

# Building the 1st Gen PureTEC and Solutions Engineering Lab

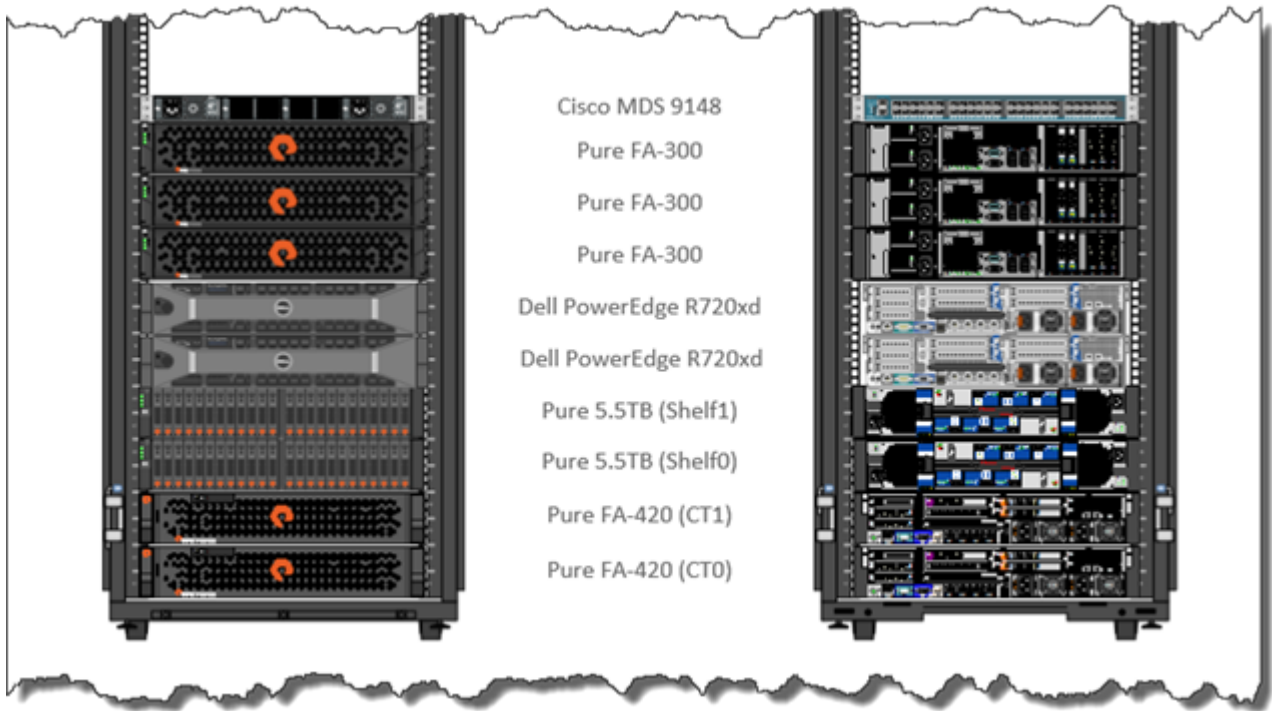
I had the best Christmas at home and at Pure with PureTEC. The week before Christmas I spent time racking the gear and getting everything squared away so I could start building out the infrastructure for the Microsoft SQL Server Reference Architecture (RA) I am aiming to deliver in Q1 CY14. It's not often one gets the opportunity to start from scratch building out their own pod.



