Quick Start Guide:
Creating HA Device with StarWind Virtual SAN Free

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TECHNICAL PAPER

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About StarWind

StarWind is a pioneer in virtualization and a company that participated in the development of this technology from its earliest days. Now the company is among the leading vendors of software and hardware hyper-converged solutions. The company's core product is the years-proven StarWind Virtual SAN, which allows SMB and ROBO to benefit from cost-efficient hyperconverged IT infrastructure. Having earned a reputation of reliability, StarWind created a hardware product line and is actively tapping into hyperconverged and storage appliances market. In 2016, Gartner named StarWind "Cool Vendor for Compute Platforms" following the success and popularity of StarWind HyperConverged Appliance. StarWind partners with world-known companies: Microsoft, VMware, Veeam, Intel, Dell, Mellanox, Citrix, Western Digital, etc.

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Introduction

StarWind Virtual SAN Free allows creating a fault tolerant and high performing storage pool by mirroring existing server's internal storage between nodes. It is a free version of StarWind Virtual SAN that eliminates need in physical shared storage. StarWind Virtual SAN Free is a full-fledged production platform offering all the features of StarWind VSAN. It utilizes all the industry-standard uplink protocols like iSCSI, SMB3, NFS and the latest iSER and NVMf. It is shipped with a number of ready to use Powershell scripts and supports both hyper-converged and "compute and storage separated" configurations. It is completely functional and allowed for production.

This guide is intended for experienced Windows Server users and administrators who are willing to configure a two-node highly available device that will run on top of Windows Server 2012 R2 using StarWind Virtual SAN Free.

A full set of up-to-date technical documentation can always be found here, or by pressing the **Help** button in the StarWind Management Console.

For any technical inquiries please visit our online community, Frequently Asked Questions page, or use the support form to contact our technical support department.
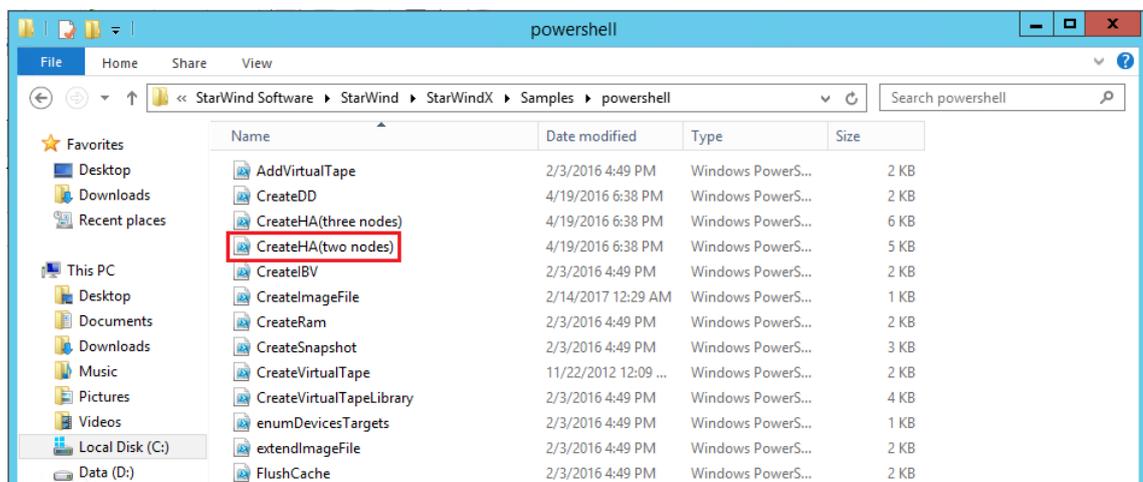
Implementation

1.   Open the folder containing StarWind PowerShell samples.

By default, samples are located under the path:
C:\Program Files\StarWind Software\StarWind\StarWindX\Samples\powershell.

2.   Locate the file named CreateHA(two nodes).ps1 and copy it to any other place for further editing.

3.   Open the file CreateHA(two nodes).ps1 file with PowerShell ISE (or any other text editor) and change the values marked with red.

4.   For the first StarWind node:

- *host*; Enter the IP address of the host that has StarWind service installed;

- *port*; Enter the StarWind service connection port number (3261 by default);

- *user* and *password*; Enter the StarWind username and password (default values are: username: root, password: starwind);

- *firstNode.ImagePath*; Enter the path to an existing directory where image file will be located;

- *firstNode.ImageName*; Enter an image file name;

- *firstNode.Size*; Enter an image file size in megabytes;

- *firstNode.CreateImage*; Create an image file.

NOTE that firstNode.CreateImage value should be equal to $true;

- *firstNode.TargetAlias*; Enter the alias of the target;

- *firstNode.AutoSynch*; Make sure to specify automatic or manual synchronization after device creation by setting the value of this variable to either $true or $false;

- *firstNode.SyncInterface*; Synchronization interfaces. Enter the IP address(es) of the partner node interface(s) (the "second" StarWind node) which will be used as the synchronization channel;

- *firstNode.HBInterface*; Heartbeat interfaces. Enter the IP address(es) of the partner interface(s) (the "second" StarWind node) which will be used as the heartbeat channel;

- *firstNode.CacheSize*; Enter the L1 cache size in megabytes or leave it as "" in case you would like it to be N/A;

- *firstNode.CacheMode*; Caching mode ("none" - without caching, "wt" – write-through mode or "wb" - write-back mode). Enter the necessary value;

- *firstNode.PoolName*; Enter the pool name in case you would like your resource to be tagged in SMI-S provider. Enter leave it as "" in case you do not need to tag your resources to the SMI-S provider;

- *firstNode.SyncSessionCount*; Synchronization session count. Make sure you set the value of the variable to "1";

- *firstNode.ALUAOptimized*; Set ALUA optimization by entering $true or $false values.

