



Setup

Version: 3478

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Add-On Packages/Setup

Enter the following commands from the command prompt (Main menu option 3 Advanced -> option 1 Bash shell)

- ◇ addon_hd configure
- ◇ addon_hd partition
- ◇ addon_hd format
- ◇ Enable addon_hd
- ◇ Start addon_hd

The addon_hd service creates 2 partitions. A read-only partition for program installation is mounted by default on /opt. A read-write partition for data storage is mounted on /data.

The addon_hd service can be configured to run on the built-in flash if it is 128 MB or larger. Otherwise an extra flash drive or hard drive is required.

Partitioning schemes

Device	RO Partition	RO Size	RO Mount Point	RW Partition	RW Size	RW Mount point
Built-in 128 MB Flash	hda3	32 MB	/opt	hda4	Remainder of drive (24 MB for 128 MB flash)	/data
Add-on Flash or Hard Drive Less than 8 GB	hdc1	512 MB	/opt	hdc2	Remainder of drive	/data
Add-on Flash or Hard Drive Greater than 8 GB	hdc1	4 GB	/opt	hdc2	Remainder of drive	/data

Primary Flash as Add-On HDD

Use the following procedure to use the add-on hard drive feature with available storage on the primary flash (intended for routers with a primary flash that is 4 GB or larger).

- Ensure a DNS server is configured and the router has access to the Internet.
- Drop to a bash shell command line (Main menu option 3 Advanced -> option 1 Bash shell).
- Update the router OS.

update 4.4.0

- Reboot the router after the OS update completes successfully.
- Drop to a bash shell command line (3. Advanced, 1. Bash shell).
- Run fdisk on the primary flash device (normally /dev/hda).

```
fdisk /dev/hda
```

- Document the existing partition scheme (option 'p' in fdisk) which will look similar to the output below.

```
Command (m for help): p
Disk /dev/hda: 16 heads, 63 sectors, 15538 cylinders
Units = cylinders of 1008 * 512 bytes
   Device Boot      Start         End      Blocks   Id  System
/dev/hda1    *           1          131       65992+   83  Linux
/dev/hda2                132          148         8568   83  Linux
/dev/hda3                149          214       33264   83  Linux
/dev/hda4                215         15538     7723296   83  Linux
```

- Delete the hda3 and hda4 partitions.

```
Command (m for help): d
Partition number (1-4): 3
Command (m for help): d
Partition number (1-4): 4
```

- Write the changes to disk by using the 'w' command.

```
Command (m for help): w
The partition table has been altered!
Calling ioctl() to re-read partition table.
WARNING: If you have created or modified any DOS 6.x
partitions, please see the fdisk manual page for additional
information.
Syncing disks.
```

- Run fdisk on the primary flash device (normally /dev/hda) again.

```
fdisk /dev/hda
```

- Confirm the partition table only shows hda1 and hda2 by using the 'p' command.

```
Command (m for help): p
Disk /dev/hda: 16 heads, 63 sectors, 15538 cylinders
Units = cylinders of 1008 * 512 bytes
   Device Boot      Start         End      Blocks   Id  System
/dev/hda1    *           1          131       65992+   83  Linux
/dev/hda2                132          148         8568   83  Linux
```

- Create a new 3rd partition by using the following options:

- ◇ n (add new partition)
- ◇ p (primary partition)
- ◇ 3 (partition number)
- ◇ <enter> (accept the default which should be around 149)
- ◇ +1000M (make it a 1GB partition)

- The sequence should look similar to the following.

```
Command (m for help): n
```

```
Command action
  e   extended
  p   primary partition (1-4)
p
Partition number (1-4): 3
First cylinder (149-15538, default 149):
Using default value 149
Last cylinder or +size or +sizeM or +sizeK (149-15538, default 15538): +1000M
```

- Create a new 4th partition by using the following options:

- ◇ n (add new partition)
- ◇ p (primary partition)
- ◇ 4 (partition number)
- ◇ <enter> (accept the default which should be around 2181)
- ◇ <enter> (make it use the remain available space)

- The sequence should look similar to the following.

```
Command (m for help): n
Command action
  e   extended
  p   primary partition (1-4)
p
Partition number (1-4): 4
First cylinder (2181-15538, default 2181):
Using default value 2181
Last cylinder or +size or +sizeM or +sizeK (2181-15538, default 15538):
Using default value 15538
```

- Confirm the partitions and sizes by using the 'p' command.

```
Command (m for help): p
Disk /dev/hda: 16 heads, 63 sectors, 15538 cylinders
Units = cylinders of 1008 * 512 bytes
   Device Boot      Start         End      Blocks   Id  System
/dev/hda1  *           1          131     65992+   83  Linux
/dev/hda2             132          148       8568    83  Linux
/dev/hda3             149         2180    1024128   83  Linux
/dev/hda4             2181        15538    6732432   83  Linux
```

- Write the changes to disk by using the 'w' command.

```
Command (m for help): w
The partition table has been altered!
Calling ioctl() to re-read partition table.
WARNING: If you have created or modified any DOS 6.x
partitions, please see the fdisk manual page for additional
information.
Syncing disks.
```

- Reboot the router after completing the partition changes.

- Run the `addon_hd` configuration script (`addon_hd configure`).

```
# addon_hd configure
Creating a default add-on hard drive configuration...
Checking for a hard drive or flash drive...
  Probing hdb... not found.
  Probing hdc... not found.
  Probing hdd... not found.
Using the 3rd and 4th partitions on the primary flash drive.
```

- Format the partitions by using `addon_hd format` script (`addon_hd format`).

```
# addon_hd format
WARNING: All data and programs on the add-on drive will be lost!
Are you sure you want to format the add-on drive (y/N)? y
  Formatting program partition... done.
  Formatting data partition... done.
Starting the add-on hard drive service...
  Mounting add-on program partition read-only... done.
  Mounting add-on data partition read-write... done.
done.
```

- Enable the `addon_hd` (Enable `addon_hd`) so that it starts at boot.

```
# Enable addon_hd
addon_hd enabled on boot.
```

- Start the `addon_hd` feature (Start `addon_hd`) to make it available for use (most likely it is already started from the previous command).

```
# Start addon_hd
Add-on hard drive service is already started.
```

- Perform a "`df -h`" to confirm the `addon_hd` feature is working as evidenced by a 1GB `/dev/hda3` partition mounted on `/opt` and another larger `/dev/hda4` partition (size depends on the size of the flash) mounted on `/data`.

```
# df -h
Filesystem      Size      Used Available Use% Mounted on
rootfs          63.3M     47.6M    12.7M   79% /
/dev/root.old   63.3M     47.6M    12.7M   79% /
/dev/hda3       984.4M    16.0M    918.3M   2% /opt
/dev/hda4       6.3G     32.1M     6.0G    1% /data
```