat /etc/redhat-release
8 fi
9 |

```

\$MOAB_JOBID	Variable
%NUMOFcores%	Variable
%ERRORPATH%	Variable
%OUTPUTPATH%	Variable
%MOABENVIRONMENTVARIABLES%	Variable
%IMAGENAME%	Variable
\$MOAB_ACCOUNT	Variable
\$MOAB_BATCH	Variable

In addition to Moab variables, the list includes Custom Inputs, which are defined in the Custom Settings section of the job template, and Moab environment variables.



You can also import a script from a file by clicking **Import** and selecting the file containing the script.

3. When you are done editing your script, click **Done Editing** to save.

If you want to export a script for use in other jobs or job templates, click **Export** and enter a file name for the script file.

#### Related Topics

- [Creating a Job on page 67](#)
- [Application Template Details on page 83](#)

## 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.

**i** 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 [1.1.2 Search and/or Filter Areas](#) 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

- [1.1 Workload Page](#)
- [Job Details Page on page 50](#)

## 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 Admin 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 several application templates that you can customize for your environment or to use as a guide for creating your own application templates. See [Provided Templates on page 105](#) for information.

**i** 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 on page 144](#).

In this chapter:

- [Application Templates Page on page 75](#)
- [Create Application Template Page on page 79](#)
- [Edit Application Template Page on page 81](#)
- [Provided Templates on page 105](#)
- [Application Template API on page 144](#)

## 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 76](#)
- [Page Details on page 76](#)

- [Additional Functions on page 78](#)

## Page Example

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

The screenshot shows the 'Application Templates' page. At the top, there is a 'Template Type' dropdown menu set to 'All'. Below this is a table with the following columns: Name, Ver., Owner, Permissions, Published, Used, and Changed. The table contains four entries:

Name	Ver.	Owner	Permissions	Published	Used	Changed
Docker Application	v.1	moab-admin	Users: ALL Groups: ALL Accounts: ALL	✓	0	2016-07-20
Free Form	v.1	moab-admin	Users: ALL Groups: ALL Accounts: ALL	✓	0	2016-07-20
Nitro Application	v.1	moab-admin	Users: ALL Groups: ALL Accounts: ALL	✓	0	2016-07-20
Remote Viz Application	v.1	moab-admin	Users: ALL Groups: ALL Accounts: ALL	✓	0	2016-07-20

Below the table, there is a 'Show' dropdown set to '10' entries and a pagination control showing 'prev', '1', and 'next'. At the bottom of the main pane are two buttons: 'CREATE APPLICATION TEMPLATE' and 'IMPORT'. To the right of the table is a 'Filters' section with several input fields for filtering by Name, Owner, Published, Date Created, and Permissions (User, Group, Account). At the bottom right of the filters are 'RESET' and 'FILTER' buttons.

## Page Details

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

In this section:

- [New Application Template Creation on page 76](#)
- [Filters on page 76](#)
- [Application Templates List on page 77](#)

## 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 [Creating an Application Template on page 100](#).
- **IMPORT** – Opens up a pop-window that lets you import an existing application template. See [Importing an Application Template on page 103](#).

## 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
<b>Name</b>	Name used to identify the application template.
<b>Owner</b>	The owner of the application template.
<b>Published</b>	Whether you want to display applications templates that are published <i>or</i> unpublished.
<b>Date Created</b>	Date range during which the application template was created. When this filter is selected, additional fields appear letting you specify the date range.
<b>User</b>	Name of the user or users given permission to use this application template.
<b>Group</b>	User group given permission to use this application template.
<b>Account</b>	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.

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.

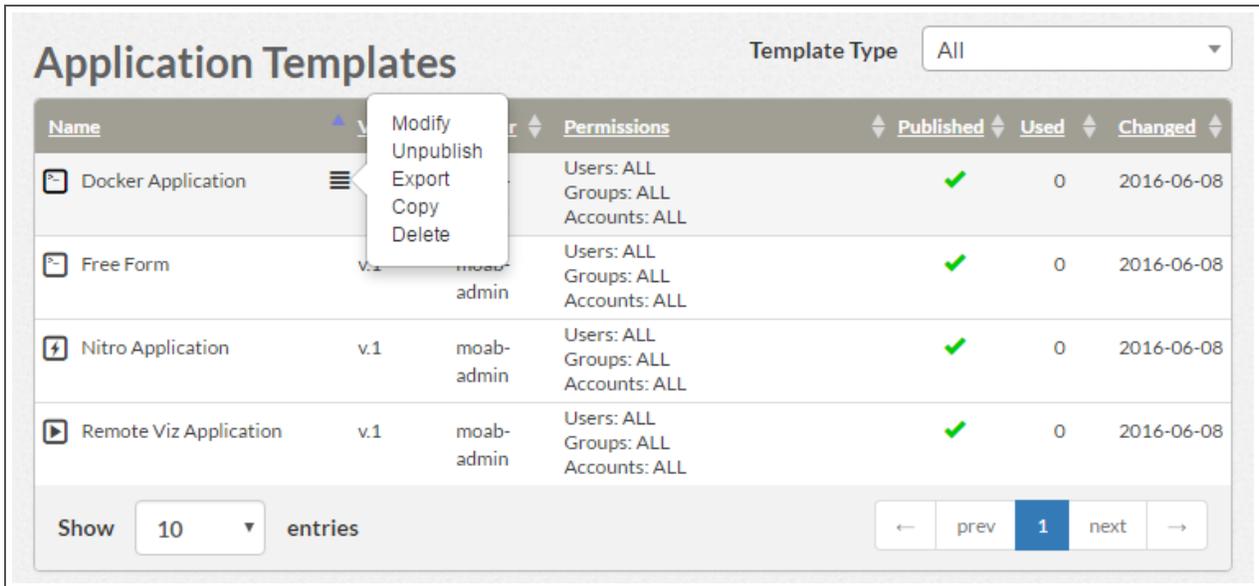
The following table describes the different columns and their contents.

Column Heading	Description
<b>Name</b>	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.

Column Heading	Description
<b>Version</b>	The current version of the template.
<b>Owner</b>	Name of the individual who created the application template.
<b>Permissions</b>	User, Group, and Account permissions granted for this application template.
<b>Published</b>	Indicates whether the application template is published.
<b>Used</b>	Number of times the application template has been used (the number of jobs submitted using this application template).
<b>Changed</b>	Date on which the application template was last changed.

## Additional Functions

The Templates page also includes a pop-up 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 pop-up menu.



The screenshot shows the 'Application Templates' interface. At the top right, there is a 'Template Type' dropdown menu set to 'All'. Below this is a table with the following columns: Name, Permissions, Published, Used, and Changed. The table contains four entries: 'Docker Application', 'Free Form', 'Nitro Application', and 'Remote Viz Application'. A pop-up menu is displayed over the 'Free Form' entry, listing the following actions: Modify, Unpublish, Export, Copy, and Delete. At the bottom of the table, there is a 'Show 10 entries' control and a pagination control showing 'prev', '1', and 'next'.

From this pop-up menu, you can:

- 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.

**i** If you delete one of the templates provided with Viewpoint, you can restore the template on the Application Template Configuration page. See [Application Templates Configuration Page on page 32](#).

#### Related Topics

- [Creating an Application Template on page 100](#)
- [Importing an Application Template on page 103](#)
- [Editing an Application Template on page 101](#)

## Create Application Template Page

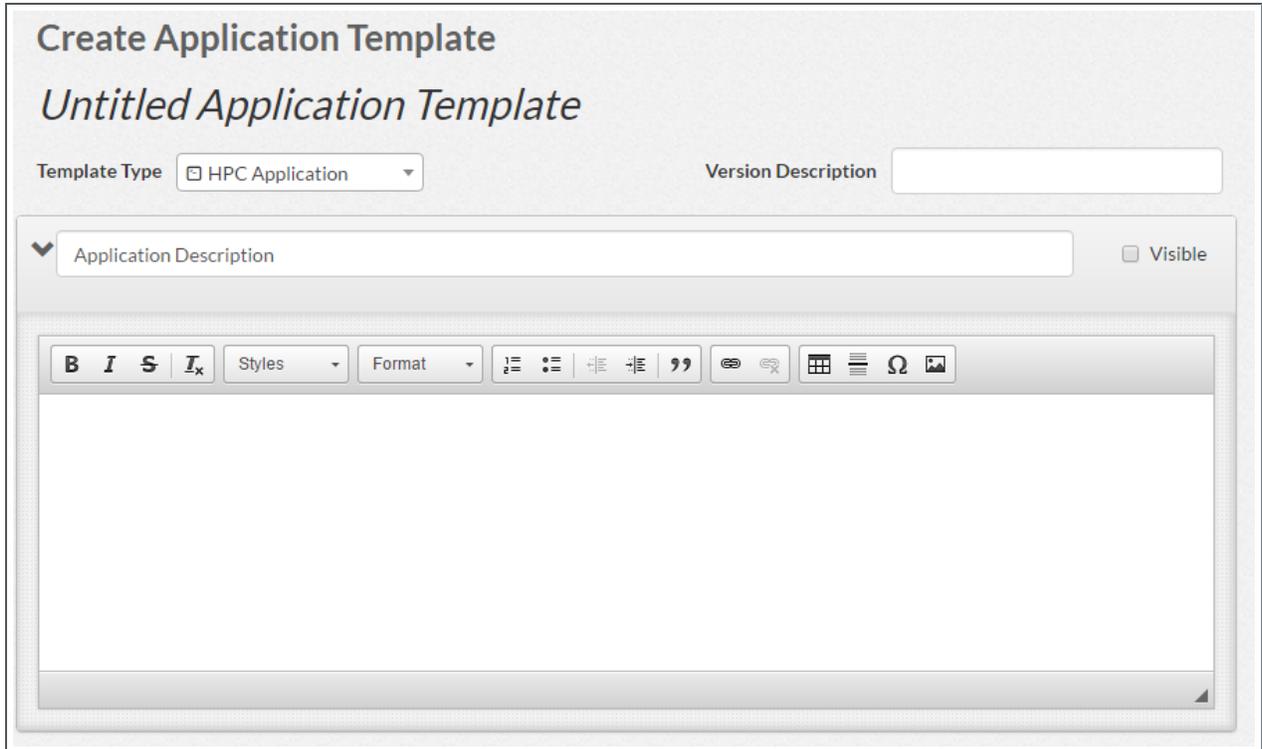
The Create Application Template Page lets you create application templates that users may use when creating jobs.

To access this page, click **TEMPLATE** from the menu to access the Application Templates page, and then click **CREATE APPLICATION TEMPLATE**.

This topic identifies how the Create Application Template page is organized and the fields and functions available when creating an application template.

### Page Example

The following image is an example of the Create Application Template page.



The Create Application Template page is divided into several sections:

- General Information – Contains the application template name, template type, and version description.
- Permissions – Defines who is allowed to use the application template.
- Application Description – Contains a formatted text description of the application template that you can use to provide detailed instructions on how to use the application template.
- Basic Settings – Contains basic fields for defining Moab-related settings for jobs created with the application template.
- Advanced Settings – Contains additional fields for defining Moab-related settings for jobs created with the application template.
- Node Policies Settings – Contains fields for defining node policies for jobs created with the application template.
- Custom Settings – Contains fields for defining custom parameters for jobs created with the application template.

All sections except General Information and Permissions have editable name fields that make it possible for you to rename the section for the template you are creating. See [Application Template Details on page 83](#) for detailed information about each of these sections.

## 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.

Related Topics

- [Creating an Application Template on page 100](#)
- [Application Template Details on page 83](#)
- [Application Templates Page on page 75](#)
- [Chapter 4 Application Templates on page 75](#)

## Edit Application Template Page

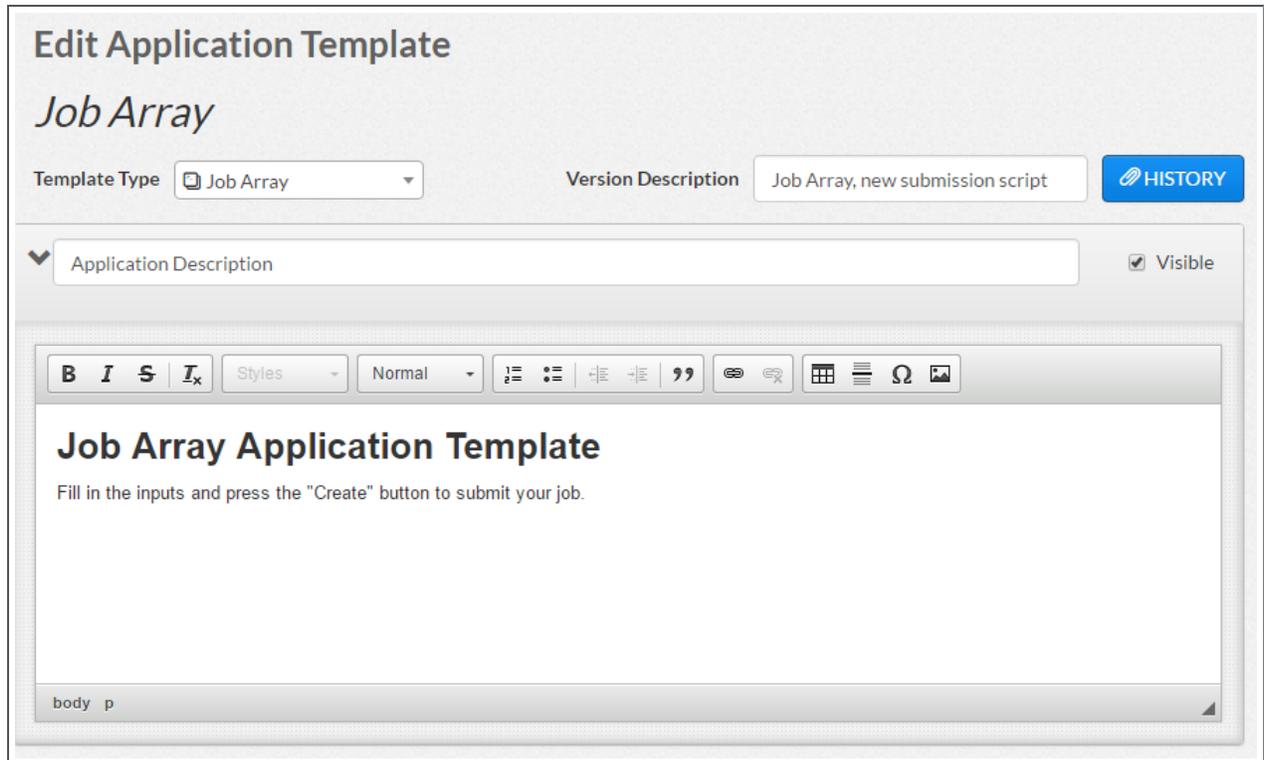
The Edit Application Template page lets you edit existing application templates that users can use when creating jobs.

To access this page, click **TEMPLATE** from the menu to access the Application Templates page, then click the name of an existing application template from the list of application templates.

This topic identifies how the Edit Application Template page is organized and the fields and functions available when editing an application template.

### Page Example

The following image is an example of the Edit Application Template page.



The Edit Application Template page is divided into several sections:

- General Information – Contains the application template name, template type, and version description.
- Permissions – Defines who is allowed to use the application template.
- Application Description – Contains a formatted text description of the application template that you can use to provide detailed instructions on how to use the application template.
- Basic Settings – Contains basic fields for defining Moab-related settings for jobs created with the application template.
- Advanced Settings – Contains additional fields for defining Moab-related settings for jobs created with the application template.
- Node Policies Settings – Contains fields for defining node policies for jobs created with the application template.
- Custom Settings – Contains fields for defining custom parameters for jobs created with the application template.

All sections except General Information and Permissions have editable name fields that make it possible for you to rename the section for the template you are editing. See [Application Template Details on page 83](#) for detailed information about each of these sections.

## 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.

Related Topics

- [Editing an Application Template on page 101](#)
- [Application Template Details on page 83](#)
- [Application Templates Page on page 75](#)
- [Chapter 4 Application Templates on page 75](#)

## Application Template Details

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

See [Create Application Template Page on page 79](#) for more information about creating application templates.

See [Edit Application Template Page on page 81](#) for more information about editing application templates.

In this topic:

- [Application Template Name on page 84](#) – Identifies the name for the application template.
- [Application Template Type on page 84](#) - Identifies the type for the application template.
- [Available Fields on page 84](#) – Provides information on the available fields and how the fields are organized.

- [Field Information and Actions on page 95](#) – Provides a general explanation of the field functions; including how to show or hide fields.
- [Application Template Permissions on page 96](#) – Provides information on how to restrict the users who have access to this application template.
- [Published/Unpublished Application Template on page 97](#) – Provides information regarding the difference between published and unpublished application templates.
- [Job Submission Script on page 97](#) – Explains how to access and use the Script Builder window to manage the job submission script for the application template.
- [Application Template History on page 99](#) - Identifies the version for the application template. Provides information on saving a template as a new view version, viewing a template's history, and reverting to previous template versions.

## 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 application template type. To choose, select one of the options from the drop-down menu. The available application template types are:

- HPC Application
- Job Array
- Remote Visualization
- Nitro Application

When editing an existing application template, you can modify the application template to create job arrays by changing the application template type to Job Array.

## Available Fields

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

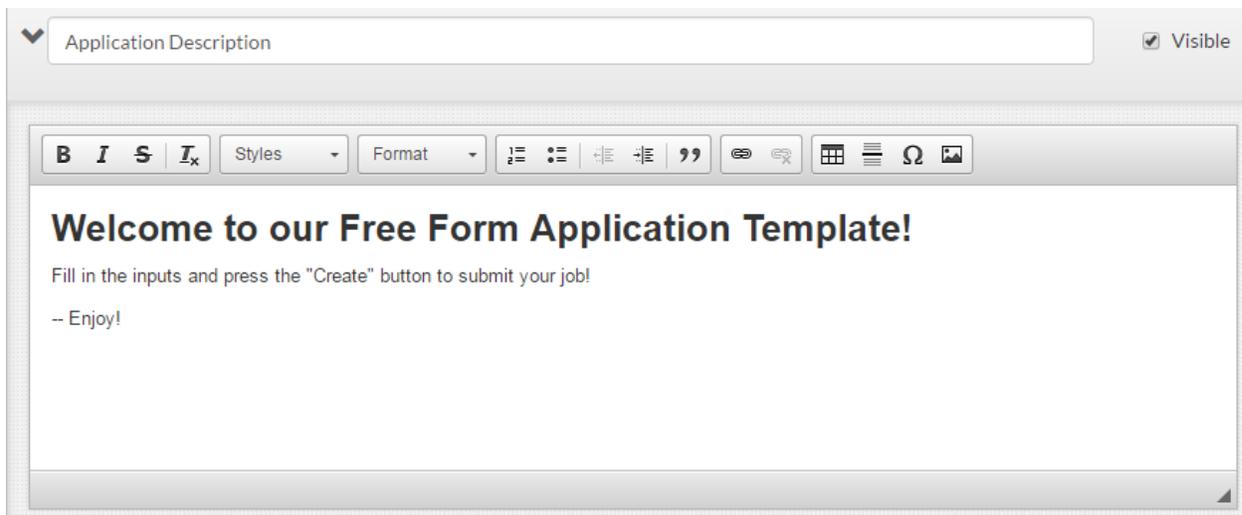
- [Application Description on page 85](#)
- [Basic Settings on page 85](#)
- [Advanced Settings on page 92](#)
- [Node Policy Settings on page 94](#)
- [Custom Settings on page 94](#)

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 95](#) for information on using the fields.

## Application Description

This area lets you provide a description for your application template. Use this area to tell users any necessary information to use or access this application 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. If the template will be used for creating job arrays, the Basic Settings area also specifies starting and ending job indexes.

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** – contains settings for basic information like the name assigned to jobs created with this template and the submission script used to

submit jobs. See [Job Submission Script on page 97](#) for more information about creating a job submission script.

### Basic Job Settings

Label	Name	
Variable Name	NAME	
Default Value		
<input checked="" type="checkbox"/> Enabled	<input checked="" type="checkbox"/> Visible	<input checked="" type="checkbox"/> Editable

---

Label	Submission Script
Variable Name	SCRIPT
Default Value	Customize Script
<input type="checkbox"/> Visible	<input type="checkbox"/> Editable

If the Template Type for the application template is set to **Job Array**, the Basic Settings area also contains settings for job indexes.

<b>Label</b>	<input type="text" value="Job Arrays"/>
<b>Min Variable Name</b>	<input type="text" value="STARTINDEX"/>
<b>Min Default Value</b>	<input type="text" value="0"/> <input type="button" value="▲"/> <input type="button" value="▼"/>
<b>Max Variable Name</b>	<input type="text" value="ENDINDEX"/>
<b>Max Default Value</b>	<input type="text" value="1"/> <input type="button" value="▲"/> <input type="button" value="▼"/>
<input type="checkbox"/> Visible <input type="checkbox"/> Editable	

- Time Management – contains delay start and job duration settings.

The screenshot displays a configuration window titled "Time Management". It is divided into two sections by dashed lines. The top section is for "Duration" and includes a "Label" field with the text "Duration", a "Variable Name" field with the text "DURATION", and a "Default Value" field which is empty and has a clock icon. Below these are two checked checkboxes: "Visible" and "Editable". The bottom section is for "Delay Start By" and includes a "Label" field with the text "Delay Start By", a "Variable Name" field with the text "ELIGIBLEDATE", and a "Default Value" field which is empty and has a clock icon. Below these are two unchecked checkboxes: "Visible" and "Editable".

- Credentials – settings for specifying job ownership, resource usage, policy enforcement, etc. See 1.1 Credential Overview for more information.

The screenshot shows a configuration window titled "Credentials". It contains three distinct sections, each enclosed in a dashed border. Each section has a "Label" field, a "Variable Name" field, and two checkboxes: "Enabled" and "Visible".

Label	Variable Name	Enabled	Visible
Account	ACCOUNT	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Quality of Service	QOS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Queue / Class	DESTINATIONQUEUE	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

- Resources – contains architecture, memory, and core settings.

Resources

