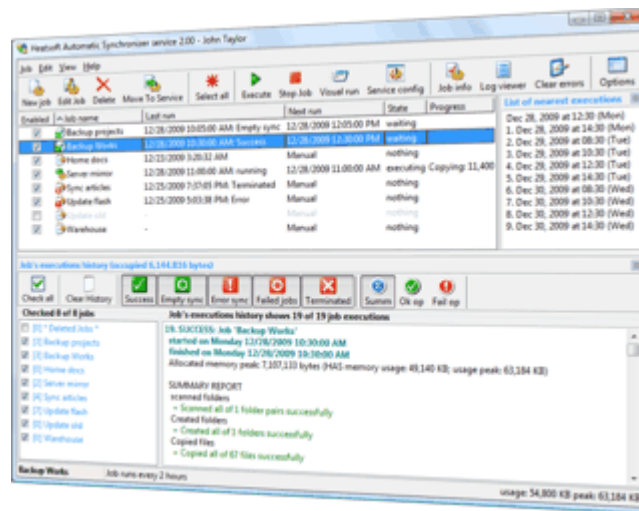


# HEATSOFT AUTOMATIC SYNCHRONIZER version 2.03



## User Guide

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# 1 Introduction

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## 1.1 What is HAS?



Heatsoft Automatic Synchronizer (HAS) is an easy-to-use program designed for an automatic synchronization, backup, replication and mirroring of important files on most storage media or even between two computers on a network. With HAS you can easily keep all important files synchronized between servers, desktops, notebooks, LANs, ZIP disks, secondary hard disks, etc.

HAS allows you to compare and synchronize multiple folders at a time in manual mode with a single mouse click or in automatic mode with scheduler. The program arranges your synchronization needs in sets of "jobs". A job is a set of specifications which defines what folder pairs you want to synchronize, how you want do this, and how often you want to do it. HAS Job Wizard provides most of the building blocks of jobs for you, such as the preinstalled synchronization methods. Once configured, in automatic mode HAS synchronizes the folder pairs at the user-defined time intervals. This multithreaded process runs in the background without any further user-interaction required. In the manual mode you are able to see a preview table of synchronization. All synchronization activities are stored in a log file. Summary e-mail will be send to specified address after the job execution. Service addon allows a user to execute jobs within a native windows service.

HAS is designed for [Microsoft Windows 7/Vista/XP/2000/Server 2003/Server 2008](#).

If you are looking for a simple, fast, powerful and flexible synchronizing solution for your business or for your personal needs in a networking environment or on a single machine, you have just found it. Download the 30-day trial version and see for yourself.

HAS is priced competitively at only \$39.92 US for a single user license. HAS version with Service addon costs \$59.92 US. We provide flexible discount program for volume purchase orders. See Order section for more information. If you have a problem or a question, free support is always available.

## 1.2 Features

- Multi-thread transfer engine which executes jobs in the background. Execution of several jobs at the same time.
- Service addon allows a user to execute jobs within a native windows service.
- Support Unicode filenames.
- Ability to synchronize between servers, desktops, notebooks, LANs, ZIP disks, etc.
- Ability to run on Windows startup.
- Ability to work in the silent mode.
- Ability to execute a job in visual mode. In this mode you are able to see a preview table of synchronization.
- History of jobs' executions.
- Job Agenda allows to see the pending job executions list.
- Launch job execution via shortcut.
- Command line interface for the professional users.
- System tray alerts.
- Synchronization activities are stored in the log files: full, summary, error logs.
- Ability to send notifications by e-mail with attached log files.
- Job Wizard provides most of the building blocks of a job for you, such as the preinstalled synchronization methods.
- Ability to export and import jobs.
- Select folders for synchronization in Explorer like a folders tree.
- Ability to use UNC paths in a comparison.
- Ability to use environment variables in folder paths.
- Supports inclusion or exclusion of files.
- Ability to exclude folders from a comparison.
- Supports different types of synchronization.
- Flexible and powerful scheduler.
- Ability to view log files for jobs in the Log Viewer.
- Easy to use interface for simple creation and maintenance of synchronization tasks.
- Ability to customize toolbars.
- Extremely cost effective.

## 1.3 System Requirements

**Desktop or notebook computer with:**

- 64 MB RAM or more
- 2.5 MB of hard disk space

**One of following operating systems:**

- Windows 7
- Windows Vista
- Windows XP
- Windows Server 2008
- Windows Server 2003
- Windows 2000
- Windows NT

## 1.4 Support and feedback

### Technical Support

Registered users are entitled to technical support, should the need arise. Please contact us by e-mail at [support@heatsoft.com](mailto:support@heatsoft.com)

### Important note

The program version has been created for running on *Microsoft Windows NT/2000/XP/2003/Vista/7*. If you experience any problems please inform us about it!

All mentioned Trademarks and Copyrights belong to their respective owners.

Before you contact us, please do the following:

- Be sure that you're doing everything right. We all make mistakes sometimes... Be attentive.
- Look at the Help file: it may already contain an answer to your question. A lot of people ask us something like "how do I:", though the complete information is there.
- Visit HAS home page in the Internet at <http://www.heatsoft.com/has/HASindex.html>

It's a good chance that you'll find the newer version of HAS there. If the serious bug has been found in the program, but the new version is not ready yet, we make the hot fix for it.

But if you still have a problem with HAS and nothing else helps, please contact technical support at [feedback@heatsoft.com](mailto:feedback@heatsoft.com)

Please inform us about the following:

- HAS version (from "About" dialog).
- Where did you get HAS (http or ftp site).
- Windows 7/Vista/XP/2000/NT/2003/2008 version (including service packs and other fixes installed), US or international, OEM or not.
- Computer information: CPU type and speed, installed memory.
- Description of your problem (as much information as possible to retrieve the problem).

In order to get the complete computer information (working under Windows XP), open the Control Panel, click on "System" icon and select tab "Hardware" in the "System properties" window.

If you have any comments or suggestions for the next releases, please don't hesitate to email them to us [feedback@heatsoft.com](mailto:feedback@heatsoft.com)

### Feedback

If you have any comments or concerns about HAS please direct them to [feedback@heatsoft.com](mailto:feedback@heatsoft.com) or <http://www.heatsoft.com/has/HASsupport.html> Your feedback is important to us in order to get an idea of how to make HAS a better product for you. Many of HAS features and significant portions of HAS interface have been heavily influenced by comments from users. So if you have a grand idea for a new feature, or a better way of doing something, please drop us a note.

## 1.5 Getting program updates

### **Important!**

If you've got HAS not from our web page, but from the other source (magazine CD or some software library), please visit our home page:

<http://www.heatsoft.com/has/HASdownload.html>

- you'll probably find the latest version. Usually, **we release new version of HAS about once within every three months.**

## 1.6 Information for registered users

Registered users who have purchased a license of HAS from Heatsoft Corporation are eligible for a free upgrade to HAS 2.03. To upgrade, send an email message to [support@heatsoft.com](mailto:support@heatsoft.com) including the name and email address that you did use when you purchased the license. And we'll email you detailed instructions within 24 hours.

## 1.7 About Heatsoft Corporation

**Heatsoft Corporation** is a small software development company. We provide high-quality, software development services and Web design solutions at excellent rates. We are in business since 2001, specializing in simple, cost-effective stuff that runs well.

### Heatsoft products:

Heatsoft Automatic Synchronizer Keep your folders synchronized with Heatsoft Automatic Synchronizer. The program allows you to compare and synchronize multiple folders in manual mode with a single click or in automatic mode with scheduler. Once configured, it works in the background without any further user-interaction required. Designed for Windows 2000/XP/Server 2003/Server 2008/Vista/7. [Costs \\$39.92.](#)

Advanced Directory Comparison and Synchronization It is ideal for keeping files synchronized between a desktop & laptop and is a very fast method of backing up critical directories. With ADCS you can easily see what have changed in your directories and transfer changes with single mouse click ADCS is targeted to 'visual' (manual) sync. ADCS is more comfortable to synchronize a folder's pair easily. Moreover ADCS has integrated features like Disk space viewer and Remove empty folders. Designed for Windows 98/Me/2000/XP/Server 2003/Server 2008/Vista/7. [Costs \\$32.92.](#)

Heatsoft Clone Cleaner HCC helps you to find duplicate files on your system and delete them. Thus, you can free up a lot of disk space taken by the extra copies and reduce clutter on your disks. HCC does not only take into account items like file name, size or timestamp, but reads possible duplicates byte to byte. This way, it is guaranteed that the files are really identical, and you can delete the extra copies with full confidence. HCC provides tools for safe and easy deletion of duplicate files. Designed for Windows 98/Me/2000/XP/Server 2003/Server 2008/Vista/7. [Costs \\$32.92.](#)

Handy File Tool Handy File Tool (HFT) is a very fast and simple file manager. It has some internal utilities such as Renamer, Replacer and Finder. HFT has utilities necessary for webmasters, programmers and anybody who is concerned with computers. Imagine that you need to process hundreds of files. It would take you many hours to do this manually. Designed for 98/Me/2000/XP/Server 2003/Server 2008/Vista/7. [Freeware.](#)

### Web site:

<http://www.heatsoft.com>

### Support forum:

<http://www.heatsoft.com/hfm>

### Email:

Sales Department: [sales@heatsoft.com](mailto:sales@heatsoft.com)  
Support Department: [support@heatsoft.com](mailto:support@heatsoft.com)  
Feedback Department: [feedback@heatsoft.com](mailto:feedback@heatsoft.com)  
Webmaster: [webmaster@heatsoft.com](mailto:webmaster@heatsoft.com)

### Postal Address:

Heatsoft Corporation  
3914 Seaton Place  
Las Vegas, Nevada 89121  
United States of America

## 1.8 Install HAS

### Important!

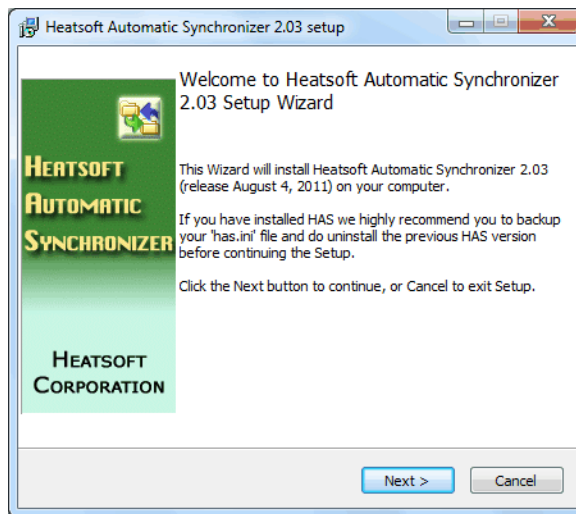
If you've got HAS not from our web page, but from the other source (magazine CD or some software library), please visit our home page:

<http://www.heatsoft.com/has/HASdownload.html>

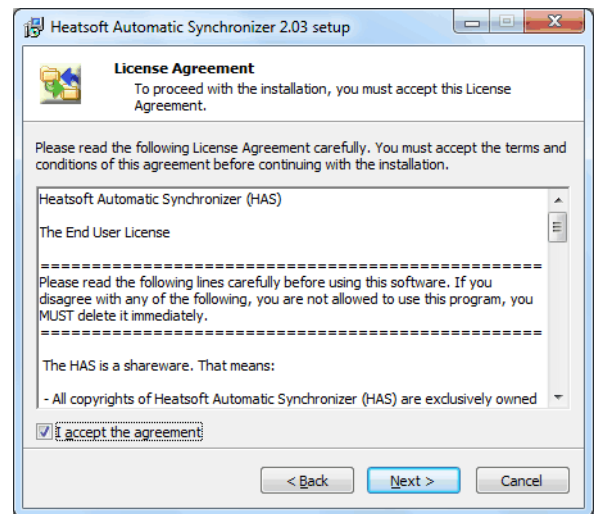
- you'll probably find the latest version. Usually, **we release new version of HAS about once within every three months.**

To install HAS, unpack the **HASheat.zip**, execute the **HASv2301\_setup.exe** and follow the instructions. You'll need to select the target directory and the components to install.

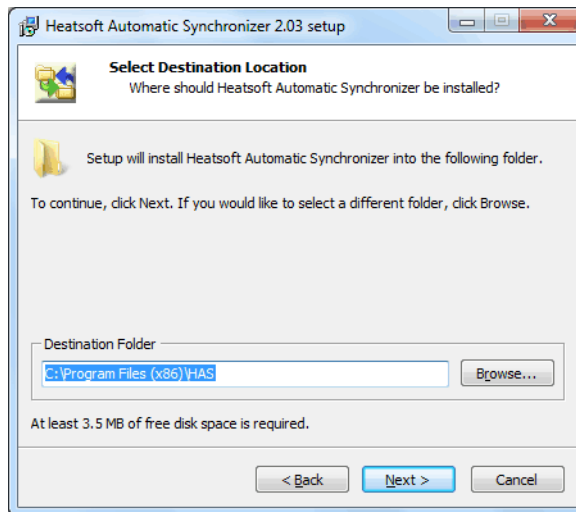
The installation procedures and screen shots are based on Windows XP operating system. For those of other OS, please follow its on-screen instruction.



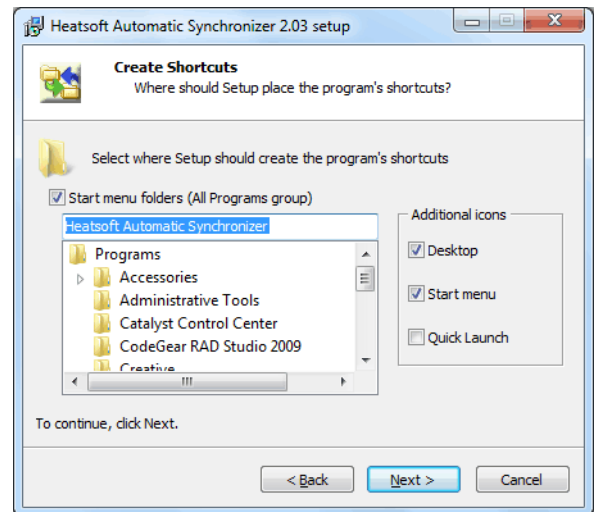
1. Click [Next].



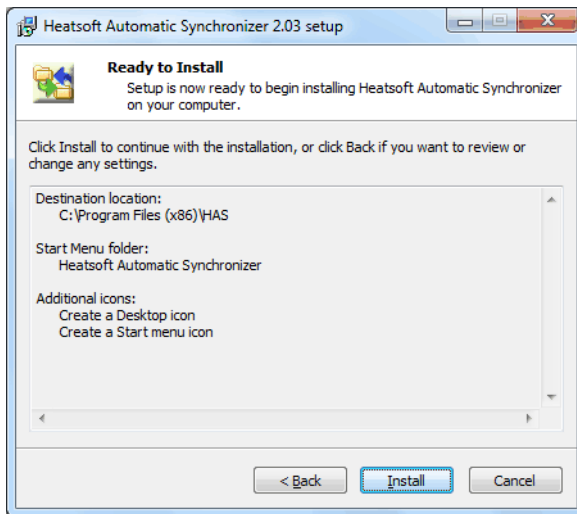
2. Read the License Agreement. Click [Next].



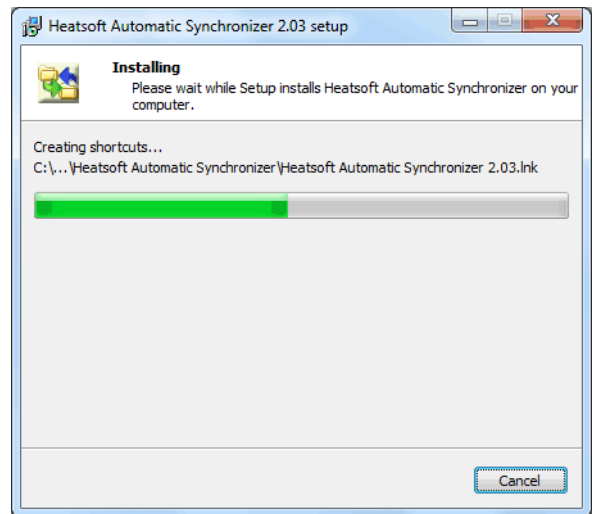
3. Review a path to the destination folder. Click [Next].



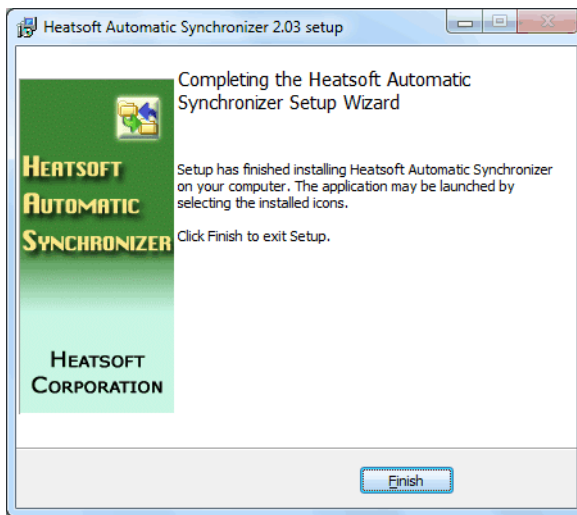
4. By default HAS will create a group in Programs, a desktop shortcut and a shortcut in the Start Menu. Click [Next].



5. Click [Next].



6. You can terminate installation by clicking [Cancel].



7. Click [Finish] to complete setup.

8. To run HAS click [Start] → [All Programs] → [Heatsoft Automatic Synchronizer] → [HAS 2.03] or click the shortcut [HAS 2.03] on the desktop or Start Menu.

## 2 Quick start tutorial

---

The quickest way to introduce your self to HAS is to use this program. This tutorial guides you through the some actual situations which you can solve with HAS. All situations are described step by step. If you read the guides carefully many of your questions will be solved.

### 2.1 Tutorial 1: Set up automatic synchronization

**Task:**


Set up automatic synchronization at every hour on all days except Saturday and Sunday.

---

**Solution:**

- You must create a new Job (see Tutorial 5: Creating a job quickly). Click the button **New Job** on the main toolbar or press **Ctrl+N** shortcut. This opens the Job wizard window.
- If you have created Job, then select it in the main window. For example you select the job - 'Mirror to Server'.
- Click the button **Edit Job** on the main toolbar. This opens the Job wizard with the job 'Mirror to Server'.
- In the Job wizard window go to the page Scheduling.
- On the page Scheduling in the group **Enable scheduler** select **always**. This makes the enable scheduler controls.
- To exclude Saturday and Sunday from the scheduler list:
  - Turn on check **Run on the week days only**, this makes the enable week days list.
  - Turn off these checks **Saturday** and **Sunday** in the **Run on the week days only** list.
- To setup automatic synchronization at every hour:
  - A single click on **every** control in the **Repeat** controls group.
  - Set value 0 in the **days** control.
  - Set value 1 in the **hours** control.
  - Set value 0 in the **minutes** control.

You can see the real dates of executions, calculated on started settings in the **List of nearest executions**.

- Turn on the option **Run missed schedules at the program startup** if you need to periodically switch off your computer and some scheduled jobs can be missed. If this option is checked, the program will detect all missed (scheduled but not executed on time) items and execute them at startup program.
- Click the button **Save Job** to save changes of the job.
- The job state switches to  waiting. In the column **Next run** you can see the date when the job 'Mirror to Server' will start.

**Notes:**

- Scheduler can execute jobs automatically when HAS is running only. Turn on **Launch HAS at Windows start up** tick box at the "General" page in the Options window to run HAS automatically at Windows startup. For more information see the work in "silent" mode.
- To view information about job settings click the button **Job info** on the main toolbar.
- To edit job settings click the button **Edit job** on the main toolbar. Editing job turns off the scheduler settings.

## 2.2 Tutorial 2: Set up automatic incremental backup

### **Task:**

Set up automatic incremental backup for the work's folders every day at 16:30.

Backup is the most frequently used operation type. It is used for saving your important files into another storage location. If some files are corrupted or lost in the original folder, you can easily restore them from the backup copies.

**Incremental backup** is the program which copies only files that have been changed since previous backup; files are compared by a date and time of the last change (comparison rules of a job). The advantages of this backup type are quite obvious - less amount of data to operate with, less time is necessary to perform backup operation.

For example, you have three work's folders which you do want to backup daily once a day:

<b><u>Work's folders</u></b>	<b><u>Backup folders</u></b>
c:\My documents	z:\backup\My documents
c:\My pictures	z:\backup\My pictures
c:\My stuff	z:\backup\My stuff

---

### **Solution:**

The task is divided into 2 steps:


#### **Step 1: Creating a new job**

#### **Step 2: Scheduled job execution**

#### **Step 1: Creating a new job**

- To create a new Job, click the button **New Job** on the main toolbar or press **Ctrl+N** shortcut. This opens the Job wizard window.
- In the window Job wizard on the page Job settings type a name for your Job. For example, 'Backup work's folders'. Choose the page Comparing folders by clicking on the appropriate item in the list which occupies top-left part of the page Job settings.
- On the page Comparing folders you should add folder pairs for comparison and synchronization. Click the button **Add pair** or press **Ins**. The window Add/Edit a pair will appear.
- In the window Add a pair select folder "c:\My documents" in the left tree, and folder "z:\backup\My documents" in the right tree. Press the button **Ok** to add these selected folders as a pair. The pair "c:\My documents <-> z:\backup\My documents" will be added into the Folder pairs list.
- Using the same way, add another two pairs into the Folder pairs list:
  - "c:\My pictures <-> z:\backup\My pictures"
  - "c:\My stuff <-> z:\backup\My stuff"
 When you add pairs go to the page Synchronize methods.
- On the page Synchronize methods set the method **Copy files from Left to Right**. This method copies files that have been changed since previous backup from the Left folders to the Right folders. So the Right folders (backup folders) will be equal and updated with the most recent files from the Left side folders (work's folders). After this go to the page Comparison rules.
- On the page Comparison rules turn on checks: **Size, Timestamp, Attributes**. HAS will compare files by a size, date and time of the last change, attributes. Choose the page Scheduling.
- On the page Scheduling in the group **Enable scheduler** select **always**. This makes enable scheduler controls.
- To setup automatic synchronization at every day at 16:30:00.
  - Set **First executions' date** in the **Enable scheduler** controls group. Set date to today, set time to 16:30.
  - A single click on **every day at the start time** control in the **Repeat** controls group.
 You can see the real dates of executions, calculated on stateded settings in the **List of nearest executions**.
- Turn on option **Run missed schedules at the program startup** if you need to periodically switch off your computer and some scheduled jobs can be missed. If this option is checked, the program will detect all missed (scheduled but not executed on time) items and execute them at startup program.
- Click the button **Save Job** to save a created job. The job 'Backup work's folders' will appear in the Main window.

**Step 2: Scheduled job execution**

- The job state will be  waiting. In the column **Next run** in the main window you can see the date when the job 'Backup work's folders' will start automatically. Scheduler can execute jobs automatically when HAS is running only. You can setup HAS to run it automatically at log on, for more information see the work in "silent" mode.
- You can execute the job in background mode before **Next run** time is coming. Select the job and click the button **Execute** on the main toolbar or press **Ctrl+R**. The executing job in background mode does not change the scheduler settings.
- You can execute the job in the detailed mode before **Next run** time is coming. Select the job and click the button **Visual run** on the main toolbar. The executing job in the detailed mode turn off the scheduler settings.

**Notes:**

- Scheduler can execute jobs automatically when HAS is running only. Turn on **Run at Logon** check at the "General" page in the Options window to run HAS automatically at Windows startup. For more information see the work in "silent" mode.
- To view information about job settings click the button **Job info** on the main toolbar.
- To edit job settings click the button **Edit job** on the main toolbar. The editing job turns off the scheduler settings.

## 2.3 Tutorial 3: Set up the mirror copy for all files

### **Task:**

Set up the mirror copy for all files, except temporary files (\*.tmp; \*.old; \*.~\*; \*.bak) from work folders to backup folders include time zones differences between New York (GMT-05:00) and San Francisco (GMT-08:00).

Mirror copy is one of the most frequently used operation type. It is used for saving your important files into another storage location and clearing backup folders from old files at the same time.

**Mirror copy** is the program which copies only files that have been changed since previous backup, and new files which are not present in backup folders. Files are compared by a date and time of the last change (comparison rules of a job). The particularity of mirror copy is in removing old files which existing in backup folders and copying new files at the same time. So the backup folders will be made identical to the source work folders.

