Double-Take for Linux

Double-Take for Linux Scripting Guide



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Introduction

1

Welcome to Double-Take® for Linux®! Double-Take has its own scripting language which is explained in this manual. This guide does not explain Double-Take features and functions, only the scripting aspects of Double-Take. For details on the features and functions, see the Double-Take User's Guide.

Resources

You have many resources available to you when using Double-Take.

- **Operating System and application documentation**—Make sure that you have complete documentation for your operating system and your applications.
- **Double-Take documentation**—The complete set of Double-Take documentation includes the manuals listed below. Each manual is available in the \DblTake\docs directory on the product CD and in the root of the installation directory you selected during the installation. The manuals are in Adobe® Acrobat® PDF format. If needed, you can install the free Adobe Acrobat Reader® by downloading the latest version from the Adobe web site at www.adobe.com.
  - *Double-Take for Linux User's Guide*—This guide is a complete how-to guide with detailed steps for installing and using Double-Take. This guide also contains a complete list of Double-Take messages, alerts, and statistics. The file name of this manual is User's Guide.pdf.
  - *Double-Take for Linux Scripting Guide*—This guide is a scripting manual for those users who want to use DTCL (Double-Take Command Language). The file name of this manual is Scripting Guide.pdf.
  - *Double-Take for Linux Evaluation Guide*—This guide is for those users who are evaluating Double-Take. It walks through specific steps allowing you to become familiar with the Double-Take core technology first hand. The file name of this manual is Evaluation Guide.pdf.
- **Double-Take Online Help**—The online help can be accessed by pressing the F1 key, clicking the **Help** button on screens where it is available, or selecting **Help**, **Help Topics**.
- **Readme**—Double-Take includes a readme file which contains any last-minute information. This file is called readme.html and is located in the \DblTake\docs directory of the product CD and in the root of the installation directory you selected during the installation.
- **Other Resources**—Technical support, professional services, and training are all available for all Double-Take Software products.
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Conventions used in this guide

The following conventions are used throughout this guide:

- **Bold** is used for items you click or select with the mouse, such as menu names and items, dialog box options, or button names. For example, when you see **File, Options**, you should select the **File** menu and then choose **Options** from the pull-down menu.
- ***Blue italics*** is used for cross-references to other sections or chapters in this guide.
- `Code text` is used to indicate text that is displayed on-screen exactly as shown (such as screen messages or error messages) and text that should be entered exactly as shown.
- **`Bold code text`** is used for Double-Take commands.
- UPPERCASE letters indicate syntax that must be typed exactly as shown.
- Underlined letters can be used as a shortcut for the command.
- *lowercase italized blue* letters are variables such as file names, user names, or machine names.
- Angle brackets, < and >, surround required items that must be supplied with the command.
- Square brackets, [and], surround optional items that can be supplied with the command but are not required.
- The pipe character, |, separates items in a list.
- Identifiers that contain a space or non-alphanumeric characters must be enclosed in quotation marks. For example "domain.com" or "machine name" or "129.65.35.45."

NOTE: You can specify an IP address or an IP address:port combination (separated by a colon) in place of a machine name in any DTCL command that allows for the entry of a machine name. For example, all of the following login commands are acceptable.

login alpha administrator ********

login 216.234.244.47 administrator ********

login 216.234.244.47:1205 administrator ********

If you have modified your ports so that your source, target and/or clients are running on different ports and you are using DTCL scripts, then you will need to modify the scripts to include the port values as noted above. This only applies to source/target/client combinations that are communicating with each other on different ports. It does not apply between combinations of source/target pairs of servers that are using different ports.

Clients and Scripts

2

The Double-Take scripting language can be used in the Double-Take Command Line Client or in script files, which use the same set of commands.

The Command Line Client

The Command Line Client is run from the operating system command line, and then Double-Take commands are run from the Double-Take **Command** line. There are three different methods of executing commands from the Command Line Client:

- **Interactive Entry**—At the directory prompt where Double-Take is installed, type the command `DTCL -i`. A **Command** prompt will appear and the Double-Take commands can be entered from that prompt. Any resulting errors are immediately displayed.

Interactive Entry

```
/usr/bin> dtcl -i
Command: login alpha administrator ******* domain_name
User access level set to DT_FULL_ACCESS
Command:
```

- **File Entry**—Create a file with all of the Double-Take commands you want to run. At the directory prompt where Double-Take is installed, type **`DTCL -f filename`** where **`filename`** is the name of the file containing the Double-Take commands. For example, you might use the following `dtcl.txt` file to log on to a machine and display its replication sets.

File Entry

```
/usr/bin> dtcl -f dtcl.txt
User access level set to DT_FULL_ACCESS
- List of rep sets -
User data                                enabled

/usr/bin>
```

DTCL.TXT Used in File Entry

```
login alpha administrator password domain_name;
source alpha;
repset list;
```

- **Single Line Entry**—Determine all of the Double-Take commands you want to run and enter them in a single line (separated by semi-colons) at the command prompt where Double-Take is installed. For example, you might use the following command to log on to a machine and display its replication sets.

Single Line Entry

```
/usr/bin> dtcl login alpha administrator password; source alpha; repset list
  User access level set to DT_FULL_ACCESS
  - List of rep sets -
  DataFiles                                    enabled

/usr/bin>
```

NOTE: Because the Windows command process (cmd.exe) strips two layers of quotation marks during processing, any Double-Take command that you use that requires quotation marks must have three quotation marks around it. For example, if your machine name had a space in it, login "machine name" username password would be sufficient for the Command Line Client interactive entry or file entry. But for the Command Line Client single line entry, you would have to use login """machine name""" username password.

Double-Take scripts

You can create script files to execute series and combinations of Double-Take commands to meet specific needs. When working with scripts, keep in mind the following.

- When creating Double-Take scripts, each commented line must start and end with the pound (or number) sign (#).
- Double-Take scripts must use ANSI coding. Do not use Unicode or other formats.
- Variables can be used in commands to replace items that vary such as machine or domain names. A variable name must start with the dollar sign ($) character and can contain letters, numbers, strings, and integers. Values are assigned to variables using the equals (=) assignment statement. For example, valid variable assignment statements are $MyDomain="domain.com"; and $MySource=alpha;.
- All Double-Take commands return values which can also be assigned to variables. For example, the connection command returns a connection ID for the connection being created. The statement $ConnectionID=CONNECT dataset to target; saves the connection ID as a variable. The variable components of the connect command could be replaced as well. For example, $TheRepset="DataFiles";, $TheTarget=beta;, and $ConnectionID=CONNECT $TheRepset to $TheTarget; are all valid statements.
- Double-Take scripts can take advantage of four flow control programming constructs.
  - **IF conditional**—The IF conditional expression is a comparison between two values or variables. Use the following syntax for an IF conditional:

    ```
    IF <relational expression> THEN <statement_block>
    [ ELSE <statement_block> ] END
    ```

    Use the following conditions to create the relational expression.

= Is equal to	**>** Is greater than
!= Is not equal to	**>=** Is greater than or equal to
< Is less than	statement block Any sequence of valid DTCL commands
<= Is less than or equal to	

  - **FOR Loop**—The FOR loop sets a variable to a start value, executes each statement in the statement block, and then adds the step value to the variable. If the new value of the variable does not exceed the end value then the statements will be executed again. This continues until the variable exceeds the end value. If a step value is not provided, the default adds one to the variable. Use the following syntax for the FOR loop:

    FOR <variable> = <start_value> TO <end_value>
    [STEP <step_value>] DO <statement_block> END

  - **WHILE Loop**—The WHILE loop evaluates a relational expression and, if it is true, then the statement block is executed. When the statement block has completed execution, the expression will be reevaluated again and, if it is true, the statement block is executed again. This continues until the expression is false. Use the conditions specified in the IF conditional to create the relational expression and the following syntax for the WHILE loop:

    ```
    WHILE <relational_expression> DO <statement_block> END
    ```

  - **WRITE Command**—The WRITE command writes values to the screen. These values can be variables or constants of type integer$, string$, date$, or time$. The write command is used in conjunction with either the IF conditional, WHILE loop, or FOR loop.
- Each Double-Take command and assignment must end with a semi-colon. However, no semicolon is necessary after the END keyword for the IF conditional and the loop statements.
- When using the Command Line Client, a script file can be executed using the `-f` option. Create a one-line batch file using the following command to initiate the Double-Take Command Line Client with the `-f` option and specify the name of the script to execute.

  ```
  cmd /c DTCL -f "/usr/bin/scriptname"
  ```

  If you do not specify a path for the script file, Double-Take will look in the directory where the DTCL -f command was executed.

See ***Scripting Examples*** on page 15-1 for sample Double-Take scripts.

Logging on and off of Double-Take

To ensure protection of your data, Double-Take uses native operating system security and requires a valid system username and password. If you do not have a valid system username and password for a selected machine, you will not be able to configure Double-Take for that machine.

As you enter DTCL commands, Double-Take automatically attempts to log on to the source or target machine. You can verify your access by the resulting message.

- **DT_Full_Access**—You have administrator rights to the selected Double-Take machine.
- **DT_Monitor_Only_Access**—You have monitor rights to the selected Double-Take machine.
- **DT_No_Access**—You do not have any rights to the selected Double-Take machine.

If you have monitor access or no access and want to log on as the administrator, use the **`login`** command. Log off of a machine by using the **`logout`** command.

Command	LOGIN
Description	Log on to a Double-Take machine
Syntax	**`LOGIN <`*`machine`*`> <`*`username`*`> <`*`password`*`> [`*`domain`*`]`**
Options	• ***`machine`***—Name of the machine • ***`username`***—Name of the user. The username is limited to 100 characters. • ***`password`***—Password associated with the user name. The password is limited to 100 characters. • ***`domain`***—If logging in using a domain account, this is the domain name. If logging in using a local account, this is the machine name. The domain is limited to 100 characters.
Examples	`login alpha administrator ******`
Notes	• Options that contain non-alphanumeric characters must be enclosed in quotation marks. • The password cannot be a Double-Take keyword. These are any DTCL command (source, target, and so on.) or any DTCL shortcut command (env, mon, rep, and so on). • When scripting with this command, it will return one of three positive numbers: 0 (no access granted), 1 (monitor access granted), or 2 (full access granted).

Command	LOGOUT
Description	Logs off of a Double-Take machine
Syntax	**`LOGOUT <`*`machine`*`>`**
Options	***`machine`***—Name of the machine
Examples	`logout alpha`
Notes	Machine names that contain non-alphanumeric characters must be enclosed in quotation marks.

Getting Help

A listing of the DTCL commands and their syntax is available by typing the **`help`** command.

Command	HELP
Description	Displays the DTCL commands and their syntax
Syntax	HELP
Notes	• Press any key to scroll through the list of commands. • Press q to exit the help function. • You can also type dtcl help from the directory where the Double-Take program files are installed to display the DTCL commands and their syntax.

Exiting

To exit the Command Line Client, type the **`exit`** or **`quit`** command.

Command	EXIT
Description	Exits the Command Line Interactive client
Syntax	**`EXIT`**

Command	QUIT
Description	Quits the Command Line Interactive client
Syntax	QUIT

Replication Sets 3

NOTE: As noted in the *Scripting Guide* ***Introduction*** on page 1-1, this guide does not explain Double-Take features and functions, only the scripting aspects of Double-Take. For details on the different features and functions, see the Double-Take *User's Guide*.

Using the Double-Take commands, you can perform the following functions to manage your replication sets.

- ***Creating a replication set*** on page 3-1
- ***Modifying a replication set*** on page 3-4
- ***Deleting a replication set*** on page 3-7
- ***Calculating replication set size*** on page 3-8

Creating a replication set

Before you can establish a connection, you must create a replication set.

