Ready to Migrate to Microsoft Windows Server 2012…?

By Barun Chaudhary & Perumal Raja

Abstract:
Microsoft Windows Server 2012, Microsoft's latest server operating system provides a wide spectrum of operating system features that takes the IT Infrastructure of an Organization to the next level. Dell as one of the leading hardware manufacturer is all set to enable this operating system on its wide range of products.

Microsoft has taken a big leap into innovation with Microsoft Windows Server 2012, the latest server operating system released by Microsoft. This transformation of Microsoft's server operating system leads to a versatile Server and Cloud platform with key enhancements in areas including networking, storage, advanced security features, centralized server management, performance and reliability monitoring, virtualization and cloud computing. With these enhancements organizations can transform their IT Infrastructure into a more flexible, cost effective and versatile datacenter.

This article describes Dell's support for Microsoft Windows Server 2012 and other important considerations that should be known while upgrading your server from previous Microsoft Operating System to Microsoft Windows Server 2012.

With the core objective of ensuring that Dell servers are ready to support this new operating system at the release, Dell has worked extensively with Microsoft during the development phase of this operating system. The focus was two-fold, first to ensure all the operating system features work seamlessly on our supported platforms and second to provide rich management experience with Dell's OpenManage support for this operating system.

Dell Server support for Microsoft Windows Server 2012

Dell supports Microsoft Windows Server 2012 on a wide array of Dell PowerEdge and Dell PowerEdge C server platforms across four server generations. Dell servers can be categorized under 2 support philosophies, listed below.

Dell Qualified: *Dell™ Engineering has successfully tested and validated the current and immediately preceding released operating system (OS) version on Dell PowerEdge™ Servers. Dell adheres to all published partner test plans to ensure OS compatibility and provides full technical support for the Dell hardware components running on the OS. Dell Qualified systems have Open Manage support.*

Dell Supported: *Dell™ Engineering has tested this current operating system (OS) version on Dell PowerEdge Servers to ensure OS compatibility. While most OS features work as expected on this platform, some certification tests could not be completed successfully. These findings are documented at Dell.com/ostechsheets. Dell Supported systems may not have OpenManage support. Also updated drivers may not be available from Dell for these systems.*

Dell's 11th and 12th generation of servers are classified under Dell Qualified category whereas Dell's 9th and 10th generation of server are classified under Dell Supported category. The complete list of servers supported with Microsoft Windows Server 2012 is listed in table below.

Note: You can find the minimum BIOS version required for these servers here.

Dell Qualified PowerEdge Servers for Microsoft Windows Server 2012:

11th Generation Servers	12th Generation Servers
PowerEdge R910	PowerEdge R820
PowerEdge R810	PowerEdge R720
PowerEdge R710	PowerEdge R720XD
PowerEdge R610	PowerEdge R620
PowerEdge R510	PowerEdge R520
PowerEdge R410	PowerEdge R420
PowerEdge R310	PowerEdge R320
PowerEdge R210 II	PowerEdge T620
PowerEdge R210	PowerEdge T420
PowerEdge R815	PowerEdge T320
PowerEdge R715	PowerEdge M820
PowerEdge R515	PowerEdge M620
PowerEdge R415	PowerEdge M520
PowerEdge T710	PowerEdge M420
PowerEdge T610	
PowerEdge T410	
PowerEdge T310	
PowerEdge T110 II	
PowerEdge T110	
PowerEdge M910	
PowerEdge M710HD	
PowerEdge M710	
PowerEdge M610x	
PowerEdge M610	
PowerEdge M915	

Table-1 : Dell Qualified PowerEdge Servers

Dell Qualified PowerEdge C Servers for Microsoft Windows Server 2012:

PowerEdge C Servers
PowerEdge C8220
PowerEdge C6220
PowerEdge C6145
PowerEdge C6105
PowerEdge C6100
PowerEdge C5220
PowerEdge C2100
PowerEdge C1100

Table-2 : Dell Qualified PowerEdge C Servers

Note: Dell PowerEdge C Servers are currently under test to get certified by Microsoft for Microsoft Windows Server 2012.

Dell Supported PowerEdge Servers for Microsoft Windows Server 2012:

9th Generation Servers	10th Generation Servers
PowerEdge 6950	PowerEdge R900

PowerEdge 2950 III	PowerEdge R300
PowerEdge 2950	PowerEdge R200
PowerEdge 2900 III	PowerEdge R905v
PowerEdge 2900	PowerEdge R805v
PowerEdge 1950 III	PowerEdge 2970
PowerEdge 1950	PowerEdge T300
PowerEdge 1900	PowerEdge T100
PowerEdge SC1435	PowerEdge T605
PowerEdge 1955MC	PowerEdge T105
	PowerEdge M600
	PowerEdge M905
	PowerEdge M805
	PowerEdge M605

Table-3 : Dell Supported PowerEdge Servers

You can refer to Dell's Early Adopters' Guide for a comprehensive list of storage and network controllers which are supported with Microsoft Windows Server 2012; however we would like to call out few specific limitations and our recommendations for Dell's Software RAID support.

