

Myrinet Roll: Users Guide

Myrinet



Myrinet Roll: Users Guide :

Version 5.0 Edition

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Preface

The function of the Myrinet Roll is to install and configure the Myrinet drivers and an MPICH environment that uses the underlying Myrinet hardware.

The Myrinet Roll contains the following pre-built MPICH environment:

Table 1. MPICH Environment

Name	Version
MPICH over Myrinet	1.2.7p1..20

Preface

Chapter 1. Requirements

Rocks Version

The Myrinet Roll is for use with Rocks version 5.0 (V).

Other Rolls

The Myrinet Roll requires the Base, Kernel and HPC to be installed on the Frontend. Compatibility has been verified with the following Rolls:

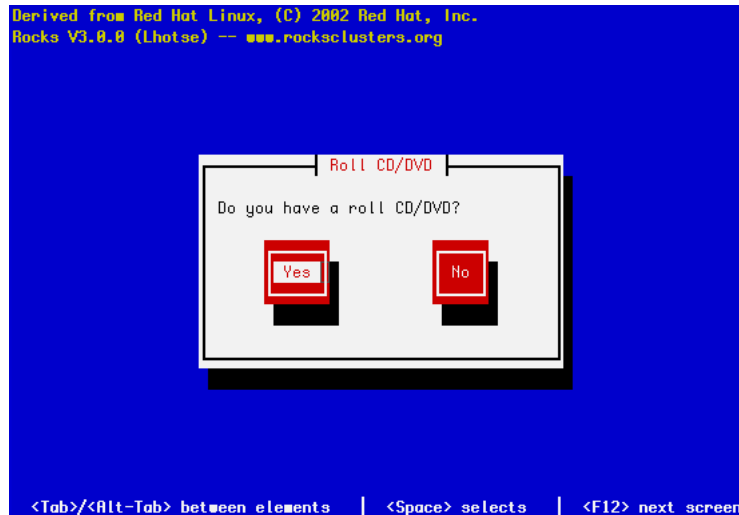
- HPC
- Kernel
- SGE
- Grid

Chapter 2. Installing the Myrinet Roll

Adding the Roll

The Myrinet Roll must be installed during the Frontend installation step of your cluster (refer to section 1.2 of the Rocks usersguide). Future releases will allow the installation of the Myrinet Roll onto a running system.

The Myrinet Roll is added to a Frontend installation in exactly the same manner as the required HPC Roll. Specifically, after the HPC Roll is added the installer will once again ask if you have a Roll (see below). Select 'Yes' and insert the Myrinet Roll.



Chapter 2. Installing the Myrinet Roll

Chapter 3. Using the Myrinet Roll

How to assign an IP address to an Myrinet interface

How to assign and IP address to a Myrinet interface

After you bring up a compute node, then you can assign an IP address to the Myrinet adapter. First you have to add a network definition. Here is an example creating a network:

```
# rocks add network myrieth subnet=192.168.0.0 netmask=255.255.0.0
```

Now you can add the myri0 interface by using 'rocks add host interface'. Below is an example of assigning an address to the myri0 interface on compute-0-0:

```
# rocks add host interface compute-0-0 myri0 ip=192.168.0.1 \  
  subnet=myrieth name=compute-0-0-myri0
```

After adding all the interfaces, it is a good idea to sync up the frontend's configuration with the changes you just made. Run the following:

```
# rocks sync config
```

You can use `rocks list host interface compute-0-0` to list your interfaces on compute-0-0. Please refer to your Rocks documentation for more information on how to manage ethernet interfaces in the Rocks environment.

After you run the above command, you must reinstall the compute node in order to correctly apply the IP address. To reinstall the compute node, execute:

```
# shoot-node compute-0-0
```

How to remove an IP address from a Myrinet interface

If you wish to remove a previously added IP address, execute:

```
# rocks remove host interface compute-0-0 myri0
```

The above removes the entry for the Myrinet interface `myri0` associated with `compute-0-0`.

Using Myrinet with MPI

Note: You must be a non-root user to run an mpi job.

First, create a `machines` file in your home directory. Below is a sample:

```
compute-0-0  
compute-0-1
```

We will be compiling and running the `mpi` program, a common example program. Copy the source code to your home directory:

```
$ cd ~/
```

Chapter 3. Using the Myrinet Roll

```
$ cp /var/www/html/roll-documentation/myrinet/5.0/examples/cpi.c ~/
```

How to run mpich over myrinet

First compile cpi with mpich:

```
$ /opt/mpich/myrinet/gnu/bin/mpicc -o cpi.mpich cpi.c
```

To run cpi, execute:

```
$ /opt/mpich/myrinet/gnu/bin/mpirun -np 2 -machinefile machines cpi.mpich
```