For example, you have four work folders which you do want to mirror copy:

<b><u>Work's folders</u></b>	<b><u>Backup folders</u></b>
c:\My documents	x:\Backup\My documents
c:\My projects	x:\Backup\My projects
c:\My stuff	x:\Backup\My stuff
c:\My articles	x:\Backup\My articles

---

### **Solution:**

The task is divided into two steps:


#### **Step 1: Creating a new job for mirror copy**

#### **Step 2: The job execution**

#### **Step 1: Creating a new job for mirror copy**

- To create a new Job, click the button **New Job** on the main toolbar or press **Ctrl+N** shortcut. This opens the Job wizard window.
- In the window Job wizard on the page Job settings type a name for your Job. For example, 'Mirror copy to Backup'. Choose the page Comparing folders by clicking on the appropriate item in the list which occupies top-left part of the Job wizard window.
- On the page Comparing folders you should add folders pairs for comparison and synchronization. You can add pairs to your Job by choosing them from folder trees. Click on the **Add pair** button or press **Ins** shortcut. The window Add/Edit a pair will be displayed.
- In the window Add a pair choose the folder "c:\My documents" in the left tree, and the folder "x:\Backup\My documents" in the right tree. Click on the button **Ok** to add these selected folders. The pair "c:\My documents <-> x:\Backup\My documents" will be added into the Folder pairs list.
- Using the same way, add another pairs into Folder pairs list:
  - "c:\My projects <-> x:\Backup\My projects"
  - "c:\My stuff <-> x:\Backup\My stuff"
  - "c:\My articles <-> x:\Backup\My articles"
 When you add pairs jump to the page File filters.
- On the page File filters you should set exclude file filter for temporary files. To do this, turn on the check **Use exclude file filter** and enter \*.tmp; \*.old; \*.~\*; \*.bak in the drop-down list. Choose the page Synchronize methods when you complete the filter form.
- Select the **Mirror copy files from Left to Right** method on the page Synchronize methods. This method copies all newer, single files and empty folders from Left to Right and delete all single files and empty folders in the Right folders. So the Right folders (backup folders) will be made identical to the Left side folders (work's folders). After this go to the Comparison rules page.
- On the page Comparison rules turn on checks: **Size, Timestamp, Attributes**. Turn on the check **Adjust timezone** and type **3** (difference in time between GMT-05:00 and GMT-08:00) in the string **Ignore filetype differences in hours** to includes time zones differences.
- Click the button **Save Job** to save a created job. The job 'Mirror copy to Backup' will appear in the Main window.

**Step 2: The job execution**

- The state of the job 'Mirror copy to Backup' will be  nothing. It means that the job is in manual mode. You can execute the job manually at any time you wish. Select the job 'Mirror copy to Backup' and click the **Execute selected Job(s)** button on the main toolbar or use **Ctrl+R** shortcut.
- You can execute the job in detailed mode. Choose the job 'Mirror copy to Backup' and click the button **Visual run** on the main toolbar.
- You can also set up automatic job execution. See Tutorial 1 - *Set up automatic synchronization on every hour on all days except Saturday and Sunday* -.

**Notes:**

- To view information about job settings click the button **Job info** on the main toolbar.
- To edit job settings click the button **Edit job** on the main toolbar. Editing job turn off scheduler settings.

## 2.4 Tutorial 4: Synchronize Home computer and Flash drive

### **Task:**

Synchronize Home computer folders and Flash drive via single clicking shortcut on a Desktop.

For example, you have three folders which you do want to keep in sync:

<b><u>Home Desktop</u></b>	<b><u>Flash drive</u></b>
c:\My documents	h:\work\docs
c:\My pictures	h:\work\pics
c:\My stuff	h:\work\stuff

---

### **Solution:**

The task is divided into 2 steps:

#### **Step 1: Creating a new job**

#### **Step 2: Setup shortcut for the job**

##### **Step 1: Creating a new job**

- To create a new Job, click the button **New Job** on the main toolbar or press **Ctrl+N** shortcut. This opens the Job wizard window.
- In the window Job wizard on the page Job settings type a name for your Job. For example, 'Sync Home and Flash'. Choose the page Comparing folders by clicking on the appropriate item in the list which occupies top-left part of the page Job settings.
- On the page Comparing folders you should add folder pairs for comparison and synchronization. Click the button **Add pair** or press **Ins**. The window Add/Edit a pair will appear.
- In the window Add a pair choose folder "c:\My documents" in the left tree, and folder "h:\work\docs" in the right tree. Press the button **Ok** to add these selected folders as a pair. The pair "c:\My documents <-> h:\work\docs" will be added into the Folder pairs list.
- Using the same way, add another two pairs into the Folder pairs list:  
 "c:\My pictures <-> h:\work\pics"  
 "c:\My stuff <-> h:\work\stuff"  
 And go to the page Synchronize methods.
- On the page Synchronize methods set the method **Update Left and Right (Make Equal)**. This method copies NEWER and SINGLE files from Left and Right folders to the each other. So Left and Right folders will be equal and updated with most recent files.
- Click the button **Save Job** to save the created job. The job 'Sync Home and Flash' will appear in the Main window.
- Now you can execute the job 'Sync Home and Flash'. Select the job and click the button **Execute** on the main toolbar or press **Ctrl+R**.

##### **Step 2: Setup shortcut for the job**

- To place a shortcut on a Desktop for the job 'Sync Home and Flash' select it and click the button **Create icon** on the main toolbar. The window Create shortcut will appear.
- In the window Create shortcut under the group **Where create shortcut** set **Desktop, Start menu** and click the button **Create shortcut**. It creates shortcuts for the job 'Sync Home and Flash' on a Desktop and in the Start menu.
- Now you can click the created shortcut in order to synchronize folders between *Home Desktop* and *Flash drive*.

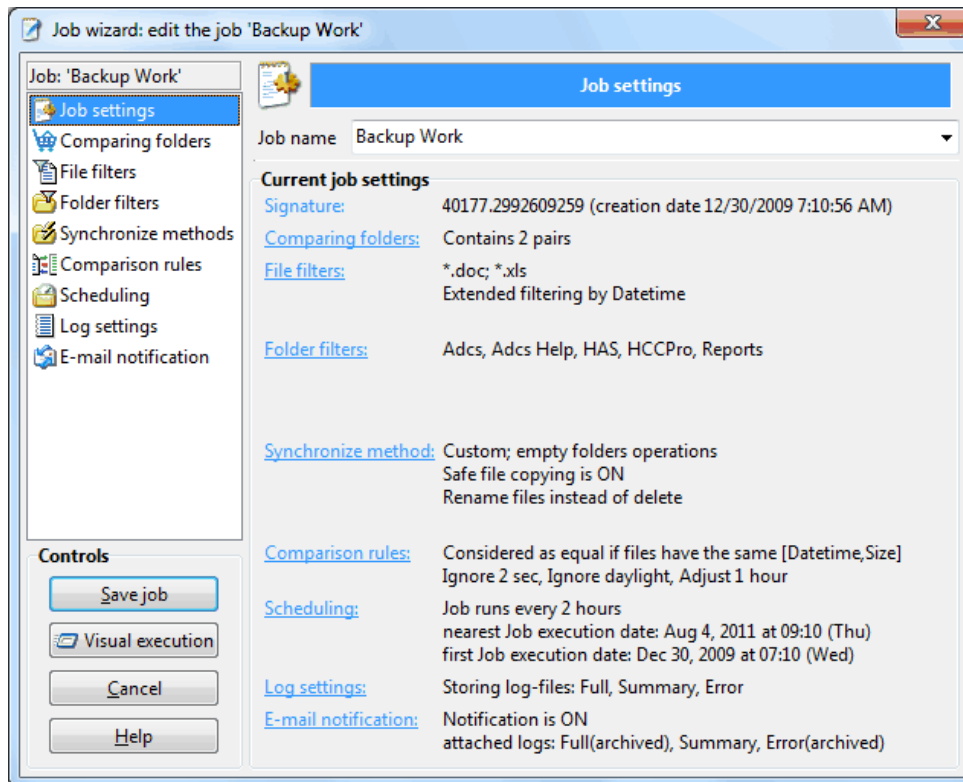
## 2.5 Tutorial 5: Simple way to create a Job

Heatsoft Automatic Synchronizer works with data organized in Jobs. To synchronize your data, you need to create a Job that would define what folders to synchronize, and a way how to do the synchronization.

You can easily create a new Job with the help of Job Wizard: press **New Job** button on the program toolbar and follow the instructions of the Wizard.

### Job settings

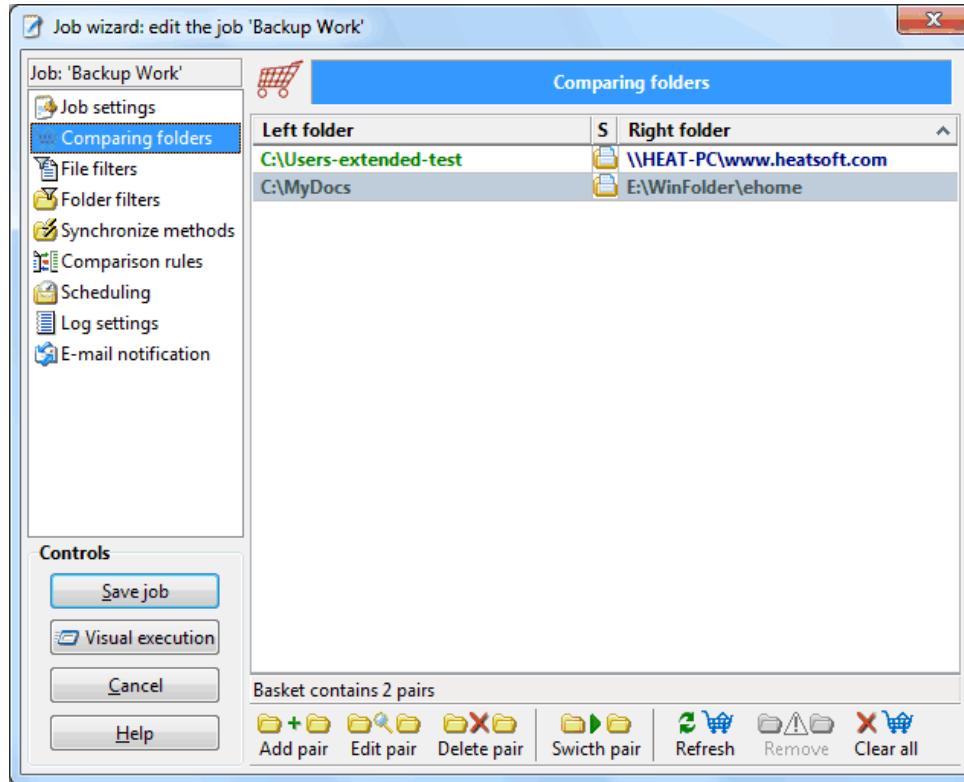
On the first step you should specify a Job name in the Job settings section. A Job name must be unique. A Job name cannot contain the following characters: \ / : \* ? " < > |.



## Select folders for comparison

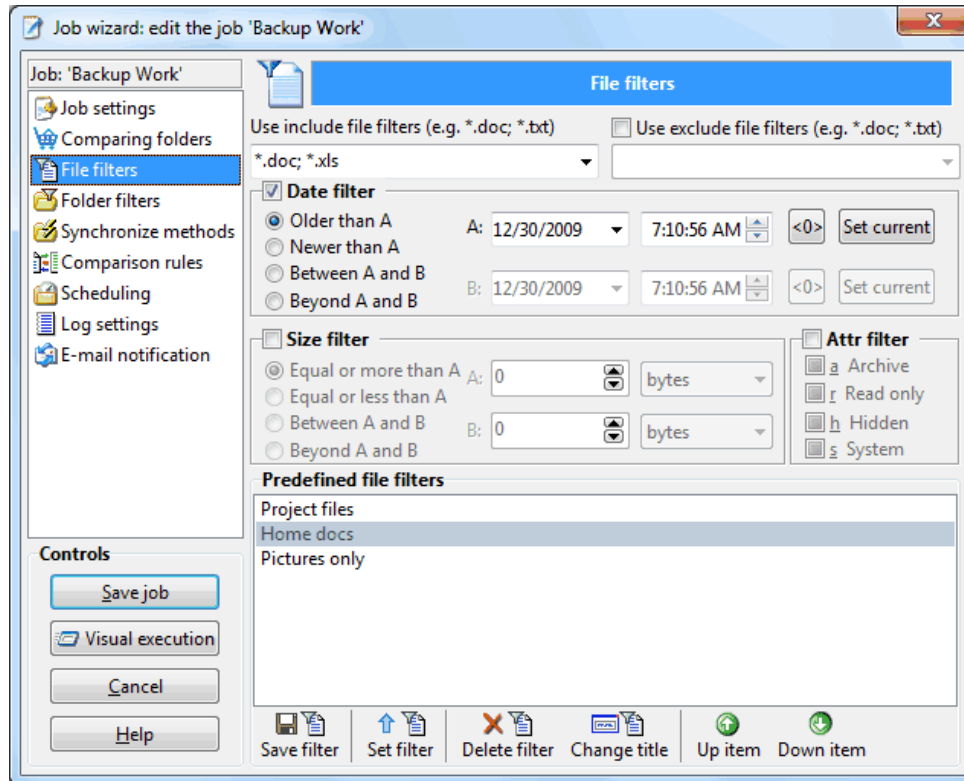
At this step, choose folders pairs for comparison. Add at least one folders pairs in order to create a job.

To select a folders pair, click the **Add pair** button. In the Add pair dialog you can either select a pair from existing folders or create a new one.



## Set files specifications

At this step, define files specifications to include or exclude files from a comparison. You can skip this step, by default all files from compared folders will be included in a comparison.



To set a file mask to include files in a comparison, type the mask in the string **Use include file filters**. For example the mask may be: **a\***. This mask includes files, which name begins with **a**.

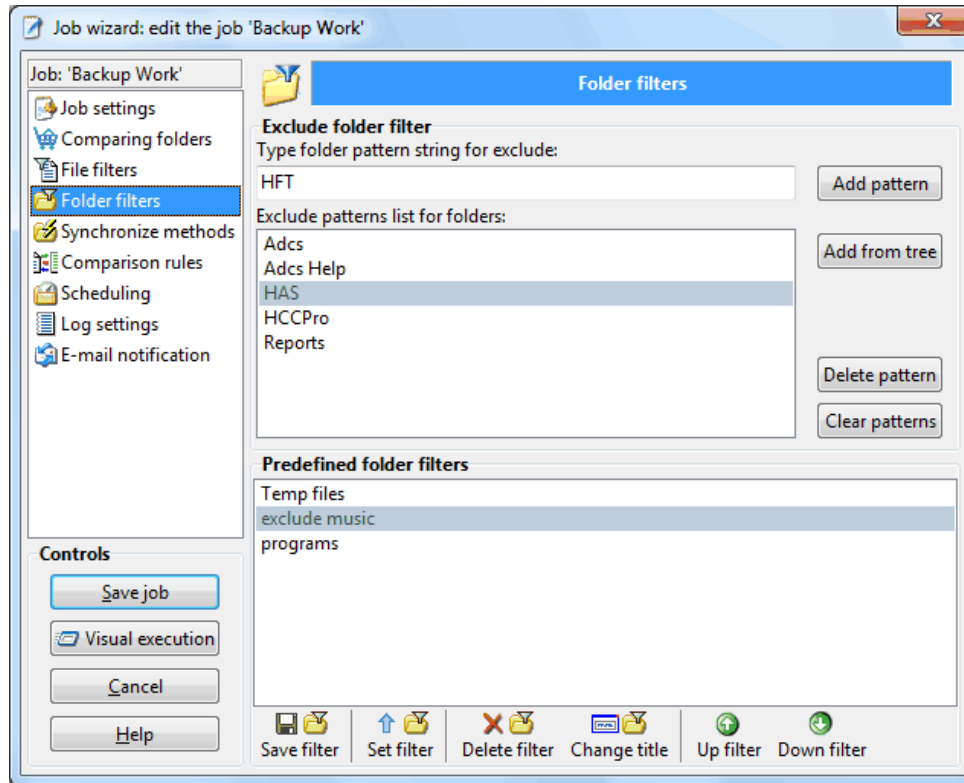
To set a file mask to exclude files from a comparison, turn on check **Use exclude file filters** and type the mask in it. For example the mask may be: **\*.html**. This mask excludes files, which name ends with **.html**.

You may use the advanced include file filter by a date, size and attributes for more accuracy.

To read more information about file filters see the Job wizard: page File filters topic.

## Set folder filter

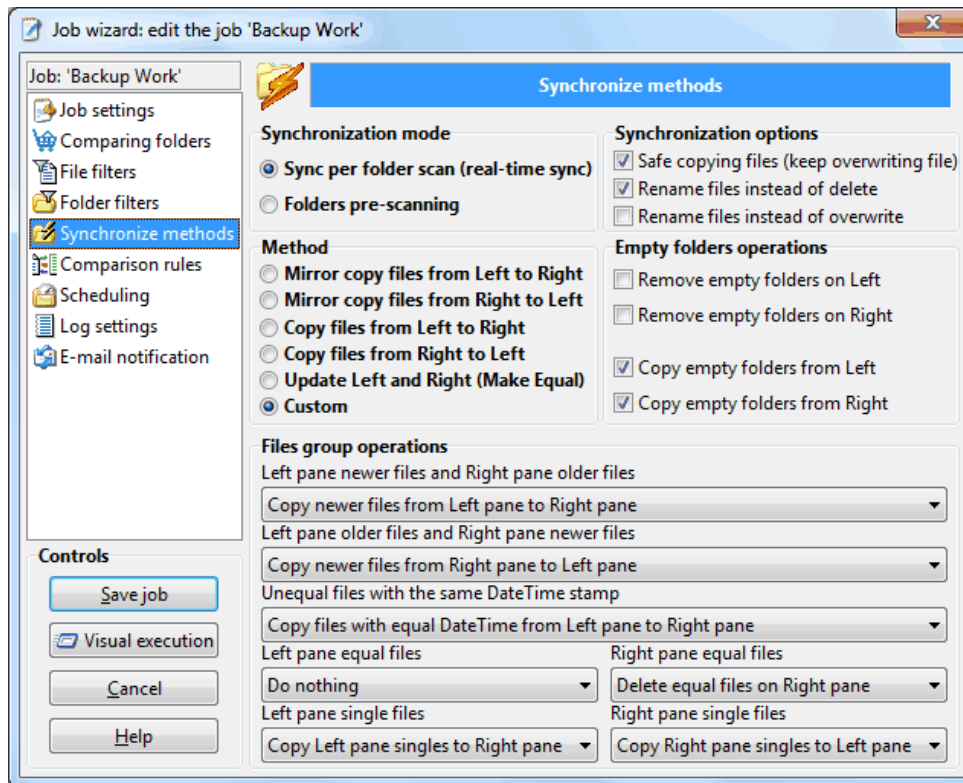
At this step, you can select folders which will be excluded from a comparison. You can skip this step, by default all folders from compared pairs will be include in a comparison.



To set the folder filter, type a name of a folder in the line **Type folder pattern string for exclude** and click on the button **Add pattern**. The typed name will be added into **Exclude patterns list for folders**. A pattern string can be a combination of valid folder name characters and the asterisk (\*). The asterisk is a wildcard that represents any combination of valid folder name characters.

## Set synchronize method

At this step, you must set the synchronize method. Heatsoft Automatic Synchronizer has several predefined methods and one custom.



Synchronization method: You can select the required synchronization method:

- **Mirror copy files from Left to Right:** the program will copy all files and empty folders from Left to Right and delete all single files and empty folders in the Right folders. So the Right folders will be made identical to the Left folders.
- **Mirror copy files from Right to Left:** the program will copy all files and empty folders from Right to Left and delete all single files and empty folders in the Left folders. So the Left folders will be made identical to the Right folders.
- **Copy files from Left to Right:** the program will copy all files and empty folders from Left to Right. So files and empty folders from the Left folders will be added/overwritten to the Right folders.
- **Copy files from Right to Left:** the program will copy all files and empty folders from Right to Left. So files and empty folders from the Right folders will be added/overwritten to the Left folders.
- **Update Left and Right (Make equal):** the program will copy NEWER, SINGLE files and empty folders from Left and Right folders to the each other. So Left and Right folders will be equal and updated with most recent files and empty folders.
- **Custom:** This method allows you to manually set operations for the file groups from the drop-down controls.

You must select one of the methods to have a valid job. If you select **Custom** method you must set operations for the file groups and empty folders manually.

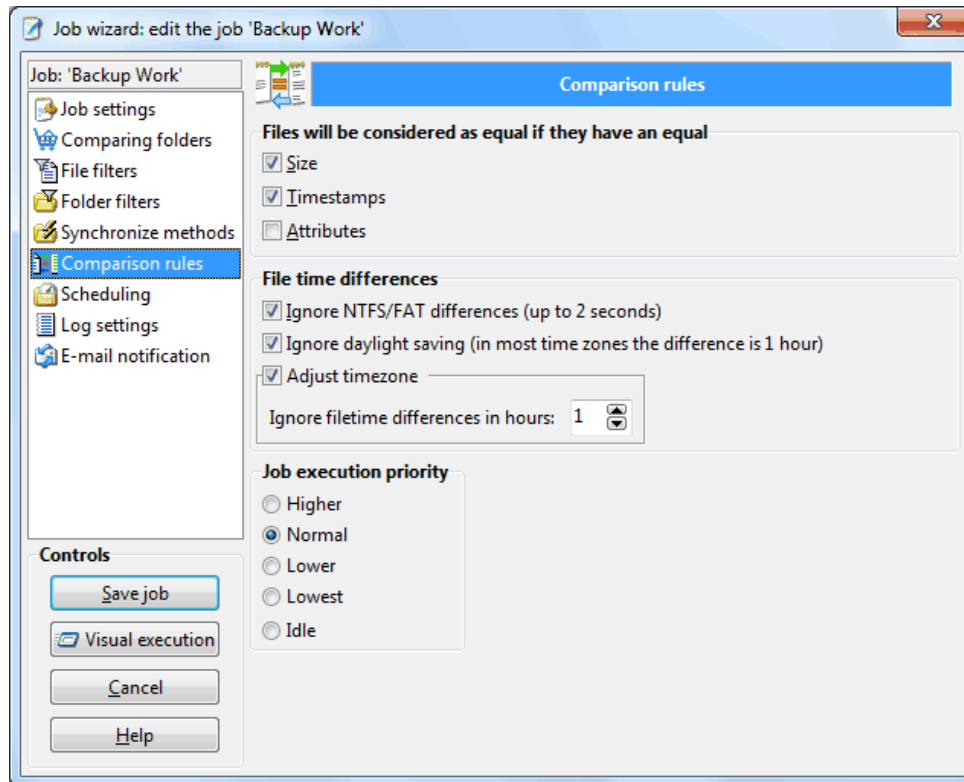
Operations for empty folders are set automatically for each predefined synchronization method. If you want to customize operations for empty folders you must set **Custom** synchronization method.

Empty folders operations:

- **Remove empty folders on Left:** Removes empty folders on the Left pane.
- **Remove empty folders on Right:** Removes empty folders on the Right pane.
- **Copy empty folders from Left:** Copies empty folders from Left to Right pane.
- **Copy empty folders from Right:** Copies empty folders from Right to Left pane.

## Set comparison rules

At this step, you can set the rules for a comparison. You can skip this step at first time and set the rules later.



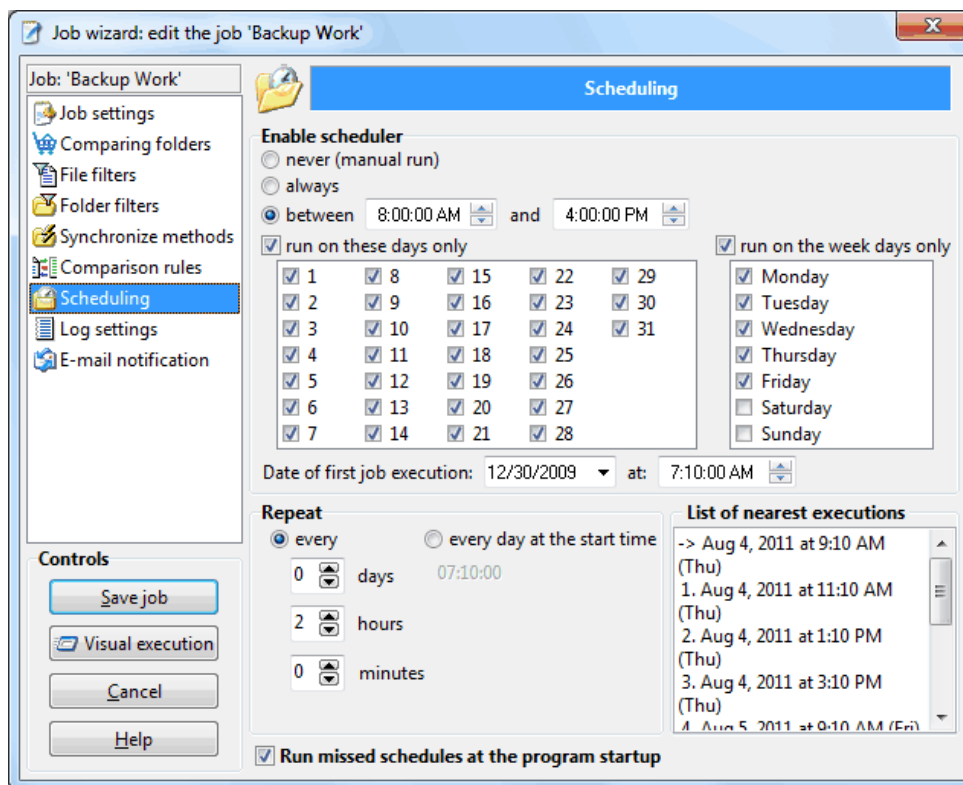
The rules are divided into groups:

- **the rules for considered files as equal by attributes:** use these rules if you do not want to check all file attributes in a comparison. You may turn off some fields. If you turn off all attributes, the program will compare files only by file names.
- **the rules by file time differences in operating systems and time zones:** use these rules if you work with files and transfer them between different operating systems or time zones.