1. Use the **`repset create`** command to create a new replication set.

Command	REPSET CREATE
Description	Creates a replication set
Syntax	**`REPSET CREATE <`*`name`*`>`**
Options	***name***—Name of the replication set
Examples	`repset create DataFiles`
Notes	• The name of the replication set should not be a Double-Take keyword. These are any DTCL command (source, target, and so on.) or any DTCL shortcut command (env, mon, rep, and so on). • Replication set names that contain non-alphanumeric characters must be enclosed in quotation marks.

2. Specify it as the active replication set by using the **repset use** command.

Command	REPSET USE
Description	Specifies a replication set as the active replication set
Syntax	**REPSET USE <*repset*>**
Options	***repset***—Name of the replication set
Examples	`repset use DataFiles`
Notes	Replication set names that contain non-alphanumeric characters must be enclosed in quotation marks.

3. Define a replication set rule by using the **repset rule add** command.

Command	REPSET RULE ADD
Description	Adds a rule to a replication set. A rule is the specification of a path including volume, directories, wild cards, and/or file names.
Syntax	**REPSET RULE ADD <*path*> [INCLUDE|EXCLUDE] [, RECURSIVE|NONRECURSIVE] [TO <*repset*>]**
Options	• ***path***—Volume, directory, wild card, and/or file name • **INCLUDE**—Include the specified path in the replication set • **EXCLUDE**—Exclude the specified path in the replication set • **RECURSIVE**—All subdirectories and files of the specified path are recursively included or excluded • **NONRECURSIVE**—No subdirectories and files of the specified path are included or excluded • ***repset***—Name of the replication set
Examples	`repset rule add "c:\data" to DataFiles`
Notes	• The default settings for this command are include and recursive. • The options include/exclude and recursive/nonrecursive can be used in any combination and in any order. The first option does not require a comma, but the second option does require a comma before the option. • If you do not specify a replication set name, the current replication set will be used. • Options that contain non-alphanumeric characters must be enclosed in quotation marks.

4. Repeat the **repset rule add** command to completely define your replication set.

5. If you need to see the devices available, use the **device list** command.

Command	DEVICE LIST
Description	Displays the block devices available on a machine
Syntax	**DEVICE LIST <*filter*> [ON <*machine*>]**

Options	• ***filter***—Use one of the following options for the device filter
	  • **ALL**—Lists all unique devices on the specified machine. If there is no machine specified, the source, if designated, will be tried first. The target, if designated, will be tried second.
	  • **OKSOURCE**—List all devices on the specified source that are replication capable. If a target is specified, an error will be returned.
	  • **OKTARGET**—List all devices on the specified target that are capable of being used as a target path. If a source is specified, an error will be returned.
	• ***machine***—Name of the machine

Examples	`device list all on alpha`
Notes	Machine names that contain non-alphanumeric characters must be enclosed in quotation marks.

6. If you need to remove a rule, use the **repset rule remove** command.

Command	REPSET RULE REMOVE
Description	Removes a rule from a replication set
Syntax	**REPSET RULE REMOVE <*path*> [FROM <*repset*>]**
Options	• ***path***—Volume, directory, wild card, and/or file name • ***repset***—Name of the replication set
Examples	`repset rule remove "c:\data" from DataFiles`
Notes	• If you do not specify a replication set name, the current replication set will be used. • Options that contain non-alphanumeric characters must be enclosed in quotation marks.

7. After you have added all of the rules, save the replication set by using the **repset save** command.

Command	REPSET SAVE
Description	Saves all replication set rules for the currently selected source
Syntax	REPSET SAVE

Modifying a replication set

Make modifications to a replication set when you want to change the data you wish to protect.

1. View the replication sets associated with the active source machine by using the **`repset list`** command.

Command	REPSET LIST
Description	Lists all replication set names for the currently selected source
Syntax	**`REPSET LIST`**

2. Identify a replication set as active by using the **`repset use`** command.

Command	REPSET USE
Description	Specifies a replication set as the active replication set
Syntax	**`REPSET USE <`*`repset`*`>`**
Options	***repset***—Name of the replication set
Examples	`repset use DataFiles`
Notes	Replication set names that contain non-alphanumeric characters must be enclosed in quotation marks.

3. View the replication set's rules by using the **repset display** command.

Command	REPSET DISPLAY
Description	Displays the replication set rules
Syntax	**REPSET DISPLAY [*repset*]**
Options	***repset***—Name of the replication set
Examples	`repset display DataFiles`
Notes	• If you do not specify a replication set name, the current replication set will be used. • Replication set names that contain non-alphanumeric characters must be enclosed in quotation marks.

4. Remove the existing rule that you need to change using the **repset rule remove** command.

Command	REPSET RULE REMOVE
Description	Removes a rule from a replication set
Syntax	**REPSET RULE REMOVE <*path*> [FROM <*repset*>]**
Options	• ***path***—Volume, directory, wild card, and/or file name • ***repset***—Name of the replication set
Examples	`repset rule remove "c:\data" from DataFiles`
Notes	• If you do not specify a replication set name, the current replication set will be used. • Options that contain non-alphanumeric characters must be enclosed in quotation marks.

5. Add a new rule by using the **repset rule add** command.

Command	REPSET RULE ADD
Description	Adds a rule to a replication set. A rule is the specification of a path including volume, directories, wild cards, and/or file names.
Syntax	**REPSET RULE ADD <*path*> [INCLUDE|EXCLUDE] [, RECURSIVE|NONRECURSIVE] [TO <*repset*>]**
Options	• ***path***—Volume, directory, wild card, and/or file name • **INCLUDE**—Include the specified path in the replication set • **EXCLUDE**—Exclude the specified path in the replication set • **RECURSIVE**—All subdirectories and files of the specified path are recursively included or excluded • **NONRECURSIVE**—No subdirectories and files of the specified path are included or excluded • ***repset***—Name of the replication set
Examples	`repset rule add "c:\data" to DataFiles`
Notes	• The default settings for this command are include and recursive. • The options include/exclude and recursive/nonrecursive can be used in any combination and in any order. The first option does not require a comma, but the second option does require a comma before the option. • If you do not specify a replication set name, the current replication set will be used. • Options that contain non-alphanumeric characters must be enclosed in quotation marks.

6. If you decide that you do not like the changes you have just made, you can use the **repset resync** command to restore the previously saved settings, undoing your modifications.

Command	REPSET RESYNC
Description	Retrieves the last saved replication set settings, clearing any unsaved changes
Syntax	REPSET RESYNC

7. Save the replication set by using the **repset save** command.

Command	REPSET SAVE
Description	Saves all replication set rules for the currently selected source
Syntax	REPSET SAVE

Deleting a replication set

1. View the replication sets associated with the active source machine by using the **`repset list`** command.

Command	REPSET LIST
Description	Lists all replication set names for the currently selected source
Syntax	**`REPSET LIST`**

2. Delete the replication set by using the **`repset delete`** command.

Command	REPSET DELETE
Description	Deletes the specified replication set
Syntax	**`REPSET DELETE <`*`repset`*`>`**
Options	***repset***—Name of the replication set
Examples	`repset delete DataFiles`
Notes	Replication set names that contain non-alphanumeric characters must be enclosed in quotation marks.

3. After deleting the replication set, use the **`repset save`** command so that the deletion will be registered by other Double-Take clients.

Command	REPSET SAVE
Description	Saves all replication set rules for the currently selected source
Syntax	REPSET SAVE

Calculating replication set size

Use the **repset calculate** command to manually calculate the size of a replication set.

Command	REPSET CALCULATE
Description	Calculates the size of a replication set
Syntax	**REPSET CALCULATE [*repset*]**
Options	***repset***—Name of the replication set
Examples	`repset calculate DataFiles`
Notes	• If a replication set name is not specified, the active replication set will be used. • The results of the calculation are logged to the Double-Take log file. • Replication set names that contain non-alphanumeric characters must be enclosed in quotation marks.

Use the **CalculateOnConnect** option with the **get** and **set** commands to calculate the size of the replication set automatically upon connection. See ***Server Settings*** on page 13-1 for more information on using these commands with a Double-Take program setting.

Establishing a Connection

4

NOTE: As noted in the *Scripting Guide* ***Introduction*** on page 1-1, this guide does not explain Double-Take features and functions, only the scripting aspects of Double-Take. For details on the different features and functions, see the Double-Take *User's Guide*.

After you have created a replication set, you can establish a connection by connecting the replication set to a target.

1. If you do not know which replication set you will be connecting to the target machine, the **`repset list`** command will display the available replication sets for that source.

   Command REPSET LIST

   Description Lists all replication set names for the currently selected source

   Syntax

   ```
   REPSET LIST
   ```

2. Connect the replication set to the target by using the **`connect`** command.

   Command CONNECT

   Description Establishes a connection between a replication set and a target machine

   Syntax

   ```
   CONNECT <repset> TO <target> MAP EXACT
   | MAP BASE <target_path>
   | MAP <source_path> TO <target_path> [,...]
   [MIRROR | NOMIRROR] [, REPLICATE | NOREPLICATE]
   [, MONITOR | NOMONITOR] [, ORPHANS | NOORPHANS]
   [, COMPRESSION <level>]  [CLEARRESTOREREQUIRED]
   ```

   Options

   - ***repset***—Name of the replication set
   - ***target***—Name of the target, an IP address on the target, or a virtual IP address
   - **MAP EXACT**—Specifies that the replication set data will be sent to the same logical volume or block device on the target
   - **MAP BASE** ***target_path***—Substitute a complete path where you want the replicated data to be stored on the target. For a block device, the target will be a flat file on the file system under the specified path. A loopback device will be needed to access the device.

Options

- **MAP *source_path* TO *target_path***—Specify a custom location (a file location, a device in /dev, a loop device in /dev that is attached to another device or file, or a loop device that is attached to another device or file using DTLOOP) that specifies each directory on the source and where that data will be copied to on the target machine
- ***...***—Indicates that the ***source_path* TO *target_path*** option can be used more than once for each source directory in the replication set
- **MIRROR**—Automatically initiates a mirror when the connection is established
- **NOMIRROR**—Does not initiate a mirror when the connection is established
- **REPLICATE**—Automatically initiates replication when the connection is established
- **NOREPLICATE**—Does not initiate replication when the connection is established
- **MONITOR**—Specifies that the target is going to monitor the specified source machine for failover. The source machine must have already been defined as a monitor machine.
- **NOMONITOR**—Specifies that the target is not going to monitor the source machine for failover
- **ORPHANS**—Moves or deletes orphan files on the target
- **NOORPHANS**—Does not move or delete orphan files on the target
- **COMPRESSION *level***—Enables compression of data being sent to the target at the level specified. Valid levels are 1 (minimum), 2 (moderate), or 3 (maximum).
- **CLEARRESTOREREQUIRED**—Clears the restore required flag and initiates the connection

Examples

- `connect DataFiles to beta map exact`
- `connect UserData to beta map base /dev`
- `connect UserFiles to beta map exact orphans, compression 2`

Notes

- The default settings for this command are mirror, replicate, nomonitor, and noorphans.
- The options (no)mirror, (no)replicate, (no)monitor, (no)orphans, and compression can be used in any combination and in any order. The first option does not require a comma, but the second and remaining options do require a comma before the option.
- Options that contain non-alphanumeric characters must be enclosed in quotation marks.
- If you are establishing a connection within a NAT or firewall environment, you will need to specify the target using the IP address and port number (separated by a colon) of the router. For example, connect DataFiles to 10.10.1.57:1105 map exact.
- When scripting with this command, if a successful connection is established, the command will return a positive number, which is the connection ID assigned to that connection.

Simulating a Connection

5

NOTE: As noted in the *Scripting Guide* ***Introduction*** on page 1-1, this guide does not explain Double-Take features and functions, only the scripting aspects of Double-Take. For details on the different features and functions, see the Double-Take *User's Guide*.

After you have created a replication set, you can simulate a connection by connecting the replication set to the TDU.

