

ULTRABAC USER MANUAL

Disclaimer of Warranties & Limitations of Liabilities

UltraBac Software™, hereinafter referred to as “UBS”, has taken due care in preparing this manual. However, nothing contained herein modifies or alters in any way the standard terms and conditions of the UBS purchase, lease or license agreement by which this software product was acquired, nor increases in any way UBS’s liability to the customer. In no event shall UBS or any of its authorized vendors be liable for incidental or consequential damages in connection with or arising from the use of the software package, this manual, or any related materials supplied by UBS.

Copyright Notice

© Copyright 2002 UltraBac Software. All rights reserved. UltraBac Software, UltraBac Software logo, Backup and Disaster Recovery Software for Business, and Express Index are trademarks of UltraBac Software. Other product names mentioned herein may be trademarked and are property of their respective companies.

This manual may not, in whole or in part, be copied, photocopied, reproduced, translated or reduced to any electronic medium or machine-readable form without prior written consent from UltraBac Software.

All UltraBac Software and software related products are licensed in accordance with the terms and conditions of the UBS purchase, lease or license agreement, by which this software product was acquired. No ownership of UBS software products is transferable, and law prohibits any use beyond the terms of one or more of the aforementioned agreements, without written consent of UBS.

TABLE OF CONTENTS

Introduction	1
Conventions Used in This Manual	2
Minimum System Requirements	3
UltraBac 7.x Installer	4
Licensing UltraBac	8
Administration	12
Backup	13
Preferences	14
Backup Job Creation	23
Incremental / Differential Backups	30
Before and After Jobs	33
Scheduled Backup Creation	35
Backup Storage Device Manager	42
Media Changer Device Driver	49
Autoloader Control	50
Command Line Functionality	53
Email Notification	56
Agent Preferences	57
UltraVue	63
Cluster Failover Support	65
Restore	68
Restoration	69
Find Files	74
UltraBac System State / Active Directory Restore	76
Agents	82
UltraBac Disaster Recovery	83
Static Mirror Image Backup	91
Locked File Backup Agent	93
Exchange 2000 Agent	96
Exchange 5.5 Agent	100
Exchange Individual Mailbox Backup & Restore	104
SQL Agent	108
NetWare Agent	113
Oracle Agent	117
Win9x Agent	123
Index	125

▼ INTRODUCTION

Conventions Used In This Manual

Option Name	“ ” (Option Name can refer to Menu Items, Choices, Buttons, etc.)
Convention:	“Option Name”
Example:	“Tools”
Sample:	Choose the “Tools” option
Dialog Box Name	<i>“Italicized”</i>
Convention:	<i>“Italicized Dialog Box Name”</i>
Example:	<i>“UltraBac Preferences”</i>
Sample:	Select the <i>“Operation”</i> box found in the “New Backup” Screen
Text Insertion	< >
Convention:	<Description of text to be inserted>
Example:	\\<Your Computer Name>\<Share Name>\<File Name>
Sample:	\\CAT\C\$\temp
Number Insertion	[]
Convention:	[A series of #'s—the quantity of #'s specifies the maximum number of digits]
Example:	Protect Media for [###] days
Sample:	Protect Media for [365] days
An Option Path	“ ” “/” “ ”
Convention:	“Option Name”/”Option Name”/”..... “
Example:	“Tools”/”Preferences”/”Media”/”Protect Media for [###] days”
Sample:	Select the “Tools” option, then the “Preferences” option, then the “Media” option, followed by the “Protect Media for [###] days” option
Chapter or Section Name	BOLD TYPE (lower case or all caps)
Convention:	Chapter or Section Name in Bold Type
Example:	Backup Group Format
Sample:	Refer to the Backup Group Format section of the Creating Backup Sets chapter
File Path	<u>“Underlined”</u>
Convention:	<u>“Underlined File Path”</u>
Example:	<u>“C:\UltraBac\”</u>
Sample:	By default, UltraBac installs into the <u>“C:\UltraBac\”</u> directory

Minimum System Requirements

Basic Requirements:

1. Windows NT[®]/2000/XP Server or Professional operating system for UltraBac[™] for Windows NT/2000/XP.

Service Pack:

1. Typically the latest service pack is recommended.

Operating System:

1. NT 4.0 required and Windows 2000 or XP recommended.

Screen:

1. A minimum screen display of 800x600 is required and 1024x768 recommended.
2. 256-color display required and 65536 colors recommended.

RAM:

1. NT Workstation – 32MB required and 64+MB recommended.
2. 2000/XP Professional – 64MB required and more recommended.
3. NT Server – 48MB required and 64+MB recommended.
4. 2000/XP Server – 128MB required and 256+MB recommended.

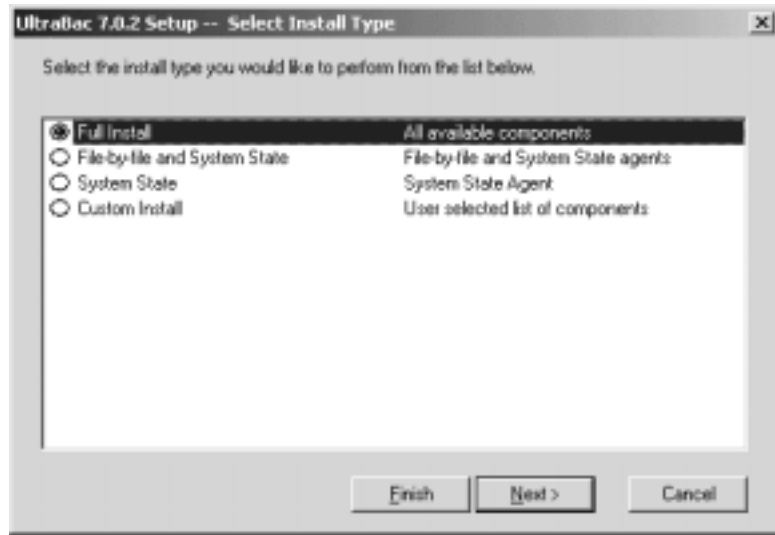
Hard Disk:

1. 10MB of free hard disk space required, 50MB recommended.

UltraBac 7.x Installer

LOCAL INSTALL

Launch UltraBac's setup wizard by clicking "Setup.exe." Click "Next" to continue when the UltraBac Introduction screen appears. Read the UltraBac Licensing Agreement text, click "I accept the terms of the licensing agreement," and click "Next" to continue.



Full Install – If the machine on which you're installing the software will be the UltraBac host responsible for running the backups, install the entire version by leaving the "Full Install" option selected.

File-by-file and System State – If the machine on which you're installing the software is a client machine, and only the files and System State are needed in the backup from the host, choose the "File-by-file and System State" option.

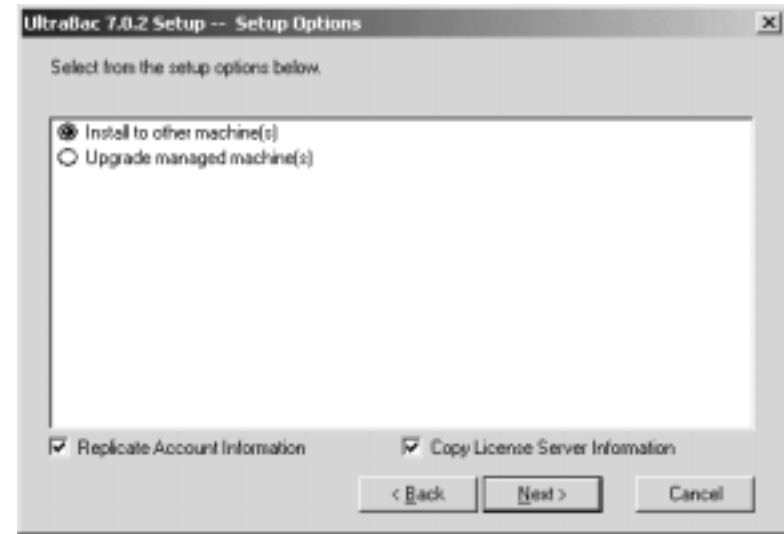
System State – Choose this option if only the System State is to be backed up on the machine on which you're running the setup.

Custom Install – Choose Custom Install if you're installing any of the UltraBac agents by themselves, or if you'd like to add components to an existing installation of UltraBac.

Choose the appropriate option in the "Select Install Type" box and click "Next" to continue. Review the Component and Action column to make sure you've selected the proper components of UltraBac 7.x, and click "Next." Click "Finish" when the setup has completed successfully. If the setup encountered any errors during installation, consult the UltraBac Setup Log, located in the root of the UltraBac 7.x installation folder, to see where the setup may have had problems installing.

REMOTE INSTALL

When installing UltraBac to a remote machine on the network, run the "setup.exe" from the UltraBac 7.x root directory from the UltraBac host machine. Click "Next" to continue when the UltraBac Introduction screen appears. Read the UltraBac Licensing Agreement text, click "I accept the terms of the licensing agreement," and click "Next" to continue.



Install to other machine(s) – Use this option if you're doing a remote installation of UltraBac 7.x to another machine on the network.

Upgrade managed machine(s) – All of the machines located in "Tools"/"Maintain Managed Machines" will be upgraded with changed files since the last installation.

Replicate Account Information – The account information located in "Tools"/"Options"/"General"/"Accounts" will be replicated to each machine chosen for installation.

Copy License Server Information – The licensing server specified in "Tools"/"License Management"/"Set License Server" will be replicated on the remote machine to which you're installing.

Choose the appropriate selection and click "Next." If you had chosen the "Upgrade Managed Machines" option you would have seen all of the machines listed in the Managed Machines list, which should be selected by default. Use the "Select All" or "Select None" buttons if you'd like to set or clear the machines for installation. The "Remove" button will unselect each machine checked with an X. If you'd like to add additional machines for installation, click the "Add" button and choose the machine to which you'd like to install the software. Click "Next" when the appropriate machine or machines have been selected for installation.



If you're installing UltraBac agents to remote machines, choose the "Custom Install" radio button and click "Next." Confirm the install path and click "Next." By default, all components are selected for installation. The objects in the custom setup screen may be individually excluded by clicking directly on the icon next to the component name, so that the gray icon is replaced with a red X. In the screenshot below, everything is selected for installation except for the Exchange Agent, Mailbox Agent, and the Oracle Agent. When you've selected the appropriate components to install, click "Next."



View the "Setup Summary" screen to confirm your selections and click "Next." After UltraBac begins its installation process, you'll see the transference of UltraBac files to the

remote machine in the installation box. When the setup completes successfully, click “Finish.” If the installation encountered any errors, look on the client that UltraBac was copying files to when the error(s) occurred. There should be an “UltraBac_Setup_Log.txt” file available in the root of the UltraBac 7.x directory. To locate the errors, open the setup log and look towards the bottom of the screen.

UNINSTALL

Uninstall UltraBac by accessing “Add/Remove Programs” through the Windows control panel. Simply highlight the UltraBac 7.x in the “*Add/Remove Programs*” window and click the “Remove” button.

Licensing UltraBac

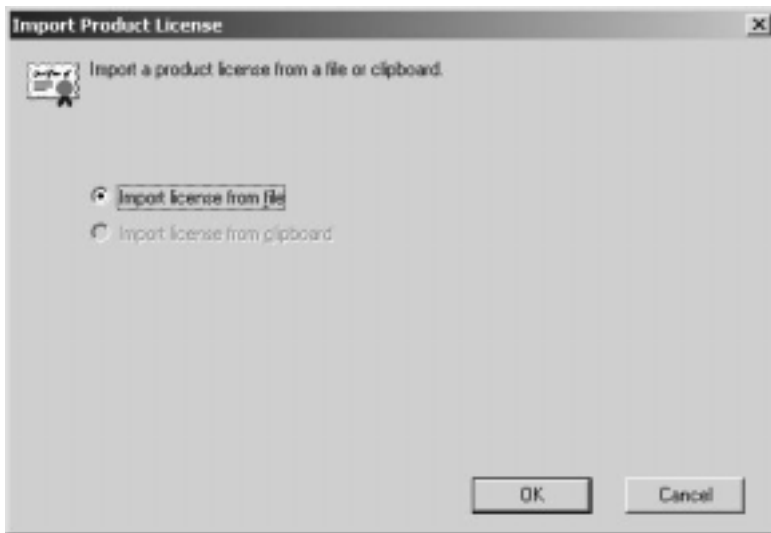
NOTE: If you do not have a license from UltraBac Software, please request one by visiting: <http://www.ultrabac.com/licensing>.

The initial installation of UltraBac software (from a fresh download with no attached license) will run as a fully functional program for 45 days. After the expiration date is passed, a license must be obtained to run backups.

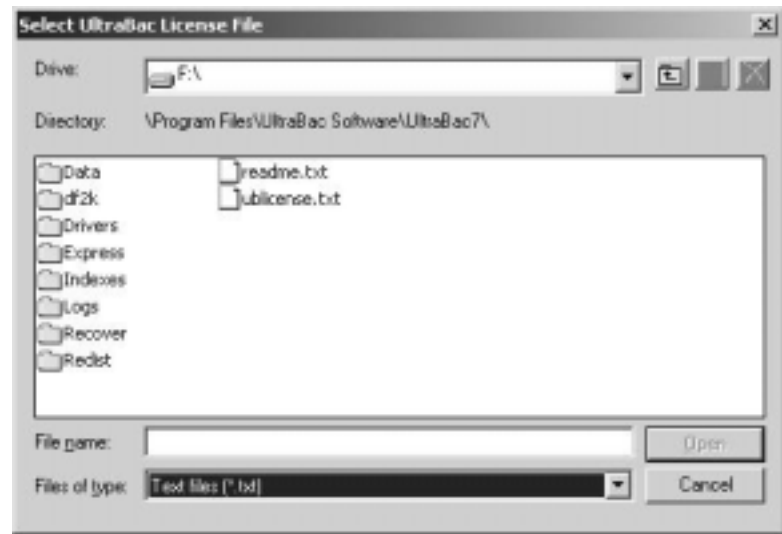
LICENSING PREMISE

Each machine in your backup scheme must have a valid license. This includes servers, workstations, and individual agents that UltraBac offers for specialized backups such as SQL, Exchange, Oracle, etc. When a file-by-file backup is launched, the server/workstation is validated through the UltraBac Licensing Server (typically the Backup Server). UltraBac first checks the backup server for a valid UltraBac engine/workstation license. Once the engine/workstation license is validated, UltraBac connects to the remote/local machine to acquire a license. Once the license is validated, the backup will continue.

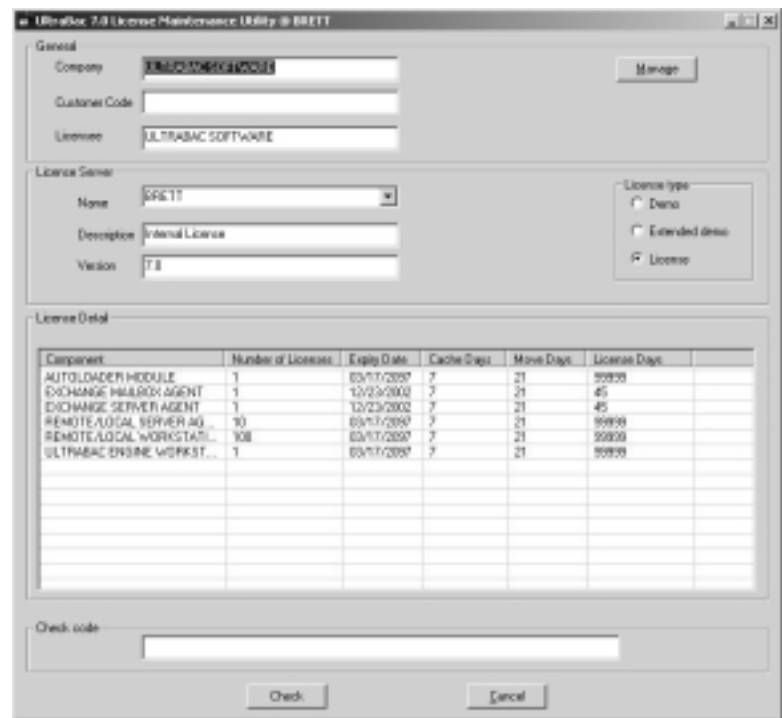
Once you have received your license from licensing@ultrabac.com, you will need to save the file "ublicense.txt" to: "C:\Program Files\UltraBac Software\UltraBac7." After saving "ublicense.txt," launch UltraBac software from "Start"/"Programs"/"UltraBac"/"UltraBac Management Console" or "C:\Program Files\UltraBac Software\UltraBac7\UBUI.exe." Once the program is launched, select "Tools"/"License Management"/"Import License" and select "OK."



Browse to the UltraBac7 directory, select the "ublicense.txt" file, and click "Open."



To confirm the license imported successfully, go to "Tools"/"License Management"/"Edit License."



EXPLANATION OF LICENSE DETAIL

Component – This is the module of the software that has been licensed.

Number of Licenses – This is the number of licenses available for a particular module.

Expiry Date – This indicates the expiration date of the module.

Cache Days – This allows the machine to be backed up for seven days without a licensing server.

Move Days – Once the license has been moved for the module, it cannot be re-licensed for 21 days.

License Days – Number of days that module is licensed for; this corresponds with expiry date.

NOTE: Dissimilar to UltraBac Version 6, there will be no check code for Version 7.x. The check code is only for inputting the license information manually. To confirm which machines have acquired which license, select "Manage" in the upper right hand corner. Expanding the plus sign will show which module has acquired a license and the date it was acquired.



UPDATING AN EXISTING LICENSE

Once you have received your license from licensing@ultrabac.com, you will need to save "ublicense.txt" to "C:\Program Files\UltraBac Software\UltraBac7." To import the license, launch the UltraBac user interface from "Start"\Programs"\UltraBac"\UltraBac Management Console" or "C:\Program Files\UltraBac Software\UltraBac7\UBUI.exe." Next, select "Tools"/"License Management"/"Import License," click "OK," and select the text file that contains the new license. This process is essentially the same as the steps outlined above.

VERSION 6.x TO VERSION 7.x

In order to upgrade a prior Version 6.x license to Version 7.x, please visit: <http://www.ultrabac.com/licensing>. Complete this form and submit it. Version 6.x licenses are not compatible with Version 7.x.

Administration

UltraBac can connect to a remote machine and execute every function through the UltraBac console. Basic administration of UltraBac may include creating sets, scheduling backups, editing sets, restoring from tape, setting preferences, etc. When connected to the remote machine through the “Connect” feature, the window will look as if you’re on that machine, similar to Terminal Services.

INSTALLATION / USE

The “UltraBac Management Service,” or the UltraBac Engine (as it appears in the “Custom” setup screen), must be installed and running on the remote machine you’re trying to connect to. UltraBac receives all of its security information required to authenticate the user to the remote machine from the “UltraBac Management Service.” When authenticating through the domain, UltraBac will use the default account listed in “Tools”/“Options”/“Accounts” to gain access to the machine.



To connect to a remote UltraBac machine using the administration tool, click the “Connect” button on the toolbar. UltraBac will query a list of computers and display an Explorer-like tree of machines on the network to choose from. Double-click on the computer or type in the <Name of the Machine> in the “Computer Name” box, and click “OK.” After the machines have been registered, they’ll appear in the drop-down list box in the toolbar making it easy to switch from one UltraBac host to another.

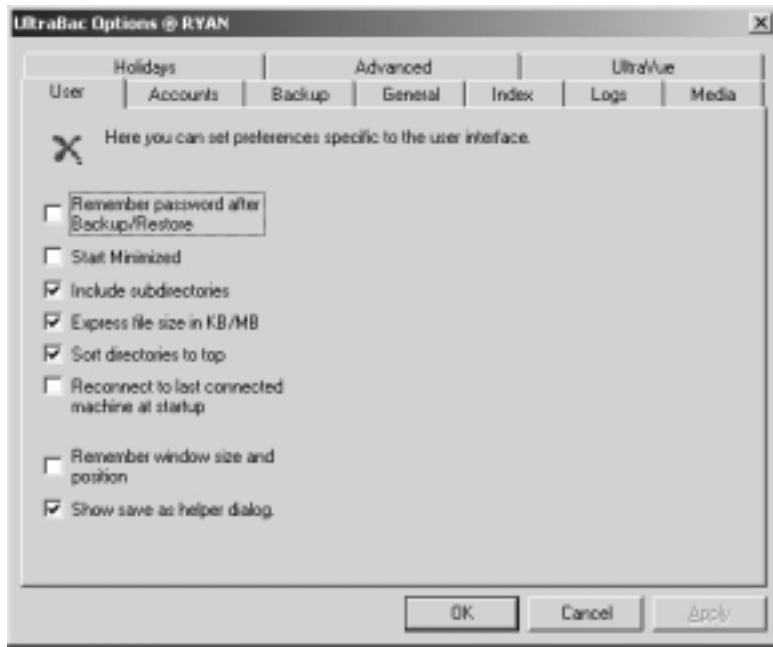
Once you’re connected to another machine, you may move through the interface as if you were connected to your local computer.

Clicking the “Disconnect” button on the toolbar will break the connection and return to the local machine’s interface.

▷ BACKUP

Preferences

USER



Remember password after Backup/Restore – If a username and password is entered through the Backup Wizard, the account will automatically be remembered for the next backup set.

Start Minimized – When “UBUI.exe” is launched, the console window will be minimized.

Include subdirectories – UltraBac will back up the entire directory tree when this preference is checked.

Express file size in KB/MB – When this option is selected “On,” only data units smaller than 1 KB will be expressed as bytes. If this option is selected “Off,” all date unit values will be expressed as bytes. The default selection mode for this option is “On.”

Sort directories to top – When UltraBac enumerates a backup set, directories will appear on top of the hierarchy.

Reconnect to last connected machine at startup – If the user's last session of UltraBac was spent connected to a different machine by using the “Connect” feature, UltraBac will remember the machine name and connect to it the next time “UBUI.exe” is launched.

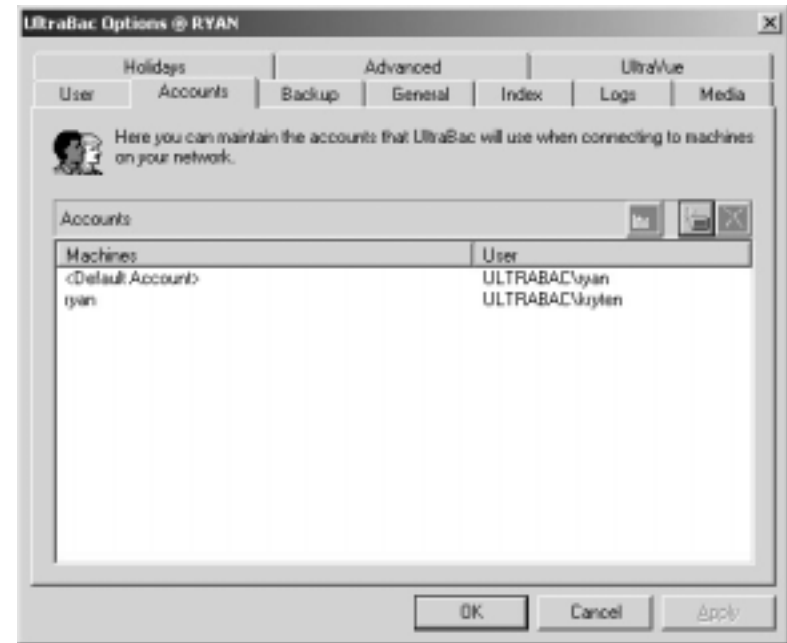
Remember window size and position – With this preference checked, UltraBac will remember its window size from the last time it appeared on the screen.

Show save as helper dialog – This is the dialog that appears after you've saved a set through the Backup Wizard. With this preference unchecked, the dialog will cease to appear.

Default scheduler view type – This control is implemented as a pull down list with three user selectable options:

- **Daily** – When this option is selected, a “Day Planner” style presentation for the current day is displayed. A pull-down selector is provided for changing the view to another date.
- **Monthly** – When this option is selected, a “Month at a Glance” style presentation for the current month is displayed. The current day and date will be indicated by a red highlight. Scroll buttons are provided for changing the month shown in the display.

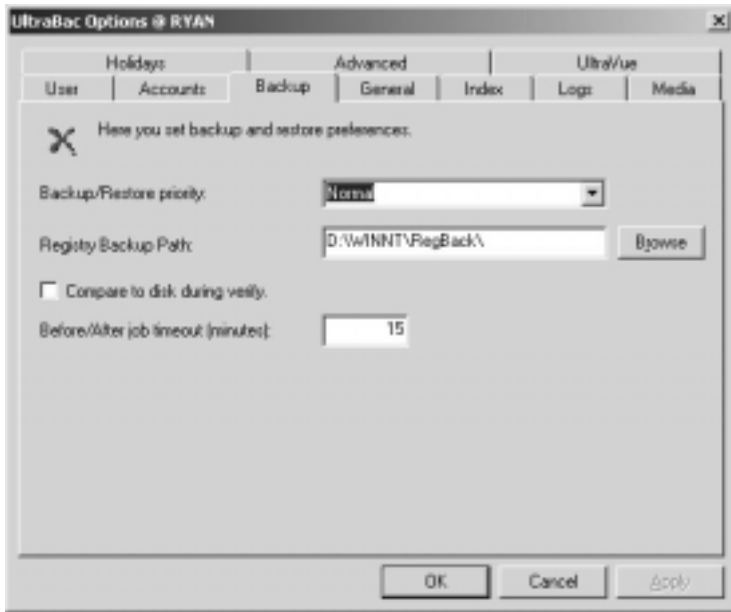
ACCOUNTS



This option provides addition and deletion capabilities for the user accounts the UltraBac process uses to request authentication for file access. Clicking the “Add” icon will display a “Require Account Information for Connection” dialog box, where you are prompted to enter a <Username>, <Password>, and <Domain Name>. After you click “OK,” you will have to either type or choose a machine name in your local network that corresponds with the specified user account.

When you add an account through this preference, you'll notice there is a check box entitled "Set as default for other connections." If this preference is checked, the entered account information will be used for Windows® authentication for every backup and restore. You may also enter different accounts to use for connections to specific machines that require different security information.

BACKUP



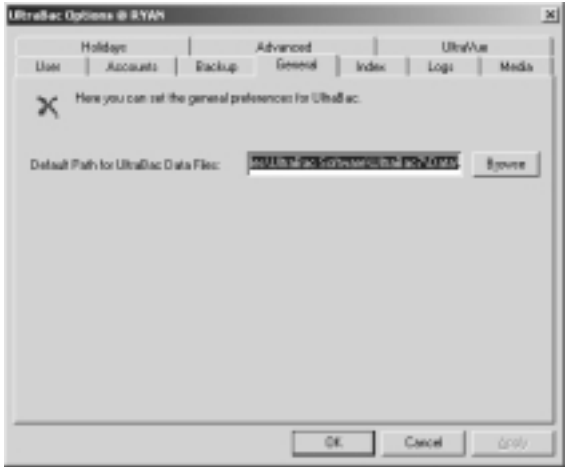
Backup/Restore priority – This setting designates the priority of the system's resources when UltraBac is running. There are four choices: normal, high, real-time, and idle.

Registry Backup Path – When UltraBac backs up the registry it performs a registry dump to a defined directory then backs up the flat files in the specified directory. The default path is "C:\%systemroot%\RegBack."

Compare to disk during verify – With this preference checked, UltraBac will always compare the backed up contents on the storage media with the data it backed up on disk. If there are any differences between the two, the differences will be reported in the verify log. For example, if between the backup and verify some files were modified, the "Compare to disk" function will recognize those changes and report them in the verify log.

Before/After job timeout (minutes) – Through either the set level or scheduled backup group level, UltraBac has a function available to call batch files, or previously written scripts, to run before the backup begins or after the backup finishes. This time interval specifies how many minutes UltraBac should wait before it stops trying to run the script.

GENERAL

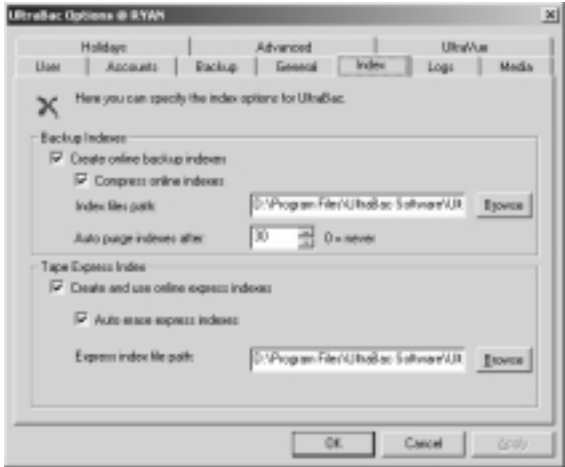


Default Path for UltraBac Data Files – UltraBac will store all of its backup sets and groups in this defined path. The default is “C:\Program Files\UltraBac Software\UltraBac7\data.”

INDEX

Backup Indexes

Create online backup indexes – This option must be checked “On” in order to create an online, disk-based index for every set backed up by UltraBac (an index is always written to the storage media, regardless of setting).



Compress online indexes – This option typically uses 65 percent less storage space than

uncompressed online indexes. The compression/decompression time required is minimal. Other than the added time, the compressing and decompressing are transparent to the user.

Index files path – Specifies the path where all the online backup indexes reside. These files needn't be kept in their default location. They can be stored locally, or on any available UNC path on the network, so that all may access the online indexes.

Auto purge indexes after [###] days – This option controls the automatic purging of online index entries. Qualifying indexes are purged after each backup. Valid entries are [0] through [999]. When set to “0,” index entries are no longer automatically purged by the program. As a rule, the number of days before the automatic purge function removes an index entry should be approximately the same as the number of tapes used in your backup rotation.

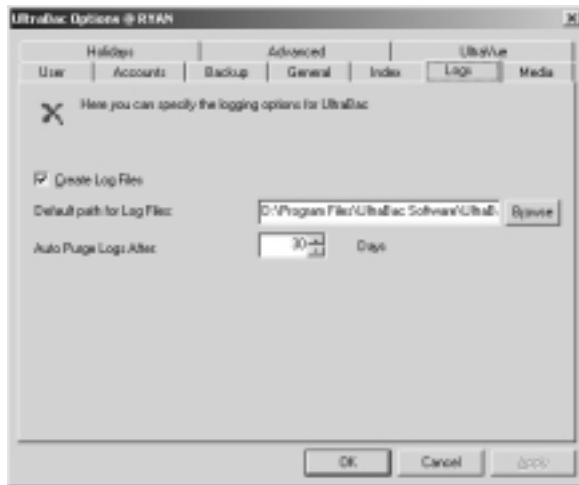
TAPE EXPRESS INDEX™

The Express Index™ improves retrieval of backup indexes and files from tapes.

Create and use online express indexes – This enables the Express Index option.

Auto erase express indexes – Automatically deletes the associated Express Index whenever a storage tape is reformatted for use with UltraBac (“Prepare for UltraBac” or “Clear Media”).

LOGS



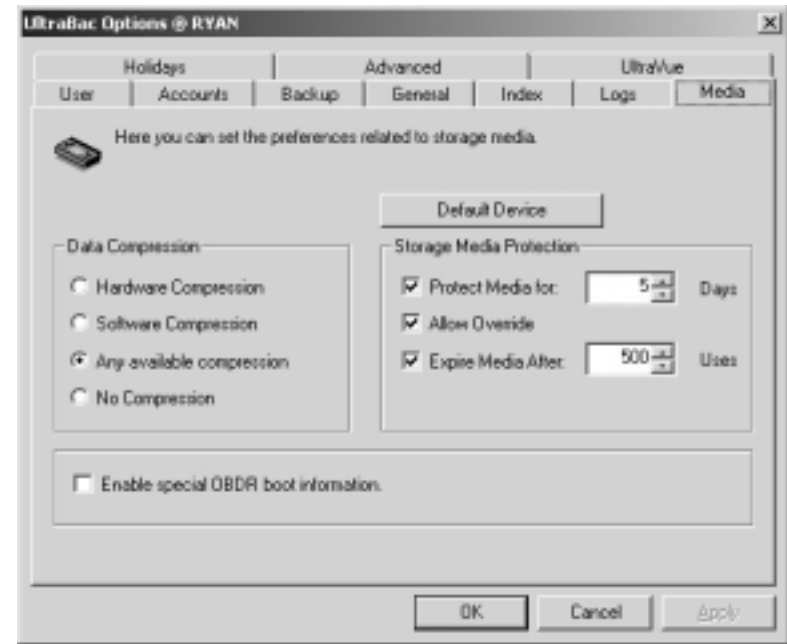
Backup, verify, and restore logs are created when “Create Log Files” is checked (this is checked by default).