To read more information about comparison rules see the Job wizard: page Comparison rules topic.

## Schedule job

You can set Heatsoft Automatic Synchronizer to perform synchronization at any date and time automatically. To schedule a Job you must enable scheduler. Set **always** or **between** value in the **Enable scheduler** controls group.



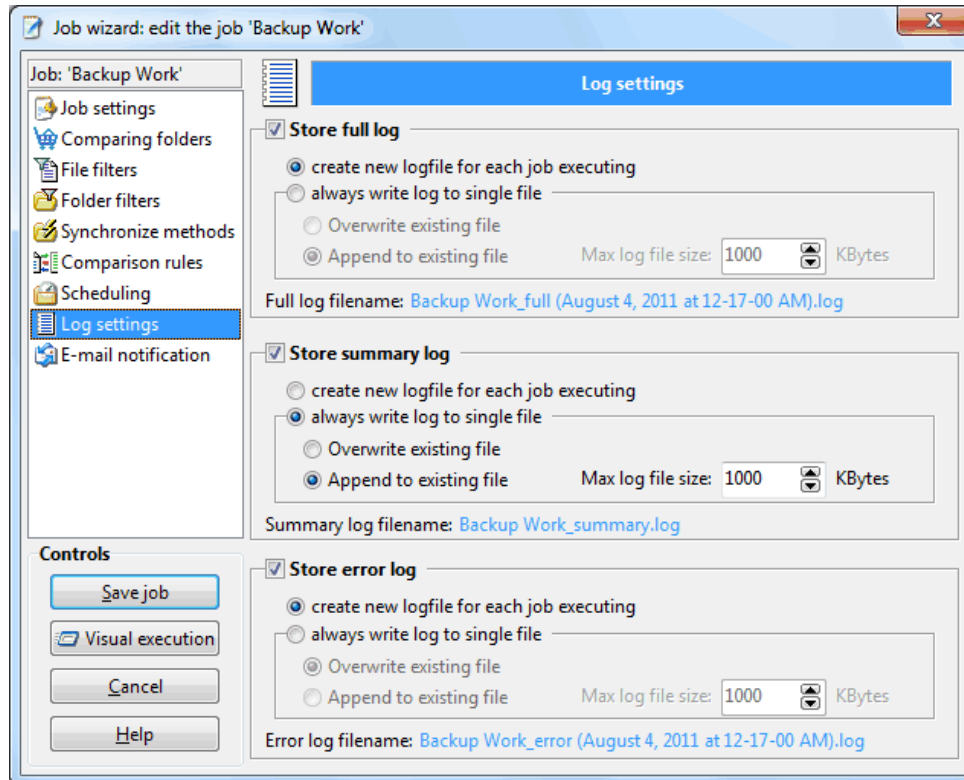
Field	Description
<b>Enable scheduler</b>	The group of controls enables the job automatic executions.
<b>Never (manual run)</b>	Job is in manual mode, automatic executions are disabled. You can execute it manually at any convenient time.
<b>Always</b>	Job automatic executions are enabled all the time.
<b>Between</b>	Job automatic executions are enabled between the specified time.
<b>Run on these days only</b>	The program will execute your job on selected month days only. Select one or several days of a month.
<b>Run on the week days only</b>	The program will execute your job on selected week days only. Select one or several weekdays.
<b>First executions' date</b>	Defines date and time of the first job execution.
<b>Repeat</b>	The group of controls defines frequency of job automatic executions.
<b>Every XX days</b>	The program will execute your job every XX days at the specified time.
<b>Every XX hours</b>	The program will execute your job every XX hours.
<b>Every XX minutes</b>	The program will execute your job every XX minutes.
<b>Every day at the start time</b>	The program will execute your job every day at the specified time. You can set the start time in the <b>First executions' date</b> control.
<b>List of nearest executions</b>	The list of the nearest job executions. These are the real dates of execution, calculated on stateded settings.
<b>Run missed schedules at the program startup</b>	Use this option if you need to periodically switch off your computer and some scheduled jobs can be missed. If this option is checked, the program will detect all missed (scheduled but not executed on time) items and execute them at the startup program.

You can skip this step, a job will be stored in manual mode by default. You can execute it manually at any time. To do that select a job in the Job list, click **Execute** button in the main toolbar.

## Setup log settings

At this step, you can set the log storing settings for a job.

Heatsoft Automatic Synchronizer can store the synchronization activity into log files: Full log, Summary log and Error log. You can select which log files will be created. To do this turn on the tick box next to necessary log file group.

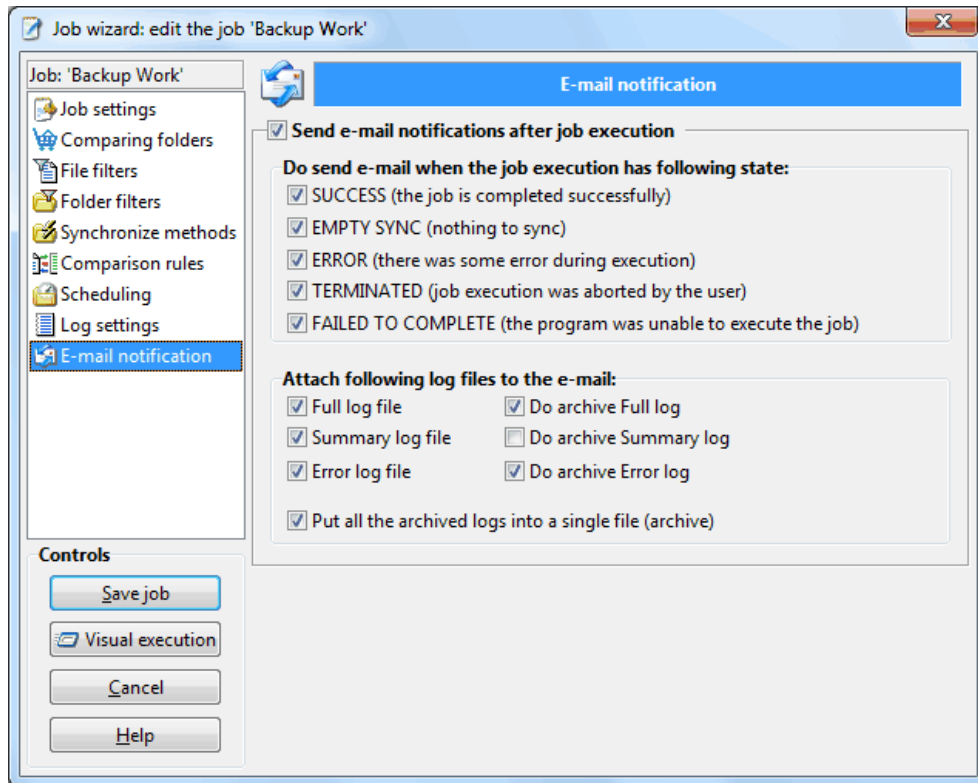


You can skip this step, so all the log files will be created by default.

## Setup e-mail notifications settings

At this step, you can set the e-mail notifications settings for a job.

Automatic Synchronizer can send e-mail to specified address after the job execution. To do this turn on the tick box **"Send e-mail notification after each job execution"**.



### **Important note:**

- Upon defining all the job settings, you need to go to the "E-mail notifications" page in the Job Wizard window in order to set a notification type for each job.

## 2.6 Tutorial 6: Run HAS as Windows service

### **Task:**

Synchronize folders for an organizer everyday around 6 AM. The synchronization task must be executed daily even if no one is logged on interactively.

### **Solution:**

The task is divided into 3 steps:

**Step 1: Add a job to the Service manager**

**Step 2: Put the created job into the HAS Service**

**Step 3: Run the HAS Service**

### **Important note**

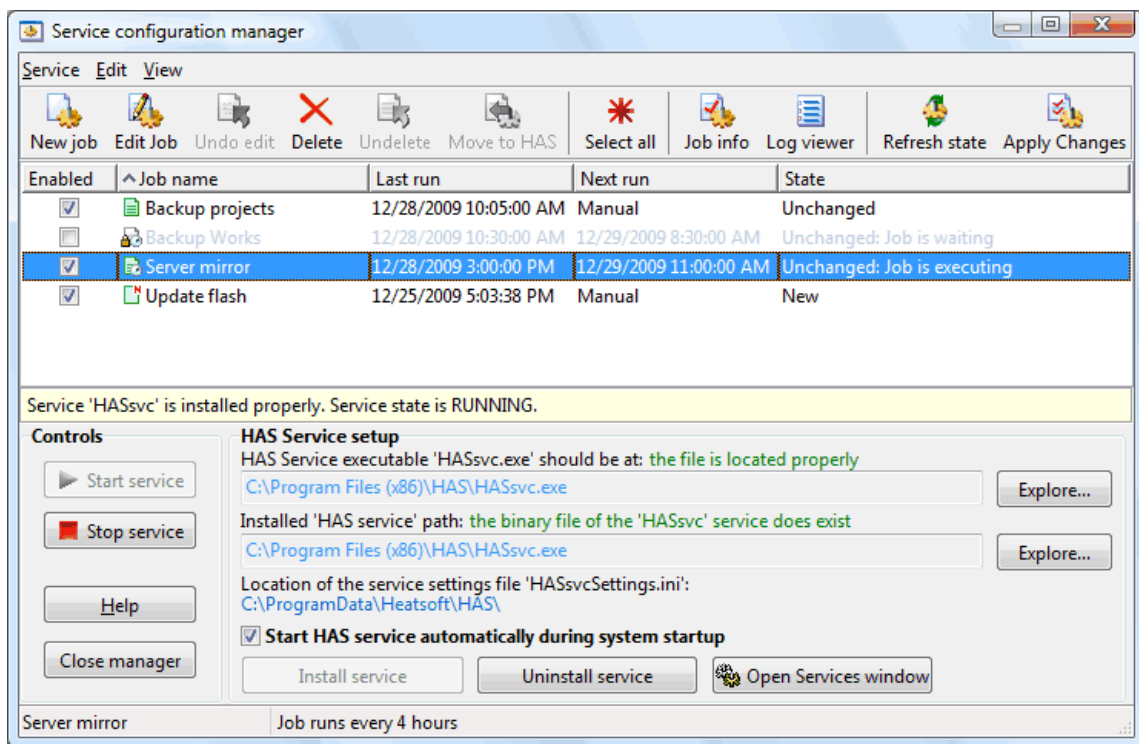
Unlimited HAS Service is available in *HAS with Service addon* only. For more details see Order section.

### **Step 1: Add a job to the Service manager**

- Open the *Service configuration manager* window. Use the main menu item **Job|Service configuration manager** in the HAS main window.
- Create a new Job (see Tutorial 5: Creating a job quickly). Click the button **New Job** on the toolbar in the top of the window or press **Ctrl+N** shortcut. This opens the Job wizard window.
- If you have created Job in the HAS main window, you can move it to the *Service configuration manager*. Select a job in the main window and click the main menu item **Edit|Move Job to Service**.

### **Step 2: Put the created job into the HAS Service**

- Click the button **Apply Changes** on the toolbar in the *Service configuration manager* window in order to put the created job into the HAS Service jobs list. You will see statistics of changes.



**Step 3: Run the HAS Service**

- You should install HAS service. For that, click the button **Install service** at the bottom of the jobs list. You can see the installed service in the **Services window** - click the button **Open Services window** and locate the '*HAS service*' in the window:
  - Select the '*HAS service*' and click right mouse button, a popup menu will appear
  - In the popup click the item **Properties**, HAS Service Properties window will be opened
  - In the window choose the sheet **Log on**
  - Check the radiobutton **This account**, and select an account which the '*HAS service*' will use to access to network resources (folders)
- Finally, start *HAS service*: click the button **Start service** at the bottom of the job list. Jobs status is reflected in the jobs list.

**Notes:**

- You must set a scheduler for a job in order *HAS Service* will be able to execute the job.
- You can update job settings while *HAS Service* is running.
- To see what *HAS Service* is doing click the **Log Viewer** button on the toolbar.

## 2.7 Tutorial 7: Notes for using Heatsoft Automatic Synchronizer

### **Task:**

Several notes for using Heatsoft Automatic Synchronizer

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### **Note 1: synchronizing hundreds of thousands files**

Starting version 2.03 HAS does have an ability to synchronize millions of files at a time. If you have a large amount of files we highly recommend you to use the **Sync per folder scan (real-time sync)** synchronization mode.

Otherwise we recommend you to construct a Job in a way that the Job has less than 500,000 files for scanning/synchronizing. Greater number of files during scanning/synchronizing with the **Folders pre-scanning sync** mode can exceed limit of memory Windows and the Job execution would be aborted.

### **Note 2: schedule a Job**

Try to run a Job in manual (Visual) mode several times before you do set the Job for automatic execution. You can see the **memory usage pick** of the Job execution in the Job History or Log file.

If the Job execution takes a lot of memory, you can reduce memory size consumed for storing the Job History in the **Options** window.

### **Note 3: executing several Jobs at a time**

Do not start all the Jobs simultaneously. This can consume a lot of memory and CPU resources so that some or all of the Jobs execution could be aborted.

### **Note 4: using long (file) paths length**

Since HAS version 2.00 you can use extended file paths: the max path length is extended from 260 to 32,767 wide characters (Unicode version of functions). Kindly be advised that a file path which length exceeds 254 symbols may not be accessible (visible) in Windows Explorer.

### **Note 5: UTF8 encoding of log files**

All the stored log files are UTF8 encoded. That does not any change for users who do work with filenames in Western languages.

### **Note 6: speed up filling of Job History viewer**

The colored Job History viewer is a former Windows component - Richedit. Filling of the Richedit can take a long time (up to tens seconds and more) if filepaths contain Eastern symbols. In order to get rid the delay you can turn off the colors in the Job History viewer: turn off the check **Use colored view** at the page [Job History](#) in the Options window.

# 3 User interface

## 3.1 The main window

The main window contains the main menu, the toolbar, the Job list and the Job's executions history pane.

The screenshot shows the main window of Heatsoft Automatic Synchronizer. The title bar reads "Heatsoft Automatic Synchronizer with service addon 2.03 - John Taylor". The menu bar includes "Job", "Edit", "View", and "Help". The toolbar contains icons for "New job", "Edit Job", "Delete", "Move To Service", "Select all", "Execute", "Stop Job", "Visual run", "Jobs Agenda", "Service config", "Job info", "Log viewer", and "Options".

The main area is divided into two panes. The top pane is a table of jobs:

Enabled	Job name	Last run	Next run	State	Progress
<input checked="" type="checkbox"/>	Backup projects	6/17/2011 6:06:35 AM: Empty sync	8/17/2011 6:06:35 AM	waiting	
<input checked="" type="checkbox"/>	Backup Work	8/2/2011 9:30:00 AM: Success	8/2/2011 11:30:00 AM	waiting	
<input checked="" type="checkbox"/>	Home docs	7/31/2011 11:10:23 AM: Error	Manual	idle	
<input checked="" type="checkbox"/>	Server mirror	8/2/2011 11:00:00 AM: running	8/2/2011 11:00:00 AM	executing	Scanned: 4,336 file
<input checked="" type="checkbox"/>	Sync articles	7/29/2011 1:21:09 PM: Terminated	Manual	idle	
<input checked="" type="checkbox"/>	Update flash	7/28/2011 4:48:15 PM: Failed	Manual	idle	
<input type="checkbox"/>	Update old	-	Manual	idle	
<input checked="" type="checkbox"/>	Warehouse	6/23/2011 11:12:30 PM: Success	Manual	idle	

To the right of the job list is a "List of nearest executions" pane showing a list of scheduled runs for "Backup Work".

The bottom pane is titled "Job's executions history (occupied 511 Kbytes)". It contains a toolbar with icons for "Check all", "Clear History", "Success", "Empty sync", "Error sync", "Failed jobs", "Terminated", "Summ", "Ok op", and "Fail op". Below the toolbar, it shows "Checked 7 of 8 jobs" with a list of job names and their counts. The main area of this pane displays the execution history for the selected job, "Backup Work", showing a successful execution on 8/2/2011 at 9:30:00 AM. It includes a "SUMMARY REPORT" with details on scanned folders, deleted files, and memory usage.

The screenshot shows the main window of Heatsoft Automatic Synchronizer. The title bar reads "Heatsoft Automatic Synchronizer with service addon 2.03 - John Taylor". The menu bar includes "Job", "Edit", "View", and "Help". The toolbar contains icons for "New job", "Edit Job", "Delete", "Move To Service", "Select all", "Execute", "Stop Job", "Visual run", "Jobs Agenda", "Service config", "Job info", "Log viewer", and "Options".

The main area is divided into two panes. The top pane is a table of jobs:

Enabled	Job name	Last run	Next run	State	Progress
<input checked="" type="checkbox"/>	Backup projects	6/17/2011 6:06:35 AM: Empty sync	8/17/2011 6:06:35 AM	waiting	
<input checked="" type="checkbox"/>	Backup Work	8/2/2011 9:30:00 AM: Success	8/2/2011 11:30:00 AM	waiting	
<input checked="" type="checkbox"/>	Home docs	7/31/2011 11:10:23 AM: Error	Manual	idle	
<input checked="" type="checkbox"/>	Server mirror	8/2/2011 11:00:00 AM: running	8/2/2011 11:00:00 AM	executing	Scanned: 8,223 files; 7,451 operations done
<input checked="" type="checkbox"/>	Sync articles	7/29/2011 1:21:09 PM: Terminated	Manual	idle	
<input checked="" type="checkbox"/>	Update flash	7/28/2011 4:48:15 PM: Failed	Manual	idle	
<input type="checkbox"/>	Update old	-	Manual	idle	
<input checked="" type="checkbox"/>	Warehouse	6/23/2011 11:12:30 PM: Success	Manual	idle	

The bottom pane is titled "Job information: job 'Server mirror'". It contains a "Job state" section with details for the selected job:

- Job name: Server mirror
- Job state: executing
- Sync mode: Sync per folder scan
- Sync method: Custom
- Last execution: 8/2/2011 11:00:00 AM
- Time elapsed: 1 m 13 s
- Execution status: running

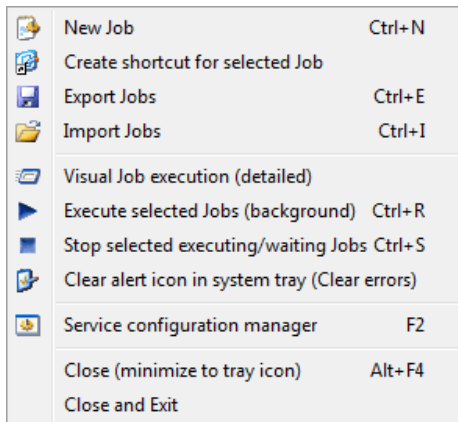
To the right is a "Last execution results" table:

	on Left pane	on Right pane	Errors
Scanned folders:	886	411	
Found files:	5,129	3,094	
Copied files:	1,520 [105,492,275 bytes]	3,561 [452,605,673 bytes]	none
Deleted files:	28 [4,968,946 bytes]	1,539 [92,297,726 bytes]	none
Created folders:	61	525	none
Removed folders:	none	217	none
Total files changes:	1,492 [100,523,329 bytes]	2,015 [360,265,232 bytes]	

## 3.2 The main menu

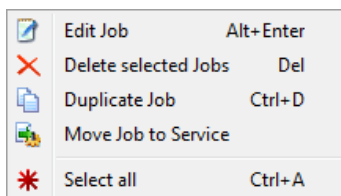
The program menu allows you to manage your jobs and user interface options.

### Job menu



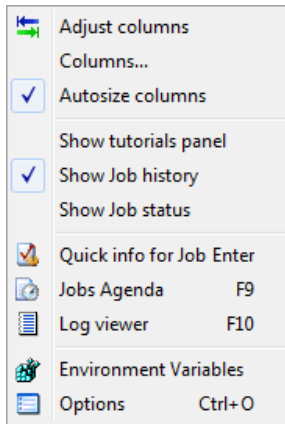
Menu item	Shortcut	Description
New Job	<b>Ctrl+N</b>	Opens the job wizard to create a new job.
Create a shortcut for a selected Job	<b>None</b>	Opens the window to create a shortcut for a selected Job.
Export Jobs	<b>Ctrl+E</b>	Opens the Export Jobs window to store jobs.
Import Jobs	<b>Ctrl+I</b>	Opens the Import Jobs window to load stored jobs into HAS.
Visual Job execution (detailed)	<b>None</b>	Opens the visual job executing window.
Execute selected Jobs (background)	<b>Ctrl+R</b>	Executes selected Jobs in the main window.
Stop selected executing/waiting Jobs	<b>Ctrl+S</b>	Terminates selected executing or waiting Jobs in the main window.
Clear alert icon in the system tray (Clear errors)	<b>None</b>	Use this item to change tray icon status from error to normal.
Service configuration manager	<b>F2</b>	Opens the Service configuration manager window where you can setup the HAS Service.
Close and Exit	<b>None</b>	Closes the program.
Close	<b>Alt+F4</b>	Minimizes application to the system tray icon.

### Edit menu



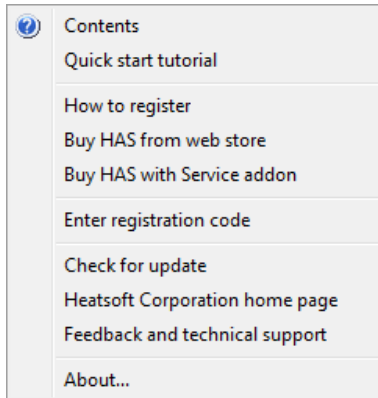
Menu item	Shortcut	Description
Edit Job	<b>Alt+Enter</b>	Opens the job wizard to edit a selected job.
Delete selected Jobs	<b>Del</b>	Deletes selected Jobs in the main window.
Duplicate Job	<b>Ctrl+D</b>	Duplicates a selected Job in the main window.
Move Job to Service	<b>None</b>	Move selected jobs to the Service configuration manager.
Select all	<b>Ctrl+A</b>	Selects or deselects all Jobs in the main window.

**View menu**



Menu item	Shortcut	Description
Adjust columns	<b>None</b>	Makes column widths equal in the main window.
Columns...	<b>None</b>	Opens the Job columns window for customize columns in the Job list.
Show tutorials panel	<b>None</b>	Hides/Shows the quick start tutorials panel in the main window.
Show Job history	<b>None</b>	Hides/Shows the Job executions history panel in the main window.
Show Job status	<b>None</b>	Hides/Shows the <b>Job status</b> panel in the Job list.
Quick info for Job	<b>Enter</b>	Opens the quick info window for a selected job.
Jobs Agenda	<b>F9</b>	Shows the jobs agenda window.
Log viewer	<b>F10</b>	Shows the log viewer window.
Environment variables	<b>None</b>	Shows the Environment variables window.
Options	<b>Ctrl+O</b>	Shows the options window.

**Help menu**

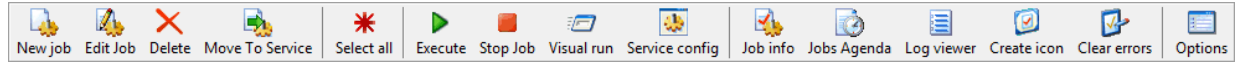


Menu item	Shortcut	Description
Contents	<b>None</b>	Shows HAS help topics.
Quick start tutorial	<b>None</b>	Shows HAS quick start tutorial help.
How to register	<b>None</b>	Shows the order help topic.
Buy HAS from web store	<b>None</b>	Directs you to web store, internet connection is required.
Enter registration code	<b>None</b>	Opens a window that allows to enter registration code.
Check for update	<b>None</b>	Directs you to HAS download webpage.
Heatsoft home page	<b>None</b>	Directs you to Heatsoft Corporation web site.
Feedback and technical support	<b>None</b>	Directs you to the HAS support webpage.
About	<b>None</b>	Provides information about the current version of HAS.

## 3.3 The main toolbar

HAS main toolbar provides quick access to frequently used operations and commands. Most toolbar operations are duplicated in the drop-down menus.




















The toolbar consists of a number of buttons identified by icons and captions. If you leave the mouse cursor on a button for a moment a small window with a description will appear.



### Notes:

- To activate a command, click on the corresponding button with the primary mouse button.
- To get a short description of the function of each button, rest the mouse cursor over the button.
- To customize Main toolbar, right click on the toolbar and select item Customize toolbar. This opens the window which allows you to add or remove buttons from the toolbar.

The **Main toolbar** can contains the following buttons:

Button	Shortcut	Description
	<b>CTRL+N</b>	Opens Job wizard to create a new Job.
	<b>Alt+Enter</b>	Opens Job wizard to edit a selected Job. If a selected job state is either waiting or executing you'll be asked to abort it for editing.
	<b>Ctrl+E</b>	Opens Export Jobs window which allows you to export HAS jobs into a text file in order to be able to import these exported jobs into HAS later.
	<b>Ctrl+I</b>	Opens Import Jobs window which allows you to import jobs which were exported to a text file into HAS.
	<b>Ctrl+D</b>	Duplicates a selected job.
	<b>Del</b>	Deletes selected jobs from the Job list.
	<b>None</b>	Move selected jobs to the Service configuration manager.
	<b>CTRL+A</b>	Selects/deselects all jobs in the Job list.
	<b>None</b>	Makes equal column widths in the main window.
	<b>F2</b>	Opens the Service configuration manager window where you can setup the HAS Service.
	<b>Ctrl+R</b>	Manual start of selected jobs. All selected jobs will start simultaneously.
	<b>CTRL+S</b>	Stops execution/waiting of selected jobs.
	<b>None</b>	Opens the Visual run window where you can execute a selected job step by step.
	<b>Enter</b>	Shows detailed properties of a selected job in the Quick info window.
	<b>F9</b>	Shows pending jobs executions job in the Jobs Agenda window.
	<b>F10</b>	Allows to view stored log files in the Log viewer window.
	<b>None</b>	Opens the Create shortcut window. The window allows you to place job shortcut on a Desktop for a fast executing job.
	<b>None</b>	Use this button to change tray icon status from error to normal.
	<b>CTRL+O</b>	Shows the options window.