- *firstNode.SectorSize*; Enter device sector size (512 for ESXi or 4096 for Hyper-V, SOFS);

- firstNode.SerialID; Comment out this line.

5. For the second StarWind node:

```
CreateHA(two nodes).ps1  X
36        $secondNode = new-Object Node
37
38        $secondNode.HostName = "172.16.10.20"
39        $secondNode.HostPort = "3261"
40        $secondNode.Login = "root"
41        $secondNode.Password = "starwind"
42        $secondNode.ImagePath = "My computer\D\Starwind"
43        $secondNode.ImageName = "partnerImg1"
44        $secondNode.Size = 2048
45        $secondNode.CreateImage = $true
46        $secondNode.TargetAlias = "partnerha1"
47        $secondNode.AutoSynch = $true
48        $secondNode.SyncInterface = "#p1=172.16.30.10:3260,172.16.40.10:3260"
49        $secondNode.HBInterface = "#p1=172.16.10.10:3260,172.16.20.10:3260"
50        $secondNode.ALUAOptimized = $true
51
52        $device = Add-HADevice -server $server -firstNode $firstNode -secondNode $secondNode -initMethod "Clear"
```

- *secondNode.HostName*; Enter a the IP address of a host where StarWind service is running;
- *secondNode.HostPort*; Enter the number of a port for connecting to the StarWind Service (3261 by default);
- *secondNode.Login* and *secondNode.Password*; Enter StarWind username and password (default values are: username: root, password: starwind);
- *secondNode.ImagePath*; Enter the path to an existing directory where image file will be located on the partner node (second node);
- *secondNode.ImageName;* Enter an image file name;
- *secondNode.Size;* Enter an image file size in megabytes. Note that is has be equal to the value of *firstNode.Size*;
- *secondNode.CreateImage;* Create an image file. Note that *secondNode.CreateImage* value should be equal to $true;
- *secondNode.TargetAlias;* Enter the alias of the target;
- *secondNode.AutoSynch;* Make sure to specify automatic or manual synchronization after device creation by setting the value of this variable to either $true or $false;
- *secondNode.SyncInterface;*
- Synchronization interfaces. Enter the IP address(es) of the partner node interface(s) (the "first" StarWind node) which will be used as the synchronization channel;
- *secondNode.HBInterface;* Heartbeat interfaces. Enter the IP address(es) of the partner node interface(s) (the "first" StarWind node) which will be used as the heartbeat channel;
- *secondNode.ALUAOptimized;* Set ALUA optimization by entering $true or $false values.

6. Run the script. After the HA device creation you should see the following:

7. In order to list all the devices and targets on the StarWind host, run the enumDevicesTargets.ps1 script.
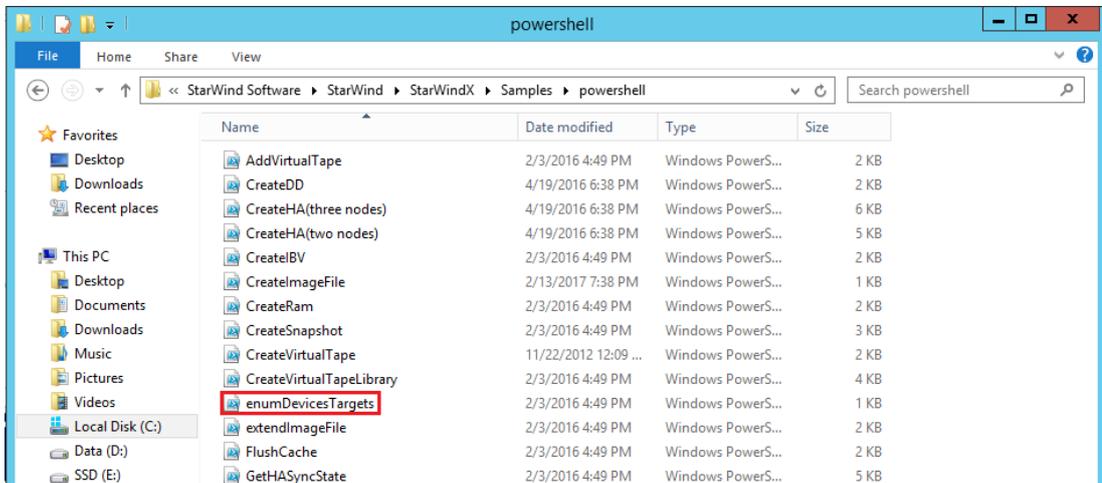
8. Make sure you modify the values marked with a red line in order to fit your setup (host IP, port, user, password), save the script and run it.

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