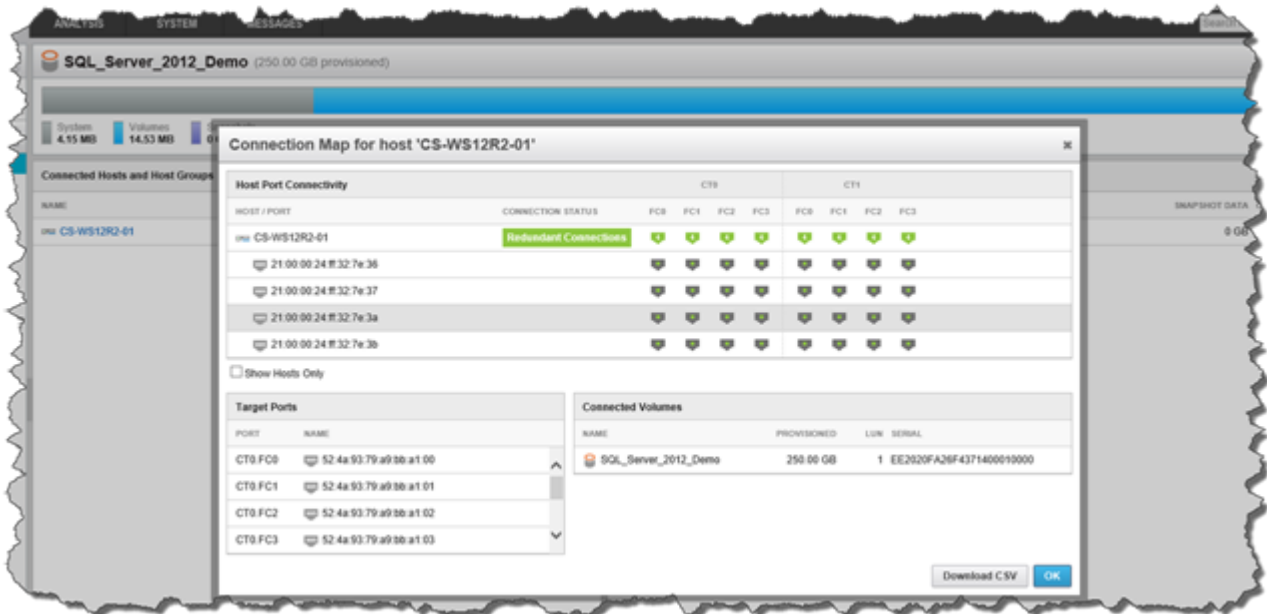


Now that all the Christmas festivities are over at the house and the kids are about to head back to college I've been back in the office focused on Stage 2 of getting the infrastructure setup with cabling, switch zoning and software. So far the pod I am building has the following PureTEC components:



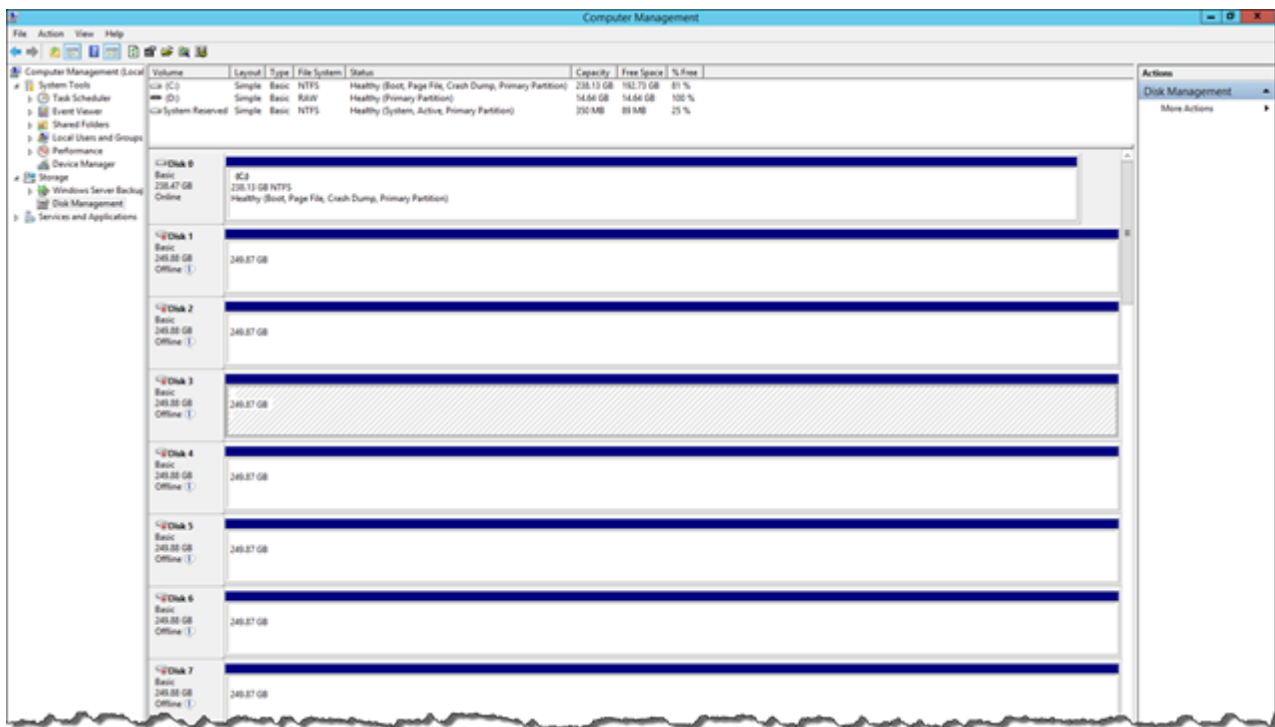


Got a switch zoneset configured from one of the FA-300s, which I have re-purposed as a server, to the FA-420 with Windows Server 2012 R2 and SQL Server 2012. Right now just doing some basic testing using direct attached SSD for a few upcoming demos then I will be switching everything over to boot from SAN.



