



GoMidjets ClearCheck

Easily check the integrity of your ClearCase databases

Copyright © 2008-2015 GoMidjets. All rights reserved.

<http://GoMidjets.com>



Administrator's Guide – UNIX and Linux

Version 2.9.7

Table of contents

Conventions Used in This Book	3
How to Contact us	3
GoMidjets ClearCheck Concepts	4
Key Features	4
Topology	5
What's new in version 2.9.7	6
What's new in version 2.9.5	6
What's new in version 2.8	7
What's new in version 2.7	8
What's new in version 2.5	10
GoMidjets ClearCheck installation	10
Pre installation.....	10
Installation.....	11
How to use GoMidjets ClearCheck.....	11
Server details.....	12
VOBs	13
Checkvob	16
More Checks	17
Reports.....	18
Scheduler	19
License.....	20
Appendix A: How to Integrate ClearCheck with your backup script	21
Appendix B: How to Integrate ClearCheck with Windows Scheduler.....	22
Appendix C: Summary of changes (v1.3.0 – v2.0.0).....	25

Conventions Used in This Book

Throughout this book, we've used the following typographic conventions:

Constant width

Constant width in body text indicates a language construct, such as the name of a stored procedure, a SQL statement, an enumeration, an intrinsic or user-defined constant, a structure (i.e., a user-defined type), or an expression (like `dblElapTime = Timer - dblStartTime`). Code fragments and code examples appear exclusively in constant-width text. In syntax statements and prototypes, text set in constant width indicates such language elements as the function or procedure name and any invariable elements required by the syntax.

Constant width italic

Constant width italic in body text indicates parameter names. In syntax statements or prototypes, constant width italic indicates replaceable parameters. In addition, constant width italic is used in body text to denote variables.

Italicized words in the text indicate intrinsic or user-defined function and procedure names.

Many system *Italic*

elements, such as paths and filenames, are also italicized. URLs and email addresses are italicized. Finally, italics are used for new terms where they are defined.



This icon indicates a tip, suggestion, or general note.



This icon indicates a warning or caution.

When “UNIX” is mentioned in this book, it includes all UNIX operating systems and all Linux operating systems that ClearCase can run on.

How to Contact us

GoMidjets Inc.

68 Kaplansky St.

Petach-Tiqwa, Israel 49213

Tel: (972)-722-405-222

Facsimile: (972)-722-408-222

Email: info@gomidjets.com

GoMidjets ClearCheck Concepts

GoMidjets ClearCheck is a simple, fast and reliable software for automatic validation of the integrity of ClearCase infrastructures, on a daily basis.

GoMidjets ClearCheck's main purpose is to identify problems of ClearCase infrastructures (VOBs, views, global type, etc.) as early as possible, and ensures peace-of-mind.

GoMidjets ClearCheck works as follows:

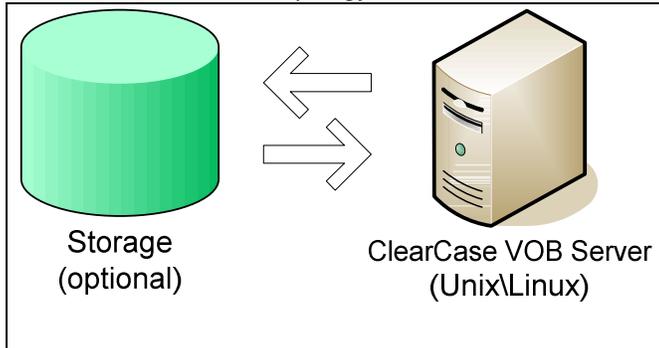
1. The CM administrator defines the ClearCase VOBs server host, the type of checks, which VOBs to check and the frequency of checks.
2. ClearCheck executes the checks and recognizes problems, if they exist. This execution includes internal ClearCase dbcheck, checkvob and rgy_check commands, and free space validation checks as well.
3. ClearCheck collects any problems found and sends them as a compact mail to the CM administrator. It may suggest solutions and provide links to the IBM knowledge-base

Key Features

- Peace-of-mind! ClearCheck recognizes most of errors and problems in ClearCase database.
- Provides a complete, automated process.
- Enables easy installation - Start working in 10-15 minutes.
- Scheduled to run automatically on a daily basis.
- Supports the following ClearCase versions, beginning with version 2003.06: ClearCase, ClearCase LT, ClearCase MultiSite (each replica separately), Base ClearCase and UCM ClearCase
- Supports the following operating systems: UNIX, Linux and Windows.
- Supports all 3rd-party NAS storage filers, including IBM, NetApp, EMC, HDS and more.
- Supports NFS, Samba (SMB) and TAS protocols.
- Provides an output email report that contains the "bottom-line" only.
- Provides central management and full logs.
- Provides graphic (GUI) and command-line (CLI) modes – ClearCheck can seamlessly integrated with backup scripts.
- Customizable product – user can control which checks to run and the arguments; which VOBs to check; running frequency, etc.
- Safety and security – all checks are read-only; no data is changed during the checks; all data remains inside the organization.
- A smart product – Can identify well-known problems and suggest solutions.

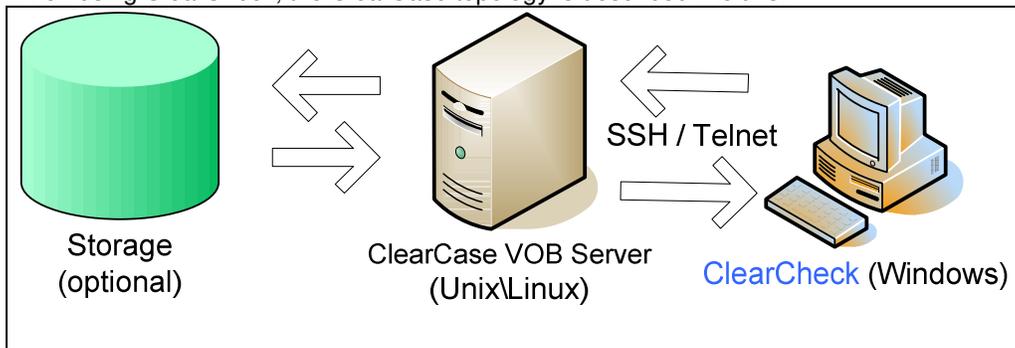
Topology

Your current ClearCase topology can be described like this:



ClearCase Registry server (if located on another host), license server and ClearCase clients are omitted from this chart. They are irrelevant here.

When using ClearCheck, the ClearCase topology is described like this:



As you can see, the addition is a Windows host on which ClearCheck is installed. This host communicates with ClearCase VOB server by SSH.

If you use ClearCase MultiSite, it may look the same for each of your replicas.

What's new in version 2.9.7

For this release, we updated the internal knowledge base used to detect errors within ClearCase VOBs, and we also fixed some bugs with the ClearCheck software.

Fixed issues:

- We fixed some situations where filenames and file versions that contain "error" or "problem" strings were detected as errors themselves.
- We further enhanced saving capabilities in HTML format and we fixed a bug that enforced you to save report in HTML format

Regarding ClearCheck and Windows Server 2012

This version runs under Windows Server 2012. Although we planned to officially support WS 2012 starting from ClearCheck v3.0 (the major release that is coming soon), some of our customers have already reported to us that they could run ClearCheck successfully on Windows Server 2012.