1. If you do not know which replication set you will be connecting to the target machine, the **`repset list`** command will display the available replication sets for that source.

Command	REPSET LIST
Description	Lists all replication set names for the currently selected source
Syntax	**`REPSET LIST`**

2. To initiate a connection to the TDU, use the **`connect tdu`** command. This logs the connection statistics to the file specified. The remaining connection flags are identical to the standard **`connect`** command.

Command	CONNECT TDU
Description	Establishes a simulation connection between a replication set and the Throughput Diagnostics Utility. This connection imitate a normal connection without transmitting any data across the network.
Syntax	**`CONNECT <`*`repset`*`> TO TDU <`*`filename`*`> [`*`connection_flags`*`]`**
Options	• ***repset***—Name of the replication set • ***filename***—Name of the file to store the connection statistics generated by the TDU • ***connection_flags***—The same options available in the standard connect command
Examples	• `connect DataFiles to TDU` • `connect UserData to TDU map exact /dev`
Notes	• The statistic file that the TDU creates can be viewed using DTStat. By default, the file is called statistic.sts. To view the statistic file, type DTStat -f <filename>. For details on DTStat, see the Double-Take User's Guide. • Options that contain non-alphanumeric characters must be enclosed in quotation marks.

Managing Connections 6

NOTE: As noted in the *Scripting Guide* ***Introduction*** on page 1-1, this guide does not explain Double-Take features and functions, only the scripting aspects of Double-Take. For details on the different features and functions, see the Double-Take *User's Guide*.

Using the Double-Take commands, you can perform the following functions to manage your connections.

- ***Monitoring connections*** on page 6-1
- ***Controlling an automatic mirror*** on page 6-2
- ***Queuing Double-Take data*** on page 6-2
- ***Configuring automatic reconnections*** on page 6-2
- ***Configuring compression*** on page 6-3
- ***Disconnecting a connection*** on page 6-4

Monitoring connections

1. Identify the connection ID that you want to monitor by using the **`conid`** command.

Command

CONID

Description

- Allows you to to assign the value of a connection ID to a variable
- Lists the target and replication set for all connection IDs for a source

Syntax

- **<*variable*>=CONID <*repset*> TO <*target*>**
- **CONID LIST [*source*]**

Options

- ***variable***—Name of the variable that you want to use to store the connection ID
- ***repset***—Replication set that was used to establish the connection
- ***target***—Name of the target, an IP address on the target, or a virtual IP address
- ***source***—Name of the source

Examples

- `$con_id=conid DataFiles to beta`
- `$ConnectionNumber=conid UserData to beta`
- `conid list alpha`

Notes

- The `conid list` and `variable=conid` commands are two separate commands.
- If no machine name is specified in the conid list command, the active source will be used.
- Options Machine names that contain non-alphanumeric characters must be enclosed in quotation marks.

2. Use the Double-Take **status** command to display statistical and informational data.

Command	STATUS
Description	Requests connection and statistical information
Syntax	**STATUS | CONNECT <*con_id*>** **| MIRROR <*con_id*>** **| REPLICATE <*con_id*>** **| TRANSMIT <*con_id*>**
Options	• **CONNECT**—Displays connection information for the connection ID specified • ***con_id***—Connection ID assigned to the source/target connection • **MIRROR**—Displays mirroring information for the connection ID specified • **REPLICATE**—Displays replication information for the connection ID specified • **TRANSMIT**—Displays transmission information for the connection ID specified
Examples	• `status connect 1` • `status replicate 1`

For details on other monitoring methods, see the Double-Take *User's Guide*.

Controlling an automatic mirror

Use the **AutoRemirror** option with the **get** and **set** commands to configure if a mirror is intiitated automatically when a connection is automatically reconnected. See ***Server Settings*** on page 13-1 for more information on using these commands with a Double-Take program setting.

Queuing Double-Take data

Use the **QJournalDir**, **QJournalFileSize**, **QmemoryBufferMax**, **QJournalSpaceMax**, **QJournalFreeSpaceMin**, and **QueueSizeAlertThreshold** options with the **get** and **set** commands to configure how Double-Take queues data. See ***Server Settings*** on page 13-1 for more information on using these commands with a Double-Take program setting.

Configuring automatic reconnections

Use the **AutoReconnect** option to configure Double-Take automatic reconnections. See ***Server Settings*** on page 13-1 for more information on using these commands with a Double-Take program setting.

Configuring compression

1. To determine the current compression setting, use the **`compression list`** command. By default, compression is disabled.

   Command COMPRESSION LIST

   Description Identifies the compression level set and if compression is enabled

   Syntax **`COMPRESSION LIST`**

2. To set the level of compression, use the **`compression set`** command.

   Command COMPRESSION SET

   Description Sets the compression level

   Syntax **`COMPRESSION SET <`*`con_id`*`> <`*`level`*`>`**

   Options
   - ***con_id***—Connection ID assigned to the source/target connection
   - ***level***—Any whole number from 1 to 3 where 1 is minimum compression and 3 is maximum compression

   Examples `compression set 1 2`

   Notes This command only sets the level of compression. It does not initiate compression.

3. To initiate compression, use the **`compression enable`** command.

   Command COMPRESSION ENABLE

   Description Enables compression

   Syntax **`COMPRESSION ENABLE <`*`con_id`*`>`**

   Options ***con_id***—Connection ID assigned to the source/target connection

   Examples `compression enable 1`

4. If you need to stop compression, use the **`compression disable`** command.

   Command COMPRESSION DISABLE

   Description Disables compression

   Syntax **`COMPRESSION DISABLE <`*`con_id`*`>`**

   Options ***con_id***—Connection ID assigned to the source/target connection

   Examples compression disable 1

Disconnecting a connection

Use the **disconnect** command to disconnect the source/target connection.

Command DISCONNECT

Description Disconnects a specified source/target connection for the currently selected source

Syntax **DISCONNECT <*con_id* | *>**

Options

- ***con_id***—Connection ID assigned to the source/target connection
- ***—Specifies all connection IDs

Examples

- `disconnect 1`
- `disconnect *`

Mirroring and Replication

7

NOTE: As noted in the *Scripting Guide* ***Introduction*** on page 1-1, this guide does not explain Double-Take features and functions, only the scripting aspects of Double-Take. For details on the different features and functions, see the Double-Take *User's Guide*.

Using the Double-Take commands, you can perform the following functions to manage mirroring and replication.

- ***Controlling mirroring*** on page 7-1
- ***Controlling an automatic mirror*** on page 7-3
- ***Configuring and removing orphan files*** on page 7-3
- ***Starting replication*** on page 7-4
- ***Inserting tasks during replication*** on page 7-4

Controlling mirroring

You can stop, start, pause, or resume a mirror.

- **Mirror Stop**

Command	MIRROR STOP
Description	Stops a paused mirror
Syntax	**MIRROR STOP <*con_id* | *>**
Options	• ***con_id***—Connection ID assigned to the source/target connection • ***—Specifies all connection IDs
Examples	• `mirror stop 1` • `mirror stop *`

- **Mirror Start**

Command	MIRROR START
Description	Initiates the mirror process
Syntax	**MIRROR START <*con_id*> [DIFFERENT [,NEWER] ,CHECKSUM | NOCHECKSUM] [ORPHANS |NOORPHANS] [CALCULATE | NOCALCULATE] [CLEARRESTOREREQUIRED]**

Options

- *con_id*—Connection ID assigned to the source/target connection
- **DIFFERENT**—Mirrors only those files that are different based on the file date, time, and/or size
- **NEWER**—Mirrors only those files that are newer on the source than on the target
- **CHECKSUM**—Mirrors only those blocks that are different based on block checksum comparisons
- **NOCHECKSUM**—Does not perform a checksum comparison when mirroring files
- **ORPHANS**—Moves or deletes orphan files on the target
- **NOORPHANS**—Does not move or delete orphan files on the target
- **CALCULATE**—Calculate the size of the replication set prior to mirroring
- **NOCALCULATE**—Does not calculate the size of the replication set prior to mirroring
- **CLEARRESTOREREQUIRED**—Clears the restore required flag and initiates the mirror

Examples

- `mirror start 1 different, newer`
- `mirror start 2 different, checksum orphans calculate`

Notes The default settings for this command are noorphans and calculate.

- **Mirror Pause**

Command MIRROR PAUSE

Description Pauses a mirror that is in progress

Syntax **MIRROR PAUSE <*con_id* | *>**

Options

- *con_id*—Connection ID assigned to the source/target connection
- ***—Specifies all connection IDs.

Examples

- `mirror pause 1`
- `mirror pause *`

- **Mirror Resume**

Command MIRROR RESUME

Description Resumes a paused mirror

Syntax **MIRROR RESUME <*con_id* | *>**

Options

- *con_id*—Connection ID assigned to the source/target connection
- *—Specifies all connection IDs.

Examples

- `mirror resume 1`
- `mirror resume *`

Controlling an automatic mirror

Use the **AutoRemirror** option with the **get** and **set** commands to configure if a mirror is intiitated automatically when a connection is automatically reconnected. See ***Server Settings*** on page 13-1 for more information on using these commands with a Double-Take program setting.

Configuring and removing orphan files

1. Use the **MoveOrphanedFiles**, **RemoveAllOrphans**, , **RemoveOrphansTime**, **MoveOrphansDir**, and **LogAllOrphans** options with the **get** and **set** commands for orphan file configuration. See ***Server Settings*** on page 13-1 for more information on using these commands with a Double-Take program setting.
2. To remove orphan files manually, use the **orphans start** command.

Command	ORPHANS START
Description	Manual operation to remove any orphan files on the target
Syntax	**ORPHANS START** ***con_id*** **[CLEARRESTOREREQUIRED]**
Options	• ***con_id***—Connection ID assigned to the source/target connection • **CLEARRESTOREREQUIRED**—Clears the restore required flag and initiates the orphan operation
Examples	`orphans start 1`

3. If you want to stop removing orphan files after it has been started, use the **orphans stop** command.

Command	ORPHANS STOP
Description	Stops the process to remove orphan files on the target
Syntax	**ORPHANS STOP** ***con_id***
Options	***con_id***—Connection ID assigned to the source/target connection
Examples	`orphans stop 1`

Starting replication

Start replication by using the **replication start** command.

Command	REPLICATION START
Description	Initiates the replication process
Syntax	**REPLICATION START <*conid* | *> [CLEARRESTOREREQUIRED]**
Options	• ***conid***—Connection ID assigned to the source/target connection • *****—Specifies all connection IDs • **CLEARRESTOREREQUIRED**—Clears the restore required flag and initiates replication
Examples	• `replication start 1` • `replication start *`

Inserting tasks during replication

Task command processing is a Double-Take feature that allows you to insert and run tasks at various points during the replication of data. Because the tasks are user-defined, you can achieve a wide variety of goals with this feature. For example, you might insert a task to create a snapshot or run a backup on the target after a certain segment of data from the source has been applied on the target. This allows you to coordinate a point-in-time backup with real-time replication.

Task command processing can be enabled from the Management Console, but it can only be initiated through a scripting command.

If you disable this option on a source server, you can still submit tasks to be processed on a target, although task command processing must be enabled on the target.

Because Double-Take replication follows the same write sequence within and across multiple files, it provides complete data integrity at all times. At any given moment, the target represents a single point in time from the source, which makes the target crash consistent. But for some applications, crash consistency may not be adequate. You may require that the source data be in a quiescent (latent) state, similar to an application checkpoint. You need to be able to identify when the application is stable, which is usually when all of the data has been written to disk. This can be triggered by stopping the service. With task command processing, you can stop the source service just long enough to identify that stopped point in time as a stable state, insert a task at that point into the Double-Take replication queue to trigger a backup or snapshot on the target, and then restart the service. Here is how the process would work.