## 3.4 Job list

The Job list displays jobs which you can execute. Fields of the Job list allow you to view the state of each job. You can left-click on the top of the column to sort by a specified field. You can right-click on the Job list to display a menu of commands appropriate to the object.

Enabled	Job name	Last run	Next run	State	Progress
<input checked="" type="checkbox"/>	Backup projects	12/28/2009 10:05:00 AM: Empty sync	12/28/2009 12:05:00 PM	waiting	
<input checked="" type="checkbox"/>	Backup Works	12/28/2009 10:30:00 AM: Success	12/28/2009 12:30:00 PM	waiting	
<input checked="" type="checkbox"/>	Home docs	12/23/2009 3:20:32 AM	Manual	nothing	
<input checked="" type="checkbox"/>	Server mirror	12/28/2009 11:00:00 AM: running	12/28/2009 11:00:00 AM	executing	Copying: 59,303 of 252,698 Kb
<input checked="" type="checkbox"/>	Sync articles	12/25/2009 7:37:05 PM: Terminated	Manual	nothing	
<input checked="" type="checkbox"/>	Update flash	12/25/2009 5:03:38 PM: Error	Manual	nothing	
<input type="checkbox"/>	Update old	-	Manual	nothing	
<input checked="" type="checkbox"/>	Warehouse	-	Manual	nothing	

To change the columns displayed in the Job list:

- On the View menu, click Columns.
- Right-click on the top of the column, choose Columns item.
- Click the button **Job list columns...** in the general settings window.

You can also re-order the Jobs by clicking headings such as **Job name**, **Last run**, **Next run** or **State**. Click the column heading to re-order the jobs by that column. For example, when you click the **Job name** column, jobs are sorted alphabetically by the job name.

To change the order of the columns, point to a column heading (**Job name**, **Last run**, **Next run** or **State**), and then drag the column to the left or right until it's located where you want it.

Column	Description
<b>Job name</b>	Column displays a unique name of a job.
<b>Last run</b>	Column displays a date when a job was started and result of last job execution.
<b>Next run</b>	Column displays a date when a job should start next time.
<b>State</b>	Column displays a job state.
<b>Progress</b>	Column displays progress of synchronization.

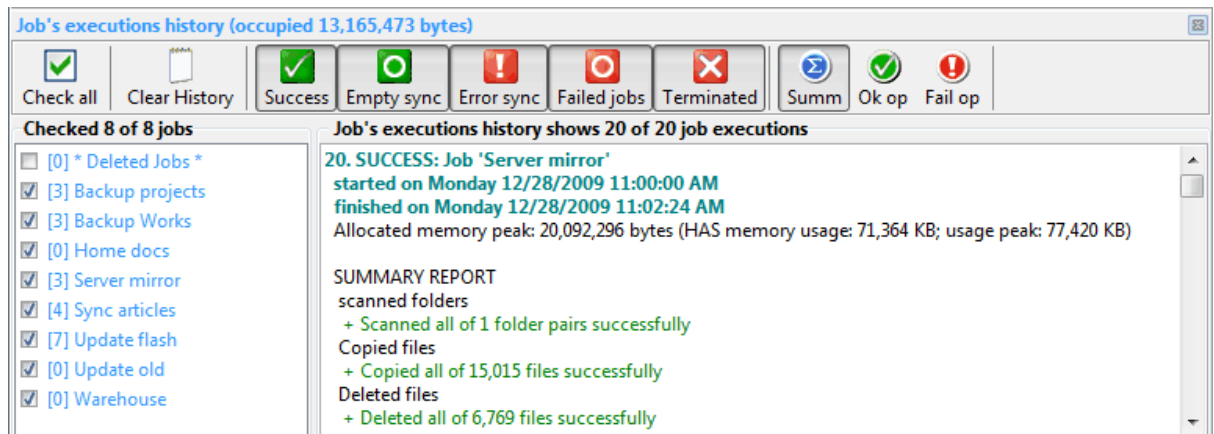
Job can be in one of three following states – Idle, Waiting, Executing:


Symbol	State	Description
	Waiting	Job is in automatic mode and it was not executed. Job waits <b>Next Run</b> time and starts when current time will be equal or greater than <b>Next Run</b> time.
	Idle	Job is in manual mode and it was not executed yet. You can execute the job at any time you wish.
	Executing	Job performs a synchronization.
	Idle: Success	Job is in manual mode and the last execution has been completed successfully.
	Idle: Empty sync	Job is in manual mode and the last execution has been completed without synchronization.
	Idle: Error	Job is in manual mode and the last execution has been completed with an error.
	Idle: Failed	Job is in manual mode and it was unable to execute.
	Idle: Terminated	Job is in manual mode and the last execution has been terminated.
	Waiting: Success	Job is in automatic mode and the last execution has been completed successfully.
	Waiting: Empty sync	Job is in automatic mode and the last execution has been completed without synchronization.
	Waiting: Error	Job is in automatic mode and the last execution has been completed with an error.
	Waiting: Failed	Job is in automatic mode and it was unable to execute.
	Waiting: Terminated	Job is in automatic mode and the last execution has been terminated.

## 3.5 Jobs executions history

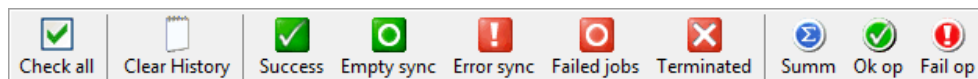
The Job's executions history shows events occurred during synchronization. The history pane contains the toolbar, the **Checked Jobs list** and the text pane. The text pane displays messages related only to the checked jobs. You can right-click on the Job history to display a menu of commands appropriate to the object.

Checked Jobs list allows you to manage Jobs executions displayed in the text pane. Jobs executions will be displayed only for Jobs checked in the list. Check **Deleted Jobs** to see executions for Jobs which were removed. A number next to the Job name means quantity of executions for this job.













Different colors denote different types of history messages as defined in Job History Settings. If you wish you can customize fonts and colors for all kinds of events with the help of the **Job History Settings** item  from the Context menu.

The Job history toolbar allows you to manage information about jobs executions in the text pane. The hint contains a text string that appears when you move the mouse pointer over a button.



The **History toolbar** contains the following buttons:

Button	Description
	Check all Turn on/off tick boxes for all jobs in the job history list.
	Clear History Deletes information from the Job history.
	Success Shows successful jobs executed. This executions were completed successful without any errors.
	Empty sync Shows jobs executions without data synchronization because comparison folders are empty.
	Error sync Shows jobs executions with an error. During this executions some errors like "not enough space", "access denied" were occurred.
	Failed jobs Shows jobs executions which were failed. This Jobs can not be executed because comparison folders not exists, or exceeded windows memory limit.
	Terminated Shows jobs executions which were terminated. The executions of this Jobs were stopped by user.
	Summ Shows summary report (statistics) for each job execution.
	Ok op Shows all success operations (creating, removing folders and copied, deleted files).
	Fail op Shows all filed operations (creating, removing folders and copied, deleted files with errors).

### Notes:

- To activate a command, click on the corresponding button with the primary mouse button.
- To get a short description of the function of each button, rest the mouse cursor over the button.
- To customize History toolbar, right click on the toolbar and select item Customize toolbar. This opens the window which allows you to add or remove buttons from the toolbar.

## 3.6 Job wizard

A job has some settings which define job behavior during execution. Job Wizard allows you to create a job or customize job settings. Job Wizard contains several pages. Each page has specific settings that enable you to control your job execution.

There are eight pages:

<b>Job Wizard page</b>	<b>Description</b>
<b>Job settings</b>	Represents current job settings in a short form. On the page you can change a job name.
<b>Comparing folders</b>	Contains pairs of folders which will be compared.
<b>File filters</b>	File filters specify files which will be involved in comparison/synchronization. There are a filespec, a datetime, a size and attributes filters.
<b>Folder filters</b>	Folder filters define what folders to exclude from a comparison.
<b>Synchronize methods</b>	Allows you to specify how to perform a synchronization. There are predefined methods such as Mirror copy, Update, Copy.
<b>Comparison rules</b>	Contains comparison rules. Defines what files are equal.
<b>Scheduling</b>	Allows you to set up HAS scheduler for an editing job. Defines how often the job must be executed in automatic mode.
<b>Log settings</b>	Allows you to set up a storing of synchronization activity. There are three types of log files: full, summary, and error.
<b>E-mail notifications</b>	Allows you to set up the Notifications to inform you by e-mail about Job execution results.

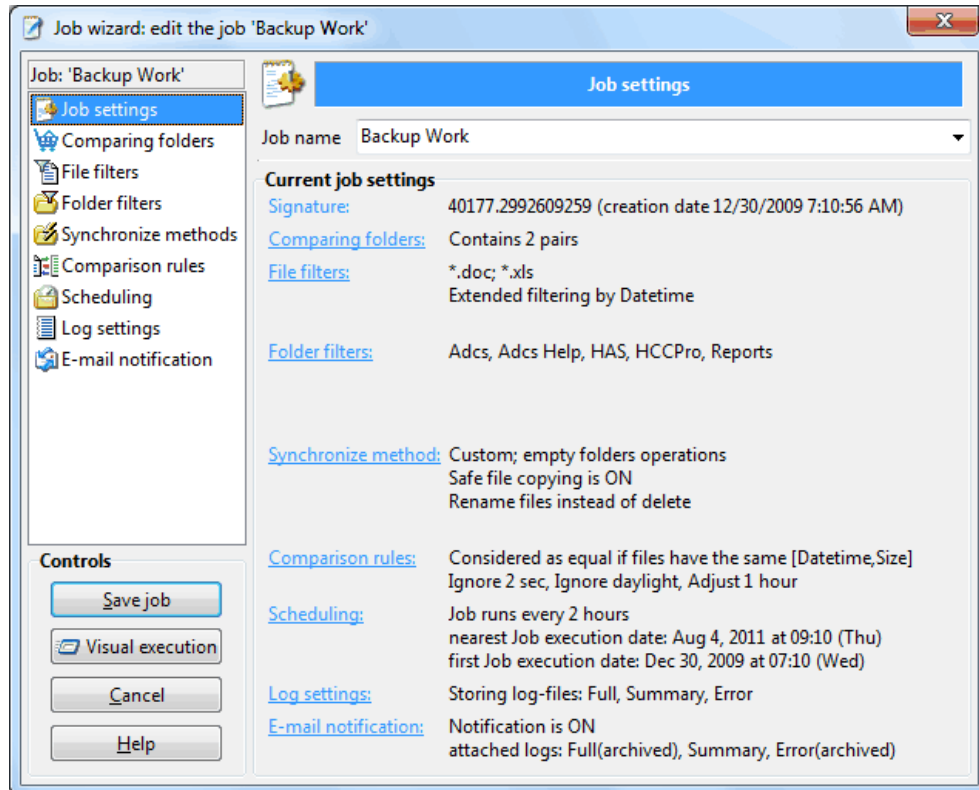
Job is a set of comparing folders and operations over them. For detailed customization you can set comparison rules for each job. Job can be executed in automatic mode or manual mode. All the Job operations can be stored into a log file.

Created Job can be executed in visual mode. This mode allows to control all the execution step by step.

## Job settings

Job settings display the current job settings in a short form. In the page you see information about comparing folders, file filters, folder filters, defined synchronization method, comparison rules for files, Job scheduling and log file settings. When you see all settings, you can fast forward to the desired page for editing. To do that, click on the highlighted link on the page.

You can set/edit a Job name on the page.

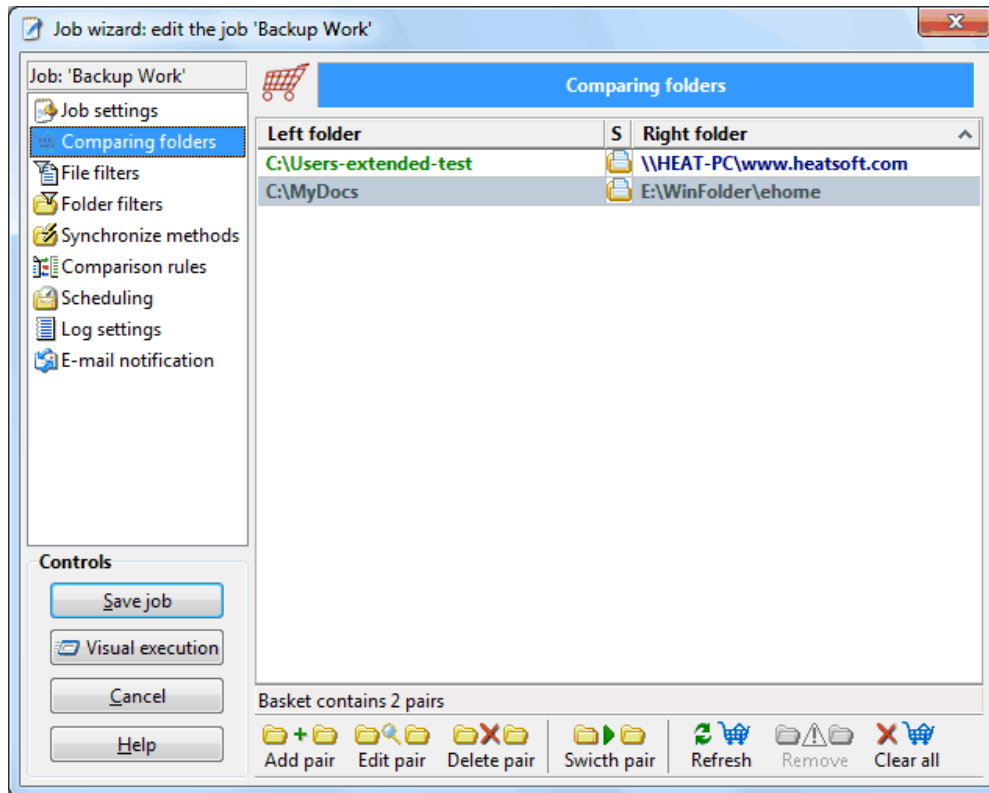


### Notes:

- Job name must be unique.
- Don't use symbols such as \ / : \* ? " < > | in a Job name.



## Comparing folders

On the page Comparing folders you can set/edit folder pairs for comparison.



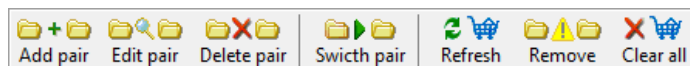
Comparing folders is a folder pair which is displayed in the table.










An image between folder paths shows how the folder will be compared with or without their subfolders:

- This image  presents comparing with subfolders.
- This image  presents comparing without subfolders.

You can sort pairs by a name and by a path. Click on the top of table column to view the sort menu.

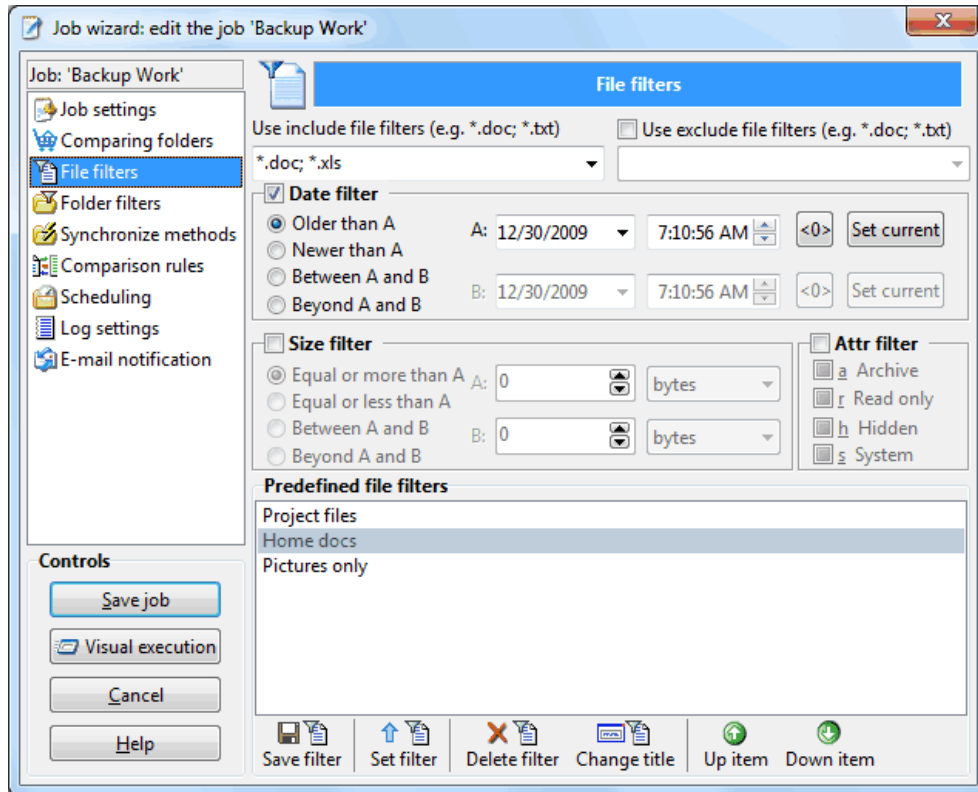
Use the toolbar for the pair management:



Button	Shortcut	Description
	<b>Ins</b>	Adds a pair to the comparing folders list. Opens the Add/Edit a pair window.
	<b>Enter</b>	Edits a selected pair. Opens the Add/Edit a pair window with selection of editing folders.
	<b>Del</b>	Deletes a selected pair from the comparing folders list.
	<b>None</b>	Switches a type of comparison for a selected pair:  <u>with</u> subfolders or  <u>without</u> subfolders.
	<b>None</b>	Checks folder pairs: if a folder from a pair doesn't exist the pair will be shadowed.
	<b>None</b>	Deletes invalid pairs.
	<b>None</b>	Clears the comparing folders list.

## File filters

On the page you can exclude files from a comparison/synchronization. File filter is actual for all of the folder pairs. You can filter files by a name mask(filespec), by a modified date, by a size and by attributes.



### Filtering by a name mask (filespec)

If you want to include files with only a specific name, simply type a file mask in **Use include file filters** line. For example, the mask *\*books\** limits the files involved into comparison to files which have the word *books* in their name.

If you want to exclude some files with a specific name you need:

- set check **Use exclude file filters**
- type a name mask in the **Use exclude file filters** line.  
For example, the mask *\*Finance\** excludes all the files which have in their name the word *Finance*.

You can use **include** and **exclude** file name masks together. For example, **include** mask *\*books\**, and **exclude** mask *\*Finance\** and it allows you involve in comparison only files which have the word *books*, but do not contain the word *Finance* in their name.

File mask (filespec) can contain special symbols:

Symbol	Description
*	In file name of this place can be any number of any characters.
?	In file name of this place should be a single character.
;	This symbol separates filter parts.

For example, there are three files in the comparing folders: **air.exe**, **air.com**, **water.exe**.

Operation Task	Implementation	Files in the table
<b>AND</b>	File name must begin with the letter "A" <b>AND</b> must end with the letter "E"	Include: a*e      air.exe
<b>OR</b>	File name must begin with the letter "A" <b>OR</b> must end with the letter "E"	Include: a*; *e      air.com, water.exe
<b>NOT</b>	File name should <b>NOT</b> begin with the letter "A"	Exclude: a*      water.exe
<b>Ex #1</b>	Shows all files which have names length of seven characters	Include: ???????      air.exe, air.com
<b>Ex #2</b>	Shows all files which names end with the "EXE" but do <b>NOT</b> begin with the letter "A"	Include: *exe Exclude: a*      water.exe

#### Filters rules:

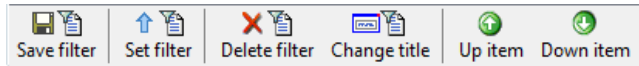
- Filter can contain any numbers of filters parts. Filters parts separated by ";"
- Filters parts concatenated by OR.
- Filters part "\*. \*" It means including all files. It doesn't matter, it contains a file "." or not.
- Any numbers of "\*" or any numbers of spaces will be considered as "\*. \*".
- Exclude filter like "\*. \*" shows all files.
- File name like readme.txt contains a dot, but this dot doesn't appear in the preview table. The filter like readme?txt shows file readme.txt and doesn't show the file readme1.txt.







#### Filtering by a modified date, size, and attributes

To use the filter you must set an appropriate check on a Date filter, a Size filter or a Attr filter and set filter parameters. These parameters are described in the table below.

Field	Description
<b><u>Date filter</u></b>	<u>This group allows to filter out files by the last modified file date.</u>
<b>Older than A</b>	This field allows to specify a file date range for filtering. The file date range filter makes visible those files which the last modified date is <b>older than</b> the given date range.
<b>Newer than A</b>	This field allows to specify a file date range for filtering. The file date range filter makes visible those files which the last modified date is <b>newer than</b> the given date range.
<b>Between A and B</b>	These two fields allow to specify a file date range for filtering. The file date range filter makes visible those files which the last modified date is <b>between</b> the given date range.
<b>Beyond A and B</b>	These two fields allow to specify a file date range for filtering. The file date range filter makes visible those files which the last modified date is <b>beyond</b> the given date range. Sets time to zero (00:00:00).
<b>Set current</b>	Inserts the current date and time.
<b><u>Size filter</u></b>	<u>This group allows to filter out files by a file size.</u>
<b>More than A</b>	This field allows to specify a file size range for filtering. The file size range filter makes visible those files which sizes are <b>more than</b> the given size range.
<b>Less than A</b>	This field allows to specify a file size range for filtering. The file size range filter makes visible those files which sizes are <b>less than</b> the given size range.
<b>Between A and B</b>	These two fields allow to specify a file size range for filtering. The file size range filter makes visible those files which sizes are <b>between</b> the given size range.
<b>Beyond A and B</b>	These two fields allow to specify a file size range for filtering. The file size range filter makes visible those files which sizes are <b>beyond</b> the given size range.
<b><u>Attr filter</u></b>	<u>This group allows to filter out files by file attributes.</u>

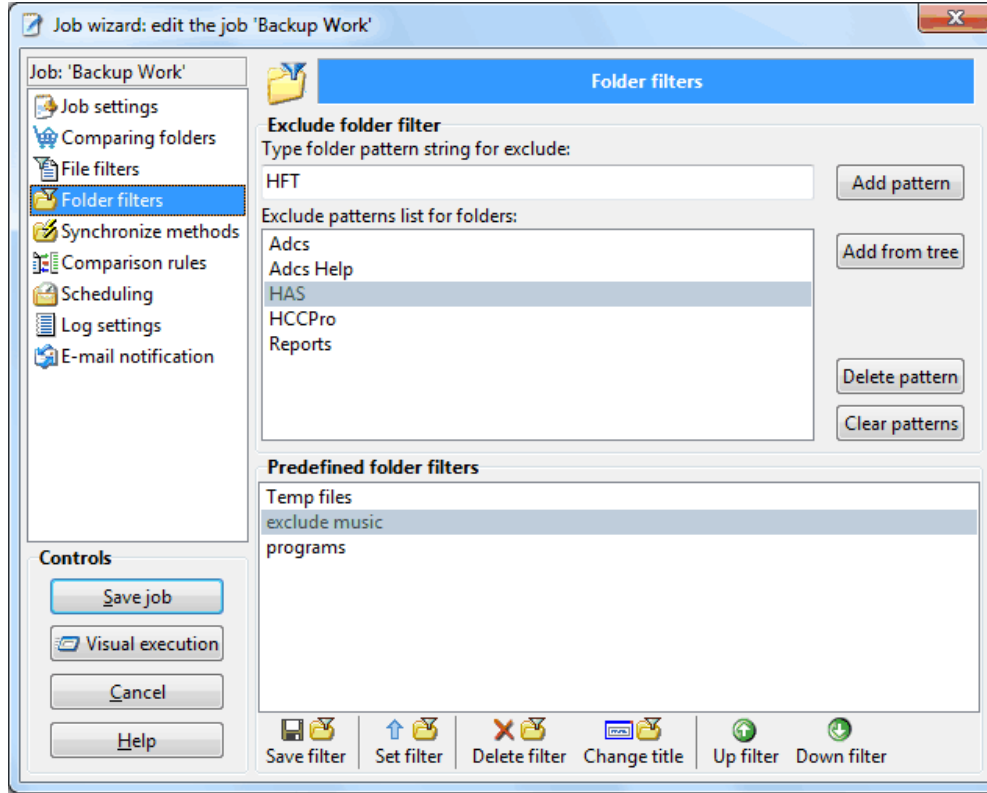
You can save the whole file filter as predefined in order to use it for other jobs. To save the file filter click the button **Save filter** on the toolbar.