Note that ClearCheck v2.x requires .NET Framework 2.0 which is not installed on Windows Server 2012, so you have to install it manually before installing ClearCheck (you have to download it from the Microsoft website here: <http://www.microsoft.com/en-us/download/details.aspx?id=1639>)

What's new in version 2.9.5

In this version we focus on performance improvements.

As you know, ClearCheck running performance is based on ClearCase performance on your site.

We found a way to accelerate running time by 10 times! This is especially useful if you have thousands of VOBs or gigantic VOBs.

Several features have been added based upon customer request. Here are the new features:

1. Running time of VOB database consistency checks ("dbcheck") on Windows has been decreased by a factor of 10 times. We could shrink it from 37 hours for a full cycle to less than 3 hours.
** Note: this requires free space and available memory (RAM).
2. NEW: When you schedule ClearCheck to run periodically, you can now control its priority status directly from ClearCheck dashboard. This enables you to better control its process and even accelerate running time. Available priorities are: Normal, Above Normal and High Priority.

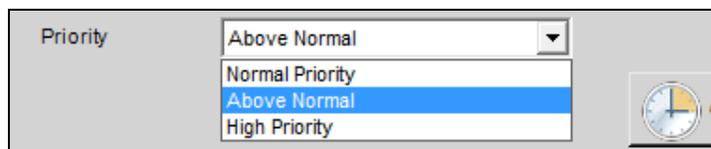


Figure 1: Priority statuses

3. NEW: You can update the scheduled running time of ClearCheck from within its dashboard (you do not have to go to Windows Task Scheduler anymore).
4. A new log file that reports (in real-time) the progress of VOB scanning and checks. Remember that ClearCase health checks can take many hours (especially if you have gigantic VOBs or hundreds of VOBs). This new log shows starting time and end time for each check per VOB, and this enables the users and administrators to know the current status at all times. You can also check this

log retrospectively to determine how long the scan & checks for each VOB and for each check take. This also helps you plan the frequency of checks and better understand your server performance in regards to these checks. See an example: <http://gomidjets.com/download/clearcheck-status-myvobserver-00.txt>

5. New feature in database consistency check (dbcheck) that supports scanning and analyzing VOBs even if they are stored or backed-up in more than one disk. This supports situations where you have to save VOBs or VOBs backup in separate disks (for many reasons – lack of space; redundancy; I/O performance etc.). ClearCheck now provides a list where you can specify all locations. During running, it looks for the VOB in all locations until it finds it (and then performs relevant checks). If the VOB is not found, it alerts about this. This feature works for Linux, UNIX and Windows VOB servers.

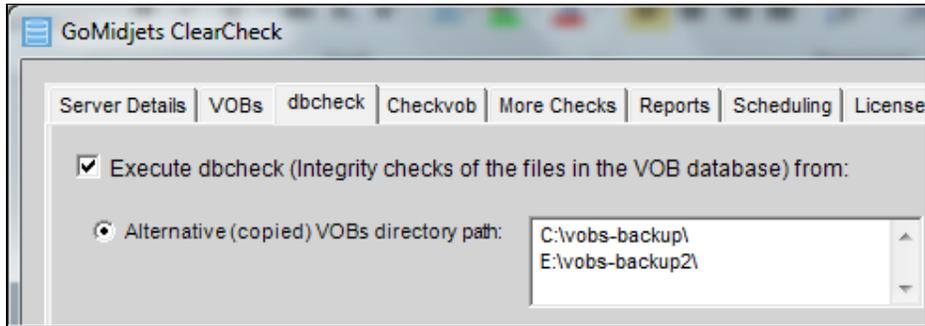
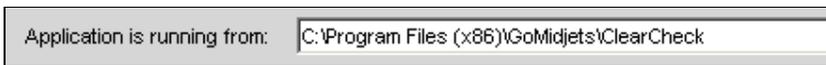


Figure 2: You can provide a list of all VOBs directory paths.

6. New feature that prevents overwriting an existing report (if filename already exists). In this case, it adds a sequence number at the end of the filename. For instance: if the report name should be `clearcheck-12182014.pdf` and filename is already exists, the name will be `clearcheck-12182014(1).pdf`. This feature is important in case you add a dynamic date variable as part of the filename (like many users do) and you run the report more than once a day.
7. New feature in GUI: You can see where the application is actually installed and running from. To get this go to 'About' tab:



What's new in version 2.8

1. New advice messages (with a blue arrow) have been added to some of the warning messages, enabling you to better understand these warnings and how they can help you (prior to this feature, advice was only provided for error messages)

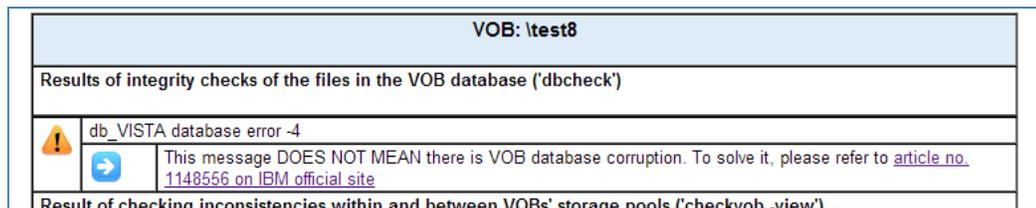


Figure 1: new advice messages for Warning messages

2. More legible check titles. The title now explains, for each check, what it analyzes. E.g. “Results of integrity checks of the files in the VOB database”



Figure 2: More legible titles

3. The report specifies finish time (as well as starting time). It helps users to see how much time is required to run the daily/nightly process of scanning the VOBs and analyzing the results.

4.

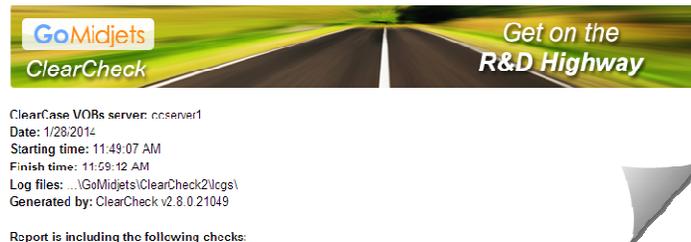


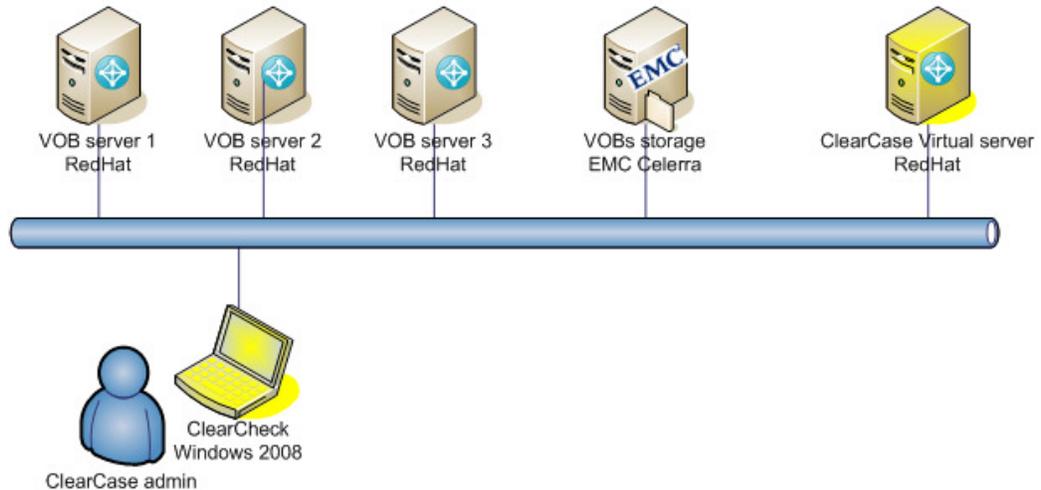
Figure 3: Finish time to generate the report is now part of the report’s header

