

# How to configure Hardware Raid on Dell Server

Saturday, July 06, 2013 [RAID](#) [2 comments](#)

In this article we are going to configure hardware raid on the Dell server PowerEdge R510 with 12 disks and PowerEdge Raid Controller (PERC) H700 internal integrated

**Dell PowerEdge R510 :**



Before going to the configuration lets see some basic about Hardware Raid :

- Hardware Raid is important for a system performance Its offload the CPU task like calculation of RAID parities and I/O processes
- PERC H700 offer 512MB cache memory with Battery Backup Unit that's why It has a default Write Back Cache Policy
- Writes are cached to the raid controller's RAM and in the event of power loss BBU saves pending writes and cached data
- BBU also offers faster rebuilds and higher write throughput

Now Let's see step by step Hardware RAID 5 configuration on the Dell R510 server

**Step 1:** Reboot the server and then **press <Ctrl><R>** to go into the RAID controller BIOS

```
Phoenix ROM BIOS PLUS Version 1.10 1.9.0
Copyright 1985-1988 Phoenix Technologies Ltd.
Copyright 1990-2011 Dell Inc.
All Rights Reserved

Dell System PowerEdge R510
www.dell.com

Two 2.40 GHz Quad-core Processors, Bus Speed:5.86 GT/s, L2/L3 Cache:1 MB/12 MB
System running at 2.40 GHz
System Memory Size: 48.0 GB, System Memory Speed: 1067 MHz, Voltage: 1.35V

Broadcom NetXtreme II Ethernet Boot Agent v6.0.11
Copyright (C) 2000-2010 Broadcom Corporation
All rights reserved.
Press Ctrl-S to enter Configuration Menu
PowerEdge Expandable RAID Controller BIOS
Copyright(c) 2010 LSI Corporation
Press <Ctrl><R> to Run Configuration Utility

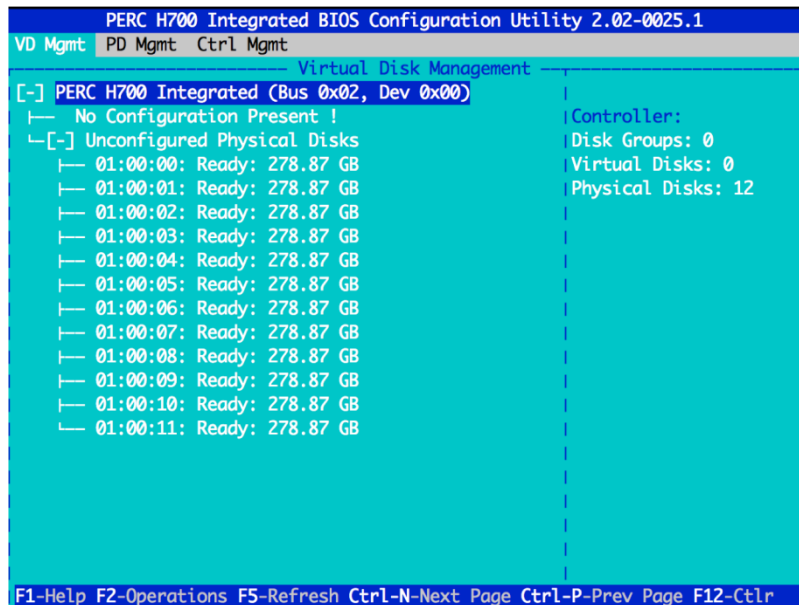
F2 = System Setup
F10 = System Services
F11 = BIOS Boot Manager
F12 = PXE Boot
```

**Step 2:** Now you are in the RAID BIOS and Default display is VD Mgmt it will display current status of raid controller

There is no raid configuration present on the system & 12 unconfigured physical disks are ready status

