



Compile Linux Kernel with patch

The purpose of this document is to provide steps in applying the patch of SCSI drivers that will support over 2 terabytes capacity for Areca U320 controller, After applying the patch and recompiling the kernel , the recommended partition label to use is **GPT** for over 2 terabytes capacity.

Step 1: Obtain the kernel source package.

First you need to fetch the proper kernel source rpm. For other Fedora version you can follow this procedure but you need to acquire your kernel source the same with your current kernel. Obtain the current kernel version using the command:

```
# uname -r  
2.6.9-1.667
```

For the Fedora 3 kernel sources you may download using this link: <http://download.fedora.redhat.com/pub/fedora/linux/core/3/i386/os/SRPMS/kernel-2.6.9-1.667.src.rpm>. All other official versions of the Linux kernel source code can be found at <http://kernel.org/> .

Step 2: Install the kernel source

Install the kernel source rpm using rpm as root. You may use the following command.

```
# rpm -ivh kernel-2.6.9-1.667.FC3.src.rpm
```

Step 3: Rebuild the kernel source

Now change your working directory to the SPECS directory and extract the kernel source using rpmbuild:

```
# cd /usr/src/redhat/SPECS  
# rpmbuild -bp -- target=i686 kernel-2.6.spec
```

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Step 4: Copy the kernel source

```
# cd /usr/src/redhat/BUILD/kernel-2.6.9/  
# cp -rf linux-2.6.9 /usr/src
```

Step 5: Clean old module & config files

```
#cd /usr/src/linux-2.6.9  
# make clean  
# make mrproper
```

Step 6: Apply the PATCH

Download the tarball patch from www.proware.com.tw website in support item or contact your sales representative. Copy the patch on your /usr/src/ directory:

```
#cd /usr/src  
# tar -zxvf patch-linux-2.6.9-O2TB.tar.gz  
# zcat patch-linux-2.6.9-O2TB.gz | patch -p0
```

Step 7: Recompile Kernel

```
#cd /usr/src/linux-2.6.9  
#make menuconfig [ for text mode ]
```

Then load the existing configuration of your system

Load an Alternate configuration File → /boot/config-2.6.9-1.667

Check the following configurations:

For Adaptec U320 HBA card option:

➤ Device Drivers → SCSI device support → SCSI low-level drivers →
Adaptec AIC79xx U320 support →

- ✓ Enable Read Streaming for All Targets
- ✓ Compile in debugging code
- ✓ Decode register during diagnostics

For LSI 320 HBA card option:

➤ Device Drivers → Fusion MPT device Support

- ✓ Fusion MPT misc device (ioctl) driver
- ✓ Fusion MPT LAN Driver

Save new cofnig

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Step 8: Compile the kernels modules

```
#make  
#make modules_install  
#make install
```

Step 9: Copy configuration file

```
#cp /usr/src/linux-2.6.9/.config /boot/config- patch-linux-2.6.9-O2TB
```

Step 10: Boot new kernel

Restart and boot the new kernel , select the **2.6.9-prep** boot item.

Note:

If the Os still cannot detect the over 2 terabytes capacity of your subsystem, you may restart patching and recompiling your kernel by starting steps 5 until the end of procedure. Please make sure that during patching and recompiling of kernel there's no error to avoid this problem.