<p><b>Label</b> Number of Cores</p> <p><b>Variable Name</b> NUMOFCORES</p> <p><b>Total Amount of Cores</b> <input checked="" type="checkbox"/> Visible <input checked="" type="checkbox"/> Editable</p> <p><b>Total Cores</b> 1 <input type="text"/> <input type="button" value="⚙️"/> <input type="button" value="↑"/> <input type="button" value="↓"/></p> <p><b>Nodes With Core Count</b> <input checked="" type="checkbox"/> Visible <input checked="" type="checkbox"/> Editable</p> <p><b>Total Nodes</b> 1 <input type="text"/> <input type="button" value="⚙️"/> <input type="button" value="↑"/> <input type="button" value="↓"/></p> <p><b>Cores Per Node</b> 1 <input type="text"/> <input type="button" value="⚙️"/> <input type="button" value="↑"/> <input type="button" value="↓"/></p> <p><b>Malleable Core Count</b> <input type="checkbox"/> Visible <input type="checkbox"/> Editable</p> <p><b>Minimum Cores</b> 1 <input type="text"/> <input type="button" value="⚙️"/> <input type="button" value="↑"/> <input type="button" value="↓"/></p> <p><b>Maximum Cores</b> 2 <input type="text"/> <input type="button" value="⚙️"/> <input type="button" value="↑"/> <input type="button" value="↓"/></p> <p><input checked="" type="checkbox"/> Enabled</p>	<p><b>Label</b> Total Memory (GB)</p> <p><b>Variable Name</b> MEMORYAMOUNT</p> <p><b>Total Memory</b> <input checked="" type="checkbox"/> Visible <input type="checkbox"/> Editable</p> <p><b>Default Value</b> 0.50 <input type="text"/> <input type="button" value="⚙️"/> <input type="button" value="↑"/> <input type="button" value="↓"/></p> <p><b>Memory per Core</b> <input checked="" type="checkbox"/> Visible <input type="checkbox"/> Editable</p> <p><b>Default Value</b> 0.50 <input type="text"/> <input type="button" value="⚙️"/> <input type="button" value="↑"/> <input type="button" value="↓"/></p> <p><input checked="" type="checkbox"/> Enabled</p>
	<p><b>Label</b> Architecture</p> <p><b>Variable Name</b> ARCHITECTURE</p> <p><b>Default Value</b> <input type="text"/></p> <p><input checked="" type="checkbox"/> Enabled <input checked="" type="checkbox"/> Visible <input checked="" type="checkbox"/> Editable</p>

Use the up and down arrows to increment or decrement the resource values. Click the settings icon  to set minimum, maximum, and step values to be used when incrementing and decrementing the resource setting.

Variable Name: MEMORYAMOUNT

Total Memory:  Visible,  Editable, Default Value: 0.50

Memory per Core:  Visible,  Editable, Default Value: 0.50

Enabled

Settings for Total Memory: Min: 0.25, Max: 65535, Step: 0.25, APPLY

- Data Management – settings for job execution directory, output, and error reporting. Check the Use execution path box to use the execution path for the output path or error path.

Data Management

Execution Path: Variable Name: EXECUTIONDIRECTORY,  Enabled,  Visible

Output Path: Variable Name: OUTPUTPATH,  Enabled,  Visible,  Use execution path

Error Path: Variable Name: ERRORPATH,  Enabled,  Visible,  Use execution path

## 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. You can also define job environment variables that can be used when creating submission scripts.

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

▼ Advanced Settings

Label

Variable Name

Default Value

Enabled  Visible  Editable

Label

Variable Name

Default Value

Enabled  Visible  Editable

Label

Variable Name

Default Value

Enabled  Visible  Editable

Label

Variable Name

Default Value

Name	Count	Type
No required generic resources		

Enabled  Visible  Editable

Label

Default Value

Key	Value
No environment variables set	

Enabled  Visible  Editable

Label

Variable Name

Default Value

Enabled  Visible  Editable

Label

Variable Name

Default Value

Enabled  Visible  Editable

Label

Variable Name

Enabled  Visible

Label

Variable Name

Enabled  Visible

Label

Variable Name

Default Value

Enabled  Visible  Editable

**i** 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 Reference 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.

The screenshot displays the 'Node Policies Settings' section of a configuration interface. It contains four distinct policy configuration panels, each with a dashed border. Each panel includes a 'Label' field, a 'Variable Name' field, a 'Default Value' dropdown menu, and three checkboxes for 'Enabled', 'Visible', and 'Editable'.

- Top-Left Panel:**
  - Label: Node Requested Policy
  - Variable Name: NODESREQUESTEDPOLICY
  - Default Value: Exact Set
  - Enabled:  Visible:  Editable:
- Top-Right Panel:**
  - Label: Node Access Policy
  - Variable Name: NODEACCESSPOLICY
  - Default Value: Shared
  - Enabled:  Visible:  Editable:
- Bottom-Left Panel:**
  - Label: Nodes Requested List
  - Variable Name: NODESREQUESTED
  - Default Value: (empty field)
  - Enabled:  Visible:  Editable:
- Bottom-Right Panel:**
  - Label: Node Allocation Policy
  - Variable Name: NODEALLOCATIONPOLICY
  - Default Value: First Available
  - Enabled:  Visible:  Editable:

## Custom Settings

This area lets you add any custom settings to a template.

The screenshot shows a 'Custom Settings' panel with two identical slider widget configurations side-by-side. Each configuration includes a 'Type' dropdown set to 'Slider', a 'Label' text box (containing '1' and '2' respectively), a 'Variable Name' text box (containing 'v1' and 'v2'), and five numeric input fields with up/down arrows: 'Min' (0), 'Max' (10000), 'Step' (1), and 'Initial Value' (0). Below each widget are three checkboxes: 'Visible', 'Editable', and 'Required', all of which are checked, and a 'Delete' button. At the bottom of the panel are three large buttons: '+ Left', '+ Fill', and '+ Right'.

## 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.

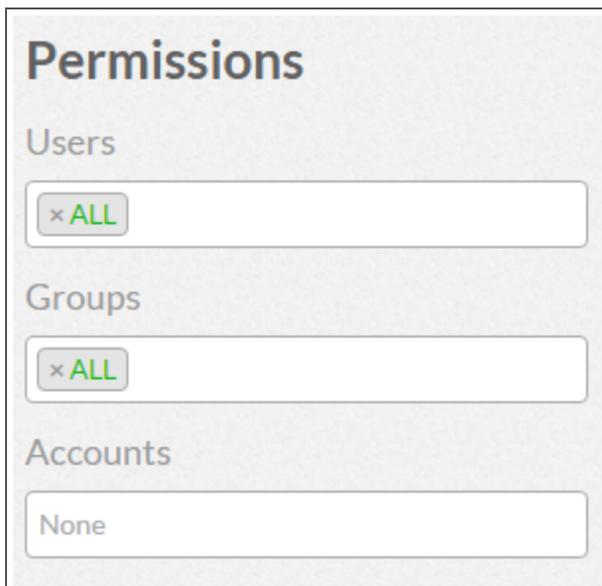
- **Label** – User-friendly name shown for the field on the Create/Edit Job page. This is typically similar to the variable name.
- **Variable Name** – Actual name of the variable widget that will contain the user's input. For Basic and Advanced Settings areas, this is the Moab variable for that field 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 97](#) 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 92](#)).
- **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.



The image shows a 'Permissions' section with three input fields. The first field is labeled 'Users' and contains 'x ALL'. The second field is labeled 'Groups' and also contains 'x ALL'. The third field is labeled 'Accounts' and contains 'None'. Each field has a small 'x' icon on the left side, indicating a clear or remove function.

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 [Additional Functions on page 78](#).

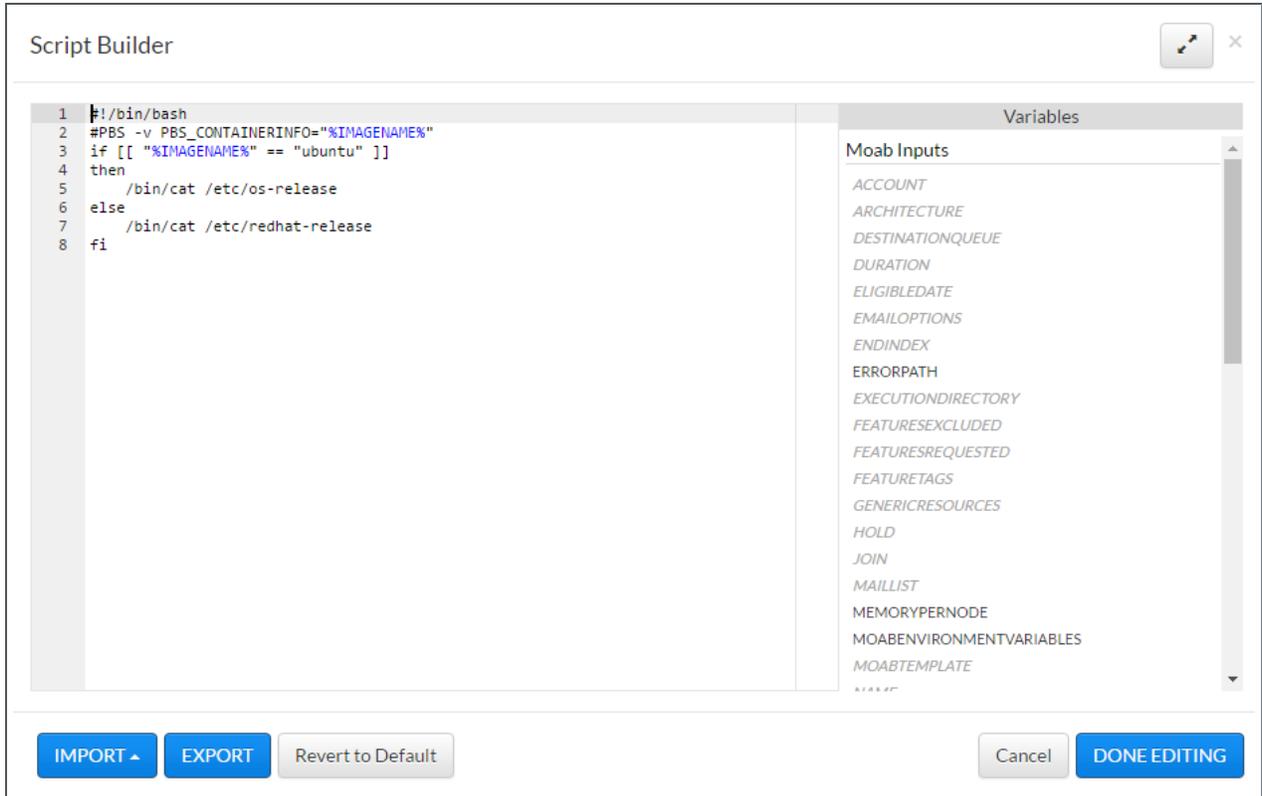
## Job Submission Script

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.



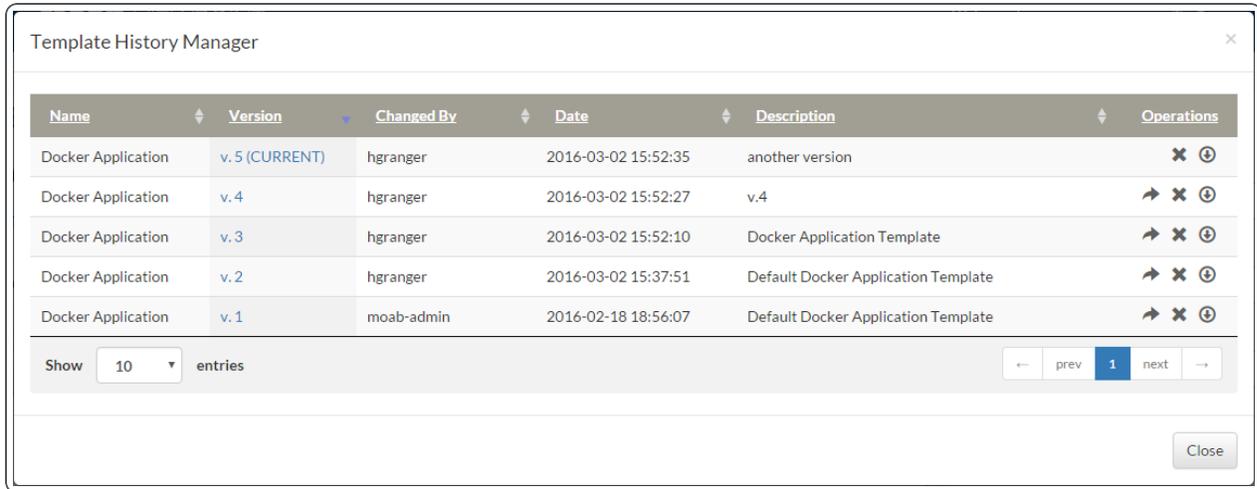
Using this window you can:

- 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. The right pane includes Moab inputs, Moab environment variables, and job environment variables defined in the Advanced Settings area. 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 application templates to use.

## Application Template History

Viewpoint creates a new version of the application template every time you edit an application template. The Template History Manager window displays a history of the versions and lets you manage the versions. Once an application template has been edited and saved, the next time you go to edit the template, a **History** button is provided. Click this button to view the Template History Manager window.

The following image is an example of the Template History Manager window.



The Template History Manager window displays a list of the different versions for the application template in a column format and provides operations for managing the versions of an application template. The following table describes the different columns and their contents.

**i** Column titles that are underlined indicate that you can sort (ascending or descending) the column contents.

Column Heading	Description
<b>Name</b>	Name used to identify the application template.
<b>Version</b>	The version number for the version of the application template.
<b>Changed By</b>	Name of the user who last edited the application template.
<b>Description</b>	A description of the application template version.

Column Heading	Description
<b>Operations</b>	<p>Icons representing operations that can be performed on the application template version.</p> <ul style="list-style-type: none"> <li> - Makes this version of the application template the current version.</li> <li> - Deletes this version of the application template.</li> <li> - Exports this version of the application template.</li> </ul>

#### Related Topics

- [Create Application Template Page on page 79](#)
- [Edit Application Template Page on page 81](#)
- [Managing Application Template History on page 105](#)
- [Application Templates Page on page 75](#)
- [Chapter 4 Application Templates on page 75](#)

## Creating an Application Template

Viewpoint lets you create application templates to define settings associated with jobs that will be created using the template.

### Create an Application Template

Do the following:

1. If you have not already done so, access the Application Templates page. (Click **TEMPLATE** from the menu.)
2. Click **CREATE APPLICATION TEMPLATE** to create a new application template.

The Create Application Template page displays with the application template fields.

3. Click the default template name, "Untitled Application Template", enter a new template name and click **Save**. See [Application Template Name on page 84](#) for more information.
4. Select a template type from the **Template Type** drop-down menu. See [Application Template Type on page 84](#) for more information.

5. Enter a version description in the **Version Description** field. See [Application Template History on page 99](#) for more information.
6. In the **Permissions** section, do *one* of the following:
  - If you want to let others to use the template, add the users, groups, or accounts who can use the template and click the **Published** radio button.
  - If you do not want others to use the template, click the **Unpublished** radio button.See [Application Template Permissions on page 96](#) for more information.
7. Enter a description of template in the Application Description section. See [Application Description on page 85](#) for more information.
8. Use the fields in the Basic Settings section to define the Moab-related settings for jobs created with your application template. See [Basic Settings on page 85](#) for more information.
9. Use the fields in the Advanced Settings section to define additional settings for jobs created with your application template. See [Advanced Settings on page 92](#) for more information.
10. Use the fields in the Node Policy Settings section to define node policy settings for jobs created with your application temperate. See [Node Policy Settings on page 94](#) for more information.
11. Use the controls in the Custom Settings section to define custom parameters for jobs created with your application template. See [Custom Settings on page 94](#) for more information.
12. Do one of the following:
  - Click **SAVE TEMPLATE** to save the application template and stay on this page.
  - Click **SAVE AND CLOSE** to save the application template and close this page.

#### Related Topics

- [Application Template Details on page 83](#)
- [Create Application Template Page on page 79](#)
- [Application Templates Page on page 75](#)
- [Chapter 4 Application Templates on page 75](#)

## Editing an Application Template

Viewpoint lets you edit an existing application template to change settings associated with jobs that will be created using the template.

## Edit an Application Template

Do the following:

1. If you have not already done so, access the Application Templates page. (Click **TEMPLATE** from the menu.)
2. Do one of the following:
  - If you want to edit the current version of an application template, click on the name of the application template you want to edit in the list of existing application templates to edit the application template.  
If you are not editing the latest version of the template, the Edit Application Template page displays a warning and gives you options to restore the version you are editing, edit the latest version, or return to the version history.
  - If you want to edit a previous version of an application template, use the Template History Manager. See [Application Template History on page 99](#) for more information.

The Edit Application Template page displays with the application template fields.

3. Click the default template name, "Untitled Application Template", enter a new template name and click **Save**. See [Application Template Name on page 84](#) for more information.
4. Select a template type from the **Template Type** drop-down menu. See [Application Template Type on page 84](#) for more information.
5. Enter a version description in the **Version Description** field. See [Application Template History on page 99](#) for more information.
6. In the **Permissions** section, do one of the following:
  - If you want to let others to use the template, add the users, groups, or accounts who can use the template and click the **Published** radio button.
  - If you do not want others to use the template, click the **Unpublished** radio button.
 See [Application Template Permissions on page 96](#) for more information.
7. Enter a description of template in the Application Description section. See [Application Description on page 85](#) for more information.
8. Use the fields in the Basic Settings section to define the Moab-related settings for jobs created with your application template. See [Basic Settings on page 85](#) for more information.
9. Use the fields in the Advanced Settings section to define additional settings for jobs created with your application template. See [Advanced Settings on page 92](#) for more information.

10. Use the fields in the Node Policy Settings section to define node policy settings for jobs created with your application template. See [Node Policy Settings on page 94](#) for more information.
11. Use the controls in the Custom Settings section to define custom parameters for jobs created with your application template. See [Custom Settings on page 94](#) for more information.
12. Do one of the following:
  - Click **SAVE TEMPLATE** to save the application template and stay on this page.
  - Click **SAVE AND CLOSE** to save the application template and close this page.

Related Topics

- [Application Template Details on page 83](#)
- [Edit Application Template Page on page 81](#)
- [Application Templates Page on page 75](#)
- [Chapter 4 Application Templates on page 75](#)

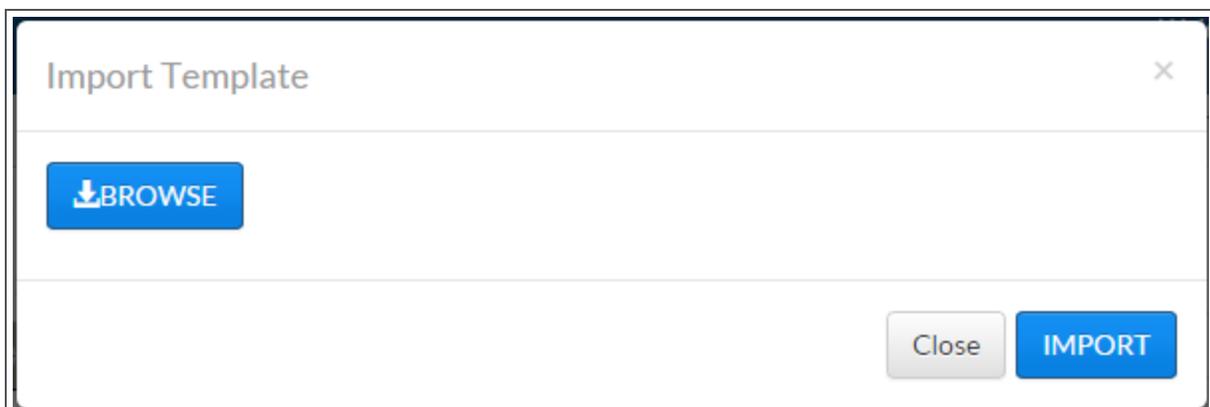
## Importing an Application Template

### 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 files are 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 templates appear in the Import Template window, click **IMPORT**. The application templates appear in the application template list and can be edited as needed.

Related Topics

- [Application Template Details on page 83](#)
- [Chapter 4 Application Templates on page 75](#)

## Managing Application Template History

Viewpoint creates a new version of an application template every time you open and save an application template from the Edit Application Template page.

### Manage the History for the Application Template

Do the following:

1. If you have not already done so, access the Application Templates page (click **Template** from the menu).
2. From the list of templates, select the application template for which you would like to manage the application template version.

The Edit Application page displays.

3. Click **History**.

The Template History Version page appears.

4. In the row containing the version number you want to manage, do the following, as needed:
  - Click the description of an application template version to change its description.
  - Click  to make this version of the application template to be the current version.
  - Click  to delete this version of the application template.
  - Click  to export this version of the application template.

Related Topics

- [Application Template History on page 99](#)
- [Application Templates Page on page 75](#)
- [Chapter 4 Application Templates on page 75](#)