1. Double-Take and an application are both running on the source. Only Double-Take is running on the target.
2. The application data is changing on the source and Double-Take is capturing those data changes and transmitting them to the target.
3. A script is launched (either manually or perhaps scheduled by the Windows Scheduler) that stops the application service on the source, pauses to give the service time to shutdown and write the data to disk, initiates a Double-Take task command, and then restarts the application service on the source.
4. The Double-Take task command is transmitted, inline with the source replication data, to the target.
5. The data is applied on the target as it is received. Since the task command was inserted inline, the replication data from the source is applied to the target first. When the target gets to the Double-Take task command, the target data will be in the exact same state as the source data when the source application service was stopped. Since this was a stable point on the source, it is also a stable point on the target.

6. The target processes the Double-Take task command and completes whatever task is defined, perhaps a snapshot or backup. Since the Double-Take task command is user-defined, you can insert any valid executable or batch file.

Double-Take task command processing must be enabled, and there must be an active Double-Take connection for task command processing to function properly. To insert a task command, you would use the **queuetask** command. Also, see ***Creating a backup or snapshot of the target by inserting a task command during replication*** on page 15-4 for a sample script which can be used as a basis for creating a script for your own environment.

Command QUEUETASK

Description Queues tasks inline with replication data.

Syntax

```
QUEUETASK <job_name> TO <target>  ONQUEUE = <task> [args]
| ONTRANSMIT = <task> [args] | ONRECEIVE = <task> [args]  |
ONEXECUTE = <task> [args]  [TIMEOUT = <timeout>]
[INTERACT | NOINTERACT]
```

Options

- ***job_name***—Unique job name assigned to this task. This will be the identifier you see in the log files.
- ***target***—Name of the target, an IP address on the target, or a virtual IP address. Depending on the network route Double-Take uses to access the target, you may need to specify the fully qualified domain name. The target is required even if you are only queuing a task to be executed on the source.
- **ONQUEUE**—Execute the specified task on the source machine as soon as the source receives and queues the task. During heavy replication, there may be a delay while the task is queued inline with the replication operations.
- **ONTRANSMIT**—Execute the specified task on the source machine just before the source transmits the task to the target.
- **ONRECEIVE**—Execute the specified task on the target machine as soon as the target receives and queues the task.
- **ONEXECUTE**—Execute the specified task on the target when the target processes the task from the queue. Since the task is not executed until it is processed, if the target is paused, the task will be held in queue.
- ***task***—The path and filename of the task to run relative to the machine it will be run on. Tasks include any valid executable or batch file. The executables or files must exist in the specified location on the machine where they will be executed
- ***args***—Arguments or options which need to be supplied with the task. Multiple arguments can be supplied in a space-separated list enclosed in quotation marks.

Options

- **TIMEOUT** ***timeout***—Valid number followed by an optional time indicator indicating the length of time ot pause while waiting for the task to complete. The valid time indicators include seconds, minutes, hours, and days. If you do not specify a time indicator, it will default to seconds. The number zero (0) indicates there is no timeout delay and the next operation is immediately processed. The keyword FOREVER indicates that the next operation is not processed until the task has completed execution. If you do not specify this option, the timeout will default to forever.
- **INTERACT**—Tasks interact with the desktop and, therefore, display on screen and run in the foreground
- **NOINTERACT**—Tasks do not interact with the desktop

Examples

```
qtask backup to beta onrec=PauseAndBackup.bat
onexec=resume.bat
```

Notes

- The default setting for this command is nointeract.
- Any combination of one or more execution points can be used with the same queuetask command.
- All script processing messages, including errors, can be viewed in the Double-Take logs and the Windows Event Viewer.
- Onqueue will still execute as soon as the task is placed on the queue even if transmission is stopped (manually stopped or paused, unmet scheduled transmission criteria, etc.). Any other option will not execute until transmission is restarted.
- If your source is in a restore required state, any task placed on the queue will be executed immediately. Use caution when submitting tasks while in this state so that the target does not get inadvertently updated.
- A task may be discarded if all connections to a target are manually disconnected, replication is stopped for all connections to a target, or an auto-disconnect occurs.
- If a task is submitted after replication is stopped, the task will be executed immediately.
- If you disable task command processing while tasks are in queue, those tasks will not be executed.
- The user submitting the task command must be a member of the Double-Take Admin security group on both the source and target and the Double-Take service must have proper privileges to access the files or run the commands specified in the task.
- Options that contain non-alphanumeric characters must be enclosed in quotation marks.

Verification

8

NOTE: As noted in the *Scripting Guide* ***Introduction*** on page 1-1, this guide does not explain Double-Take features and functions, only the scripting aspects of Double-Take. For details on the different features and functions, see the Double-Take *User's Guide*.

With Double-Take commands, verification can only be initiatied after a connection is established.

1. Log on to the source using the **`login`** command.

Command	LOGIN
Description	Log on to a Double-Take machine
Syntax	**`LOGIN <`*`machine`*`> <`*`username`*`> <`*`password`*`> [`*`domain`*`]`**
Options	• ***machine***—Name of the machine • ***username***—Name of the user. The username is limited to 100 characters. • ***password***—Password associated with the user name. The password is limited to 100 characters. • ***domain***—If logging in using a domain account, this is the domain name. If logging in using a local account, this is the machine name. The domain is limited to 100 characters.
Examples	`login alpha administrator ******`
Notes	• Options that contain non-alphanumeric characters must be enclosed in quotation marks. • The password cannot be a Double-Take keyword. These are any DTCL command (source, target, and so on.) or any DTCL shortcut command (env, mon, rep, and so on). • When scripting with this command, it will return one of three positive numbers: 0 (no access granted), 1 (monitor access granted), or 2 (full access granted).

2. Identify the source that you want to initiate verification for by using the **`source`** command.

Command	SOURCE
Description	Identifies a machine as the active source machine
Syntax	**`SOURCE <`*`source`*`>`**
Options	***source***—Name of the source
Examples	`source alpha`
Notes	Source names that contain non-alphanumeric characters must be enclosed in quotation marks.

3. Initiate the verification process by using the **verify** command.

Command VERIFY

Description Verifies the integrity of the data between the source and target machines.

Syntax

```
VERIFY <con_id> [ SYNC [,NEWER] | NOSYNC]
[,CHECKSUM | NOCHECKSUM] [STARTTIME=<mm/dd/yy> [hh:mm]]
[EVERY <number> <time_units>] [ORPHANS | NOORPHANS]
[CLEARRESTOREREQUIRED]
```

Options

- ***con_id***—Connection ID assigned to the source/target connection
- **SYNC**—Synchronizes any data that is different
- **NEWER**—Synchronizes only those files that are newer on the source than on the target
- **NOSYNC**—Do not synchronize any data that is different
- **CHECKSUM**—Compares and/or synchronizes those blocks that are different on the source than on the target based on checksum comparisons
- **NOCHECKSUM**—Does not perform a checksum comparison when comparing and/or synchronizing files
- **STARTTIME**—Starts the verification process at the time specified
- ***mm/dd/yy***—Date in month/day/year format when the verification process will begin
- ***hh:mm***—Time in hour:minute format using the 24-hour clock when the verification process will begin
- **EVERY**—Repeat the verification process at the frequency specified
- ***number***—Length of time to repeat the verification process
- ***time_units***—Minutes (min), hours (hr), or days (day)
- **ORPHANS**—Moves or deletes orphan files on the target
- **NOORPHANS**—Does not move or delete orphan files on the target
- **CLEARRESTOREREQUIRED**—Clears the restore required flag and initiates the verification

Examples

- `verify 1`
- `verify 2 sync, newer`
- `verify 2 every 2 hr`

Notes The default verification settings are sync, checksum, and noorphans.

4. Use the **VerifyLogName**, **VerifyLogAppend**, and **VerifyLogLimit** options with the **get** and **set** commands to configure the verification log. See ***Server Settings*** on page 13-1 for more information on using these commands with a Double-Take program setting.

Data Transmission 9

NOTE: As noted in the *Scripting Guide* ***Introduction*** on page 1-1, this guide does not explain Double-Take features and functions, only the scripting aspects of Double-Take. For details on the different features and functions, see the Double-Take *User's Guide*.

Using the Double-Take commands, you can perform the following functions to manage your connections.

- ***Controlling transmission manually*** on page 9-1
- ***Controlling a target manually*** on page 9-3
- ***Scheduling transmission criteria*** on page 9-4
- ***Setting bandwidth limitations*** on page 9-8

Controlling transmission manually

You can stop, start, pause, or resume transmission.

1. To start the transmission process, use the **`transmission start`** command.

Command	TRANSMISSION START
Description	Initiates the transmission process
Syntax	**`TRANSMISSION START <`*`target`*`>`**
Options	***target***—Name of the target, an IP address on the target, or a virtual IP address. Depending on the network route Double-Take uses to access the target, you may need to specify the fully qualified domain name.
Examples	`transmission start beta`
Notes	Target names that contain non-alphanumeric characters must be enclosed in quotation marks.

2. To stop the transmission process, use the **`transmission stop`** command.

Command	TRANSMISSION STOP
Description	Stops the transmission process
Syntax	**`TRANSMISSION STOP <`*`target`*`>`**
Options	***target***—Name of the target, an IP address on the target, or a virtual IP address. Depending on the network route Double-Take uses to access the target, you may need to specify the fully qualified domain name.
Examples	`transmission stop beta`
Notes	Target names that contain non-alphanumeric characters must be enclosed in quotation marks.

3. To pause the transmission process, use the **`transmission pause`** command.

Command	TRANSMISSION PAUSE
Description	Pauses the transmission pause
Syntax	**`TRANSMISSION PAUSE <`*`target`*`>`**
Options	***target***—Name of the target, an IP address on the target, or a virtual IP address. Depending on the network route Double-Take uses to access the target, you may need to specify the fully qualified domain name.
Examples	`transmission pause beta`
Notes	Target names that contain non-alphanumeric characters must be enclosed in quotation marks.

4. To resume the transmission process, use the **`transmission resume`** command.

Command	TRANSMISSION RESUME
Description	Resumes a paused transmission
Syntax	**`TRANSMISSION RESUME <`*`target`*`>`**
Options	***target***—Name of the target, an IP address on the target, or a virtual IP address. Depending on the network route Double-Take uses to access the target, you may need to specify the fully qualified domain name.
Examples	`transmission resume beta`
Notes	Target names that contain non-alphanumeric characters must be enclosed in quotation marks.

Controlling a target manually

1. Pause the execution of operations on the target by using the **pausetarget** command on a target that you are logged in to.

Command	PAUSETARGET
Description	Allows you to pause the execution of Double-Take operations on the target
Syntax	**PAUSETARGET <*target*> [FROM <*source*>]**
Options	• ***target***—Name of the target, an IP address on the target, or a virtual IP address • ***source***—Name of the source
Examples	`pausetarget beta`
Notes	• You must be logged on to the target machine for this command to work. • If the target machine has not been identified using the target command, you must specify the target name in the command. • Options that contain non-alphanumeric characters must be enclosed in quotation marks.

2. Resume the execution of operations on the target by using the **resumetarget** command on a target that you are logged in to.

Command	RESUMETARGET
Description	Allows you to resume the execution of Double-Take operations on the target
Syntax	**RESUMETARGET <*target*> [FROM <*source*>]**
Options	• ***target***—Name of the target, an IP address on the target, or a virtual IP address • ***source***—Name of the source
Examples	`resumetarget beta`
Notes	• You must be logged on to the target machine for this command to work. • Options that contain non-alphanumeric characters must be enclosed in quotation marks.

Scheduling transmission criteria

You can clear an existing schedule, disable or enable the use of a schedule, and set start, stop, and window criteria.