The “Auto Purge Logs After” option is designed to automatically purge older log files as

they age past the parameter value. Qualifying backup, restore, and verify logs are purged after each respective backup, restore, and verify (e.g. restore logs purged after a restore). Backups, restores, verifies, and archives all create individual logs prefixed with “BK” for backup, “RS” for restore, “AR” for archive, and “VY” for verify. The next six digits that comprise the file name are the date in “YYMMDD” format. The log file extension name is a sequence number, which always begins with “000” for the first file created that day. The latest log file for a day has the highest file extension number.

Setting the “Auto Purge Logs After” value to zero inhibits the automatic deletion of log files.

MEDIA



Data Compression – The default compression option is set to “Any available compression.” This option will automatically determine whether hardware compression is available and utilize it first. If hardware compression is not available on the backup device (either tape or disk), software compression is automatically enabled during the backup.

NOTE: As a general rule, never select software compression as the default when hardware compression is available. Software compression is slower and will therefore take longer to perform a backup!

Storage Media Protection – The “Expire Media After” option allows the operator to set the number of times the storage media can be used before a warning is issued. The “Protect Media for” and “Allow Override” options are described below.

The “Protect Media for” option, when enabled, protects a storage media for [###] number of days. When the storage media is prepared, an expiration date is calculated using this value and stored on the media. UltraBac compares the current date with the expiration date before it modifies the storage media.

The following exceptions correspond with the “Protect Media for” option being enabled and the “Allow Override” option being disabled. If an operator attempts, during an attended backup, to reuse the storage media before the specified number of days has elapsed, an erasure (Clear Storage Media enabled) of the storage media will be denied. When an “un-expired” storage media is used for an unattended backup, and the “Clear Storage Media” option is enabled, the erasure will be replaced with an append and an event log entry will be generated. The log entry will indicate the storage media's status and that the storage media was not cleared.

The following exceptions correspond with the “Allow Override” option, the “Protect Media” option and the “Clear Storage Media” option all being enabled. During an attended backup, UltraBac will warn the user before erasing the storage media. An unattended backup under the same conditions will erase the storage media and generate an event log entry noting this usage. **NOTE:** Under this situation, “Protect media for [###] Days” will be ignored and the storage media will be cleared, erasing everything on the storage media!

If the “Expire Media After” option is checked and set, it will no longer be able to write to the storage media after UltraBac has completed the specified number of uses.

NOTE: When using autoloaders, UltraBac follows the above rules with reference to the first tape, however, when the backup spans tapes UltraBac will clear all subsequent tapes. To limit how many subsequent tapes a scheduled backup group can use, the user may specify beginning and ending slots when using (without barcodes) UltraBac's extra-cost autoloader option.

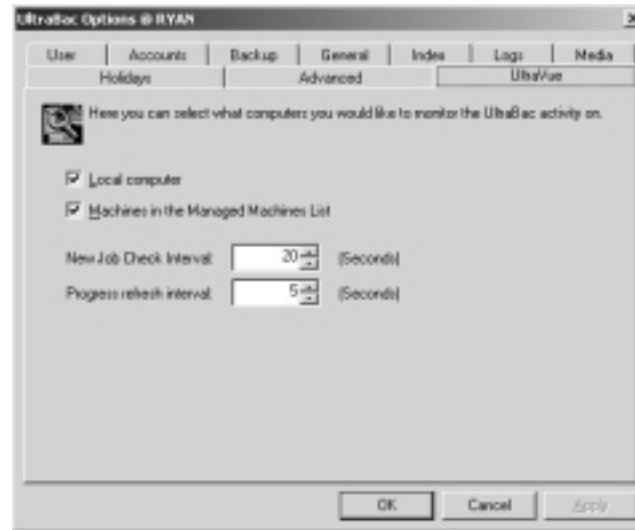
The “Default Device” option is covered in the **BACKUP STORAGE DEVICE MANAGER** portion of the manual.

ULTRAVUE™

Local computer – When checked, UltraVue™ will always use the local machine as its default console.

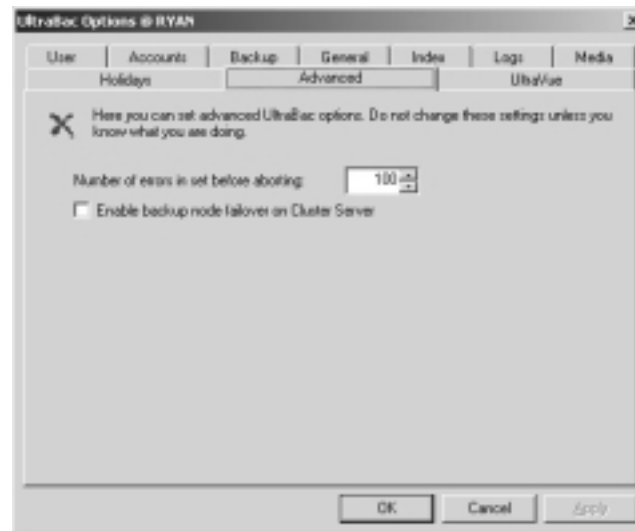
Machines in the Managed Machines List – If a list has already been created through the “Connect To” feature, UltraBac will use that list if this option is checked. You can check the machine(s) listed through the drop-down box on the toolbar of the main console.

New Job Check Interval – Specifies the frequency, in seconds, at which UltraBac will check the machine(s) administered through UltraVue.



Progress refresh interval – When set to its default, five seconds, this option displays an update of the “Current Throughput” and “Total bytes/time” every five seconds through the “UltraBac Progress” dialog box.

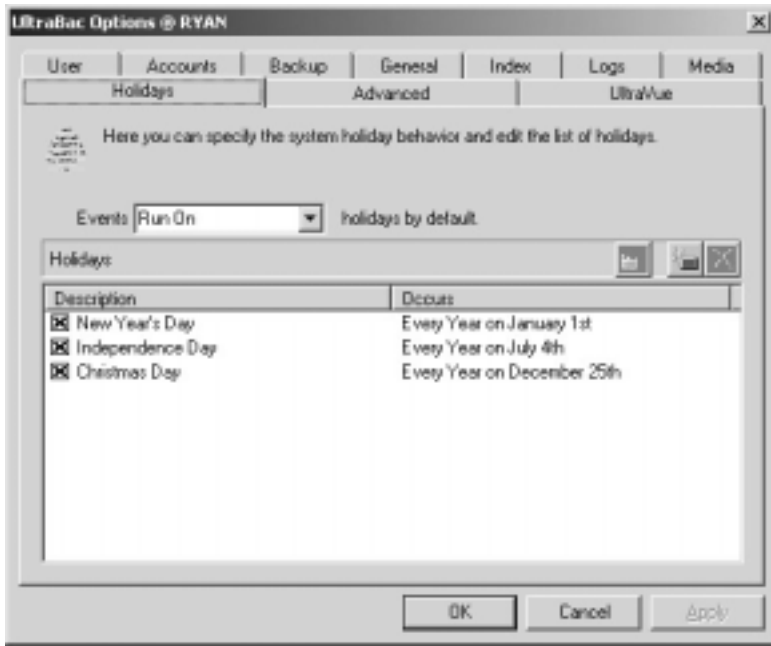
ADVANCED



Number of errors in set before aborting – If UltraBac encounters errors during the backup job, it will not abort until it reaches the number of errors specified through this number counter (the default setting for this option is “100”).

Enable backup node failover on Cluster Server – This option should only be enabled if UltraBac is installed on a Microsoft Cluster Server. When this preference is checked, UltraBac will continue its regular scheduled backup jobs on the secondary node in the cluster.

HOLIDAYS



Through the “Holidays” tab, you can customize the execution of events to fit your scheduled backup needs. For example, if you don't want a scheduled backup to run on a specific holiday, add a new entry by clicking on the green “Add” icon. Choose the “Do Not Run On” option in the “Events” list box. There are four options for the customized entries: Run On, Do Not Run On, Run Before The, and Run After The.

Backup Job Creation

A backup job consists of two component types: one or more backup sets and a backup group. A set serves as a backup filter used to designate which files, directories, and logical drives will be included in the backup. In other words, a backup set is created to select files for backup on a given machine with the option of including or excluding files or directories as the user sees fit. The backup group serves as a backup container used to schedule one or more backup sets. The backup group is more commonly referred to as the “Scheduled Backup Job.” We call it a group simply because it contains a “group” of sets to be included at the time of the scheduled backup. The group consists of execution parameters such as the backup set(s), scheduled time and date, storage media device options, batch file executions before and after the backup, and other useful options.

Part One of this section will illustrate the creation of a backup set, both local and remote. Part Two of this section will discuss many of the specific topics related to creation and configuration of a Backup Group (Scheduled Backup).

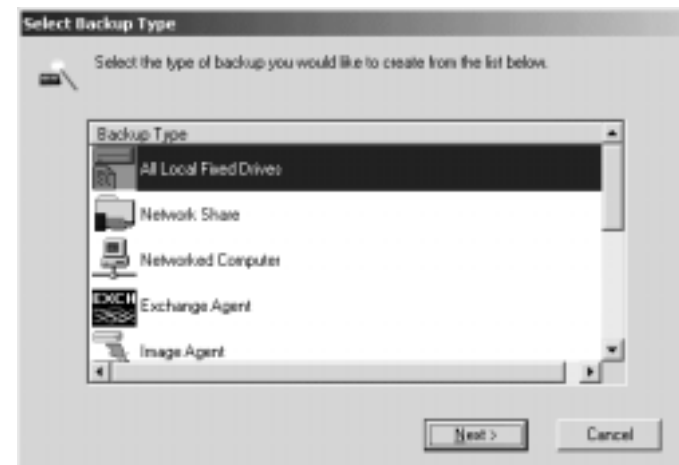
NOTE: Running a remote backup of a remote System State requires the installation of the UltraBac System State agent on the remote machine.

http://www.ultrabac.com/kb7/UltraBac_Help/UltraBac_User_Manual/agent_installation.htm

SET CREATION METHODS

Local Backup Set Creation

Start the Backup Wizard by either clicking the “Backup Wizard” icon on the toolbar, or clicking “File”/”New Backup Wizard.” The first window of the new Backup Wizard is entitled “Select Backup Type.” This starting point displays a list of the backup operations supported by the installed version of UltraBac.



Leave the “All Local Fixed Drives” option highlighted and select “Next” to continue.

The Set Description and a File Selection Logic filter are defined in the “*Selection Criteria*” dialog box. The “*File Selection Logic*” drop-down list box contains pre-defined options for backups containing only modified files, which are used in conjunction with “clearing the archive bit” (this will be explained more thoroughly later in the manual). For this example, we’ll leave the default setting (“All Files”) in place. Click “Next” to continue. The window below displays a summary of the selections made thus far.



Selecting “Finish” will close the window shown above and open a new window displaying a tree view of the logical drives present on this machine. Because “All Files” had been previously chosen as the file selection logic for this backup set, all of the files and folders of each partition and of the System State are included in the selection view.



Save the set by either clicking the “Save” icon on the toolbar, or clicking “File”/”Save As.” In this example, the set has been given the file name, “Full System Backup.” Insert a descriptive <File Set Name> and select “Save.” Saving this backup set causes the “Next Action” window to open as shown below.



The “Action to Perform” window gives the user the option to continue creating/editing sets or move on to scheduling the newly created backup set. The choices presented in the “Next Action” window are:

Backup the saved set to the current storage device – Choosing this option is the correct choice if your preference is to manually launch an ad hoc (immediate) backup of the files selected by the recently saved backup set. The current storage device defines the backup storage device, i.e. a tape drive or a disk resource that is identified as the current default backup storage device. The current storage device for ad hoc backups is always displayed in the title bar at the top of the screen. When the set is saved, UltraBac will remember the device selected for that particular set when it is re-opened.

Schedule the backup to run later – Choosing this option is the correct choice if you are ready to move on to the next step and actually schedule the backup to run at a later date. We will explain how to use this choice more in depth in the next section of the manual **SCHEDULED BACKUP CONFIGURATION**.

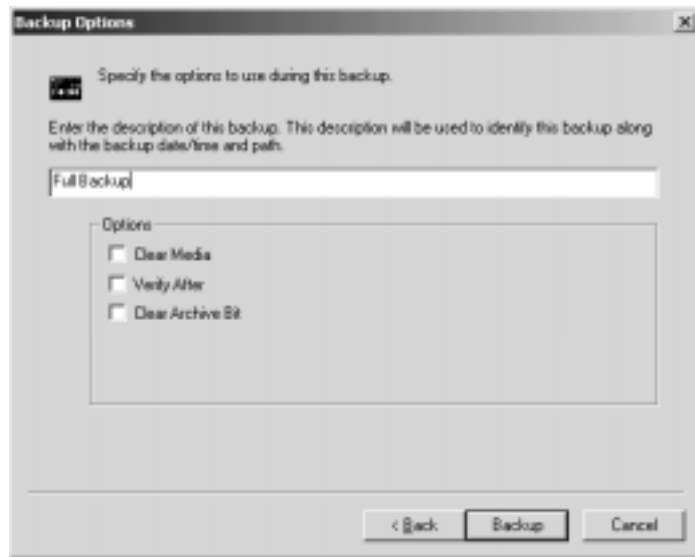
Close this backup and create another – Choosing this option is the correct choice if your preference is to create additional backup sets. As with the example above, additional backup sets can be created and saved for inclusion into a backup group, or can be used as the file selection filter for a manually launched ad hoc backup.

Return to the backup set editor – Choosing this option is the correct choice if your preference is to return to the backup set currently under construction and make additional changes. Once any desired changes are completed, the user can return to this window and

make another selection.

Do not show this dialog the next time I save a backup set – Check this box if the “*Action to Perform*” dialog box becomes unnecessary.

Leave the default setting, return to the backup set editor, and click “OK.” From this screen, you can perform an interactive or ad hoc backup by either clicking the “Backup” icon on the toolbar, or clicking “Operations”/“Backup Selected Files.” The default storage media device will be used for the backup unless you click the “Device” button on the lower toolbar. You can do this by specifying a different device, highlighting it and clicking “OK.” (More information on this topic is provided in the **STORAGE MEDIA MANAGEMENT** section of the manual.) You can always note the backup's target device by looking at the top of the window in the title bar; UltraBac will display the version number, the set name, and the storage device in the title bar. When you click the “Backup” icon to initiate the backup session, UltraBac will display a box to enter a description of the backup and give three backup options: Clear Media, Verify After, and Clear Archive Bit.



Select the appropriate box(es) and click “Backup.” As the ad hoc backup begins, you'll be able to view the backup's activity in the “*UltraBac Progress*” dialog box. When the backup finishes, a backup log, verify log, and backup statistics will be viewable by clicking the respective button.

NETWORK BACKUP SET CREATION

NOTE: Running a remote backup of a remote System State requires the installation of the UltraBac 7.x System State agent on the remote machine.

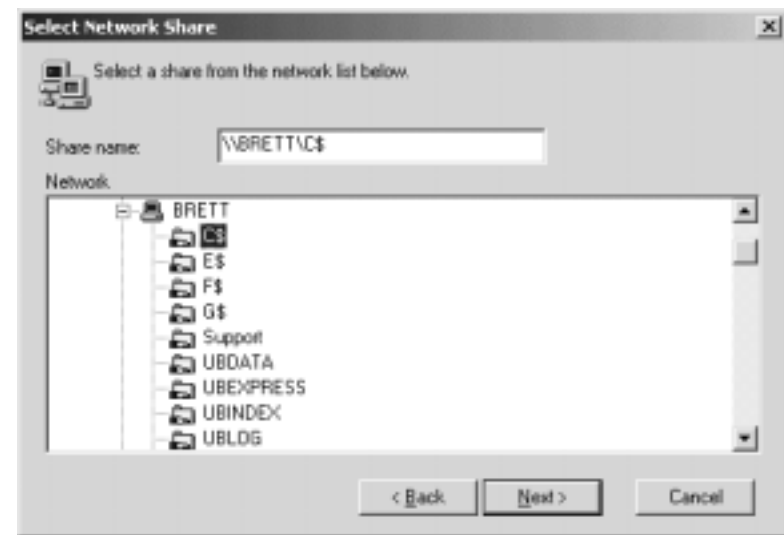
http://www.ultrabac.com/kb7/UltraBac_Help/UltraBac_User_Manual/agent_installation.htm

There are two options to back up remote machines listed in the Backup Wizard: Network Share and Network Computer. These two options are similar in function, but different in scope. The “Network Share” option will only back up one UNC path (remote partition) per set. **NOTE:** The remote registry or System State cannot be backed up using the “Network Share” option. The “Network Computer” option has the ability to back up all drives on the remote computer and its System State. However, in order to capture the remote System State, the Win32File agent must be installed on the remote machine you're trying to connect to.

Both methods will be illustrated in the section below.

NETWORK SHARE SET

Start the wizard by clicking the “Backup” icon on the toolbar. Highlight the “Network Share” option to create a set for a UNC path on the network and click “Next.” The next screen will give you the option to enter account information used to connect to the UNC path (by default, UltraBac uses the account previously saved in “Tools”/”Options”/”General”/”Accounts”). If the default account has sufficient privileges, enter no information in the Win32 account screen and click “Next.” The next screen will display a Windows® Explorer-like list all of the domains and computers seen through NetBIOS.

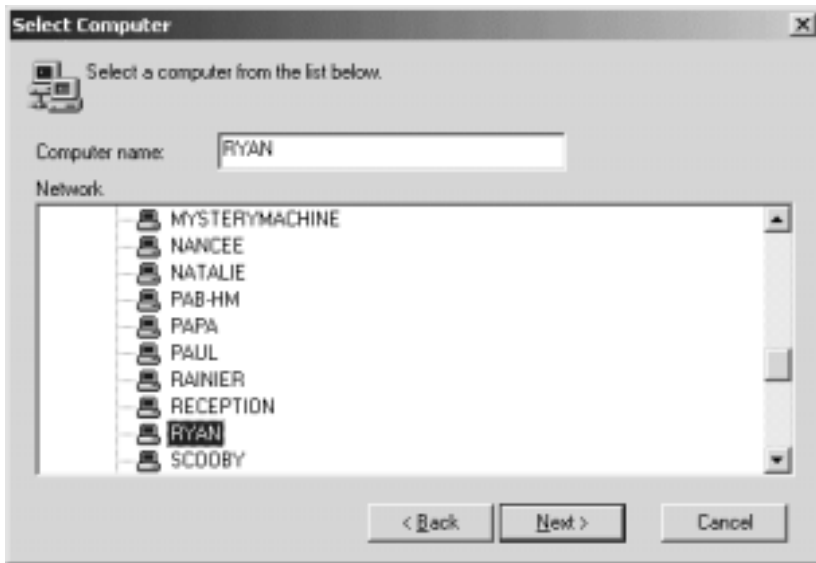


From this screen, you can browse to the “Network Share,” or type in the UNC path in the “Share Name” box as shown above, and click “Next.” Type the appropriate <Set Description> and choose the correct file selection logic (the default will automatically select all files on the target share) and click “Next.” The “Backup Wizard Summary” screen will follow, giving you the option to view the files, back them up to a storage device, or save as a set. Leave the default setting and click “Finish.” With the UNC pathname enumerated, you should see a directory tree from which to exclude or include files as you see fit. Files

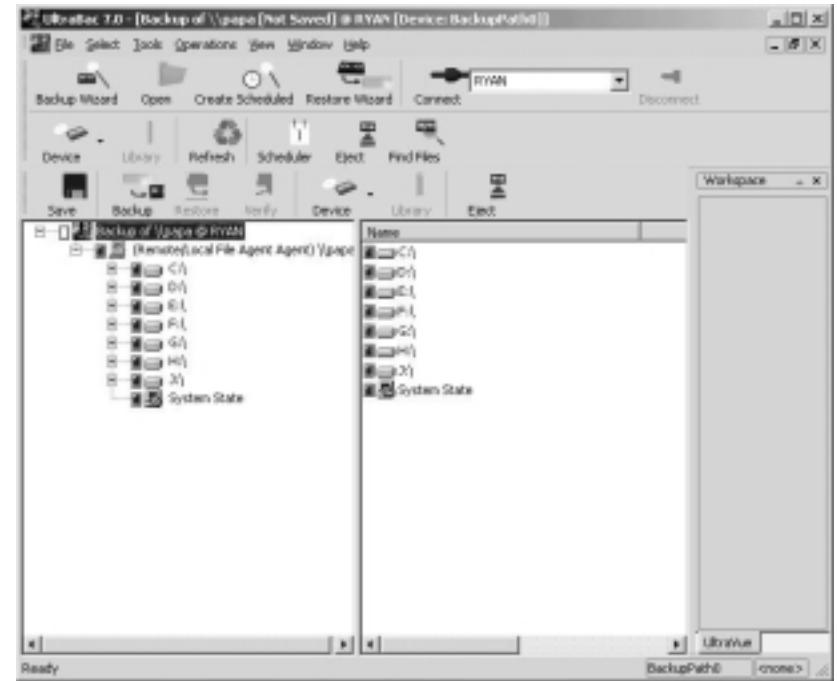
and directories are selected or excluded by clicking directly on them, so that the blue box is filled or cleared. Finally, save the set by clicking the “Save” icon on the toolbar, or click “File”/”Save As,” type the appropriate <File Set Name>, and click “Save.”

NETWORK COMPUTER SET

Creating a “Network Computer” set is almost identical to the steps taken to create a “Network Share” set, illustrated above. Start the wizard by clicking the “Backup” icon on the toolbar. Highlight the “Network Computer” option to create a backup set for a remote computer on the network and click “Next.” The next screen will give you the option to enter account information used to connect to the UNC path (by default, UltraBac uses the account previously saved in “Tools”/”Options”/”General”/”Accounts”). If the default account has sufficient privileges, enter no information in the Win32 account screen and click “Next.” The next screen will display a Windows Explorer-like list of all of the domains and computers seen through NetBIOS.



Browse to the computer name to be backed up, highlight the computer name, and click “Next.” Type the appropriate <Set Description> (or leave the default set description if you find it adequate), choose the correct file selection logic (the default will automatically select all files on the target share), and click “Next.” The “Backup Wizard Summary” screen will follow, giving you the option to view the files, back them up to a storage device, or save as a set. Leave the default setting and click “Finish.” The enumerated network computer should look similar to the following screen.



If the Win32File agent isn't installed on the remote machine you're connecting to, the "System State" icon will not appear as a selectable object (if you're backing up an NT4 machine, the registry will show up as the "System State" icon). Before you save the set, you can include and exclude entire partitions, or certain directories within the partitions, by clicking directly on them so that the blue box is filled or cleared. Finally, save the set by clicking the "Save" icon on the toolbar, or click "File"/"Save As," type the appropriate <File Set Name>, and click "Save."

Incremental / Differential Backups

INCREMENTAL VS. DIFFERENTIAL

Incremental and differential backups are very similar in their function and creation. Both are used to minimize the amount of time needed to complete a backup, and the amount of storage space used for that backup. Incremental and differential backup sets will back up only the files that have the Archive Bit set rather than cleared. The process of clearing the Archive Bit is performed during a full or incremental backup, when UltraBac's preferences have been modified accordingly. After the full backup clears the Archive Bit, the Archive Bit is reset by OS each time a file is modified, thereby making it available for incremental or differential backups.

Incremental Backup – UltraBac backs up the modified files, and the “Clear Archive Bit” option is selected each time a backup is performed, whether it is full or incremental.

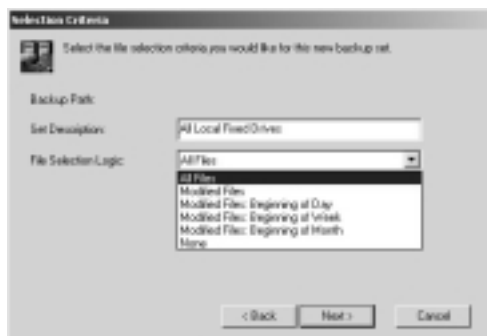
Differential Backup – UltraBac backs up the modified files since the last full backup. The “Clear Archive Bit” option is not selected for differential backup sets.

The biggest difference in the setup of incremental and differential backups is the number of files being backed up, and the number of restores necessary, if one were performing a full system restore. Taking a full system restore as an example, the following would need to be restored to recover a failed machine back to its original state:

- With “Incremental” backups, it is necessary to restore the full backup, then each sequential incremental backup, until the most recent has been restored.
- “Differential” backups require the restoration of only the full backup, then one differential. The differential backup will contain all modified files since the last full backup.

CREATING INCREMENTAL / DIFFERENTIAL BACKUP SETS

After starting the Backup Wizard, and selecting the type of backup you would like to perform (i.e. “All Local Fixed Drives,” “Network Share,” etc.), choose “Next” and the screen below will appear.

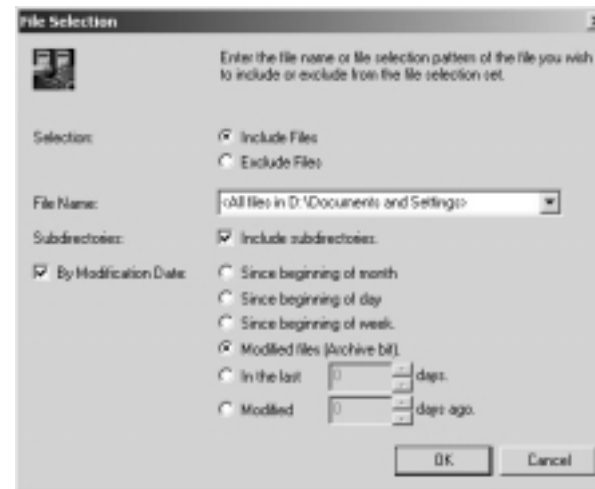


There are several options for the backup of modified files. For the creation of incremental or differential sets, it is recommended to select “Modified Files” without the date modifier. This will create a set that uses the Archive Bit (a file attribute) in the File Selection Logic.

There is also a method of including the modified files of any given directory, in case one needs to customize a set to include the modified files in a specific location. After a set is loaded, the entire directory tree of the target drive will appear in the UltraBac interface, as shown below.



Right-click on a directory in which modified files are to be backed up, and click “Include Directory Name.” The “File Selection” screen should have the “Modified Files (Archive Bit)” radio button selected, similarly resembling the screenshot below.



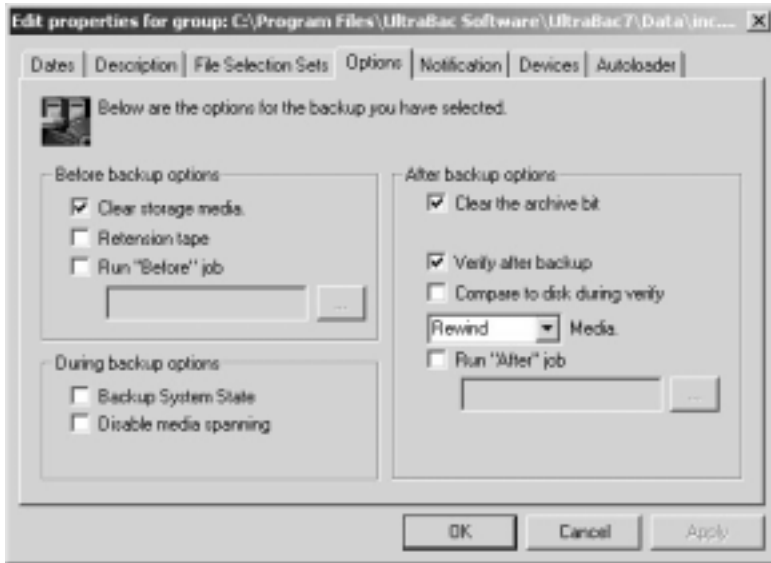
Click “OK,” and save the set with a strategic name such as <DirectoryName_Incremental>.

SCHEDULING AN INCREMENTAL / DIFFERENTIAL BACKUP

For information on creating a scheduled backup, please visit the following link for instructions:

http://www.ultrabac.com/kb7/UltraBac_Help/UltraBac_User_Manual/Scheduled_Backup_Creation.htm

In the UltraBac Scheduler's "Options" screen, there is a check box labeled "Clear the archive bit." This box must be checked during all full backups to allow either incremental or differential backups to take place.



The "Clear the archive bit" box must also be checked on all incremental backup jobs or the backup will be considered a differential. To the "Modified Files" backup set, this file has the "Archive" attribute still set, so the file will continue to be backed up until that attribute is removed.

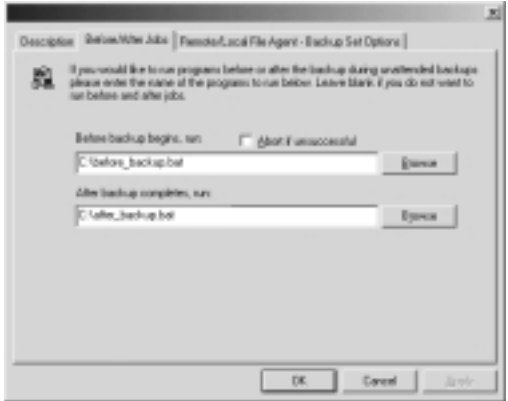
Before and After Jobs – Set Level

UltraBac has the ability to launch scripts or batch files before a backup set runs and after the backup set completes. This is most commonly used to create and run a customized batch file that stops the services of a relational database before the backup begins, and re-starts the services by launching a customized batch file after the job is complete.

Before/After commands are inserted in the set after the set has been “enumerated” by the Backup Wizard, as shown in the screenshot below.



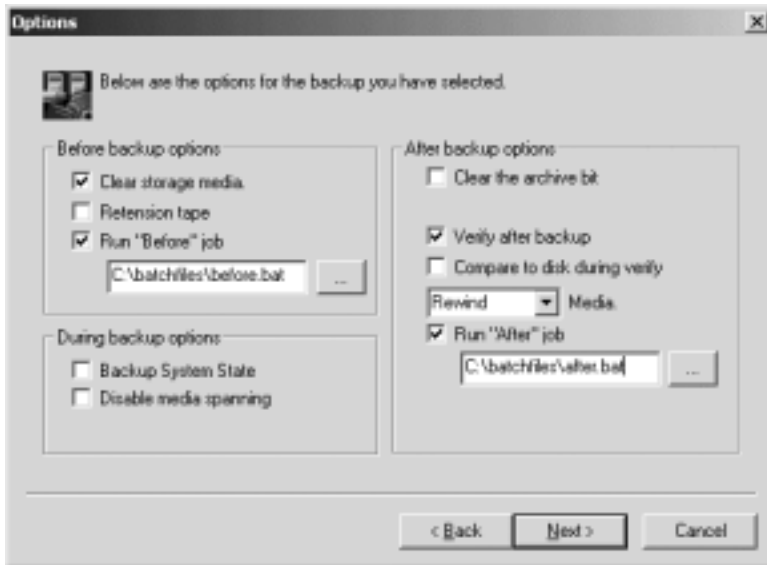
After the backup set has been loaded, click “File”/”Set Properties”/”Before/After Jobs.” Type the <Path> or browse to the file you’d like to run before the backup begins and do the same for the “After” job in the box below. If your preference is for the backup to quit its job if the batch file doesn’t run, click “Abort if Unsuccessful.”



Click “OK” and save the set by clicking “File”/”Save As.”
NOTE: Before/After jobs only run when inserted in the “Group” level or “Scheduled Backup” level.