## Provided Templates

Viewpoint comes configured with several application templates that you can customize for your environment. The available templates are:

- Free Form – Basic application template for creating jobs and job arrays.
- Docker Application – Application template that can be used to create HPC jobs for a Docker container running an image of your choice.
- Nitro Application – Template for specifying setting and the task file to create Nitro jobs.
- Remote Viz Application – Template for creating remote visualization and workload management sessions.

If you delete one of the provided templates, you can redeploy it from the Application Templates Configuration page. See [Application Templates Configuration Page on page 32](#).

In this section:

- [Free Form Application Template on page 106](#)
- [Docker Application Template on page 116](#)
- [Nitro Application Template on page 125](#)
- [Remote Viz Application Template on page 134](#)

## Free Form Application Template

The Free Form Application Template is a basic application template for creating HPC jobs and job arrays

### Available Fields

The available fields used for creating/editing the Free Form application template are grouped into five areas. Specifically:

- [Application Description on page 106](#)
- [Basic Settings on page 107](#)
- [Advanced Settings on page 113](#)
- [Node Policy Settings on page 115](#)
- [Custom Settings on page 115](#)

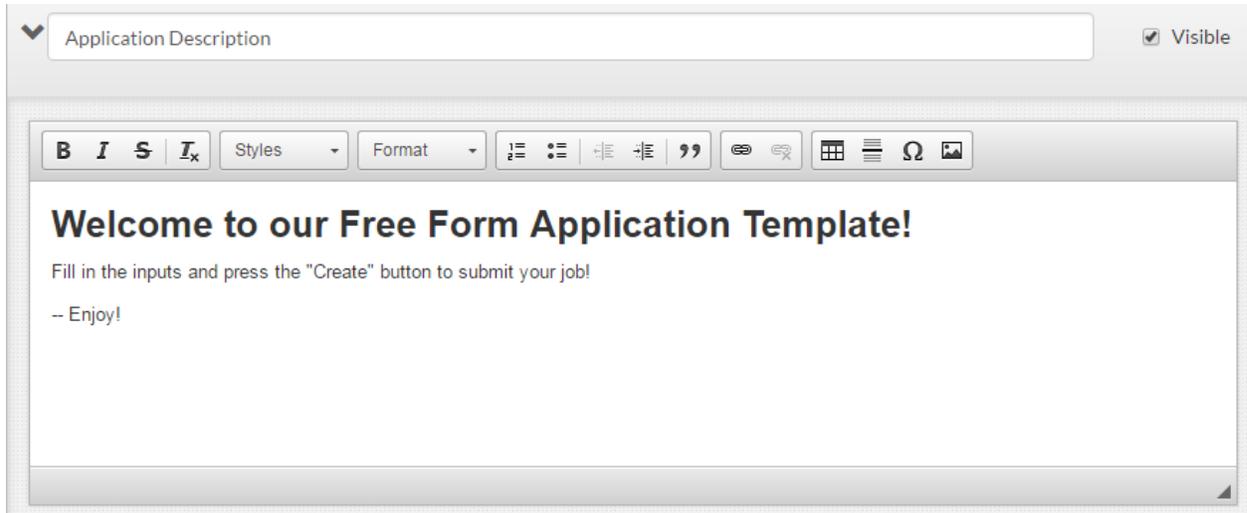
Expand an area to view its fields. This section provides information on these different areas and their associated fields. See [Field Information and Actions on page 95](#) for information on using the fields.

### Application Description

This area lets you 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. This area breaks the basic setting information into functional groups. The following images are examples of the functional groups.

- Basic Job Settings – contains settings for basic information like the name assigned to jobs created with this template and the submission script used to submit jobs.

### Basic Job Settings

Label	<input type="text" value="Name"/>
Variable Name	<input type="text" value="NAME"/>
Default Value	<input type="text"/>
<input checked="" type="checkbox"/> Enabled <input checked="" type="checkbox"/> Visible <input checked="" type="checkbox"/> Editable	

Label	<input type="text" value="Submission Script"/>
Variable Name	<input type="text" value="SCRIPT"/>
Default Value	<input type="text" value="Customize Script"/>
<input type="checkbox"/> Visible <input type="checkbox"/> Editable	

If the Template Type for the application template is set to **Job Array**, the Basic Job Settings area also contains settings for job indexes.

<b>Label</b>	Job Arrays
<b>Min Variable Name</b>	STARTINDEX
<b>Min Default Value</b>	0
<b>Max Variable Name</b>	ENDINDEX
<b>Max Default Value</b>	1
<input type="checkbox"/> Visible <input type="checkbox"/> Editable	

- Time Management – contains delay start and job duration settings.

Time Management

---

**Label** Duration

**Variable Name** DURATION

**Default Value**  

Visible  Editable

---

**Label** Delay Start By

**Variable Name** ELIGIBLEDATE

**Default Value**  

Visible  Editable

- Credentials – settings for specifying job ownership, resource usage, policy enforcement, etc. See 1.1 Credential Overview for more information.

The screenshot shows a configuration window titled "Credentials". It contains three distinct sections, each enclosed in a dashed border. Each section has a "Label" field, a "Variable Name" field, and two checkboxes: "Enabled" and "Visible".

Label	Variable Name	Enabled	Visible
Account	ACCOUNT	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Quality of Service	QOS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Queue / Class	DESTINATIONQUEUE	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

- Resources – contains architecture, memory, and core settings.

The screenshot shows the 'Resources' configuration panel, which is organized into three distinct sections, each enclosed in a dashed border. The top section, 'Number of Cores', has a 'Label' of 'Number of Cores' and a 'Variable Name' of 'NUMOFCORES'. It includes checkboxes for 'Visible' and 'Editable' (both checked), and a 'Total Cores' field with a value of 1. Below this are 'Nodes With Core Count' (checked for visible/editable) and 'Total Nodes' (value 1), 'Cores Per Node' (value 1), and 'Malleable Core Count' (unchecked for visible/editable). At the bottom of this section are 'Minimum Cores' (value 1) and 'Maximum Cores' (value 2). The middle section, 'Total Memory (GB)', has a 'Label' of 'Total Memory (GB)' and a 'Variable Name' of 'MEMORYAMOUNT'. It includes 'Total Memory' (checked for visible, unchecked for editable) and 'Default Value' (0.50). Below this is 'Memory per Core' (checked for visible, unchecked for editable) and another 'Default Value' (0.50). The bottom section, 'Architecture', has a 'Label' of 'Architecture' and a 'Variable Name' of 'ARCHITECTURE'. It has a 'Default Value' field with a dropdown arrow. All three sections have an 'Enabled' checkbox checked at the bottom.

- Data Management – settings for job execution directory, output, and error reporting.

Data Management

**Label**

**Variable Name**

Enabled  Visible

**Label**

**Variable Name**

Enabled  Visible  Use execution path

**Label**

**Variable Name**

Enabled  Visible  Use execution path

## Advanced Settings

This area contains advanced inputs to Moab that can be requested 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.

Provided Templates

| 113

▼ Advanced Settings

**Label**

**Variable Name**

**Default Value**

Enabled  Visible  Editable

**Label**

**Variable Name**

**Default Value**

Enabled  Visible  Editable

**Label**

**Variable Name**

**Default Value**

Enabled  Visible  Editable

**Label**

**Variable Name**

**Default Value**

Name	Count	Type
No required generic resources		

Enabled  Visible  Editable

**Label**

**Default Value**

Key	Value
No environment variables set	

Enabled  Visible  Editable

**Label**

**Variable Name**

**Default Value**

Enabled  Visible  Editable

**Label**

**Variable Name**

**Default Value**

Enabled  Visible  Editable

**Label**

**Variable Name**

Enabled  Visible

**Label**

**Variable Name**

Enabled  Visible

**Label**

**Variable Name**

**Default Value**

Enabled  Visible  Editable

**i** 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 Reference Guide* for more information on this parameter.

## Node Policy Settings

This area specifies node request, access, and allocation policies for jobs created with this template.

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

The screenshot displays the 'Node Policies Settings' section of a web interface. It contains four distinct policy settings arranged in a 2x2 grid:

- Node Requested Policy:** Label: Node Requested Policy; Variable Name: NODESREQUESTEDPOLICY; Default Value: Exact Set (dropdown); Enabled: ; Visible: ; Editable:
- Node Access Policy:** Label: Node Access Policy; Variable Name: NODEACCESSPOLICY; Default Value: Shared (dropdown); Enabled: ; Visible: ; Editable:
- Nodes Requested List:** Label: Nodes Requested List; Variable Name: NODESREQUESTED; Default Value: (empty text field); Enabled: ; Visible: ; Editable:
- Node Allocation Policy:** Label: Node Allocation Policy; Variable Name: NODEALLOCATIONPOLICY; Default Value: First Available (dropdown); Enabled: ; Visible: ; Editable:

## Custom Settings

This area lets you add any custom settings to your template.

The screenshot displays the 'Custom Settings' section of a web interface. It features a header 'Custom Settings' and three buttons below it:

- + Left**
- + Fill**
- + Right**

#### Related Topics

- [Application Templates Page on page 75](#)
- [Application Template Details on page 83](#)
- [Create Application Template Page on page 79](#)
- [Edit Application Template Page on page 81](#)
- [Provided Templates on page 105](#)

## Docker Application Template

The Docker Application template can be used to create HPC jobs for a Docker container running an operating system image that can be selected at job submission time.

### Available Fields

The available fields used for creating/editing the Docker application template are grouped into five areas. Specifically:

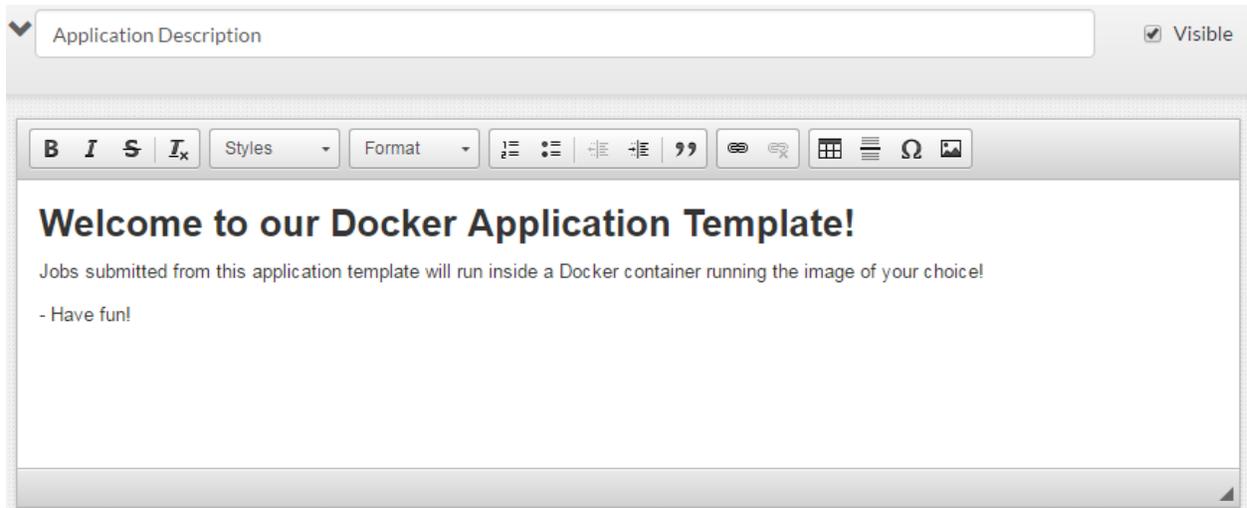
- [Application Description on page 116](#)
- [Basic Settings on page 117](#)
- [Advanced Settings on page 122](#)
- [Node Policy Settings on page 124](#)
- [Image Selection on page 124](#)

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 95](#) for information on using the fields.

### Application Description

This area lets you 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. This area breaks the basic setting information into functional groups. The following images are examples of the functional groups.

- **Basic Job Settings**– contains settings for basic information like the name assigned to jobs created with this template and the submission script used to submit jobs.

### Basic Job Settings

Label	Name
Variable Name	NAME
Default Value	Docker_job

Enabled  Visible  Editable

Label	Submission Script
Variable Name	SCRIPT
Default Value	Customize Script

Visible  Editable

If the Template Type for the application template is set to **Job Array**, the Basic Job Settings area also contains settings for job indexes.

<b>Label</b>	<input type="text" value="Job Arrays"/>
<b>Min Variable Name</b>	<input type="text" value="STARTINDEX"/>
<b>Min Default Value</b>	<input type="text" value="0"/> <input type="button" value="▲"/> <input type="button" value="▼"/>
<b>Max Variable Name</b>	<input type="text" value="ENDINDEX"/>
<b>Max Default Value</b>	<input type="text" value="1"/> <input type="button" value="▲"/> <input type="button" value="▼"/>
<input type="checkbox"/> Visible <input type="checkbox"/> Editable	

- Time Management – contains delay start and job duration settings.

Time Management

---

**Label** Duration

**Variable Name** DURATION

**Default Value**  

Enabled  Visible  Editable

---

**Label** Delay Start By

**Variable Name** ELIGIBLEDATE

**Default Value**  

Enabled  Visible  Editable

- Credentials – settings for specifying job ownership, resource usage, policy enforcement, etc. See 1.1 Credential Overview for more information.

Credentials

Label:

Variable Name:

Enabled  Visible

Label:

Variable Name:

Enabled  Visible

Label:

Variable Name:

Enabled  Visible

- Resources – contains architecture, memory, and core settings.

Resources

Label:

Variable Name:

Total Amount of Cores  Visible  
 Editable

Total Cores:

Nodes With Core Count  Visible  
 Editable

Total Nodes:

Cores Per Node:

Malleable Core Count  Visible  
 Editable

Minimum Cores:

Maximum Cores:

Enabled

Label:

Variable Name:

Total Memory  Visible  
 Editable

Default Value:

Memory per Core  Visible  
 Editable

Default Value:

Enabled

Label:

Variable Name:

Default Value:

Enabled  Visible  Editable

- Data Management – settings for job execution directory, output, and error reporting.

The screenshot shows a 'Data Management' configuration panel with three distinct sections, each enclosed in a dashed border. Each section contains a 'Label' input field, a 'Variable Name' input field, and a row of checkboxes.

- Execution Path Section:**
  - Label: Execution Path
  - Variable Name: EXECUTIONDIRECTORY
  - Enabled:  Visible:
- Output Path Section:**
  - Label: Output Path
  - Variable Name: OUTPUTPATH
  - Enabled:  Visible:  Use execution path:
- Error Path Section:**
  - Label: Error Path
  - Variable Name: ERRORPATH
  - Enabled:  Visible:  Use execution path:

## Advanced Settings

This area contains advanced inputs to Moab that can be requested 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.

▼ Advanced Settings

Label

Variable Name

Default Value

Enabled  Visible  Editable

Label

Variable Name

Default Value

Enabled  Visible  Editable

Label

Variable Name

Default Value

Enabled  Visible  Editable

Label

Variable Name

Default Value 

Name	Count	Type
No required generic resources		

Enabled  Visible  Editable

Label

Default Value 

Key	Value
No environment variables set	

Enabled  Visible  Editable

Label

Variable Name

Default Value

Enabled  Visible  Editable

Label

Variable Name

Default Value

Enabled  Visible  Editable

Label

Variable Name

Enabled  Visible

Label

Variable Name

Enabled  Visible

Label

Variable Name

Default Value

Enabled  Visible  Editable

**i** 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 Reference Guide* for more information on this parameter.

## Node Policy Settings

This area specifies node request, access, and allocation policies for jobs created with this template.

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

The screenshot displays the 'Node Policies Settings' configuration area, which is organized into four distinct panels, each representing a different policy type. Each panel contains the following fields and options:

- Node Requested Policy:** Label: Node Requested Policy; Variable Name: NODESREQUESTEDPOLICY; Default Value: Exact Set (dropdown); Options:  Enabled,  Visible,  Editable.
- Node Access Policy:** Label: Node Access Policy; Variable Name: NODEACCESSPOLICY; Default Value: Shared (dropdown); Options:  Enabled,  Visible,  Editable.
- Nodes Requested List:** Label: Nodes Requested List; Variable Name: NODESREQUESTED; Default Value: None; Options:  Enabled,  Visible,  Editable.
- Node Allocation Policy:** Label: Node Allocation Policy; Variable Name: NODEALLOCATIONPOLICY; Default Value: First Available (dropdown); Options:  Enabled,  Visible,  Editable.

## Image Selection

This area lets you specify operating system images in which to run Docker jobs created with this template. You can also add any custom settings to the template in this area.

▼ Image Selection

Type

Label

Variable Name

✎	Label		Value
	Ubuntu 14	✓	ubuntu
	CentOS 5		centos:5
	CentOS 6		centos:6

Visible
  Editable
  Required
 Delete

+ Left

+ Fill

+ Right

#### Related Topics

- [Application Templates Page on page 75](#)
- [Application Template Details on page 83](#)
- [Create Application Template Page on page 79](#)
- [Edit Application Template Page on page 81](#)
- [Provided Templates on page 105](#)

## Nitro Application Template

The Nitro Application Template lets you specifying settings and the task file for creating Nitro jobs.

### Available Fields

The available fields used for creating/editing the Nitro application template are grouped into five areas. Specifically:

- [Application Description on page 126](#)
- [Basic Settings on page 126](#)

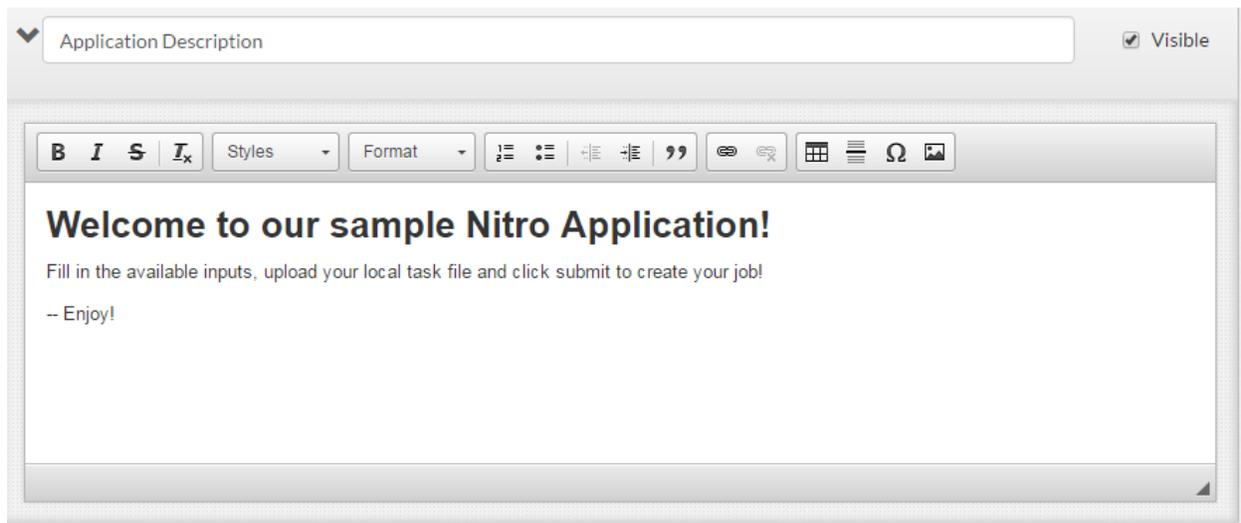
- [Advanced Settings on page 131](#)
- [Node Policy Settings on page 133](#)
- [Nitro Inputs on page 133](#)

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 95](#) for information on using the fields.

## Application Description

This area lets you 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. This area breaks the basic setting information into functional groups. The following images are examples of the functional groups.

- **Basic Job** – contains settings for basic information like the name assigned to jobs created with this template and the submission script used to submit jobs.

### Basic Job Settings

Label	Name
Variable Name	NAME
Default Value	Nitro_job
<input checked="" type="checkbox"/> Enabled <input checked="" type="checkbox"/> Visible <input checked="" type="checkbox"/> Editable	

---

Label	Submission Script
Variable Name	SCRIPT
Default Value	Customize Script
<input checked="" type="checkbox"/> Visible <input checked="" type="checkbox"/> Editable	

If the Template Type for the application template is set to **Job Array**, the Basic Job Settings area also contains settings for job indexes.

<b>Label</b>	<input type="text" value="Job Arrays"/>
<b>Min Variable Name</b>	<input type="text" value="STARTINDEX"/>
<b>Min Default Value</b>	<input type="text" value="0"/> <input type="button" value="▲"/> <input type="button" value="▼"/>
<b>Max Variable Name</b>	<input type="text" value="ENDINDEX"/>