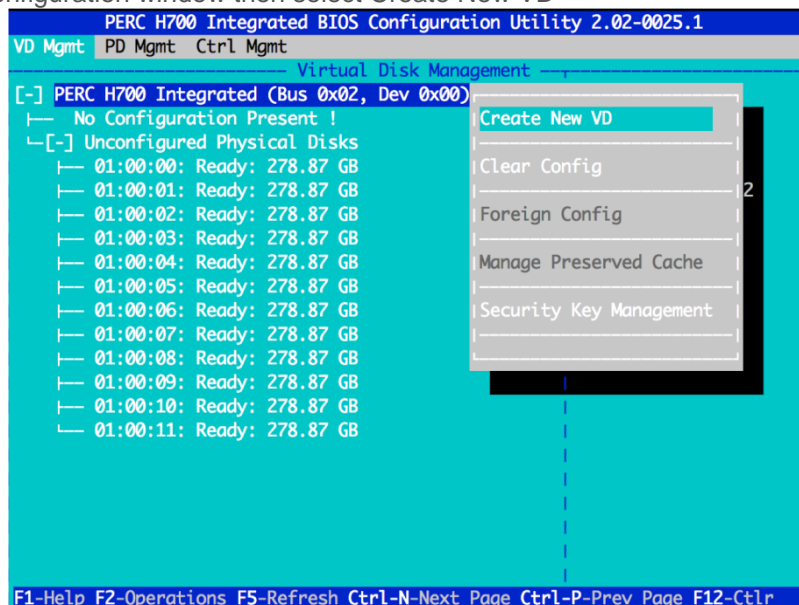
Let's configure the RAID 5

Select PERC H700 Integrated raid controller & Press <F2>

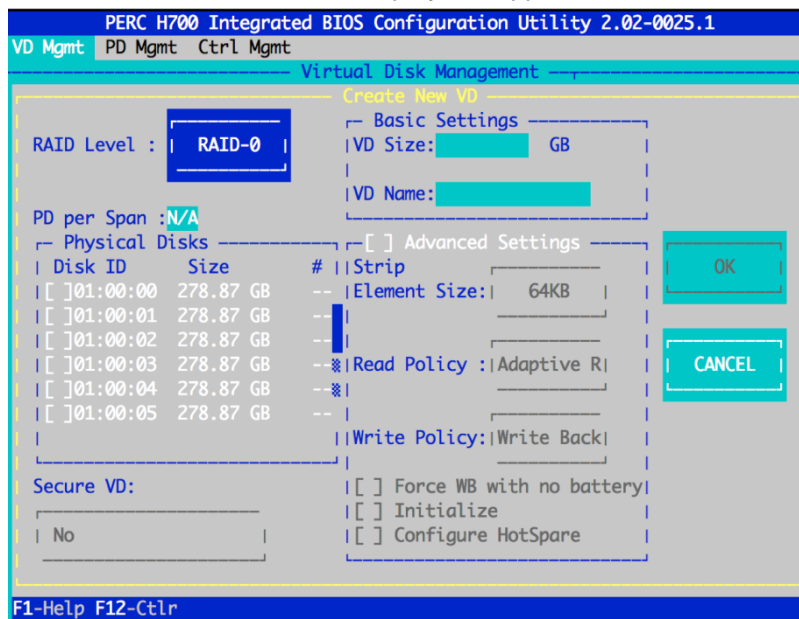


### Step 3: Create New Virtual Disk

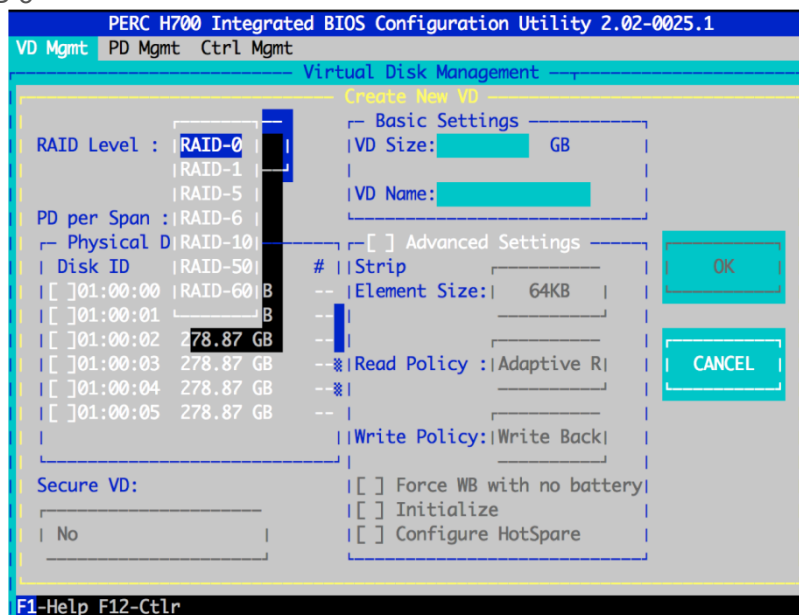
It displays the configuration window then select Create New VD