GROUP LEVEL

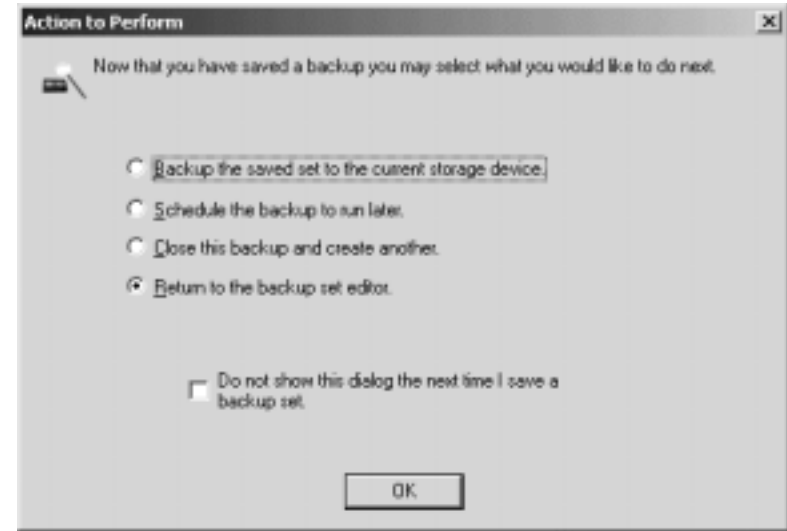
When creating a Scheduled Backup, the fourth option in the Scheduler Creation Wizard will contain a space in which you can insert a batch file as a Before or After command.



The batch file can be executed before the Scheduled Backup begins or after the Scheduled Backup completes. To insert the batch file, either browse to the desired batch file or type the path in the empty space underneath the “Run” toggle switch. If a Scheduled Backup has already been created and you wish to insert a batch file in an existing Group, access the Scheduled Backup Group's properties and access the “Options” tab.

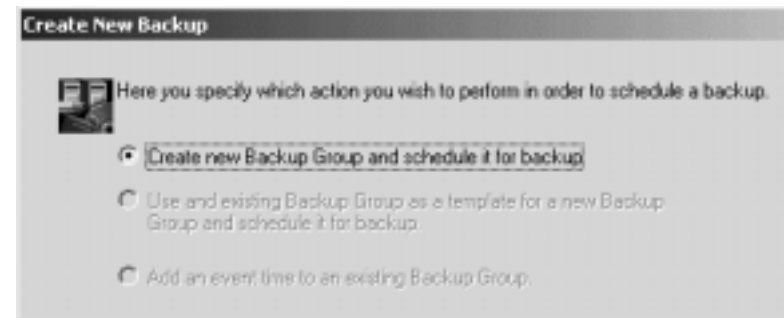
Scheduled Backup Creation

The process of creating a Backup Group is accomplished within the UltraBac Scheduler Wizard. The Scheduled Backup Wizard can be initiated through the “Action to Perform” window that appears when a backup set is saved.



The Scheduler Wizard is also accessible by clicking the “Create Scheduled” icon on the toolbar, or through “Tools”/”Backup Scheduler.”

Launching the Backup Scheduler produces the window titled “Create New Backup Group.”



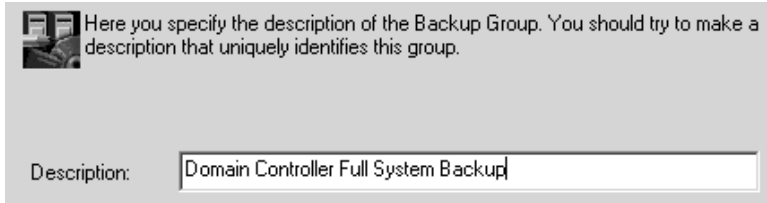
Three options are available in this window:

Create new Backup Group and schedule it for backup – This is the default option and will be used for illustrating the next step in creating a scheduled backup.

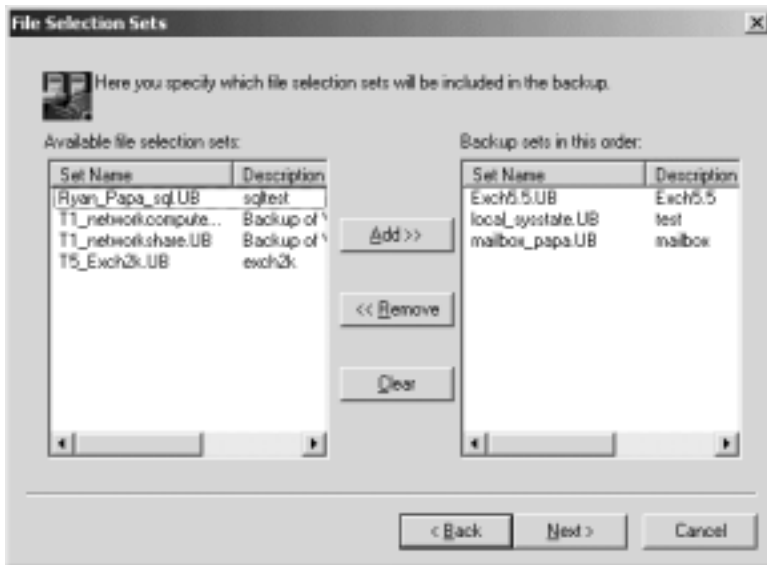
Use an existing Backup Group as a template for a new Backup Group and schedule it for backup.

Add (or Change) an event time to an existing Backup Group.

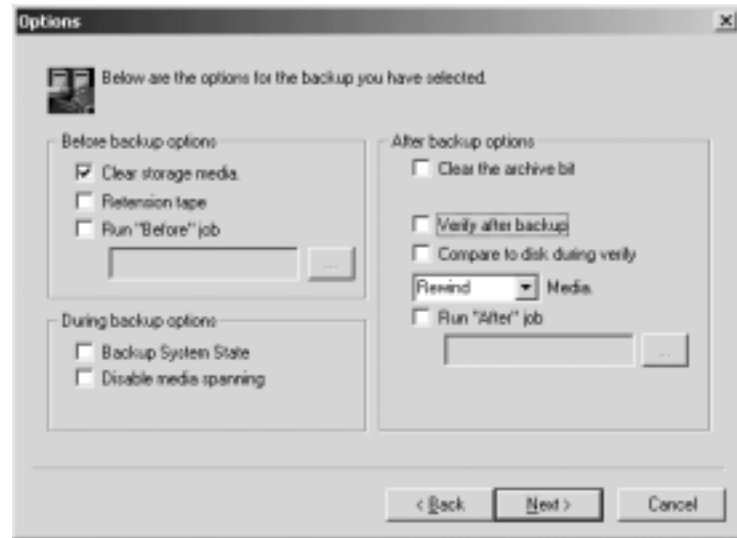
Leave the default option, “Create new Backup Group and schedule it for backup,” and click “Next.” The next step in the wizard allows you to enter a short description of the scheduled backup.



Type the appropriate description for the scheduled backup and click “Next.” Add the backup set or sets you’d like to include in the scheduled backup by highlighting the set on the left side and clicking “Add” to move it over to the right side. Double-clicking on each set on the left will also move the set into the box to the right. Notice the text, “Backup sets in this order” above the box on the right. The sets are listed sequentially and will be run as such during a scheduled backup. The sets in the backup job can be added or removed at any time by accessing the properties of the group and accessing the “File Selection Sets” tab.



Click “Next” to continue.



The options are divided into three groups: “Before Backup Options,” “During Backup Options,” and “After Backup Options.”

Before Backup Options

Clear storage media – When this option is enabled, the storage media selected by this backup group will be erased. The specific functionality of this option can vary, depending on the type of media system. If the storage media is a directory on a disk resource, the contents of that directory are examined and any existing UltraBac storage files are deleted. If the storage media is a tape system, the tape will be rewound, a new header written, and any data previously recorded onto the tape is overwritten.

Retention tape – This option performs a fast forward operation out to the end of the media, followed by a rewind operation back to the beginning point of the media.

Run “Before” job – This option is used to execute a previously created script to run before the backup begins. This is most commonly used to shut down the services of a database before the backup, so they can be backed up as flat files.

During Backup Options

Backup System State – This option functions as a global selector for all of the backup sets in this backup group. When selected, this user control will trigger a backup of the System State for each Windows® 2000/XP computer represented by a backup set in this backup group. If a specific computer is represented by more than one set, only one backup of that computer's System State will be created and stored. Additionally, if any of the backup sets are resources for Windows NT® computers, this option will trigger a backup of the Registry for those computers.

Disable media spanning – When this option is used, the backup operation will be halted

when it reaches the end of media marker. This option is used to protect sensitive data that is not to be overwritten.

After Backup Options

Clear the archive bit – If this option is selected (made active), the archive bit on every file in each backup set of this backup group will be set to “Off” or “cleared.” Clearing the Archive Bit is used in conjunction with Incremental and Differential backups.

Verify after backup – After the scheduled backup job has completed backing up all the specified sets, the verify operation will use a cyclic redundancy check process to check each file stored on the backup media for inconsistencies.

Compare to disk during verify – This option compares the data on the hard drive to the data on the storage media during the CRC check of the data. This option takes a bit longer than the standard verify.

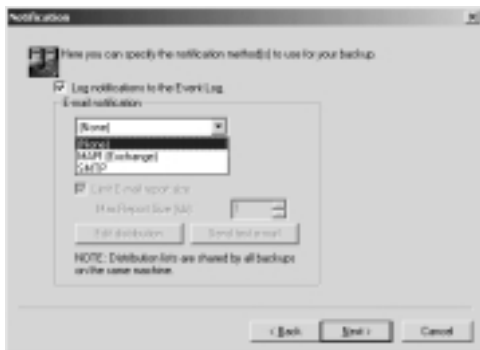
Media – This user control has three selection instruction choices. They are “Rewind,” “Eject,” and “Eject to Mailbox.”

- **Rewind** – UltraBac will automatically rewind the media after it's finished with the job.
- **Eject** – Will eject the tape out of the tape drive, if the device supports the function (some tape drives do not support eject through software, it must be done manually).
- **Eject to Mailbox** – May only be selected with the use of an autoloader containing a built-in mailbox.

RUN “AFTER” JOB

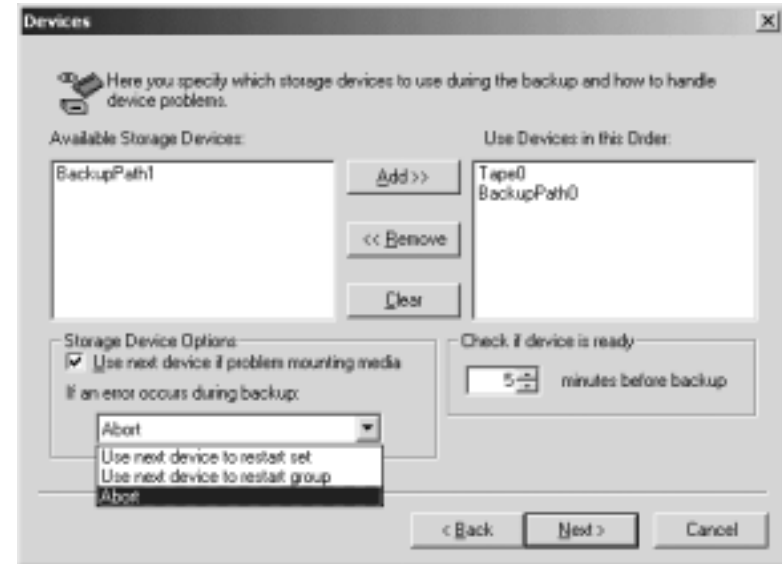
This option is used to initiate a previously created script to run after the backup job is finished. This is most commonly used to start the services of a given database, after the backup has finished backing up the database files. (For more information on Before/After Jobs, please visit the **BEFORE AND AFTER JOBS** portion of the online manual.)

Select “Next” to continue. The next window to open displays the Notification Options for Backup Groups.



Log notifications to the Event Log – Log notification is enabled by default. Events will automatically be written to the application event log when this option is checked. This can be a very useful tool in trouble shooting problems related to backup; users are encouraged not to disable this option.

In order to configure scheduled backups to automatically send an email for each backup job, please refer to the section entitled **EMAIL NOTIFICATION** in our manual. Click “Next” to continue. The next window to open displays the “Devices” window. This control is used for selecting which backup storage device or devices will be used for storing the data.

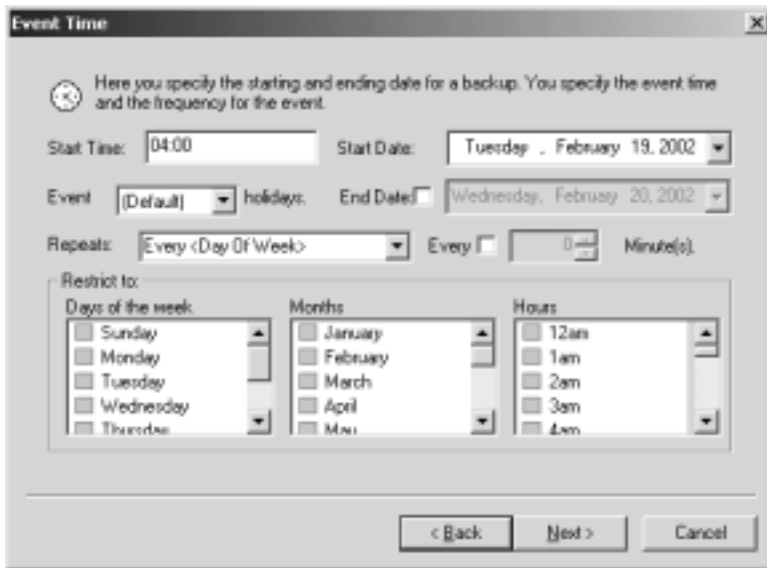


The pane on the left contains a list of the Available Storage Devices, except for the default storage device, which should already appear in the right pane. You can add more devices from the left to the right by either double-clicking on the device, or highlighting it and clicking “Add.” If the primary storage device defined in the right pane isn’t available for some reason, the next device appearing in the list will be used. The failover is only in effect when the “Use Next Device if Problem Mounting Media” option is checked.

If an error occurs during backup – There are three selectable options available by clicking the drop-down list box:

- **Use next device to restart set** – If the storage device should fail during a scheduled backup, UltraBac will discard the *set* it was currently backing up, and restart the *set* using the next storage device in line.
- **Use next device to restart group** – If the storage device should fail during a scheduled backup, UltraBac will discard the backup *group* it was currently backing up, and restart the *group* using the next storage device in line.
- **Abort** – UltraBac will end its session and send an email notifying the backup administrator of the failed backup, if email notification was set up before hand.

Select “Next” to continue. The next window to open displays the Event Time options for the Backup Group.



Start Time – UltraBac uses military time as its queue to launch a scheduled backup. Type the appropriate <Time> in the “Start Time” field.

Start Date – Use the pull-down to display a “Month-at-a-Glance” calendar. The current date will be represented by a red highlight. Any future date can be selected and used to launch a scheduled backup.

Event – There are four options under the “*Event*” drop-down list box. The selections are:

- **Runs On** – Scheduled backups will run on holidays as they would any other day.
- **Runs Before** – Scheduled backups will run on the day before a defined holiday and not the holiday on the following day.
- **Runs After** – Scheduled backups will run on the day after a defined holiday and not the holiday on the previous day.
- **Does Not Run** – Scheduled backups will not run on any day that has been defined as a holiday.

End Date – This option has two user controls: a check box that enables the end date function and a field for selecting the end time in which the Backup Group can be executed.

Repeat – This option is used to assign repetition properties to the execution of the Scheduled Backup. This option offers the following predefined repetition choices.

- Never (Run Once)
- Every <Day of Week>
- Every <Date>
- The first day of each month

- First <Day Of Week> of each month
- Second <Day Of Week> of each month
- Third <Day Of Week> of each month
- Fourth <Day Of Week> of each month
- The last <Day Of Week> of each month
- First weekday of each month
- Last weekday of each month
- Last day of each month

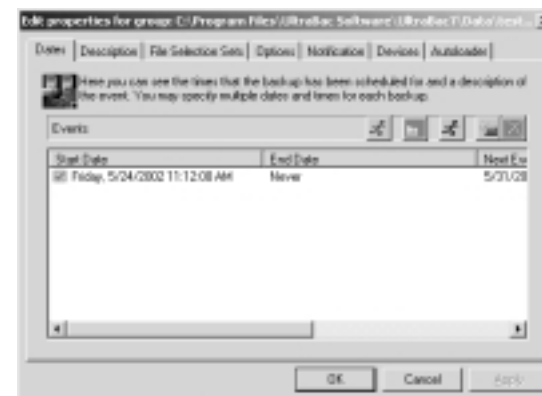
Scheduled Backups can be configured to launch every X minutes. Example: if there are frequently modified files on the network that need to be backed up every half an hour, the user can create a scheduled backup to run a given set every 30 minutes.

Select “Next” to continue.

Type a strategic <Filename> for the scheduled backup such as “Daily.” Clicking “Next” brings you to the last step in creating a Scheduled Backup. Make sure the summary displays all the correct information and finally click “Finish.”

RUNNING “INTERACTIVE” AND “UNATTENDED” BACKUPS THROUGH THE SCHEDULER

Pre-configured scheduled backups may be run through the Scheduler in the group properties. Notice the red and blue figures in the screenshot below. When the red figure is clicked, the scheduled backup is executed in “Unattended” mode. This simply means that if the backup should receive any errors, UltraBac will suppress the pop-up messages and report them in the backup log. The unattended option comes in handy when you want to execute a backup, walk away from the backup machine, and not worry about being present if any errors should occur. When the blue figure is clicked, the Scheduled Backup is executed in “Interactive” mode. Any errors reported during the backup will be reported with a pop-up message, causing the backup to pause until the user clicks “OK” or “Cancel.”



The scheduled backup can be disabled from its scheduled backup time by un-checking the small box next to the day and time in the “Dates” tab.

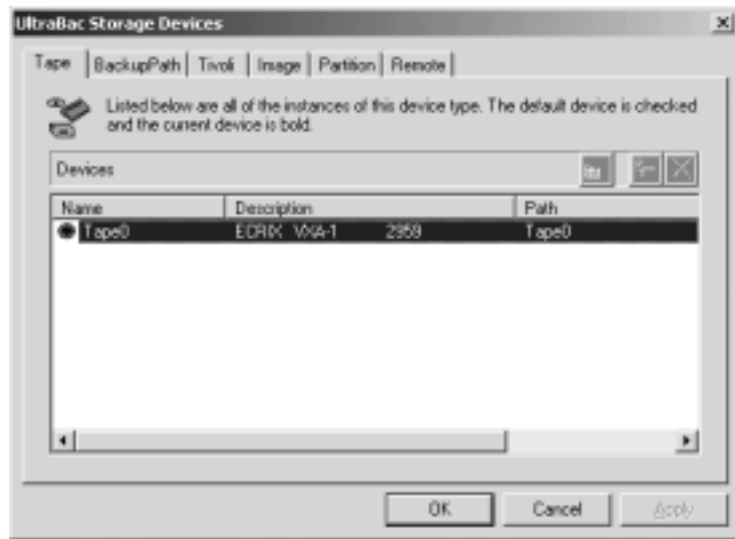
Backup Storage Device Manager

Access the Backup Storage Device Manager by clicking “Select”/”Storage Devices” on the toolbar of the UltraBac console. This utility allows the administration many different kinds of storage devices. They are:

1. Local Tape Device
2. Backup Path
3. Tivoli Device
4. FTP Device
5. Image (used for imaging)
6. Partition (used for imaging)
7. Remote Storage Device

LOCAL TAPE DEVICE

As long as the OS already sees the tape device, UltraBac should recognize it as a valid storage device as well. In fact, if the tape device driver is already loaded, it will automatically appear in the “Tape” tab of the “*UltraBac Storage Devices*” dialog box. The tape devices are numbered in sequential order starting with the lowest SCSI ID first. Meaning, if there is only one tape drive on the system it will show up as Tape0. If there are three tape drives attached to the machine, they’ll be listed as Tape0, Tape1, and Tape2. The screenshot below lists one stand-alone tape drive attached to the UltraBac host.



If a tape device is attached to the machine, but doesn't appear in the “Tape” tab in the “UltraBac Storage Devices” screen, look in Windows Media® Device Manager (located in Computer Management) to see if the driver for the tape device is installed and functional.

Do this by right-clicking on “My Computer”/”Manage”/”Device Manager,” and confirm that a tape device is seen by the OS. If the tape drive doesn't appear in Device Manager, either the driver needs to be installed or there may be some sort of SCSI communication conflict preventing the device from being seen by Windows.

BACKUP PATH

A Backup Path can be any valid folder accessible through Windows Explorer. In other words, a Backup Path could be a specified folder on your local hard drive or a centralized remote location on the network. Many backup administrators like to define Backup Paths on a server with a large amount of empty space and use it as a storage location for daily and weekly backups. Add a Backup Path by clicking the small green icon, specifying a device name, and typing a <Path> to the directory to be used as a storage device. If the directory doesn't exist, UltraBac will ask if you want it to be created. Clicking “Yes” will create the directory. Backup Paths should be created strategically according to the nature of the backups they'll be storing. For example, if Incremental backups are being performed each day of the work week, five folders could be created on the storage drive with names like “Monday_Incremental,” “Tuesday_Incremental,” and so on. One example follows:



The Backup Path can also be restricted in size to prevent undesired storage expansion. This could be a hindrance if backups keep appending to their assigned storage Backup Path, as overpopulation of data will cause the disk to become slow in performance. If the user requires a particular amount of space always be available on the storage drive, use the “Limit size per media” option to fulfill this requirement by checking its box and specifying a cap in number of megabytes.

TIVOLI STORAGE DEVICE

In order to install the Tivoli device, the host on which the Tivoli storage device is to be installed must be running the Tivoli client software. You can download the client software from the following link:

http://www.tivoli.com/support/storage_mgr/clients.html#xp

To define the Tivoli device, access “Select”/”Storage Device”/”Tivoli” and click the small green icon to add the device.

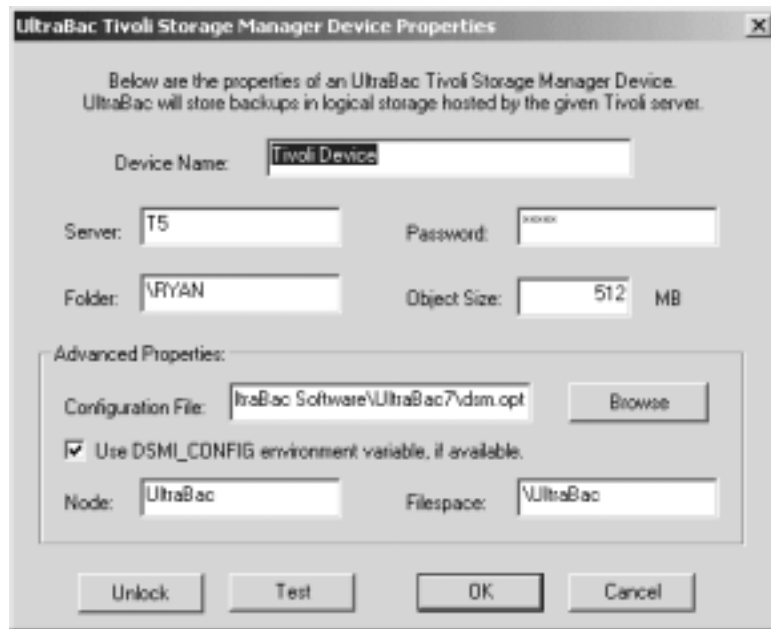
Device Name – This is up to the user and is there for identification purposes—it appears in the backup log, on the title bar through the GUI, etc.

Server – Name or IP address of the Tivoli server.

Password – This is the password defined on the selected Tivoli server for the Node name.

Folder – This is Tivoli’s “high-level name” and allows the user to host multiple independent devices on the same Tivoli server. If someone wanted to make 20 devices with one Tivoli server, they could leave all the other fields the same and just change the Folder (and Device Name).

Object Size – Limits the size of Tivoli objects on the server.



Advanced Properties

- **Configuration File** – This is the TSM Client config file, and defines things like the communication protocol and port number to use when communicating with the server.
- **Use DSML_CONFIG environment variable, if available** – Selects whether the DSML_CONFIG environment variable, if set, overrides the above path.
- **Node** – The Node name that UltraBac tells the Tivoli Server. Tivoli doesn't allow data written by one node to be seen by another, so users will want to standardize on a Node name so that UltraBac can use a common data store.

- **Filespace** – Part of an object's full name and stems from ADSM being designed to back up servers.

Click “Test” to make sure the device is working correctly. If the test of the device completes successfully, it is ready for use.

FTP DEVICE

The FTP Device provides UltraBac with the ability to direct backups to storage hosted by any FTP server compliant with the RFC 959 specification. This ability simplifies the process of configuring an offsite backup location, since all that is required at the target is an FTP server with sufficient storage. Additionally, this facility allows backups to be written to non-Windows hosts, which may be useful in certain environments. All that is required to configure an FTP Device is the address of a live FTP server, a valid login to this server, and a server-interpreted path specifying where the data should be stored.

Add an FTP device by doing the following:

- Access "Select"/"Storage Devices", click the FTP tab and click the Add icon.
- Give the FTP device a unique name through the Device Name box.
- In the Server field, type the name of the FTP server to which you're backing up.
- In the Path box, type the name of a folder that already exists or type a folder name of your choice and it will be created for you.
- Type the name of a user that has the proper access rights into the FTP server in the User field.
- Type the user's password in the Password field.
- By default the File Limit is 512MB on backup. This may be changed, but we recommend that you leave the 512MB suggested limit.
- If only a certain amount of space is to be used on the FTP server, check the Device Limit box and enter a number of MB to be used in the backup. UltraBac will not surpass the amount of MB entered. When UltraBac reaches the amount specified as a device limit, it will in turn ask for Volume 2 to continue its backup job.



IMAGE AND PARTITION TABS

When doing Static Mirror Image backups to a local hard drive, it's necessary to first create a formatted partition with no assigned drive letter to use either an Image or Partition device.

Image – When imaging or cloning an entire hard drive, the target disk to which you're copying must be as big or bigger than the source. Make sure the target disk has all partitions deleted and then you'll be able to add it as an imaging device.

Partition – This type of device is used when cloning or imaging an entire partition to a locally created partition with no assigned drive letter. Similar to an image device, the Partition device must be as big as or bigger than the source partition. Create a partition through Windows' Disk Management and then take away the associated drive letter. The newly created partition can be used as a Partition device.

For more information, see the **ULTRABAC DISASTER RECOVERY** portion of the User Manual.

REMOTE

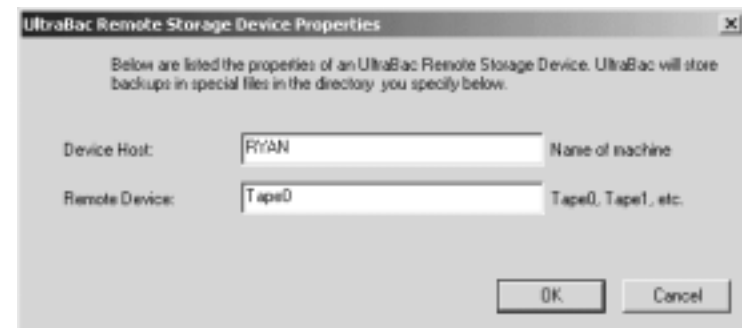
NOTE: The Remote Device option must be installed on the machine that houses the tape drive to be used in a backup.

The Remote device option is installed by running “setup.exe.” Choose “Custom” setup in the Installation Wizard, expand “Devices,” and choose “Remote” for installation (shown in the screenshot below). When the installation wizard completes the setup, the “UltraBac Management Service” will be running on the machine, enabling it as a valid Remote tape device. The machine on which the Remote device option was installed must be pointed to the UltraBac licensing server. From the UltraBac host machine (the machine running the backups), click the “Connect” icon on the toolbar, type the <Machine Name> with attached tape drive, and click “OK.” Then click “Tools”/“License Management”/“Set License Server,” type the name of the <Licensing Server>, and click “OK.”

Add a tape device on another machine as a storage device on the “Remote” tab. Do this by clicking the small green icon, then typing the <Host Name> of the remote tape device and the <Tape Device Number> starting with “Tape0.” If there is more than one tape device attached to the system, UltraBac will see the tapes in sequential order, starting with the lowest SCSI ID first.



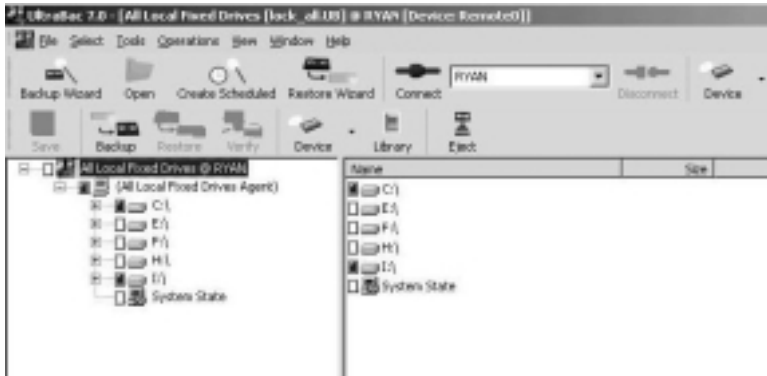
Add a tape device on another machine as a storage device on the “Remote” tab. Do this by clicking the small green icon, then typing the <Host Name> of the remote tape device and the <Tape Device Number> starting with “Tape0.” If there is more than one tape device attached to the system, UltraBac will see the tapes in sequential order, starting with the lowest SCSI ID first.



If you'd like to back up to a remote tape drive located in a different domain, a connection must first be established through UltraBac to the remote machine. Do this by clicking “Tools”/”Options”/”General”/”Accounts,” clicking the “Add” icon, typing an <Account Name> with administrative authority on the machine to which you're connecting, typing the <Password>, and typing the name of the <Remote Domain>. Click “OK,” and be sure to leave the “Set as default for other connections” box unchecked. (This account information is required for remote authentication through the UltraBac Management Service.) And finally, add the remote tape drive by accessing the “Remote” tab in “Select”/”Storage Devices.”

DEVICE SELECTION

If you wanted the local Tape0 to be the global default device, simply click its radio button and click “OK.” This option has some flexibility, as it can change if the user wants to select an alternate device on the set level other than the global storage device. In the image below notice that there are two “Device” icons in the toolbar—one on the upper level and one on the lower level. The “Device” icon in the lower level on the toolbar is selected for the set level, whereas the “Device” icon on the top level is selected for the global level. When a device is selected on the set level, that information will be retained in the set properties, so that the next time you “load” the set, the same storage device will be selected automatically. Also, you can always tell what storage device is being used by looking at the title bar on the top of the screen. In the image below, it says “[Device:Remote0]” in the title bar, meaning the backup would be directed to that storage device.



Media Changer Device Driver

WINDOWS® 2000

Right-click “My Computer.”

Go to “Manage.”

Go to “Device Manager.”

Go to “Medium Changers” on right.

You should see “Unknown Medium Changer Device” or something similar.

Right-click this object and select “Properties.”

Go to the “Drivers” tab.

Click “Update Driver.”

Click “Next.”

Select “Display a list of the known drivers for this device so that I can choose a specific driver” and then click “Next.”

Click “Have Disk.”

Browse to the location of the “mchgr.inf” file (default location is C:\Program Files\UltraBac Software\UltraBac7\Drivers\win2k), and click “Open.”

The “Select a Device Driver” screen will now say “UltraBac Medium Changer Device.”

Click “Next.”

You may get the screen below. Click “Yes,” then click “Next” again.

Click “Finish.”

Click “Close.”

Close the “Computer Management” screen.

WINDOWS NT® 4.0

Close all non-essential applications.

Open the “Control Panel” again and select “Tape Devices.”

Choose “Drivers” and select “Add.”

Click “Have Disk.”

Type <C:\> and click “Browse.”

Browse until you find the “Oemsetup.inf” file.

This generally brings up “C:\Program Files\UltraBac Software\UltraBac7\Drivers,” or wherever the UltraBac files are installed on your system and click “OK.”

Highlight the autoloader driver (e.g. UltraBac Medium changer driver) and select “OK.”

If “medchg.sys” is located in the “%systemroot%\system32\Drivers” directory, you will see the following screen.