<b>Max Default Value</b>	<input type="text" value="1"/> <input type="button" value="▲"/> <input type="button" value="▼"/>
<input type="checkbox"/> Visible <input type="checkbox"/> Editable	

- Time Management – contains delay start and job duration settings.

The screenshot displays a configuration window titled "Time Management". It is divided into two sections by dashed lines. The first section is for "Duration" and includes a "Label" field with the text "Duration", a "Variable Name" field with the text "DURATION", and a "Default Value" field which is empty and has a clock icon on the right. Below these fields are three checkboxes: "Enabled", "Visible", and "Editable", all of which are unchecked. The second section is for "Delay Start By" and includes a "Label" field with the text "Delay Start By", a "Variable Name" field with the text "ELIGIBLEDATE", and a "Default Value" field which is empty and has a clock icon on the right. Below these fields are three checkboxes: "Enabled", "Visible", and "Editable", all of which are unchecked.

- Credentials – settings for specifying job ownership, resource usage, policy enforcement, etc. See 1.1 Credential Overview for more information.

Credentials

<b>Label</b> Account	<b>Label</b> Quality of Service
<b>Variable Name</b> ACCOUNT	<b>Variable Name</b> QOS
<input type="checkbox"/> Enabled <input type="checkbox"/> Visible	<input type="checkbox"/> Enabled <input type="checkbox"/> Visible
<b>Label</b> Queue / Class	
<b>Variable Name</b> DESTINATIONQUEUE	
<input type="checkbox"/> Enabled <input type="checkbox"/> Visible	

- Resources – contains architecture, memory, and core settings.

Resources

<b>Label</b> Number of Cores	<b>Label</b> Total Memory (GB)
<b>Variable Name</b> NUMOFCORES	<b>Variable Name</b> MEMORYAMOUNT
<b>Total Amount of Cores</b> <input type="checkbox"/> Visible <input type="checkbox"/> Editable	<b>Total Memory</b> <input checked="" type="checkbox"/> Visible <input type="checkbox"/> Editable
<b>Total Cores</b> 1	<b>Default Value</b> 1.00
<b>Nodes With Core Count</b> <input checked="" type="checkbox"/> Visible <input checked="" type="checkbox"/> Editable	<b>Memory per Core</b> <input checked="" type="checkbox"/> Visible <input type="checkbox"/> Editable
<b>Total Nodes</b> 1	<b>Default Value</b> 1.00
<b>Cores Per Node</b> 8	<input checked="" type="checkbox"/> Enabled
<b>Malleable Core Count</b> <input type="checkbox"/> Visible <input type="checkbox"/> Editable	<b>Label</b> Architecture
<b>Minimum Cores</b> 1	<b>Variable Name</b> ARCHITECTURE
<b>Maximum Cores</b> 2	<b>Default Value</b>
<input checked="" type="checkbox"/> Enabled	<input type="checkbox"/> Enabled <input type="checkbox"/> Visible <input type="checkbox"/> Editable

- Data Management – settings for job execution directory, output, and error reporting.

The screenshot shows a 'Data Management' configuration window with three distinct sections, each enclosed in a dashed border. Each section contains a 'Label' text box, a 'Variable Name' text box, and a set of checkboxes.

- Section 1:** Label: Execution Path; Variable Name: EXECUTIONDIRECTORY;  Enabled;  Visible.
- Section 2:** Label: Output Path; Variable Name: OUTPUTPATH;  Enabled;  Visible;  Use execution path.
- Section 3:** Label: Error Path; Variable Name: ERRORPATH;  Enabled;  Visible;  Use execution path.

## Advanced Settings

This area contains advanced inputs to Moab that can be requested 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.

▼ Advanced Settings

**Label**

**Variable Name**

**Default Value**

Enabled  Visible  Editable

**Label**

**Variable Name**

**Default Value**

Enabled  Visible  Editable

**Label**

**Variable Name**

**Default Value**

Enabled  Visible  Editable

**Label**

**Variable Name**

**Default Value**

Name	Count	Type
No required generic resources		

Enabled  Visible  Editable

**Label**

**Default Value**

Key	Value
No environment variables set	

Enabled  Visible  Editable

**Label**

**Variable Name**

**Default Value**

Enabled  Visible  Editable

**Label**

**Variable Name**

**Default Value**

Enabled  Visible  Editable

**Label**

**Variable Name**

Enabled  Visible

**Label**

**Variable Name**

Enabled  Visible

**Label**

**Variable Name**

**Default Value**

Enabled  Visible  Editable

**i** 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 Reference Guide* for more information on this parameter.

## Node Policy Settings

This area specifies node request, access, and allocation policies for jobs created with this template.

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

The screenshot displays the 'Node Policies Settings' section with a dropdown menu at the top. Below it are four distinct policy configuration panels, each with a dashed border. Each panel contains the following fields:

- Node Requested Policy:** Label: Node Requested Policy; Variable Name: NODESREQUESTEDPOLICY; Default Value: Exact Set; Enabled: ; Visible: ; Editable: .
- Node Access Policy:** Label: Node Access Policy; Variable Name: NODEACCESSPOLICY; Default Value: Single Job; Enabled: ; Visible: ; Editable: .
- Nodes Requested List:** Label: Nodes Requested List; Variable Name: NODESREQUESTED; Default Value: None; Enabled: ; Visible: ; Editable: .
- Node Allocation Policy:** Label: Node Allocation Policy; Variable Name: NODEALLOCATIONPOLICY; Default Value: First Available; Enabled: ; Visible: ; Editable: .

## Nitro Inputs

This area lets you specify the task file to be used when creating Nitro jobs. You can also add any custom settings to your template.

Nitro Inputs

Type: File Upload

Label: Task File

Variable Name: TASKFILE

Required

Delete

+ Left    + Fill    + Right

#### Related Topics

- [Application Templates Page on page 75](#)
- [Application Template Details on page 83](#)
- [Create Application Template Page on page 79](#)
- [Edit Application Template Page on page 81](#)
- [Provided Templates on page 105](#)

## Remote Viz Application Template

The Remote Viz Application template lets you specify settings for remote visualization and workload management sessions.

### Available Fields

The available fields used for creating/editing the Remote Viz application template are grouped into five areas. Specifically:

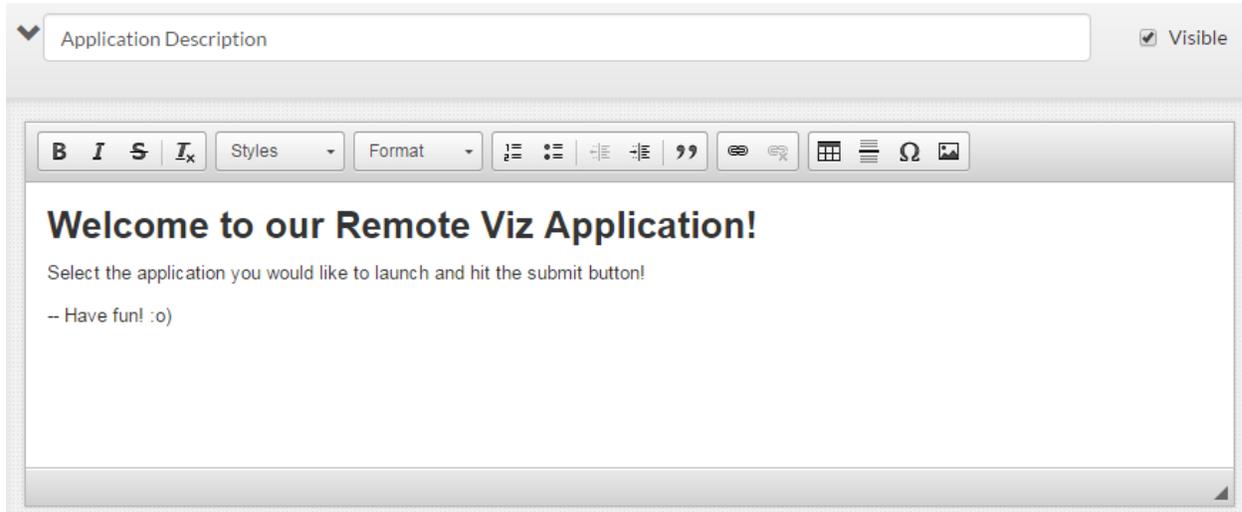
- [Application Description on page 135](#)
- [Basic Settings on page 135](#)
- [Advanced Settings on page 141](#)
- [Node Policy Settings on page 143](#)
- [User Inputs on page 143](#)

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 95](#) for information on using the fields.

## Application Description

This area lets you 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. This area breaks the basic setting information into functional groups. The following images are examples of the functional groups.

- Basic Job Settings – contains settings for basic information like the name assigned to jobs created with this template and the submission script used to submit jobs.

### Basic Job Settings

Label	Name
Variable Name	NAME
Default Value	Remote_viz_job
<input checked="" type="checkbox"/> Enabled	<input type="checkbox"/> Visible <input type="checkbox"/> Editable

---

Label	Submission Script
Variable Name	SCRIPT
Default Value	Customize Script
<input type="checkbox"/> Visible	<input type="checkbox"/> Editable

If the Template Type for the application template is set to **Job Array**, the Basic Job Settings area also contains settings for job indexes.

<b>Label</b>	<input type="text" value="Job Arrays"/>
<b>Min Variable Name</b>	<input type="text" value="STARTINDEX"/>
<b>Min Default Value</b>	<input type="text" value="0"/> <input type="button" value="▲"/> <input type="button" value="▼"/>
<b>Max Variable Name</b>	<input type="text" value="ENDINDEX"/>
<b>Max Default Value</b>	<input type="text" value="1"/> <input type="button" value="▲"/> <input type="button" value="▼"/>
<input type="checkbox"/> Visible <input type="checkbox"/> Editable	

- Time Management – contains delay start and job duration settings.

The screenshot displays a configuration window titled "Time Management". It is divided into two sections by dashed lines. The top section is for "Duration" and the bottom section is for "Delay Start By". Each section contains a "Label" field, a "Variable Name" field, a "Default Value" field with a clock icon, and three checkboxes: "Enabled", "Visible", and "Editable".

Section	Label	Variable Name	Default Value	Enabled	Visible	Editable
Duration	Duration	DURATION		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Delay Start By	Delay Start By	ELIGIBLEDATE		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- Credentials – settings for specifying job ownership, resource usage, policy enforcement, etc. See 1.1 Credential Overview for more information.

The image shows a configuration window titled "Credentials". It contains three distinct sections, each enclosed in a dashed border. Each section has a "Label" field, a "Variable Name" field, and two checkboxes: "Enabled" and "Visible".

Label	Variable Name	Enabled	Visible
Account	ACCOUNT	<input type="checkbox"/>	<input type="checkbox"/>
Quality of Service	QOS	<input type="checkbox"/>	<input type="checkbox"/>
Queue / Class	DESTINATIONQUEUE	<input type="checkbox"/>	<input type="checkbox"/>

- Resources – contains architecture, memory, and core settings.

Resources

**Label**

**Variable Name**

**Total Amount of Cores**  Visible  
 Editable

**Total Cores**

**Nodes With Core Count**  Visible  
 Editable

**Total Nodes**

**Cores Per Node**

**Malleable Core Count**  Visible  
 Editable

**Minimum Cores**

**Maximum Cores**

Enabled

**Label**

**Variable Name**

**Total Memory**  Visible  
 Editable

**Default Value**

**Memory per Core**  Visible  
 Editable

**Default Value**

Enabled

**Label**

**Variable Name**

**Default Value**

Enabled  Visible  Editable

- Data Management – settings for job execution directory, output, and error reporting.

Data Management

Label	Execution Path
Variable Name	EXECUTIONDIRECTORY
<input type="checkbox"/> Enabled	<input type="checkbox"/> Visible

---

Label	Output Path
Variable Name	OUTPUTPATH
<input checked="" type="checkbox"/> Enabled	<input type="checkbox"/> Visible
	<input checked="" type="checkbox"/> Use execution path

---

Label	Error Path
Variable Name	ERRORPATH
<input checked="" type="checkbox"/> Enabled	<input type="checkbox"/> Visible
	<input checked="" type="checkbox"/> Use execution path

## Advanced Settings

This area contains advanced inputs to Moab that can be requested 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.

▼ Advanced Settings

Label: Merge Streams

Variable Name: JOIN

Default Value: Yes

Enabled  Visible  Editable

Label: Hold Job

Variable Name: HOLD

Default Value: No

Enabled  Visible  Editable

Label: Script Shell

Variable Name: SHELL

Default Value:

Enabled  Visible  Editable

Label: Generic Resources

Variable Name: GENERICRESOURCES

Default Value:

Name	Count	Type
remote_visualization	1	Per Job

Enabled  Visible  Editable

Label: Job Env Variables

Default Value:

Key	Value
No environment variables set	

Enabled  Visible  Editable

Label: Operating System

Variable Name: OPERATINGSYSTEM

Default Value:

Enabled  Visible  Editable

Label: Moab Environment Variables

Variable Name: MOABENVIRONMENTVARIABLES

Default Value: Yes

Enabled  Visible  Editable

Label: Email Options

Variable Name: EMAILOPTIONS

Enabled  Visible

Label: Email Notification List

Variable Name: MAILLIST

Enabled  Visible

Label: User Priority

Variable Name: USERPRIORITY

Default Value: 0

Enabled  Visible  Editable

Label: Requested Features

Variable Name: FEATURESREQUESTED

Default Value: None

Enabled  Visible  Editable

Label: Excluded Features

Variable Name: FEATURESEXCLUDED

Default Value: None

Enabled  Visible  Editable

Label: Default Moab Template

Variable Name: MOABTEMPLATE

Default Value: remote\_visualization

Enabled  Visible  Editable

**i** 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 Reference Guide* for more information on this parameter.

## Node Policy Settings

This area specifies node request, access, and allocation policies for jobs created with this template.

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

The screenshot displays the 'Node Policies Settings' section of a web application. It contains four distinct policy configuration panels, each with a dashed border. Each panel includes a 'Label' text input, a 'Variable Name' text input, and a 'Default Value' dropdown menu. Below these fields are three checkboxes: 'Enabled', 'Visible', and 'Editable'.  
1. **Nodes Requested Policy:** Label 'Nodes Requested Policy', Variable Name 'NODESREQUESTEDPOLICY', Default Value 'Exact Set'.  
2. **Node Access Policy:** Label 'Node Access Policy', Variable Name 'NODEACCESSPOLICY', Default Value 'Shared'.  
3. **Nodes Requested List:** Label 'Nodes Requested List', Variable Name 'NODESREQUESTED', Default Value 'None'.  
4. **Node Allocation Policy:** Label 'Node Allocation Policy', Variable Name 'NODEALLOCATIONPOLICY', Default Value 'First Available'.

## User Inputs

This area lets you specify graphical commands to run inside your remote visualization session. You can also add any custom settings to the template in this area.

▼ User Inputs

Type: List

Label: Application

Variable Name: COMMAND

Label	Value
Gnome Desktop ✓	gnome-session
Firefox Browser	firefox
Graphical Terminal	xterm -ls

Visible  Editable  Required

Type: List

Label: Geometry

Variable Name: GEOMETRY

Label	Value
800x600	800x600
1024x768 ✓	1024x768
1280x720	1280x720
1440x900	1440x900
1920x1080	1920x1080

Visible  Editable  Required

#### Related Topics

- [Application Templates Page on page 75](#)
- [Application Template Details on page 83](#)
- [Create Application Template Page on page 79](#)
- [Edit Application Template Page on page 81](#)
- [Provided Templates on page 105](#)

## 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:

- [Authenticate Against the Viewpoint Template API on page 145](#)
- [Supported Methods on page 146](#)
- [Create Template on page 147](#)
- [Delete Template on page 176](#)
- [Delete Template History on page 176](#)
- [Get All Templates on page 177](#)
- [Get Single Template on page 193](#)
- [Modify Template on page 200](#)
- [Modify Template History on page 210](#)

## 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

- [Application Template API on page 144](#)

## 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
<b>/api/templates/</b>	Get All Templates	---	Create Template	---	---
<b>/api/templates/&lt;id&gt;/</b>	Get Single Template	Modify Template <div style="border: 1px solid #0070c0; padding: 5px; margin-top: 5px;">  Beginning with version 9.0.1, this method creates a new application template version every time you modify and save changes to an application template. The previous version is saved in the template history.                     </div>	---	Delete Template	Modify Template Attribute "published"

Resource	GET	PUT	POST	DELETE	PATCH
<b>/api/templates/&lt;history_pk&gt;/history/</b>	Get Template History	---	Create Template (creates a new application template and assigns it as the current version)	---	---
<b>/api/templates/&lt;history_pk&gt;/history/&lt;version&gt;/</b>	Get Single Template History	Revert Template (creates a copy of the application template for the specified history version and assigns it as the current version)	---	Delete Template History	Update Template Version Description

#### Related Topics

- [Application Template API on page 144](#)
- [Authenticate Against the Viewpoint Template API on page 145](#)
- [Create Template on page 147](#)
- [Delete Template on page 176](#)
- [Delete Template History on page 176](#)
- [Get All Templates on page 177](#)
- [Get Single Template on page 193](#)
- [Modify Template on page 200](#)
- [Modify Template History on page 210](#)

## Create Template

#### In this topic:

- [URL on page 148](#)
- [Example on page 148](#)
  - [Request Body on page 149](#)
  - [Response on page 163](#)

## URL

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

## Example

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

## Request Body

## Request Body