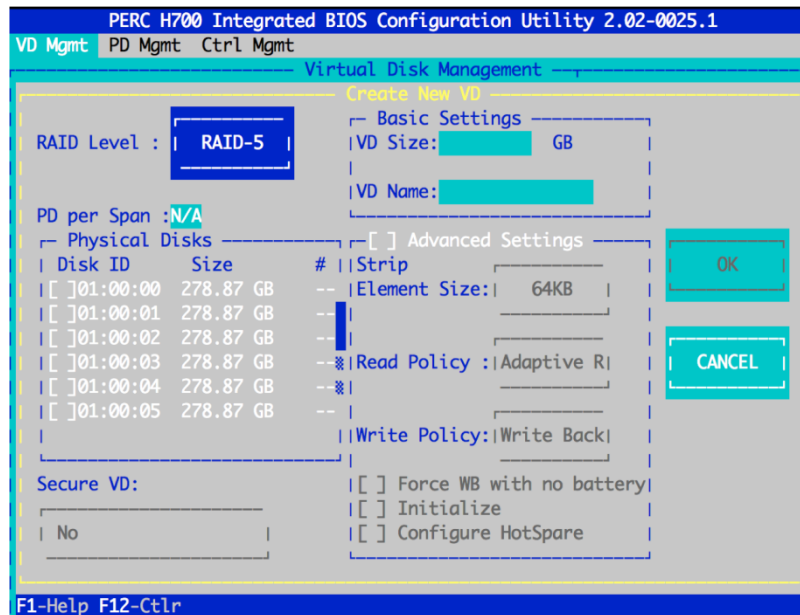
**Step 4:** Press enter on RAID Level then it will display all supported raid levels



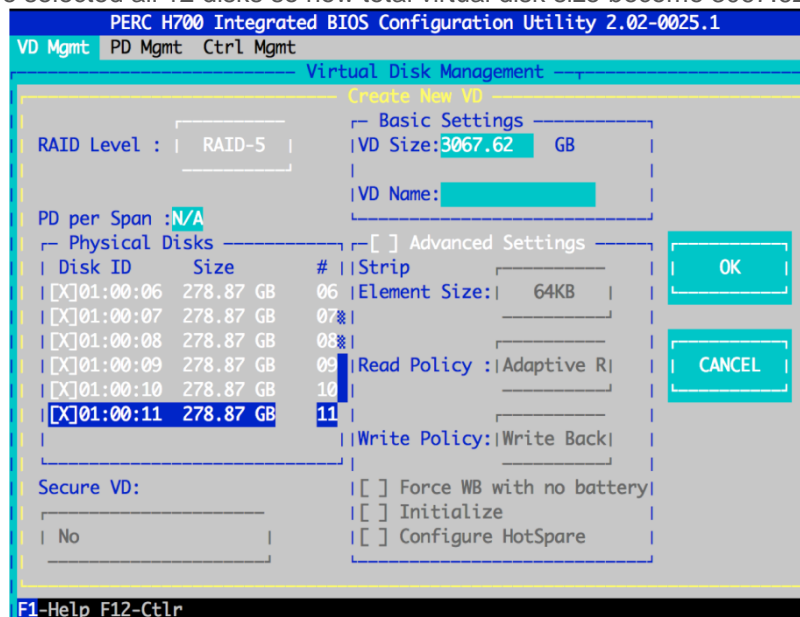
**Step 5:** Raid Controller PERC H700 support RAID Levels 0,1,5,6,10,50,60  
Let's select RAID 5