Button	Shortcut	Description
 Save filter	<b>None</b>	Saves the current filter as predefined in the Save file filter window.
 Set filter	<b>None</b>	Sets the predefined file filter and fill fields with values of the predefined file filter.
 Delete filter	<b>None</b>	Deletes the selected predefined file filter from the list.
 Change title	<b>None</b>	Changes caption of the selected predefined file filter in the Rename file filter window.
 Up item	<b>None</b>	Moves selection in the predefined file filter list to one item up.
 Down item	<b>None</b>	Moves selection in the predefined file filter list to one item down.

## Folder filters

On the page you can exclude folders from a comparison. The folder filter is actual for all of the folder pairs. Folder filter consists of the list folder names you do want to exclude from a comparison.



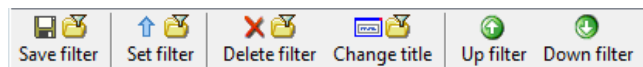
You can type folder patterns or select the pattern names from a tree. Type the folder name in the line **Type folder pattern string for exclude** and click on the button **Add pattern** to add the typed folder name. The typed name will be added into **Exclude patterns list for folders**. A pattern string can be a combination of valid folder name characters and the asterisk (\*). The asterisk is a wildcard that represents any combination of valid folder name characters.

To add pattern names from a tree click the button **Add from tree**. You can select folders names in the Getting folder names window.

You can manage the folder patterns in **Exclude patterns list for folders** with following buttons:

Button	Description
Add pattern	Adds the typed folder pattern.
Add from tree	Adds the folder patterns from the tree.
Delete pattern	Deletes the selected folder pattern.
Clear patterns	Deletes all the folders patterns in the list.

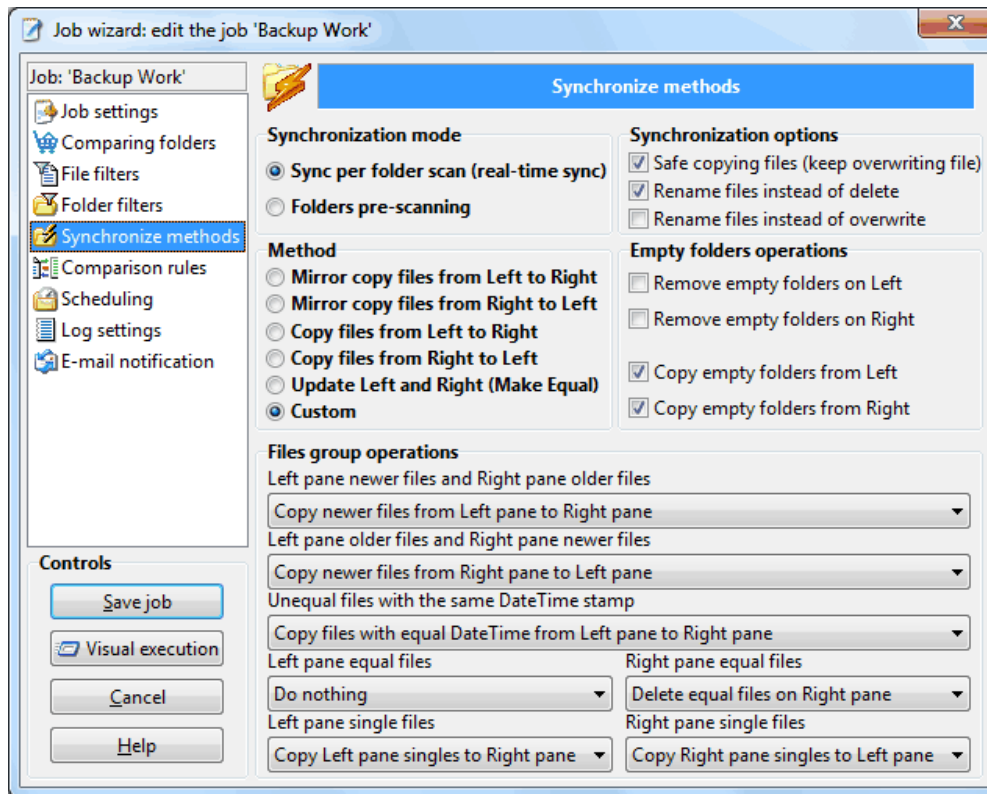
You can save the folder filter as predefined in order to use it for other jobs. To save the file filter click the button **Save filter** on the toolbar.



Button	Shortcut	Description
	None	Saves the current filter as the predefined folder filter in the Save folder filter window.
	None	Sets the predefined folder filter and fills fields with values of the predefined folder filter.
	None	Deletes the selected predefined file filter from the list.
	None	Changes caption of the selected predefined file filter in the Rename folder filter window.

## Synchronize methods

Synchronization method is a set of operations which HAS takes over the compared folder pairs during synchronization. On the page you can choose a synchronization predefined method or customize your own method.



Synchronization mode defines a way how a synchronization would be made:

Sync mode	Description
<b>Sync per folder scan (real-time sync)</b>	HAS does synchronize a folder pair immediately after its folders are scanned. Then HAS does read subfolders of the folder pair and syncs them, etc. The main advantage of the synchronization mode is reducing of the memory usage. The mode allows to sync tens of millions of files at a time.
<b>Folders pre-scanning</b>	HAS does scan all the folder pair contents, keeps it in the memory, and then starts a synchronization. Visual run requires to use this mode.

There are five predefined methods and one custom:

Method	Description
<b>Mirror copy files from Left to Right</b>	Copies all files and empty folders from Left to Right and delete all single files and empty folders in the Right folders. So the Right folders will be made identical to the Left folders.
<b>Mirror copy files from Right to Left</b>	Copies all files and empty folders from Right to Left and delete all single files and empty folders in the Left folders. So the Left folders will be made identical to the Right folders.
<b>Copy files from Left to Right</b>	Copies all files and empty folders from Left to Right. So files and empty folders from the Left folders will be added/overwritten to the Right folders.
<b>Copy files from Right to Left</b>	Copies all files and empty folders from Right to Left. So files and empty folders from the Right folders will be added/overwritten to the Left folders.
<b>Update Left and Right (Make equal)</b>	Copies NEWER, SINGLE files and empty folders from Left and Right folders to the each other. So Left and Right folders will be equal and updated with most recent files and empty folders.
<b>Custom</b>	This method allows you to manually set operations for file groups from the drop-down controls. Operations for empty folders will be enabled when you select this method.

**Safe copying files (protect overwriting file until success file replication is done)** - turn on this tick box to protect overwriting file. When this tick box is on HAS will copy a file to a temporary file, and when file replication is successfully done HAS will overwrite old file with new one.

**Rename files instead of delete** - turn on this tick box to protect deleting file. When this tick box is on HAS will rename a file instead of delete it. For example, HAS does create the file **My thesis.doc.(May 16, 2008 at 13-41-57).del** instead of delete **My thesis.doc**.

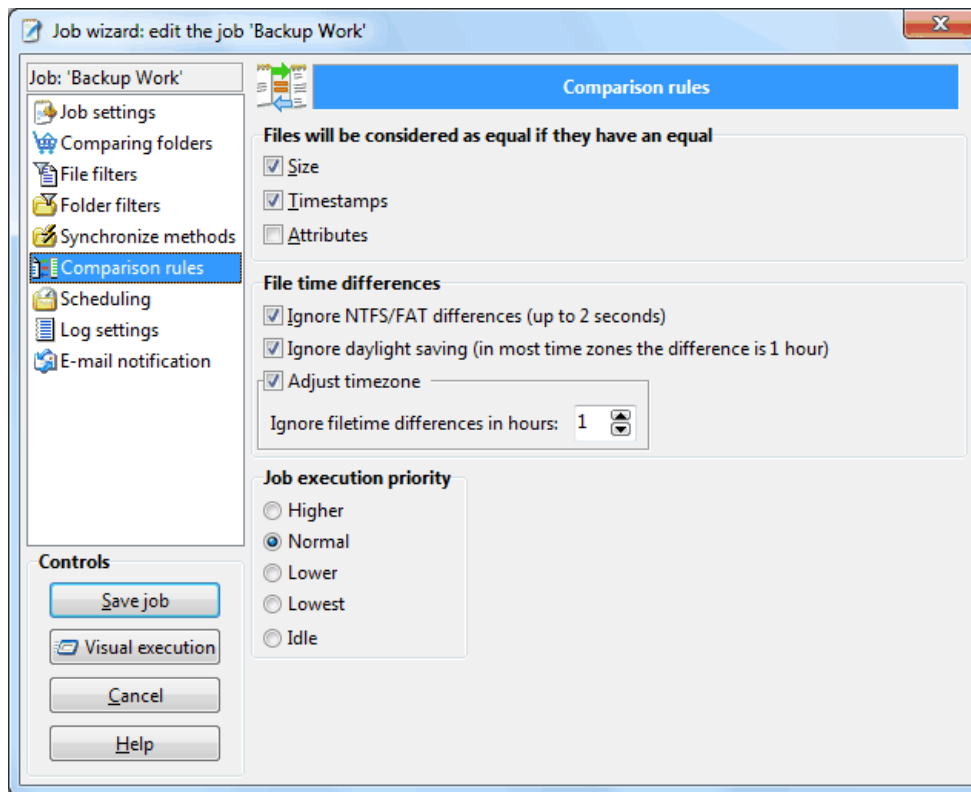
**Rename files instead of overwrite** - turn on this tick box to protect overwriting file. When this tick box is on HAS will rename a file instead of overwrite it. For example, HAS does create the file **My thesis.doc.(May 16, 2008 at 13-41-57).owr** instead of overwrite **My thesis.doc**.

Operations for empty folders are set automatically for each predefined synchronization method. If you want to customize operations for empty folders, set custom synchronization method.

Empty folders operations	Description
<b>Remove empty folders on Left</b>	Removes empty folders on the Left pane.
<b>Remove empty folders on Right</b>	Removes empty folders on the Right pane.
<b>Copy empty folders from Left</b>	Copies empty folders from Left to Right pane.
<b>Copy empty folders from Right</b>	Copies empty folders from Right to Left pane.

## Comparison rules

Comparison rules define how duplicate files will be compared. On the page you can set up when the duplicates will be considered as equal.



The following options let you specify what comparison criteria is used to consider files as equal:

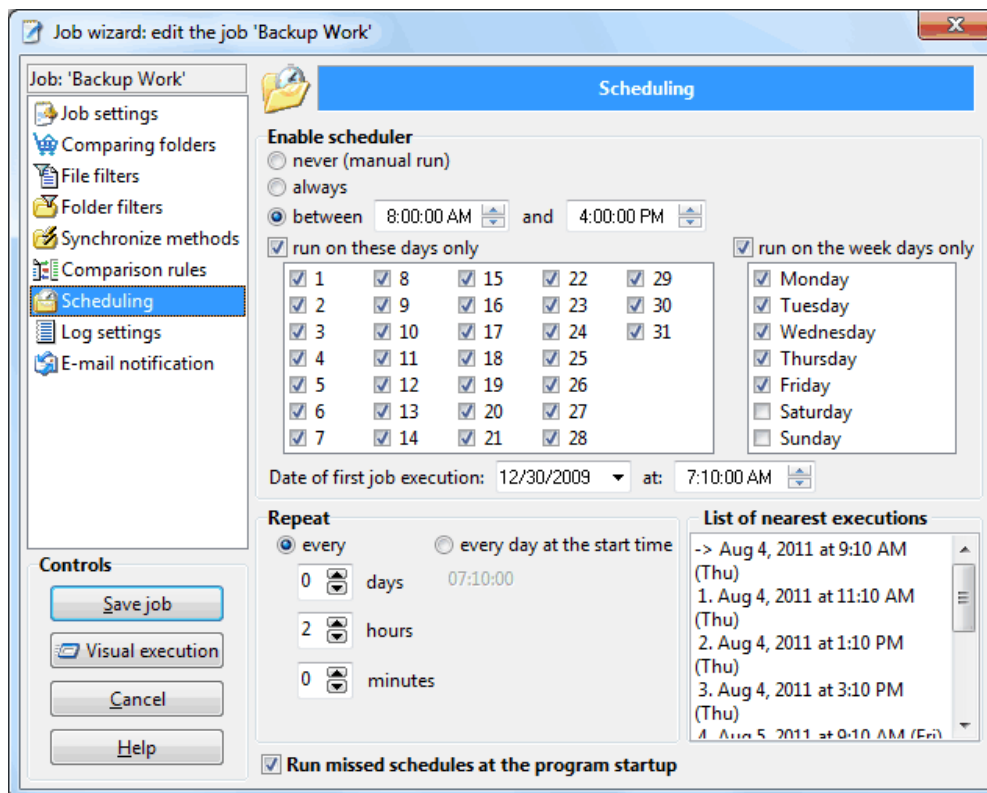
Option	Description
<b>Size</b>	Duplicates being considered as equal if files have an equal size.
<b>Timestamp</b>	Duplicates being considered as equal if files have an equal date and time.
<b>Attribute</b>	Duplicates being considered as equal if files have an equal attribute. File attributes can differ in some OS, for example in Windows 2000 and Windows 98.
<b>Ignore NTFS/FAT differences (up to 2 seconds)</b>	The DOS FAT system stores file timestamps to the nearest 2 seconds only, while NTFS and HPFS can represent timestamps to the nearest 100 nanoseconds. Copying across a network, between file systems, can result in files with slightly different timestamps. If this option is checked, those files would be treated as if they had the same times. This option is useful for comparing directories between computers with different file systems.
<b>Ignore daylight saving (usually 1 hour)</b>	The DOS FAT file times are not adjusted for Daylight Saving Time (DST), whereas NTFS entries are. When NT family automatically adjusts for DST, the date/time stamp of files on NTFS volumes appear to be shifted by one hour, even if the files were last changed prior to the DST adjustment. This adjusted time is then displayed in all operations which report local time (that is, NT Explorer, File Manager, directory listings, and so on). When files are copied from an NTFS drive to a FAT drive before the time change, the times can differ by an hour, but the files remain the same. If this options is checked, those files would be treated as if they had the same times. This option is useful for comparing directories between computers with different file systems.
<b>Adjust timezone Ignore filetime differences in hours</b>	Sets filetime differences in hours. It is available if the <b>Adjust timezone</b> is checked.

## Scheduling

On the page you can set up HAS scheduler for a job. With scheduler, you can schedule a Job to run at a time that is most convenient for you. Turn on the check **Launch HAS on Windows start up** at the "General" page in the Options window in order to get HAS started and runs it in the background each time you start Windows.

With scheduler, you can also:

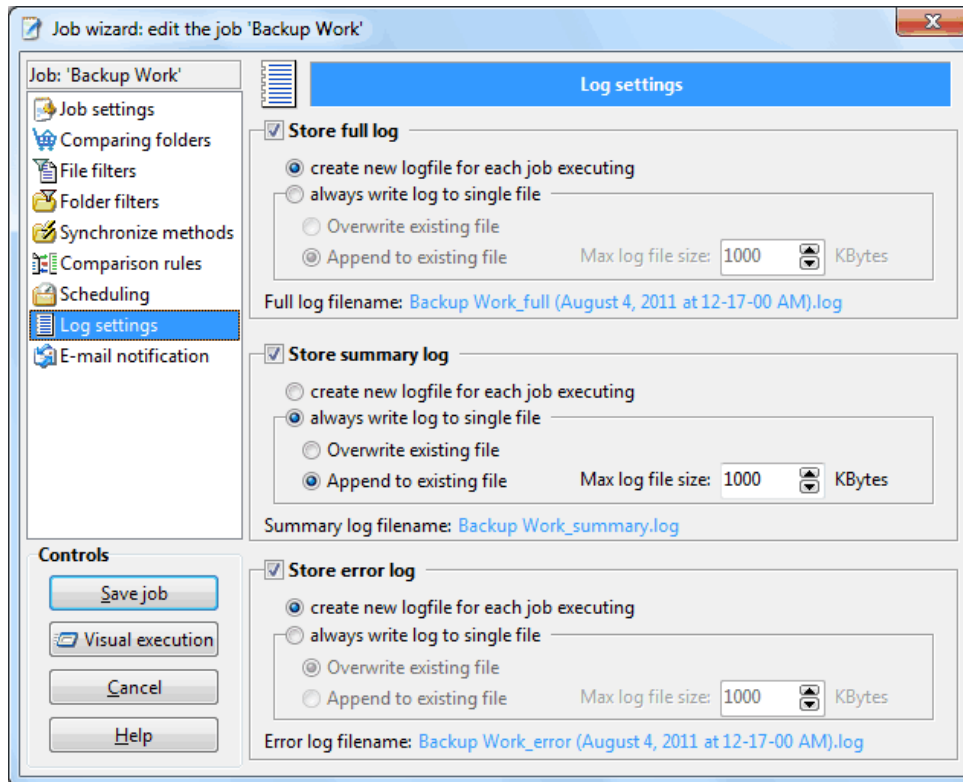
- Schedule a job to run daily, weekly, monthly, or at certain times.
- Change the schedule for a job.
- Stop a scheduled job.



Field	Description
<b>Enable scheduler</b>	The group of controls enables the job automatic executions.
<b>Never (manual run)</b>	Job is in manual mode, automatic executions are disabled. You can execute it manually at any convenient time.
<b>Always</b>	Job automatic executions are enabled all the time.
<b>Between</b>	Job automatic executions are enabled between the specified time.
<b>Run on these days only</b>	The program will execute your job on selected month days only. Select one or several days of a month.
<b>Run on the week days only</b>	The program will execute your job on selected week days only. Select one or several weekdays.
<b>First executions' date</b>	Defines date and time of the first job execution.
<b>Repeat</b>	The group of controls defines frequency of job automatic executions.
<b>Every XX days</b>	The program will execute your job every XX days at the specified time.
<b>Every XX hours</b>	The program will execute your job every XX hours.
<b>Every XX minutes</b>	The program will execute your job every XX minutes.
<b>Every day at the start time</b>	The program will execute your job every day at the specified time. You can set the start time in the <b>First executions' date</b> control.
<b>List of nearest executions</b>	The list of the nearest job executions. These are the real dates of execution, calculated on stateded settings.
<b>Run missed schedules at the program startup</b>	Use this option if you need to periodically switch off your computer and some scheduled jobs can be missed. If this option is checked, the program will detect all missed (scheduled but not executed on time) items and execute them at the startup program.

## Log settings

All the synchronization activity of a job can be stored into a log file. On the page you can set up storing settings.



HAS can create three types of log file: Full log, Summary log and Error log:

Log file type	Description
<b>Full log</b>	Contains detailed information about job execution.
<b>Summary log</b>	Contains status information about job execution.
<b>Error log</b>	Describes errors which are occurred during job execution.

Log file name can vary depending on log settings. You can see an example of Log file name on the page.

There are individual settings for each log file types (Full log, Summary log, Error log):

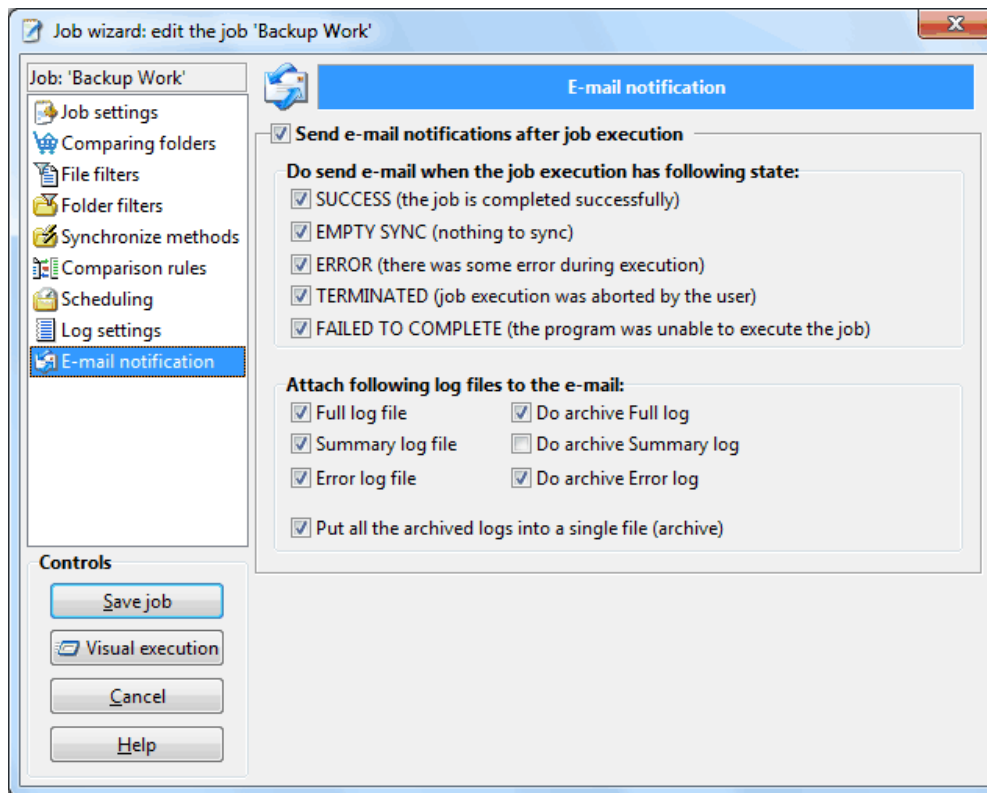
Option	Description
<b>Store new log file for each job executing</b>	Creates the new file every time job was executed. The name of file includes the current date and time. So you can easily distinguish what log is for.
<b>Always write log to single file</b>	Log file is stored in one single file always.
<b>Overwrite existing file</b>	Log file will be overwritten on every job execution.
<b>Append to existing file</b>	Job execution results will be appended to existing log file.
<b>Max log file size</b>	Limits maximum log file size. When this limit will be exceeded the log file would be overwritten.

### Note:

- You can set the main log folder for storing log files in the Options window.

## E-mail Notifications

HAS can inform you about Job execution results. On this page you can choose events when HAS will send e-mail to specified e-mail address.



Option	Description
<b>Send e-mail notification after each job execution</b>	Summary e-mail will be send to <a href="#">specified address</a> after the job execution.
<b><u>Do send e-mail when the job execution has following state</u></b>	The group allows a user to define when HAS will send notifications for the job.
<b>SUCCESS</b>	Job completed successfully. There was no error during execution.
<b>EMPTY SYNC</b>	Job did not perform any operation since folders are synchronized already.
<b>ERROR</b>	There was some error during the job execution.
<b>TERMINATED</b>	The job execution was aborted by the user.
<b>FAILED TO COMPLETE</b>	HAS was unable to execute the job in a proper way (for instance due to inaccessible folders).
<b><u>Attach following log files to the e-mail</u></b>	The group allows a user to attach the job log files to the notification e-mail.
<b>Full log file</b>	A log file with all the operations that HAS performed during the job execution.
<b>Summary log file</b>	Contains a few lines with status information about the job execution.
<b>Error log file</b>	Describes errors which are occurred during the job execution.
<b>Do archive Full log</b>	Option to put the Full log file into a zip-archive. Allows to decrease size of a log file for sending up to 10 times. Extremely useful when operations volume is large.
<b>Do archive Summary log</b>	Option to put the Summary log file into a zip-archive. May not be useful if you do choose to archive Summary log only.
<b>Do archive Error log</b>	Option to put the Error log file into a zip-archive. Allows to decrease size of a log file for sending up to 10 times.
<b>Put all the archived logs into a single file</b>	Log files with archive option will be archived together into a one file.

### **Note:**

- To use the e-mail notification you must first set up main Email Notification setting.

## 3.7 Visual Job executing

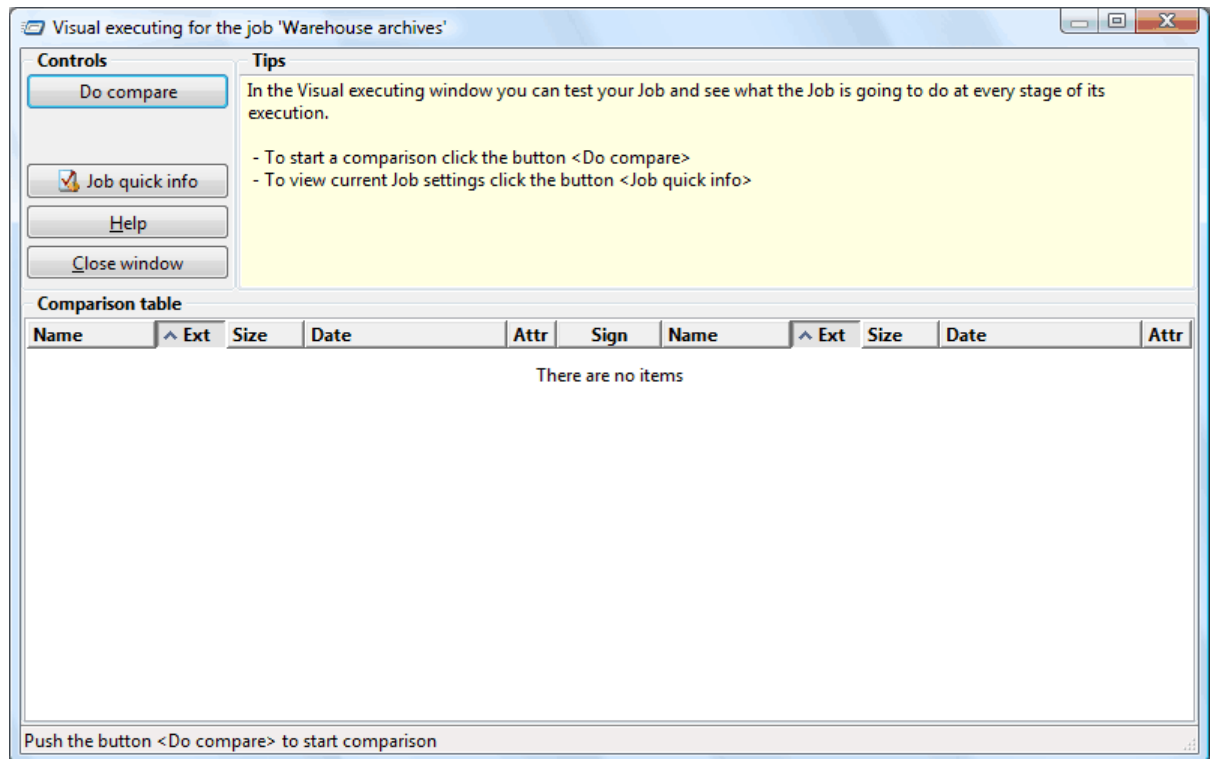
You can execute a job in detailed visual mode. The visual mode allows you to have full control on every step of job execution. To execute a job in visual mode click the button Visual run on the main toolbar or select the main menu item **Job|Visual Job execution (detailed)**.