1. To clear all existing transmission options, use the **`schedule clear`** command.

Command	SCHEDULE CLEAR
Description	Clears the existing transmission schedule for the specified target
Syntax	**`SCHEDULE <`*`target`*`> CLEAR`**
Options	***`target`***—Name of the target, an IP address on the target, or a virtual IP address Depending on the network route Double-Take uses to access the target, you may need to specify the fully qualified domain name.
Examples	`schedule beta clear`
Notes	Target names that contain non-alphanumeric characters must be enclosed in quotation marks.

NOTE: All transmission options are stored on the source machine until they are either cleared or the option is updated. At this time, there is not a command to display the existing transmission options.

2. Enable transmission limiting when you want to apply any transmission options that have been configured. You can also disable the transmission options without losing your settings. Use either of the following two commands to disable or enable transmission limiting.

Command	SCHEDULE ENABLE
Description	Enables the transmission schedule
Syntax	**`SCHEDULE <`*`target`*`> ENABLE`**
Options	***`target`***—Name of the target, an IP address on the target, or a virtual IP address Depending on the network route Double-Take uses to access the target, you may need to specify the fully qualified domain name.
Examples	`schedule beta enable`
Notes	Target names that contain non-alphanumeric characters must be enclosed in quotation marks.

Command	SCHEDULE DISABLE
Description	Disables the transmission schedule without clearing the schedule data
Syntax	**`SCHEDULE <`*`target`*`> DISABLE`**
Options	***`target`***—Name of the target, an IP address on the target, or a virtual IP address Depending on the network route Double-Take uses to access the target, you may need to specify the fully qualified domain name.

Examples `schedule beta disable`

Notes Target names that contain non-alphanumeric characters must be enclosed in quotation marks.

3. You can specify a start time, a repeat interval, and queue usage criteria.

Command SCHEDULE START

Description Sets criteria to start the transmission of data from the source to the target

Syntax

SCHEDULE <*target*> START [STARTTIME = <*mm/dd/yy*> <*hh:mm*>] [MEMLIMIT = <*percent*>] [QUEUESIZE = <*bytes*>] [EVERY <*number*> <*time_units*>]

Options

- ***target***—Name of the target, an IP address on the target, or a virtual IP address Depending on the network route Double-Take uses to access the target, you may need to specify the fully qualified domain name.
- ***mm/dd/yy***—Date in month/day/year format indicating when the transmission will begin
- ***hh:mm***—Time in hour:minute format using the 24-hour clock indicating when the transmission will begin
- ***percent***—Any number between 0 and 100 indicating the percentage of system memory that must be in use to initiate the transmission process
- ***bytes***—Number of bytes that must be in the source disk queue to initiate the transmission process
- ***number***—Any number indicating how often the transmission process will be repeated
- ***time_units***—Minutes (min), hours (hr), or days (day)

Examples

```
schedule beta start starttime=03/11/07 03:30,
queuesize=10000, every 6 hr
```

Notes

- The start option EVERY cannot be used by itself and cannot be the first option in a string of options.
- If you use more than one start option, the transmission will begin when the first start option value is met. Additionally, each option after the first must be separated by a comma, as illustrated in the Examples.
- Target names that contain non-alphanumeric characters must be enclosed in quotation marks.

4. You can specify a transmission duration and a maximum number of bytes.

Command	SCHEDULE END
Description	Sets criteria to end the transmission of data from the source to the target
Syntax	**SCHEDULE <*target*> END [DURATION = <*number*> <*time_units*>] [BYTES = <*bytes*>]**
Options	• ***target***—Name of the target, an IP address on the target, or a virtual IP address Depending on the network route Double-Take uses to access the target, you may need to specify the fully qualified domain name. • ***number***—Any number indicating the length of time before the transmission ends • ***time_units***—Minutes (min), hours (hr), or days (day) • ***bytes***—Number of bytes transmitted before the transmission ends
Examples	`schedule beta end duration=3 hr bytes=1500000`
Notes	• If you use both of the end options, duration and bytes, the transmission will be stopped when the first end option value is met. • Target names that contain non-alphanumeric characters must be enclosed in quotation marks.

5. You can specify a transmission window.

Command	SCHEDULE WINDOW
Description	Sets criteria to only allow transmissions during a certain period of time
Syntax	**SCHEDULE <*target*> WINDOW <*hh:mm*> TO <*hh:mm*>**
Options	• ***target***—Name of the target, an IP address on the target, or a virtual IP address Depending on the network route Double-Take uses to access the target, you may need to specify the fully qualified domain name. • ***hh:mm***—Time in hour:minute format using the 24-hour clock. The first time is when the transmission will begin and the second time is when the transmission will end.
Examples	`schedule beta window 23:00 to 06:00`
Notes	• Establishing a transmission window by itself is not sufficient to start a transmission. You will need to specify a start criteria. • Target names that contain non-alphanumeric characters must be enclosed in quotation marks.

Transmission schedule examples

This section shows examples of how the different **`schedule`** commands could be used together.

NOTE: The numbers and times were randomly selected for these examples. Be sure to use values that work for your environment.

- **Example 1**—In this example, transmission is set to begin on January 12, 2007, at 10:30 p.m. and to end after 6 hours. This schedule is also set to repeat every day:

  ```
  schedule alpha start starttime=1/12/07 22:30, every 1 day
  schedule alpha end duration=6 hr
  schedule alpha enable
  ```

  If all the data is not transmitted within the 6-hour duration, the remaining data will remain in the queue and will be transmitted during the next scheduled transmission.

- **Example 2**—In this example, transmission is set to begin after the source queue contains approximately 40 MB of data, and transmission is set to end after approximately 50 MB of data have been sent from the source to the target:

  ```
  schedule alpha start queuesize=40000000
  schedule alpha end bytes=50000000
  schedule alpha enable
  ```

  If there is data remaining in the source queue after the transmission ends, the data will be sent when the source queue again reaches 40000000 bytes of data.

- **Example 3**—In this example, transmission is set to begin after the source queue contains approximately 50 MB of data, and transmission is set to end after 60 MB of data have been sent from the source to the target. However, transmission can only occur if the start criteria is met within the defined 6-hour window:

  ```
  schedule alpha start queuesize=50000000
  schedule alpha end bytes=60000000
  schedule alpha window 22:00 to 04:00
  schedule alpha enable
  ```

  If additional data remains in the source queue after the transmission ends, that data will be sent when the start criteria is again met within the defined 6-hour window. However, if the start criteria is not met within the defined 6-hour window, data remains in the queue until the start criteria is met within the defined window.

NOTE: At any time, transmission can be manually started, stopped, paused, or resumed regardless of scheduled transmission criteria.

Setting bandwidth limitations

With a fixed bandwidth limit, data will be transmitted at all times according to the user specified bandwidth configuration. If you want to set a fixed bandwidth limit, use the **`limit bandwidth`** command.

Command LIMIT BANDWIDTH

Description Sets a fixed bandwidth limitation for transmitting data from the source to the target

Syntax **`LIMIT BANDWIDTH <bytes>, <seconds> TO <target>`**

Options

- ***bytes***—Number of bytes to be transmitted
- ***seconds***—Maximum number of seconds to wait before transmitting again
- ***target***—Name of the target, an IP address on the target, or a virtual IP address. Depending on the network route Double-Take uses to access the target, you may need to specify the fully qualified domain name.

Examples

```
limit bandwidth 19300, 5 to beta
```

Notes

- This command transmits in bursts, not bytes per seconds. The time identifies how long to wait before transmitting again. For example, if 5 seconds are specified and it only takes 2 seconds to send the specified bytes, Double-Take will wait an additional 3 seconds before transmitting again.
- Target names that contain non-alphanumeric characters must be enclosed in quotation marks.

Restoration 10

NOTE: As noted in the *Scripting Guide* ***Introduction*** on page 1-1, this guide does not explain Double-Take features and functions, only the scripting aspects of Double-Take. For details on the different features and functions, see the Double-Take *User's Guide*.

1. Login to your target by using the **`login`** command.

   Command LOGIN

   Description Log on to a Double-Take machine

   Syntax **`LOGIN <machine> <username> <password> [domain]`**

   Options
   - ***machine***—Name of the machine
   - ***username***—Name of the user. The username is limited to 100 characters.
   - ***password***—Password associated with the user name. The password is limited to 100 characters.
   - ***domain***—If logging in using a domain account, this is the domain name. If logging in using a local account, this is the machine name. The domain is limited to 100 characters.

   Examples
   ```
   login alpha administrator ******
   ```

   Notes
   - Options that contain non-alphanumeric characters must be enclosed in quotation marks.
   - The password cannot be a Double-Take keyword. These are any DTCL command (source, target, and so on.) or any DTCL shortcut command (env, mon, rep, and so on).
   - When scripting with this command, it will return one of three positive numbers: 0 (no access granted), 1 (monitor access granted), or 2 (full access granted).

2. Identify your source that you will be restoring to by using the **`source`** command.

   Command SOURCE

   Description Identifies a machine as the active source machine

   Syntax **`SOURCE <source>`**

   Options ***source***—Name of the source

   Examples
   ```
   source alpha
   ```

   Notes Source names that contain non-alphanumeric characters must be enclosed in quotation marks.

3. Restore Double-Take data from target to the source by using the **restore** command.

Command RESTORE

Description Initiates the restoration process

Syntax

```
RESTORE <repset> FROM <target> ORIGINAL <original_source>
[, OVERWRITE | NOOVERWRITE] [, OVERWRITENEWER |
NOOVERWRITENEWER] [, USETARGETDB | NOUSETARGETDB]
[, RESTOREDBTOO | NORESTOREDBTOO] [, CHECKSUM |
NOCHECKSUM][, ORPHANS | NOORPHANS]
```

Options

- *repset*—Name of the replication set
- *target*—Name of the target, an IP address on the target, or a virtual IP address
- *original_source*—Name of the original source
- **OVERWRITE**—Overwrites files on the source
- **NOOVERWRITE**—Does not overwrite files on the source
- **OVERWRITENEWER**—Overwrites files on the source even if the source file is newer than on the target
- **NOOVERWRITENEWER**—Does not overwrite files on the source that are newer on the source than on the target
- **USETARGETDB**—Uses the replication set from the target machine
- **NOUSETARGETDB**—Uses the replication set from the source machine
- **RESTOREDBTOO**—Restores the replication set database from the target to the source
- **NORESTOREDBTOO**—Does not restore the replication set database from the target to the source
- **CHECKSUM**—Performs a block checksum comparison and only restores those blocks that are different
- **NOCHECKSUM**—Does not perform a block checksum comparison and restores those files that are different
- **ORPHANS**—Moves or deletes orphan files on the source
- **NOORPHANS**—Does not move or delete orphan files on the source

Examples

```
restore DataFiles from beta ,overwritenewer ,usetargetdb
```

Notes

- The default settings for this command are overwrite, overwritenewer, usetargetdb, restoredbtoo, and noorphans.
- The options can be used in any combination and in any order. The first option does not require a comma, but the second and remaining options do require a comma before the option.
- The source command is required before each use of the restore command.
- This command requires the original source option.
- Options that contain non-alphanumeric characters must be enclosed in quotation marks.

After the restoration is complete, the connection will remain connected and continue replicating data changes from the target to the source until the restoration connection is manually disconnected on the target using the **disconnect** command.

Failover 11

NOTE: As noted in the *Scripting Guide* ***Introduction*** on page 1-1, this guide does not explain Double-Take features and functions, only the scripting aspects of Double-Take. For details on the different features and functions, see the Double-Take *User's Guide*.

Using the Double-Take commands, you can perform the following functions to manage failover.

- ***Configuring failover*** on page 11-1
- ***Editing failover configuration*** on page 11-9
- ***Stopping failover monitoring*** on page 11-9
- ***Removing failover configuration*** on page 11-11
- ***Failing over*** on page 11-12

Configuring failover

1. Specify a target machine by using the **`target`** command.

Command	TARGET
Description	Identifies a machine as the active target machine
Syntax	**`TARGET <`*`target`*`>`**
Options	***target***—Name of the target, an IP address on the target, or a virtual IP address
Examples	`target beta`
Notes	• You must be logged into a machine using the login command before using the target command. • Target names that contain non-alphanumeric characters must be enclosed in quotation marks.