New fixed bug in version 2.8

1. We have corrected run-time errors that formerly occurred because the length of errors found in VOB exceeded 4GB. The length of errors is now limited to 2GB, and in the event that an error message is longer, the user is asked to read the rest in logs files generated by ClearCase. This behavior saves memory and reduces ClearCheck running time.
2. More accurate detection of warning messages
3. We fixed the crowded titles in HTML and PDF reports. Now these titles are more spacious and legible.

What’s new in version 2.7

1. **NEW consolidation: Scan all VOB servers simultaneously and get ONE integrated health status report for all VOB servers.**
 For the first time, you can monitor multiple ClearCase VOB servers together, and get one single consolidated report every day. This enables you to save time and see the whole picture at once (rather than watch a report for the first server, and then another report for the second server, and then ... etc.).
 Furthermore, we now also enable you to set up a dedicated ClearCase server that runs all health checks locally, even in situations where VOBs reside on other servers. For example, one current customer enjoys that configuration in the following way:



In diagram: You can see the production environment of ClearCase (3 VOB servers plus VOBs storage). We added another virtual server upon the request of the customer (this new server is not mandatory). Finally, ClearCheck dashboard is installed on Windows client (it could be installed on any Windows client).

2. **NEW: You can use wildcards to specify where the backup of VOBs storage resides.**

As you know, ClearCheck supports checking for database corruptions (also known as “dbcheck”) on backup copies of the VOB databases, so there’s no need to lock the VOBs, which means you can avoid R&D downtime.

A valuable new functionality enables you to use wildcards*, (e.g.

[/vobstorage/backups/mybackup*](#))

if root directory of backup folder is unknown right now. This is very useful when the directory is dynamically changed every day – if folder name contains date or even time.

This directory can also lead to snapshot or checkpoint backups of 3rd-party filers such as NetApp, EMC, Sun, IBM etc. as well as supported directories which are accessible by NFS and CIFS.

Furthermore, you can combine wildcards with dynamic variables of date and times.

e.g: today is 2013/02/04 and root folder to store VOB backups is:

[/vobstorage/backups/{yyyy}_{MM}_{dd}*](#)

In this example, the path is first translated by dynamic variables: {yyyy} will be translated to current year; {MM} to current month and {dd} to current day. Afterwards, the tool will search for this path by using the asterisk (*) wildcard.

Note: If wildcards return more than one folder, only the most recent one will be considered to run the health checks.

** Wildcards – Symbol used to replace or represent one or more characters – asterisk (*) and question mark (?)

3. **Improved integration with Task Scheduler in Windows server 2008 R2**

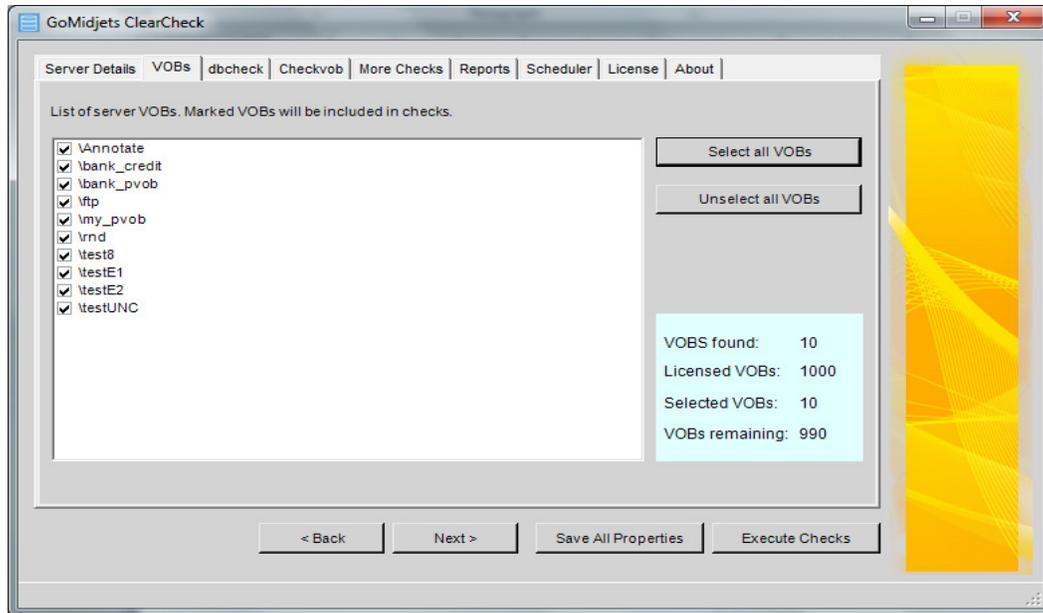
The “Task Scheduler” utility in Windows Server 2008 R2 (and Windows 7) replaces the Windows “Scheduled Tasks” utility. Accordingly, we updated the integration with the scheduler in order to enable you to schedule the running of checks from within ClearCheck dashboard.



4. **NEW display: Instantly shows you information about the VOBs:**

- How many VOBs were found on ClearCase server(s)
- How many VOBs are licensed in your license key (ClearCheck is licensed by amount of VOBs and VOB servers)

- How many VOBs are currently selected to be analyzed during ClearCheck scanning
- How many VOBs remain to be selected
- That information is changed dynamically each time you select a VOB. See a screenshot:



What's new in version 2.5

5. Improved report interface: more information is now organized into tables. We also added a new message type of 'Information' (besides error, warning and advice). See report examples: [PDF](#) and [HTML](#).
6. Better support for Windows 64bit servers, including Windows 2008 and Windows 7. Admin privileges are not required anymore to install and launch the tool.
7. New log is provided: a full log of 'dbcheck' scanning. This log is provided along with our clear and concise ClearCheck report. This log may be useful if you have to immediately send the full log file to a Rational Support team.
8. More accurate 'Free Space' check for AIX and Windows servers
9. The tool covers situations where VOBs are registered on Windows in UNC format,
10. Ignoring false positive issues when running ClearCase v7.1.1, v7.1.2, v7.0.1 and 7.0.0
11. Performance: we improved loading time by a several seconds
12. All reports are now located in one centralized directory (existing users keep receiving reports to a location which they have already determined, unless they explicitly change it)
13. All log files are now located in one centralized directory (named %appdata%\GoMidjets\ClearCheck2\logs)

GoMidjets ClearCheck installation

Pre installation

Prerequisites:

14. ClearCheck can be installed on any of the following Windows hosts: Windows 2000, Windows XP, Windows 2003 server, Windows Vista, Windows 2008.
15. ClearCheck communicates with your VOB server by using SSH (secure shell) or Telnet protocols; in hence you have to make sure that SSH or Telnet are up and running on your VOB server. Please consult your IT administrator in order to setup SSH or Telnet on your VOB server.
16. The account which executes the checks should have permissions to run the ClearCase commands: dbcheck, checkvob, rgy_check. It also should have access to relevant file systems. The recommended account for this purpose is the object owner – usually it's the VOBs owner.
17. Make sure you have write access to “temp” directory on the Windows host in which ClearCheck will be installed. “Temp” directory is usually “C:\Docuemts and Settings\username\Local Settings” and is defined by an environment variable named %temp%.
18. ClearCheck supports **all** kinds of VOB server Beginning with version 2003.06, and including ClearCase, ClearCase LT, Base ClearCase and UCM ClearCase. Visit IBM site to see a full list of operating systems supported by ClearCase: <http://www-01.ibm.com/software/awdtools/clearcase/sysreq/>

Installation

Just run the exe file.

How to use GoMidjets ClearCheck

When running ClearCheck for the first time, you will see the following screen:

The screen is consisted of tabs and buttons.

The tabs section is divided to the following tabs, as described below: Server details, VOBs, DBCheck, Checkvob, More Checks, Mail, License and about.

You firstly have to choose your server type (Remote – UNIX/Linux).

On the bottom of the form, you have the following options:

Execute checks now – Run ClearCheck checks right now. Before start running checks, ClearCheck will validate that all necessary fields, like server details, check types, VOBs and mail properties, are filled correctly.

This option's purpose is to check ClearCheck behavior starting right at this moment now, without scheduling it to other time. In this case, ClearCheck is minimized to system tray while all the checks are generated in the background. When ClearCheck checks end, it will open again on screen.

Usually, you'd prefer running the checks as part of the daily backups.

☞ Use this option carefully, especially during the working hours, since you have the option to lock VOBs.

Save All Properties – Properties are saved into a file. It is best to save it for future execution, so it can be executed full automated.

Online Help – A small window describing ClearCheck controls. On rollover a control, it will show its details inside this field.

Server details

<input type="checkbox"/> Use public and private keys			
Server Name	ccserver	Protocol	SSH
Username	vobadmin	Cleartool Path	/usr/atria/bin/cleartool
Private key file location		Is path	/bin/ls
Password	*****	Prompt	regex: .*[!\$%#>] \$
Retype password	*****	Timeout	180
Apply		<< Advanced	
		Restore to default	

Run on remote server (UNIX/Linux) –

Run the checks on remote server (UNIX or Linux). In this case, you need to specify remote server properties, as described below:

Server name – Name of the remote server or its IP address

Account – Account (login) name. Specify an account that has sufficient permissions to execute the following commands: dbcheck, cleartool checkvob and rgy_check. This account should also have permissions to access relevant file systems. The recommended account for this purpose is the object owner – usually it's the VOBs owner.

Password - Account password to login remote server

ClearCheck Advanced Features

<input type="checkbox"/> Use public and private keys			
Server Name	solaris	Protocol	SSH
Account	tg	Cleartool Path	/usr/atria/bin/cleartool
Password	*****	Is path	/bin/ls
Retype password	*****	Prompt	regex: .*[!\$%#>] \$
		Timeout	60
Apply		<< Advanced	
		Restore to default	

Protocol – Choose Telnet or SSH.

Cleartool path – UNIX convention of “cleartool” command path. Usually it is located:

/usr/atria/bin/cleartool

ls path - UNIX convention of “ls” (list content of directory) command. Usually it is located in:

/bin/ls

Prompt - Holds the command prompt string to expect from the server.

☞ Advanced features are hidden since their default definition is suitable to most of the organizations. By changing these properties, you have more flexibility to match it to your organization’s needs. Noticed that changing the advanced properties is not recommended if not necessary.

Timeout - Number of idle seconds before disconnection. This value specifies how many seconds must pass without any activity occurring between ClearCheck and the remote server before ClearCheck will autodisconnect. Autodisconnect is a measure of protection so there are no 'ghost' connections made between you and the remote server. If you don't want autodisconnection to occur, set Timeout property to 0.

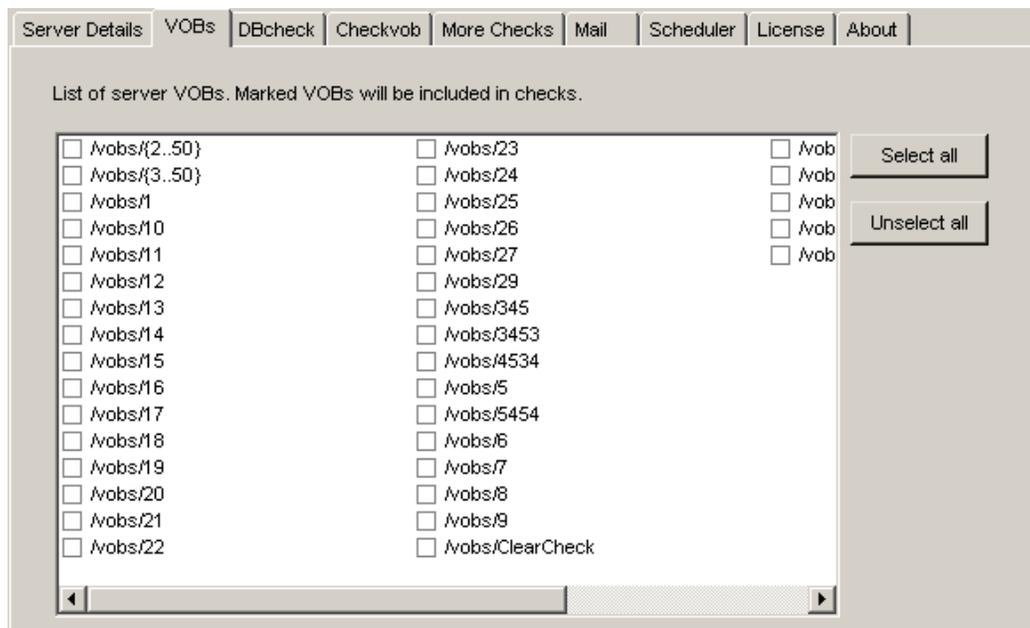


Even a non-ClearCase Windows client can serve as a ClearCheck host for remote server. For example: if your ClearCase server resides on a Linux host, you can install ClearCheck on any Windows host, and then configure this host to connect to your ClearCase Linux server.

☞ If your Windows host runs ClearCase LT, you cannot use this host to connect remotely to ClearCase UNIX server (That’s a very rare situation).

☞ If you’re using SSH protocol and it’s the first time you’re accessing your VOB server from the Windows machine where ClearCheck installed, you’d better to setup initial connection to VOB server by Putty and any other utility, in order to set the initial key for connection between these two hosts.

VOBs



A list of all server VOBs. Choose which VOBs to include in the checks.

Any VOB that its process is running on this server will be included in this list, even if the VOB storage is not stored in the server. For example: If the VOBs reside on a filer like NetApp or EMC, they will be shown in this list.