```

{
  "name": "New Template",
  "version_description": "",
  "type": "regular",
  "description": {
    "text": "",
    "visible": false
  },
  "published": true,
  "widgets": [
    {
      "default_value": "",
      "label": "Name",
      "variable_name": "NAME",
      "visible": true,
      "editable": true,
      "properties": [
        {
          "name": "id",
          "value": "name"
        },
        {
          "name": "enable",
          "value": "true"
        }
      ]
    },
    {
      "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"
        },
        {
          "name": "enable",
          "value": "true"
        }
      ]
    },
    {
      "tooltip": "The amount of time the job is expected to run for"
    },
    {
      "default_value": "",
      "label": "Job Arrays",
      "variable_name": "arrays",
      "visible": false,
      "editable": 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,
    "label": "Delay Start By",
    "variable_name": "ELIGIBLEDATE",
    "visible": false,
    "editable": false,
    "properties": [
        {
            "name": "id",
            "value": "eligibledate"
        },
        {
            "name": "enable",
            "value": "false"
        }
    ],
    "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"
    },
    {
      "name": "enable",
      "value": "false"
    }
  ],
  "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"
    },
    {
      "name": "enable",
      "value": "false"
    }
  ],
  "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"
    },
    {
      "name": "enable",
      "value": "false"
    }
  ]
}

```

```

    }
  ],
  "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"
    },
    {
      "name": "totalamount",
      "value": true
    },
    {
      "name": "nodeswithcount",
      "value": true
    },
    {
      "name": "malleablecorecount",
      "value": true
    },
    {
      "name": "totalamount_editable",
      "value": true
    },
    {
      "name": "nodeswithcount_editable",
      "value": true
    },
    {
      "name": "malleablecorecount_editable",
      "value": true
    },
    {
      "name": "totalamount_visible_default",
      "value": true
    },
    {
      "name": "nodeswithcount_visible_default",
      "value": false
    },
    {
      "name": "malleablecorecount_visible_default",
      "value": false
    },
    {
      "name": "totalcores_default",
      "value": "1"
    },
    {
      "name": "totalnodes_default",
      "value": "1"
    },
    {

```

```

        "name": "corespernode_default",
        "value": "1"
    },
    {
        "name": "minimumcores_default",
        "value": "1"
    },
    {
        "name": "maximumcores_default",
        "value": "2"
    },
    {
        "name": "enable",
        "value": "true"
    }
    ],
    "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": "Memory (GB)",
    "variable_name": "MEMORYAMOUNT",
    "visible": true,
    "editable": true,
    "properties": [
        {
            "name": "id",
            "value": "memorypernode"
        },
        {
            "name": "totalmemory",
            "value": true
        },
        {
            "name": "memorypercore",
            "value": true
        },
        {
            "name": "totalmemory_visible_default",
            "value": false
        },
        {
            "name": "memorypercore_visible_default",
            "value": true
        },
        {
            "name": "totalmemory_default",
            "value": "0.50"
        },
        {
            "name": "memorypercore_default",
            "value": "0.50"
        },
        {
            "name": "totalmemory_editable",
            "value": true
        },
        {
            "name": "memorypercore_editable",

```

```

        "value": true
    },
    {
        "name": "enable",
        "value": "true"
    }
],
"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": "linux",
    "label": "Architecture",
    "variable_name": "ARCHITECTURE",
    "visible": true,
    "editable": true,
    "properties": [
        {
            "name": "id",
            "value": "architecture"
        },
        {
            "name": "enable",
            "value": "true"
        }
    ]
},
"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"
        },
        {
            "name": "enable",
            "value": "false"
        }
    ]
},
"tooltip": "Your job's execution directory"
},
{
    "default_value": "",
    "label": "Error Path",
    "variable_name": "ERRORPATH",
    "visible": false,
    "editable": true,
    "properties": [
        {
            "name": "id",
            "value": "errorpath"
        },
        {
            "name": "useExecutionPath",

```

```

        "value": false
      },
      {
        "name": "enable",
        "value": "false"
      }
    ],
    "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"
      },
      {
        "name": "useExecutionPath",
        "value": false
      },
      {
        "name": "enable",
        "value": "false"
      }
    ],
    "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"
      },
      {
        "name": "enable",
        "value": "false"
      }
    ],
    "tooltip": "Merge stderr and stdout streams?"
  },
  {
    "default_value": "false",
    "label": "Hold Job",
    "variable_name": "HOLD",
    "visible": false,
    "editable": false,
    "properties": [
      {
        "name": "id",

```

```

        "value": "hold"
    },
    {
        "name": "enable",
        "value": "false"
    }
],
"time"
    "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"
        },
        {
            "name": "enable",
            "value": "false"
        }
    ]
},
"/bin/bash"
    "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"
        },
        {
            "name": "enable",
            "value": "true"
        }
    ]
},
"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"
        },
        {
            "name": "enable",

```

```

        "value": "false"
    }
  ],
  "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"
    },
    {
      "name": "enable",
      "value": "false"
    }
  ]
},
  "tooltip": "A list of requested email options"
},
{
  "default_value": "",
  "label": "Generic Resources",
  "variable_name": "GENERICRESOURCES",
  "visible": false,
  "editable": false,
  "properties": [
    {
      "name": "id",
      "value": "genericresources"
    },
    {
      "name": "enable",
      "value": "false"
    }
  ]
},
  "tooltip": "Allows for specification of additional job attributes"
},
{
  "default_value": "",
  "label": "Job Env Variables",
  "variable_name": "Job Environment Variables",
  "visible": false,
  "editable": false,
  "properties": [
    {
      "name": "id",
      "value": "jobEnvVariables"
    },
    {
      "name": "enable",
      "value": "false"
    }
  ]
}
],
},
{

```

```

    "default_value": "",
    "label": "Moab Job Template",
    "variable_name": "MOABTEMPLATE",
    "visible": false,
    "editable": false,
    "properties": [
      {
        "name": "id",
        "value": "moabtemplates"
      },
      {
        "name": "enable",
        "value": "false"
      }
    ],
    "tooltip": "Defines set of MOAB job templates"
  },
  {
    "default_value": "SHARED",
    "label": "Node Access Policy",
    "variable_name": "NODEACCESSPOLICY",
    "visible": false,
    "editable": false,
    "properties": [
      {
        "name": "id",
        "value": "node-access-policy"
      },
      {
        "name": "enable",
        "value": "false"
      }
    ]
  },
  {
    "default_value": "FIRSTAVAILABLE",
    "label": "Node Allocation Policy",
    "variable_name": "NODEALLOCATIONPOLICY",
    "visible": false,
    "editable": false,
    "properties": [
      {
        "name": "id",
        "value": "node-allocation-policy"
      },
      {
        "name": "enable",
        "value": "false"
      }
    ]
  },
  {
    "default_value": "EXACTSET",
    "label": "Node Requested Policy",
    "variable_name": "NODESREQUESTEDPOLICY",
    "visible": false,
    "editable": false,
    "properties": [
      {
        "name": "id",

```

```

        "value": "nodes-requested-policy"
    },
    {
        "name": "enable",
        "value": "false"
    }
]
},
{
    "default_value": "",
    "label": "Operating System",
    "variable_name": "OPERATINGSYSTEM",
    "visible": false,
    "editable": false,
    "properties": [
        {
            "name": "id",
            "value": "operatingSystem"
        },
        {
            "name": "enable",
            "value": "false"
        }
    ]
},
{
    "default_value": "",
    "label": "Requested Features",
    "variable_name": "FEATURESREQUESTED",
    "visible": false,
    "editable": false,
    "properties": [
        {
            "name": "id",
            "value": "features-requested"
        },
        {
            "name": "enable",
            "value": "false"
        }
    ],
    "tooltip": "Contains a list of features that are required for the job to run"
},
{
    "default_value": "",
    "label": "Excluded Features",
    "variable_name": "FEATURESEXCLUDED",
    "visible": false,
    "editable": false,
    "properties": [
        {
            "name": "id",
            "value": "features-excluded"
        },
        {
            "name": "enable",
            "value": "false"
        }
    ],
    "tooltip": "Contains a list of features that can not be present on hardware"
}

```

```

the job needs to run"
  },
  {
    "default_value": "",
    "label": "Nodes Requested List",
    "variable_name": "NODESREQUESTED",
    "visible": false,
    "editable": false,
    "properties": [
      {
        "name": "id",
        "value": "nodes-requested"
      },
      {
        "name": "enable",
        "value": "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"
  },
  {
    "name": "description",
    "value": "Application Description"
  }
],
"permissions": [
  {

```

```
    "name": "ALL",  
    "type": "user"  
  },  
  {  
    "name": "ALL",  
    "type": "group"  
  },  
  {  
    "name": "ALL",  
    "type": "account"  
  }  
]  
}
```

## Response

## Response

```

{
  "url": "http://10.2.184.87:8081/api/templates/7/",
  "history_url": null,
  "changed_by": "moab-admin",
  "current": true,
  "date": "2016-09-13T07:42:36.204904Z",
  "id": 7,
  "name": "New Template",
  "type": "regular",
  "description": {
    "text": "",
    "visible": false
  },
  "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"
    },
    {
      "name": "basic",
      "value": "Basic Settings"
    },
    {

```

```

    "name": "advanced",
    "value": "Advanced Settings"
  },
  {
    "name": "description",
    "value": "Application Description"
  }
],
"use": 0,
"widgets": [
  {
    "default_value": "",
    "editable": true,
    "label": "Name",
    "variable_name": "NAME",
    "visible": true,
    "properties": [
      {
        "name": "id",
        "value": "name"
      },
      {
        "name": "enable",
        "value": "true"
      }
    ]
  }
],
{
  "default_value": "0",
  "editable": true,
  "label": "Duration",
  "variable_name": "DURATION",
  "visible": true,
  "properties": [
    {
      "name": "id",
      "value": "duration"
    },
    {
      "name": "enable",
      "value": "true"
    }
  ]
},
{
  "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"
        },
        {
            "name": "enable",
            "value": "false"
        }
    ]
},
{
    "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"
        },
        {
            "name": "enable",
            "value": "false"
        }
    ]
},
{
    "default_value": "",
    "editable": true,
    "label": "Queue / Class",
    "variable_name": "DESTINATIONQUEUE",
    "visible": false,
    "properties": [
        {
            "name": "id",
            "value": "destinationQueue"
        },
        {
            "name": "enable",
            "value": "false"
        }
    ]
},
{
    "default_value": "",
    "editable": true,
    "label": "Quality of Service",
    "variable_name": "QOS",
    "visible": false,
    "properties": [
        {
            "name": "id",
            "value": "qos"
        },
        {
            "name": "enable",
            "value": "false"
        }
    ]
},
{
    "default_value": "",
    "editable": true,
    "label": "Number of Cores",
    "variable_name": "NUMOFCORES",

```

```

"visible": true,
"properties": [
  {
    "name": "id",
    "value": "cpupernode"
  },
  {
    "name": "totalamount",
    "value": "True"
  },
  {
    "name": "nodeswithcount",
    "value": "True"
  },
  {
    "name": "malleablecorecount",
    "value": "True"
  },
  {
    "name": "totalamount_editable",
    "value": "True"
  },
  {
    "name": "nodeswithcount_editable",
    "value": "True"
  },
  {
    "name": "malleablecorecount_editable",
    "value": "True"
  },
  {
    "name": "totalamount_visible_default",
    "value": "True"
  },
  {
    "name": "nodeswithcount_visible_default",
    "value": "False"
  },
  {
    "name": "malleablecorecount_visible_default",
    "value": "False"
  },
  {
    "name": "totalcores_default",
    "value": "1"
  },
  {
    "name": "totalnodes_default",
    "value": "1"
  },
  {
    "name": "corespernode_default",
    "value": "1"
  },
  {
    "name": "minimumcores_default",
    "value": "1"
  },
  {
    "name": "maximumcores_default",

```

```

        "value": "2"
      },
      {
        "name": "enable",
        "value": "true"
      }
    ]
  },
  {
    "default_value": "",
    "editable": true,
    "label": "Memory (GB)",
    "variable_name": "MEMORYAMOUNT",
    "visible": true,
    "properties": [
      {
        "name": "id",
        "value": "memorypernode"
      },
      {
        "name": "totalmemory",
        "value": "True"
      },
      {
        "name": "memorypercore",
        "value": "True"
      },
      {
        "name": "totalmemory_visible_default",
        "value": "False"
      },
      {
        "name": "memorypercore_visible_default",
        "value": "True"
      },
      {
        "name": "totalmemory_default",
        "value": "0.50"
      },
      {
        "name": "memorypercore_default",
        "value": "0.50"
      },
      {
        "name": "totalmemory_editable",
        "value": "True"
      },
      {
        "name": "memorypercore_editable",
        "value": "True"
      },
      {
        "name": "enable",
        "value": "true"
      }
    ]
  },
  {
    "default_value": "linux",
    "editable": true,

```

```

    "label": "Architecture",
    "variable_name": "ARCHITECTURE",
    "visible": true,
    "properties": [
      {
        "name": "id",
        "value": "architecture"
      },
      {
        "name": "enable",
        "value": "true"
      }
    ]
  },
  {
    "default_value": "",
    "editable": true,
    "label": "Execution Path",
    "variable_name": "EXECUTIONDIRECTORY",
    "visible": false,
    "properties": [
      {
        "name": "id",
        "value": "exedir"
      },
      {
        "name": "enable",
        "value": "false"
      }
    ]
  },
  {
    "default_value": "",
    "editable": true,
    "label": "Error Path",
    "variable_name": "ERRORPATH",
    "visible": false,
    "properties": [
      {
        "name": "id",
        "value": "errorpath"
      },
      {
        "name": "useExecutionPath",
        "value": "False"
      },
      {
        "name": "enable",
        "value": "false"
      }
    ]
  },
  {
    "default_value": "",
    "editable": true,
    "label": "Output Path",
    "variable_name": "OUTPUTPATH",
    "visible": false,
    "properties": [
      {

```

```

        "name": "id",
        "value": "outputpath"
    },
    {
        "name": "useExecutionPath",
        "value": "False"
    },
    {
        "name": "enable",
        "value": "false"
    }
]
},
{
    "default_value": "false",
    "editable": false,
    "label": "Merge Streams",
    "variable_name": "JOIN",
    "visible": false,
    "properties": [
        {
            "name": "id",
            "value": "join"
        },
        {
            "name": "enable",
            "value": "false"
        }
    ]
},
{
    "default_value": "false",
    "editable": false,
    "label": "Hold Job",
    "variable_name": "HOLD",
    "visible": false,
    "properties": [
        {
            "name": "id",
            "value": "hold"
        },
        {
            "name": "enable",
            "value": "false"
        }
    ]
},
{
    "default_value": "",
    "editable": false,
    "label": "Script Shell",
    "variable_name": "SHELL",
    "visible": false,
    "properties": [
        {
            "name": "id",
            "value": "shell"
        },
        {
            "name": "enable",

```

```

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

```

```

    "visible": false,
    "properties": [
      {
        "name": "id",
        "value": "genericresources"
      },
      {
        "name": "enable",
        "value": "false"
      }
    ]
  },
  {
    "default_value": "",
    "editable": false,
    "label": "Job Env Variables",
    "variable_name": "Job Environment Variables",
    "visible": false,
    "properties": [
      {
        "name": "id",
        "value": "jobEnvVariables"
      },
      {
        "name": "enable",
        "value": "false"
      }
    ]
  },
  {
    "default_value": "",
    "editable": false,
    "label": "Moab Job Template",
    "variable_name": "MOABTEMPLATE",
    "visible": false,
    "properties": [
      {
        "name": "id",
        "value": "moabtemplates"
      },
      {
        "name": "enable",
        "value": "false"
      }
    ]
  },
  {
    "default_value": "SHARED",
    "editable": false,
    "label": "Node Access Policy",
    "variable_name": "NODEACCESSPOLICY",
    "visible": false,
    "properties": [
      {
        "name": "id",
        "value": "node-access-policy"
      },
      {
        "name": "enable",
        "value": "false"
      }
    ]
  }
]

```