**Step 6:** Select all physical disks

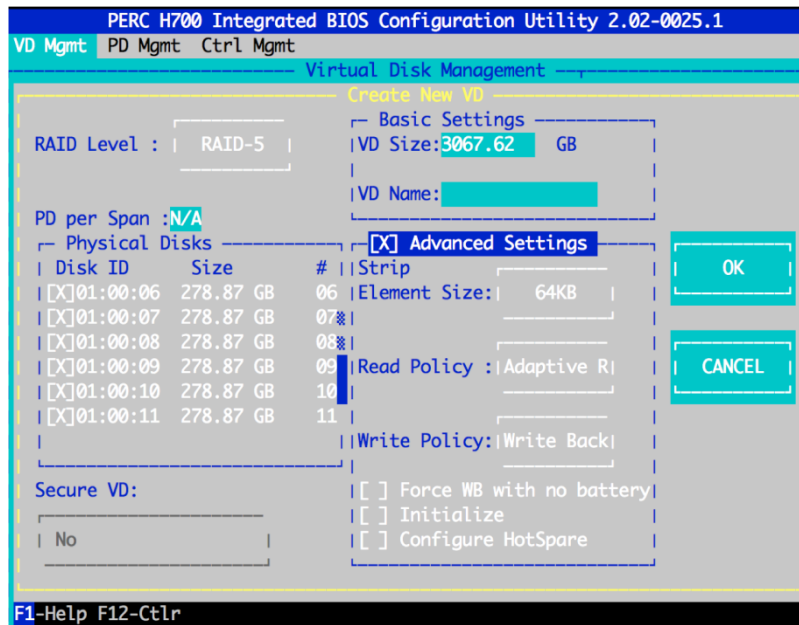


**Step 7:** We have selected all 12 disks so now total virtual disk size become 3067.62 GB

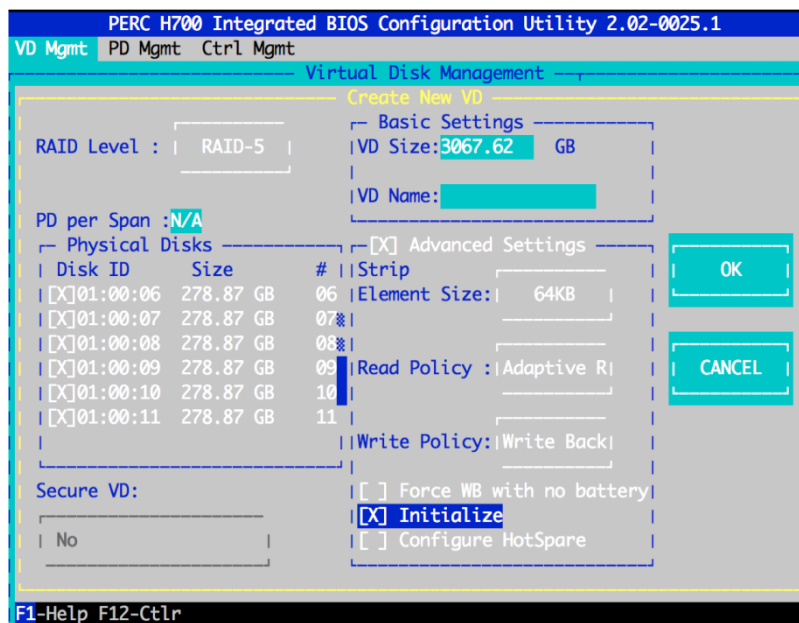


**Step: 8** Select Advanced settings

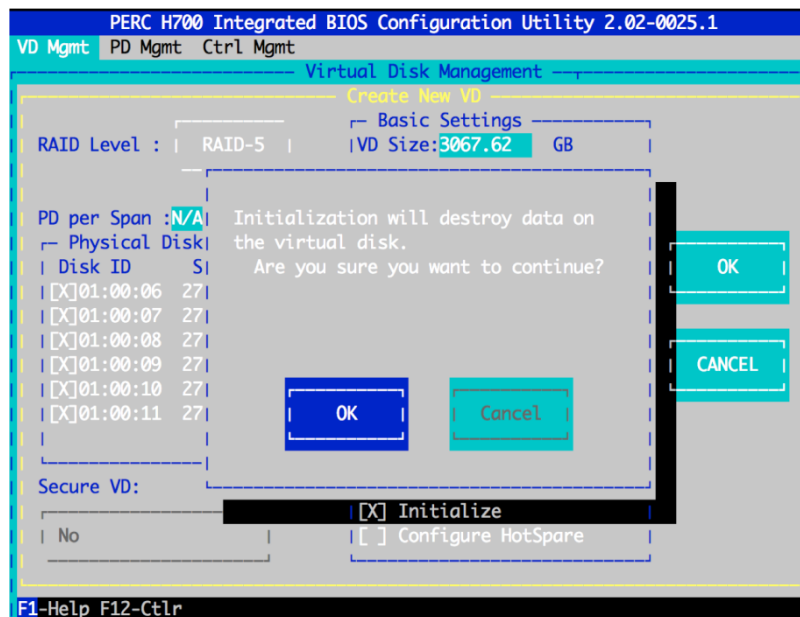
- Stripe Element Size : 64 KB
- Read Policy : Adaptive Read
- Write Policy : Write Back
- Force WB with no battery = If you select this option then you will lose data during power failure
- Initialize = it will destroy all data on Virtual disk
- Configure Host Spare = If you select this option then in the event of disk failed system auto replaced failed disk with spare disk & rebuild it (But you need to keep on spare disk)



**Step: 9** Select Initialize and It will destroy all Hard disks data (if you have any data make sure you have backed up )



**Step: 10** Press OK to format all disks & It will create a single large virtual disk with RAID 5



**Step: 11** Now Operating system can see the single VD and Server is ready to install the OS