For your convenience, you can select all VOBs or unselect all VOBs by pressing the appropriate button.

 VOBs list is sorted alphabetically by default.

dbcheck is an IBM utility that searches after possible database corruption and key file inconsistencies.

Execute dbcheck – Specify whether to include dbcheck when ClearCase is executed.

Alternative VOBs Directory Path - Specify a root directory path of where the copy of the VOBs reside on. Using this option enables running ClearCheck independently, with no necessity to lock and unlock VOBs. This feature enables you to use ClearCheck with no downtime! You can just run it on any time, regardless working hours and duration of running.

 **Notice:** You have to copy the VOBs to alternative storage manually before executing ClearCheck

If you use this option, ClearCheck enables you to use dates variables. It can help you to specify an alternative **dynamic** path by your 3rd-party filer. For example: If you use NetApp filer and create a new snapshot directory every day, you can specify the date and then ClearCheck executes dbcheck on this directory.

In screenshot above, you can see that alternative path is "/export/home/vobs/.snapshot/{dd}-{MMM}-{yyyy}" . That means that every day, ClearCheck executes dbcheck by the date of today.

The following date variables are valid:

Variable	Description	Example
{DOW}	Day of week. 1 digit, 0 to 6	0 is Sunday, 6 is Saturday
{dd}	day in 2 digits format	02 , 28
{ddd}	day in 3 letters format	Sun, Mon
{dddd}	day in full letters format	Sunday, Monday
{M}	month in 1 or 2 digits format	1 , 10
{MM}	month in 2 digits format	01, 10
{MMM}	month in 3 letters format	Jan, Feb

{MMMM}	month in full letters format	January, February
{yy}	year in 2 digits format	08, 09
{yyyy}	year in 4 digits format	2008, 2009
{YESTERDAY}	the date of yesterday by following format: MM-dd-yyyy	04-01-2009
{TODAY}	the date of yesterday by following format: MM-dd-yyyy	04-02-2009
{dd-1}	Day of yesterday (2 digits)	30
{ddd-1}	Day of yesterday (3 letters)	Thu
{dddd-1}	Day of yesterday (full letters)	Thursday
{DOW-1}	Day of yesterday (0-6)	0 , 1 , 2
{M-1}	Months of yesterday (one digit or two)	1, 10
{MM-1}	Month of yesterday (two digits)	01 , 10
{MMM-1}	Month of yesterday (short name)	Jan , Feb
{MMMM-1}	Month of yesterday (short name)	January , February
{yy-1}	Year of yesterday (two digits)	09, 10
{yyyy-1}	Year of yesterday (four digits)	2009, 2010

 Always use {} brackets and the right {small or capital} letters.

 You can test your variables by using "Test Path" button.

 An example of a common convention of yesterday's date when using NetApp filer:

{MM-1}-{dd-1}-{yyyy-1}

Which means: If today is the first day of 2011, yesterday is 12-31-2010

Original VOBs Directory Path - Use this option if you want to run the DBcheck on original VOBs storage (but not its copy). In this option, you have to determine if you also need to lock and unlock VOBs and whether you want to lock and unlock all vobs at once (as recommended) or lock and unlock each VOB separately.

Lock VOB – Mark this option if you want ClearCheck to lock the VOB.

 Use this option very carefully. Locking the VOB during working hours is not recommended!

Unlock VOB - Mark this option if you want ClearCheck to unlock the VOB

 Each VOB is locked and unlocked separately by ClearCheck. This will save your server downtime.

 In fact, you have many combinations to run DBcheck. Here we summarize the common 5 combinations:

Alternative VOBs Directory Path - Add file synchronization to your backup script and a command-line execution to Windows Scheduler.

Original VOBs Directory Path - Add file synchronization to your backup script and a command-line execution to Windows Scheduler. ClearCheck will lock and unlock VOBs.

Start running ClearCheck after the following file is found – This property enables you to integrate ClearCheck with your backup script. Marking this box means ClearCheck searches for a flag file during its running. You also have to specify a filename into the text box.

ClearCheck is synchronized with your backups as follows: ClearCheck will start running just after the flag file is created on the remote server.

ClearCheck will search for this file every 10 seconds, for a duration of 30 minutes.

After the file is found, ClearCheck will executes all checks, unlock all checked VOBs and remove the flag file.

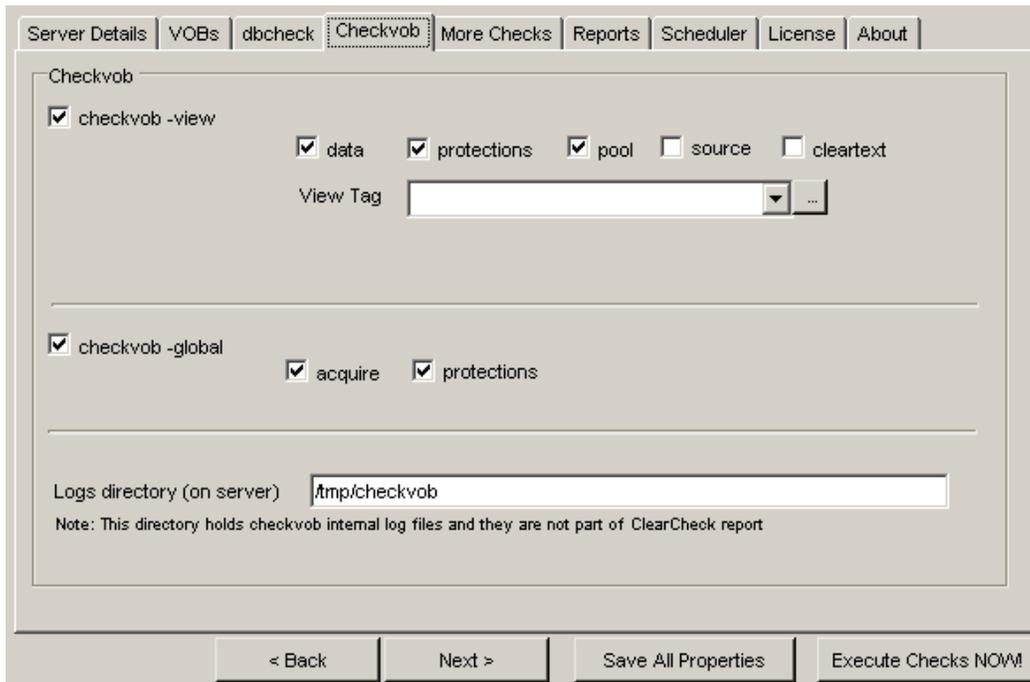
If the flag file is not found during 30 minutes, ClearCheck will show an error message.

 For further details about backup script and Windows Scheduler, read Appendix A – “How to integrate ClearCheck with your backup script and Windows Scheduler”.

 This flag file can be used to synchronize UNIX/Linux VOB server with your Windows dashboard, even if you do not want to launch it in adjacent to backups.

DBcheck will be executed on the following days - You can decide which days to execute dbcheck. IBM recommends running once a week, but the more the days that dbcheck runs, the earlier the problems are recognized. In screenshot example above, we run DBcheck twice a week – on Sunday and Wednesday.

Checkvob



Checkvob is a utility that finds and fixes inconsistencies within and between VOBs.