Visual job execution is divided into six following stages:

Visual execution stage	Description
<b>Before comparison</b>	Invitation for a comparison. You can start comparing folder pairs in the stage.
<b>Comparison progress</b>	Comparison is running. You can see folder scanning progress. The stage allows you to abort comparison.
<b>Comparison results</b>	Processed folder scanning results are displayed in a comparison table. You can see calculated statistics for comparison.
<b>Synchronization preview</b>	Synchronization preview shows what operations should be taken for folder pairs synchronization.
<b>Synchronization progress</b>	Synchronization is running. You can see synchronization progress - every operation is displayed in an operation table. The stage allows you to abort synchronization.
<b>Synchronization results</b>	Represents synchronization results and statistics.

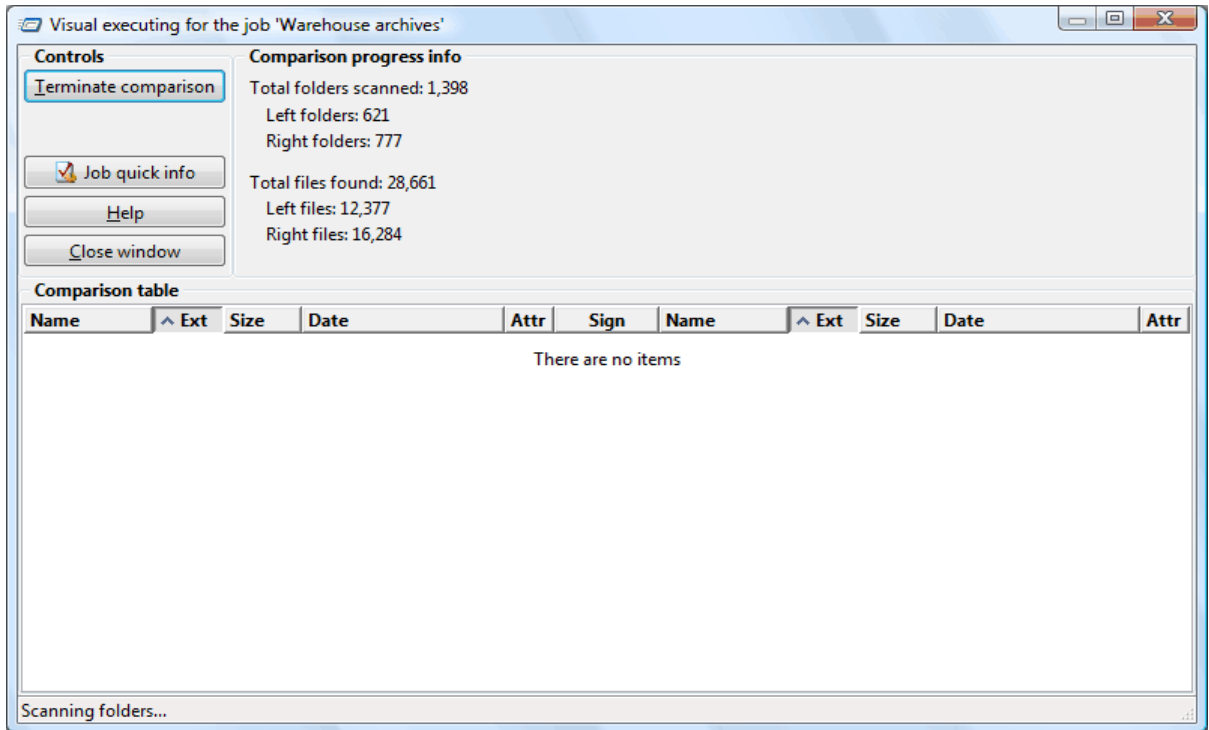
### Visual Job executing: before comparison

This stage allows you to start comparison, simply click the button **Do compare**.



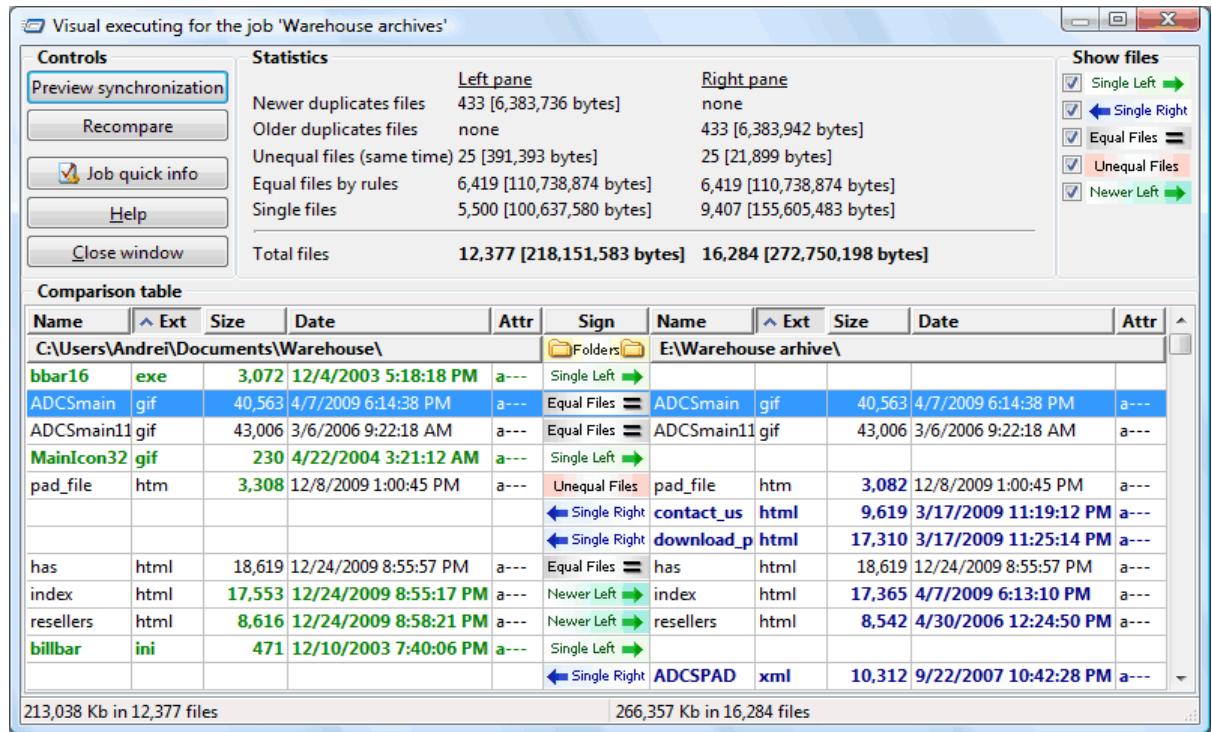
## Visual Job executing: comparison progress

**Comparison progress info** shows how many folders were scanned. You can abort scanning at any time by click the button **Terminate comparison**.



## Visual Job executing window: comparison results

The stage allows to view comparison statistics and folder pairs content.



The group **Statistics** contains statistics of comparison results.

The group **Show files** contains check boxes defining which files will be shown in the table. Turn on/off check to show/hide a files group.

The image in the middle of comparison table shows the file status:

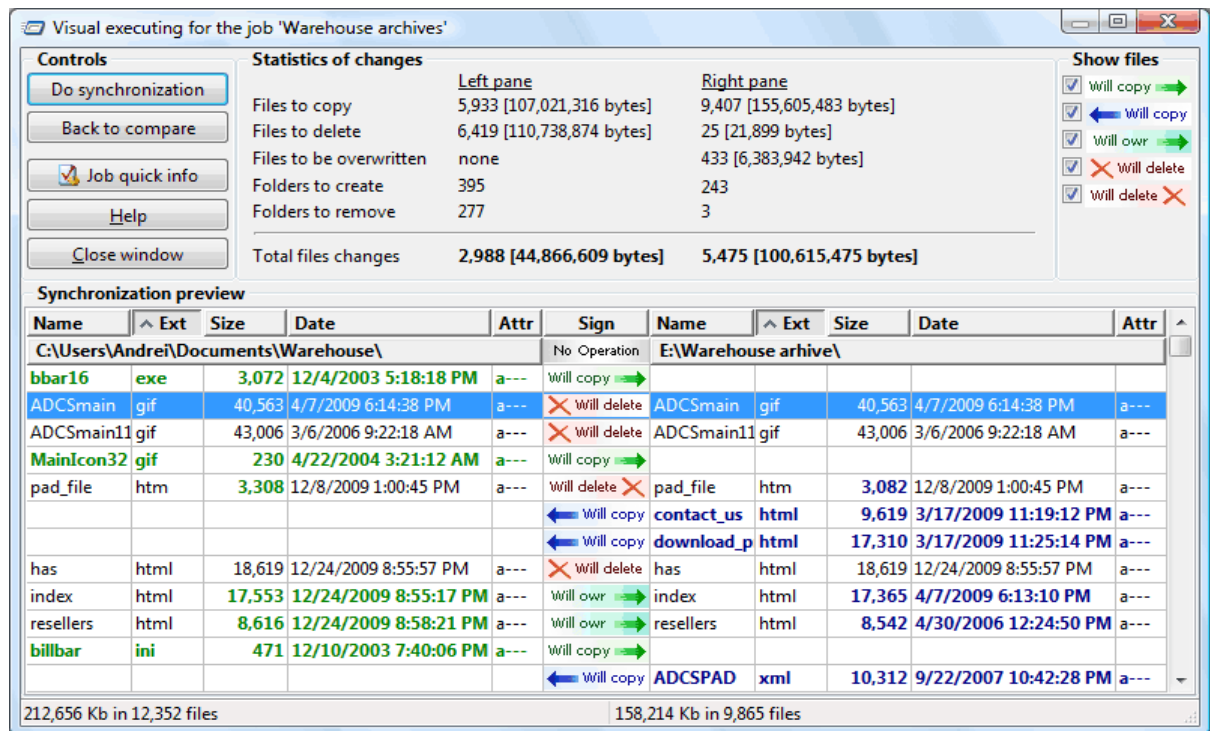
Image	Description
	Single file on the Left side.
	Duplicate files which have the same name. Left file is newer than Right one.
	Single file on the Right side.
	Duplicate files which have the same name. Right file is newer than Left one.
	Duplicate files which have the same name. Left and Right files are equal.
	Duplicate files which have the same name and the same date, but have different size.
	The folder pair.
	The single folder is on left pane of the comparison table.
	The single folder is on right pane of the comparison table.

You can sort files in the comparison table. The tabstop header allows to sort the file list by a name, extension, size, and date&time on the appropriate header. Clicking on the same headers reverses the order. A small arrow on the left of the header text shows the sort direction. To sort files in compared directories click on the tabstop header which is placed above the comparison table.

Tabstop header	Meaning
<b>Name</b>	Sorting the files by a name then by extension.
<b>Ext</b>	Sorting the files by type (extension) then by a name.
<b>Size</b>	Sorting the files by their size on a disk, then by a name, then by an extension.
<b>Date</b>	Sorting the files by their creation date and time, then by a name, then by an extension.

## Visual Job executing window: synchronization preview

This stage informs you of how synchronization is going to work. To start synchronization click the button **Do synchronization**.



The group **Statistics of changes** contains statistics of changing during synchronization.

The group **Show files** contains check boxes defining which files will be shown in the table. Turn on/off check to show/hide a files group.

The image in the middle of the Synchronization preview shows the operation status:

Image	Description
	Folder will be created on the Left side.
	Folder will be created on the Right side.
	Empty folder will be deleted on the Left side and will create on the Right side.
	Empty folder will be deleted on the Right side and will create on the Left side.
	Empty folder will be deleted on the Left side.
	Empty folder will be delete on the Right side.
	Empty folders will be deleted from both sides.
	File will be copied from left folder to right one.
	File in right folder will be overwritten with file from left folder.
	File in right folder will be renamed instead overwrite.
	File will be copied from right folder to left one.
	File in left folder will be overwritten with file from right folder.
	File in left folder will be renamed instead overwrite.
	File will be deleted from left folder.
	File will be renamed instead delete in left folder.
	File will be deleted from right folder.
	File will be renamed instead delete in right folder.
	Files will be deleted both from left and right folders.
	Files will be renamed both from left and right folders.
	No operation.

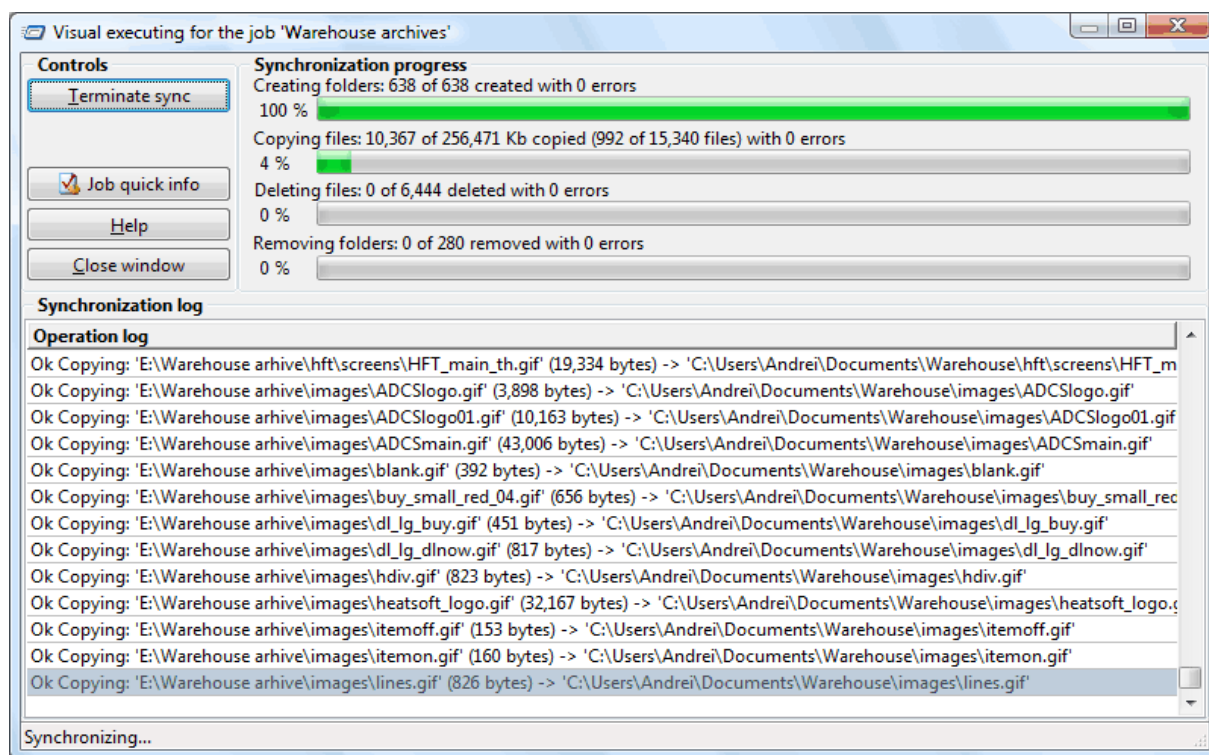
You can sort files in the table. The tabstop header allows to sort the file list by a name, extension, size, and date&time on the appropriate header. Clicking on the same headers reverses the order. A small arrow on the left of the header text shows the sort direction. To sort files click on the tabstop header which is placed above the table.

#### Tabstop header Meaning

<b>Name</b>	Sorting the files by a name then by extension.
<b>Ext</b>	Sorting the files by type (extension) then by a name.
<b>Size</b>	Sorting the files by their size on a disk, then by a name, then by an extension.
<b>Date</b>	Sorting the files by their creation date and time, then by a name, then by an extension.

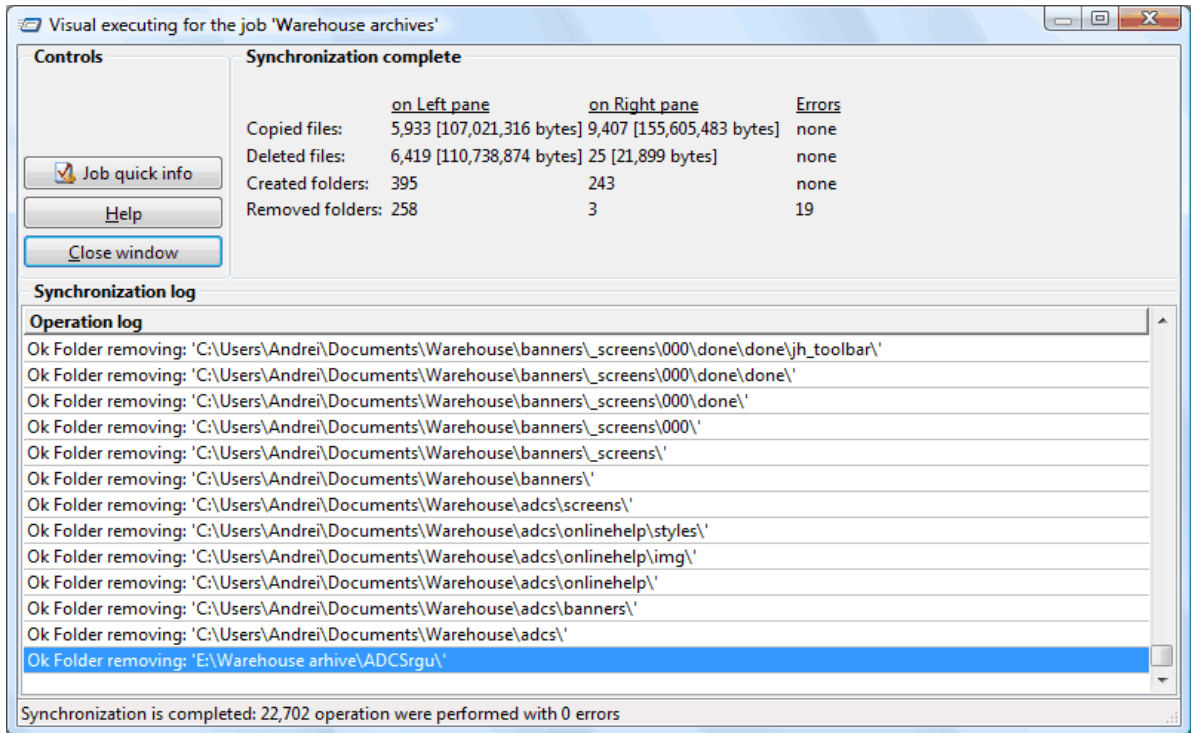
## Visual Job executing window: synchronization progress

The stage informs you about synchronization progress. You can abort synchronizing at any time by click the button **Terminate sync**.



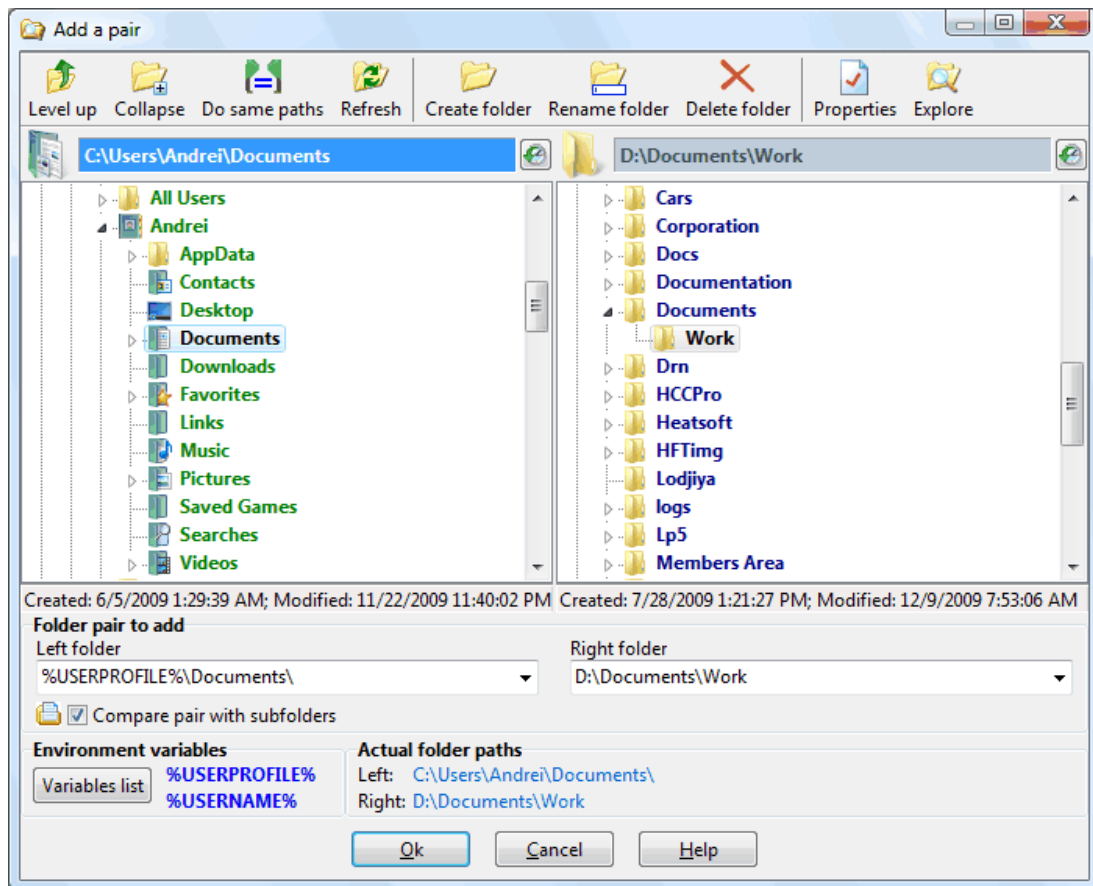
## Visual Job executing window: synchronization results

This is the final stage of **Visual executing** of a job. You can see the statistics of performed operations.



## 3.8 Add/Edit pair window

The main purpose of the Add/Edit a pair window is to allow you to select/change folders you want to compare. Moreover you can manage folders: create, rename and delete a folder, view folder properties and explore a folder with Windows Explorer.



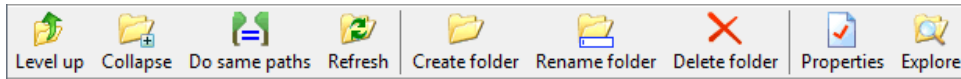
The selected folders pair is displayed at the bottom of the window in the group **Folder pair to add**. You can type UNC path (like \\My Server\Data) in the text boxes. The checkbox **Add pair with subfolders** defines how to compare folders: with or without their subfolders.

You can use environment variables in folder paths. Clicking on blue labels **%USERPROFILE%** and **%USERNAME%** would add the variables names into active combobox. Clicking on the button **Variables list** to open list of environment variables and their values.










When you select/type a folder pair click **Ok** button. The pair will be added/changed into the Comparing folders wizard page.

You can use **History** button  for navigation in the folder tree.

