

# Installing BCM: How can I mass-produce Bright head node installations using PXE?

An already-installed (or *primary*) Bright head node can be used to create a head node PXE image. Machines that are booted using PXE, from the already-installed head node using such a head node PXE image, are able to start up more head nodes. This is called the *mass-production* of head nodes, and is useful for some custom cluster configurations.

The mass-production procedure for head nodes from the primary head node is as follows:

## A. Install and Setup buildmatic (on the primary)

This is a one-off procedure to configure the settings for the buildmatic and to create an rpm directory from the ISO.

### A.1: Install required buildmatic RPMs

```
yum install buildmatic-common buildmatic-7.1-stable createrepo
```

### A.2: Generate global config and install

```
/cm/local/apps/buildmatic/common/bin/setupbmatic --createconfig
```

```
cp /cm/local/apps/buildmatic/common/settings.xml /cm/local/apps/buildmatic/7.1-stable/bin
```

```
cp /cm/local/apps/buildmatic/common/nfparams.xml /cm/local/apps/buildmatic/7.1-stable/bin
```

```
cp /cm/local/apps/buildmatic/common/nfparams.xml /cm/local/apps/buildmatic/7.1-stable/files
```

### A.3: Populate rpm-store using a Bright DVD

```
/cm/local/apps/buildmatic/common/bin/setupbmatic --createrpmdir  
/mnt2/bright7.1-centos7u1.iso
```

To add more supported Linux distributions, repeat this step with additional Bright ISOs

## B. Generate buildconfig and pxe image (on the primary)

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## From commandline

### B.1 Generate XML buildconfig

```
/cm/local/apps/buildmatic/7.1-stable/bin/genbuildconfig -v 7.1-stable -d CENTOS7u1 -i 1111111  
=> Successfully generated build-config for CENTOS7u1 7.1-stable  
==> /cm/local/apps/buildmatic/7.1-stable/config/111111.xml
```

### B.2 Generate PXE image using the buildconfig generated in B.1

```
/cm/local/apps/buildmatic/7.1-stable/bin/buildmaster /cm/local/apps/buildmatic/7.1-stable/config/111111.xml
```

## C. Allow NFS traffic to head node (on the primary)

C.1 Update firewall rules (shorewall) on the head node and restart shorewall service

Edit `/etc/shorewall/rules` to allow NFS traffic from outside (uncomment that section)

```
service shorewall restart
```

### C.2 Add the following lines to `/etc/exports`, so that they can be nfs-mounted from the installer

```
/home/bright/base-distributions 10.2.0.0/16(ro,no_root_squash,async)  
/home/bright/rpm-store 10.2.0.0/16(ro,no_root_squash,async)
```

Modify the above paths and network, according to your needs.

## D. Install head node (on each machine-to-become-head-node)

### D.1 PXE boot node from primary

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**D.2 In the PXE menu, select from one of the installation methods described below:**

D.2.1 Install Bright Head Node : Select this option to perform a normal installation.

D.2.2 Unattended Install Bright Head Node: This installation method does not involve any user interaction. This option can be selected when the installation parameters (defined in the buildconfig from Step B.1) does not require any more modifications.

**D.3 Enter CMID, as entered in step B.1 or B.3 (eg., 111111)**

**D.4 In the installer** (This step is not relevant if the unattended installation method was chosen):

D.4.1 On Network interfaces screen, update interfaces (external and/or internal)

D.4.2 On NFS parameters screen:

- Choose correct interface to use for install (defaults to external interface from D.3.1)
- Update nfsserver field

D.5 Wait until done, and remember to change the PXE BIOS boot to regular hard drive boot on the new head nodes.. If no more head nodes are to be created via PXE boot, then an undo of the export and shorewall allowance of step C can be done on the primary, and the primary reverted to regular use.

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