2. Determine what NICs are available on the specified target by using the **niclist** command.

Command	NICLIST
Description	Displays the NICs available on the specified target machine. Each NIC is assigned an integer value and this value is used in the monitor move command.
Syntax	**NICLIST [*target*]**
Options	***target***—Name of the target, an IP address on the target, or a virtual IP address
Examples	`niclist beta`
Notes	• If you do not specify a machine name, the value from the current target will be returned. If you have not identified a target, no data will be returned. • If you have not logged into the target machine, no data will be displayed. • Target names that contain non-alphanumeric characters must be enclosed in quotation marks.

3. Establish a monitor to use with the remaining monitor commands by using the **monitor create** command.

Command	MONITOR CREATE
Description	Establishes a source as a failover monitor. This is the machine that will be monitored by a target in case it should experience a failure.
Syntax	**MONITOR CREATE <*source*>**
Options	***source***—Name of the source
Examples	`monitor create alpha`
Notes	Machine names that contain non-alphanumeric characters must be enclosed in quotation marks.

4. Specify that you want to use the monitor that was just created by using the **monitor use** command.

Command	MONITOR USE
Description	Specifies the source machine designated as the monitor that will be used in subsequent monitor commands
Syntax	**MONITOR USE <*monitor*>**
Options	***monitor***—Name of the source machine designated as the monitor
Examples	`monitor use alpha`
Notes	Monitor names that contain non-alphanumeric characters must be enclosed in quotation marks.

5. Configure the monitor settings (including the IP address to monitor, the target NIC that will assume the IP address when it fails, the monitor interval and missed packets) by using the **`monitor move`** command.

Command MONITOR MOVE

Description Designates the IP address that will be failed over to the specified target NIC

Syntax

`MONITOR MOVE <`*`IP_address`*`> TO NIC <`*`target_NIC`*`>`
`INTERVAL <`*`interval`*`> TIMEOUT <`*`timeout`*`> [`*`monitor`*`]`
`| NOTEST [`*`monitor`*`]`

Options

- *`IP_address`*—The IP address which should be moved during failover
- *`target_NIC`*—The integer value of the target NIC obtained from the niclist command
- **INTERVAL** *`interval`*—The frequency, in seconds, of the monitor requests sent to the source machine to see if it is online and active
- **TIMEOUT** *`timeout`*—The number of seconds before failover will occur. This number is reset to its maximum each time the source sends a response to the monitor request.
- **NOTEST**—Allows you to failover an IP address without sending monitor requests or expecting responses from the source. This option should only be used if you are monitoring multiple IP addresses but do not want to send monitor requests to each address.
- *`monitor`*—Name of the source machine designated as the monitor

Examples

- `monitor move 205.31.2.57 to nic 1 interval 5 timeout 25`
- `monitor move 205.31.2.68 to nic 2 notest`

Notes

- If you do not specify a monitor, the current source designated as the monitor will be used. If you have not identified a monitor, you will receive an error message stating that a monitor has not been selected.
- Monitor names that contain non-alphanumeric characters must be enclosed in quotation marks.

6. To remove an IP address from an established monitor, use the **monitor remove** command.

Command MONITOR REMOVE

Description Removes an IP address that is currently being monitored

Syntax

```
MONITOR REMOVE <IP_address> [monitor]
```

Options

- ***IP_address***—The currently monitored IP address that should be removed
- ***monitor***—Name of the source machine designated as the monitor

Examples

- `monitor remove 205.31.2.57 alpha`
- `monitor remove 205.31.2.68`

Notes

- If you do not specify a monitor, the current source designated as the monitor will be used. If you have not identified a monitor, you will receive an error message stating that a monitor has not been selected.
- Monitor names that contain non-alphanumeric characters must be enclosed in quotation marks.

7. Configure the failover settings by using the **monitor option** command.

Command MONITOR OPTION

Description Configures the settings to determine how failover will be performed

Syntax

```
MONITOR OPTION [MOVENAME | NOMOVENAME]
[, MOVEADDRESSES | NOMOVEADDRESSES]
[, MOVESHARES | NOMOVESHARES] [, ADD | REPLACE]
[, USESHAREFILE | NOUSESHAREFILE] [, FAILONE | FAILALL]
[, TRIGGERONE | TRIGGERALL] [, FODELAY | NOFODELAY]
[, FBDELAY | NOFBDELAY]
[, INTERVENTION | NOINTERVENTION]
[, FOHOSTNAME | NOFOHOSTNAME]
[, FBHOSTNAME | NOFBHOSTNAME] [monitor]
```

Options

- **MOVENAME**—Moves the server name during failover
- **NOMOVENAME**—Does not move the server name during failover
- **MOVEADDRESSES**—Moves the IP address(es) during failover
- **NOMOVEADDRESSES**—Does not move the IP address(es) during failover
- **MOVESHARES**—Moves the shares during failover
- **NOMOVESHARES**—Does not move the shares during failover
- **ADD**—Specifies the source machine's identity is added to the target machine's identity when failover occurs
- **REPLACE**—Specifies that the source machine's identity replaces the target machine's identity when failover occurs
- **USESHAREFILE**—Use the Double-Take generated .shr file to determine shares
- **NOUSESHAREFILE**—Do not use the Double-Take generated .shr file to determine shares

Options

- **FAILONE**—When multiple IP addresses exist on a monitor machine, only the failed address is failed over to the target machine
- **FAILALL**—When multiple IP addresses exist on a monitor machine, all of the addresses will fail over to the target machine even if only one address fails
- **TRIGGERONE**—When multiple IP addresses are being monitored, failover occurs when one of the IP addresses fails
- **TRIGGERALL**—When multiple IP addresses are being monitored, failover occurs when all of the IP addresses fail
- **FODELAY**—Guarantees that the pre-failover script has completed before failing over
- **NOFODELAY**—Does not guarantee that the pre-failbover script has completed before failing over
- **FBDELAY**—Guarantees that the pre-failback script has completed before failing back
- **NOFBDELAY**—Does not guarantee that the pre-failback script has completed before failing back
- **INTERVENTION**—Specifies that network administrator intervention is required before failover begins
- **NOINTERVENTION**—Specifies that network administrator intervention is not required before failover begins
- **FOHOSTNAME**—Removes the host SPN from Active Directory on the source and adds it to Active Directory on the target during failover
- **NOFOHOSTNAME**—Does not modify Active Directory on the source or target during failover
- **FBHOSTNAME**—Returns the host SPN on the source and target back to their original settings during failback
- **NOFBHOSTNAME**—Does not modify Active Directory on the source or target during failback
- ***monitor***—Name of the source machine designated as the monitor

Examples

- `monitor option alpha`
- `monitor option nomoveshares, nousesharefile, failone, nointervention`

Notes

- The default settings are movename, moveaddress, moveshares, add, usesharefile, failall, fodelay, fbdelay, intervention, nofohostname, and nofbhostname.
- The options can be used in any combination and in any order. The first option does not require a comma, but the second and remaining options do require a comma before the option.
- Monitor names that contain non-alphanumeric characters must be enclosed in quotation marks.

8. If you specified to failover or failback the hostname in the `monitor option` command. You will need to specify a user and the associated password that has update privileges within Active Directory using the **`monitor account add`** command. This allows SPNs to be created and deleted during failover and failback.

Command MONITOR ACCOUNT ADD

Description Identifies a user account with update permissions within Active Directory

Syntax **`MONITOR ACCOUNT ADD <`*`username`*`> <`*`password`*`> [`*`monitor`*`]`**

Options
- *`username`*—Name of the user in the format domain\user or user@domain
- *`password`*—Password associated with the user name
- *`monitor`*—Name of the source machine designated as the monitor

Examples
```
monitor account add administrator ***** alpha
```

Notes
- The password cannot be a Double-Take keyword. These are any DTCL commands (source, target, and so on) or any DTCL shortcut commands (env, mon, rep, and so on).
- The password cannot be blank.
- Options that contain non-alphanumeric characters must be enclosed in quotation marks.

9. Specify any scripts by using the **`monitor script add`** command.

Command MONITOR SCRIPT ADD

Description Specifies the scripts that should be run during the failover and failback processes

Syntax **`MONITOR SCRIPT ADD <`*`type`*`> <`*`script_name`*`> [`*`monitor`*`]`**

Options
- *`type`*—Any of the following script types
  - **PREFAILOVER**—The file is a pre-failover script to be run on the target before failover
  - **POSTFAILOVER**—The file is a post-failover script to be run on the target after failover
  - **PREFAILBACK**—The file is a pre-failback script to be run on the target before failback
  - **POSTFAILBACK**—The file is a post-failback script to be run on the target after failback
  - **SRCPOSTFAILBACK**—The file is a post-failback script to be run on the source after failback
- *`script_name`*—Full path and name of the script file
- *`monitor`*—Name of the source machine designated as the monitor

Examples
```
monitor script add prefailback /home/username/preback
```

Notes
- If you do not specify a monitor, the current source designated as the monitor will be used. If you have not identified a monitor, you will receive an error message stating that a monitor has not been selected.
- Options that contain non-alphanumeric characters must be enclosed in quotation marks.

10. Remove any scripts by using the **monitor script remove** command.

Command MONITOR SCRIPT REMOVE

Description Specifies the scripts that should not be run during the failover and failback processes

Syntax **MONITOR SCRIPT REMOVE <*type*> [*monitor*]**

Options

- ***type***—Any of the following script types
  - **PREFAILOVER**—The file is a pre-failover script to be run on the target before failover
  - **POSTFAILOVER**—The file is a post-failover script to be run on the target after failover
  - **PREFAILBACK**—The file is a pre-failback script to be run on the target before failback
  - **POSTFAILBACK**—The file is a post-failback script to be run on the target after failback
  - **SRCPOSTFAILBACK**—The file is a post-failback script to be run on the source after failback
- ***monitor***—Name of the source machine designated as the monitor

Examples

- `monitor script remove prefailback`
- `monitor script remove postfailover`

Notes

- If you do not specify a monitor, the current source designated as the monitor will be used. If you have not identified a monitor, you will receive an error message stating that a monitor has not been selected.
- Monitor names that contain non-alphanumeric characters must be enclosed in quotation marks.

11. Review your failover settings by using the **monitor display** command.

Command MONITOR DISPLAY

Description Displays the monitoring and failover configuration settings for the specified monitor machine

Syntax **MONITOR DISPLAY <*monitor*>**

Options ***monitor***—Name of the source machine designated as the monitor

Examples `monitor display alpha`

Notes

- If you do not specify a monitor, the current source designated as the monitor will be used. If you have not identified a monitor, you will receive an error message stating that a monitor has not been selected.
- Monitor names that contain non-alphanumeric characters must be enclosed in quotation marks.

12. Start failover monitoring by using the **monitor start** command.

Command	MONITOR START
Description	Initiates failover monitoring
Syntax	**MONITOR START <*monitor*> [ON <*target*>]**
Options	• ***monitor***—Name of the source machine designated as the monitor • ***target***—Name of the target, an IP address on the target, or a virtual IP address
Examples	`monitor start alpha on beta`
Notes	Options name that contain non-alphanumeric characters must be enclosed in quotation marks.

Editing failover configuration

1. Retrieve your monitor information by using the **monitor get** command.

Command	MONITOR GET
Description	Retrieves and displays the machines that are currently being monitored by the specified target machine
Syntax	**MONITOR GET <*target*>**
Options	***target***—Name of the target, an IP address on the target, or a virtual IP address
Examples	`monitor get beta`
Notes	Monitor names that contain non-alphanumeric characters must be enclosed in quotation marks.

