

Manual

File Synchronization between two PC's resp. NMS Servers

Version 1.0 dated March 25th, 2010

Subject to alterations



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1 Overview

This document describes the handling of the synchronization tool **"Allway Sync"** based on a sample scenario where NovaTec products are being used. In this scenario we simulate a file transfer. Data consistency between the two NMS must be guaranteed after a switch to the redundant NMS has taken place.



2 Synchronization Tool

2.1 <u>Description</u>

"Allway Sync" gives the user the ability to synchronize or backup files between multiple computers via the internet or LAN, for example.

The download of this tool is free of charge, but its use is limited. The following is stated on the "Allway Sync" website: "Allway Sync" is **FREE** for personal use (with limitations). Furthermore, it includes **NO SPYWARE**, **ADWARE** or **MALWARE**. However, you should pay for a Pro license if you use this software for a commercial purpose or to synchronize more than 40,000 files in 30-day period."

2.2 <u>Source</u>

"Allway Sync" can be downloaded from http://www.alwaysync.com



3 Sample Scenario:

The following configuration shows how to keep the log files of the single NMS consistent.



Synchronization of the NMS log files within the network during the redundancy switchover in case of a server failure. A possible reason for the failure would be a computer overload resulting in a crash.

3.1 Network Management System (NMS)

The following steps relate to NMS server A. The necessary steps for NMS server B have to be executed accordingly.

3.1.1 Active Network Management System

The active NMS server receives the CallHome Events from the NovaTec target systems. For that purpose the systems get configurations via configuration Tool *NovaTec Configuration*. In these configurations two NMS servers (two IP addresses) are activated.

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3.1.2 <u>Redundant Network Management System</u>

A second PC system equipped with a NMS server is ready in case of an operation failure of the active NMS server. The switchover between the two servers is realised with the dual IP address.

3.1.3 Job Management

A NMS server needs a so called Job database. So, the first thing to do is to setup a database which contains the target systems and their parameters.

This manual describes the use of two NMS. Consequently, two Job databases are required. That means that both NMS servers are based on the same but unequally named databases.

3.1.4 Setup NMS

To clearly separate between the two NMS and the corresponding Job database both carry the addition A and B:

| Active NMS server: | $NMS \land \leftarrow \rightarrow Job \ DB \land$ |
|---------------------------|---|
| Backup NMS server: | NMS B $\leftarrow \rightarrow$ Job DB B |

After having executed the necessary steps to setup the Job database open the NMS and set the individual paths.

Click "Server" and then "Start Server" to start the NMS server (pict 301).

| NovaTec Network Management System 7.0.4 Port:-800 | |
|--|------|
| About Network settings Database Server 301 | |
| Actual database C:\DATA Sync A\NMS A\NMS AJob DB.mdb State | |
| Database open | |
| Choose Open Close Log file information Log file directory c:\data sync a\NMS A\nms a-log files | |
| <u>Ch</u> ange path | |
| [c] NovaTec 2010 Exit | Help |



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3.2 Synchronization

The following describes the file synchronization steps. The files are synchronized between two NMS servers. The synchronization tool "Allway Sync" is installed on another desktop PC but it can also be run on one of the two servers. This tool offers three synchronization possibilities between two servers:

- 1. It copies the files from NMS server A to the direction where the update is necessary. That means to the direction of NMS server B.
- 2. As above but vice versa.
- 3. Bi-directional synchronization.

The following describes the third possibility.

3.2.1 Network Folder and File Sharing

At first, share the folders containing the necessary files (e. g. Job DB A and Log files A). Please see pict 302, 303 and 304.

| DATA Sync A Properties 🛛 🖓 🗙 | Permissions for DATA Sync A |
|--|---|
| General Sharing Security Customize Image: Security You can share this folder with other users on your network. To enable sharing for this folder, click Share this folder. Image: Do not share this folder Image: Share this folder Image: Share name: DATA Sync A Image: Comment: Image: User limit: Image: Allogy this number of users: Image: To set permissions for users who access this folder over the network, click Permissions. Image: To configure settings for offline access, click Image: Caching. | Share Permissions Group or user names: Everyone 2 Add Remove Permissions for Everyone Allow Deny Full Control Change Read |
| Windows Firewall is configured to allow this folder to be shared with other computers on the network. <u>View your Windows Firewall settings</u> | OK Cancel <u>A</u> pply |
| OK Cancel Apply | |

NMS server A:Folder name ← → Data Sync ANMS server B:Folder name ← → Data Sync B





The left part of the picture shows the Windows directory tree after the folder sharing. The right part of the picture shows the network environment of the "Allway Sync" server.