ClearCheck suggests two kinds of Checkvob checks:

- a. **Check storage pools.** Select the checks for data, protection, pool, source and cleartext. If you mark this option, you need to specify view name from the list, since this check runs by a view context.

That views list is generated by ClearCheck, which searches your database and finds all view tags.

 It is recommended to use a unique, well-configured, snapshot view for using ClearCheck. Do not use a view that already serves other users.

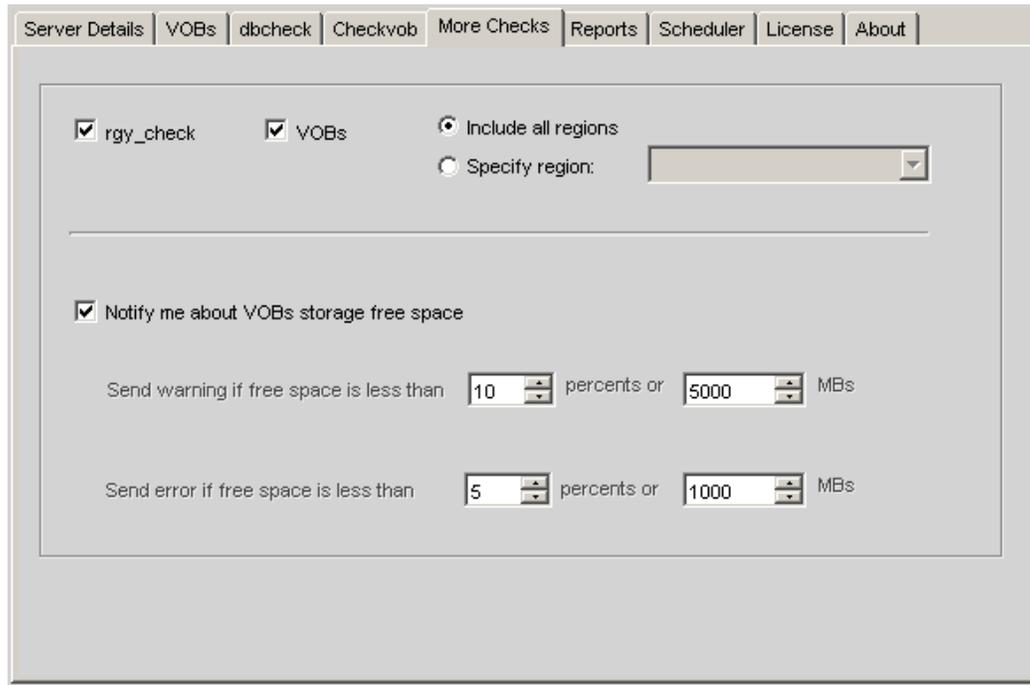
 If you have to create a new view, use the "New" button.

- b. **Check global types.**

If you mark one or more of 'checkvob' checks, you also need to specify a logs directory. This directory collects all data that is generated during the checks. Since ClearCheck summarizes all the important data, you can specify a temporary directory name.

The default log directory path is "/tmp/checkvob". The log files inside are named uniquely based on the current date. (It will not overwrite or append to existing files.)

More Checks



Server Details | VOBs | dbcheck | Checkvob | **More Checks** | Reports | Scheduler | License | About

rgy_check VOBs Include all regions
 Specify region:

Notify me about VOBs storage free space

Send warning if free space is less than percents or MBs

Send error if free space is less than percents or MBs

rgy_check

rgy_check is a utility that checks registry files for inconsistencies.

VOBs - Checks the contents of the VOB tag and/or VOB object registries

Regions - If you have more than one region in your environment, you can specify a specific region.

☞ If you have more than one VOB server in your ClearCase registry that uses ClearCheck and you mark 'rgy_check' including all regions, you may get double errors (if exist), since this check covers all ClearCase registry regions. In this case, you had better to specify a region.

Notify about Free Space

Mark this check if you want to include a free space checking. You can run it always or if the amount of free space is less than <your choice> mega bytes (MBs).

ClearCheck will find all filesystems which hold VOBs and will notify you by your chosen criteria.

☞ If VOBs are scanned from an alternative (backup) directory path, note that free space check is still performed on the real (original) path of the VOBs.

Reports

The screenshot shows the 'Reports' tab in the ClearCheck configuration window. It features several sections for report generation settings:

- Report Selection:** A prompt 'Please select at least one of the following reports:' is followed by three options: 'PDF file', 'HTML file', and 'Email'. The 'Email' option is selected.
- File Options:** For both PDF and HTML, there are checkboxes for 'Open report when done' and 'Overwrite file if already exist' (only for HTML). Buttons for 'Test Filename' and 'Date Variables...' are provided for each.
- Email Configuration:** Includes fields for 'Outgoing Mail Server (SMTP)' (out.gomidjets.com), 'Recipients Email Address' (support@gomidjets.com), and 'Attach report as' (both PDF and HTML are selected). A 'Send Test Email...' button is present.
- Advanced Email Settings:** A button labeled 'Advanced Email Settings...' is located to the right of the SMTP and Recipients fields.
- Report Style:** Includes a 'Header's image location' field with radio buttons for 'File' (selected) and 'URL'. A 'Display warning and error messages only' checkbox is unchecked, and a 'Use local icons' checkbox is checked.

Here you specify details for target mail.

ClearCheck uses SMTP method for sending Emails.

Outgoing SMTP server –Name or IP address of your organization mail server.

Recipients Email Address – Specify email addresses of whom you want to send the final report. You can specify more than one person, separated by comma.

Advanced Email Settings:

The 'Advanced Email Settings' dialog box contains the following configuration options:

- Port:** 25
- SSL Enabled?:** False
- Sender Details:**
 - Authentication?:** True
 - Name:** ClearCheck Test
 - Email Address:** admin@zahav.net.il
 - Password:** [Redacted]

Buttons for 'OK' and 'Cancel' are located at the bottom right.

Port – Specify port number that your organization uses for sending Emails. Usually it's 25. Contact your network administrator for further details.

SSL enabled – If your mail server uses SSL authentication, choose "True". Contact your network administrator for further details.

You can also define sender details:

Authentication - If your mail server requires authentication, you have to choose "True".

If your organization uses “Microsoft Outlook”, you probably do not need authentication, but please consult your administrator.

Name – Name of Email sender.

Email Address – Specify Email account through which the mail will be delivered.

Password – If your mail server requires authentication method, you need to specify the password of the sender account.

When ClearCheck is running, it will send a Email at the end of its process. If the Email cannot be delivered, an error message will be sent to log file. If you are working in GUI mode, an error message will be also sent to screen.

Scheduler

ClearCheck should be executed on a daily basis. In this tab you can add ClearCheck into the Windows Scheduled Tasks.

Please supply all below details and then add it to Windows Scheduled Tasks

Hour (24 HH:MM)

User

Password

At the first time running ClearCheck, it searches the scheduled tasks of your Windows host. If no relevant task is configured yet, it will suggest adding a new scheduled task. You need to supply the following details:

Time/Hour – When to execute ClearCheck (on a daily basis).

User and **password** – Details of the Windows account in which the ClearCheck will be executed. If you omit the domain name, it may be added by Windows Scheduled tasks.