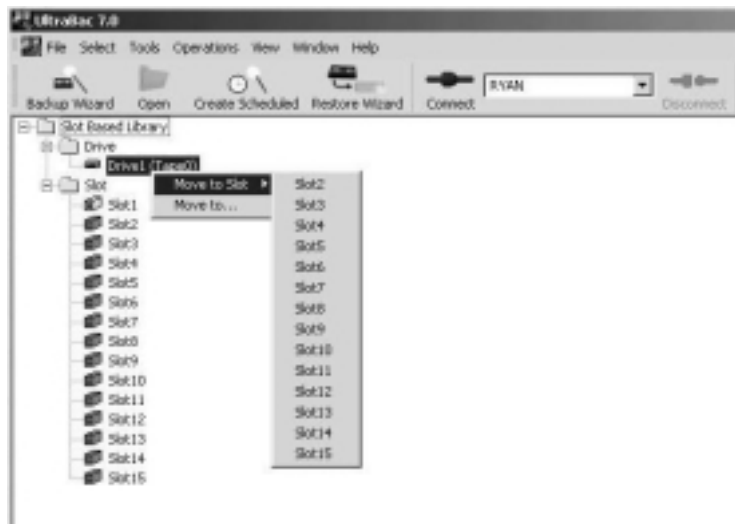
Select “New.”

Now you will be prompted with: “Please enter the full path to the Medium Changer driver files.” Type in the directory where the UltraBac's driver files reside (e.g. “C:\Program Files\UltraBac Software\UltraBac7\Drivers”) and select “Continue.”

From the “*System Settings Change*” dialog box select either “Yes” or “No.” It is not necessary to restart your computer at this time. However, it is necessary to restart your computer if you want to load the new “medchg.sys” device driver.

Autoloader Control

Autoloaders can be controlled through the GUI interface in a separate console with the use of the UltraBac autoloader driver. Without the autoloader module, the user would have to move tapes from the drive into the slot (and vice versa) manually from the autoloader console, which could prove quite inconvenient. The use of the Autoloader Control Module requires UltraBac's proprietary autoloader driver be installed. Assuming the user already has the UltraBac Medium Changer driver installed, access the autoloader library by clicking "Tools"/"Library Control," which will display the following screen:



From the above screen, you can either drag and drop tapes into the drive (and the reverse) or you can right-click on an object and move the tape to its destination by choosing a slot or tape drive number. The "Library Control" selection is only available if the tape device is selected as the default storage device. If a backup path is selected as the default storage device, the "Library Control" selection will be "grayed out." To select the tape drive as your default storage device, click "Select"/"Storage Devices"/"Tape," and choose the tape device residing in the autoloader.

UltraBac also supports the administration of remote autoloader consoles. It's essentially the same as what's described above, but the user must attach to the other machine using the "Connect To" feature in order to see the remote autoloader. This feature can only be used if the UltraBac Management Service has been installed on the remote machine with the autoloader. Assuming the UltraBac Management Service has been installed on the remote machine, use this utility by clicking "File"/"Connect To:"/"Other," double-clicking on the machine with the autoloader, and clicking "Yes" when UltraBac asks you if you want this machine to remain in your list. Now you can click the drop-down list box on the toolbar and select the remote machine name. As long as the machine name appears in the box on the toolbar, the "Library Control" module will be highlighted.

BACKUP AND RESTORE USING AN AUTOLOADER

UltraBac can use an autoloader in two different modes: Sequential and Random. Sequential and Random modes can be set and configured through the autoloader console (for more information, see the user manual for your autoloader).

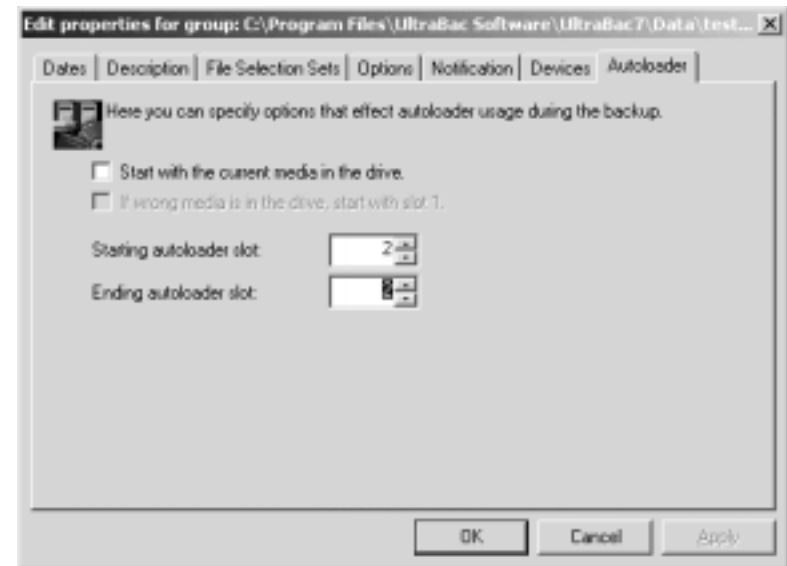
Using the autoloader “**Sequentially**” means that tape cartridges will be filled as backups span from one media to the next.

“**Random**” mode means you have the option to back up to certain slots in the autoloader and assign those slots according to the backup job. This option requires the UltraBac Medium Changer driver be installed. You can install the UltraBac Medium Changer driver through Device Manager using Windows 2000, or “Control Panel”/”Tape Devices” using NT 4.0.

Through the Backup Scheduler, a backup job can be configured to back up to a particular slot in the autoloader.

Random Access Backups

Configuration of the backup to be directed to a particular slot(s) in the autoloader is made through the Backup Scheduler. Access “Tools”/”Backup Scheduler,” double-click on one of the backup jobs to be configured, and access the “Autoloader” tab. You’ll see there’s an option to assign a starting and ending autoloader slot number to the backup job.



This is most commonly used to assign each slot to a particular day in the week (for example, Monday's backup job starting and ending on slot one, Tuesday's backup job starting and ending on slot two, etc.). The ending autoloader slot number will come in handy if your backup is spanning more than one tape, but you don't necessarily want it to

span past a certain point. Let's say you have mission critical data on a tape in slot number four that you don't want overwritten. You have a backup job configured to start on slot two with a chance the backup could span from slot two, to three, and on to four, thereby overwriting the valuable data. You can stop the span on slot three to protect the data from being overwritten.

The **“Start with the current media in the drive”** option is selected if the backup should be started with the current tape in the drive.

Selecting **“If wrong media is in the drive, start with slot 1”** will cause the backup to begin with slot one if the wrong media is in the specified starting slot.

Random Access Restores

Random access restores are automatically performed when the UltraBac Medium Changer driver is installed. Both online and storage media indexes contain slot information telling UltraBac to place the right tape into the drive. No manual configuration should be needed for autoloader restores. Ostensibly, the online index should be used for the restore with all the tapes in there assigned slots. However, if the online index is missing for any reason, loading the index from tape will suffice. This method may take up much more time since the user must find out which tape in the autoloader holds the data to be restored, manually move the tape into the drive, and finally load the index from storage media.

Here's an example of a scenario in which the user must restore data from a tape in the autoloader: The backup administrator is assigned to restore the entire “Photos” folder from last Wednesday's backup. The backup administrator loads the index from disk by clicking “File”/“Load Index for Restore”/“Verify”/“Retrieve From Online Index.” At this point, the backup administrator chooses which backup set to load judging by the set description, or by the day of the week on which it was backed up. When the appropriate set is loaded, the folder is selected and restored. UltraBac will automatically place the correct slot into the tape drive and proceed with the restore.

Command Line Functionality

UltraBac has added the option of running commands through the DOS shell in Windows®. Because of this new implementation, UltraBac administrators may now create small scripts or batch files that users can execute to perform functions in the software that they might not otherwise be familiar with. Most users would much rather double-click on a batch file to restore a needed file than learn how to use a rather sophisticated piece of backup software. The command line functionality allows backup administrators to tailor those needs as they arise.

Launch the command prompt and switch to the UltraBac 7.x directory by typing something similar to this command: “cd program files\ultrabac software\ultrabac7.”

Now the DOS prompt should be pointing to the UltraBac 7.x directory. Type <ub /?> and you should see the following screen containing all the available command line options:



```
Microsoft Windows [Version 5.00.2195]
Copyright 1985-2000 Microsoft Corp.

C:\>cd program files\ultrabac software\ultrabac7

C:\Program Files\UltraBac Software\UltraBac7\sub /?
UltraBac 7.0 (Alpha) Copyright 1997-2002 Barratt Edwards International, Corp.
Build Date: Jan 18 2002

Usage: UB [option] [command]
[option] can be one or more of the followings
Note: Value in all caps are the default value.
Options and commands are NOT case sensitive

/PrepareMedia:<volume>[label]>      Prepare media with label
/Device:<device number or name>     Select device (overrides default)
/IncludeRegistry                    Include the registry in the backup
/Set:<set specifier>                Specify the set to operate on by set nu
number or index file name
/StartFileTime:<MMDD[YY][YY][hhMM]> Specify start file time for operation.
/EndFileTime:<MMDD[YY][YY][hhMM]>   Specify end file time for operation.
/TimeType:<MODIFIED|accessed|created> Specify the time type of StartFileTime
and EndFileTime
/Restore:<path>                     Restore with optional restore to path
/Overwrite:<[Yes/No/Update/ASK]>    Overwrite
/R                                  Recurse into subdirectories
/KeepStructure:<[YES/No]>           Maintain directory structure
/KeepSecurity:<[No/File/Folder/BOTH]> Maintain directory/file security
/RestoreInUseFiles:<[NO/Yes]>       Restore files that are in-use
/Password:<password>               Set password
/Verify:<[OK/Compare/No]>          Verify after backup.
/Quiet                              Run silent

[command] can be ONLY one of the following

/Backup <set/group name>           Backup the specified set or group
/CheckDevice                       Check device availability
/EjectMedia                         Eject media from device
/ViewMedia                          View media Header
/ViewMediaIndex                    View list of backups on media
/FindFiles:<file pattern>          File files specified by the file patter
n

C:\Program Files\UltraBac Software\UltraBac7>
```

BACKUP

Many of UltraBac's functions can be performed directly through the Windows DOS shell.

We'll start by executing a backup from a previously defined set (sets cannot be created through the command line interface, only executed). Below is an example of a command performing an ad hoc backup using a defined set while clearing the media and verifying after the backup: "ub /backup test.ub /device:backuppath0 /preparemedia:testvolume /verify:crc"

A dissection of the command above is necessary to better understand its functions.

- First of all, the "Backup" switch is followed by a set name, or a ".ub" file. In the example above, "test.ub" is specified for the backup set. The available backup sets can be displayed by viewing the files in the Data subdirectory; "dir data" will display the sets and groups held in the data directory.
- Secondly, a storage media device must be defined using the "Device" switch. Only the storage devices already configured through the GUI interface can be defined through the command line. The three types of devices are: TapeX, Backup path X, and RemoteX. Meaning, if a remote tape device was used for storage media, you'd type </device:remote0> in the command line.
- Third, a "PrepareMedia" switch clears the media and writes a new volume label. Type the name of your <New Volume Label> after the "PrepareMedia" switch.
- And finally, the storage media undergoes a cyclic redundancy check by adding the "Verify" switch.

Running the set through the command line will first enumerate all the files on the storage media before it attempts the actual restore. You'll see a bunch of files climbing down through the DOS window—these files aren't being restored, UltraBac is simply checking to see if all files are available for restore.

When the restore is complete, UltraBac will issue a backup and verify log if the "CRC" switch was added to the command.

The above example illustrated the backup of a set. UltraBac can also launch groups or Scheduled Backups from the command line. Since the group level has predefined settings like verifying the backup, clearing the media, etc., you only need to issue a command to kick off the scheduled backup. Here's an example of what one would type to launch a backup group: "ub /backup groupname.ubb."

RESTORE

Let's say for example, you have a backup of some files on your first backup path, and want to restore them through the command line to a temp directory on the F: drive. The command to perform such a task would be: "ub /restore:\temp /device:backuppath0 /findfiles:*/set:1 /overwrite:yes."

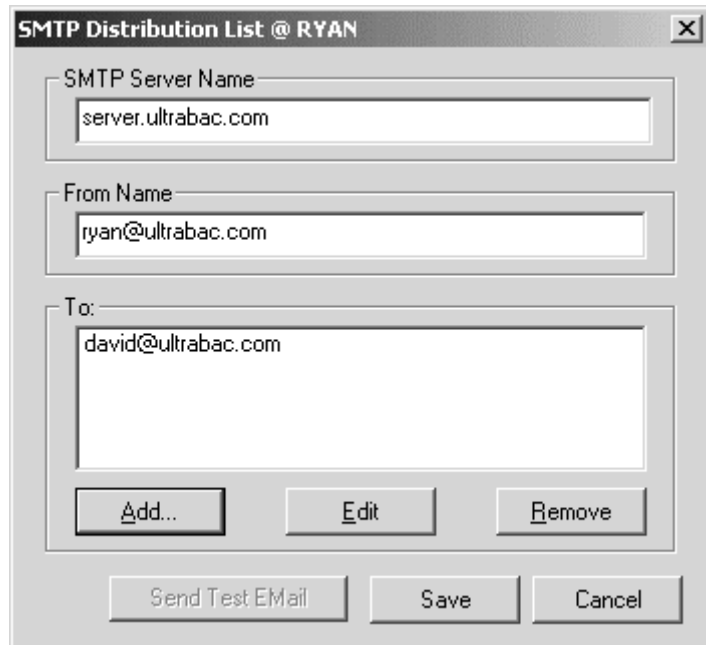
- The "/restore" switch is followed by the restore path. To restore the backup to its original path, you can just leave it blank. If you'd like to restore it to a local or remote path on the network, type the <Path> separated by a colon after the "/restore" switch.
- The backup media must be defined in order for UltraBac to know where to go to retrieve the data. The storage devices are listed as TapeX, Backup path X, and RemoteX.

Email Notification

SMTP

E-mail notification is set up through the “Notification” tab in the properties of a Scheduled Backup. You may set up email notification by double-clicking on an existing group through the Scheduler, accessing the “Notification” tab, and completing the following steps:

- Click the drop-down list box, choose SMTP, and click “Edit Distribution.” This will bring up the “SMTP Distribution List” screen.
- In the first field, enter your <SMTP Server Name>.
- In the second field, enter the <Email Address> that you want to be listed in the “From” field when receiving email. Since this is not verified in any manner by UltraBac, it doesn't have to be one that actually exists on your system, but can be a bogus one, such as “noone@ultrabac.com.” It must, however, be of a proper form (something@something.com).



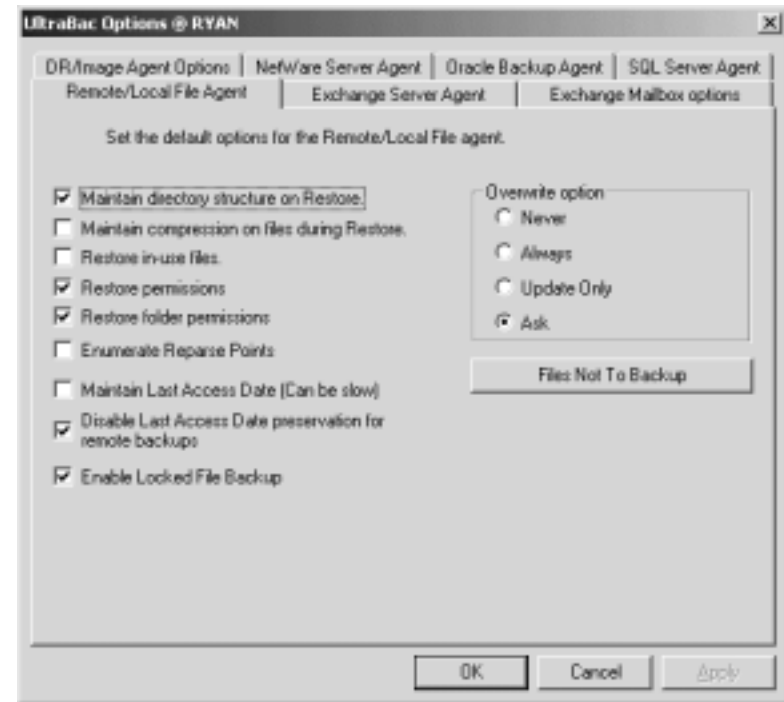
The screenshot shows a dialog box titled "SMTP Distribution List @ RYAN". It contains three text input fields: "SMTP Server Name" with the value "server.ultrabac.com", "From Name" with the value "ryan@ultrabac.com", and "To:" with the value "david@ultrabac.com". Below the fields are three buttons: "Add...", "Edit", and "Remove". At the bottom of the dialog are three buttons: "Send Test EMail", "Save", and "Cancel".

- Next, click on “Add” and enter in the full <Email Address> of someone that you wish to receive email notification from UltraBac. You can repeat this step to add up to 20 email recipients.
- If you wish to test connectivity, click “Send Test E-Mail.” Click “OK.”

There are also options in the “Notification” tab to send an email notification on each error, send a full backup report, and limit the email report size.

Agent Preferences

REMOTE / LOCAL FILE AGENT



The following list briefly describes what each preference will do if checked:

Maintain directory structure on Restore – When restoring a directory tree, UltraBac will maintain the original directory structure as when it was backed up.

Maintain compression on files during Restore – UltraBac maintains compression on files as it restores them.

Restore in-use files – UltraBac will copy over files that are in use during the restore. For example, any “.dll” file that’s in use in the WINNT directory would be overwritten with this preference checked. All of the in-use files that are overwritten during the restore will be marked as such in the restore log.

Restore folder permissions – UltraBac will restore the permissions on folders back to their original settings.

Enumerate Reparse Points – If any reparse points had been previously configured, UltraBac will enumerate them and back them up if selected.

Maintain Last Access Date (can be slow) – The last access date is slightly different than the modified date of any given file. If UltraBac is chosen to include the “Last Access Date” on each file, the backup creates a bit more overhead with each read/write function. Use this preference only if necessary.

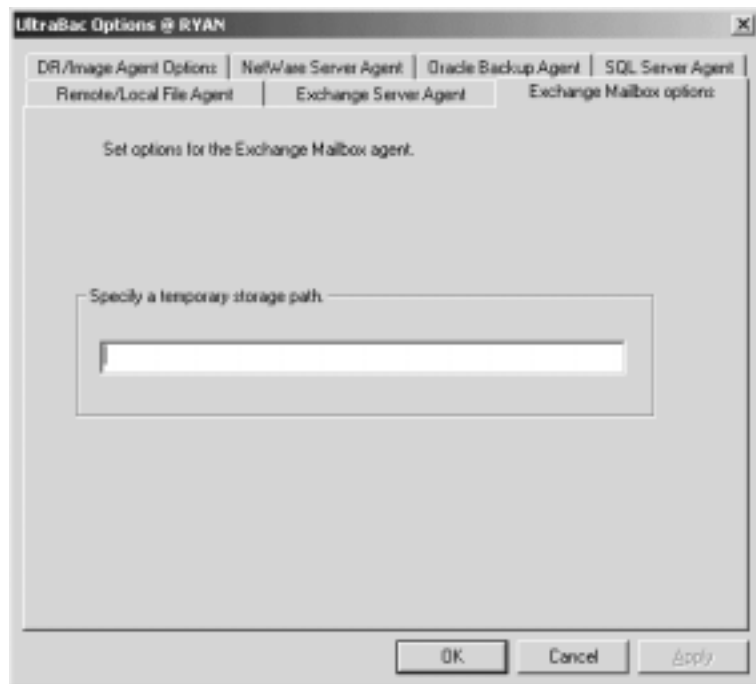
Disable Last Access Date preservation for remote backups – This preference will disable backing up the “Last Access Date” for remote machines.

Enable Locked File Backup – If the locked file backup driver has been installed on the UltraBac host, this preference allows a function that temporarily “freezes” the partition to enable backups of exclusively locked files.

Overwrite option – During a restore, UltraBac gives the user several choices for overwriting files: Never, Always, Update Only, and Ask. These choices are also available in the “Restore Dialog” box available when clicking “Operations”/”Restore Selected Files.”

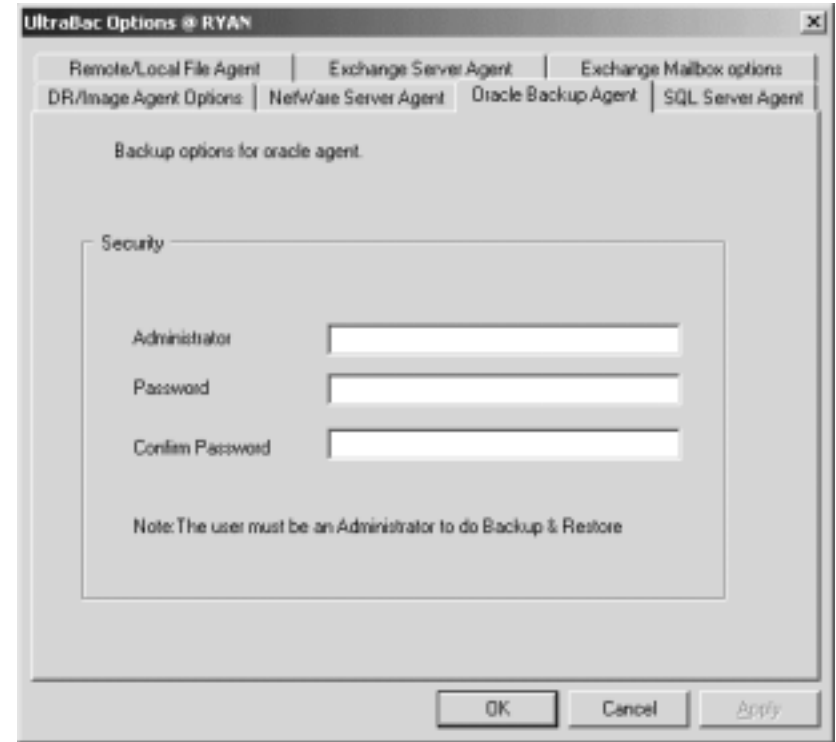
Files Not To Backup – This is the global exclusion list. One example of utilizing the global exclusion list would be an entry for “%systemroot%\system32\config,” which holds the active registry files. This directory would get skipped during the regular file-by-file portion of the backup since it’s already getting backed up as part of the System State. Also, if a user is backing up SQL databases with the UltraBac SQL Agent, the “.mdf” and “.ldf” files may also be added to the exclusion list.

EXCHANGE MAILBOX OPTIONS



There are two different kinds of Mailbox restores: overwriting the contents of the mailbox and mounting the mailbox to a PST file. When UltraBac is set to overwrite the entire mailbox, the temporary storage path needn't be used. However, UltraBac will use this specified path by creating a PST file and placing the contents of the mail to be restored in the PST file. Before entering a location for the temporary PST file, make sure enough disk space is available to hold the amount of information in the mailbox(es) selected for restore.

ORACLE BACKUP AGENT

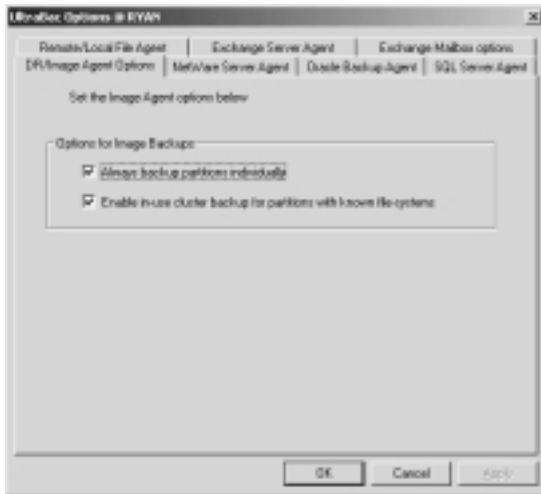


Through this screen, the Oracle administrator username and password must be entered for the Oracle agent to run its backups. The default username and password for Oracle is "internal" and "oracle," respectively. Users may use this account information for all backups if they wish. Take note that Oracle user account information is also kept in the set level once an Oracle set has been created and is NOT encrypted. To view the account information on the set level, open up the Oracle set with notepad in "C:\Program Files\UltraBac Software\UltraBac7\data\OracleSet.ub." If using sensitive Oracle account information, make sure that strict security settings are applied to the UltraBac Oracle set.

DR / IMAGE AGENT OPTIONS

Always backup partitions individually – When UltraBac enumerates the hard disk(s) in

the machine, you will see all of its partitions listed underneath the disk. With this preference checked, UltraBac will always back up the partitions in separate sessions during the backup. If this preference was unselected, the hard disk wouldn't display any of the partitions beneath it and, hence, the entire disk would be backed up.



Enable in-use cluster backup for partitions with known file-systems – UltraBac will back up only the data on the partition and skip the empty sectors on the partition. This preference is always selected by default because it saves time during the backup by excluding the empty sectors on the hard drive.

NETWARE SERVER AGENT



Server Name or IP Address – Saves the desired NetWare Server as default.

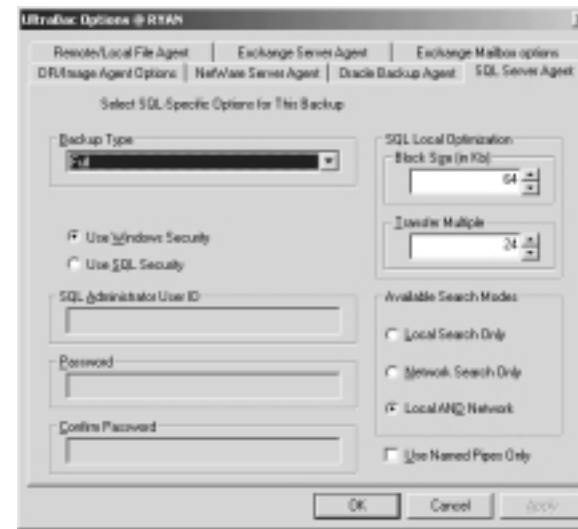
User Name – Enter a fully distinguished user name.

User NDS Context – Specify the NetWare Tree or Root name.

Protocol Preference – Specify SPX, IP, or both.

Disable Logins During Backup – Disables Logon during backup when checked.

SQL SERVER AGENT



The properties set in the SQL preference screen will be used as the default settings when this screen appears again through the Backup Wizard when creating a SQL Server backup set.

Backup Type – Full, Incremental, or Differential

- **Full** – Will back up the selected databases.
- **Incremental** – Will back up the transaction logs only and dump them into the database once the backup is complete.
- **Differential** – Will back up the transaction logs.

There are two types of **SQL security** used for authentication—Windows security and SQL security. Individual SQL sets may contain different security information, but the global preference can be set here, making it easier if only one username and password is to be used for SQL backups. Select either Windows security or SQL security by clicking the appropriate radio button. If SQL security is used, the SQL username must have SA authority. If any “Access Denied” errors should occur during the backup and Windows security was checked, try SQL security using an SA account.

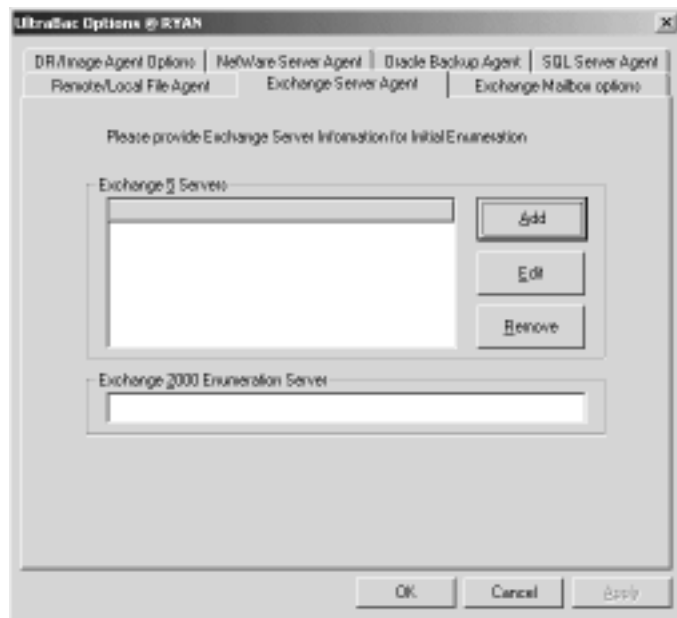
SQL Local Optimization – Advanced SQL users may want to set the “Block Size” and “Transfer Multiple” settings to something other than their default. We recommend that you leave these settings in place but, if they are altered, beware that the settings must be the exact same in order for the database(s) to be restored successfully. For example, if the “Block Size” setting was at 128 KB when it was backed up, the restore would fail if the “Block Size” setting was set back to 64 KB.

Available Search Modes

- **Local Search Only** – The servers registered in the “Client Network Utility” will appear as selectable objects in the SQL Backup Wizard.
- **Network Search Only** – UltraBac will query the network for all SQL servers and display them as objects to back up.
- **Local and Network** – UltraBac will display a combination of the servers registered in the “Client Network Utility” and the SQL servers it can find on the network.

Use Named Pipes Only – If selected, “Named Pipes” will be the only protocol allowed during the backup session.

EXCHANGE SERVER AGENT



Exchange 5.5 servers can be manually added through this preference screen, enabling UltraBac to list the entered Exchange server name in the UltraBac set creation wizard. To add an Exchange 5.5 server, click “Add” and type in the appropriate <Name> in the naming field. To add an Exchange 2000 server, type the <Server Name> in the “Exchange 2000 Enumeration Server” box.

UltraVue™

Remote UltraBac processes can be viewed through UltraVue™, part of UltraBac's remote administration utility. UltraVue allows users to view statistics of remote backup, verify, or restore processes, and gives the user the option to cancel the job interactively.

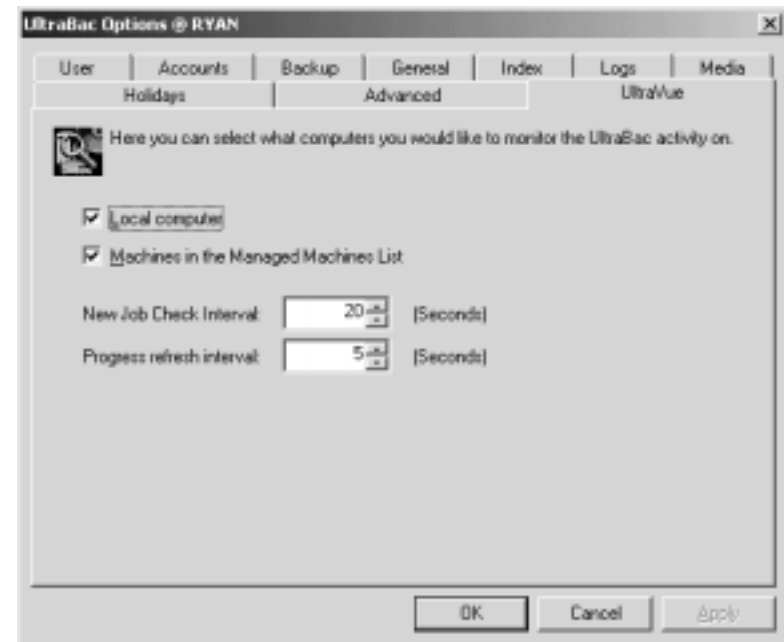
The UltraVue preference is located in “Tools”/”General”/”UltraVue.”

Local computer – If this is checked, UltraVue will check for an active UltraBac session every [###] seconds, depending on what is specified in the “New Job Check Interval” counter.

Machines in the Managed Machines list – If checked, UltraBac will give the status of all machines in the managed machines list every [###] seconds, depending on what is specified in the “New Job Check Interval” counter.

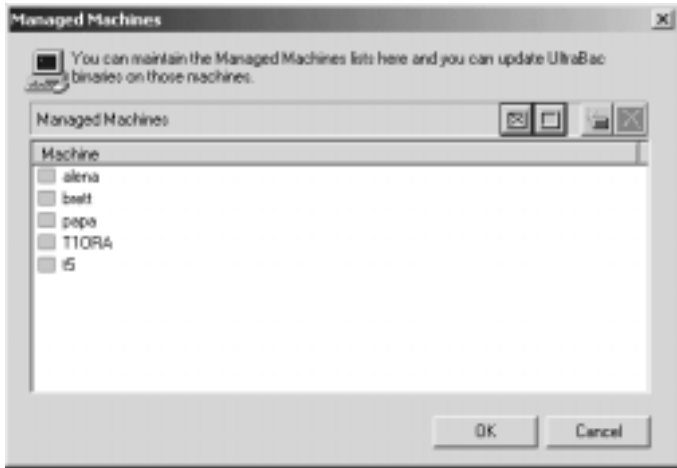
New Job Check interval – UltraBac checks for new UltraBac processes every [###] seconds.