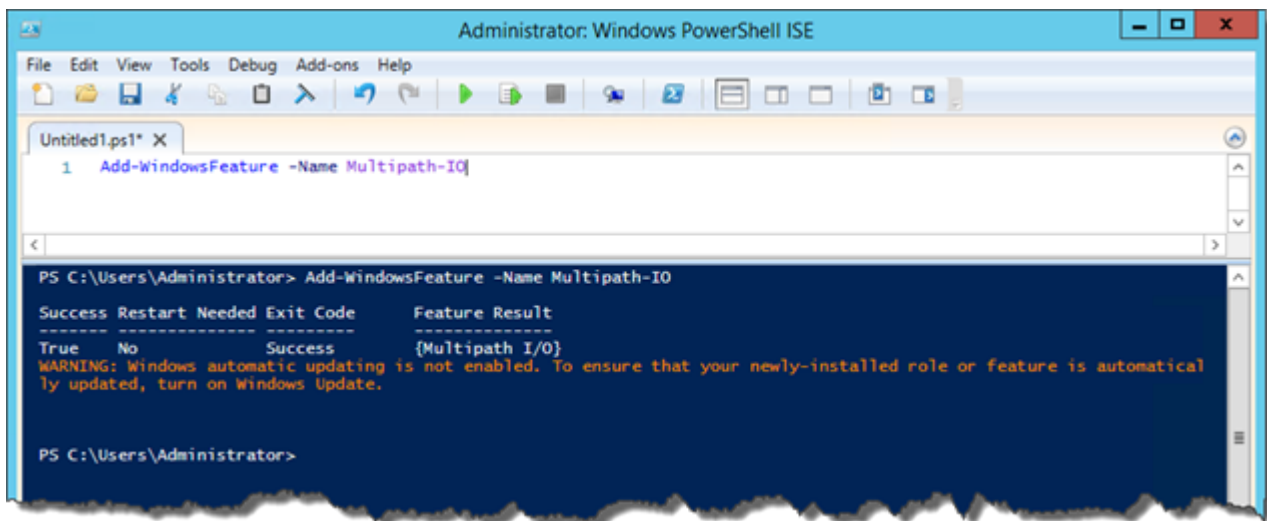
One of the most important things to ensure you enable on the Windows Server 2012 R2 host is Multipath I/O (MPIO) to ensure you redundant physical connection support to the Pure Storage array. Without MPIO installed using Windows Computer Management/Storage/Disk Management you will see something like below, lots and lots and lots of drives. In my case 32 to be exact, the math  $[(4 \text{ redundant connections}) \times (2$

controllers)) x (4 HBA ports)] = 32.



We work with the out-of-the-box Microsoft Device Specific Module (DSM) so you just need to make sure that the MPIO feature is added to Windows and then make sure that the PURE FlashArray is listed in the MPIO Properties. To add MPIO to Windows Server you can use one line of PowerShell:

```
[crayon-64277d7a4f329068309412/]
```



Once MPIO is installed one more line of PowerShell to check that the PURE FlashArray is listed:

```
[crayon-64277d7a4f33a847033473/]
```

```
PS C:\Users\Administrator> Get-MSDSMSupportedHW

VendorId ProductId
-----
PURE     FlashArray

PS C:\Users\Administrator>
```

I haven't made any tweaks to the MPIO settings but just got the basics working, I'll discuss changing some of the MPIO settings in a future post. For now to check what the current defaults are for MPIO use: [crayon-64277d7a4f33c707791988/]

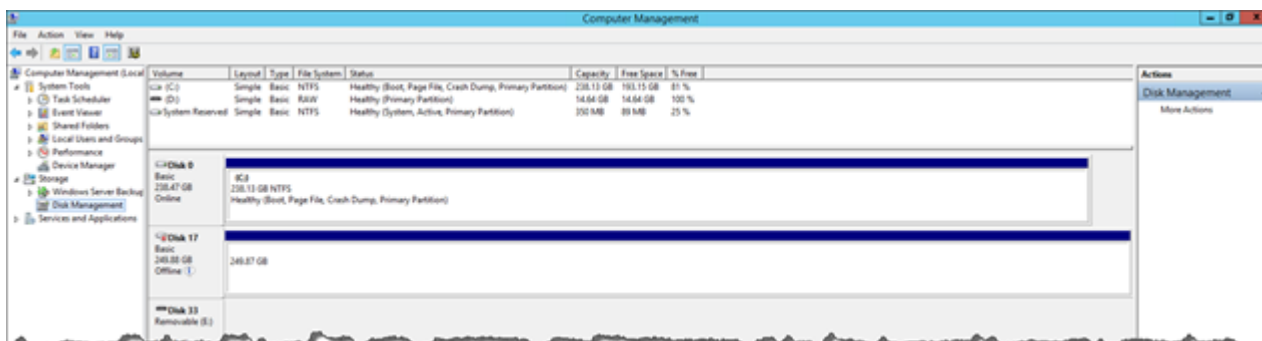
```
Administrator: Windows PowerShell ISE

1 Get-MPIOSetting

PS C:\Users\Administrator> Get-MPIOSetting

PathVerificationState : Disabled
PathVerificationPeriod : 30
PDORemovePeriod : 20
RetryCount : 3
RetryInterval : 1
UseCustomPathRecoveryTime : Disabled
CustomPathRecoveryTime : 40
DiskTimeoutValue : 60
```

Once MPIO is installed performing a rescan using Windows Computer Management/Storage/Disk Management will result in a single disk with redundant paths. Now, let's talk more PureTEC.



Time to get back to work on configuring MPIO specifics, migrating my SQL Server database to the Pure Storage LUN and working on some PowerShell to take PureTEC snapshots and create new hosts to mount those snapshots.

Thanks,  
Barkz