```

    }
  ]
},
{
  "default_value": "FIRSTAVAILABLE",
  "editable": false,
  "label": "Node Allocation Policy",
  "variable_name": "NODEALLOCATIONPOLICY",
  "visible": false,
  "properties": [
    {
      "name": "id",
      "value": "node-allocation-policy"
    },
    {
      "name": "enable",
      "value": "false"
    }
  ]
},
{
  "default_value": "EXACTSET",
  "editable": false,
  "label": "Node Requested Policy",
  "variable_name": "NODESREQUESTEDPOLICY",
  "visible": false,
  "properties": [
    {
      "name": "id",
      "value": "nodes-requested-policy"
    },
    {
      "name": "enable",
      "value": "false"
    }
  ]
},
{
  "default_value": "",
  "editable": false,
  "label": "Operating System",
  "variable_name": "OPERATINGSYSTEM",
  "visible": false,
  "properties": [
    {
      "name": "id",
      "value": "operatingSystem"
    },
    {
      "name": "enable",
      "value": "false"
    }
  ]
},
{
  "default_value": "",
  "editable": false,
  "label": "Requested Features",
  "variable_name": "FEATURESREQUESTED",
  "visible": false,

```

```

    "properties": [
      {
        "name": "id",
        "value": "features-requested"
      },
      {
        "name": "enable",
        "value": "false"
      }
    ]
  },
  {
    "default_value": "",
    "editable": false,
    "label": "Excluded Features",
    "variable_name": "FEATURESEXCLUDED",
    "visible": false,
    "properties": [
      {
        "name": "id",
        "value": "features-excluded"
      },
      {
        "name": "enable",
        "value": "false"
      }
    ]
  },
  {
    "default_value": "",
    "editable": false,
    "label": "Nodes Requested List",
    "variable_name": "NODESREQUESTED",
    "visible": false,
    "properties": [
      {
        "name": "id",
        "value": "nodes-requested"
      },
      {
        "name": "enable",
        "value": "false"
      }
    ]
  }
],
"version_description": "",
"version": 1
}

```

#### Related Topics

[Application Template API on page 144](#)

[Supported Methods on page 146](#)

## Delete Template

This topic provides information on how to delete an application template; including all of its template history (api/templates/<id>). See [Delete Template History on page 176](#) for information on how to delete the selected history for an application template (api/templates/<history\_pk>/history/<version>).

In this topic:

- [URL on page 176](#)
- [Parameters on page 176](#)
- [Example on page 176](#)

### URL

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

### Parameters

Parameter	Required	Type	Description	Example
<b>id</b>	Yes	Integer	ID of the application template.	1

### Example

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

Related Topics

- [Application Template API on page 144](#)
- [Supported Methods on page 146](#)

## Delete Template History

This topic provides information on how to delete the selected history for an application template (api/templates/<history\_pk>/history/<version>). See [Delete Template on page 176](#) for information on how to delete an application template; including all of its template history (api/templates/<id>).

In this topic:

- [URL on page 177](#)
- [Parameters on page 177](#)
- [Example on page 177](#)

## URL

```
DELETE /api/templates/<history_pk>/history/<version>/
```

## Parameters

Parameter	Required	Type	Description	Example
<b>history_pk</b>	Yes	String	History ID of the application template	b00ce08c-01ed-4a9d-a916-f587b9f1af44
<b>version</b>	Yes	Integer	Version of the application template	2

## Example

```
DELETE /api/templates/b00ce08c-01ed-4a9d-a916-f587b9f1af44/history/2/
```

### Related Topics

- [Application Template API on page 144](#)
- [Supported Methods on page 146](#)

## Get All Templates

### In this topic:

- [URL on page 177](#)
- [Parameters on page 178](#)
  - [Page Control on page 178](#)
  - [Filter on page 178](#)
- [Example on page 179](#)
  - [Response on page 180](#)

## URL

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

## Parameters

### Page Control

Parameter	Required	Type	Description	Example
<b>page_size</b>	No	Integer	Specifies count of application templates per page.	page_size=3
<b>page</b>	No	Integer	Specifies number of page.	page=2

### Filter

Parameter	Required	Type	Description	Example
name	No	String	Specifies name of application template for filtering	name=Free Form name__contains=foo name__icontains=foo name__startswith=foo
current	No	Boolean	Specifies whether only the current version for the application templates is included in the filtering	current=True
type	No	String	Specify the application template type to include in the filtering	type=array
owner	No	String	Specifies the owner's name for filtering	owner=moab-foo owner__contains=moab owner__icontains=foo owner__startswith=foo owner__ne=foo
published	No	Boolean	Specifies the published status of the application template for filtering	published=True
permissions__user__in	No	List	Specifies the list of users that the application template should contain	permissions__user__in=-hpotter,hgranger

Parameter	Required	Type	Description	Example
permissions__group_name__in	No	List	Specifies the list of groups that the application template should contain	permissions__group__name__in=-hpotter,hgranger
permissions__account_name__in	No	List	Specifies the list of accounts that the application template should contain	permissions__account__name__in=DEFAULT,QA
date_gte	No	Date	Specifies the date before which the application template was created	date__gte=2015-09-01
date_lte	No	Date	Specifies the date after which the application template was created	date__lte=2015-09-16

## Example

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

# Response

## Response

```

{
  "count": 1,
  "next": null,
  "previous": null,
  "results": [
    {
      "url": "http://localhost:8080/api/templates/5/",
      "history_url": "http://localhost:8080/api/templates/b00ce08c-01ed-4a9d-
a916-f587b9f1af44/history/",
      "changed_by": "moab-admin",
      "current": true,
      "date": "2016-09-08T12:14:19.647410Z",
      "id": 5,
      "name": "Free Form",
      "type": "regular",
      "description": {
        "text": "<h1><strong>Welcome to our Free Form</strong> Application
Template!</h1>\n\n<p>Fill in the inputs and press the \"Create\" button to submit
your job!</p>\n\n<p>-- Enjoy!</p>",
        "visible": true
      },
      "owner": "moab-admin",
      "permissions": [
        {
          "name": "ALL",
          "type": "account"
        },
        {
          "name": "ALL",
          "type": "group"
        },
        {
          "name": "ALL",
          "type": "user"
        }
      ],
      "published": true,
      "sections": [
        {
          "name": "description",
          "value": "Application Description"
        },
        {
          "name": "advanced",
          "value": "Advanced Settings"
        },
        {
          "name": "basic",
          "value": "Basic Settings"
        },
        {
          "name": "custom",
          "value": "Custom Settings"
        },
        {
          "name": "dataManagement",
          "value": "Data Management"
        }
      ]
    }
  ]
}

```

```

        "name": "resources",
        "value": "Resources"
    },
    {
        "name": "credentials",
        "value": "Credentials"
    },
    {
        "name": "timeManagement",
        "value": "Time Management"
    },
    {
        "name": "defaults",
        "value": "Basic Job Settings"
    }
],
"use": 0,
"widgets": [
    {
        "default_value": "ggg",
        "editable": true,
        "label": "Name",
        "variable_name": "NAME",
        "visible": true,
        "properties": [
            {
                "name": "id",
                "value": "name"
            },
            {
                "name": "enable",
                "value": "true"
            }
        ]
    },
    {
        "default_value": "0",
        "editable": true,
        "label": "Duration",
        "variable_name": "DURATION",
        "visible": true,
        "properties": [
            {
                "name": "id",
                "value": "duration"
            },
            {
                "name": "enable",
                "value": "true"
            }
        ]
    },
    {
        "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": true,
    "label": "Delay Start By",
    "variable_name": "ELIGIBLEDATE",
    "visible": true,
    "properties": [
        {
            "name": "id",
            "value": "eligibledate"
        },
        {
            "name": "enable",
            "value": "true"
        }
    ]
},
{
    "default_value": "0",
    "editable": false,
    "label": "User Priority",
    "variable_name": "USERPRIORITY",
    "visible": false,
    "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"
      },
      {
        "name": "enable",
        "value": "true"
      }
    ]
  },
  {
    "default_value": "",
    "editable": true,
    "label": "Queue / Class",
    "variable_name": "DESTINATIONQUEUE",
    "visible": true,
    "properties": [
      {
        "name": "id",
        "value": "destinationQueue"
      },
      {
        "name": "enable",
        "value": "true"
      }
    ]
  },
  {
    "default_value": "",
    "editable": true,
    "label": "Quality of Service",
    "variable_name": "QOS",
    "visible": true,
    "properties": [
      {
        "name": "id",
        "value": "qos"
      },
      {
        "name": "enable",
        "value": "true"
      }
    ]
  }

```

```

    ]
  },
  {
    "default_value": "",
    "editable": true,
    "label": "Number of Cores",
    "variable_name": "NUMOFCORES",
    "visible": true,
    "properties": [
      {
        "name": "id",
        "value": "cpuperiode"
      },
      {
        "name": "totalamount",
        "value": "True"
      },
      {
        "name": "nodeswithcount",
        "value": "True"
      },
      {
        "name": "malleablecorecount",
        "value": "False"
      },
      {
        "name": "totalamount_editable",
        "value": "False"
      },
      {
        "name": "nodeswithcount_editable",
        "value": "False"
      },
      {
        "name": "malleablecorecount_editable",
        "value": "False"
      },
      {
        "name": "totalamount_visible_default",
        "value": "True"
      },
      {
        "name": "nodeswithcount_visible_default",
        "value": "False"
      },
      {
        "name": "malleablecorecount_visible_default",
        "value": "False"
      },
      {
        "name": "totalcores_default",
        "value": "1"
      },
      {
        "name": "totalnodes_default",
        "value": "1"
      },
      {
        "name": "corespernode_default",

```

```

        "value": "1"
    },
    {
        "name": "minimumcores_default",
        "value": "1"
    },
    {
        "name": "maximumcores_default",
        "value": "2"
    },
    {
        "name": "enable",
        "value": "true"
    }
]
},
{
    "default_value": "",
    "editable": true,
    "label": "Total Memory (GB)",
    "variable_name": "MEMORYAMOUNT",
    "visible": true,
    "properties": [
        {
            "name": "id",
            "value": "memorypernode"
        },
        {
            "name": "totalmemory",
            "value": "True"
        },
        {
            "name": "memorypercore",
            "value": "True"
        },
        {
            "name": "totalmemory_visible_default",
            "value": "True"
        },
        {
            "name": "memorypercore_visible_default",
            "value": "True"
        },
        {
            "name": "totalmemory_default",
            "value": "0.5"
        },
        {
            "name": "memorypercore_default",
            "value": "0.5"
        },
        {
            "name": "totalmemory_editable",
            "value": "False"
        },
        {
            "name": "memorypercore_editable",
            "value": "False"
        }
    ]
}

```

```

        "name": "enable",
        "value": "true"
    }
  ]
},
{
  "default_value": "linux",
  "editable": true,
  "label": "Architecture",
  "variable_name": "ARCHITECTURE",
  "visible": true,
  "properties": [
    {
      "name": "id",
      "value": "architecture"
    },
    {
      "name": "enable",
      "value": "true"
    }
  ]
},
{
  "default_value": "",
  "editable": true,
  "label": "Execution Path",
  "variable_name": "EXECUTIONDIRECTORY",
  "visible": true,
  "properties": [
    {
      "name": "id",
      "value": "exedir"
    },
    {
      "name": "enable",
      "value": "true"
    }
  ]
},
{
  "default_value": "",
  "editable": true,
  "label": "Error Path",
  "variable_name": "ERRORPATH",
  "visible": true,
  "properties": [
    {
      "name": "id",
      "value": "errorpath"
    },
    {
      "name": "useExecutionPath",
      "value": "True"
    },
    {
      "name": "enable",
      "value": "true"
    }
  ]
}
},

```

```

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

```

```

        "visible": true,
        "properties": [
            {
                "name": "id",
                "value": "shell"
            },
            {
                "name": "enable",
                "value": "true"
            }
        ]
    },
    {
        "default_value": "true",
        "editable": true,
        "label": "Moab Environment Variables",
        "variable_name": "MOABENVIRONMENTVARIABLES",
        "visible": true,
        "properties": [
            {
                "name": "id",
                "value": "moabenvironmentvariables"
            },
            {
                "name": "enable",
                "value": "true"
            }
        ]
    },
    {
        "default_value": "",
        "editable": true,
        "label": "Email Notification List",
        "variable_name": "MAILLIST",
        "visible": true,
        "properties": [
            {
                "name": "id",
                "value": "maillist"
            },
            {
                "name": "enable",
                "value": "true"
            }
        ]
    },
    {
        "default_value": "",
        "editable": true,
        "label": "Email Options",
        "variable_name": "EMAILOPTIONS",
        "visible": true,
        "properties": [
            {
                "name": "id",
                "value": "emailoptions"
            },
            {
                "name": "enable",
                "value": "true"
            }
        ]
    }

```

```

    }
  ]
},
{
  "default_value": "",
  "editable": true,
  "label": "Generic Resources",
  "variable_name": "GENERICRESOURCES",
  "visible": true,
  "properties": [
    {
      "name": "id",
      "value": "genericresources"
    },
    {
      "name": "enable",
      "value": "true"
    }
  ]
},
{
  "default_value": "",
  "editable": true,
  "label": "Job Environment Variables",
  "variable_name": "Job Environment Variables",
  "visible": true,
  "properties": [
    {
      "name": "id",
      "value": "jobEnvVariables"
    },
    {
      "name": "enable",
      "value": "true"
    }
  ]
},
{
  "default_value": "",
  "editable": false,
  "label": "Default Moab Template",
  "variable_name": "MOABTEMPLATE",
  "visible": false,
  "properties": [
    {
      "name": "id",
      "value": "moabtemplates"
    },
    {
      "name": "enable",
      "value": "false"
    }
  ]
},
{
  "default_value": "SHARED",
  "editable": false,
  "label": "Node Access Policy",
  "variable_name": "NODEACCESSPOLICY",
  "visible": false,

```

```

    "properties": [
      {
        "name": "id",
        "value": "node-access-policy"
      },
      {
        "name": "enable",
        "value": "false"
      }
    ]
  },
  {
    "default_value": "FIRSTAVAILABLE",
    "editable": false,
    "label": "Node Allocation Policy",
    "variable_name": "NODEALLOCATIONPOLICY",
    "visible": false,
    "properties": [
      {
        "name": "id",
        "value": "node-allocation-policy"
      },
      {
        "name": "enable",
        "value": "false"
      }
    ]
  },
  {
    "default_value": "EXACTSET",
    "editable": false,
    "label": "Node Requested Policy",
    "variable_name": "NODESREQUESTEDPOLICY",
    "visible": false,
    "properties": [
      {
        "name": "id",
        "value": "nodes-requested-policy"
      },
      {
        "name": "enable",
        "value": "false"
      }
    ]
  },
  {
    "default_value": "",
    "editable": false,
    "label": "Operating System",
    "variable_name": "OPERATINGSYSTEM",
    "visible": false,
    "properties": [
      {
        "name": "id",
        "value": "operatingSystem"
      },
      {
        "name": "enable",
        "value": "false"
      }
    ]
  }

```

```

    ]
  },
  {
    "default_value": "",
    "editable": false,
    "label": "Requested Features",
    "variable_name": "FEATURESREQUESTED",
    "visible": false,
    "properties": [
      {
        "name": "id",
        "value": "features-requested"
      },
      {
        "name": "enable",
        "value": "false"
      }
    ]
  },
  {
    "default_value": "",
    "editable": false,
    "label": "Excluded Features",
    "variable_name": "FEATURESEXCLUDED",
    "visible": false,
    "properties": [
      {
        "name": "id",
        "value": "features-excluded"
      },
      {
        "name": "enable",
        "value": "false"
      }
    ]
  },
  {
    "default_value": "",
    "editable": false,
    "label": "Nodes Requested List",
    "variable_name": "NODESREQUESTED",
    "visible": false,
    "properties": [
      {
        "name": "id",
        "value": "nodes-requested"
      },
      {
        "name": "enable",
        "value": "false"
      }
    ]
  }
],
"version_description": "Default Free Form Application Template",
"version": 2
}
]
}

```

Related Topics

- [Application Template API on page 144](#)
- [Supported Methods on page 146](#)

## Get Single Template

In this topic:

- [URL on page 193](#)
- [Parameters on page 193](#)
- [Example on page 193](#)
  - [Response on page 194](#)

### URL

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

### Parameters

Parameter	Required	Type	Description	Example
<b>id</b>	Yes	Integer	ID of the application 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

- [Application Template API on page 144](#)
- [Supported Methods on page 146](#)

## Modify Template

This topic provides information on how to modify the application template itself (api/templates/<id>). See [Modify Template History on page 210](#) for

information on how to modify the application template's history/version information (`api/templates/<history_pk>/history/<version>`).

These are the different methods that you can use to modify an application template:

- **PUT** – Creates a new application template version and enables you to modify and save template attribute changes to that version. The previous version is saved in the application template's history.
- **PATCH** – Lets you change whether the application template is published; all other template attributes, including the template version, remain unchanged.

In this topic:

- [PUT Method on page 201](#)
- [PATCH Method on page 201](#)

## PUT Method

In this section:

- [URL on page 201](#)
- [Parameters on page 201](#)
- [Example on page 201](#)

## URL

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

## Parameters

Parameter	Required	Type	Description	Example
<b>id</b>	Yes	Integer	ID of the application template	1

## Example

See [Create Template on page 147](#) for additional parameters you can modify.

## PATCH Method



You must the correct content type when using the PATCH API. If not specified, the API will consider the type as 'text/html' which might cause side effects in the request processing code.

In this section:

- [URL on page 202](#)
- [Parameters on page 202](#)
- [JSON Structure on page 202](#)
- [Example on page 202](#)
  - [Request Body on page 202](#)
  - [Response on page 203](#)

## URL

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

## Parameters

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

## JSON Structure

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

Name	Required	Type	Description
published	No	Boolean	Application template's status: published or unpublished; if the application template is unpublished, then only owner can use it (not generally visible)

## Example

This section provides an example of how to update application template 1 with the published tag unset.

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

### Request Body

```
{
  "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": "cpuperiode"
      }
    ]
  },
  {
    "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

- [Application Template API on page 144](#)
- [Supported Methods on page 146](#)

## Modify Template History

This topic provides information on how to modify the application template's history/version number (api/templates/<history\_pk>/history/<version>). See [Modify Template on page 200](#) for information on how to modify the application template itself (api/templates/<id>).

There are two different methods that you can use to modify an application template history/version number:

- **PUT** – Creates a copy of the selected application template history version and applies it as the current version for the application template (reverts the application template to a previous version's information).
- **PATCH** – Lets you modify the version description for the selected application template history version, all other attributes, including the template version, remain unchanged.