The **Add/Edit a pair** window has a toolbar:

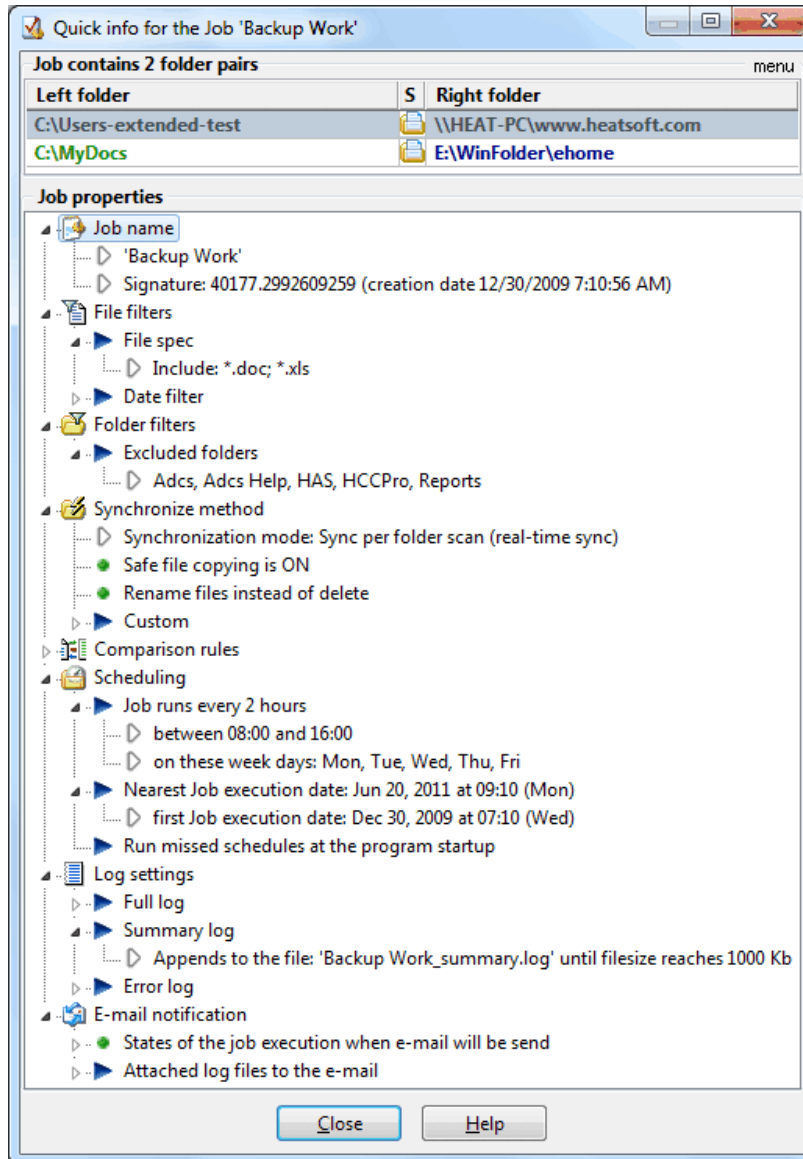


Tool buttons are described below:

Button	Shortcut	Description
	<b>Ctrl+U</b>	Goes to level up in the tree.
	<b>Ctrl+Z</b>	Collapses all expanded items in the tree.
	<b>Ctrl+Tab</b>	Sets the same path in a sibling tree.
	<b>Ctrl+R</b>	Refreshes trees.
	<b>F7</b>	This command allows you to create a new folder in the Create folder window.
	<b>Shift+F6</b>	The command will open an inplace edit window around the folder to be renamed. Don't use symbols such as \ / : * ? " < >   in a folder name.
	<b>Del</b>	Deletes a selected folder.
	<b>Alt+Enter</b>	This command opens properties dialog box for a selected folder or a drive.
	<b>Alt+W</b>	This command starts Windows Explorer with a selected folder.




## 3.9 Quick info for Job

The window **Quick info** examines a job in details. The **Quick info** displays folder pairs, file and folder filters, comparison rules, a synchronization method, scheduling and log settings used in a job.



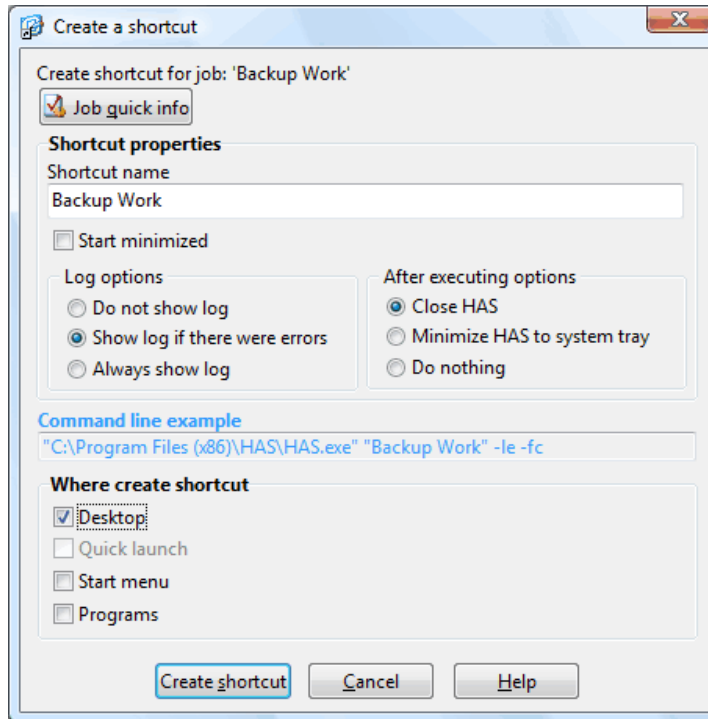
With this window you can get information about job settings. To edit these settings use the Job wizard window.

### **Notes:**

- Opening the window **Quick info** does not require to stop the executing/waiting job.
- Editing a job with the Job wizard requires to stop  executing or  waiting job. This switches the job state to  Idle.

## 3.10 Create shortcut for Job

The Create a shortcut window allows you to place a shortcut for a specified job on a Desktop, a Quick launch pane, a Start Menu and a Programs menu. You can use this option for a fast executing job.



The Create a shortcut window has following fields described below:

Field	Description
<b>Job quick info</b>	Opens the Quick info window for the job. Allows to view job settings.
<b>Shortcut name</b>	Represents the display name of a shortcut on a Desktop.
<b>Start minimized</b>	Defines how HAS will be started. If checked then HAS will start minimized in system tray. Otherwise HAS shows the HAS main window.
<b>Log options</b>	This parameters define how the Log file will be displayed after a job execution.
<b>Do not show log</b>	Log file does not display.
<b>Show log if there were errors</b>	Log file will be displayed if there are errors only during execution.
<b>Always show log</b>	Log file will be displayed after every job execution.
<b>After executing options</b>	This parameters define behaviour of HAS after job execution.
<b>Close HAS</b>	HAS will be closed after job execution.
<b>Minimize HAS to system tray</b>	HAS will be minimized in the system tray.
<b>Do nothing</b>	HAS remains working.
<b>Command line example</b>	Shows an example of a command-line for a specified job. You can use this line to start a job from a command-line.
<b>Where create shortcut</b>	These parameters define locations where a shortcut will be created.
<b>Desktop</b>	Shortcut will be created on a Desktop.
<b>Quick launch</b>	Shortcut will be created in a Quick Launch pane.
<b>Start menu</b>	Shortcut will be created in a Start menu.
<b>Programs</b>	Shortcut will be created in a Programs menu.

The shortcut you created will allow you to execute a job immediately. Clicking on the shortcut causes HAS to open and execute a specified job. For example, during your workday you need to periodically backup the Job named "Backup\_work\_files". Create the shortcut on your desktop for this Job and execute it.

You can customize behavior of HAS started via the shortcut:

- Start up options.
- Log options.
- After executing options.

**Notes:**

- Only a shortcut specified job will be started. Other jobs will be suspended while the specified executing.
- You can stop the specified job execution. This will abort **Log options** and **After executing options**.
- Only one instance of HAS is allowed. If HAS is running already, the shortcut activates the HAS main window and start the job executing.

### 3.11 Command line parameters

Heatsoft Automatic Synchronizer allows to perform operations using command line parameters. So you can perform HAS commands without opening the program window, either with any appropriate program (like "Windows Scheduled Tasks", for instance), through created shortcut to HAS or through "Run" option from Windows "Start" menu.

HAS command line syntax:

**HasExecutable "JobName" ["JobSignature"] [switches]**

where

**HasExecutable** - path to the 'has.exe' file, for instance, "c:\Program Files\HAS\HAS.exe"

**JobName** - name of the job you do want to run

**JobSignature** - a job signature which is the job creation datetime stamp; optional parameter may be helpful if do rename the job

**switches** - list of optional parameters which allow to define HAS behaviour

List of switches and corresponding HAS actions is displayed in the following table:

Key	Description
<b>sm</b>	HAS will start minimized in system tray.
<b>fc</b>	HAS will be closed after job execution.
<b>fm</b>	HAS will be minimized in the system tray after job execution.
<b>le</b>	Log file will be displayed if there are errors only during execution.
<b>la</b>	Log file will be displayed after every job execution.
<b>exit</b>	Wait until HAS finishes current job execution and close the program.
<b>terminate</b>	Terminates HAS application immediately.

The command line example is:

**"c:\Program Files\Has\HAS.exe" "Heap scanning" "40477.5453684838" -la -sm**

Below are two examples of command line usage:

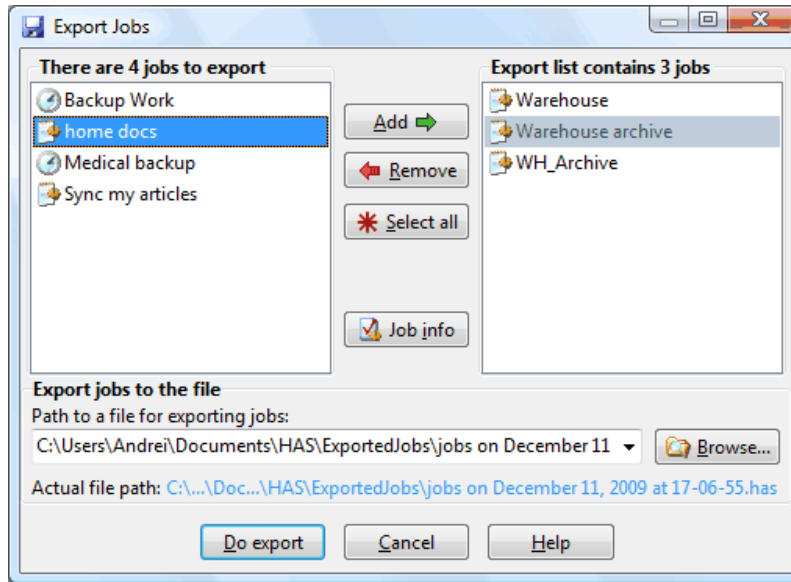
- Execute Job through "Run" option from Windows "Start" menu.
- Create shortcut for a Job for next quick execution.

**Notes:**

- Do not use too long job names (>90 characters)
- Do not use funny symbols in job names (eastern languages, two or more bytes symbols)

## 3.12 Export Jobs

The **Export Jobs** window allows you to export HAS jobs into a text file in order to be able to import these exported jobs into HAS later. You can open the window using the main menu item **Job|Export Jobs** or the shortcut **Ctrl+E** in the HAS main window.



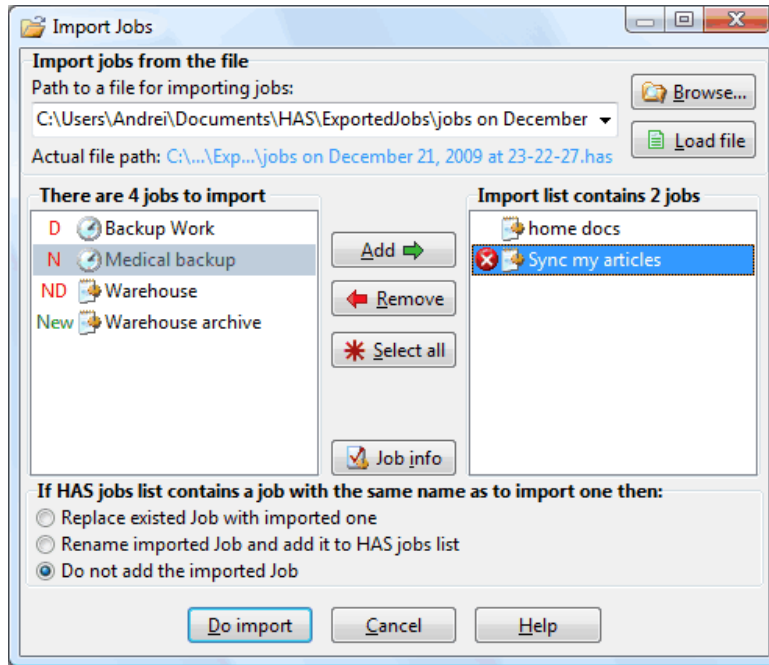
All the HAS jobs which are available to export are displayed in the left list **There are # jobs to export**. The right list **Export list contains # jobs** does contain jobs that will be exported actually. You can transfer jobs between these lists with the **Add** and **Remove** buttons in the middle of the window.

The **Export jobs to the file** group at the bottom of the window contains a line where you can set a path and a name to a file for exporting jobs.

To export jobs which are in the **Export list contains # jobs** list click the **<Do export>** button.

## 3.13 Import Jobs

The **Import Jobs** window allows you to import jobs which were exported to a text file into HAS. You can open the window using the main menu item **Job|Import Jobs** or shortcut **Ctrl+I** in the HAS main window.




To import jobs into HAS you should:

- In the line **Path to a file for importing jobs** at the top of the window type a path to a file with HAS jobs. You can select the file with the **<Browse>** button.
- Click the **<Load file>** button in the top right corner of the window. All the jobs which are available to import will be displayed in the left **There are # jobs to import** list.
- Select desired jobs in the left list and click the **<Add>** button to move selected jobs to the right **Import list contains # jobs** list.

The left **There are # jobs to import** list can contain one of the following signs:

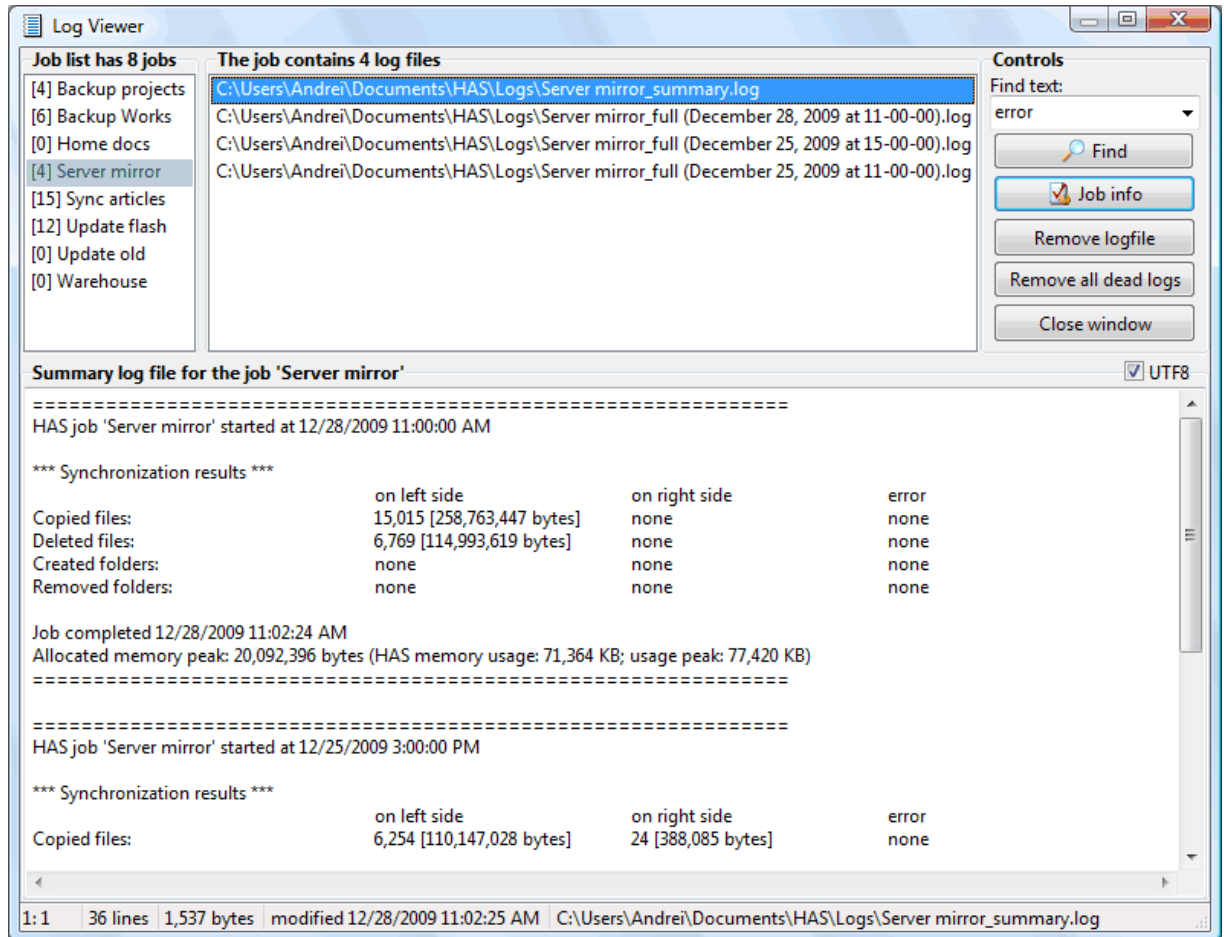
Sign	Description
<b>N</b>	HAS job list contains at least one job with the same name.
<b>D</b>	HAS job list contains at least one job with the same data (settings: folder pairs, sync methods, etc).
<b>ND</b>	HAS job list contains the job already.
<b>New</b>	There is no job with same name or same data in the HAS job list. Job is unique.

In order to prevent importing duplicate jobs to HAS, the **Import Jobs** window does restrict add for jobs with the same settings to a job which is in HAS job list already. In the right **Import list contains # jobs** list jobs with same data sign do have the icon .

In the **If HAS job list contains a job with same name as to import one** box you can choose what to do with jobs for importing which have same name as a job in HAS.

## 3.14 Log file viewer

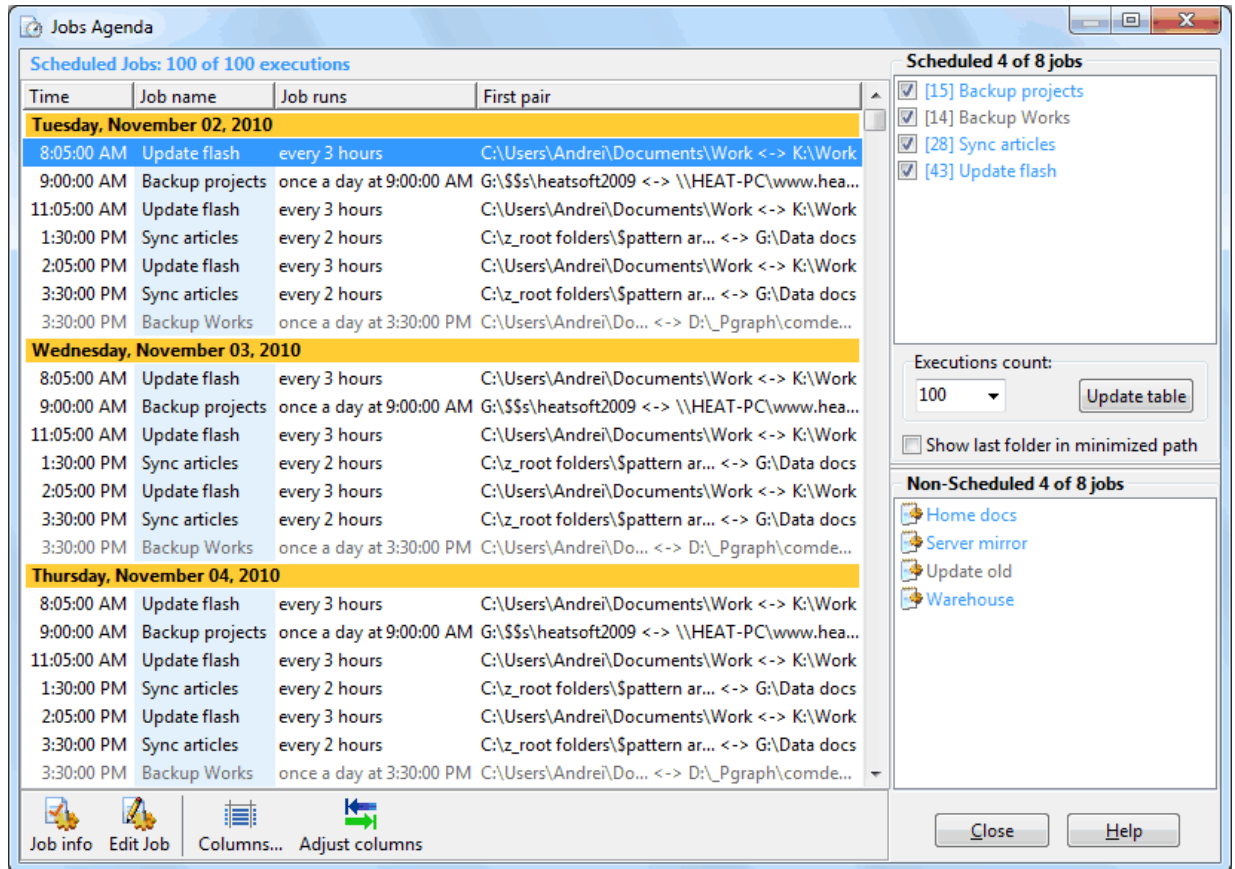
The window allows you to view log files for all job executions. Log files separated by jobs. You can set up log storing options for each job at the Log settings page in the Job Wizard window.



Field	Description
<b>Job list</b>	The Job list contains all jobs. A number next to the Job name means quantity of stored log files for this job.
<b>Logfile list</b>	The Logfile list contains all log files which belong to the selected job in the Job list.
<b>Find</b>	You can find a specified text in a log file. To search the text type it in the line <b>Find text</b> and click the button <b>Find</b> .
<b>Job info</b>	Opens the quick info window for the job.
<b>Remove logfile</b>	Physically removes a selected logfile.
<b>Remove all dead logs</b>	Removes links to logfiles which doesn't exist on the disk.
<b>Logfile text pane</b>	Displays the log file selected in the Logfile list.

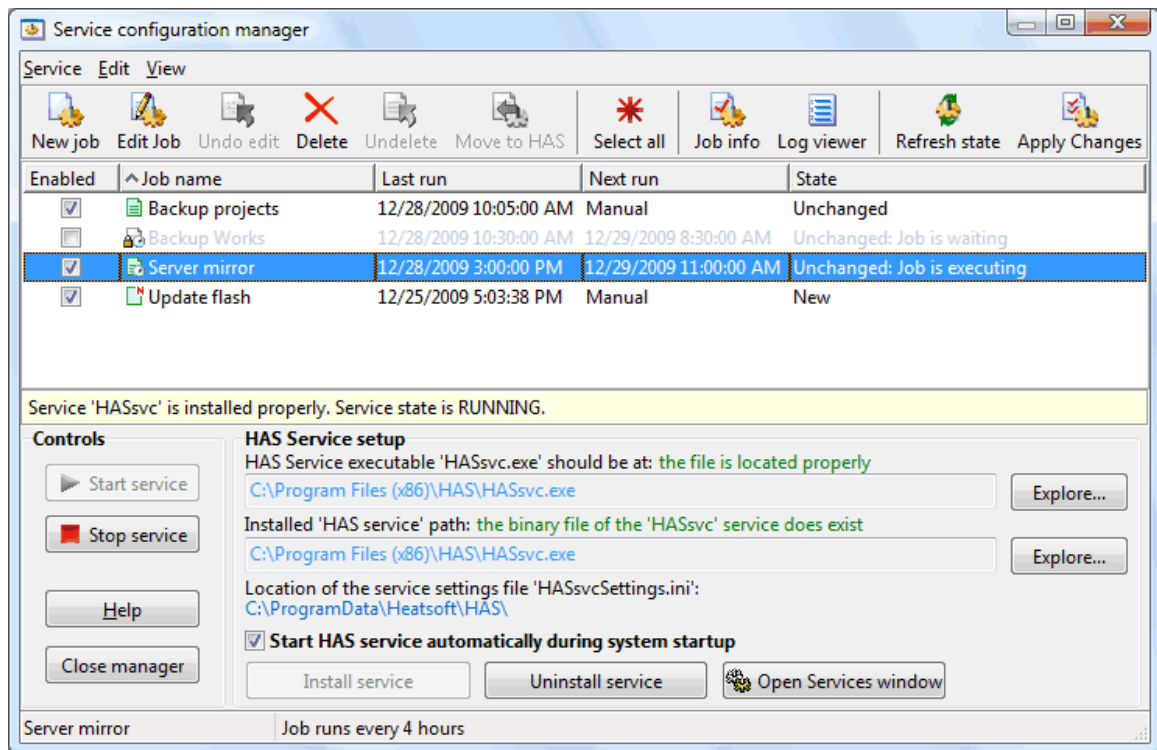
## 3.15 Jobs Agenda

The **Jobs Agenda** window allows you to see pending job executions in order to learn easily what HAS will do with scheduled jobs.



## 3.16 Service configuration manager

The **Service configuration manager** window allows to manage the HAS windows service. The window reflects state of jobs in the HAS service. In the manager you can create, edit or delete jobs and put these jobs into HAS service.



### HAS Service

HAS service is a small executable 'HASsvc.exe' that can run as a native Windows service without user interaction in background. You can put jobs that you have created in HAS into the HAS service and the service will execute them on schedule.

In the service manager you will be able to:

- Add, edit, remove and disable jobs in the HAS service
- Borrow a job from HAS, and put it into the HAS service: so you do not need to run HAS to execute a scheduled job
- Update jobs in the HAS service in a moment, without restarting the service
- Start(run) and stop the service from the manager
- Set how the service would start: automatically during system startup or with manual run
- Monitor what job is doing in the service: waiting, executing or disabled
- See log file how service run in Log Viewer
- See log files for each jobs execution in Log Viewer: all logs are stored in the same way as HAS does it

### How to start

HAS Service jobs management is most similar to HAS. You should create a job, set folders for synchronizing, file and folders filters, and scheduler for a job.

