

# Configuring: What is cm-register-node, and how can I use it?

*What is cm-register-node, and how can I use it?*

*(was: How can I add an SGI UV node to an existing Bright Cluster?)*

**Q: What is cm-register-node and what purpose does it serve?**

A: It is a utility that facilitates adding compute nodes that have not been provisioned by Bright Cluster Manager, to a Bright cluster and it makes them available as resources in Bright Cluster Manager.

For example, taking an external SGI UV node and making it a part of Bright Cluster.

**Q: Does cm-register-node install additional packages and config files?**

A: Yes, cm-register-node installs the core cluster management daemon (and related dependencies) packages and additional configuration files such as node certificates that enable the cluster management daemon running on the external node to communicate correctly with the cluster management daemon on the head node.

Q: In what aspects is the node registered using cm-register-node different from nodes that have been provisioned using the standard provisioning system of Bright Cluster Manager?

A: Nodes that are provisioned using the standard provisioning mechanism are configured to PXE boot off a software image on the Bright head node, and all configuration related to this software image are saved in the Bright Cluster Manager. In contrast, the externally registered node is provisioned by an external source and Bright does not have any control over the original data on the node.

**Q: In what versions of Bright is cm-register-node available?**

A: cm-register-node is available for Bright Cluster Manager version 6.0 and above.

**Q: Are configuration changes required on the Bright head node, for this process to work?**

A: Yes, depending on the scenarios described below:

1. If the IP address of the external node that will be used by the head node is not within the network range of any of the management networks defined on the Bright head node, then the following needs to be performed:

# Configuring: What is cm-register-node, and how can I use it?

a. Edit `/cm/local/apps/cmd/etc/cmd.conf` and set the following:

```
EaseNetworkValidation = 2
```

b. Restart Cluster management daemon

```
$ service cmd restart
```

2. The external node must be resolvable by IP address and hostname. If the node does not have a DNS record, an entry can be added to `/etc/hosts` on the head node (outside the Cluster manager autogenerated sections.)

Example:

## 10.3.2.1 ext-node

**Q. Are configuration changes required on the external node, for this process to work?**

A. Yes, depending on the scenarios described below:

1. Port 2 on the external node must be able to accept connection requests from head node.

**NOTE:** This might require updating the firewall rules on the external node.

From the head node, this can be verified by running:

```
$ telnet <IP address of external node> 2
```

2. Port 8081 on the external node must be able to accept connection requests from the head node.

**NOTE:** This might require updating the firewall rules on the external node.

From the head node, this can be verified by running:

```
$ telnet <IP address of external node> 8081
```

3. The head node must be reachable by its hostname from the external node. If the head node

does not have a DNS record, an entry to `/etc/hosts` can be added.

a. In the case of a single head node setup:

Example entry in `/etc/hosts`:

## 10.6.2.4 bright-headnode

b. In the case of a Bright high availability (failover) setup, the Bright active had node must be

# Configuring: What is cm-register-node, and how can I use it?

reachable via the shared IP address that resolves to 'master'.

Example entry in `/etc/hosts`:

```
10.141.255.252 master
```

c. ssh access to the external node is required from the head node. cm-register-node will setup ssh-key based authentication from the head node, if it has not been setup already.

**Q: Can Bright enable workload manager services on the external node, and hence use it as a resource to run compute jobs?**

A. Yes, this can be done by invoking cm-register-node with the additional option `-w` or `--enablewlms`.

**Q: What are the different workload managers that are supported?**

A: Slurm, PBS Pro, GridEngine, Torque, Openlava, LSF

*The above explanation and pre-requisites are also available in the man page of cm-register-node. The man page can be accessed on the Bright head node, using the command: **man cm-register-node**. The Bright Computing support team can be [contacted](#) for any further questions.*

Unique solution ID: #1290

Author: Johnny Devaprasad

Last update: 2015-12-04 19:41