Dell Software RAID Controller Support for Microsoft Windows Server 2012
Dell provides cost effective raid support through PERC S100, S300 and S110. Of these only the PERC S110 controller is supported with Microsoft Windows Server 2012 and its driver availability can be checked here.

The PERC S100 and S300 controllers do not have support for Microsoft Windows Server 2012 and there is no plan to support these controllers with Microsoft Windows Server 2012 in future. Customers who are using Dell servers with PERC S100 and S300 controllers have to switch to one of the below alternate options if they want to install Microsoft Windows Server 2012 on their servers.

Option1: Converting PERC S100 into on-board SATA controller
Note: No data is migrated and this is not a replacement of PERC S100 solution. Data needs to be backed up before following the below steps.
1. Power on the server and press F2 to enter the BIOS settings.
2. Enter the BIOS setup -> SATA settings option and change it to ATA or ACHI mode whichever is available. Refer Figure-1.
3. Save and Exit the setup.
4. Boot from the Microsoft Windows Server 2012 DVD and complete the installation.

Option2: Switching to on-board SATA controller from PERC S300
Note: No data is migrated and this is not a replacement of PERC S300 solution. Data needs to be backed up before following the below steps.
1. Open the server and remove the internal SATA cables connected to the S300 controller and connect it to the On-Board SATA controller ports of the server.
2. Power on the server and press F2 to enter the BIOS settings.
3. Enter the BIOS setup -> SATA settings option and change it to ATA or ACHI mode whichever is available. Refer Figure-1.
4. Save and Exit the setup.
5. Boot from the Microsoft Windows Server 2012 DVD and complete the installation.
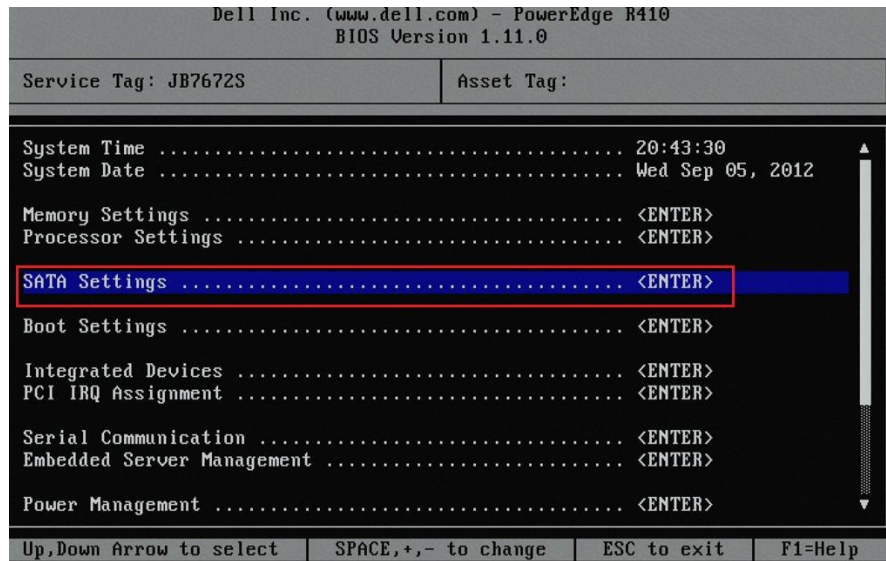
Figure-1 : BIOS Setup Screen

Option 3: Buying a new supported PERC controller from Dell
You can purchase additional supported RAID controllers via the spare parts sales teams with a phone call to Dell or you can also order online via the S&P sales catalog. To order online, go to http://accessories.dell.com and search for "PERC".

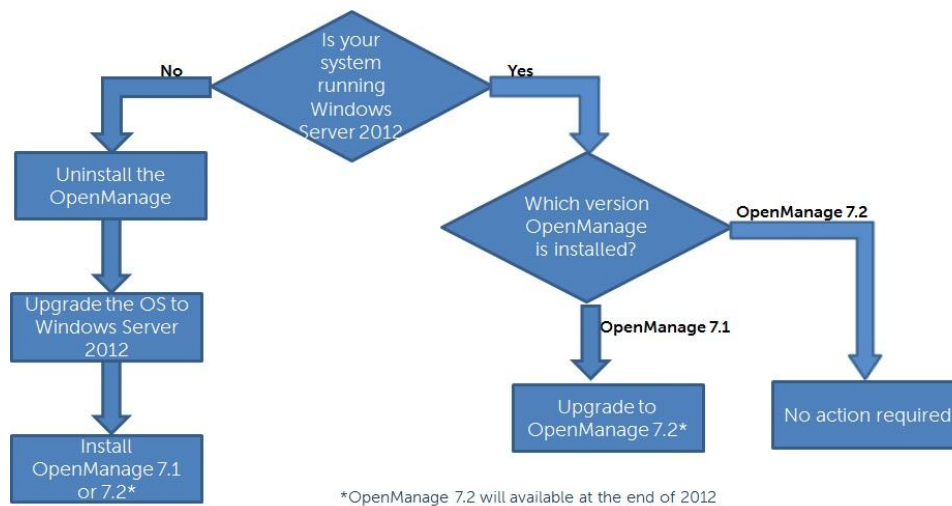**Microsoft Windows Server 2012 provided RAID solution:**