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3.2.2 Synchronization Options

Now the settings for the synchronization in the synchronization tool have to be done. At any time ,,Allway Sync" allows to adjust the synchronization settings as required. The synchronization rules are important.

Pict 305: the programme is started

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| 1 New Job 1 Sample - Synchronization with OffsiteBox Online Data Storage | |
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| | ~ |
| Analyze Synchronize Clear Automatic synchronization is off | |
| [06.03.2010 16:57] Application started, profile: "default profile" | |
| US.US.2010 16:37 Application started, prome: default prome | |
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| P | |



3.2.2.1 Setting of the Synchronization Rules

The synchronization in both directions is necessary as data consistency between the two NMS servers has to be realised.

Pict 306 shows how the synchronization options are to be selected. The requested option "All-way Synchronization Mode" is chosen.





3.2.2.2 Setting of the Network Folder Path

Now, the network paths of the source folder and the target folder have to be entered. See pictures 307 to 313.

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| 🐓 Allway Sync | |
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| 🖗 New Job 1 🔞 Sample - Synchronization with OffsiteBox Online Data Storage | |
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| Press "Configure" button to specify synchronization folder path | |
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| Automatic synchronization is off | |
| [06.03.2010 17:16] Application started, profile: "default profile" | |



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3.2.3 Synchronization Process

After the configuration of the right paths of the network folders the synchronization process begins.

3.2.3.1 Manual Synchronization

Start the data analysis and determine the current data status (pict 314).

In case that the synchronization is executed the first time, a warning is being displayed. This warning can be ignored (pict 315 to 317).

Click "Synchronize" to start the synchronization (pict 318).

Pict 319 shows the final state after the synchronization.



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3.2.3.2 Automatic Synchronization

The manual file synchronization is not the common practice, as you are permanently dependent on the data actuality. Therefore the automatic synchronization is preferred (pict 320 to 323)

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Summary of the individual steps:

- 1. Setup the Job database
- 2. Share network folders. A password may be requested.
- 3. Start NMS
 - a. Import Job database path to NMS
 - b. Determine memory location for the Log files
 - c. Start NMS server
- 4. Start "Allway Sync"
 - a. Make the necessary settings
 - b. Enter the network folder paths
 - c. Analyze and synchronize. Does not apply for automatic synchronization.



4 Notes:

- The synchronization fails when two NMS servers access the same Job database. Thus the access of NMS servers to a sole database should be avoided.
- The synchronization fails when a file is opened in order to make changes, e. g. Job DB. The following message appears:

"02/03/2010 15:56, Fehler beim API-Aufruf, The process cannot access the file because it is being used by another process. (80070020), Automatischer Neuversuch nach 60 Sekunden, Dateiname: Fehler beim Kopieren von "C:\Documents and Settings\NMSTest\ MyDocuments \Synchron-Test\job_Test-FW-00070055.ldb" nach "\\NOTEBOOK-1\C\Syn\ job_Test-FW-00070055.ldb", fs::copyitem::access_denied".

- Incorrect settings of the network folder lead to an API error. In this case make sure that the folder has been shared and is neither write- nor read-protected.
- Before starting the synchronization process check if a password is required for the access to a network folder. This also leads to an API error and thus the synchronization cannot be executed.
- "Allway Sync" synchronizes both network folders to the state of the source folder. Thus a one-way synchronization direction has the effect that files which are not in the source folder are being deleted in the target folder. To avoid this "Allway Sync" disables the deletion by default when setting the synchronization direction. **But**, when the option "*Propagate Deletion*" is set (pict 306), the files which are not in the source folder are being deleted in the target folder in case of an one-way synchronization direction.
- "Allway Sync" recognizes files with different names but identical content not as duplicates. Therefore it is possible that file content is being overwritten. E. g.: The content in file A of folder X is Hollo"

The content in file A of folder X is "Hello"

The content in file A of folder Y is a longer text.

After the synchronization file A and its content only consist of "Hello" as the file has been overwritten during the synchronization.

• "Allway Sync" can run on the same PC/server as one of the NMS. A separate PC/server is not necessary for the installation of "Allway Sync".