Progress Refresh interval – UltraBac refreshes the progress of an UltraBac session every [###] seconds.

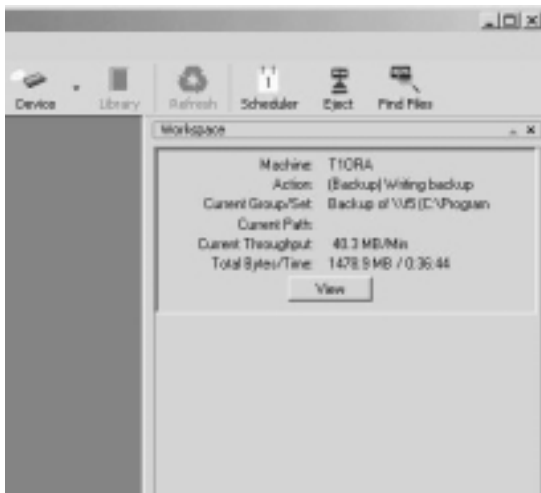


UltraBac keeps a user specified list of machines (UltraBac Backup Hosts) to be managed. Machines can be added or removed to the Managed Machines List by accessing

“Tools”/“Maintain Managed Machines” and clicking the corresponding icon depending on whether you want to add or delete a machine from the list.



When the UltraBac user interface is open, if a Backup, Restore, or Verify is running on any of the specified machines in the Managed Machines List, a progress window will appear in the Workspace portion of the UltraBac screen. Clicking the “View” button on any of the jobs running in the UltraVue workspace will bring an “UltraBac Progress” dialog box.



If the UltraBac “Progress” box is minimized, it places itself back into the UltraVue workspace, eliminating interference with the main console. When the UltraBac process is finished, the box will flash in blue, giving the user a visual message that the job is complete. At that time, the completed Backup, Restore, or Verify log can be seen by clicking the “View” button and choosing the appropriate log. In order to get rid of the flashing box in the workspace, click “View”/“Exit.”

Cluster Failover Support

When installing UltraBac 7.x on a cluster server, the backup administrator will now have the option to enable failover support to the secondary node. Enabling failover support creates a customized “.ubb” file during a scheduled backup, allowing the secondary node to restart the scheduled backup group in case the primary node fails. The customized “.ubb” file is deleted when the scheduled backup is finished.

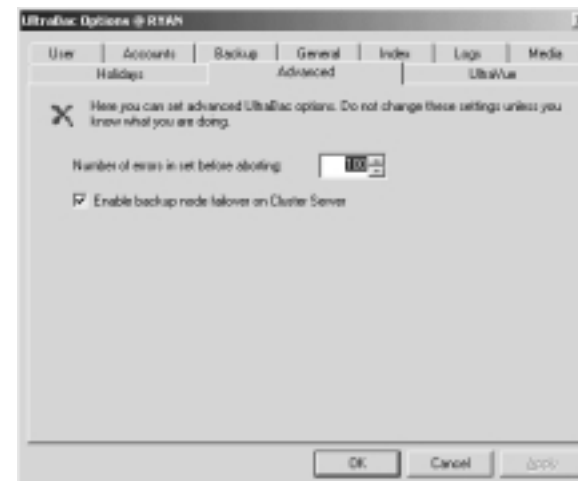
INSTALLATION AND USE

UltraBac 7.x must first be installed on both nodes in the cluster. The data “sets” and “groups” must then point to a previously created share on a physical disk in which both nodes in the cluster share. This is done by completing the following:

- Create a share on the shared physical disk called “ultrabac7_data.”
- After UltraBac 7.x has been installed, access “Tools”/”Options”/”General” on both nodes in the cluster, and type the <Path> to the newly created “ultrabac7_data” share in the “Default Path for UltraBac Data Files.” Click “OK.” By doing this, all the backup sets and groups will be saved directly to the shared resource.

UltraBac installs a “UBMS” and “UBSCHEDULER” service to run its backup engine and scheduler. When setting up these services for cluster failover, the “UBMS” service has to be running on both nodes, and the “UBSCHEDULER” service must be stopped. The “UBSCHEDULER” service will be installed as a shared resource through “Cluster Administrator” in later steps but, for now, stop the “UBSCHEDULER” service on both nodes in the cluster and set the services to “Manual.”

Enable Failover Support by accessing “Tools”/”Options”/”General”/”Advanced” in the UltraBac user interface, and check “Enable Backup Node Failover on Cluster Server.”



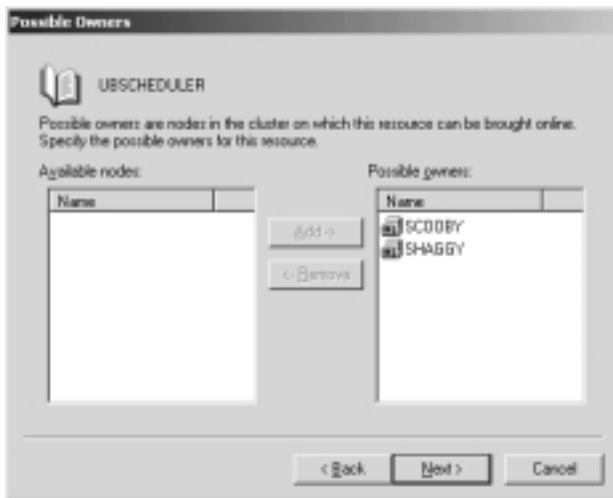
CLUSTER ADMINISTRATION

Go into “Cluster Administrator” and create a new resource under an existing group by doing the following:

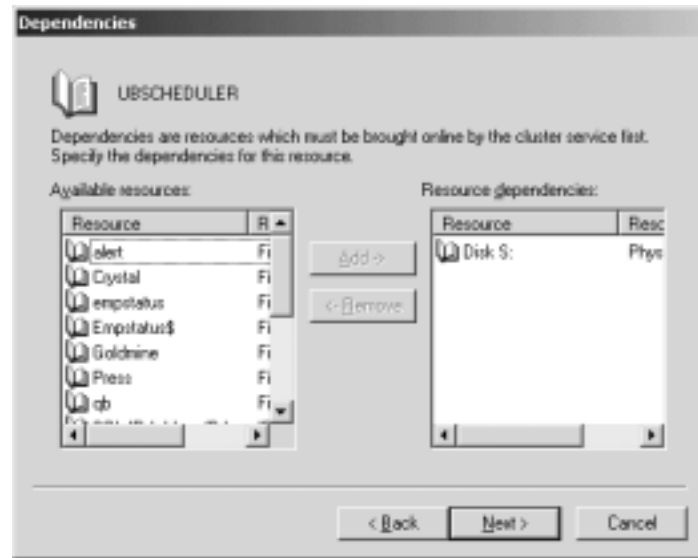
- Highlight an existing group and click “File”/”New”/”Resource.” Type <UBSCHEDULER> for the name, <ultrabac scheduler service> for the description, click the drop-down box, and choose “Generic Service” for the resource type. The group under which the service is to be created should already be chosen. Click “Next.”



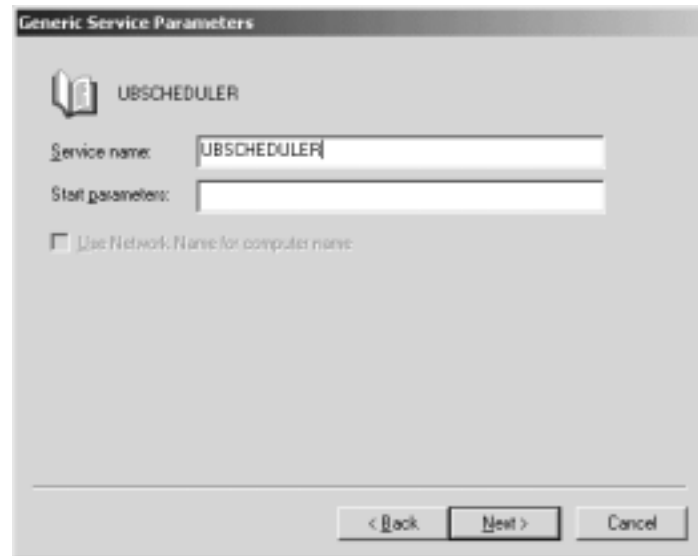
- Add both the nodes in the cluster server to the right hand column, and click “Next.”



- In the “Dependencies” dialog box, add the physical disk on which the “ultrabac7_data” share was created, and click “Next.”



- Type <UBSCHEDULER> as the service name, and click “Next.”



- Click “Finish” in the “Registry Replication” screen and bring the newly created resource online by right-clicking on it, and choosing “Bring Online.”

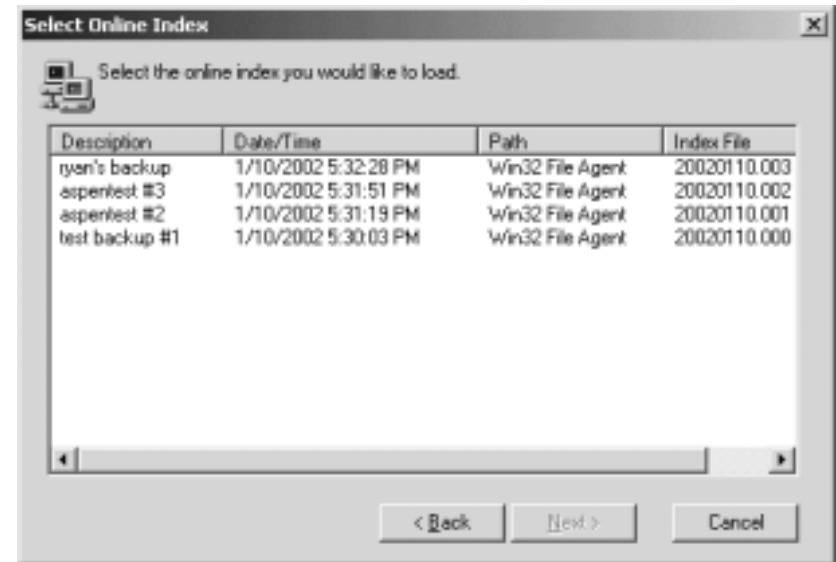
RESTORE

Restoration

UltraBac is programmed to use the high-speed retrieval logic available in most high capacity SCSI storage media drives. High speed restorations require the exact location of the files to be restored by accessing the index of files located either on the storage media itself, or on an online disk. There are two methods to retrieve the index.

Click the Restore icon on the toolbar, or click “File”/”Load Index for Restore/Verify,” and you’ll have two options: “Retrieve from online index” and “Retrieve from storage media.”

- **“Retrieve from online disk index”** – This is the fastest method as reading information from disk is much faster than reading it from tape. When UltraBac executes a backup, it automatically writes an index to disk, thereby creating speed and efficiency at the time of restore. The online index default location is: “C:\Program Files\UltraBac Software\UltraBac7\indexes”. To use this option, either double-click on “Retrieve from online disk index,” or highlight it and click “Next.” UltraBac will display all the indexes that exist on disk with a backup description, the date and time of the backup, the agent used to run the backup, and the name of the index file. You’ll most likely be identifying the backup from its description. Example:

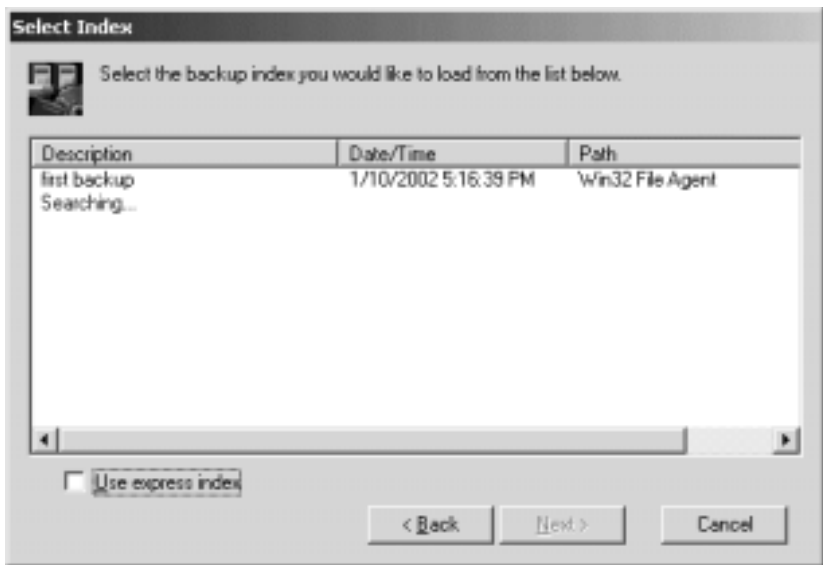


Load the index by either double-clicking on it, or highlight it and click “Next.” Only one index at a time may be loaded.

- **“Retrieve from storage media”** – The device defined in “Select”/”Storage Device” will be the global storage device that UltraBac will retrieve its data from when loading the index. For example, if the index was to be retrieved from a remote storage device, make sure that the correct device is selected under “Select”/”Storage

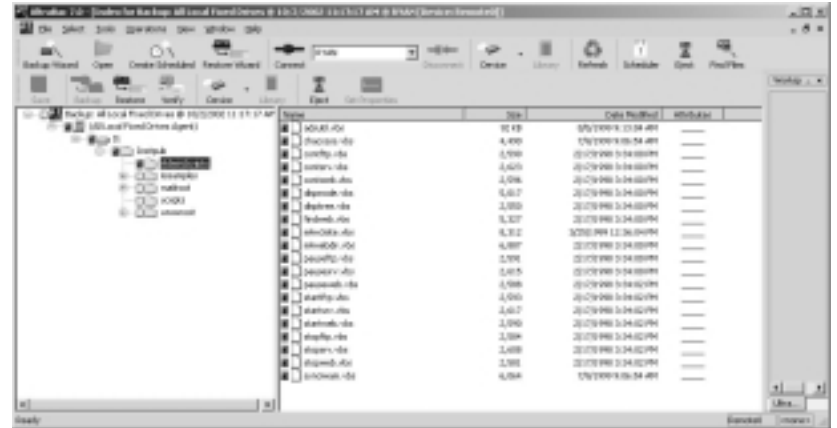
device”/”Remote” before trying to use this function.

Retrieving the index from storage media can be slow, depending on whether the “Express Index” exists. The “Express Index” places a file on the very beginning of the tape, allowing the index to be quickly retrieved. The file placed on the beginning of the tape works in conjunction with a small file on disk in the UltraBac7 directory (default location: “C:\Program Files\UltraBac Software\UltraBac7\express”). If the express index file is missing from disk, UltraBac will read the tape and retrieve each index sequentially. This process can take quite a while depending on the size of the tape. You’ll be able to see the indexes appear one by one in the “Select Index” box as UltraBac searches the tape. When UltraBac is finished scanning the tape for indexes, the “Searching...” text will disappear.

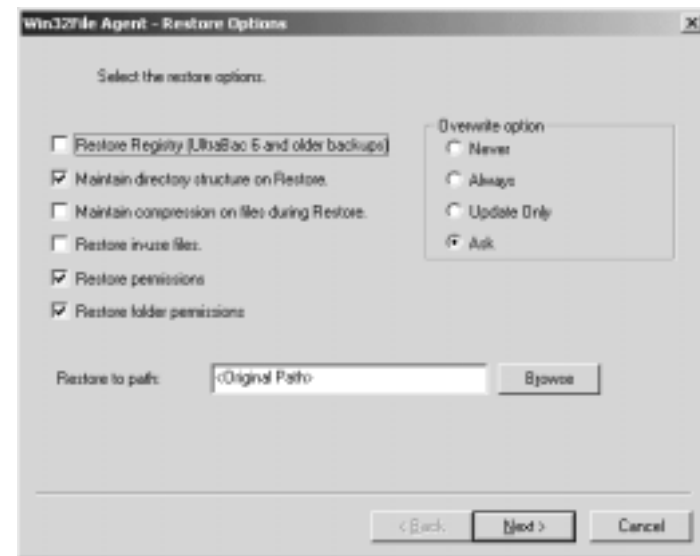


Load the index by either double-clicking on it, or highlight it and click “Next.” Only one index at a time may be loaded.

When the index is retrieved, an Explorer-like screen displaying the files in hierarchical order will appear. The directory structure is expandable by clicking the plus sign to traverse down into the directory tree. Select the files to restore by clicking inside the box next to the file or drive letter so that the box appears blue. Selecting the drive letter or parent folder will in turn select the child folders and files beneath it. In the example below, the “initio” directory was selected; hence all the files beneath the “initio” directory appear selected in the column on the right.



Continuing with the restore, click “Operations”/”Restore Selected Files.” The “*Restore Options*” dialog box has many selections, allowing the user to restore to an alternate location, determine overwrite options, etc.



Maintain directory structure on Restore – If the directory to be restored resides in a lower level of a directory tree, checking this preference will restore the directory tree down to the one being restored. (This is selected by default.)

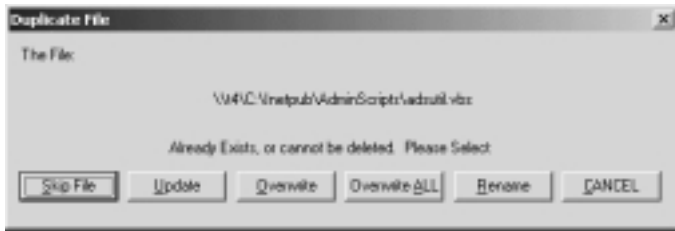
Maintain compression on files during Restore – If a file was backed up with the compression attribute turned on, it will be restored as such if this preference is checked.

Restore in-use files – If a file is in use and UltraBac is trying to restore it, this preference will force the restoration instead of skipping it. **NOTE:** If the file is in use while it's restored, all current changes will be lost the next time the computer is rebooted.

Restore permissions AND Restore folder permissions – Check if previously existing permissions are to be restored.

Overwrite option

- **Never** – If the file being restored already exists on the target drive, UltraBac will skip it.
- **Always** – UltraBac will overwrite all files with the same name as the files being restored.
- **Update Only** – If the file being restored has a modified date older than the existing file, it will not be restored.
- **Ask** – When this radio button is selected, UltraBac will display a pop-up message every time it comes across a duplicate file asking the user to select an interactive overwrite option. Depending on how many duplicate files there are on the target restore drive, this box can eventually become very tedious, especially if the user doesn't care about the files that are to be overwritten. For example, imagine being asked interactively during the restore if you want every “.dll” file in the WINNT\system32 directory to be restored.



The options available for a duplicate file are:

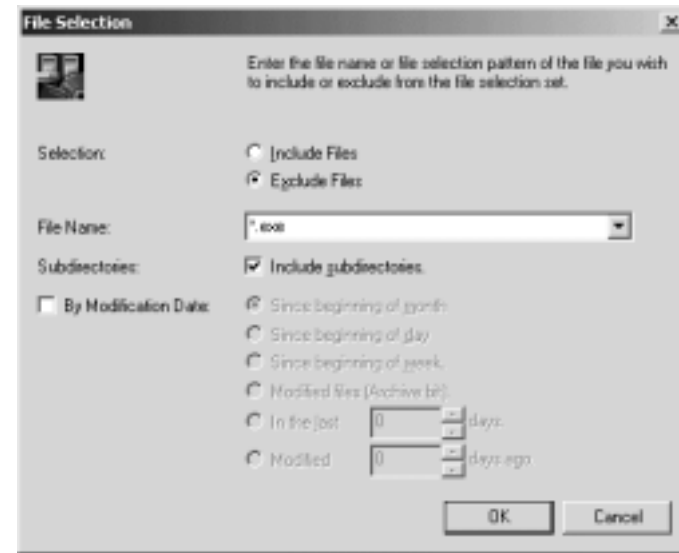
- **Skip File** – Do not restore the file from storage media. Continue processing the remainder of the files to be restored.
- **Update** – Only restore if the file on the storage media is newer than the duplicate file on disk. This comparison is based on the file's date and time attributes.
- **Overwrite** – Restore the file from storage media and overwrite the duplicate file on disk.
- **Overwrite All** – Restore the file from storage media and overwrite the duplicate on disk, then restore any other duplicate file and overwrite it as well.
- **Rename** – This option allows the user to rename the file being restored. The path can also be changed if necessary.

SELECTING FILES WITH SPECIFIC EXTENSIONS

UltraBac allows the flexibility of choosing files with only particular extensions, such as executables (.exe) or text files (.txt). This feature would be extremely useful if a user wanted to restore only the “.jpeg” files to a different location on the network. For instance,

if a web designer was building a new machine and wanted all of the “.jpeg” files moved from the old web development machine to the new one, the backup administrator could simply use this option to restore all the needed files to the newly required location. Here is one example showing how to utilize this feature step by step, assuming the index has already been loaded:

- Right-click on the parent directory containing the files to be restored, and click “Include 'directory'.”
- Type <*> and the file extension to be included in the restore. If all executables were to be included, type <*.exe> in the “File Name” box.



- By clicking “OK,” all the directories and subdirectories containing the files with the specified extension will be highlighted.
- Restore selected files.

RESTORING TO AN ALTERNATE PATH

UltraBac can direct the restore to an alternate path if specified in “*Restore Options*” dialog box shown above. By default, UltraBac will always restore to its original location (if it still exists) unless otherwise specified. To restore to an alternate location, either type the destination <UNC Pathname> in the “Restore to Path” box or specify the location by clicking the “Browse” button. If the former method is chosen and the target directory doesn’t already exist, it will be created upon restore.

Restoring to an alternate location can sometimes be risky due to the danger of overwriting sensitive files on the target drive. To ensure the safety of critical files, make sure the “Ask” radio button is selected in the “*Restore Options*” dialog box (by default, this option is already selected).

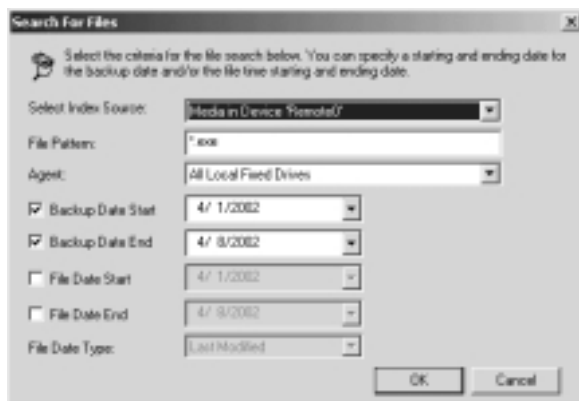
Find Files

The “Find Files” feature benefits UltraBac users by giving the backup administrator the ability to search for files based on their backup date, file property date, or file extension. There may come a time when a backup administrator needs to restore all files from a particular set based on the file extension. For instance, if all the “.jpeg” files on a web development machine were accidentally deleted or became corrupt, the backup administrator would be able to use the “Find Files” feature to search for all “.jpeg” file extensions, and restore them to their original location.

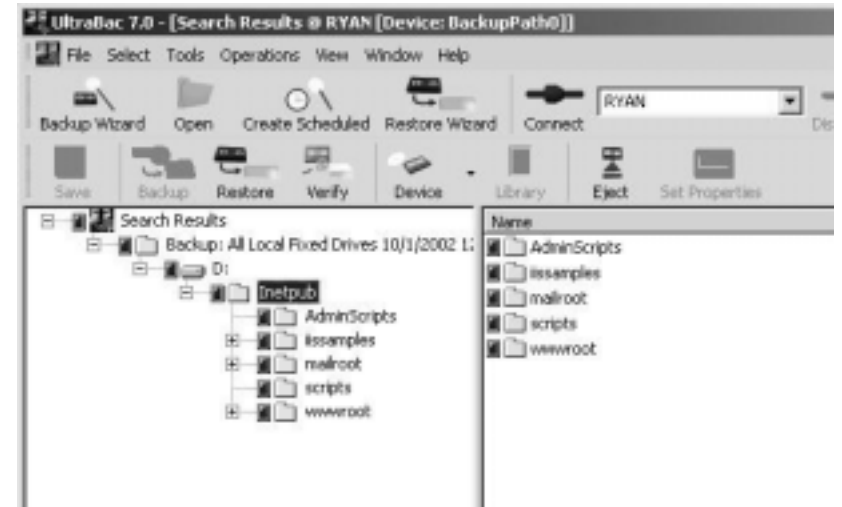
There are two locations to perform the file search: the online index or the index from the storage media. Whenever a backup is executed, an index is written to both storage media and disk. The online index default location is located at “C:\Program Files\UltraBac Software\UltraBac7\indexes.” When UltraBac searches the online disk, it queries and retrieves its information from the entire “indexes” directory. When UltraBac is finished searching the online index, it will display a list of sets containing the files specified, based on the search preferences. In order to restore these files, the storage media used to back up the data has to be chosen as the primary device through “Select”/“Storage Devices.” If more than one storage device is used for backups, this process can potentially be confusing. That's why it is often recommended to search directly from the storage media itself. When UltraBac searches the storage media, it retrieves its index information from only one location.

The following example illustrates the process of retrieving and restoring all files with “.exe” extensions from a recent backup on a remote tape drive.

- Click the drop-down arrow to choose the correct storage media device.
- Type the <File Extension> to be found in the “File Pattern” box.
- Choose the agent used to run the backup.
- Select the “Backup Date Start” and “Backup Date End” based on when the backup was performed.
- Click “OK.”



- UltraBac will access the storage media specified in “Select Index Source” and retrieve all sets with “.exe” extensions.



- Choose the appropriate set, select the executables to be restored, and click “Operations”/”Restore Selected Files.”

This is only one example that illustrates finding files based on their extension. Keep in mind that files can also be found and restored according to their file date, and the date in which the file was backed up.

For more information about restoring files, access:
http://www.ultrabac.com/kb7/UltraBac_Help/UltraBac_User_Manual/restoration.htm

UltraBac System State / Active Directory Restore

Three types of System State restores exist: Normal, Authoritative, and Non-Authoritative. Any System State restore that does not include the Active Directory is a “Normal” System State restore. A System State restore that includes the Active Directory will be either “Authoritative” or “Non-Authoritative,” depending on the nature of the domain controller.

A plain vanilla installation of Windows 2000 will have three sub-objects under the “System State” icon in UltraBac. These objects are seen whenever a local or remote Win32File set is loaded, assuming the Win32File agent has previously been installed on the machine. The subcomponents of System State contain the following: Boot Files, Com+ Database, and Registry. The System State of an Active Directory machine contains more subcomponents under the “System State” icon seen in the UltraBac interface: Active Directory, Boot Files, Com+ Database, Registry, and Sys Vol. If Certificate Server is installed, there will also be a “Certificate” icon appearing under the System State. These components are restored either all together or not at all. In other words, an attempt to uncheck or exclude one object will cause all objects to be excluded.

NORMAL SYSTEM STATE RESTORE (NO ACTIVE DIRECTORY)

Load the index containing the System State backup. (More information on loading the index for restore is available in the **RESTORATION** section of the manual.)

Select the System State object and either click the “Restore” icon on the toolbar or click “Operations”/”Perform Restore.” You’ll be able to check the appropriate restore options in the next screen: “Win32File Agent—Restore Options.” Click “Next.” When checked, the “Unattended” feature means that if any error messages should occur during the restore, they’ll be reported in the restore log rather than through interactive pop-up dialogs. Click “Restore.”

NOTE: If one restores the entire C: drive without checking “Unattended,” there will usually be a barrage of interactive pop-up dialog boxes indicating the restoration of “In-Use” files. The restore will not continue unless someone is present to click “OK” to each pop-up dialog. Therefore, it is advised to click the “Unattended” check box when doing large restores.

NOTE: When UltraBac finishes its job, the machine will need to be rebooted to activate the newly restored System State. A dialog box issued by UltraBac should appear at the end of the restore asking the user if they would like to reboot now or later.

AUTHORITATIVE SYSTEM STATE RESTORE (DOMAIN CONTROLLERS ONLY)

Start in Directory Services Restore mode. Directory Services mode is not available on

machines without Active Directory. When attempting to recover a crashed Active Directory machine, install a bare bones version of Active Directory before restoring anything. After the vanilla Active Directory installation is complete, refer to the instructions below.

Start the domain controller in “Directory Services Restore” mode before restoring the System State. Do this by completing the following steps:

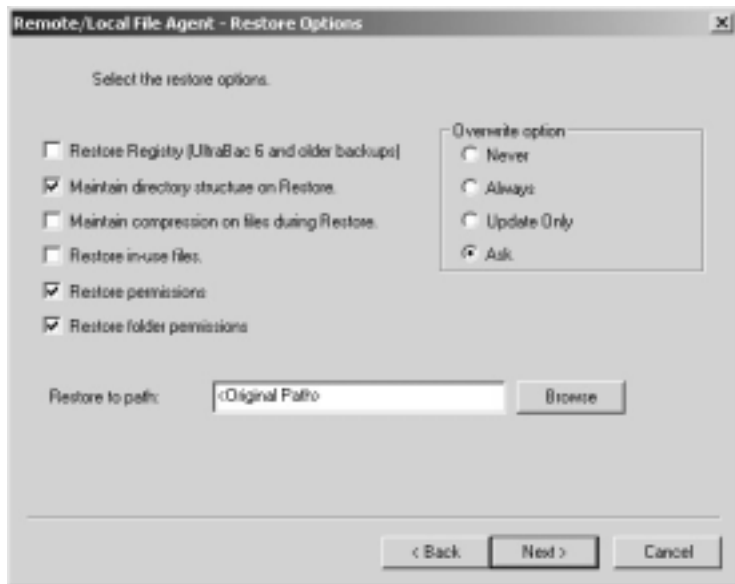
- Reboot the computer.
- When prompted to select an operating system, or as soon as Windows displays the “Starting Windows” progress bar, press “F8.”
- Windows 2000 will display various boot options, one of which is “Directory Services Restore Mode (Windows 2000 domain controllers only).” Choose this option and press “Enter.”
- If prompted, select an appropriate operating system and then press “Enter.”
- Log in using an administrator account and password stored in the SAM (Security Accounts Manager). This account was created when Active Directory was installed. **NOTE:** Active Directory administrator accounts are not available since the active directory is off-line.
- Select “OK” within the “Desktop” dialog box. This dialog box starts with the text, “Windows is running in Safe Mode.”

Restoring the System State Using UltraBac – To perform a System State restore operation, follow these steps:

- Run UltraBac by selecting from Window's task bar: “Start”/”Programs”/”UltraBac 7.0”/”UltraBac Management Console.”
- Load the index containing the System State backup you wish to restore. There will be Active Directory components appearing as objects under the System State object in UltraBac. The loaded index should look similar to the screenshot below:



- From UltraBac's menu bar, select “Operations”/”Perform Restore.”
- Selecting “Perform Restore” automatically brings the “Restore Options” dialog box.



- Select “Next.” Choose “Unattended” if you wish to view errors in the restore log rather than interactively, and click “Restore.”
- When the restore completes, a reboot request will be made. UltraBac will display a pop-up message with the option to click “OK” for a reboot, or “Cancel” to exit. Select “Cancel” to reboot the machine after the NDSUTIL utility has run successfully.



- In the next pop-up dialog, UltraBac informs the user that some files will not be active until the machine is rebooted. Click “OK” to continue.

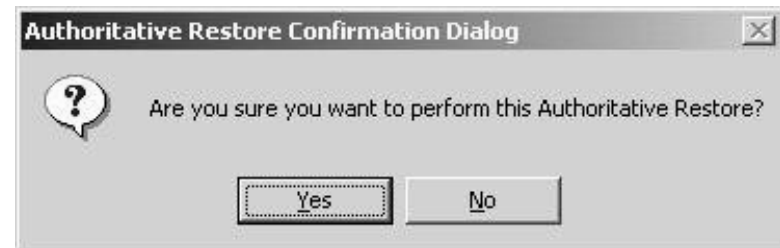


- Select “Restore Log” when the “*UltraBac Progress*” dialog box appears and verify the restore was successful. When you’re finished viewing the restore file, close it and exit the application entirely. This concludes the UltraBac portion of the restore, but the NTDSUTIL still needs to be run in order to synch the newly restored Active Directory database.

