StarWind iSCSI SAN & NAS:

HA Maintenance and Configuration Changes
April 2013
TRADEMARKS

“StarWind”, “StarWind Software” and the StarWind and the StarWind Software logos are trademarks of StarWind Software which may be registered in some jurisdictions. All other trademarks are owned by their respective owners.

CHANGES

The material in this document is for information only and is subject to change without notice. While reasonable efforts have been made in the preparation of this document to assure its accuracy, StarWind Software assumes no liability resulting from errors or omissions in this document, or from the use of the information contained herein. StarWind Software reserves the right to make changes in the product design without reservation and without notification to its users.

TECHNICAL SUPPORT AND SERVICES

If you have questions about installing or using this software, check this and other documents first - you will find answers to most of your questions on the Technical Papers webpage or in StarWind Forum. If you need further assistance, please contact us.

Copyright ©2009-2013 StarWind Software Inc.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior written consent of StarWind Software.
## CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHANGING AN HA PARTNER NODE</td>
<td>4</td>
</tr>
<tr>
<td>MANUAL SYNCHRONIZATION</td>
<td>9</td>
</tr>
<tr>
<td>PREPARING AN HA DEVICE FOR PROLONGED DOWNTIME</td>
<td>10</td>
</tr>
<tr>
<td>RESTORING A STARWIND SERVER AFTER DOWNTIME</td>
<td>16</td>
</tr>
<tr>
<td>CHANGING SYNCHRONIZATION AND HEARTBEAT CHANNELS</td>
<td>22</td>
</tr>
<tr>
<td>CONFIGURING CHAP FOR AN HA DEVICE</td>
<td>28</td>
</tr>
<tr>
<td>CONTACTS</td>
<td>33</td>
</tr>
</tbody>
</table>
CHANGING AN HA PARTNER NODE

Take the following actions to change an HA partner node:

1. Right-click the required HA device and select **Replication manager** from the shortcut menu.

![Replication Manager](image)

2. **HA Device Replication manager** appears. Click the **Remove replica** menu button.

![Replication Manager Window](image)

3. Click **Yes** to confirm the deletion.
4. Click the **Add replica** menu button.
3. Specify the partner node parameters.

4. Click **Next** to continue.

5. Specify target and virtual disk parameters.

6. Click **Next** to continue.
7. Specify synchronization and heartbeat channels.

8. Click **Next** to continue.

9. Specify cache parameters (the cache type is set automatically in accordance with the partner cache type).

10. Click **Next** to continue.
11. Confirm the settings of a new HA partner target and click **Next** to continue.

12. Click **Finish** to close the wizard.
MANUAL SYNCHRONIZATION

If synchronization of HA device nodes did not start automatically after you brought the nodes online, you can manually start it.

To start an HA nodes synchronization:

1. Right-click the required HA device and select **Synchronization** from the shortcut menu.

2. Select the node you want to use as a source of synchronization.

   **Note**: If you do not know which target has to be used as a source of synchronization, check the **Server Log** or **Event** tabs of each StarWind Server. Select the StarWind Service that went offline last.

3. Click **Synchronize**.
PREPARING AN HA DEVICE FOR PROLONGED DOWNTIME

To prepare an HA device for prolonged downtime (for ESXi):

1. Disconnect targets of an HA device from the client nodes properly.
2. Launch vSphere Client: Start->All Programs->VMware->VMware vSphere Client.
3. Shut down all VMs that store their data on the StarWind HA device by right-clicking a VM and selecting Power -> Shut Down Guest.

4. Right-click each VM that stores its data on the StarWind HA device and click Remove from Inventory.
5. Click the **Configuration** tab.
6. Choose **Storage** in the **Hardware** pane. The list of datastores appears.
7. Right-click each datastore that belongs to the HA device and click **Unmount** on the shortcut menu.