In this topic:

- [PUT Method on page 211](#)
- [PATCH Method on page 225](#)

## PUT Method

In this section:

- [URL on page 211](#)
- [Parameters on page 211](#)
- [Example on page 211](#)
  - [Response on page 212](#)

## URL

```
PUT /api/templates/<history_pk>/history/<version>/
```

## Parameters

Parameter	Required	Type	Description	Example
<b>history_pk</b>	Yes	String	History ID of the application template	b00ce08c-01ed-4a9d-a916-f587b9f1af44
<b>version</b>	Yes	Integer	Version of the application template	2

## Example

This section provides an example of how to take an older application template's version and copy and save it as a new (current) version.

```
PUT /api/templates/b00ce08c-01ed-4a9d-a916-f587b9f1af44/history/1/
```

## *Response*

## Response

```

{
  "url": "http://localhost:8080/api/templates/5/",
  "history_url": "http://localhost:8080/api/templates/b00ce08c-01ed-4a9d-
a916-f587b9f1af44/history/",
  "changed_by": "moab-admin",
  "current": true,
  "date": "2016-09-08T12:14:19.647410Z",
  "id": 5,
  "name": "Free Form v.2",
  "type": "regular",
  "description": {
    "text": "<h1><strong>Welcome
to our Free Form</strong> Application
Template!</h1>\n\n<p>Fill in the inputs and press the
\"Create\" button to submit your
job!</p>\n\n<p>-- Enjoy!</p>",
    "visible": true
  },
  "owner": "moab-admin",
  "permissions": [
    {
      "name": "ALL",
      "type": "account"
    },
    {
      "name": "ALL",
      "type": "group"
    },
    {
      "name": "ALL",
      "type": "user"
    }
  ],
  "published": true,
  "sections": [
    {
      "name": "description",
      "value": "Application Description"
    },
    {
      "name": "advanced",
      "value": "Advanced Settings"
    },
    {
      "name": "basic",
      "value": "Basic Settings"
    },
    {
      "name": "custom",
      "value": "Custom Settings"
    },
    {
      "name": "dataManagement",
      "value": "Data Management"
    },
    {
      "name": "resources",
      "value": "Resources"
    }
  ]
}

```

```

        "name": "credentials",
        "value": "Credentials"
    },
    {
        "name": "timeManagement",
        "value": "Time Management"
    },
    {
        "name": "defaults",
        "value": "Basic Job Settings"
    }
],
"use": 0,
"widgets": [
    {
        "default_value": "ggg",
        "editable": true,
        "label": "Name",
        "variable_name": "NAME",
        "visible": true,
        "properties": [
            {
                "name": "id",
                "value": "name"
            },
            {
                "name": "enable",
                "value": "true"
            }
        ]
    },
    {
        "default_value": "0",
        "editable": true,
        "label": "Duration",
        "variable_name": "DURATION",
        "visible": true,
        "properties": [
            {
                "name": "id",
                "value": "duration"
            },
            {
                "name": "enable",
                "value": "true"
            }
        ]
    },
    {
        "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": true,
    "label": "Delay Start By",
    "variable_name": "ELIGIBLEDATE",
    "visible": true,
    "properties": [
        {
            "name": "id",
            "value": "eligibledate"
        },
        {
            "name": "enable",
            "value": "true"
        }
    ]
},
{
    "default_value": "0",
    "editable": false,
    "label": "User Priority",
    "variable_name": "USERPRIORITY",
    "visible": false,
    "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"
            },
            {
                "name": "enable",
                "value": "true"
            }
        ]
    },
    {
        "default_value": "",
        "editable": true,
        "label": "Queue / Class",
        "variable_name": "DESTINATIONQUEUE",
        "visible": true,
        "properties": [
            {
                "name": "id",
                "value": "destinationQueue"
            },
            {
                "name": "enable",
                "value": "true"
            }
        ]
    },
    {
        "default_value": "",
        "editable": true,
        "label": "Quality of Service",
        "variable_name": "QOS",
        "visible": true,
        "properties": [
            {
                "name": "id",
                "value": "qos"
            },
            {
                "name": "enable",
                "value": "true"
            }
        ]
    }
],
{

```

```

"default_value": "",
"editable": true,
"label": "Number of Cores",
"variable_name": "NUMOFCORES",
"visible": true,
"properties": [
  {
    "name": "id",
    "value": "cpupernode"
  },
  {
    "name": "totalamount",
    "value": "True"
  },
  {
    "name": "nodeswithcount",
    "value": "True"
  },
  {
    "name": "malleablecorecount",
    "value": "False"
  },
  {
    "name": "totalamount_editable",
    "value": "False"
  },
  {
    "name": "nodeswithcount_editable",
    "value": "False"
  },
  {
    "name": "malleablecorecount_editable",
    "value": "False"
  },
  {
    "name": "totalamount_visible_default",
    "value": "True"
  },
  {
    "name": "nodeswithcount_visible_default",
    "value": "False"
  },
  {
    "name": "malleablecorecount_visible_default",
    "value": "False"
  },
  {
    "name": "totalcores_default",
    "value": "1"
  },
  {
    "name": "totalnodes_default",
    "value": "1"
  },
  {
    "name": "corespernode_default",
    "value": "1"
  },
  {
    "name": "minimumcores_default",

```

```

        "value": "1"
    },
    {
        "name": "maximumcores_default",
        "value": "2"
    },
    {
        "name": "enable",
        "value": "true"
    }
]
},
{
    "default_value": "",
    "editable": true,
    "label": "Total Memory (GB)",
    "variable_name": "MEMORYAMOUNT",
    "visible": true,
    "properties": [
        {
            "name": "id",
            "value": "memorypernode"
        },
        {
            "name": "totalmemory",
            "value": "True"
        },
        {
            "name": "memorypercore",
            "value": "True"
        },
        {
            "name": "totalmemory_visible_default",
            "value": "True"
        },
        {
            "name": "memorypercore_visible_default",
            "value": "True"
        },
        {
            "name": "totalmemory_default",
            "value": "0.5"
        },
        {
            "name": "memorypercore_default",
            "value": "0.5"
        },
        {
            "name": "totalmemory_editable",
            "value": "False"
        },
        {
            "name": "memorypercore_editable",
            "value": "False"
        },
        {
            "name": "enable",
            "value": "true"
        }
    ]
}
]

```

```

    },
    {
      "default_value": "linux",
      "editable": true,
      "label": "Architecture",
      "variable_name": "ARCHITECTURE",
      "visible": true,
      "properties": [
        {
          "name": "id",
          "value": "architecture"
        },
        {
          "name": "enable",
          "value": "true"
        }
      ]
    },
    {
      "default_value": "",
      "editable": true,
      "label": "Execution Path",
      "variable_name": "EXECUTIONDIRECTORY",
      "visible": true,
      "properties": [
        {
          "name": "id",
          "value": "exedir"
        },
        {
          "name": "enable",
          "value": "true"
        }
      ]
    },
    {
      "default_value": "",
      "editable": true,
      "label": "Error Path",
      "variable_name": "ERRORPATH",
      "visible": true,
      "properties": [
        {
          "name": "id",
          "value": "errorpath"
        },
        {
          "name": "useExecutionPath",
          "value": "True"
        },
        {
          "name": "enable",
          "value": "true"
        }
      ]
    },
    {
      "default_value": "",
      "editable": true,
      "label": "Output Path",

```

```

"variable_name": "OUTPUTPATH",
"visible": true,
"properties": [
  {
    "name": "id",
    "value": "outputpath"
  },
  {
    "name": "useExecutionPath",
    "value": "True"
  },
  {
    "name": "enable",
    "value": "true"
  }
]
},
{
  "default_value": "false",
  "editable": true,
  "label": "Merge Streams",
  "variable_name": "JOIN",
  "visible": true,
  "properties": [
    {
      "name": "id",
      "value": "join"
    },
    {
      "name": "enable",
      "value": "true"
    }
  ]
},
{
  "default_value": "false",
  "editable": true,
  "label": "Hold Job",
  "variable_name": "HOLD",
  "visible": true,
  "properties": [
    {
      "name": "id",
      "value": "hold"
    },
    {
      "name": "enable",
      "value": "true"
    }
  ]
},
{
  "default_value": "",
  "editable": true,
  "label": "Script Shell",
  "variable_name": "SHELL",
  "visible": true,
  "properties": [
    {
      "name": "id",

```

```

        "value": "shell"
    },
    {
        "name": "enable",
        "value": "true"
    }
]
},
{
    "default_value": "true",
    "editable": true,
    "label": "Moab Environment Variables",
    "variable_name": "MOABENVIRONMENTVARIABLES",
    "visible": true,
    "properties": [
        {
            "name": "id",
            "value": "moabenvironmentvariables"
        },
        {
            "name": "enable",
            "value": "true"
        }
    ]
},
{
    "default_value": "",
    "editable": true,
    "label": "Email Notification List",
    "variable_name": "MAILLIST",
    "visible": true,
    "properties": [
        {
            "name": "id",
            "value": "maillist"
        },
        {
            "name": "enable",
            "value": "true"
        }
    ]
},
{
    "default_value": "",
    "editable": true,
    "label": "Email Options",
    "variable_name": "EMAILOPTIONS",
    "visible": true,
    "properties": [
        {
            "name": "id",
            "value": "emailoptions"
        },
        {
            "name": "enable",
            "value": "true"
        }
    ]
},
{

```

```

    "default_value": "",
    "editable": true,
    "label": "Generic Resources",
    "variable_name": "GENERICRESOURCES",
    "visible": true,
    "properties": [
      {
        "name": "id",
        "value": "genericresources"
      },
      {
        "name": "enable",
        "value": "true"
      }
    ]
  },
  {
    "default_value": "",
    "editable": true,
    "label": "Job Environment Variables",
    "variable_name": "Job Environment Variables",
    "visible": true,
    "properties": [
      {
        "name": "id",
        "value": "jobEnvVariables"
      },
      {
        "name": "enable",
        "value": "true"
      }
    ]
  },
  {
    "default_value": "",
    "editable": false,
    "label": "Default Moab Template",
    "variable_name": "MOABTEMPLATE",
    "visible": false,
    "properties": [
      {
        "name": "id",
        "value": "moabtemplates"
      },
      {
        "name": "enable",
        "value": "false"
      }
    ]
  },
  {
    "default_value": "SHARED",
    "editable": false,
    "label": "Node Access Policy",
    "variable_name": "NODEACCESSPOLICY",
    "visible": false,
    "properties": [
      {
        "name": "id",
        "value": "node-access-policy"
      }
    ]
  }
}

```

```

        },
        {
            "name": "enable",
            "value": "false"
        }
    ]
},
{
    "default_value": "FIRSTAVAILABLE",
    "editable": false,
    "label": "Node Allocation Policy",
    "variable_name": "NODEALLOCATIONPOLICY",
    "visible": false,
    "properties": [
        {
            "name": "id",
            "value": "node-allocation-policy"
        },
        {
            "name": "enable",
            "value": "false"
        }
    ]
},
{
    "default_value": "EXACTSET",
    "editable": false,
    "label": "Node Requested Policy",
    "variable_name": "NODESREQUESTEDPOLICY",
    "visible": false,
    "properties": [
        {
            "name": "id",
            "value": "nodes-requested-policy"
        },
        {
            "name": "enable",
            "value": "false"
        }
    ]
},
{
    "default_value": "",
    "editable": false,
    "label": "Operating System",
    "variable_name": "OPERATINGSYSTEM",
    "visible": false,
    "properties": [
        {
            "name": "id",
            "value": "operatingSystem"
        },
        {
            "name": "enable",
            "value": "false"
        }
    ]
},
{
    "default_value": "",

```

```

        "editable": false,
        "label": "Requested Features",
        "variable_name": "FEATURESREQUESTED",
        "visible": false,
        "properties": [
            {
                "name": "id",
                "value": "features-requested"
            },
            {
                "name": "enable",
                "value": "false"
            }
        ]
    },
    {
        "default_value": "",
        "editable": false,
        "label": "Excluded Features",
        "variable_name": "FEATURESEXCLUDED",
        "visible": false,
        "properties": [
            {
                "name": "id",
                "value": "features-excluded"
            },
            {
                "name": "enable",
                "value": "false"
            }
        ]
    },
    {
        "default_value": "",
        "editable": false,
        "label": "Nodes Requested List",
        "variable_name": "NODESREQUESTED",
        "visible": false,
        "properties": [
            {
                "name": "id",
                "value": "nodes-requested"
            },
            {
                "name": "enable",
                "value": "false"
            }
        ]
    }
],
"version_description": "Default Free Form Application Template",
"version": 2
}
]
}

```

## PATCH Method

 You must the correct content type when using the PATCH API. If not specified, the API will consider the type as 'text/html' which might cause side effects in the request processing code.

In this section:

- [URL on page 225](#)
- [Parameters on page 225](#)
- [JSON Structure on page 225](#)

## URL

```
PATCH /api/templates/<history_pk>/history/<version>/
```

## Parameters

Parameter	Required	Type	Description	Example
history_pk	Yes	String	History ID of the application template	b00ce08c-01ed-4a9d-a916-f587b9f1af44
version	Yes	Integer	Version of the application template	2

## JSON Structure

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

Name	Required	Type	Description
version_description	No	String	Description of changes in this application template's version.

Related Topics

- [Application Template API on page 144](#)
- [Supported Methods on page 146](#)



## 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.

In this chapter:

- [Nodes Page on page 227](#)
- [Node Details Page on page 230](#)
- [Resource Job Timeline Page on page 233](#)
- [Threshold Settings on page 236](#)

### 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 on page 227](#)
- [Selection Criteria Area on page 228](#)
- [Nodelist View Details on page 228](#)

### Page Example

The following image is an example of the Nodes page.

The screenshot shows the 'Nodes' management interface. At the top, there is a 'Refresh Interval' set to 15s. The main area contains a table with the following columns: Node ID, Status, Class, Feature, Cores Available/Configured, Jobs, CPU Utilization, and Memory Utilization. The table lists 10 nodes, with 'easy' in an IDLE state and others in BUSY or RUNNING states. On the right side, there is a 'Current Search: 51 results returned' section with a search box and a 'Narrow Search' button. Below that is a 'Filters' section with a 'Select Status' dropdown and four range filters for Processors, Jobs, CPU Utilization, and Memory Utilization, each with 'RESET' and 'FILTER' buttons.

Node ID	Status	Class	Feature	Cores Available/Configured	Jobs	CPU Utilization	Memory Utilization
easy	IDLE	batch	N/A	16/16	0	0	0
node-001	BUSY	batch,batc...	InfiniBand...	0/4	3	100	0
node-002	BUSY	batch,batc...	InfiniBand...	0/4	2	100	0
node-003	BUSY	batch,batc...	InfiniBand...	0/4	1	100	0
node-004	BUSY	batch,batc...	InfiniBand	0/4	3	100	0
node-005	BUSY	batch,batc...	InfiniBand	0/4	3	100	0
node-006	BUSY	batch,batc...	InfiniBand	0/4	2	100	0
node-007	RUNNING	batch,batc...	InfiniBand	2/4	1	50	0
node-008	BUSY	batch,batc...	InfiniBand	0/4	2	100	0
node-009	RUNNING	batch,batc...	InfiniBand	3/4	1	25	0

## 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**.

 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 .
- **Refresh Interval** – You can set a time interval for automatic refresh of the nodelist view. Select a time interval from the drop-down list or select NONE to turn off automatic refresh.
- **Resource Job Timeline** – You can switch from viewing the nodelist to the Resource Job Timeline by clicking  at the top right corner of the nodelist. (the icon is greyed out until it is selected). See [Resource Job Timeline Page on page 233](#) for more information.
- **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.

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

- **Page Controls** – Page controls are available at the bottom of the nodelist 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 on page 230](#)
- [Resource Job Timeline Page on page 233](#)

## 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 230](#)
- [Page Details on page 231](#)

### Page Example

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

The screenshot displays the Node Details page for a node named 'node-049'. The page is divided into three main sections: Node Details, Resources, and Features. A 'Return to earlier search' link is located in the top right corner. A 'Close' button is in the bottom right corner.

Node Details		Resources					
Name	node-049	Real Processors	8				
State	IDLE	Available Processors	8				
Power	None	Real Memory (GB)	1				
Operating System	Centos6	Available Memory (GB)	1				
Resource Managers	nativern	CPU Utilization	0%				
Jobs	0	<table border="1"> <thead> <tr> <th>Generic Resource</th> <th>Count</th> </tr> </thead> <tbody> <tr> <td colspan="2">No Generic Resources present for this node</td> </tr> </tbody> </table>		Generic Resource	Count	No Generic Resources present for this node	
Generic Resource	Count						
No Generic Resources present for this node							
Reservations	None						

**Features**

InfiniBand

## 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
<b>Name</b>	The ID of the node.
<b>State</b>	The current state of the node or resource (such as BUSY, IDLE, DOWN).

Field	Description
<b>Power</b>	The power state of the node.
<b>Operating System</b>	The name of the operating system currently running on this node.
<b>Resource Managers</b>	List of resource managers that report the node.
<b>Jobs</b>	The number of jobs running on this node.
<b>Reservations</b>	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
<b>Real processors</b>	The number of processors on the node.
<b>Available processors</b>	The number of processors that are not dedicated to currently running jobs.
<b>Real memory (GB)</b>	The amount of memory (in GB) on the node.
<b>Available memory (GB)</b>	The amount of memory (in GB) that is available on the node.
<b>CPU utilization</b>	The current CPU utilization of the node; based on the node's operating system reported cpu load average.
<b>Generic Resource with Count</b>	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 [1.1 Workload Page](#) for more information on the job fields.

Related Topics

- [Nodes Page on page 227](#)

## 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 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 236](#) more information.

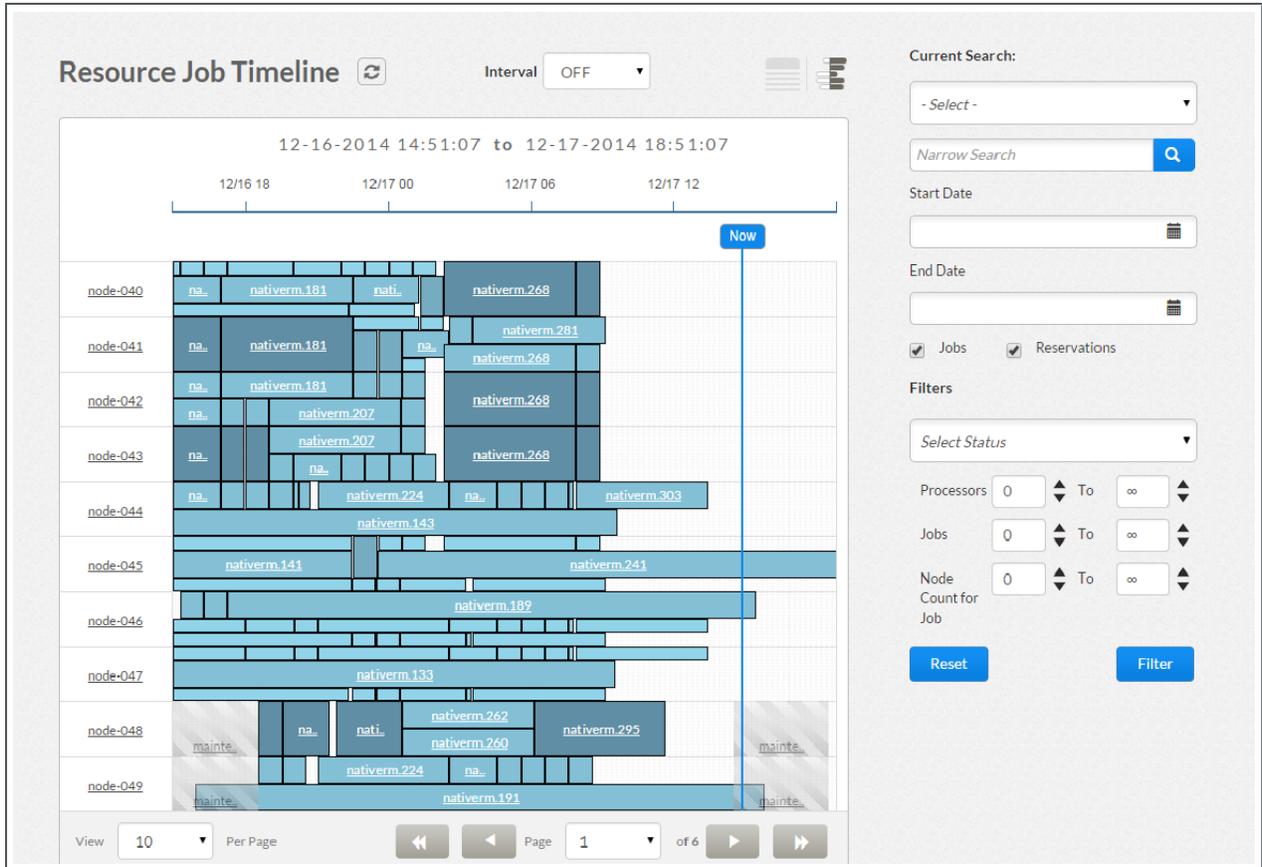
This topic provides an example of the Resource Job Timeline page and describes its layout and available information.