Run NTDSUTIL – To perform an Authoritative restore, use NTDSUTIL after you restore the System State data, but before you restart the server on the network. NTDSUTIL allows Active Directory objects to be marked for “Authoritative” restore, ensuring proper replication and distribution of data. An “Authoritative” restore should be used if the user is restoring the ONLY domain controller in the domain, or if the user desires all other domain controllers to synch up to the newly restored domain controller.

Run NTDSUTIL and mark all appropriate objects as “Authoritative.” NTDSUTIL can be run from the “Command” prompt. **NOTE:** Type <ntdsutil/?> for help on this utility.

- From the “Command” prompt, type in <NTDSUTIL> and press “Enter.”
- Type in the text <authoritative restore> at the “NTDSUTIL.EXE” prompt and press “Enter.”
- To mark the full restore as “Authoritative,” type in the text <restore database> at the “authoritative restore” prompt and press “Enter.” The “authoritative restore” command will be used in most cases. To mark just a subtree as “Authoritative,” type in the text <restore subtree ***> at the “authoritative restore” prompt, where “***” is a string (e.g. “restore subtree cn=DomainController,ou=DomainControllers,dc=DomainName,dc=TopLevelDomain Name”), and press “Enter.” For more information, see Microsoft’s documentation on restoring subtrees.
- Select “Yes” when prompted with the following confirmation screen:



The following DOS screenshot looks similar to what happens when one runs a typical “Authoritative” restore through NTDSUTIL.

```
C:\WINNT\System32\cmd.exe - ntdsutil
C:\>ntdsutil
ntdsutil: authoritative restore
authoritative restore: restore database

Opening DIT database... Done.

The current time is 04-05-02 13:52.14.
Most recent database update occurred at 04-04-02 17:23.30.
Increasing attribute version numbers by 100000.

Counting records that need updating...
Records found: 0000005288
Done.

Found 5288 records to update.

Updating records...
Records remaining: 0000000000
Done.

Successfully updated 5288 records.

Authoritative Restore completed successfully.
authoritative restore:
```

- Type in <quit> at the “authoritative restore” prompt and press “Enter.”
- Type in <quit> at the “NTDSUTIL.EXE” prompt and press “Enter.”

REBOOT

IMPORTANT WARNING! Your system must be REBOOTED before the restored System State files will be activated.

NOTE: Only restored objects specifically marked as “Authoritative” will update their respective objects on other domain controllers. All other objects will still be “Non-Authoritative.” See Microsoft’s documentation on “Authoritative” restores for more information.

NOTE: The Active Directory uses the USN (Update Sequence Number) to determine which instance of an object is “older.”

NON-AUTHORITATIVE SYSTEM STATE RESTORE (DOMAIN CONTROLLERS ONLY)

“Non-Authoritative” System State restores are usually done when there are other domain controllers on the network to which the server would replicate upon boot. If you were restoring a standard domain controller, one that wasn’t a “Root” domain controller, the restore would be completed without running the NTDSUTIL after the restore is complete. When the newly restored domain controller announces itself on the network again, other domain controllers will replicate their information to the new domain controller. Follow

the steps shown below to complete a “Non-Authoritative” restore.

Start the domain controller in “Directory Services Restore” mode by doing the following:

- Reboot the computer.
- When prompted to select an operating system, or as soon as Windows displays the Starting Windows progress bar, press “F8.”
- From the list of Safe Modes, select “Directory Services Restore Mode (Windows 2000 domain controllers only),” and then press “Enter.”
- If prompted, select an appropriate operating system and then press “Enter.”
- Wait for the “Welcome to Windows” screen to appear and press “Ctrl+Alt+Delete.”
- Log in using an administrator account and password stored in the SAM (Security Accounts Manager). This account was created when Active Directory was installed.
NOTE: Active Directory administrator accounts are not available since the active directory is off-line.
- Select “OK” within the “Desktop” dialog box. This dialog box starts with the text, “Windows is running in Safe Mode.”
- Run the restore exactly as indicated above. The only difference between an “Authoritative” and “Non-Authoritative” restore is that the NTDSUTIL is NOT used in a “Non-Authoritative” restore.
- Reboot the machine when UltraBac7 finishes the restore by clicking “OK” in the following dialog box:



AGENTS

UltraBac Disaster Recovery

PURPOSE AND USAGE

NOTE: Running an image backup of a remote machine requires the installation of the image agent on the remote machine. Visit the following link for instructions on installing agents:

http://www.ultrabac.com/kb7/UltraBac_Help/UltraBac_User_Manual/agent_installation.htm

There are two different kinds of image backups: “Static Mirror” Image and “Standard” Image. The difference between the two is quite simple.

A Static Mirror Image backs up the sectors of the hard drive from one partition to another, or from one local disk to another local disk, similar to Windows mirroring. Example: One disk contains two partitions of the same size—the system partition and a partition with blank space, unassigned of a drive letter. Using UltraBac, you can perform a Static Mirror Image backup from the system partition to the partition with blank space.

For purposes of clarity, a separate document has been created for Static Mirror Image backups. Instructions for performing Static Mirror Image backups can be found in the following location:

http://www.ultrabac.com/kb7/UltraBac_Help/UltraBac_User_Manual/Static_Mirror_Image.htm

A Standard Image backup consists of backing up the sectors of the hard drive to a tape device or a disk path. Standard Image backups are the most common and many customers run image backups of their system partition to minimize downtime in the case of a system partition crash or even an entire disk failure. If this should happen, the system can be recovered very quickly, given the user has an image backup of the system partition.

UltraBac supports backing up an image of your hard drive to a remote disk path on the network. If they wish, backup administrators can keep their image backups in one centralized location on the network. For instance, the system partition on all critical machines can be backed up to a specified BackupPath device: `\\computername\sharename`. If one of the machines should crash, the failed machine would have to be booted into DOS with a network ready DOS-boot floppy disk. At this point, “UBDR.exe” (UltraBac's disaster recovery utility) would be executed and the image backup stored on a remote storage device would be directed back to its original location.

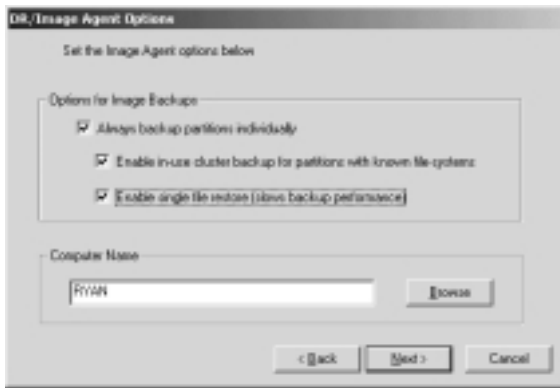
Image backups are different from file-by-file backups in several ways. Image restores are fast and ideal when restoring failed disks, especially the boot partition. Image backups do not utilize the operating system file integrity and more care must be taken to insure a “clean” backup. UltraBac suggests file-by-file backups be performed in addition to the image backup for file-by-file restores.

IMAGE BACKUP – LOCAL AND REMOTE

NOTE: UBDR cannot access a remote tape drive through DOS—this can only be done through the GUI! Run all image backups of system partitions to a disk path rather than a tape drive. If the machine fails, the system partition can then be restored by booting from a DOS floppy disk with network support and pulling the image from the remote storage disk path back to the original location. However, if a partition is to be restored on a machine that is booted into the OS, UltraBac can restore from a remote tape drive.

Create an image backup set by clicking “File”/”New Backup Wizard”/”Image Disaster Recovery Agent”/”Next.”

The following dialog box will give you the option to back up all partitions individually and enable in-use clusters on the disk you're backing up. Also, you'll have the option to enter a computer name for a remote machine that you'd like to back up. **NOTE:** In order to run an image backup of a remote machine, the UltraBac image agent must be installed on the machine you're backing up.



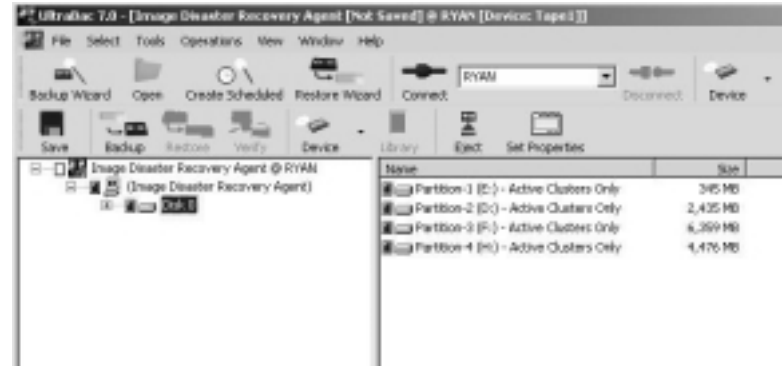
Always backup partitions individually – Implies you're backing up individual partitions rather than the entire disk.

Enable in-use cluster backup for partitions with known file-systems – This means you're backing up the data only, not the empty space on disk. If this option were unchecked, UltraBac would back up all the sectors on the partition, even the sectors without data. This feature was added to accelerate the backup and conserve media space.

Enable single file restore (slows backup performance) – If this is checked, single file restores will be available for image backups when the index for the image backup is loaded. More information is available below in the **Restore** section.

Computer Name – Allows the option to type a remote machine name in order to back it up.

Click “Next,” enter a set description (if the backup set is created for a remote machine, enter the machine name in the set description box), click “Next,” and click “Finish” to display the disk and its partitions.



Include the partition(s) you'd like added to the backup set and click "File"/"Save As," give the set a unique name such as "C_Image.ub," click "Save," and return to the set editor.

To perform an interactive image backup, make sure you have the storage device selected. Click "Operations"/"Backup Selected Files," check the appropriate boxes in the "Backup Options" dialog box and click "Backup."

RESTORE

There are two different kinds of image restore functions through the GUI interface: single file image restore and full image restore. A full image restore consists of restoring an entire image backup to another partition or disk drive. A single file image restore simply enables the user to recursively browse through a directory of each captured partition.

Full Image Restore

A full image restore through the GUI interface requires the target partition be as big or bigger than the original image backup's active cluster space. If you're restoring the image backup to its original location, leave the partition size the way it is, and unassign it of its drive letter. An image backup can only be restored through the GUI to a partition that doesn't have a drive letter. Disk management should look something like the screenshot below.



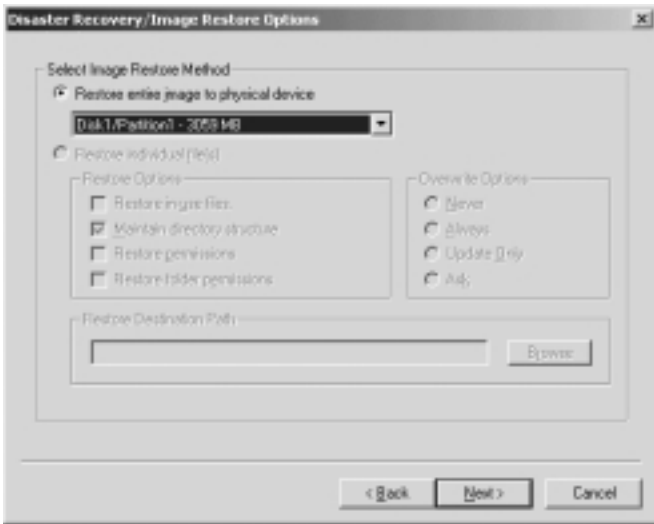
Again, note the second partition is unassigned of a drive letter. **NOTE:** If this step isn't taken, UltraBac will not be able to find any target devices to restore the image.

The following is a step-by-step process to restore a partition through the GUI interface using UltraBac.

1. Click “File”/”Load Index For Restore/Verify.”
2. Choose “Retrieve from Online Index” or “Retrieve from Storage Media”/”Next.”
3. Highlight the image set you want to restore and click “Next.” You should see something similar to the following screen.



4. Click “Operations”/”Perform Restore.”



5. Click the “Restore to Physical Device” radio button, click the drop-down list box, choose the partition you wish to restore the image to, and click “Next.”
6. You may choose “Unattended” if you wish the restore not to be interrupted by errors if any should occur. Otherwise, click “Restore.”

After the image is restored to the partition unassigned of a drive letter, go into “Disk Management” and re-assign the partition of a drive letter. If the data doesn’t appear through Windows Explorer after the restore, you will have to reboot the machine. Upon reboot, the disk will appear just as it did when the image backup was performed. Also, in some instances, Windows will run a “Check Disk” when booting into the OS if it finds a brand new partition. If this occurs, do not be alarmed and let the “Check Disk” run until it has completed its operation.

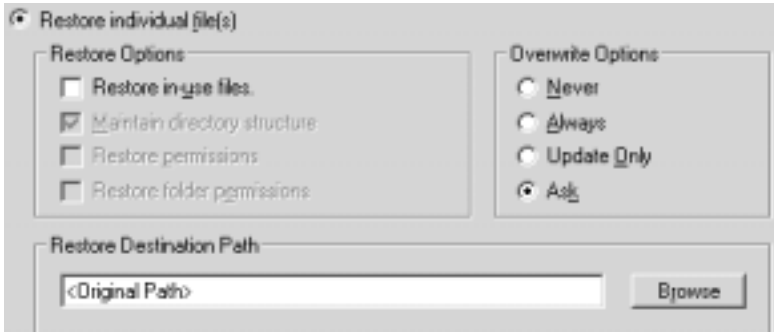
Single File Restore

This option will be available only if the “Enable Single File Restore” checkbox was checked during the creation of the image set. If the preference was selected, each partition that was backed up will have an available directory tree with which to use for restore selection logic. An example is shown in the screenshot below.



NOTE: LIMITATION – SINGLE FILE RESTORE DOES NOT WORK ON NT4 MACHINES!

Select the file(s) you wish to restore and click the “Restore” icon on the toolbar. The overwrite options shown below are identical to the overwrite options one would see in the file-by-file restore wizard. Also, the option to restore to an alternate path is available in the “Restore Destination Path” box. You may leave the default “Original Path” setting if the files are to be restored to the original location, or you may type a UNC or local path, which will direct the restore to an alternate location. Choose the appropriate restore options and click “Next.”



Click “Unattended” if you wish to suppress any errors that may occur during the restore, and click “Restore.”

BOOTING FROM THE NETWORK ENABLED DOS FLOPPY & RUNNING UBDR.EXE

There are times when a complete disk or hardware failure leaves you without an Operating System from which to boot. It is in this situation that the disaster recovery executable is used by booting from a DOS diskette, running “UBDR.exe,” and restoring an image backup from a local tape device or a designated path on the network. Our UBDR utility also has the functionality of adding “switches” to its executable, thereby opening the option of creating a small batch file or a script to further automate the image restore. Hence, the backup administrator could create a DOS-boot disk with a batch file sitting in the root of the floppy disk and, if the machine needs to be restored, the user doing the actual restore would have to simply boot from the diskette and type one command (the name of the batch file).

Upon booting from the network floppy disk, DOS will load the driver for the NIC card and attempt to lease an IP Address from the DHCP server. Depending on how the floppy boot disk was created, once the DHCP server assigns an IP address to the machine, you will be prompted to type in a password in order to gain access into the network where “UBDR.exe” and the image directories reside. A username and password for the domain can be defined in the boot disk.

NOTE: UBDR cannot access a remote tape drive through DOS—this can only be done through the GUI!

“UBDR.exe” is run from the command line. The executable is located in “C:\Program Files\UltraBac Software\UltraBac7\recover\ubdr.exe.” If UltraBac is stored on a remote machine, then “UBDR.exe” may be run remotely by typing in the path to the executable. Example: “\\machinename\ubprog\recover\ubdr.exe”

NOTE: Running UBDR with the “/?” switch will list all options applicable when running UBDR.



```
Command Prompt
UltraBac Network Disaster Recovery v4.1
This software is copyright Barratt Edwards International Corp 2000-2001
You must have a valid software license to run this software.

This program can be used to backup and restore image backups to/from disk
or tape drives (via AFPD) accessible to DOS. If used incorrectly, this program
can destroy the contents of any attached disk device.

For more information:
BEC Corp/UltraBac.com
13015 Mann St. #200
Bellevue, WA 98007
USA
Tel: 425-644-6000
URL: http://www.ultrabac.com
Support: support@ultrabac.com

UBDR.EXE Options:
-b Backup operation
-p[path] Path (or tapes) to use for backup/restore
-d[#,#] Disk# (and partition#) (both start at 1)
Restore options:
-r[n] Restore operation; n specifies index (from 1)
-i[n] Image backup session to load (default is 1 if not specified)
-aid Restore MBR (follow by 'd' to indicate restore image data also)

Examples:
UBDR -r3 -s2 -sd -p\\imagesrv\mybackup -d1,2
will restore the MBR & 3rd image file from the 2nd image backup session
located at \\imagesrv\mybackup to disk1, partition2
UBDR -b -p1 -d2
will backup the entire 2nd physical drive to the first tape drive.
```

Here's a batch file example: if the command "ubdr.exe -r1 -md -p\\fred\G\$\myprecious -d1,1" was to be placed in a batch file, it would restore the first image file from \\fred\G\$\myprecious, and it's Master Boot Record (partition info), to the first partition on the first hard drive seen by the machine.

NOTE: At any time the user may select "Esc," then "Enter" to end the specified operation.

Having run "UBDR.exe," you will be provided with the main menu:

- Restore
- Copy Disk/Partition [Static Mirror]
- Backup

RESTORE

The restore procedure provides for a boot, or non-boot, disk or partition level image restore from a local ASPI supported tape device, or from a local or remote disk.

- Enter the Source Path.

If restoring the image from a local tape device, typing "1" will designate "tape 1," typing "2" will designate "tape 2," etc. The tape devices are designated numerically, beginning with "1," with the numeric order based on SCSI order.

If restoring the image from a disk path, type in the UNC pathname to the directory where the image resides.

- A list of the partition(s) found on the specified storage device will be displayed along with the volume label, backup date, and backup description. Type in the <Number> of the partition to restore.

- Select the Destination Disk.

The local attached disk(s) will be displayed. To choose the destination disk, type the <Number> of the desired destination disk. If restoring from a partition level image, you need to do one of two things prior to performing the restore:

- partition the destination drive before hand; or
- restore the MBR prior to running the partition restore.

- You will be prompted as to whether you wish to restore the MBR first. If "Yes" is selected then the MBR will be restored and you will be returned to the main menu. If "No" is selected then the image restore will begin.

- After the restore is complete, reboot the machine.

OBDR

If your tape drive is compatible with OBDR (One Button Disaster Recovery), "UBDR.exe" has two switches. By default, when UBDR exits, it switches the tape drive back into CD-

ROM mode so that subsequent partitions can be restored. If you choose to reboot while the tape drive is still in CD-ROM mode, which it has to be in order for OBDR to work, the tape drive will not be seen by the operating system. The "-tp" switch will force the tape drive into tape drive mode. This is typically used with the "-cr" switch, which will reboot the machine after UBDR has finished.

Static Mirror Image Backup

The Static Mirror Image backup consists of copying sectors from the source disk or partition to a blank disk or partition on the same machine. Mirroring the disk or partition through UltraBac can only be done **LOCALLY**, not remotely. The procedure consists of creating a partition or disk “device” with which to store the image backup, then directing UltraBac to image the source to the target. Follow the instructions below to mirror a local partition.

MIRRORING – PARTITION LEVEL

First of all, the target partition to which you're mirroring must be the same size as the source. For example, if I were mirroring my C partition, which is three GB in size, the partition to which I'm copying my C partition must be three GB as well. The target partition in the mirror image must be created through Disk Management and unassigned of a drive letter. The partition to which you're mirroring should look similar to the screenshot shown below. Notice the second partition on Disk 1 is unassigned of a drive letter.



When the target partition has been created and unassigned of a drive letter, launch UltraBac and access “Select”/”Storage Device,” then click the “Partition” tab. Click the green icon to add the target device in the mirror. The newly created partition, unassigned of a drive letter, should be available for selection by clicking the drop-down box. After the partition device has been created, start the Backup Wizard in UltraBac, select the “Image Disaster Recover Agent” option, and click “Next.” Type a <Set Description>, click “Next,” and click “Finish.” Here you should see the enumeration of your local disk drives, available as selectable objects. Select the partition by double-clicking on the desired disk and selecting the partition(s) to be backed up. At this point, you can either save the set to run the image backup through the Scheduler at a later date or run the image backup interactively.

To save the set, “File”/”Save As,” type a <Name> for the set and click “Save.” To perform an interactive image backup with the set already loaded, click the “Device” icon on the lower toolbar, click the “Partition” tab, select the partition device, and click “OK.” To perform the backup, click the “Backup” button on the toolbar or click “Operations”/”Backup Selected Files.”

MIRRORING – DISK LEVEL

Mirroring the entire disk is similar to mirroring partitions as described above. The target disk to which you're mirroring must be the same size or bigger than the source disk.

Prepare the target disk by deleting all partitions so that it appears as “Unallocated” space through Disk Management. Then go into UltraBac, click “Select”/”Storage Devices”/”Image,” and click the “Add” icon. Under the drop-down box, the target disk appearing as “Unallocated” should be a selectable object. Choose the destination disk and click “OK.”

After the partition device has been created, start the Backup Wizard in UltraBac, select the “Image Disaster Recover Agent” option, and click “Next.” Type a <Set Description>, click “Next,” and click “Finish.” Here you should see the enumeration of your local disk drives, available as selectable objects. Select the object to be mirrored by double-clicking on the desired disk. At this point, you can either save the set to run the image backup through the Scheduler at a later date or run the image backup interactively.

To save the set, “File”/”Save As,” type a <Name> for the set and click “Save.” To perform an interactive image backup with the set already loaded, click the “Device” icon on the lower toolbar, click the “Partition” tab, select the partition device, and click “OK.” To perform the backup, click the “Backup” button on the toolbar or click “Operations”/”Backup Selected Files.”

RECOVERING WITH THE MIRRORED DISK

Booting from the mirrored partition or disk requires a couple steps. If you're booting from a mirrored SCSI disk, point the SCSI bios to boot off of the SCSI ID assigned to the mirrored drive. If the server has swappable drives, all you must to do is simply replace the failed drive with the mirrored drive.

If you're booting from a partition, edit the “boot.ini” file to boot from the mirrored partition. If you can't edit the “boot.ini” file due to a failed OS partition, you can boot from a DOS floppy disk and edit the “boot.ini” file with the DOS file editor. For instance, if the mirrored drive was Partition 3 on Disk 1, you'd change the “boot.ini” file to look similar to the example below:

```
[boot loader]
timeout=30
default=multi(0)disk(0)rdisk(1)partition(3)\WINNT
[operating systems]
multi(0)disk(0)rdisk(1)partition(1)\WINNT=“Microsoft Windows 2000 Server” /fastdetect
```

Locked File Backup Agent

This agent is an extra cost option. The use of the optional Locked File Backup agent is controlled by the UltraBac 7.x licensing module. Permanent licensing can be updated by telephone or Web site to include the use of the Locked File Backup agent after purchase.

The Locked File Backup agent is designed to temporarily “freeze” the target partition before the backup begins, and “thaw” the partition after the backup completes. Freezing the partition before the backup allows UltraBac to back up locked files that would otherwise be skipped if the partition wasn't temporarily “frozen.” During a regular file-by-file backup, without using the Locked File agent, one may find some files being skipped along with errors such as “Sharing Violation” or “Exclusively Locked.” The Locked File agent allows the backup of these files.

NOTE: The Locked File Backup agent is NOT to be used on machines with a “Dynamic Disks” configuration!

INSTALLATION

UltraBac installs the Locked File Backup agent by default when the Win32File agent is installed on a machine. The agent is either enabled or disabled by the licensing module. The actual file that enables the Locked File Backup agent is called “DF2K.sys,” located in “%systemroot%\system32\drivers,” and is only active when the machine has been rebooted after installation of UltraBac 7.x. For more information regarding the installation of the Win32File agent, visit the following link:
http://www.ultrabac.com/kb7/UltraBac_Help/UltraBac_User_Manual/agent_installation.htm

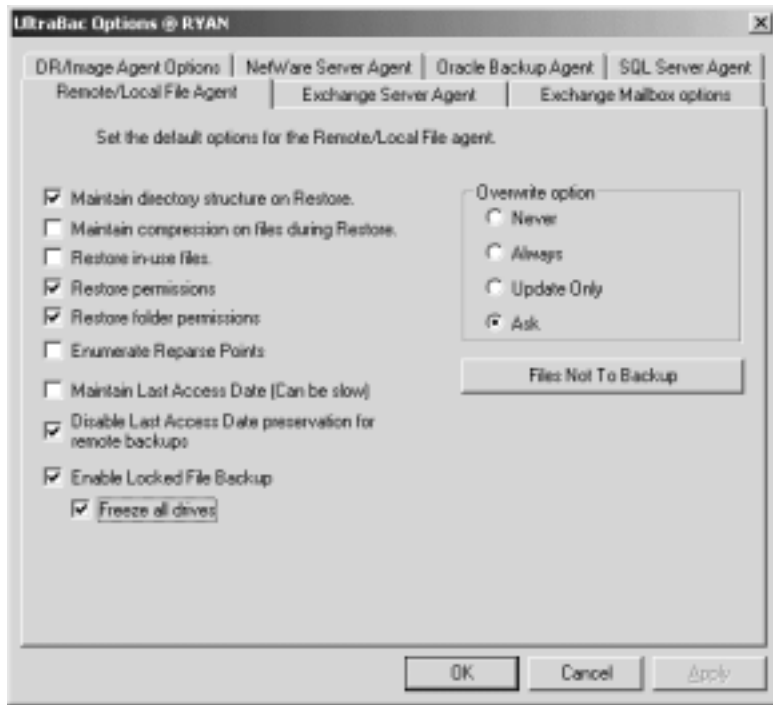
USAGE

The global preference to enable the Locked File Backup agent is located in “Tools”/”Options”/”Agents”/”Remote/Local File Agent.”

By checking the “Enable Locked File Backup” preference, UltraBac attempts to temporarily “freeze” each volume it backs up during a Win32File agent session. If UltraBac attempts to use the Locked File Backup agent on a machine that isn't licensed, or the module hasn't been installed on the machine it's trying to back up, UltraBac will report the appropriate error message and continue with its regular file-by-file backup without freezing the volume. Use the Locked File Backup driver when trying to back up exclusively locked files like “WINS,” “DHCP” files, “PST” mail files, or any other files that you'd like to back up that are being skipped by the regular file-by-file backup session.

Directly underneath the “Enable Locked File Backup” check box, there is an option to “Freeze All Drives.” This option is most commonly used when backing up a relational database that spans across multiple partitions. In order to capture everything in the database while maintaining the database file integrity, all the drives must be frozen at the time of the backup. Use this option when backing up third party relational databases like an accounting

database or Lotus Notes, only if the databases/transaction logs span across multiple partitions.



If the Locked File Backup agent is to be used on only some of the machines, but not on others, the preference to use the agent can be modified through the set level through the GUI or by opening the set with a text editor. Modifying the set through the GUI is simple. Open a Win32File set by clicking “File”/”Open” and double-clicking on the set to be modified. Click “File”/”Set Properties”/”Remote Local File Agent—Backup Set Options” and select or deselect your Locked File preference.

The Locked File Backup preference can also be edited in the set level by opening up the set in Notepad. The following is an example of what a typical backup set should look like in Notepad:

```
; Set created with UltraBac 7.0.1 it will not work  
; with earlier versions of UltraBac.  
;  
%Backup of \\papa  
@:WIN32\\papa\@papa  
+C:\Inetpub\*.*/R  
:AgentOption LockedFileBackup=1  
:AgentOption FreezeAllDrives=1  
:AgentOption EnumReparsePoints=0  
:AgentOption EnumOffline=0
```

:AgentOption MaintainLastAccessDate=0
:AgentOption DisablePreserveUncLastAccessDate=1

Change the “1” to a “0” in the “LockedFileBackup” line to disable the “Locked File Backup” Agent. Change the “1” to a “0” in the “FreezeAllDrives” line to disable freezing all the partitions at the same time.

UNINSTALL

The Locked File Backup agent can be uninstalled through “Device Manager” in Windows 2000. Complete the following steps to remove the “Locked File Backup” driver.

- Access “Computer Management.”
- Highlight “Device Manager,” right-click on it, and select “View”/“Show Hidden Devices.”
- Right-click on “Device Manager” again and select “View”/“Devices by Connection.”



- Scroll down to “UltraBac Locked File Backup Driver,” right-click on it, and select “Properties.”
- Remove the driver through the “Driver” tab.

When the machine is rebooted, the UltraBac “Locked File Backup” agent will be uninstalled.

Exchange 2000 Agent

INSTALLATION

NOTE: Running a remote backup of Exchange 2000 (E2K) requires the installation of the UltraBac 7.x E2K agent. Please visit the following link for agent installation instructions: http://www.ultrabac.com/kb7/UltraBac_Help/UltraBac_User_Manual/agent_installation.htm

The account that runs under the UltraBac Scheduler service must have sufficient privileges to run an E2K backup and restore. These permissions are defined through the Exchange System Manager, which must be installed on the UltraBac host machine in order to perform backups. **NOTE:** Important Restriction – If the System Manager isn't installed on the UltraBac machine, the user will not be able to create an Exchange 2000 backup set. The System Manager can be installed by running the setup from the Microsoft Exchange 2000 CD. Once the Exchange agent has been licensed, the System Manager is the only component needed to enable the agent.

CONFIGURATION

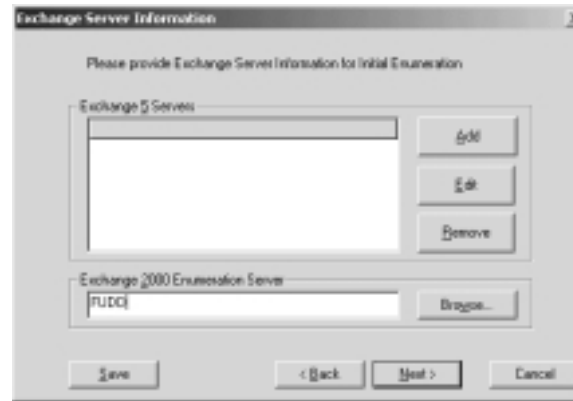
The Exchange 2000 administrator will have ultimate authority in defining E2K permissions, but one example follows.

Open the Exchange System Manager. Right-click on the server name that you want to back up, click “Properties,” click the “Security” tab, click “Add,” and add the user who has been assigned to logon under the UltraBac Scheduler service. This user should also appear in the security properties under the “Mailbox Store” and “Public Folder Store.” The agent has been configured once the correct permissions have been added in the E2K System Manager and the server is viewable from within the utility on the UltraBac machine.

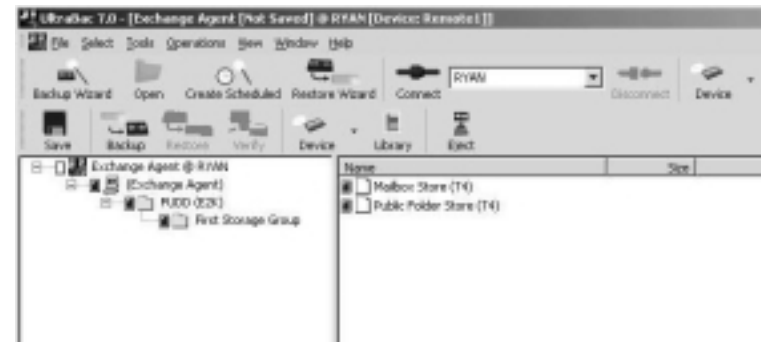
BACKUP

There are three different kinds of Exchange 2000 backups. When creating a backup set, the administrator can choose to back up the entire database, incrementally or differentially. A complete backup set requires the “Full” selection logic, while “Incremental” or “Differential” should be selected to back up only the transaction logs. Similar to SQL backups, the Exchange agent will clear the transaction logs in every full and incremental backup. The only instance where the agent doesn't clear the transaction logs is during a differential backup, which allows you to back up all the transaction logs since the last FULL backup.

Begin the set creation through the Backup Wizard by clicking “File”/”New”/”Exchange Agent”/”Next,” which brings UltraBac to the screen shown below. If the E2K System Manager isn't installed on the machine, the “Exchange 2000 Enumeration Server” box will be grayed out.