8. Choose **Storage Adapters** in the **Hardware** pane. Select a storage adapter from the **iSCSI Software Adapter** list.
9. In the **Details** section right-click each device and click **Detach** on the shortcut menu.
10. Choose **Storage Adapters** in the **Hardware** pane.
11. Select a storage adapter from the **iSCSI Software Adapter** list.
12. Click the **Properties** link in the **Details** section.
13. In the **iSCSI Initiator window**, switch to the **Dynamic Discovery** tab.
14. Select each StarWind Server and click the **Remove** button.

15. Switch to the **Static Discovery** tab of the **iSCSI Initiator** window.
16. Select each StarWind target and click **Remove**.
To prepare an HA device for prolonged downtime (for Hyper-V servers):

1. Disconnect targets of an HA device from the client nodes properly.
2. Launch **Hyper-V Manager**: Start->Administrative Tools->Hyper-V Manager.
3. Right-click each VM that stores its data on the StarWind HA device and click **Shut Down**.

4. Launch **iSCSI Initiator**: Start->Administrative Tools->iSCSI Initiator.
5. Click each StarWind target and click **Disconnect**.

6. Switch to the **Favorite Targets** tab. Select each HA target and click the **Remove** button.
7. Launch StarWind Management Console and select the Targets item. Go to the Target List tab and select the iSCSI Sessions tab. Make sure that there are no client connections.

9. In the **Services** window, right-click the **StarWind iSCSI SAN** service and click **Stop** on the shortcut menu.
RESTORING A STARWIND SERVER AFTER DOWNTIME

2. In the Services window, right-click the StarWind iSCSI SAN service and click Start on the shortcut menu.

Note: You will need to start the service in two cases:
- Host operating system of StarWind was online during planned downtime
- Automatic start for StarWind service was disabled

3. Launch StarWind Management Console and connect StarWind Servers (please refer to StarWind Help or StarWind Quick Start Guide for more detailed information).
4. Select an HA device on the Target List tab and check its synchronization status below, in Device Properties.
5. If synchronization does not start automatically, perform start it manually (see the Manual Synchronization section). Wait until synchronization is complete.
6. Connect HA targets to the client node.

Take the following steps on ESXi servers:

1. Launch vSphere Client: Start->All Programs->VMware->VMware vSphere Client.
2. Switch to the Configuration tab and click Storage Adapters in the Hardware pane.
3. Select a storage adapter from the iSCSI Software Adapter list and click the Properties link in the Details section.
4. Switch to the Dynamic Discovery tab of the iSCSI Initiator window.
5. Click Add.
6. Enter an IP address and port of a StarWind Server.
7. Click OK.
8. Perform the same action for all StarWind Servers.

9. Switch to the **Configuration** tab and select **Storage Adapters** in the **Hardware** pane.

10. Select a storage adapter from the **iSCSI Software Adapter** list.

11. Right-click each device and click **Attach**.

12. Select **Storage** in the **Hardware** pane. Right-click the required datastore and select **Mount**.
13. Now you can register a virtual machine. Right-click the appropriate datastore and click Browse Datastore on the shortcut menu.

14. Navigate to the folder named after the virtual machine. Right-click the <virtual machine>.vmx file and click Add to Inventory.

15. The Add to Inventory wizard opens. Follow the wizard’s steps to add a virtual machine.
16. Right-click a VM and click **Power -> Power On.**

Take the following steps on Hyper-V servers:

1. Launch **iSCSI Initiator**: Start->Administrative Tools->iSCSI Initiator.
2. Select each target and click **Connect.**
3. Launch **Server Manager**: Start->Administrative Tools->Server Manager.
4. Click the **Disk Management** item and check whether the disk is online. If needed right-click the disk and click **Online** on the shortcut menu.