2. Review the current failover settings by using the **monitor display** command.

Command	MONITOR DISPLAY
Description	Displays the monitoring and failover configuration settings for the specified monitor machine
Syntax	**MONITOR DISPLAY <*monitor*>**
Options	***monitor***—Name of the source machine designated as the monitor
Examples	`monitor display alpha`
Notes	• If you do not specify a monitor, the current source designated as the monitor will be used. If you have not identified a monitor, you will receive an error message stating that a monitor has not been selected. • Monitor names that contain non-alphanumeric characters must be enclosed in quotation marks.

3. If you need to edit any of the failover settings, use the failover configuration commands used to establish the failover configuration. See ***Configuring failover*** on page 11-1.

Stopping failover monitoring

1. Retrieve your monitor information by using the **monitor get** command.

Command	MONITOR GET
Description	Retrieves and displays the machines that are currently being monitored by the specified target machine
Syntax	**MONITOR GET <*target*>**
Options	***target***—Name of the target, an IP address on the target, or a virtual IP address

Examples `monitor get beta`

Notes Monitor names that contain non-alphanumeric characters must be enclosed in quotation marks.

2. To stop failover monitoring, use the **`monitor stop`** command.

Command MONITOR STOP

Description Stops monitoring the source machine for a failure

Syntax **`MONITOR STOP <`*`monitor`*`> [ON <`*`target_machine`*`>]`**

Options

- ***`monitor`***—Name of the source machine designated as the monitor
- ***`target`***—Name of the target, an IP address on the target, or a virtual IP address

Examples `monitor stop alpha on beta`

Notes Option names that contain non-alphanumeric characters must be enclosed in quotation marks.

Removing failover configuration

1. Retrieve your monitor information by using the **monitor get** command.

Command	MONITOR GET
Description	Retrieves and displays the machines that are currently being monitored by the specified target machine
Syntax	**MONITOR GET <*target*>**
Options	***target***—Name of the target, an IP address on the target, or a virtual IP address
Examples	`monitor get beta`
Notes	Monitor names that contain non-alphanumeric characters must be enclosed in quotation marks.

2. To delete the monitor, use the **monitor delete** command.

Command	MONITOR DELETE
Description	Deletes the specified failover monitor and all of its parameters
Syntax	**MONITOR DELETE <*monitor*>**
Options	***monitor***—Name of the source machine designated as the monitor
Examples	`monitor delete alpha`
Notes	• In order to successfully delete a monitor, the monitor must not be running on the server. Use the monitor stop command to ensure the monitor is not running. • Monitor names that contain non-alphanumeric characters must be enclosed in quotation marks.

Failing over

Verify that the source machine is offline and not connected to the network to avoid IP address conflicts. Trigger failover using the **`failover`** command.

Command	FAILOVER
Description	Manually initiates the failover process for the specified monitor machine
Syntax	**`FAILOVER <`*`monitor`*`> [ON <`*`target`*`>]`**
Options	• ***`monitor`***—Name of the source machine designated as the monitor • ***`target`***—Name of the target, an IP address on the target, or a virtual IP address
Examples	`failover alpha on beta`
Notes	If failover is configured for manual intervention, you must open the Failover Control Center to access the intervention prompt.

Failback 12

NOTE: As noted in the *Scripting Guide* ***Introduction*** on page 1-1, this guide does not explain Double-Take features and functions, only the scripting aspects of Double-Take. For details on the different features and functions, see the Double-Take *User's Guide*.

1. If you are performing failback before restoring, verify that your source machine is not connected to the network and that the issue(s) that caused the failure is resolved. If you have already performed a restoration, your source should already be connected to the network using a unique identity.
2. Login to the target machine that is currently standing in for the failed source by using the **`login`** command.

Command LOGIN

Description Log on to a Double-Take machine

Syntax **`LOGIN <`*`machine`*`> <`*`username`*`> <`*`password`*`> [`*`domain`*`]`**

Options

- ***machine***—Name of the machine
- ***username***—Name of the user. The username is limited to 100 characters.
- ***password***—Password associated with the user name. The password is limited to 100 characters.
- ***domain***—If logging in using a domain account, this is the domain name. If logging in using a local account, this is the machine name. The domain is limited to 100 characters.

Examples

```
login alpha administrator ******
```

Notes

- Options that contain non-alphanumeric characters must be enclosed in quotation marks.
- The password cannot be a Double-Take keyword. These are any DTCL command (source, target, and so on.) or any DTCL shortcut command (env, mon, rep, and so on).
- When scripting with this command, it will return one of three positive numbers: 0 (no access granted), 1 (monitor access granted), or 2 (full access granted).

3. Identify the machine you just logged into as the target by using the **target** command.

Command	TARGET
Description	Identifies a machine as the active target machine
Syntax	**TARGET <*target*>**
Options	***target***—Name of the target, an IP address on the target, or a virtual IP address
Examples	`target beta`
Notes	• You must be logged into a machine using the login command before using the target command. • Target names that contain non-alphanumeric characters must be enclosed in quotation marks.

4. Retrieve your monitor information by using the **monitor get** command.

Command	MONITOR GET
Description	Retrieves and displays the machines that are currently being monitored by the specified target machine
Syntax	**MONITOR GET <*target*>**
Options	***target***—Name of the target, an IP address on the target, or a virtual IP address
Examples	`monitor get beta`
Notes	Monitor names that contain non-alphanumeric characters must be enclosed in quotation marks.

5. Initiate failback by using the **failback** command. If you specified a pre-failback script in your failover configuration, that script will be executed at this time.

Command	FAILBACK
Description	Initiates the failback process for the specified monitor machine
Syntax	**FAILBACK <*monitor*> [ON <*target*>] [REMONITOR|NOREMONITOR]**
Options	• ***monitor***—Name of the source machine designated as the monitor • ***target***—Name of the target, an IP address on the target, or a virtual IP address • **REMONITOR**—Automatically continues monitoring the source machine after failback • **NOREMONITOR**—Automatically discontinues monitoring the source machine after failback.
Examples	`failback alpha on beta`
Notes	• If you do not select remonitor or noremonitor, you will be prompted after failback is complete to select whether or not to continue monitoring. • Options that contain non-alphanumeric characters must be enclosed in quotation marks.

When prompted to determine if you want to continue monitoring the source, either connect the source to the network or change the source back to its original identity. Once the source is back online, enter **Y** or **N** to indicate if you want to continue monitoring the source. After you have selected whether or not to continue monitoring the source machine, the source post-failback script, if configured, will be started.

NOTE: The source machine must be online and Double-Take must be running to ensure that the source post-failback script can be started. If the source has not completed its boot process, the command to start the script may be lost and the script will not be initiated.

Server Settings

13

While only a subset of the server settings are available through the Management Console, all of the Double-Take server settings are accessible through DTCL. You can retrieve the value of a setting or you can update the value of a setting.

- **Retrieving setting values**—To retrieve the current value of a setting, use the Double-Take **`get`** command. This command will return the value of the specified setting from the specified server.

  Command GET

  Description Requests the value of a Double-Take program setting from the specified server

  Syntax **`GET <`*`setting`*`> [`*`machine`*`]`**

  Options
  - ***setting***—See the table ***Double-Take Server Settings*** on page 13-2 for a complete list of the Double-Take program settings
  - ***machine***—Name of the machine

  Examples
  - `get netport`
  - `get VerifyLogName`
  - `get DefaultAddress`

  Notes
  - If you do not specify a machine name, the value from the current source will be returned. If you have not identified an active source, no data will be returned.
  - Machine names that contain non-alphanumeric characters must be enclosed in quotation marks.

- **Updating setting values**—To update the value of a setting, use the Double-Take **`set`** command. This command will modify the value of the specified setting on the specified server.

  Command SET

  Description Modifies the value of a Double-Take program setting for the specified server

  Syntax **`SET <`*`setting`*`>=<`*`value`*`> [`*`machine`*`]`**

  Options
  - ***setting***—See the table ***Double-Take Server Settings*** on page 13-2 for a complete list of the Double-Take program settings
  - ***value***—See the table ***Double-Take Server Settings*** on page 13-2 for a complete list of the Double-Take program settings
  - ***machine***—Name of the machine

  Examples

  ```
  set netport=1100
  set DefaultAddress="129.12.34.3"
  ```

Notes

- Some settings, although immediately applied to Double-Take, will not take effect until the service is restarted.
- If you do not specify a machine name, the value from the current source will be updated. If you have not identified an active source, no changes will be made.
- Options that contain non-alphanumeric characters must be enclosed in quotation marks.

The following table lists all of the Double-Take server settings, in decimal values.

Double-Take Server Settings

Server Setting	Description
ActivationCode	16- or 24-character Double-Take activation code **Values**: Unique value for each customer **Default**: N/A **GUI Setting**: Server Properties, Licensing tab, Activation Code
AdapterFlags	Specifies the adapter to use when establishing a connection. This option should not be changed. **Values**: 2 Encryption 4 Network Data Representation **Default**: 4 **GUI Setting**: None
Advertisement	Indicates how the Management Console populates the server tree. **Values**: 1 Uses the Double-Take heartbeat 4 Uses Windows 200x Active Directory 5 Uses both the Double-Take heartbeat and Windows 200x Active Directory **Default**: 5 **GUI Setting**: Management Console, File, Options, Configuration tab, Automatic Service Discovery Changes to this setting require the Double-Take service to be restarted for the change to take effect. If Active Directory Advertisement is enabled (set to 4 or 5), there is a 200 byte impact on the Active Directory service for each server that registers. The Double-Take service registers with Active Directory at startup and unregisters at shutdown.
AllFailover	Specifies which IP addresses to failover **Values:** 0 Failover only monitored IP addresses 1 Failover all IP addresses **Default:** 1 **GUI Setting**: Failover Control Center, Monitor Settings, Items to Failover, IP Address(es)
AllMustFail	Specifies whether or not all IP addresses must fail for failover to take place **Values:** 0 any IP address can fail 1 All IP addresses must fail **Default:** 1 **GUI Setting**: Failover Control Center, Monitor Settings, Failover Trigger, All Monitored IP Addresses Fail

Server Setting	Description
AutoReconnect	Specifies whether to reinstate the target connection(s) when the source machine is brought online after a source machine failure **Values:** 0 Do not reconnect 1 Reconnect **Default:** 1 **GUI Setting**: Server Properties, Setup tab, Source Module Startup Options, Automatically Reconnect During Source Initialization
AutoRemirror	Specifies whether to remirror when a source is brought online after an auto-disconnect **Values:** 0 Do not remirror 1 Perform a file differences checksum mirror 2 Perform a full mirror 3 Perform a file differences mirror 4 Perform a date comparison mirror. Send data only if the source data is newer than the target data. **Default:** 1 **GUI Setting**: Server Properties, Setup tab, Source Module Startup Options, Perform Remirror After Auto-Reconnect
AutoRemirrorRetry	Specifies how often, in seconds, the source should check for connections that have been reconnected but still need to be remirrored **Values:** any integer **Default:** 30 **GUI Setting**: None
AutoRetransmit	Determines whether or not a source that has lost its connection with a target will attempt to reconnect to the target **Values:** 0 Do not attempt to reconnect 1 Attempt to reconnect **Default:** 1 **GUI Setting**: None
BackupDir	Location on the target of the backup of the replication sets **Values:** any valid path **Default:** the location where the Double-Take files were installed **GUI Setting**: None
CalculateOn Connect	Specifies whether or not the replication set size should be calculated on connection **Values:** 0 Do not calculate on connection 1 Calculate on connection **Default:** 1 **GUI Setting**: Connection Manager, Mirroring tab, Calculate Replication Set size on connection
CaseSensitiveRep SetQueries	This entry is no longer used.

