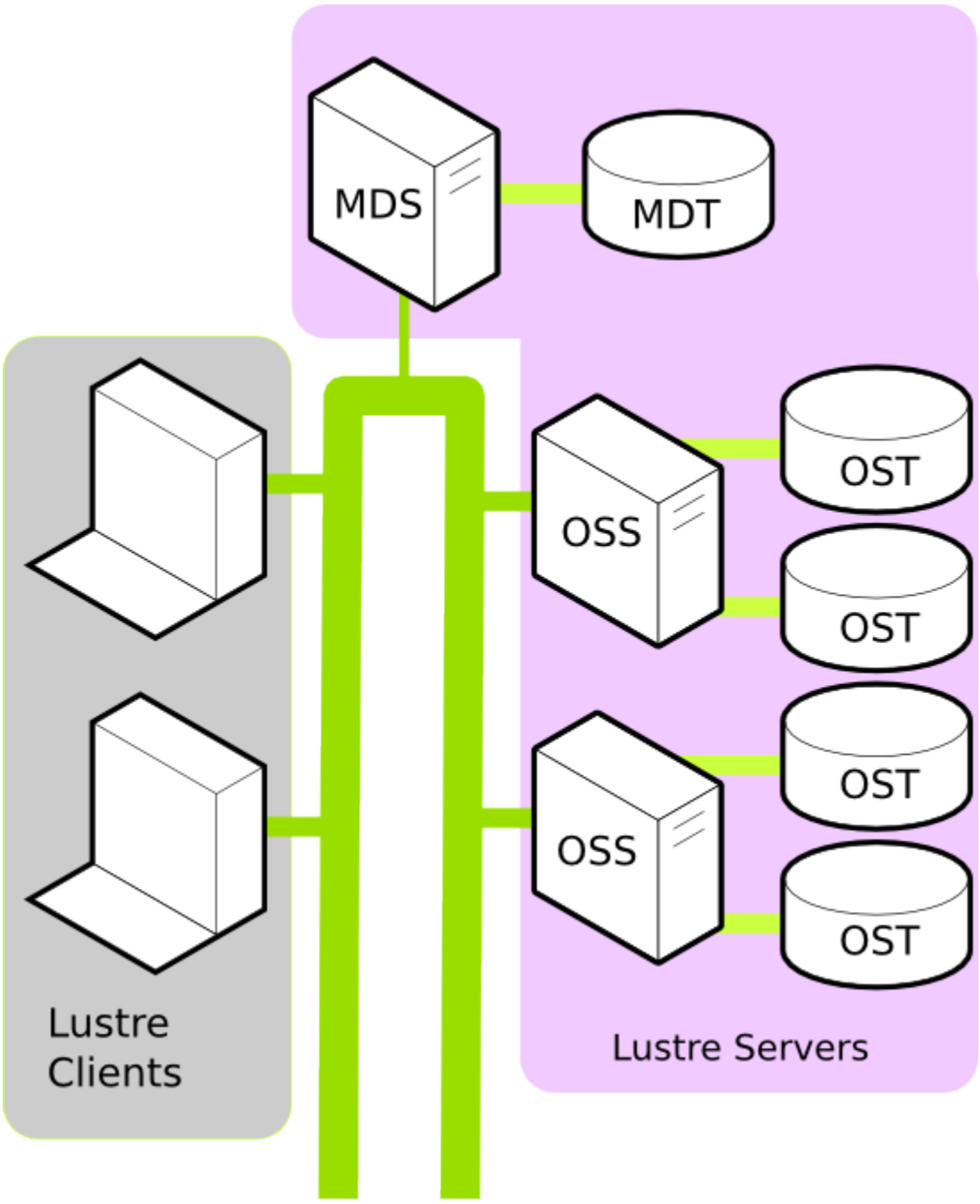
Putting together a Lustre filesystem

The Lustre filesystem software is build on-top of the Linux kernel. Because Lustre is designed for the most demanding high performance environments, modifications must be made to a stock Linux kernel to create Lustre servers. On a client, a Lustre filesystem is mounted with a Linux kernel module – and this does not need a modified kernel.

The fastest way to begin provisioning your machines into a Lustre filesystem is to use a pre-built Linux kernel with the Lustre patches already applied. A Lustre patched Linux kernel can be configured at run time to become a MGS, MDT, MDS, OSS, and OST server. An overview of these different server roles can be found in the Components of a Lustre filesystem document.



Pre-build Lustre patched Linux kernel

The most recent successful builds from our development branches
master CentOS 5 (client and server) master CentOS 6 (client and server) master Ubuntu 10.04 (x86_64, client only) master SLES 11 (x86_64, client only) b1_8 CentOS 5 (client and server) b1_8 CentOS 6 (client and server) b1_8 Ubuntu 10.04 (x86_64 client only)

Whamcloud provide pre-built Lustre patched Linux kernels based on the CentOS stock kernel. Two builds are available, 1.8 and Master. Master includes some features that will make it into the 2.1 release. These kernels are simple to install and have completed the Whamcloud test suites. Further information on the Whamcloud Lustre test suite is available on the page: Testing a Lustre filesystem.
A separate page provides a Walk-thru- Deploying Lustre pre-built RPMs.

If you prefer to build from source, the instructions below should be helpful:

Applying Lustre patches to a stock Linux kernel

The Lustre filesystem code is available as source code under the GPL2 License. Patching a Linux kernel with Lustre patches requires:

Identifying a supported kernel

Lustre patches are readily applied to a number of stock kernels and versions, these include: CentOS, SLES, and Debian. A complete list of the Whamcloud supported kernels is available on Lustre Support Matrix page.

Download the suitable Lustre source code

Lustre source code available from Whamcloud repositories contains both Client and Server code. The Whamcloud Lustre source code is available at Whamcloud git repository and contains 1.8 and Master branches.

Patch, build, and install the Linux kernel with Lustre

Patching and building a Kernel is a complex task is machine architecture, network and RAID drivers. Walk-thrus are available for the following kernels:

- Walk-thru- Build Lustre 1.8 on CentOS 5.5 or 5.6 from Whamcloud git
- Walk-thru- Build Lustre MASTER on RHEL 6.4/CentOS 6.4 from Git

Creating and Mounting a Lustre Filesystem.

Once the Lustre kernels and software is installed on your machines, it is time to start the filesystem and mount it on the clients.