In this topic:

- [Page Example on page 233](#)
- [Selection Criteria Area on page 234](#)
- [Graphical Timeline View Details on page 235](#)

## 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**.

**i** 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**.

**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).

## Graphical Timeline View Details

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

- **Refresh Interval** – 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** – Jobs are visible on the timeline 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** – Reservations are visible on the timeline only if the Reservations check box is 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

- [Node Details Page on page 230](#)
- [Threshold Settings on page 236](#)

## 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 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

- [Resource Job Timeline Page on page 233](#)



## 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.

In this chapter:

- [File Manager Page on page 239](#)
- [Uploading Files on page 242](#)
- [Creating Folders on page 242](#)
- [Maintaining Files and Folders on page 243](#)

## 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.

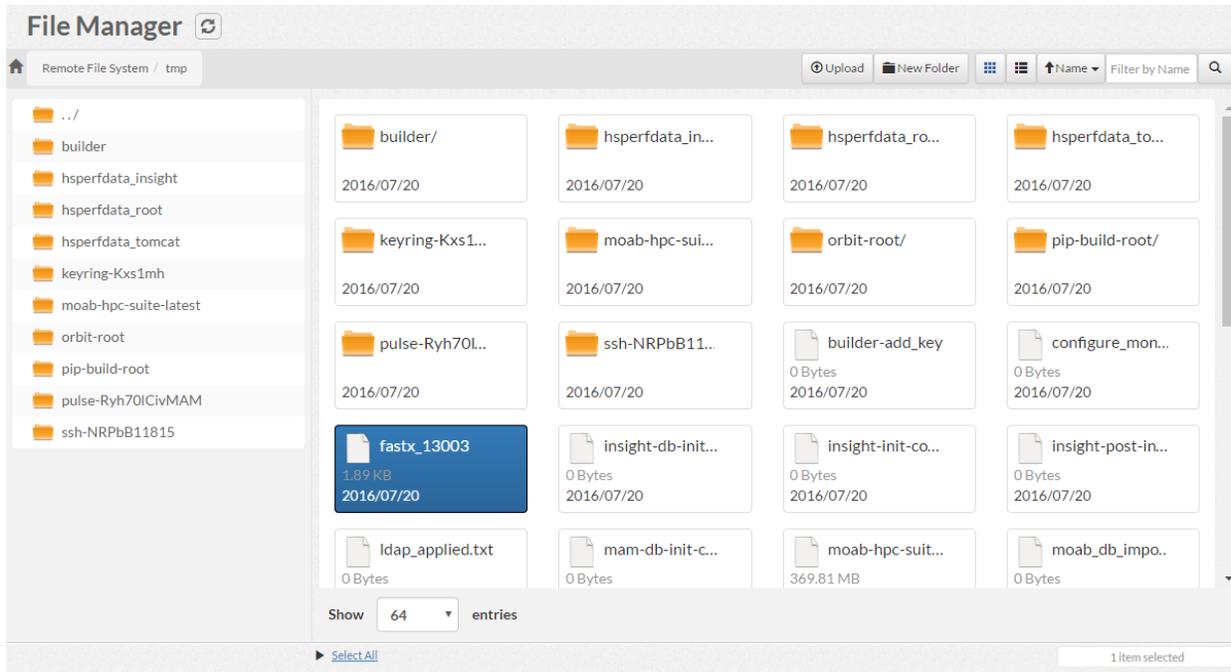
This topic provides an example of the File Manager page and describes its layout and available information.

In this topic:

- [Page Example on page 239](#)
- [Page Details on page 240](#)
- [Additional Functions on page 241](#)

### 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 on page 240](#)
- [View Settings on page 240](#)
- [Folder/File Creation Buttons on page 241](#)

## 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.

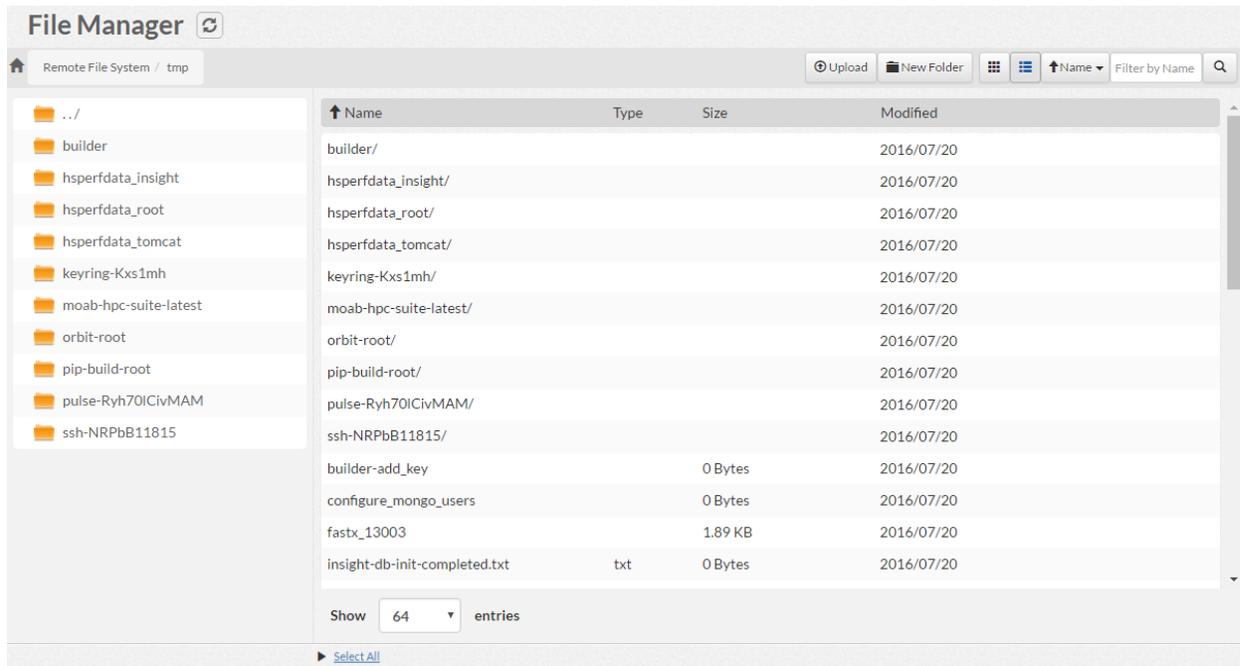
If you select a folder in the left pane, the directory path changes and the left and main panes display the applicable folders/files. Click the Home icon at any time to go directly to your home directory.

## 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.



Controls are also provided to sort files by name, file type, date modified, or size, change the sort order, and filter files by name.

## 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 242](#).
- **New Folder** – Opens up a pop-window that lets you specify the name of the new folder. See [Creating Folders on page 242](#).

**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 243](#) for details.

Related Topics

- [1.1 File Manager Page](#)

## Uploading Files

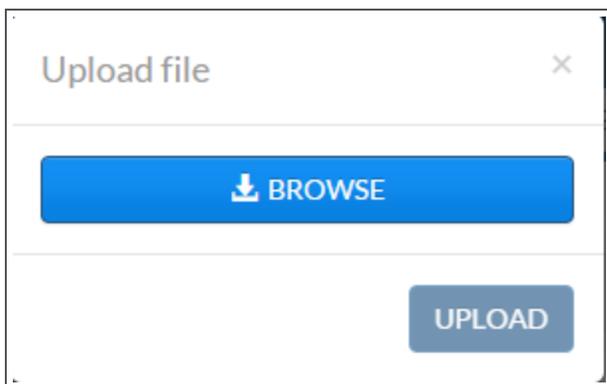
This topic provides information on how to upload files from the RFS.

### 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.



4. Click **BROWSE** and navigate to where the file is located on the RFS.
5. You can also select multiple files or folders using your operating system's 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

- [File Manager Page on page 239](#)

## Creating Folders

This topic provides information on how to add new folders.

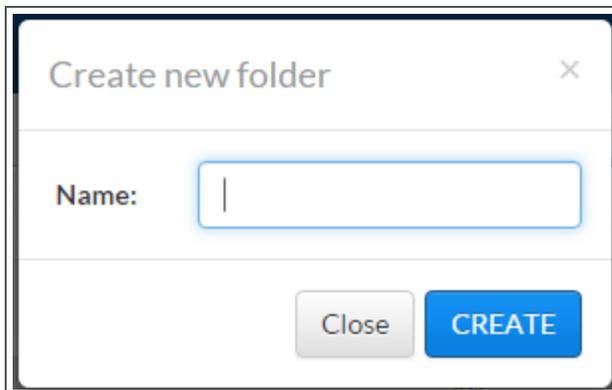
**i** You can only create new folders in the directories to which you have been granted access.

## 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.



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

Related Topics

- [File Manager Page on page 239](#)

## 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 on page 243](#)
- [Access Maintenance Options on page 244](#)

### Available Maintenance Options

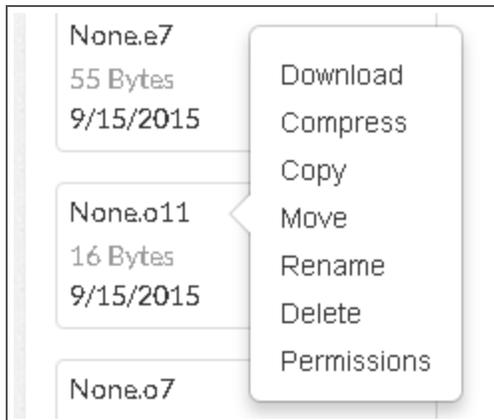
Viewpoint provides these options for maintaining files and folders:

- **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

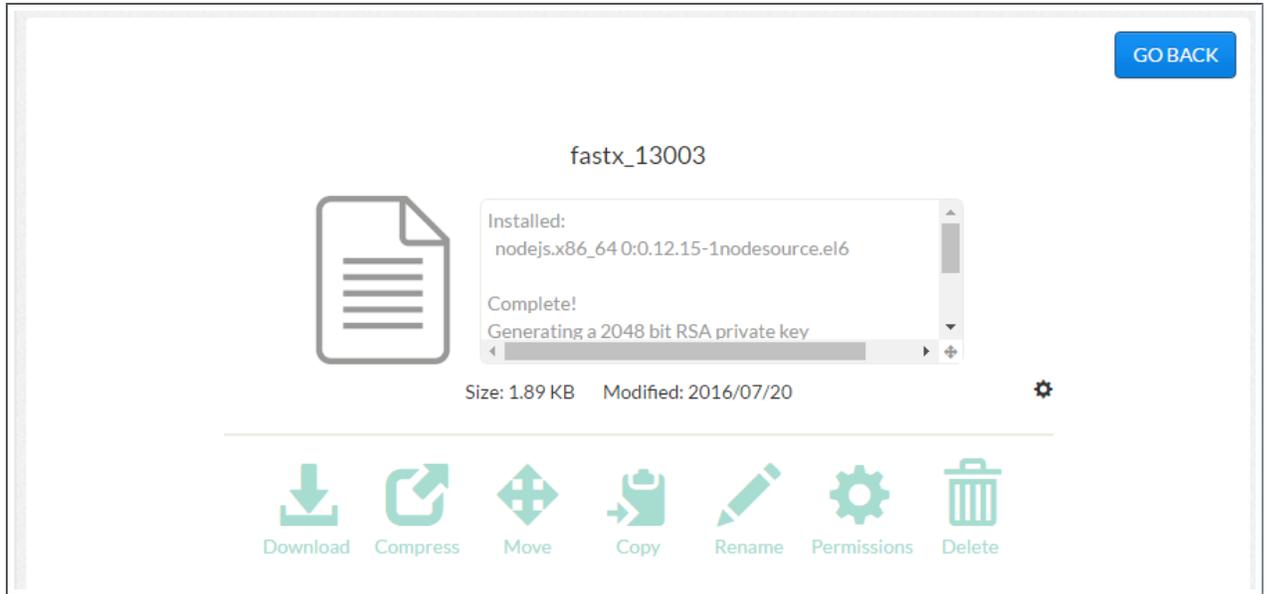
The File Manager page provides two places where you can access folder/file maintenance options.

- In the main pane. Hover the mouse 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 at 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.

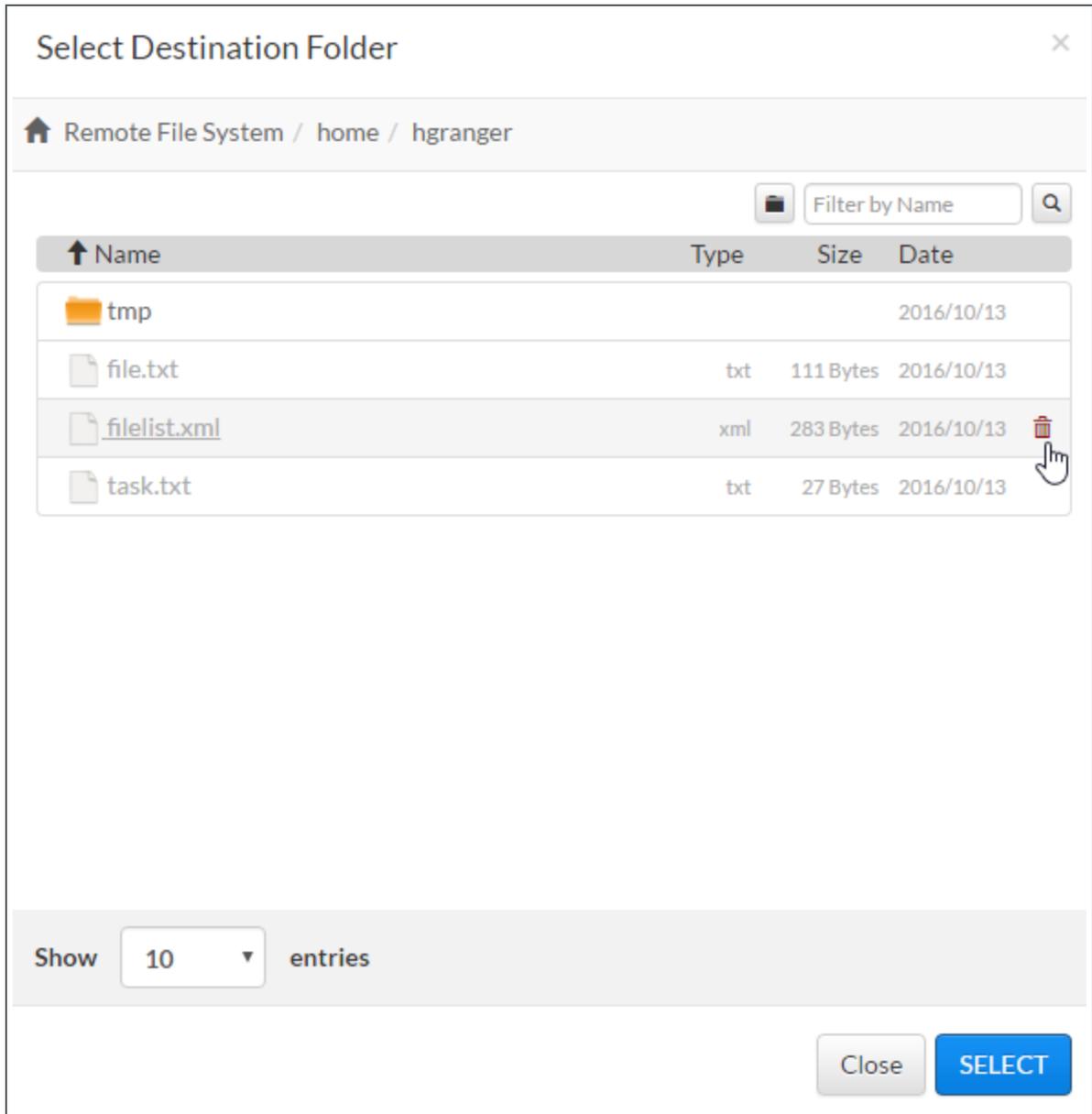
- After you have selected an individual file (clicked the file name, not the icon for the drop-down on the main pane), the file information displays in the main pane. A preview of the file displays and the different maintenance options are represented by icons. For example:



- You can also preview information about your file by clicking the  icon. Clicking this icon will bring up a menu that lets you choose your preview mode as well as how many lines you wish to view.



- When moving or copying a file, File Manager displays a destination dialog that lets you select a folder where you want the file to be moved or copied. The destination dialog includes controls to create a folder, filter files or folders by name, to select the number of file and folder entries displayed in the list, and to sort the file/folder list in ascending or descending order by name, file type, size, or last modified date. You can also delete a file or folder by hovering the mouse over the file/folder entry in the list and clicking the trashcan icon that appears next to the file entry.



Related Topics

- [File Manager Page on page 239](#)

## Chapter 7 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.

In this chapter:

- [Sessions Page on page 247](#)
- [Creating a Session on page 250](#)
- [Connecting to a Session on page 250](#)

### Sessions Page

**i** The Sessions page is only available when Remote Visualization is installed and configured. See [Remote Visualization Configuration Page on page 29](#) 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.

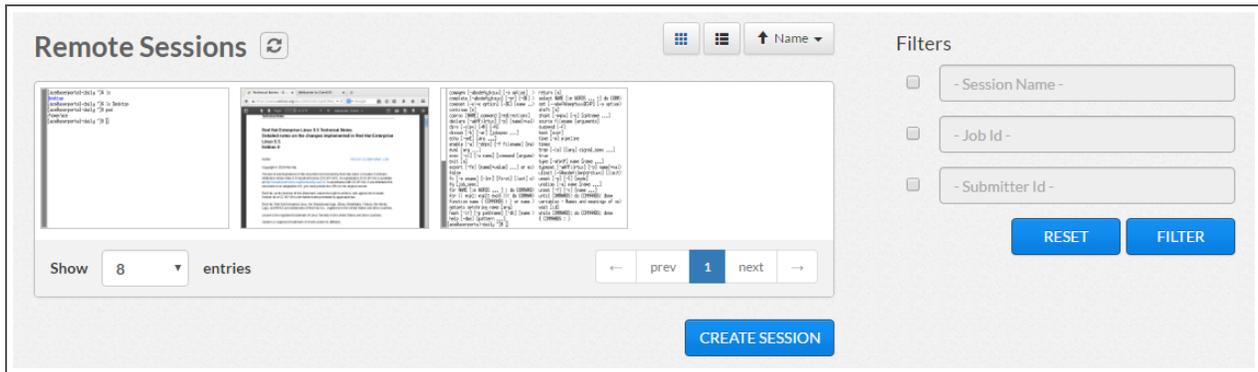
In this topic:

- [Page Example on page 248](#)
- [Filter Search Area on page 248](#)

- [Session List View Details on page 248](#)
- [Additional Functions on page 249](#)

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

**i** 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
<b>Connect</b>	Connect to the chosen session.
<b>Disconnect</b>	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.
<b>Terminate</b>	End the chosen session.

#### Related Topics

- [Chapter 7 Remote Visualization Sessions on page 247](#)

## 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

- [Sessions Page on page 247](#)

## 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.)

**i** 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 the mouse over the session you would like to connect to and click **CONNECT** from the  icon.

#### Related Topics

- [Sessions Page on page 247](#)
- [Chapter 7 Remote Visualization Sessions on page 247](#)