In the next step you should install HAS service. For that, click the button **<Install service>** at the bottom of the jobs list. You can see the installed service in the **Services** window - click the button **<Open Services window>** and locate the 'HAS service' in the window:

- Select the 'HAS service' and click right mouse button, a popup menu will appear
- In the popup click the item **Properties**, **HAS Service Properties** window will be opened
- In the window choose the sheet **Log on**
- Check the radiobutton **This account**, and select an account which the 'HAS service' will use to access to network resources (folders)

Once you create desired jobs in the manager, you must put them into HAS service. To do that click the button **<Apply Changes>** in the toolbar at the top of the manager window. You will see statistics of changes.

Finally, start HAS service: click the button **<Start service>** at the bottom of the job list. Jobs status will reflect in the jobs list.

**Job states**

Job can be in one of following states:

Icon	State	Description
	New	Job is just created or copied from HAS. The job is in the edit list only.
	New with scheduler	Job is just created or copied from HAS and it has a schedule. The job is in the edit list only.
	New, disabled	Job is just created or copied from HAS and disabled - never will be executed. The job is in the edit list only.
	New with scheduler, disabled	Job is just created or copied from HAS and it has a schedule. The job will never be executed. The job is in the edit list only.
	Unchanged	Job is in the Service. The job will never be executed since it does not have a schedule.
	Scheduled	Job is in the Service. The job will be executed on its schedule.
	Edited	Job is in the Service. The job will never be executed since it does not have a schedule. The job settings on the edit list are different from the ones in the Service. Settings of the job in the Service will be changed on Apply Changes.
	Scheduled, edited	Job is in the Service. The job will be executed on its schedule. The job settings on the edit list are different from the ones in the Service. Settings of the job in the Service will be changed on Apply Changes.
	Scheduled, marked to delete	Job is in the Service. The job has schedule. The job will be removed from the Service on Apply Changes.
	Marked to delete	Job is in the Service. The job will never be executed since it does not have a schedule. The job will be removed from the Service on Apply Changes.
	Edited, marked to delete	Job is in the Service. The job will never be executed since it does not have a schedule. The job settings on the edit list are different from the ones in the Service. The job will be removed from the Service on Apply Changes.
	Scheduled, edited, marked to delete	Job is in the Service. The job will be executed on its schedule. The job settings on the edit list are different from the ones in the Service. The job will be removed from the Service on Apply Changes.
	Disabled	Job is in the Service. The job will never be executed since it is disabled.
	Scheduled, disabled	Job is in the Service. The job has schedule, but it will never be executed since it is disabled.
	Edited, disabled	Job is in the Service. The job will never be executed since it is disabled and does not have a schedule. The job settings on the edit list are different from the ones in the Service. Settings of the job in the Service will be changed on Apply Changes.
	Scheduled, edited, disabled	Job is in the Service. The job will never be executed since it is disabled. The job settings on the edit list are different from the ones in the Service. Settings of the job in the Service will be changed on Apply Changes.
	Disabled, marked to delete	Job is in the Service. The job will never be executed since it is disabled and does not have a schedule. The job will be removed from the Service on Apply Changes.
	Scheduled, disabled, marked to delete	Job is in the Service. The job has schedule, but it will never be executed since it is disabled. The job will be removed from the Service on Apply Changes.
	Edited, disabled, marked to delete	Job is in the Service. The job will never be executed since it is disabled and does not have a schedule. The job settings on the edit list are different from the ones in the Service. The job will be removed from the Service on Apply Changes.
	Scheduled, edited, disabled, marked to delete	Job is in the Service. The job will never be executed since it is disabled. The job settings on the edit list are different from the ones in the Service. The job will be removed from the Service on Apply Changes.

## 3.17 Tray icon

When Automatic Synchronizer is running, HAS icon appears in the system tray. It doesn't require much system resources and it provides the following functions:

- indicates that Automatic Synchronizer is running;
- enables to open the program window by a single left mouse click on a tray icon;
- allows you to use some menu options.

### Tray icon menu







The tray icon menu is available on right-clicking on the icon. All menu options are performed with the user's left-click.

- **Activate HAS:** Enables to open the program window.
- **Clear errors:** Uses this item to change tray icon status from error to normal.
- **Feedback and technical support:** Directs you to Heatsoft Corporation web site to support page.
- **About:** Provides information about a current version of HAS.
- **Close and Exit:** Enables to exit the program (the program will be terminated and the HAS will disappear in the system tray).

### Working statuses

The HAS tray icon indicates the following working statuses of the program:

#### State Description

	State of all jobs is nothing.
	State of all jobs is nothing and one or several jobs have finished with an error.
	The program is waiting to execute one or several jobs.
	The program is waiting to execute one or several jobs and one or several jobs have finished with an error.
	The program is executing one or several jobs.
	The program is executing one or several jobs and one or several jobs have finished with an error.

Use **Clear errors** item from tray icon menu to change tray icon status from error to normal.

## 3.18 Work in "silent" mode

You can setup HAS to run it automatically at log on (work in "silent" mode). It allows you to execute scheduled jobs every time when you work, without your attention.

To setup the "silent mode" you must:

- Create one or several scheduled Jobs.
- Turn on **Launch HAS on Windows start up** tick box on the options "General" page.
- Turn off **Confirm stop executing/waiting jobs on exit application** check on the options "General" page.

When you complete these simple steps HAS will startup automatically minimized in the system tray after you log on and will execute scheduled jobs. You can see HAS status in the HAS system tray icon.

Another way to run HAS in "silent" mode is to use **HAS service** - a small executable 'HASsvc.exe' that can run as a native Windows service without user interaction in background. You can read detailed description how to do that in **Tutorial 6: Run HAS as Windows service**.

## 3.19 The keyboard shortcuts

### Shortcuts for the Main window

Shortcut	Description
<b>Alt</b>	Activates the main menu.
<b>Alt+J</b>	Activates the Job menu.
<b>Alt+E</b>	Activates the Edit menu.
<b>Alt+V</b>	Activates the View menu.
<b>Alt+H</b>	Activates the Help menu.
<b>Alt+Enter</b>	Opens the job wizard to edit a selected job.
<b>Alt+F4</b>	Minimizes application to the system tray icon.
<b>Ctrl+N</b>	Opens the job wizard to create a new job.
<b>Ctrl+D</b>	Duplicates a selected job.
<b>Ctrl+R</b>	Executes selected jobs (background).
<b>Ctrl+S</b>	Stops selected executed/waiting jobs.
<b>Ctrl+A</b>	Selects or deselects all jobs in the main window.
<b>Ctrl+E</b>	Opens the Export Jobs window to store jobs.
<b>Ctrl+I</b>	Opens the Import Jobs window to load stored jobs into HAS.
<b>Del</b>	Deletes selected Jobs in the main window.
<b>Enter</b>	Opens the quick info window for a selected job.
<b>F2</b>	Opens the Service configuration manager.
<b>F9</b>	Shows the jobs agenda window.
<b>F10</b>	Shows the log viewer window.
<b>Ctrl+O</b>	Shows the options window.

### Shortcuts for the page Comparing folders in the Job Wizard

Shortcut	Description
<b>Ins</b>	Opens the add pair window.
<b>Enter</b>	Opens the edit pair window.
<b>Del</b>	Deletes a selected pair.

### Shortcuts for the Add/Edit pair window

Shortcut	Description
<b>Ctrl+Z</b>	Collapses all open items in the directories tree.
<b>F7</b>	Opens the create folder window.
<b>Del</b>	Deletes a selected folder.
<b>Shift+F6</b>	Renames a selected folder.
<b>Alt+W</b>	Explores for files.
<b>Alt+Enter</b>	Shows drive or folder properties.
<b>Ctrl+H</b>	Shows the history of using folders.

## 3.20 Settings

There are a number of settings defining the way Automatic Synchronizer operates. You can modify them at any time. To open the Options window choose the main menu item **View|Options** in the menu View or use the shortcut **Ctrl+O**. Choose the settings type you need to modify.

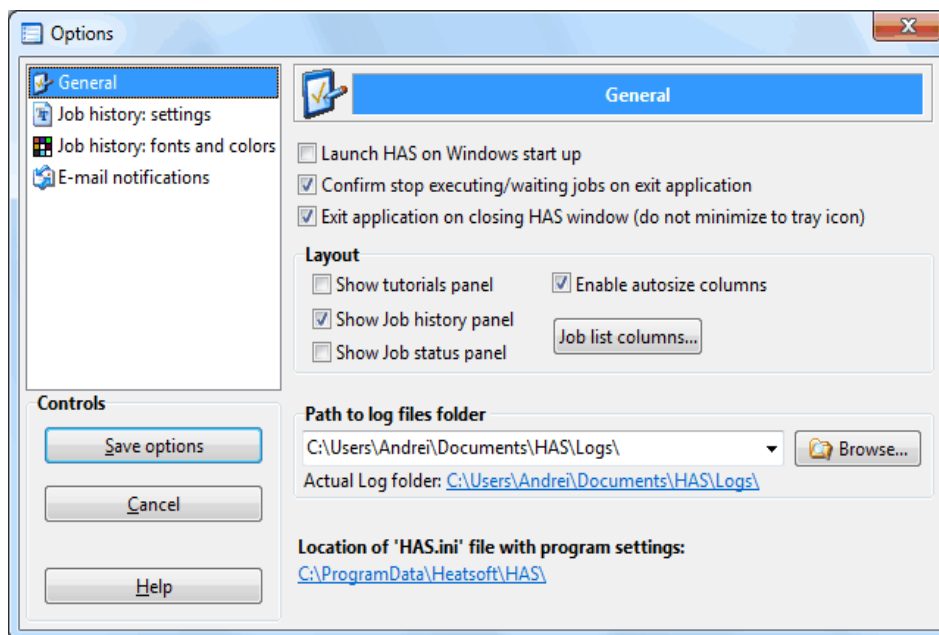
There are the following setting types in HAS:

- General settings
- Job history settings
- Job history fonts and colors
- Email notifications

## General options

To open the Options window choose the item **Options** in the menu View or use the shortcut **Ctrl+O**.

The sheet **General** allows you to set up common HAS settings.



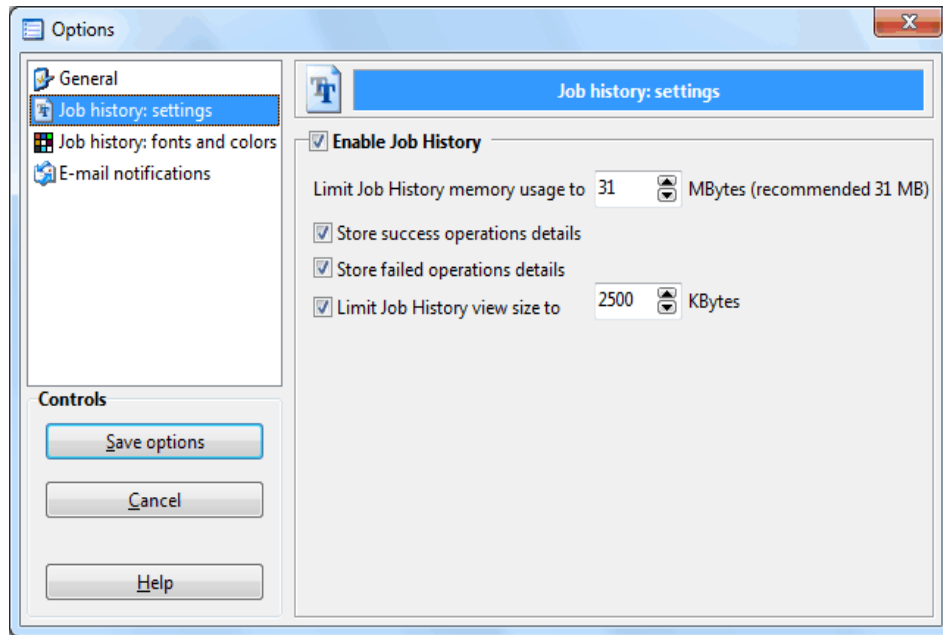
Field	Description
<b>Launch HAS on Windows start up</b>	Launches Automatic Synchronizer on Windows startup.
<b>Confirm stop executing/waiting jobs on exit application</b>	When checked and the state of some jobs are waiting, HAS will ask you for confirmation before closing.
<b>Exit application on closing HAS window (do not minimize to tray icon)</b>	Defines what HAS does when a user closes the main window: do minimize HAS or do exit.
<b>Layout</b>	This group allows to define visible controls in the main window.
<b>Show tutorials panel</b>	Hides/Shows the quick start tutorials panel in the main window.
<b>Show Job history panel</b>	Hides/Shows the Job executions history panel in the main window.
<b>Show Job status panel</b>	Hides/Shows the <b>Job status panel</b> in the Job list.
<b>Enable autosize columns</b>	If checked then columns width in the Job list will be adjusted on every resize of the main window.
<b>Job list columns...</b>	Click to change the columns displayed in the Job list.
<b>Path to log files folder</b>	Sets a path to a folder where all log files will be stored. To select the folder click on the button <b>Browse</b> .
<b>Location of 'HAS.ini' file</b>	A path to a folder where all the HAS settings are stored. To open the folder click over the path with left mouse button.

To save the changed settings click the button **Save options**.

## Job History settings

To open the Options window choose the item **Options** in the menu View or use the shortcut **Ctrl+O**.

The sheet **Job history: settings** allows you to set up **Job's executions history** settings.



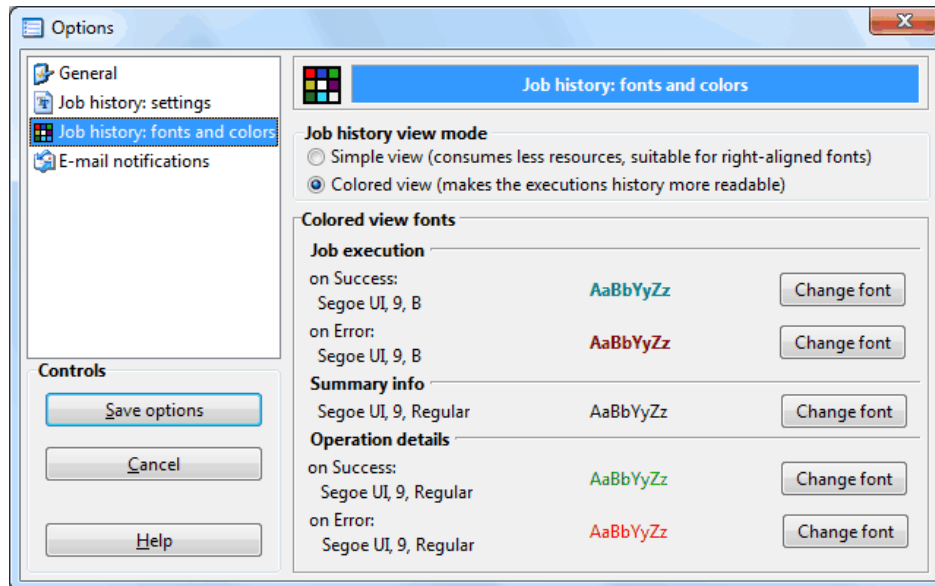
Field	Description
<b><u>Enable Job history</u></b>	Allows to turn off the Job's executions history.
<b>Limit Job History memory usage to</b>	A size of the memory that could use for storing of Job History. When Job history records exceeds the specified size, the memory would be cleared.
<b>Store success operation details</b>	Information about every succeed operation during a job execution will be stored in Job History.
<b>Store failed operation details</b>	In the jobs execution history will be stored operations that HAS was unable to complete.
<b>Limit Job History view size to</b>	When Job's executions history exceeds the specified size, the oldest (first) jobs executions will be cleared. The recommended default value is 2,500 Kb.

To save the changed settings click the button **Save options**.

## Job History fonts and colors

To open the Options window choose the item **Options** in the menu View or use the shortcut **Ctrl+O**.

The sheet **Job history: fonts and colors** allows you to choose fonts and text colors for **Job's executions history**.



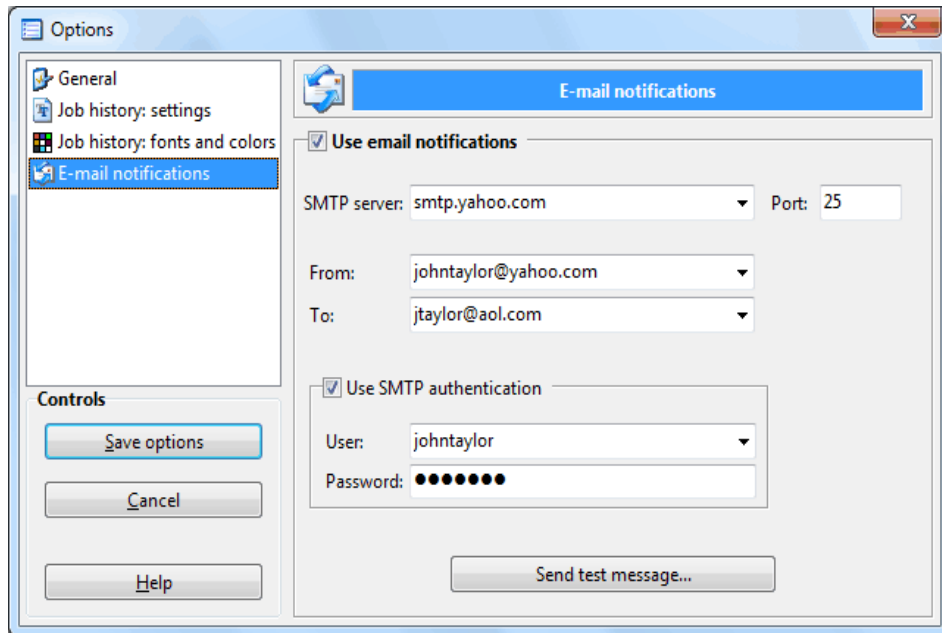
Control	Description
<b><u>Job history view mode</u></b>	Allows to select in what view Job History will be displayed.
<b>Simple view</b>	Suitable for right-aligned fonts due to rapid filling in, it consumes less resources.
<b>Colored view</b>	Makes the job execution history more readable.
<b><u>Job history fonts</u></b>	Group of controls to set fonts for the Job's executions history.
<b><u>Job execution fonts</u></b>	Fonts for a job execution caption text.
<b>on Success</b>	Font for a caption of success job execution.
<b>on Error</b>	Font for a caption of job execution with an error.
<b>Summary info</b>	Font for summary information text of job execution.
<b><u>Operation details</u></b>	Fonts for operations description text of job execution.
<b>on Success</b>	Font for success operation description.
<b>on Error</b>	Font for error operation description.
<b>Change font</b>	The button allows you to change a font Color, Name, Size or Style.

To save the changed settings click the button **Save options**.

## Email notifications options

To open the Options window choose the item **Options** in the menu View or use the shortcut **Ctrl+O**.

The sheet **Email notifications** allows you to set up the program to notify you by e-mail.



Field	Description
<b>Use email notification</b>	Check this box if you want to use e-mail notification about Job execution results.
<b>SMTP server</b>	Enter the SMTP server name of sender mailbox. For example, smtp.yourmail.com.
<b>Port</b>	Enter the server port. Its default value is <b>25</b> .
<b>From</b>	Type the sender e-mail address. The e-mail notifications will be sent on behalf the address. Note: the specified SMTP server should support this address.
<b>To</b>	Type the receiver e-mail address.
<b>Use SMTP authentication</b>	Check this box if the SMTP server does require authentication for sending e-mails.
<b>User</b>	A username of the sender e-mail account.
<b>Password</b>	A password of the sender e-mail account.
<b>Send test message...</b>	Click this button to test your e-mail settings. HAS will send a test message using the settings you specified.

### **Note:**

- Upon defining all settings you need to go to the "E-mail notifications" page in the Job Wizard window in order to set a notification type for each job.

To save the changed settings click the button **Save options**.

# 4 Registration and Licensing

## 4.1 Ordering Information

We do offer Heatsoft Automatic Synchronizer (HAS) in two packages:

**Heatsoft Automatic Synchronizer** costs **\$39.92 US**.

That is common HAS edition with all of the basic functionality.

**Heatsoft Automatic Synchronizer with Service addon** costs **\$59.92 US**.

That edition does include all the features of HAS, plus it allows to execute jobs within a native windows service.

Once you have purchased common HAS edition, you will be able to purchase the [HAS Service addon](#) for **\$29.92 US** in addition.

We strongly recommend you to read [License Agreement](#) between you and Heatsoft Corporation for using the software product.

Please keep in mind that is one-time fee for HAS lifetime support and free upgrades. Once registered, you will get all the future updates of Heatsoft Automatic Synchronizer for free. Before you place the order please READ CAREFULLY our [Return Policy](#) and [Privacy Policy](#).

### Purchasing Heatsoft Automatic Synchronizer licence

There are several options for a purchase of HAS user license. You can purchase HAS user license with a Credit card (<http://sites.fastspring.com/heatsoft/product/has>). PayPal, Money order, Check orders are available.

**We offer volume discount pricing for Heatsoft Automatic Synchronizer, as shown below:**

<b>Quantity</b>	<b>Price</b>
1 to 2 copies	\$39.92 per copy
3 to 5 copies	\$34.92 per copy
6 to 9 copies	\$29.92 per copy
10 to 19 copies	\$24.92 per copy
20 to 49 copies	\$19.92 per copy
50 to 99 copies	\$14.92 per copy
100 or more copies	\$9.92 per copy

The registration information will be emailed to you. To register software enter your HAS registration code (use the menu item Help|Enter registration code).

### Purchasing Heatsoft Automatic Synchronizer with Service addon licence

There are several options for a purchase of HAS user license. You can purchase HAS with Service addon user license with a Credit card (<http://sites.fastspring.com/heatsoft/product/hasservice>). PayPal, Money order, Check orders are available.

**We offer volume discount pricing for Heatsoft Automatic Synchronizer, as shown below:**

<b>Quantity</b>	<b>Price</b>
1 to 2 copies	\$59.92 per copy
3 to 5 copies	\$52.92 per copy
6 to 9 copies	\$44.92 per copy
10 to 19 copies	\$37.92 per copy
20 to 49 copies	\$29.92 per copy
50 to 99 copies	\$24.92 per copy
100 or more copies	\$19.92 per copy

The registration information will be emailed to you within 24 hours. To register software enter your HAS registration and HAS Service addon codes from the email (use the menu item Help|Enter registration code).

If you have any questions about purchasing Heatsoft Automatic Synchronizer please email us at [support@heatsoft.com](mailto:support@heatsoft.com).

## 4.2 Privacy policy

The information you provide Heatsoft Corporation is never compromised. It is used for the sole purpose of your purchase, and to keep you informed of updates and special offers (should you choose this option). It is never given out or sold to the any 3rd parties or used in any other way.

If you have any questions about our Privacy Policy please email us at [support@heatsoft.com](mailto:support@heatsoft.com).

## 4.3 Return policy

Any Heatsoft Automatic Synchronizer (HAS) user is entitled to 30-days trial period to try the software. And we believe that the trial period is enough to decide if our software is suitable for your needs or not. Because every Heatsoft product is available as a full functioning trial version, refunds are not given. If you receive a defective CD, it will be replaced free of charge, but no part of your purchase price will be refunded. It is because of this strict "NO REFUNDS" policy that it is strongly suggested you download and try the trial version prior to your purchase.

If you have any questions about our Return Policy please email us at [support@heatsoft.com](mailto:support@heatsoft.com).

## 4.4 License agreement

**Please read the following lines carefully before using this software.  
If you disagree with any of the following, you are not allowed to use this program, you MUST delete it immediately.**

The Heatsoft Automatic Synchronizer (HAS) is a shareware. It means:

All copyrights of HAS are exclusively owned by Heatsoft Corporation.

Anyone may use this software during a test period of 30 days. Following this test period of 30 days or less, if you wish to continue using HAS, you MUST register.

Once registered, the user is granted a non-exclusive license to use HAS on one computer, for any legal purpose, at the same time. The registered HAS software may not be rented or leased, but may be permanently transferred, if the person receiving it agrees to terms of this license. If the software is an update, the transfer must include the update and all previous versions.

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All rights not expressly granted here are reserved by Heatsoft Corporation.

Installing and using HAS signifies acceptance of these terms and conditions of the license.

If you do not agree with the terms of this license you must remove HAS files from your storage devices and cease to use the product.

### **Liability**

We try to keep our software as bug-free as possible. But it's a general rule, that no software is ever error free, and the number of errors increases with the complexity of the program. That's why we cannot guarantee that this software will run in every environment, on any Windows compatible machine, together with any other application, without producing errors. Any liability for damage of any sort is hereby denied. In any case, the liability is limited to the registration fee. Please test this program with non-critical data. We cannot guarantee the safety of your data. Should you detect errors before registration, you accept them if you register. Any description of bugs will be accepted, but we cannot guarantee that we will be able to correct them.

### **Important note**

This version of the program has been created for functioning in Microsoft Windows 7/Vista/XP/2000/Server 2003/Server 2008. If you experience a problem please inform us about it!

All mentioned Trademarks and Copyrights belong to their respective owners.