Type in the <Name> of the E2K Server and click “Next.” At this point, UltraBac will attempt to enumerate all the Exchange 2000 servers listed in the domain, or all the E2K servers seen through the System Manager. Choose either “All Objects” or select the server(s) to continue with the set creation, and click “Next.” Enter a <Set Description>, leave the default setting of the File Selection Logic, and click “Next.” The “View/Edit files in the backup” radio button will be selected by default. At this point, you can save the set, back it up, or “load” the set to perform an interactive or ad hoc backup. For this example, leave the default setting of “View/Edit files in the backup,” and click “Finish.” A loaded set is shown in the example screenshot below.



In order to create a set from this screen, click “Operations”/”Backup Selected Files,” choose “Incremental,” “Differential,” or “Full” by clicking the drop-down list box. And finally, click “Save” and type a <Name> for the E2K backup set.

Interactive backups can also be performed through this screen by clicking “Operations”/”Backup Selected Files.”

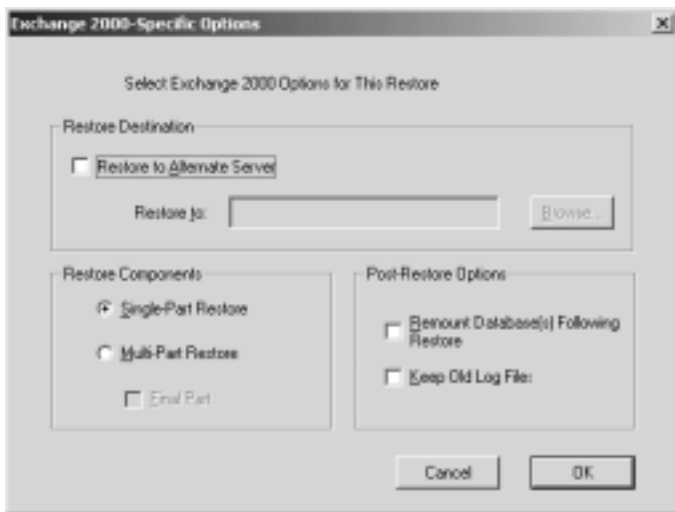
NOTE: A shortcut can be taken to create an Exchange 2000 set by completing the following sequence: “File”/”New Backup Wizard”/”Exchange Agent”/”Next”/”<E2K server name>”/”Next”/”click the server or “All Objects”/”Next”/”<Set Description> and choose the File Selection Logic”/”Next”/”Save Backup to File”/”Finish” and give the set a name.

RESTORE

Prerequisites:

- You must have an Exchange 2000 installation with the same service pack level as the machine that was originally backed up. In other words, if an E2K machine was backed up with SP1, the target restore machine must also be running E2K with SP1.
- All the services for Microsoft Exchange must be running and the Mailbox and Public Folder Store must be dismounted. Microsoft has taken an extra precaution to ensure one does not mistakenly overwrite an information store that Exchange 5.5 didn't have. In Exchange 2000, in order to overwrite the Mailbox and Public Folder Store, a preference has to be checked for a successful restore to take place. Follow these steps:
 1. Open "System Manager."
 2. Expand the hierarchical tree until you can see the "Mailbox Store" and "Public Folder Store."
 3. Right-click on the "Mailbox Store" and select "Dismount Store."
 4. Right-click on the "Public Folder Store" and select "Dismount Store."
 5. Right-click on the "Mailbox Store," click "Properties," and access the "Database" tab.
 6. Click "This Database can be overwritten by a restore"/"OK."
 7. Right-click on the "Public Folder Store," click "Properties," and access the "Database" tab.
 8. Click "This Database can be overwritten by a restore"/"OK."

Load the index from either storage media or disk and select the objects for restore. Click "Operations"/"Restore Selected Files," and UltraBac will display the "General Restore Options" screen. Click the "Exchange 2000 Options" button in the "General Restore Options" dialog box. The screen should look like the following:



In order to restore to a remote Exchange 2000 machine, click “Browse” and register the remote machine by typing its <Name> in the “*Specify Enumeration Server*” dialog box. After it's been registered, the remote machine name should appear in the “Restore Destination” box. For a single part restore, choose the appropriate radio button and select the “Post-Restore Options.” If you choose not to “Remount Database(s) Following Restore,” you can simply do it manually through System Manager after the restore is complete. Click “OK” and UltraBac will bring you back to the “*General Restore Options*” dialog box. Click “Next,” check the “Unattended” box if you don't want to view any errors or warnings if they should occur during the restore, and click “Restore.”

OVERVIEW OF “MULTIPART RESTORE”

In Exchange 2000, a Multipart Restore is essentially restoring a full backup including incrementals or differentials in one restore “session.” The order of the Multipart Restore should be the Full backup first, followed by incrementals or differentials from oldest to most recent. In other words, the most recent incremental or differential backup will be the last to be restored.

Multipart Restores are just like single part restores. In the “*Exchange 2000-Specific Options*” dialog box shown above, click the “Multi-Part Restore” radio button and the “Post-Restore Options” should become grayed out. Click “OK”/“Next,” check the “Unattended” box if you wish, and click “Restore.” When the first restore is complete, repeat the same process by loading the index from an incremental or differential backup, and run the restore again. When you get to the last incremental, click the “Final Part” check box in the “Exchange 2000-Specific Options” and either of the preferences in the “Post-Restore Options” box. When the last restore is complete, the Mailbox and Public Folders store may be mounted again.

NOTE: Make certain that the incremental sets are restored in chronological order from oldest to most recent.

Exchange 5.5 Agent

INSTALLATION / CONFIGURATION

The account that runs the UltraBac Scheduler service must be assigned the proper permissions to allow the backup of the information and directory store on an Exchange 5.5 machine. The Microsoft Exchange Administrator must be installed on the UltraBac machine in order to perform Exchange 5.5 backups. You can install Exchange Administrator by running the setup from the Microsoft Exchange 5.5 CD.

Ostensibly, the account running Exchange backups should contain the “Service Account Admin” privilege assigned through Exchange Administrator, but “Permissions Admin” should suffice. The Exchange Administrator will ultimately decide which account can be assigned the proper privileges, but one example follows:

Open the Exchange Administrator and connect to the server you'll be backing up by clicking “File”/”Connect to Server.” The hierarchy is Organization, Site, Configuration, and Server.

Highlight the Organization Object – On the toolbar, click “File”/”Properties,” and click the “Permissions” tab in the “*Properties*” dialog box. Add the UltraBac user account, or the user account name assigned under the UltraBac Scheduler service, and grant it “Service Account Admin” authority.

Highlight the Site Object – On the toolbar, click “File”/”Properties,” and click the “Permissions” tab in the “*Properties*” dialog box. Add the UltraBac user account, and grant it “Service Account Admin” authority.

Highlight the Configuration Object – On the toolbar, click “File”/”Properties,” and click the “Permissions” tab in the “*Properties*” dialog box. Add the UltraBac user account, and grant it “Service Account Admin” authority.

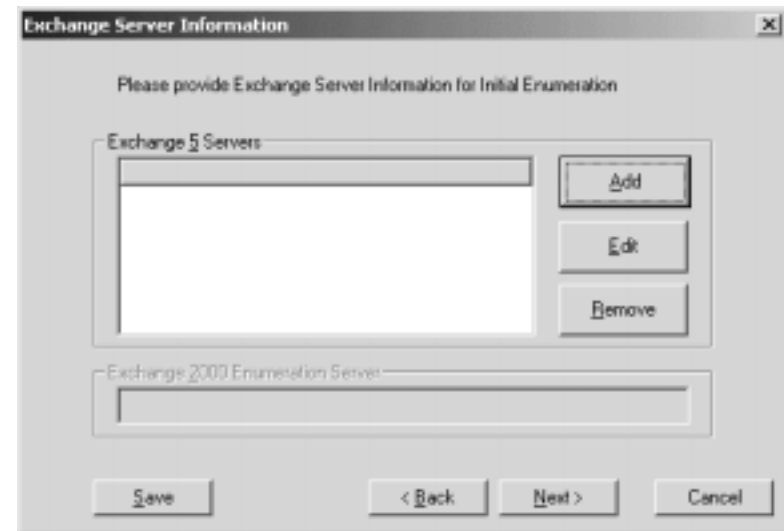
The UltraBac Exchange agent is built to run a backup of the active Exchange databases while it's online. When creating a backup set, the administrator can back up the databases completely, incrementally, or differentially.

A complete backup requires the “All Files” selection logic, while the incremental and differential backups require the “Modified Files” selection logic. The incremental backup requires the “Clear Archive Bit” option enabled, while the differential option requires it NOT be enabled. Incremental and differential backups are similar in that the transaction logs are the only part of Exchange being backed up. The difference is that while an incremental applies the transaction logs to the database, the differential doesn't, and they won't be cleared until the next full backup is completed.

NOTE: Circular logging must be disabled in order to be able to perform incremental or differential backups. Circular logging is enabled/disabled through the Exchange Administrator by highlighting the server, clicking “Properties,” clicking the “Advanced” tab, and unchecking “Circular Logging.”

BACKUP

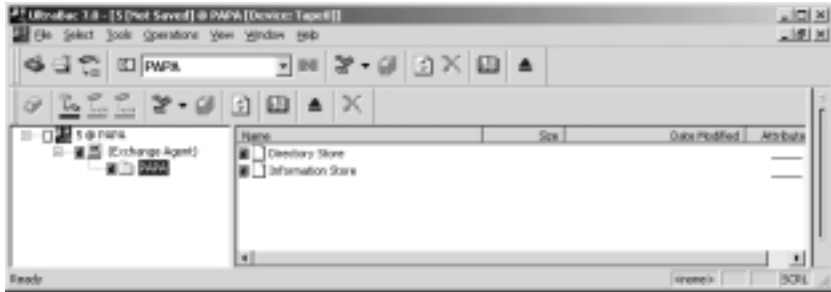
Again, the Exchange Administrator must be installed on the machine in order for the backup to work. Start the set creation by clicking “File”/”New Backup Wizard”/”Exchange Agent”/”Next.”



Click “Add,” type the <Name> of the Exchange 5.5 server(s) you're going to back up, click “OK,” and click “Next.” Depending on whether you entered more than one server in the “Exchange Server Information” dialog box, more than one server may be listed in the “Agent Object Enumerator” dialog box. You can create a multiple server set by clicking “All Objects,” or if you just want to include one server in the backup set, click the “Agent Object,” and click “Next.” Type a <Set Description> for identification purposes and choose the appropriate File Selection Logic (see the **INSTALLATION / CONFIGURATION** section to be briefed on full, incremental, and differential backups). The next screen will give three choices:

- Save Backup to File.
- Backup Selected Files to device 'Tape 0.'
- View/Edit Files in the Backup.

For this example, leave the default radio button, “View/Edit Files in the Backup,” and click “Finish.”

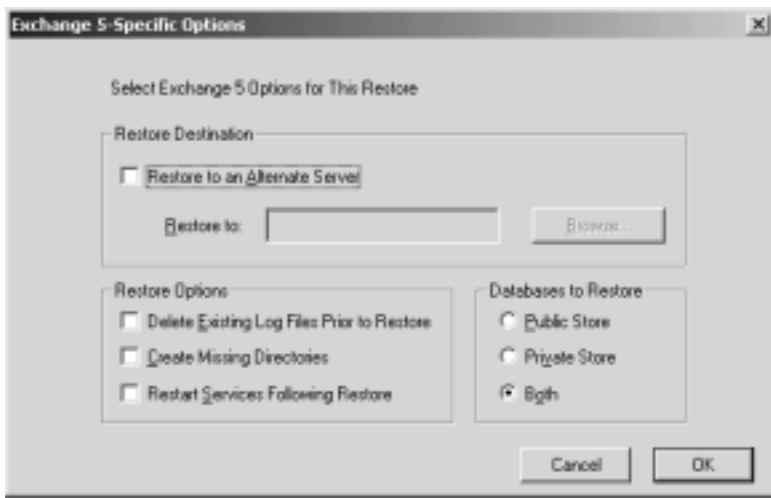


From this screen, you can save the set, or perform an interactive backup, by clicking “Operations”/”Backup Selected Files.” The next screen will allow you to choose which type of backup or set you’d like to create, and then continue with the backup.

RESTORE

The architecture of Exchange 5.5 is fairly simple. The private and public information store consists only of two files: the “priv.edb” and the “pub.edb.” If restoring to an alternate Exchange 5.5 server on the network, these will be the only two files that can be restored. With Exchange 5.5, unless you’re restoring back to the original location, the directory store cannot be restored—only the information store.

The System Attendant service is the only service that must be started in order to restore an Exchange 5.5 server. Prior to attempting the restore, make sure the System Attendant service is running otherwise UltraBac will not be able to contact its target location upon restore. Start the restore by clicking “File”/”Load Index for Restore/Verify”/”Load Index from Storage Media,” and click “Exchange 5 Options.”



Restore to an Alternate Server – This requires a few prerequisites be applied to the target machine:

- The remote Exchange box must have an installation of Exchange 5.5 server installed with the System Attendant service running.
- The same Site AND Organization name must exist on the target machine. This includes case sensitivity.
- The same service pack level and any patches that were applied to the original Exchange 5.5 machine must exist on the target machine as well.

NOTE: Without applying each of the steps listed above, the Exchange restore will fail. Be sure to double check these steps.

Delete Existing Log Files Prior to Restore – Will remove log files pre-existing on the target Exchange server. Leaving the box unchecked will cause the log files to remain in place. After starting the service, and after the database commits transactions contained in the “restored” log files, all transactions contained in qualifying pre-existing log files will be committed. To qualify, the pre-existing log files must be contiguous and must be sequential to the highest restored log file according to the numeric log file naming sequence.

Create Missing Directories – Will dynamically create any folders that didn't exist on the target machine, but that did exist on the storage media.

Restart Services Following Restore – Will restart five Exchange services after the restore is complete.

When the appropriate preferences are checked, click “OK”/”Next.” If the restore is to be run in “Silent” mode, click “Unattended,” otherwise, click “Restore.”

After the restore is complete, UltraBac recommends the user run the “isinteg -patch” utility from the command line. See the Microsoft Exchange 5.5 documentation for more information regarding this utility.

Exchange Individual Mailbox Backup & Restore

INTRODUCTION

Using UltraBac's Mailbox agent functionality, individual Microsoft Exchange 5.5 and Exchange 2000 mailboxes can be backed up and restored on an individual level. This functionality is part of the Exchange agent extra cost option. The use of the optional Exchange agent is controlled by the UltraBac Software licensing module. Pre-license evaluation versions of UltraBac default to Exchange agent enabled status.

INSTALLATION / USE

In order to use the Individual Mailbox Backup agent, you must:

- Be licensed to use the Exchange agent. Evaluation copies default with this agent enabled. Use the “Tools”/“License Management”/“Edit License” option path to see if the Exchange agent is enabled.
- Define the account that runs the UltraBac Scheduler service, usually “UltraBac,” to Exchange and set up as an Exchange Administrator in order for unattended Individual Mailbox Exchange Backups to occur.
- Install either the Outlook or Exchange client on the UltraBac host machine.
- Log on as the UltraBac Scheduler account and create an Exchange profile called “UBMAILBOX.”

NOTE: The single Mailbox agent may fail to function properly if the latest “mapisvc.inf” and “mapi32.dll” files are not updated in “%systemroot%\system32.” Without the latest MAPI files, users may notice that not everything is getting backed up, like subfolders, only some email contained in an in-box, etc. To obtain the latest “mapisvc.inf” and “mapi32.dll,” download the most recent Exchange service pack in the “I386” directory.

ULTRABAC SCHEDULER ACCOUNT DEFINED AS AN EXCHANGE ADMINISTRATOR

This account needs to be defined on the Exchange Server as a “Permissions Admin” or a “Service Account Admin” (“Service Account Admin” has more authority). Exactly how you do this is up to the administrator, but one example follows:

- Open the Microsoft Exchange Administrator application on the Exchange server (or from any NT/2000 server if this application has been installed). The hierarchy is Organization, Site, Configuration, and then Server.
- Highlight the “Organization” icon that contains the Exchange server to be backed up. Click on the “Permissions” tab. Add UltraBac (the name of account name that the UltraBac Scheduler service logs on as) as a Service Account Admin to the Organization.

- Now highlight the “Site” icon that contains the same Exchange server. Click on the “Permissions” tab. Add UltraBac as a Service Account Admin to the Site.
- Now highlight the “Configuration” folder contained by the above organization. Click on the “Permissions” tab. Add UltraBac as a Service Account Admin.
- UltraBac with Service Account Admin authority should automatically be added to the Exchange server. To check, highlight the “Exchange Server” folder. Click on the “Permissions” tab. UltraBac should appear with Service Account Admin authority. If it doesn't appear, add UltraBac as a Service Account Admin.

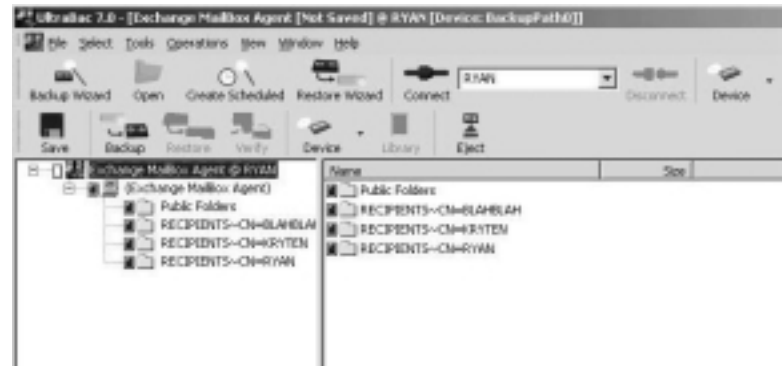
CREATING A UBMALBOX EXCHANGE PROFILE

Create an Exchange profile called “UBMAILBOX” while logged on as the account that will perform the backup. The profile must be called “UBMAILBOX” and must specify the Exchange server where the mailboxes being backed up reside. From the Window's task bar select “Tools”/”Settings”/”Control Panel”/”Mail”/”Show Profiles”/”Add” to start the Microsoft Outlook Setup Wizard and create the Exchange profile.

For more information see: [UBQ: UBO000159 Creating the UBMALBOX Exchange Profile.](#)

CREATING AN INDIVIDUAL MAILBOX SET

Use the option path “File”/”New Backup Wizard”/”Mailbox Agent”/”Next,” enter the <Name> of the Organization, Site, and Exchange server you want to backup, click “Next,” enter <Set Description>/”Next”/”Finish.” UltraBac will then connect to the Exchange server through MAPI and enumerate all the mailboxes so that they appear in the screen.



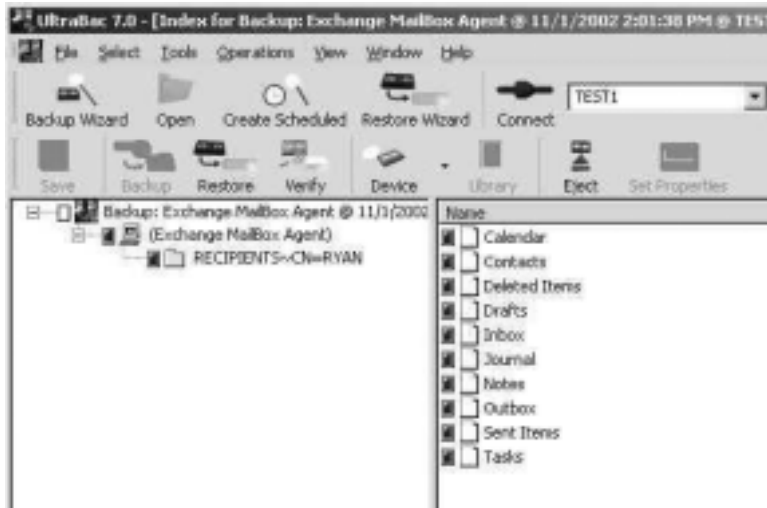
From this point, you can choose the mailboxes you want to include in the set by including or excluding them as desired. We recommend you only back up the mission critical mailboxes through the Mailbox agent and use the Exchange agent to back up the rest of them. (The difference in time between backing up all the mailboxes through MAPI versus backing them up through the Exchange agent is vast, and most administrators won't have the time to run a backup of all their mailboxes using the former method.)

There is a chance you may encounter a problem trying to enumerate the mailboxes through UltraBac. If you should receive any error messages while trying to “load” the set, make certain that you have the latest “mapi32.dll” and “mapisvc.inf” in your “C:\%systemroot%\system32” directory. Those files are critical and must be updated to allow the Mailbox agent to work. They can be found in the Microsoft Exchange 5.5 Service Pack 4 CD.

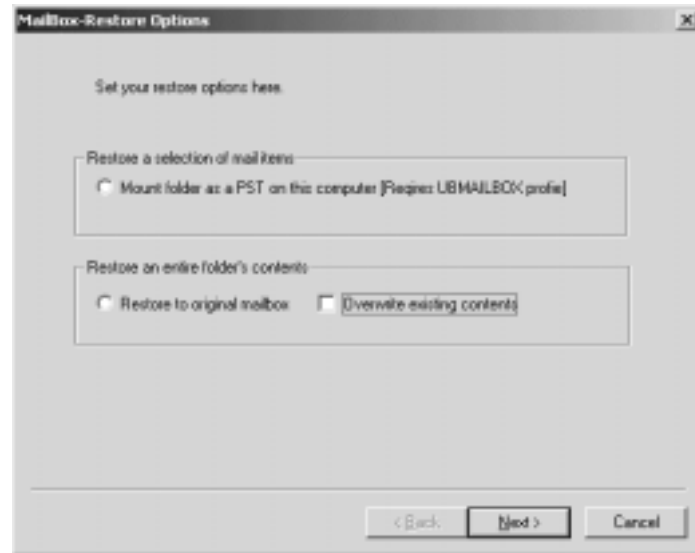
RESTORING FILES FROM AN INDIVIDUAL MAILBOX BACKUP SET

Restoring files from an Individual Mailbox Backup Set is performed similarly to typical restore with a few exceptions. The mailbox folders can be restored to their original location or can be restored as mounted Exchange PST (Personal Folder Storage) files.

As with a typical restore, click “File”/“Load Index for Restore/Verify,” highlight one of the options—either “Retrieve from online disk index” or “Retrieve from storage media,” click “Next,” highlight the Single Mailbox set you want to restore from, click “Next,” and the mailbox(s) should appear on the screen. A restore screen example follows:



- Select mailbox folders or expand a mailbox folder and select individual folders.
- Click “Operations”/“Restore Selected Files” and you’ll have the option to restore to a PST file or overwrite the mailbox.
- Selecting “Mount folder as a PST on this computer...” will restore each mailbox folder as a mounted “.pst” file on the “UBMAILBOX” profile. The user can drag and drop items (or the complete folder) from a mounted “.pst” folder to the mailbox folders. This option is typically used when restoring individual items within mailbox folders (e.g. when restoring a few emails) or to view the restored information before committing it to the mailbox. After restoring, the automatically mounted “.pst” files need to be closed (dismounted) from within Outlook (or Exchange).



NOTE: If the mounted “.pst” file is to remain mounted, the “.pst” file should be closed (dismounted), moved from the <UltraBacRoot>\”MailboxTempStore” folder to a permanent location and then re-mounted within Outlook (or Exchange). If the “.pst” file is left mounted while in the <UltraBacRoot>\”MailboxTempStore” location, future individual mailbox backups will delete the “.pst” file or the backup may fail. For more information see: [UBQ: UBQ000160 Mounting Exchange PST Profiles](#).

- Selecting “Restore to original mailbox” will restore the complete contents of each selected folder to the original mailbox folder. When selecting “DELETE existing contents of folders...” the existing folder contents will be deleted prior to performing the restore. If un-selected, the restore will append all emails to the folders. **NOTE:** Unselecting the “DELETE existing contents of folder...” option may result in duplicate email items within the original folder.
- Click “Next,” click “Run Unattended” if you'd like, and finally click “Restore.” Make sure to view the restore log when the operation is complete to ensure the success of the restore.

Selecting “Run Unattended” will post messages in the logs, instead of posting them on the desktop, allowing the restore to proceed without user intervention. **NOTE:** Always review the restore log for errors but especially when using this option.

INDIVIDUAL MAILBOX BACKUP LIMITATIONS

UltraBac's Individual Mailbox Backup & Restore is available in UltraBac Versions 6.1 and greater.

For more information see: [UBQ: UBQ000185—Individual Mailbox Backup Troubleshooting](#).

SQL Agent

INSTALLATION

The SQL agent must be installed on the UltraBac host to run local or remote SQL backups. Please visit the following link for installation instructions:

http://www.ultrabac.com/kb7/UltraBac_Help/Quick_Start_Guide/Installation.htm

Using the UltraBac 7.x SQL agent, Microsoft SQL may now be backed up online, without stopping the services prior to the backup. This agent is an extra cost option and is Microsoft SQL specific. The use of the optional SQL agent is controlled by the UltraBac 7.x licensing module. Permanent licensing can be updated by telephone or Web site to include the use of the SQL agent after purchase.

Prerequisites:

- Install the SQL client software on the UltraBac host machine (SQL Client Network Utility). This can be installed from the Microsoft SQL 7.0 CD.
- Run the SQL Client Network Utility, select “Named Pipes” as the protocol under the “General” tab, and add the <Server Name> in the “Alias” tab.

Recommended:

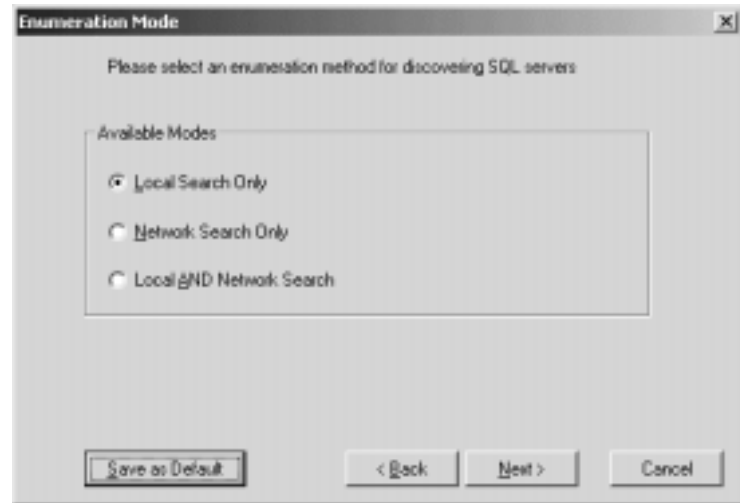
- Install SQL Enterprise Manager to ensure connectivity to the remote machine isn't a problem.
- Also, we recommend installing the SQL Profiler and the SQL Query Analyzer. When troubleshooting SQL connectivity issues, these utilities are almost essential in tracking down the problem(s). With these utilities installed, our technical support representative can quickly narrow down the issue, and usually resolve it in a timely manner. All of the listed utilities can be installed from the Microsoft SQL Server CD.

NOTE: UltraBac's SQL agent performs both “VDI” (Virtual Device Interface) and “Named Pipes” backups. You can choose whether to use “VDI” or “Named Pipes” when creating the SQL set. This will be explained in the **CONFIGURATION** section.

CONFIGURATION / BACKUP

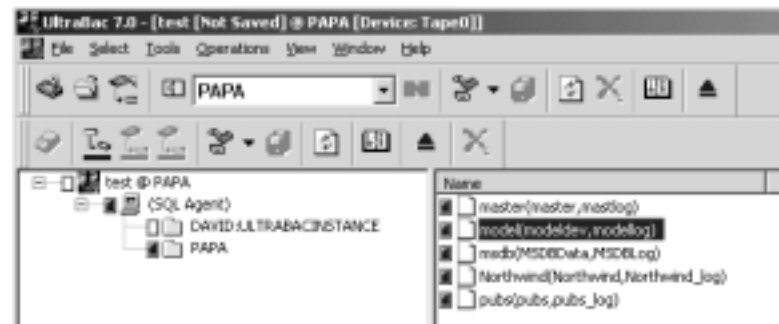
When creating a SQL backup set, the user can back up the database completely, incrementally, or differentially. A complete backup (full) will dump the transaction logs, truncate them, and back up the databases in their entirety. An incremental backup will back up the transaction logs and truncate them. A differential backup will back up only transaction logs, without truncating them.

Start the Backup Wizard by clicking “Operations”/”New Backup Wizard”/”SQL Agent”/”Next,” which brings you to the following dialog box.



“Local Search Only” will display the servers registered in the “Client Network Utility,” “Network Search Only” will query all the SQL servers on the network and list them on the next screen, and “Local AND Network Search” will combine the two prior options. Querying the network of all its SQL servers can take quite a long time depending on how many SQL servers there are and how the SQL security login is configured. To decrease the time it takes for the set creation, add the SQL server name in the “Client Network Utility,” choose “Local Search Only,” and click the “Save as Default” button. That way, UltraBac will not query the network and search for the SQL server you’re trying to back up—it will simply get its information from the client utility.

For this example, use the “Local Search Only” option, and click “Next.” The following screen will display the servers listed in the “Client Network Utility.” Click the server you’re trying to back up and click “Next.” UltraBac will allow SQL or Windows authentication when connecting to the SQL instance. Since not all SQL servers have the same permissions, every SQL set can be configured to run under a different SQL or Windows user and password. Choose the appropriate radio button, enter the <Account Info> if “SQL Security” was chosen, and click “Next.” Enter a <Set Description>, click “Next,” and click “Finish.”



If the databases were enumerated successfully, you should be able to double-click on the machine name and see all the databases listed on the right hand side of the screen (as seen in the screenshot above). Click “Operations”/”Backup Selected Files,” click the drop-down list box to select between full, incremental, and differential backup, click “Save Set,” and save it in the specified directory. Once the set is saved, you can continue with the backup, or click “Cancel” and schedule the set to run at a later date.

Shortcut for creating the set: “File”/”New Backup Wizard”/”SQL Agent”/”Next”/”Local Search Only”/”Next”/ click the server to back up /”Next”/ Choose authentication type /”Next”/ <Set Description>/choose the File Selection Logic depending on full, incremental, or differential /”Next”/”Save Backup To File”/”Finish”/ <Name for Set> /”Save.”

RESTORE

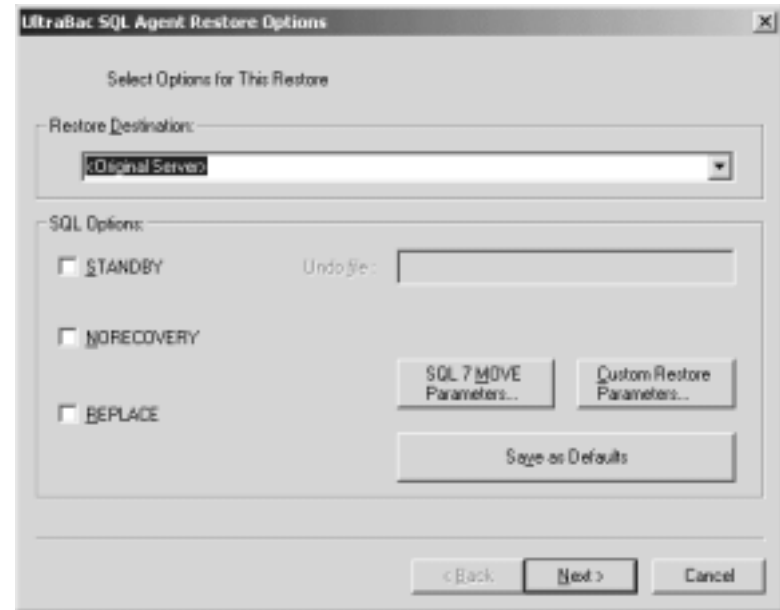
The SQL services need to be running while performing an SQL agent (live) restore.

If you dump a database (full backup) and then dump three transaction logs of the same database truncating the logs (incremental backup), when restoring the database, the database must be re-loaded in the same order that they were dumped. If the logs weren't truncated during the dumps (differential backup), then the last full dump must be loaded, followed by the most recent of the transaction logs.