After adding the new task successfully, a new task, named “DailyClearCheck” will be added into Windows Scheduled Tasks. You can set it later – edit or remove by using the Scheduled Tasks interface. You can open this interface from within ClearCheck – press on “**Open Scheduled**

Tasks” button.

License

The screenshot shows a software interface with a menu bar at the top containing: Server Details, VOBs, dbcheck, Checkvob, More Checks, Reports, Scheduler, License (highlighted), and About. Below the menu, the 'License' section is active. It features a text area labeled 'License Key' containing the alphanumeric string: 7LvW99DXOGkRq5fk1gqCrhGDIV77z0MckkHcxnMm+EP8UcevxpCzagK6+avNhh6icyHPmiHSvlp8LV8Cmni0w71UsEAhE5iuG31cUI55aLWynxRSxaf6xVaPO. Below the text area is a button labeled 'Check for validation'. Further down, there is a label 'hostid for licensing:' followed by a text box containing '60D8192187EF'. At the bottom, there is a label 'Expiration date:' followed by a text box containing '12/16/2012' and the text '(3 days are left)' to its right.

Here you can insert a license key, and see expiration date.

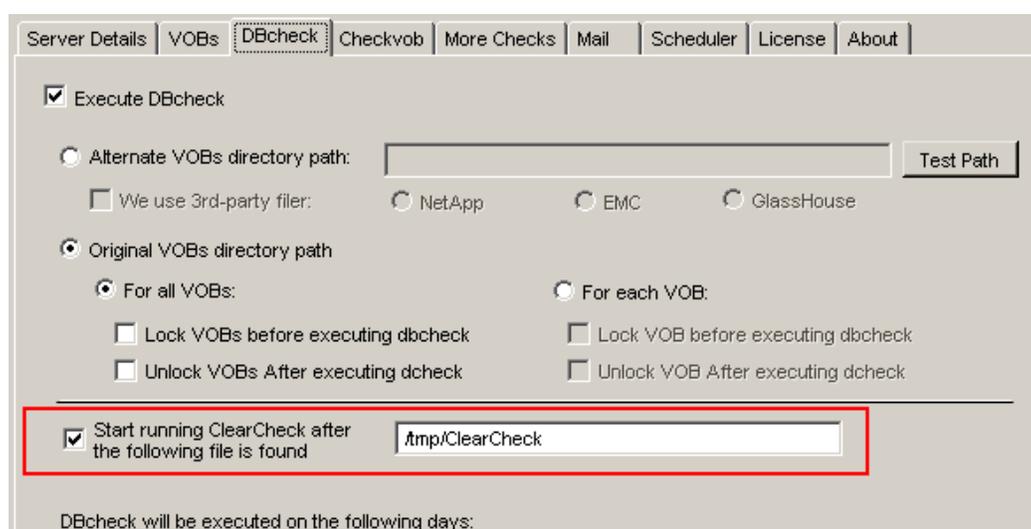
Appendix A: How to Integrate ClearCheck with your backup script

This chapter describes how to use ClearCheck, your backup script and Windows Scheduler in harmony.

Basically, your backup script includes the following steps:

- a. Lock all VOBs.
- b. Copy all VOBs into another storage (or creating a filer snapshot)
- c. Unlock the VOBs.

Since ClearCheck is a Windows EXE file, you have to synchronize it with your backup script. This synchronization is done by a UNIX “flag” file. You specify this filename in ClearCheck appropriate textbox:



The screenshot shows the 'DBcheck' configuration window. The 'Execute DBcheck' checkbox is checked. Under 'Original VOBs directory path', the 'For all VOBs' radio button is selected. The 'Start running ClearCheck after the following file is found' checkbox is checked and highlighted with a red box. The text box next to it contains '/tmp/ClearCheck'. Below this, there is a section for 'DBcheck will be executed on the following days:'.

Figure: ClearCheck flag file (/tmp/ClearCheck)

ClearCheck will not start its execution until this file, “/tmp/ClearCheck”, is found in the remote UNIX server.

All you have to do is adding a line that executes ClearCheck automatically, by your predefined definitions:

```
"c:\program files\GoMidjets\ClearCheck\Clearcheck.exe" -exec
```

For example:

Assuming the following:

- I. your backup script is [the following script \(taken from IBM site\)](#) , which is a Perl script for Windows
- II. ClearCheck is installed in “c:\program files\GoMidjets\ClearCheck” directory
- III. Synchronization file is /tmp/ClearCheck

Now it will be demonstrated how to integrate ClearCheck with your backup script, using the options described above: add ClearCheck execution line to the end of the script – just before the “_END_” line

```
printf "Backup script stopped : $tstamp \n";  
touch /tmp/ClearCheck  
_END_
```

 ClearCheck removes this 'touched' file after its execution is done. This process ensures that ClearCheck will work properly next time running.

 You need to verify that the user account which executes the backup script can 'touch' (create) this filename. You had better to use the same user account for running the backup script and running ClearCheck.

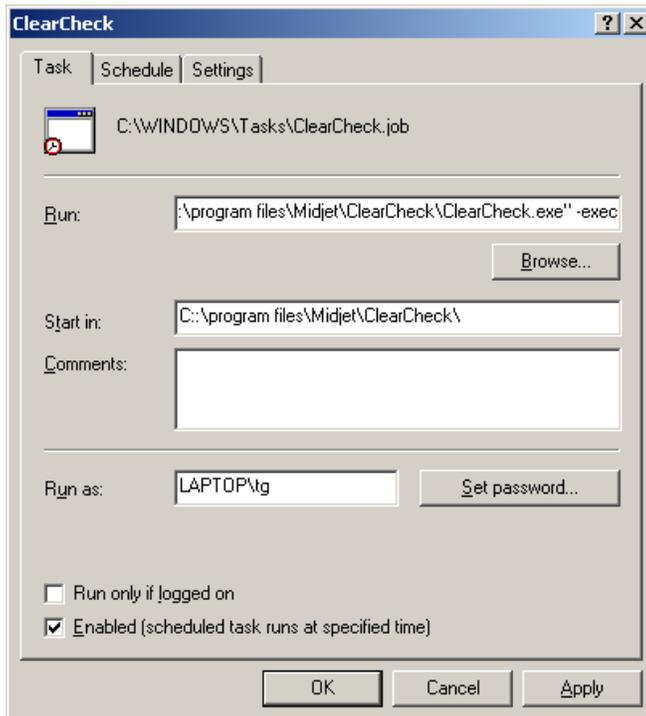
 ClearCheck can help you lock and unlock VOBs. In this demonstration we did not include these features since we assume your backup script is already taking care of it.

Appendix B: How to Integrate ClearCheck with Windows Scheduler

Windows Scheduler enables you the independence to execute ClearCheck by command-line, whenever you want.

To execute ClearCheck using Windows Scheduler, you need to add a new task in the Windows "scheduled tasks" (Start | All Programs | Accessories | System Tools | Scheduled tasks).

Here are two examples and screenshots. The first one in Windows XP; the second is in Windows Server 2008 R2.