5. Virtual disks stored on the HA device will become available for the previously created VMs. Now you can start VMs in **Hyper-V Manager**.
CHANGING SYNCHRONIZATION AND HEARTBEAT CHANNELS

To change synchronization or heartbeat channels or replace a NIC:

1. Launch StarWind Management Console and connect to the first StarWind HA partner.
2. Right-click the required HA device and click Replication manager on the shortcut menu.
3. HA Device Replication manager appears. Click the Remove replica button on the toolbar.
4. Click Yes to confirm the deletion.

5. Connect to the second HA partner node.

6. Right-click the target and click Remove Target.

7. Click Yes to confirm the deletion.
8. Select the first HA partner node again. Right-click the target and click Manage nodes.

9. HA Device Replication manager appears. Click Add replica on the toolbar.
10. Specify an IP address of the second StarWind HA partner node.

![Image of the Add partner node window]

11. Click **Next** to continue.

12. Specify target and virtual disk parameters.

13. Select **Create HA from virtual disk** radio button.

14. Specify the previously used image file as a virtual disk on the second server.

![Image of the Specify the target and virtual disk parameters window]

15. Click **Next** to continue.
16. Specify synchronization and heartbeat channels.

17. Click Next to continue.

18. Specify cache parameters (the cache type is set automatically in accordance with the partner cache type).

19. Click Next to continue.
20. Confirm the settings of a new HA partner target.

21. Click **Next** to continue.

22. Click **Finish** to close the wizard.
**CONFIGURING CHAP FOR AN HA DEVICE**

1. Launch StarWind Management Console and connect the first StarWind HA partner node.
2. Right-click the HA device on the CHAP Permissions tab and click Add permission.

![CHAP Permissions Tab](image)

3. Specify the values in the Target CHAP name, Target secret and Confirm secret fields.
4. Select Mutual CHAP authentication checkbox to ensure a higher level of iSCSI security.

![New Permission Item](image)

5. Click OK.
6. Read the notification and click OK.

![Management Console Notification](image)

7. Connect to the second HA partner node.
8. Right-click HA device and click **Change Partner Authentication Settings**.

   **Note:** If you don’t change partner authentication settings, the HA device will not be able to synchronize after the service restart.

9. Select the partner target with installed CHAP.
10. Specify CHAP as an authentication type and enter local name and secret specified for the first server (refer to the item 2-4 of this section).

11. Click **Finish**.
12. Perform the actions described in the item 1-11 for another HA partner node.
13. Specify a local name and secret to connect to the client node.

**Take the following steps on ESXi servers:**

1. Launch **vSphere Client**: **Start->All Programs->VMware->VMware vSphere Client**.
2. Switch to the **Configuration** tab and select **Storage Adapters** in the **Hardware** pane.
3. Select a storage adapter from the **iSCSI Software Adapter** list and click the **Properties** link in the **Details** section.
4. Switch to the **Static Discovery** tab of the **iSCSI Initiator** window.
5. Select the target and click **Settings**.

![Image of settings window](image)

6. Click **CHAP**.

![Image of CHAP settings](image)

7. Clear the **Inherit from parent** checkbox and specify a CHAP name and secret.

**Note:** If you have specified mutual CHAP earlier, clear the **Inherit from parent** checkbox and specify a mutual CHAP name and secret.

![Image of CHAP credentials](image)

f. Click **OK**.
Take the following steps on Hyper-V servers:

2. Select the required target and click Connect.

3. Click Advanced.
4. Select the **Enable CHAP log on** checkbox and specify a name and target secret.

5. Click **OK**.
CONTACTS

Support Forum: http://www.starwindsoftware.com/forums
Sales: sales@starwindsoftware.com
General Information: info@starwindsoftware.com

US Headquarters
Phone: 1-617-449-7717
Fax: 1-617-507-5845

EMEA and APAC
Phone: +44-0-2071936727
+44-0-2071936350
Voice Mail: 1-866-790-2646

StarWind Software Inc.
40 Mall Rd., Burlington,
MA 01803, USA
www.starwindsoftware.com