The Master database cannot be restored the same way as normal databases. The SQL setup program must be run, and the option to rebuild the Master database must be selected. The SQL server must be started in “Single User” mode to restore the Master database. Moreover, the security must be set up so that the user performing the restore has enough authority to run the restore. **NOTE:** For safe measure, if you aren't familiar with restoring an SQL database, please review the information in the SQL Administrator's Guide for full details on restoring a database.

The SQL Server can be started in “Single User” mode by typing the following in the command prompt: “C:\>sqlservr -m.”

When restoring a database, the user can redirect the restore to a different location by using the “Move” command, or overwrite an existing database by using the “Replace” command. It is even possible to restore a database to an alternate SQL server and rename the database during the restore. You'll see these options in the “*UltraBac SQL Agent Restore Options*” dialog box.



When restoring a database back to its original location, UltraBac doesn't require any of these preferences be checked.

STANDBY – This option is equivalent to the STANDBY option in Microsoft's SQL. Refer to Microsoft SQL documentation for information.

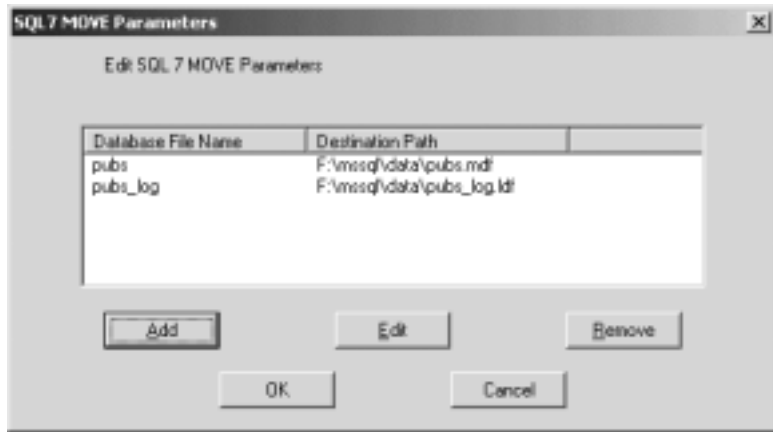
NORECOVERY – This option is equivalent to the NORECOVERY option in Microsoft's SQL. Refer to Microsoft SQL documentation for information.

REPLACE – This command is used when restoring a database to a remote SQL Server when the same database name exists on the target machine.

<http://www.microsoft.com/technet/treeview/default.asp?url=/technet/prodtechnol/sql/maintain/operate/opsguide/sqlops4.asp>

Use the “SQL 7 Move Parameters” option to move or rename files when restoring a database (most commonly used when restoring a database from one machine to another when the database doesn't exist on the target machine). Click the “SQL 7 Move Parameters” button, click “Add,” type the <Database File Name> and its <Destination Path>, and do the same for the <Transaction Log File Name> and its <Destination Path>. There should be two entries in the box, one for the database and another for its log.

NOTE: if the target Machine doesn't have the same SQL service pack level as the original machine, the restore very well may fail.



The database file name can sometimes differ from what actually shows up as the database object in SQL Enterprise Manager. Therefore, it's important to make the correct entries in the "Move Parameter" entries. With the SQL index loaded in UltraBac, the database file name and transaction log name are listed in parentheses right next to the database object name. These are the filenames to be typed in the "Move Parameters" dialog box. Example:



After the correct information has been added in the "Move Parameters" dialog box, **be sure to click the drop-down list box and choose the "Restore Destination" SQL machine.** Click "Next," choose the type of security to be used to connect to the remote SQL server during the restore, click "Next," choose "Unattended" to run in "Silent" mode, and click "Restore."

NetWare Agent

INTRODUCTION

The NetWare agent enables the user to back up the NetWare Directory (NDS), the bindery, and the local DOS files, in addition to the local NetWare files of all NetWare 4.x, 5.x, and 6.x file servers in a NetWare network. This agent also backs up all of a file's ownership, security, and extended file attributes.

This agent is an extra cost option. The UltraBac Software licensing module controls the use of this optional NetWare agent. The pre-license evaluation version of UltraBac defaults to NetWare agent enabled status. Permanent licensing can be updated by telephone or Web site to include the use of the NetWare agent after purchase.

AGENT INSTALLATION

Copy the <UltraBac Root>\NetWare\NWASRV.nlm" file to the system directory on each NetWare file server to be backed up. Modify the server's "AUTOEXEC.NCF" file to include "LOAD NWASRV."

The agent takes several switches:

-SPX and/or IP – The agent can use either the TCP/IP protocol or the SPX/SPXII, or both. By default, use of neither protocol is enabled and the agent will not auto-load protocol support NLM's (TCP/IP.NLM or SPXS.NLM). You must enable the use of at least one protocol. To enable the use of a protocol, two command-line switches are provided: "-SPX" and "-IP." Add "-SPX" to the load command (e.g. LOAD "NWASRV -SPX") to enable use of SPX/SPXII, and "-IP" to enable use of TCP/IP. The two switches can be combined.

-H – The "-H" (handicap) switch throttles the network I/O reducing processor usage by approximately 30 percent and increases backup time by about 50 to 100 percent. This switch applies when connection is via SOX2 and not when connection is via IP. IP backup speeds are approximately the same as handicapped SOX2 backups.

-SPARSE=[###] or SPARSE=OFF – The "-SPARSE=[###]" switch allows the agent to back up sparse files without expanding them, saving storage space and possible backup time. Since checking for a sparse file takes time, and the likelihood of recovering this time increases with file size, the user may specify the lower file size limit in kilobytes on which the agent will apply a sparseness check. All files less than this limit will be treated as normal files (e.g. "-SPARSE=200" instructs the agent to check all files 200 kilobytes and larger for sparseness and back them up as a sparse file if applicable). If this switch is not specified, the default setting is "-SPARSE=0." "-SPARSE=OFF" forces the agent to back up all sparse files in their expanded state. Sparse files do not exist on NetWare 3.x servers.

Whenever upgrading UltraBac, make sure to upgrade UltraBac's NetWare agent by copying the "<UltraBac root>\Netware\NWASRV.nlm" file to the system directory on each

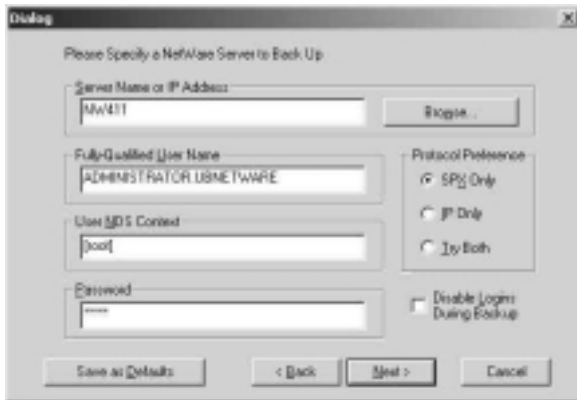
NetWare file server to be backed up. Don't forget to unload the old NLM and reload the new NLM. This can be accomplished by rebooting the NetWare file server and copying the new NLM to the NetWare file server's system directory.

NOTE: Care should be taken to make sure that the NetWare server and the NT/2000 NetWare clients are configured to use the same frame types or to auto-detect frame types. Also, verify that the NetWare computer has been updated with the Minimum NetWare Patch List.

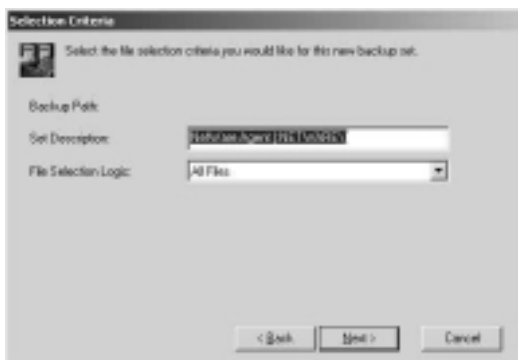
CREATING A NETWARE BACKUP SET

After selecting "File\New Backup Wizard" or selecting "Backup Wizard" from the shortcut menu, highlight "NetWare Agent" and select "Next."

UltraBac will prompt you with NetWare login information. You must specify the NetWare Server Name or IP address, Fully-Qualified User Name, User NDS Context, and Password. You may save this information as default if desired.



After selecting "Next," specify a <Set Description>. **NOTE:** Incremental or differential backups cannot be performed on NetWare agent backups.

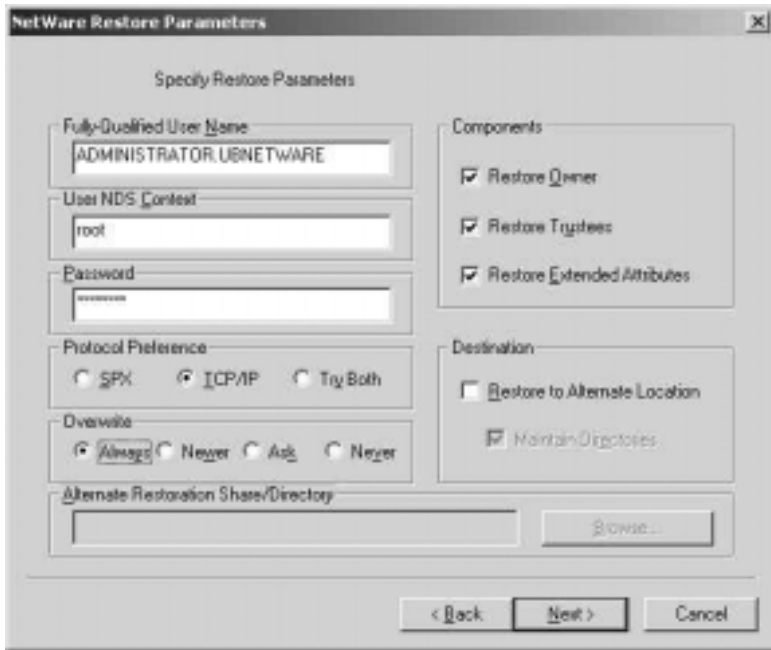


RECOVERING FROM A FAILED NETWARE SYSTEM DRIVE

Replace the drive and install the NetWare software according to Novell's instructions. Install UltraBac's NetWare NLM located in "<root>\Program Files\UltraBac Software\UltraBac7\NetWare."

After selecting files for restoration, select "Operation">\Restore Selected Files" or select "Restore" from the shortcut menu.

After selecting "Next," you need to specify NetWare Restore Parameters:



The screenshot shows the "NetWare Restore Parameters" dialog box. It has a title bar with the text "NetWare Restore Parameters" and a close button. The main area is titled "Specify Restore Parameters" and contains several sections:

- Fully-Qualified User Name:** A text box containing "ADMINISTRATOR.USNETWARE".
- User NDS Context:** A text box containing "root".
- Password:** A text box with masked characters (dots).
- Protocol Preference:** Three radio buttons: "SPX" (unselected), "TCP/IP" (selected), and "Try Both" (unselected).
- Overwrite:** Four radio buttons: "Always" (selected), "Never" (unselected), "Ask" (unselected), and "Never" (unselected).
- Alternate Restoration Share/Directory:** A text box with a "Browse..." button next to it.
- Components:** A section with three checked checkboxes: "Restore Owner", "Restore Trustees", and "Restore Extended Attributes".
- Destination:** A section with two checkboxes: "Restore to Alternate Location" (unchecked) and "Maintain Directories" (checked).

At the bottom of the dialog are three buttons: "< Back", "Next >", and "Cancel".

- **Fully-Qualified User Name** – This should be a NetWare administrator.
- **User NDS Context**
- **Password** – For fully-qualified user.
- **Protocol Preference** – Specify between "SPX," TCP/IP, or "Try Both."
- **Overwrite** – Select option for restored files.
- **Specify Components** – Options are "Restore Owner," "Restore Trustees," and "Restore Extended Attributes."

See UBQXXXXX for more information.

Oracle Agent

PURPOSE & USAGE

Our Oracle agent allows users to back up Oracle databases without shutting down the services before hand. The user will have the option to perform either “Hot” or “Cold” backups depending on the mode of the Oracle databases. The use of the Oracle agent is controlled by the UltraBac licensing module. Pre-license evaluation versions default to Oracle agent enabled status. Permanent licensing can be updated by telephone or Web site to include the use of the Oracle agent after purchase.

INSTALLATION

In order to use the Oracle agent, you must have the following:

- Oracle Version 8i or greater installed.
- The Oracle database in “ARCHIVELOG” mode to perform “Hot” backups. In order to run “cold” backups, the Oracle database must be set to “NOARCHIVELOG” mode.
- In UltraBac, go to “Tools”/“Options”/“Agents”/“Oracle Backup Agent” and type the <Username> and <Password> (by default, the username is “internal” and the password is “oracle”).

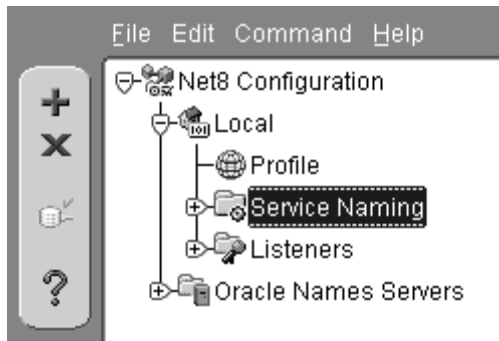
To back up remote Oracle databases, you must have the Oracle client software installed on the UltraBac host machine. This includes the Net8 Assistant and the Microsoft ODBC Administrator. When UltraBac reaches out to the remote Oracle machine, it uses the information registered in the Net8 Assistant and Microsoft ODBC Administrator to contact the it. Whether the Oracle machine is local or remote, it must still be configured and listed in the client utility (Net8 Assistant) to work.

CONFIGURATION

Most of the configuration for the Oracle agent is done on the Oracle side rather than in UltraBac's interface. The following is a step-by-step procedure configuring the Net8 Assistant and the Microsoft ODBC driver, which must be completed for the agent to run successfully.

Configuring the Net8 Assistant

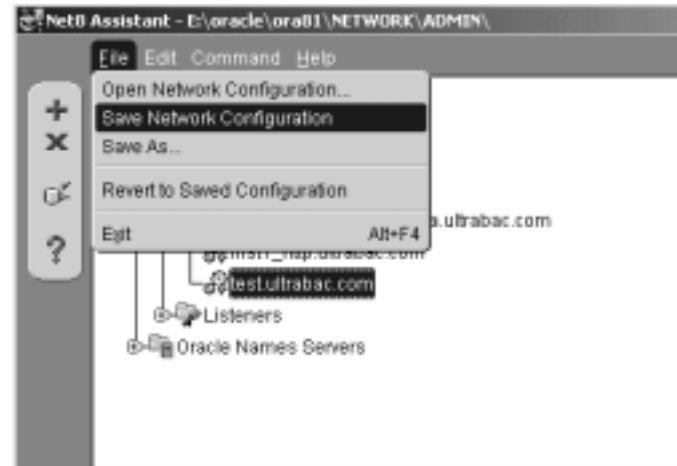
- Open the Net8 Assistant (default location is “Start”/“Programs”/“Oracle”/“Network Administration”/“Net8 Assistant.”)
- Highlight “Service Naming” and click the “Plus sign.”



- The Net Service Name Wizard should now appear on your screen. Type in the <Net Service Name>, which can be anything you'd like (it doesn't actually have to match the name of the Oracle service) and click "Next."

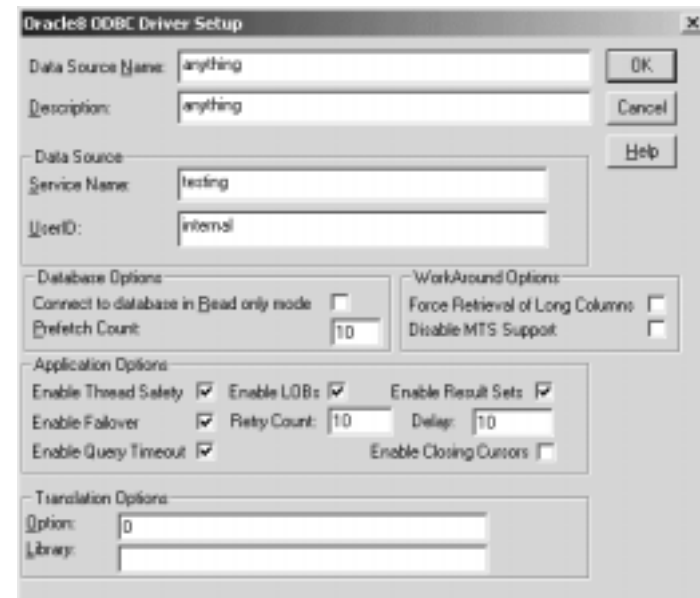


- Leave the default "TCP/IP" (internet protocol) selected and click "Next."
- Type the <Computer Name> of the machine running Oracle in the "Host Name" box. Leave the default "Port Number" and click "Next."
- Type the <Oracle Service Name> in the "Service Name" box and click "Next."
NOTE: If you aren't sure what the service name is, you can find that information in Window's "Services"/"OracleServiceNAME."
- Click "Test" and make sure the connection is completed successfully. Click "Close," then "Finish."
- The last step in the Net8 Assistant configuration is very important. Click "File"/"Save Network Configuration" before you close out of the screen. If this step is not completed, the Net8 Assistant will not remember the changes.



Configuring the Microsoft ODBC Driver

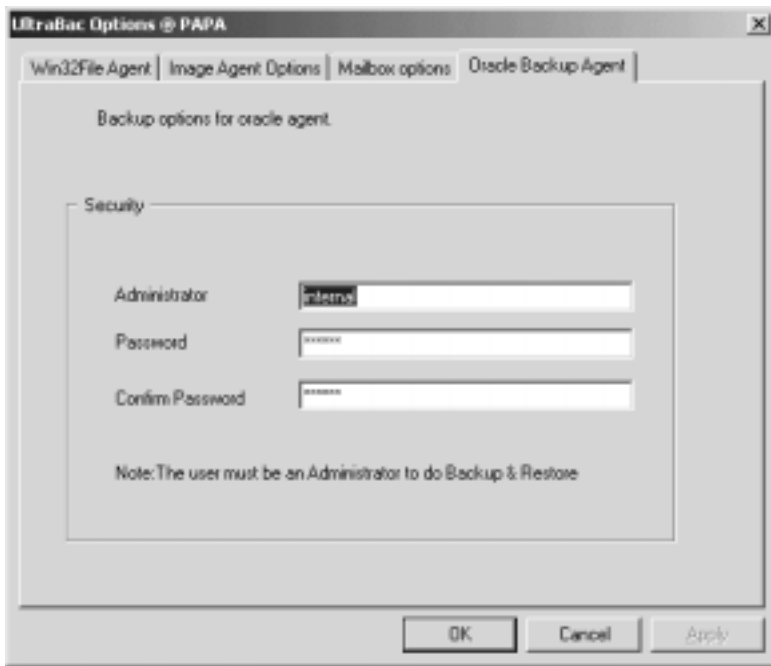
- Open “Start”/”Programs”/”Oracle”/”Network Administration”/”Microsoft ODBC Administrator.”
- Click the “System DSN” tab, and click “Add.”
- Scroll all the way down, highlight “Oracle ODBC driver” and click “Finish.”
- In the “Data source name and description,” type in your choice of appropriate text.
- In the “Service Name” box, type in the service you specified in step three of the configuration of the “Net8 Assistant.”
- Type in the user ID in the box below and click “OK” (the default is “internal”).



Configuring the Oracle agent takes a number of steps that, in order to work, must be completed with accuracy. To ensure the Oracle portion has been set up correctly, run the Oracle ODBC Test located in “Start”/”Programs”/”Oracle”/”Network Administration.” Click “Connect,” go to the “Machine Data Source” tab, and double-click in the “Data Source Name” you specified in the box directly above. The “Oracle ODBC Driver” connect box should prompt you for a password. Type the <Password> (the default password is “oracle”) and click “OK.” If you click “All Tables,” some data should appear in the query box, indicating the agent has been set up correctly.

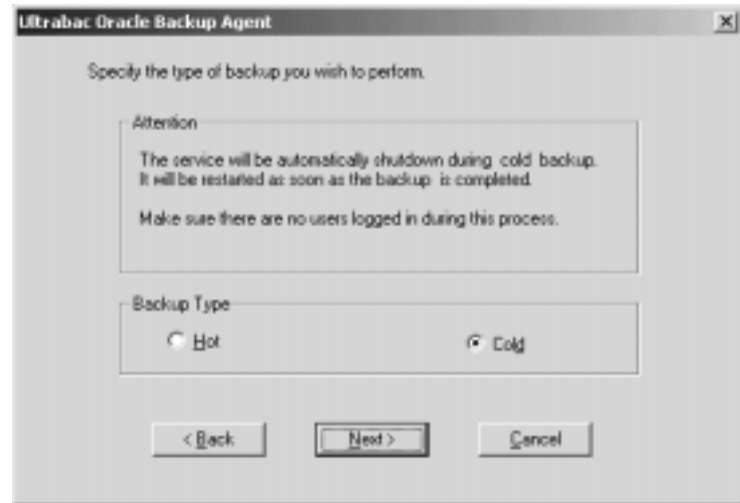
ULTRABAC ORACLE ACCOUNT INFO

UltraBac also has to be set up to use an Oracle account to connect to its databases. The account information is entered through “Tools”/”Options”/”Agents”/”Oracle Backup Agent.” By default, Oracle uses an administrator account called “internal” with its password “oracle.” Enter this information in the appropriate fields as shown in the screenshot below and click “OK” when finished.

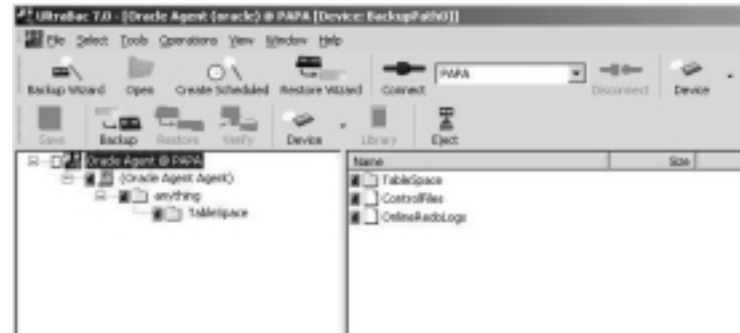


BACKUP

Creating a backup set using the Oracle agent is similar to any other of the UltraBac agents. Start out by clicking “File”/”New Backup Wizard”/”Oracle Agent”/”Next.” Choose the Oracle instance to be backed up and click “Next.”



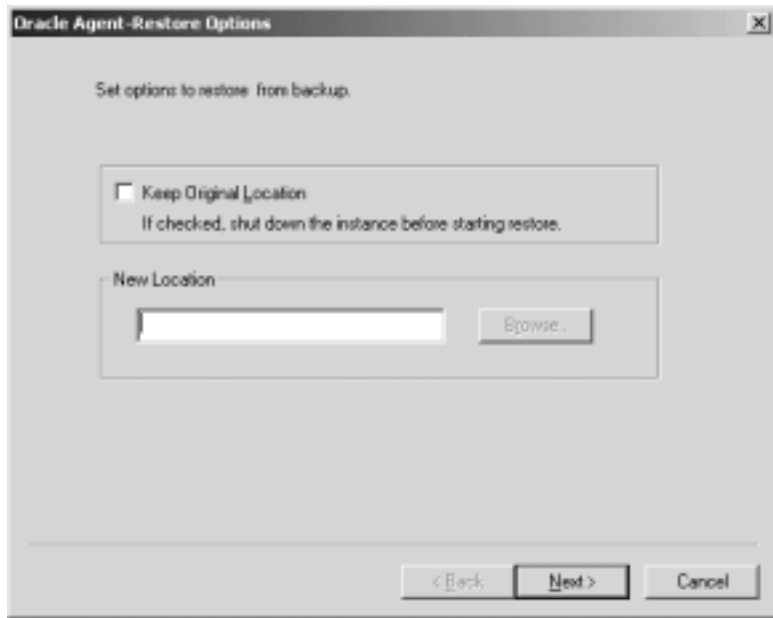
The difference between “Hot” and “Cold” backups are determined by “ARCHIVELOG” mode and “NOARCHIVELOG” mode respectively, which should be set up by the Oracle administrator. For this example, we will assume the database is in “NOARCHIVELOG” mode. Leave the default setting to “Cold” and click “Next.” Enter a <Set Description> and click “Next”/”Finish.” The following is an example of the enumerated Oracle databases, which can be backed up interactively or scheduled for a later date.



NOTE: Allow the backup enough time to dismount the Oracle database before UltraBac starts the backup. If you watch the progress dialog box as the backup is happening, it will appear as if the backup is hanging, when, in actuality, it's just dismounting the Oracle database before the backup is attempted. Depending on how large the Oracle database is, it might take quite a while to dismount it during a cold backup.

RESTORE

Load the index from the Oracle backup and choose the object(s) to be restored. Click “Operations”/”Restore Selected Files.”



Click “Keep Original Location” to restore Oracle back from where it came, otherwise, type the <Path> to a new location in the box below and click “Next.” Check “Unattended” to run the restore in “Silent” mode to avoid any error pop-ups, and then click “Restore.”

Win9x Agent

PURPOSE & USAGE

NOTE: Running a remote backup of a Windows 9x/ME box requires the installation of the UltraBac 7.x Win9x/ME agent on the remote machine. Visit the following link for instructions on installing agents:
http://www.ultrabac.com/kb7/UltraBac_Help/UltraBac_User_Manual/agent_installation.htm

UltraBac can back up the files of any Windows 9x/Me machine connected via LAN. However, if you'd like to capture the registry of the machine as well, the Windows 9x agent must be installed on the client machine.

Windows 9x/Me agent benefits:

- Registry – The Windows 9x/Me registry can be backed up and restored using the agent.
- Security – Because no shares have to be created, the agent takes advantage of NT domain security rather than workgroup security.
- Protocols supported – TCP/IP.
- Multi-drive set – Using the agent, you can include all the drives on the machine instead of one at a time.

INSTALLATION

By default, UltraBac's Win 9x/Me agent files are located in "C:\Program Files\UltraBac Software\UltraBac7\win9xclient."

- Copy the contents of this directory into a user defined directory (example: "C:\win9xagent") on the Windows 9x/Me machine you'd like to back up.
- After the files are copied to their destination, double-click on "win95agent.exe" and an UltraBac icon should appear in your System tray (by the clock). If this icon doesn't appear, the agent is most likely not installed.
- Access the Network Properties (right-click on "Network Neighborhood"/"Properties") and go to the "Access Control" tab. Click the radio button saying "User Level Access Control."
- Type the <Name> of the UltraBac host server's domain in the box saying "Obtain list of users from:".
- Select the "Configuration" tab and click "I want to be able to give others access to my files."
- Click "OK."

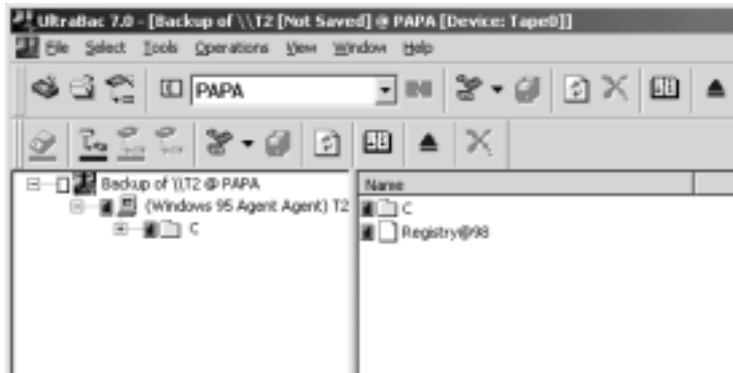
After you reboot the Windows 9x/Me machine, the agent will be properly installed and configured.

BACKUP

The following is an example of how to create a Windows 9x set:

- Click “File”/”New Backup Wizard”/”Next.”
- Highlight the “Win9x/Me Agent”/”Next.”
- Type the <Computer Name> of the Win9x or Me machine in the “Computer Name” box, or browse to the machine by expanding the Windows Explorer tree in the dialog box.
- Type a <Set Description>, choose which type of file selection logic you'd like in the set, and click “Next.” **NOTE:** The default will include all files.
- Click “Finish” and UltraBac will enumerate all the directories on the target machine.

Having completed the steps above, you should see the following screen:



From this screen, you may save the set by clicking “File”/”Save As,” or perform an interactive backup by clicking “Operations”/”Backup Selected Files.”

RESTORE

Restoring a Windows 9x/Me backup set is exactly like restoring a Windows NT/2000/XP set.

Simply click “File”/”Load Index for Restore”/”verify,” select whether you'd like to retrieve the file from storage media or online disk, click “Next,” then double-click on the Win9x/Me set to be restored. The user can direct the restore to another machine or keep it pointed to the original path.

Please refer to the **RESTORE** section in the manual for further information.

LIMITATIONS

The Win9x agent cannot be used in a peer-to-peer/workgroup environment.

INDEX

A

Active Directory, 76
Administration, 12
AGENT, 104, 113, 122, 127, 132, 138
Agent Preferences, 57
All Local Fixed Drives, 23
Allow Override, 19
Archive bit, 26, 30, 37,
Authoritative, 76, 77, 78
Auto erase express indexes, 19
Auto Purge Logs, 19
Autoloader, 49, 50, 51
Autoloader Support, 50

B

Backup, 23, 26, 30, 35, 41
Backup Group, 40, 44, 45
Backup Indexes, 17, 70
Backup Options, 37
Backup Path, 43
Backup Scheduler, 35, 41
Backup Wizard Summary, 41
Before/After Jobs, 33, 34

C

Cache days, 10
Clear Storage Media, 26, 34
Cluster, 65, 66
Command Line Functionality, 53
Compare to disk during verify, 37
Compress online indexes, 17
Connect, 12,
Conventions, 2
Copy license server info, 5
Create online backup indexes, 17
Custom Install, 4, 6

D

Daily Backups, 40
Data Compression, 19
Device, 42, 44
DF2K.sys, 93
Differential, 30, 32
Disconnect, 12
DOS, 53

E

Email, 56
Enable in-use cluster, 84
every X minutes, 40
Exchange 2000, 96, 97
Exchange 5.5, 100
Expiry Date, 10

F

File Selection, 24, 29, 30, 31
Find Files, 74
FTP Device, 45
Full install, 4

G

Global exclusion list, 58

H

Holidays, 40

I

Image backups, 83, 84, 85
Image restore, 85
Incremental, 30, 31
Index, 17, 125
Installer, 4, 5
Interactive, 41

L

License Days, 10
Local Tape Device, 42
Locked File Backup, 93

M

Mailbox agent, 104, 106
Maintain directory structure, 71
Managed Machines List, 63
Media Protection, 19
Medium Changer, 49, 51
Minimum, 3
Mirroring, 91
Modified Files, 31, 32
Monthly Backups, 40
Multipart Restore, 98, 99

N

NetWare agent, 113
Network backup, 27, 28
Network Share, 27
New Job Check Interval, 21, 63

Non-Authoritative, 80
Notification, 56
NTDSUTIL, 79
Number of errors, 21
Number of Licenses, 10

O

OBDR, 89
Oracle agent, 117
Overwrite option, 19

P

Preferences, 14, 57

R

Remember window size, 14
Remote administration, 12
Remote Tape Device, 46, 47
Reparse Points, 57
Replicate account info, 5
Requirements, 3
Restore, 68, 69, 70, 72, 76
Restore folder permissions, 71
Restore in-use files, 71
Retrieve from online disk index, 69
Retrieve from storage media, 69

S

Scheduled Backup, 35
Selection criteria, 24, 30, 31
Sequential Mode, 50
SET, 23, 24, 26, 27
Setup, 4, 5
Single file restore, 87
SMTP Support, 56
SQL 7 Move, 111, 112
SQL agent, 108
SQL Agent Preference, 61
SQL Restore, 110
Static Mirror Image, 91
Storage Device Selection, 39, 42
System, 3
System State, 4, 5, 76

T

Tape Express Index, 18
Timeout, 16
Tivoli storage device, 43

U

UBDR, 88

UBMAILBOX, 105

ULTRAVUE, 63

UltraVue Preference, 21

Unattended backups, 41

Uninstall, 7

Upgrade managed machines, 5

User Accounts, 15, 16

V

Verify, 26, 37

W

Win 9x/Me agent, 123