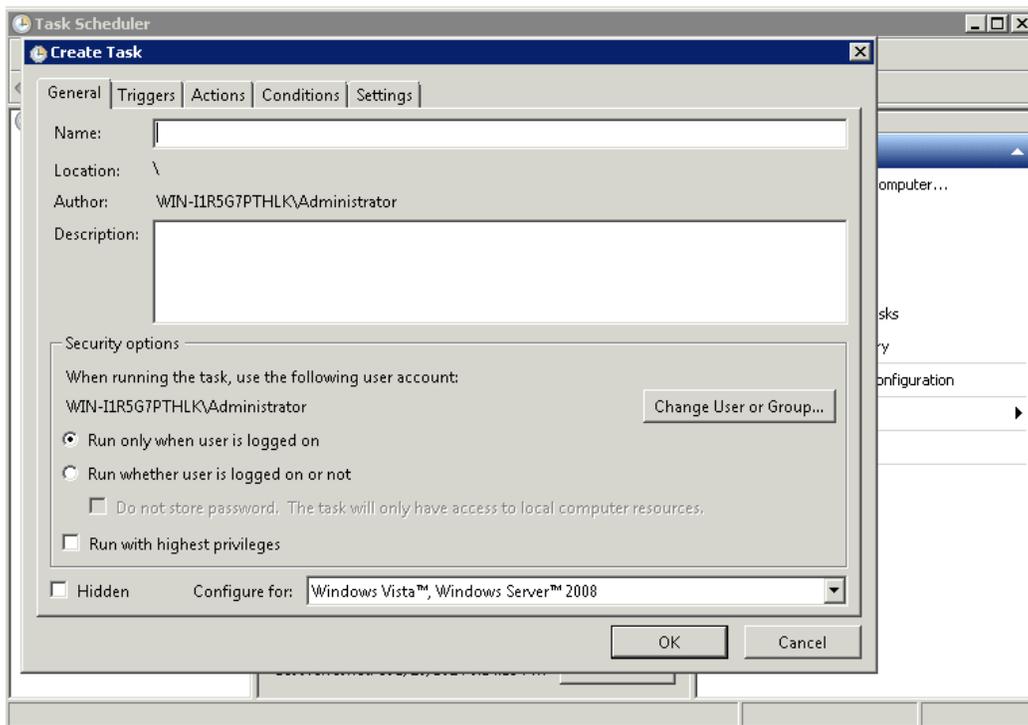


Scheduled task – Task properties

Here are two examples and screenshots. The first one in Windows XP; the second is in Windows Server 2008 R2.



Scheduled task – Task properties



Create a task in Task Scheduler

Run:

Enter executing filename (Clearcheck.exe), including the full installation path and including “-exec” parameter. For example:

```
"c:\program files\GoMidjets\ClearCheck\Clearcheck.exe" -exec
```

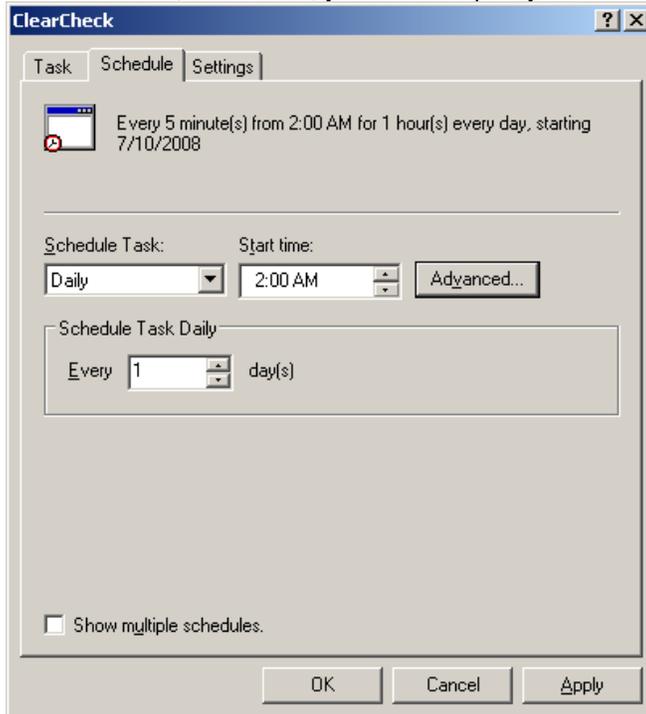
Start in:

Enter the full installation path. For example: "C:\program files\GoMidjets\ClearCheck\"

Run as:

You have to use a user account that belongs to ClearCase Admin group. This user account should have authorization to execute all required ClearCase commands, including lock and unlock VOBs (if necessary).

On the next tab, "Schedule", you need to specify execution times and frequency.



Scheduled task – Schedule properties

In this screenshot example, ClearCheck runs daily, on 2:00am.

Appendix C: Summary of changes (v1.3.0 – v2.0.0)

This edition (V2.0.0) includes the following changes:

Visual Reporting

- Enhanced visual presentation of results in a useful table
- Color-coded icons for quick review of the results: valid in green, warnings in yellow and errors in red.
- Advice is better positioned for clarity
- Summary of errors and warnings
- Option to show only errors and warnings in reports sent to the administrator's email

Reporting options

- Presentable PDF reports that can be sent out to management or external consultants.
- Customizable report header
- Option to send report as email with HTML or PDF attachment

Compatibility

- Supports Windows 7
- Supports SSH on Unix/ Linux servers
- Complies with SOX security requirements
- Better integration with Windows scheduler for easier daily reporting
- New dynamic variables for tight integration with backup systems
- Improved integration with ClearCase backups and (IBM, NetApp, HDS, Sun etc.)

Edition V1.7.0 includes the following changes:

Installation and running checks

- 4 simple steps to install and customize ClearCheck
- 3 minutes to install and receive preliminary reports.
- No need for VOB downtime in some environments

Report Functionality

- Detailed, more readable reports: checks legend, highlighted recommendations and action items, additional references to IBM solutions.

New Environments Support

- Multisite: tested and runs correctly on each separate replica.
- Supports Win2008 R2 and Windows 7

Edition V1.5.0 includes the following changes:

- HTML format support.
- Dynamic date variables to support better integration with backup and storage systems

- Supports Telnet protocol connection (in addition to SSH)
- Performance improvements
- Enhancements to Windows edition

Edition V1.3.0 includes the following changes:

- [ClearCase MultiSite](#). ClearCheck has been tested on ClearCase MultiSite replicas. It works successfully on each replica separately.
- [New date variables to improve and enrich “dbcheck” automation](#)
- [Lock + unlock all VOBs at once](#). If necessary to lock and unlock VOBs during “dbcheck” operation, you can set them all in order to acquire more safety.

IBM, the IBM logo, Rational, ClearCase and ClearQuest are trademarks or registered trademarks of International Business Machines Corporation in the United States, other countries or both.

Microsoft, Windows, Windows NT, and the Windows logo are trademarks of Microsoft Corporation in the United States, other countries, or both.

Intel, Intel logo, Intel Inside, Intel Inside logo, Intel Centrino, Intel Centrino logo, Celeron, Intel Xeon, Intel SpeedStep, Itanium, and Pentium are trademarks or registered trademarks of Intel Corporation or its UNIX is a registered trademark of The Open Group in the United States and other countries.

Linux is a trademark of Linus Torvalds in the United States, other countries, or both.

Other company, product, or service names may be trademarks or service marks of others.