Installing Microsoft Windows Server 2012 utilizing the on-board SATA controller doesn't provide data redundancy. In the event you want data redundancy, you can use the software raid functionality provided by the Microsoft Windows Server 2012 operating system.
1. Go to disk management.
2. Right click on the disks and convert it to dynamic disk.
3. Right click on the volume for which you want redundancy and create "Mirrored Volume" or "RAID-5 volume"
Note: Redundancy can be provided for both data and operating system volume but the latter supports only "Mirrored Volume". For more information about using operating system raid solution refer to Microsoft documents

Dell OpenManage Support for Microsoft Windows Server 2012
Dell OpenManage systems management suite provides proactive monitoring, notification, and remote access for Dell systems. OpenManage 7.1 which is currently available from Dell provides partial support for Microsoft Windows Server 2012. OpenManage 7.2 is planned to release towards the end of the year and will provide complete support for Microsoft Windows Server 2012. When upgrading a system to Microsoft Windows Server 2012, Dell recommends that administrators first uninstall the existing Dell OpenManage software, upgrade the operating system to Microsoft Windows Server 2012, and then install Dell OpenManage 7.1 or later. But OpenManage upgrade without an operating system upgrade is supported. For example If you have installed OpenManage 7.1 on Microsoft Windows Server 2012, you can upgrade to OpenManage 7.2 when it is available. For detailed installation instructions, see the Dell OpenManage Installation and Security User's Guide available on the Dell Systems Management Tools and Documentation DVD. You can use the flow chart in Figure-2 to decide on the required steps while upgrading your system with Dell OpenManage.

Figure-2 : Steps to Upgrade Dell Servers with Dell OpenManage

Microsoft Windows Server 2012 Supported Upgrade Path
Microsoft supports upgrading your server to Microsoft Windows Server 2012 from Microsoft Windows Server 2008 with SP2 and Microsoft Windows Server 2008 R2 with SP1 between below mentioned editions.

Upgrade From	Upgrade To
Windows Server 2008 with SP2- Standard Edition	Windows Server 2012 - Standard or Datacenter Edition
Windows Server 2008 with SP2- Enterprise Edition	Windows Server 2012 - Standard or Datacenter Edition
Windows Server 2008 with SP2- Datacenter Edition	Windows Server 2012 - Datacenter Edition
Windows Server 2008 with SP2- Web Edition	Windows Server 2012 - Standard Edition
Windows Server 2008 R2 with SP1- Standard Edition	Windows Server 2012 - Standard or Datacenter Edition
Windows Server 2008 R2 with SP1- Enterprise Edition	Windows Server 2012 - Standard or Datacenter Edition
Windows Server 2008 R2 with SP1- Datacenter Edition	Windows Server 2012 - Datacenter Edition
Windows Server 2008 R2 with SP1- Web Edition	Windows Server 2012- Standard Edition

Table-4 : Microsoft Supported Upgrade Paths

With the Microsoft Windows Server 2012 release, Dell systems are shipped with a multilingual operating system media if the server is ordered with operating system installed from Dell. This new multilingual operating system media provides customers a single place holder to provide all Dell supported operating system languages; however Simplified and Traditional Chinese operating system image comes in a separate media. While upgrading or reinstalling your operating system using this multilingual media customer needs to boot from the media and on the very first screen they need to select the language of their choice as shown in Figure-3. The rest of the installation steps are same as normal Microsoft Windows Server 2012 installation steps. For detailed steps of how to install the operating system on Dell server please refer to Dell's Installation Guide.

Figure-3 : Language Selection Screen

With the wide range of products in Dell portfolio, Dell is ready to provide a rich and advance customer experience with Microsoft Windows Server 2012. For a list of known issues and their workaround you can refer to Dell's Important Information Guide and for installation steps you can refer to Dell's Installation Guide.

References:
- Microsoft | Microsoft Windows Server 2012
- Dell | Microsoft Windows Server 2012
- Dell's Early Adopters' Guide for Microsoft Windows Server 2012
- Dell's Important Information Guide for Microsoft Windows Server 2012
- Dell's Installation Guide for Microsoft Windows Server 2012
- Dell Documentation for Microsoft Windows Server 2012

Barun Chaudhary is a software engineer on Dell Enterprise Operating System team, specializing in Virtualization and Networking technologies.

Perumal Raja is a software engineer on Dell Enterprise Operating System team, specializing in Storage and Deployment technologies.