Server Setting	Description
ChecksumAll	Setting to allow for the difference checksum option on mirror, verify, or restore to ignore the date, time, and size of the file and perform a checksum calculation on all files **Values:** 0 Checksum using date, time, size comparison 1 Checksum all files regardless of the date, time, or file size **Default:** 1 **GUI Setting**: Server Properties, Source tab, Mirroring or Verify, Use Checksum on All blocks of data during a Difference Mirror
Cleaner	Specifies if a clean mirror will delete files on the target before mirroring **Values:0** Do not delete files before mirroring **1** Delete files before mirroring **Default:** 0 **GUI Setting**: None This option is only valid if you have this option enabled and use the `clean` option with the DTCL mirror command.
ClientLog	This setting is no longer used.
ClientLogName	This setting is no longer used.
ConnectionFile	Name of the database file containing connection information **Values:** any valid file name **Default:** **`connect.sts`** **GUI Setting**: Server Properties, Database tab, Database Files, Connection
DataPath	The location of the Double-Take file attribute, replication set, connection, and schedule database files **Values:** any valid path **Default:** the location where the Double-Take files were installed **GUI Setting**: Server Properties, Database tab, Database Files, Folder
DefaultProtocol	The default protocol **Values: 1** IP protocol **Default: 1** **GUI Setting**: Server Properties, Network tab, Interface, Default Protocol TCP/IP is the only protocol currently supported.
DirUNetPort	Port used for directed UDP communications **Values: 1025** - **65535** **Default: 1105** **GUI Setting**: Server Properties, Network tab, Interface, Network, Status Listen Port Management Console, File, Options, Network, Status Transmit Port If you change this value, the source service must be stopped and restarted to implement the change.

Server Setting	Description
EmailEnabled	Specifies if e-mail notification is enabled **Values:** 0 E-mail notification is disabled 1 E-mail notification is enabled **Default:** 0 **GUI Setting**: Server Properties, E-mail Notification tab, Enable notification This is a read-only setting. If you change this setting using the DTCL SET command or via the registry editor, e-mail notification will not automatically start. You must use the GUI or the DTCL EMAIL ENABLE command to start e-mail notification.
EmailExcludeIds	Identifies the Windows Event Viewer messages that are excluded from e-mail notification. **Values:** Comma or semicolon separated list of Event Viewer IDs. You can indicate ranges within the list. **Default:** None **GUI Setting**: Server Properties, E-mail Notification tab, Exclude these Event IDs You must disable and re-enable e-mail notification for a change to take effect.
EmailFromAddress	Specifies the e-mail address that will appear in the From field of Double-Take generated e-mail messages. **Values:** Any valid e-mail address, up to 256 characters **Default:** None **GUI Setting**: Server Properties, E-mail Notification tab, From Address
EmailInclude Categories	Specifies which Event Viewer messages are sent via e-mail **Values:** 1 Error messages will be sent via e-mail 2 Warning messages will be sent via e-mail 3 Information messages will be sent via e-mail **Default:** 1,2 **GUI Setting**: Server Properties, E-mail Notification tab, Include You must disable and re-enable e-mail notification for a change to take effect.
EmailNotification List	Specifies the e-mail address(es) that will receive Double-Take generated e-mail messages. **Values:** A comma separated list of valid e-mail addresses, up to 256 addresses. Each address is limited to 256 characters. **Default:** None **GUI Setting**: Server Properties, E-mail Notification tab, Send To
EmailPassword	The password required for SMTP server authentication **Values:** Any valid password text **Default:** None **GUI Setting**: Server Properties, E-mail Notification tab, Log on to SMTP Server, Password Since the password is encrypted for security, this entry cannot be displayed or changed through the registry or through DTCL.

Server Setting	Description
EmailServer	The name of the SMTP server for e-mail notification **Values:** Any valid server name text **Default:** None **GUI Setting**: Server Properties, E-mail Notification tab, Mail Server (SMTP)
EmailServerPort	Specifies the port that the SMTP e-mail server is using **Values:** **`any valid port number`** **Default:** 25 **GUI Setting**: None
EmailSmtpLogin	Specifies if SMTP server authentication for e-mail notification is enabled or disabled **Values:** **0** SMTP authentation is disabled **1** SMTP authenticaion is enabled **Default:** 0 **GUI Setting**: Server Properties, E-mail Notification tab, Log on to SMTP Server Your SMTP server must support the LOGIN authentication method to use this feature. If your server supports a different authentication method or does not support authentication, you may need to add the Double-Take server as an authorized host for relaying e-mail messages. This option is not necessary if you are sending exclusively to e-mail addresses that the SMTP server is responsible for.
EmailSubjectDesc	Specifies if the Event Viewer message will be appended to the end of the subject line for e-mail notification **Values:** **0** Event Viewer message is not included in the subject line **1** Event Viewer message is included in the subject line **Default:** **1** **GUI Setting**: Server Properties, E-mail Notification tab, Add event description to subject
EmailSubjectPrefix	Specifies unique text which will be inserted at the front of the subject line for each Double-Take generated e-mail message. This will help distinguish the Double-Take messages from other messages. **Values:** Any valid text **Default:** Double-Take Notification **GUI Setting**: Server Properties, E-mail Notification tab, Subject Prefix
EmailUsername	The user ID required for SMTP server authentication **Values:** Any valid user ID text **Default:** None **GUI Setting**: Server Properties, E-mail Notification tab, Log on to SMTP Server, Username Since the username is encrypted for security, this entry cannot be displayed or changed through the registry or through DTCL.
Enable Performance Tracking	This entry will be used in the future.

Server Setting	Description
EnableTaskCmd Processing	Queues tasks inline with replication data **Values**: **0** Disable task command processing **1** Enable task command processing **Default**: **0** **GUI Setting**: Server Properties, Setup tab, Setup Options, Enable Task Command Processing
ExtensionNumber	Used by the Double-Take log files.
FCCHelpPath	The path and file name to the Failover Control Center online help file **Default:** `C:\Program Files\DoubleTake\online help\fcc\wwhelp.htm` **GUI Setting**: None Do not change this value or the online help will not work.
FileQueueSize	When a mirror is started, one thread reads from the disk and builds the file queue. Another set of threads reads files off of the queue and sends them to the target. This setting is the maximum size of the queue in entries. If you had 100 files to be mirrored and this was set to 16 (the default value), the first thread would fill the queue to a maximum of 16 entries. **Values:** **1** - **65535** **Default:** **16** **GUI Setting**: None This value must be set prior to starting the mirror process. The higher the number, the more memory that is used.
HBExternalRate	Number of seconds between heartbeats **Values:** **0** - **65535** **Default:** **3** **GUI Setting**: Server Properties, Network tab, Heartbeat, Time between Heartbeats Double-Take Software recommends a value that is less than **10** (see **HBTTL**). Zero (**0**) turns the heartbeats off.
HBInternalRate	This entry is no longer used.
HBLoopback	This entry is no longer used.
HBTrace	Specifies whether the heartbeat debugging information is generated **Values:** **0** not generated **1** Generated **Default:** **0** **GUI Setting**: Server Properties, Network tab, Heartbeat, Show Heartbeat Messages in Logger
HBTTL	Number of seconds without receiving a heartbeat before a remote machine is considered unavailable **Values:** **0** - **65535** **Default: 10** **GUI Setting**: Server Properties, Network tab, Heartbeat, Missed Heartbeat Limit

Server Setting	Description
HPQueueRatio	Ratio of replication packets to one mirror packet **Values:** 0 - 65535 **Default:** 5 A HPQueueRatio of 5 indicates 5 replication packets to 1 mirror packet. **GUI Setting**: Server Properties, Source tab, Queue Ratio, Replication Packets to 1 Mirror Packet If you change this value, the source service must be stopped and restarted to implement the change.
IgnoreDeleteOps	Specifies if file and directory delete operations will be replicated to the target **Values:0** Delete operations are replicated to the target **1** Delete operations are not replicated to the target Default:**0** **GUI Setting**: Server Properties, Source tab, Replication, Ignore Delete Operations
InstallPath	Path specified during the Double-Take installation **Values:** any valid path **Default:** specified during installation **GUI Setting**: None
InstallVersionInfo	Installation number specified during the Double-Take installation. Do not modify this entry.
LoadSourceTarget	Specifies the functionality of the Double-Take service **Values:0** Neither the source nor target modules are loaded **1** Only the source module is loaded **2** Only the target module is loaded **3** Both the source and target modules are loaded **Default: 3** **GUI Setting**: None This setting will not take effect until the Double-Take service has been restarted.
LogAllOrphans	Specifies whether orphan files are logged to the Double-Take log on the target **Values:0** Do not log the orphan files to the Double-Take log on the target **1** Log the orphan files to the Double-Take log on the target **Default: 0** **GUI Setting**: Connection Manager/Restoration Manager, Orphans tab, Log Orphaned Files to Target List
LogDir	The location of the Double-Take messages/alerts, verification, and statistics log files **Values:** any valid path **Default:** the location where the Double-Take files were installed **GUI Setting**: Server Properties, Logging tab, Folder
LogFile	The name of the Double-Take messages/alerts log file **Values**: any valid file name **Default**: **DTLog** **GUI Setting**: None

Server Setting	Description
LogMessageLevel	Specifies the types of messages logged to the.dtl files **Values:** 0 No messages will be logged 1 Only alert messages will be logged 2 Alert and release messages will be logged 3 Alert, release, and debug messages will be logged **Default:** 2 **GUI Setting**: None
MaxChecksum Blocks	Specifies the number of checksum values retrieved from the target **Values:** any integer **Default:** 32 **GUI Setting**: None
MaxConnections	Number of network requests that can be processed simultaneously. Windows is limited to 5 simultaneous requests. **Values: 0 - 65535** **Default: 5** **GUI Setting**: None Double-Take Software recommends that you not change this value.
MaxLogFileSize	Maximum size, in bytes, of any .dtl log file **Values:**limited by available disk space **Default:** 1048576 **GUI Setting**: Server Properties, Logging tab, Messages & Alerts, Maximum Length
MaxNumberofLog Files	Maximum number of .dtl log files that can exist at one time. When Double-Take creates a new .dtl file, if this number is exceeded, the oldest .dtl file is deleted. **Values:** 1 - 999 **Default:** 5 **GUI Setting**: Server Properties, Logging tab, Messages & Alerts, Maximum Files
MaxRemove OrphansOpSize	Determines whether or not Double-Take will send over multiple remove orphan operations. Double-Take will send over the operations if a directory has more files than this number. **Values:** 0 - 131072 **Default :** 1000 **GUI Setting**: None
MaxRetry	A generic, application wide setting specifying the number of retry attempts for processes such as creating sockets, starting the service, and so on **Values:** any integer **Default:** 5 **GUI Setting**: None
MaxWriteChunk Size	Maximum merged op size (in bytes) used during replication **Values:** any integer **Default: 370000** **GUI Setting**: None

Server Setting	Description
MCHelpPath	The path and file name to the Management Console online help file **Default:** `C:\Program Files\DoubleTake\online help\mc\wwhelp.htm` **GUI Setting**: None Do not change this value or the online help will not work.
MemoryQueueToDiskThreshold	A percentage of `QmemoryBufferMax` that will trigger queuing to disk. **Values:** any valid percentage **Default:** 100 **GUI Setting**: None
MirrorChunkSize	Block size, in bytes, used in the mirroring process **Values: 1 - 1048576** **Default: 370000** **GUI Setting**: Server Properties, Source tab, Mirror Queue, Size of Mirror Packets A higher block size value gives you better throughput, but only to a certain point, then it starts using more memory (this has to do with the way memory is allocated and deallocated). A lower block size value produces slower throughput, but uses memory efficiently.
MirrorOverwrite	Determines if the mirror process overwrites existing files **Values: 0** never overwrite **1** always overwrite **2** overwrite if older **Default: 1** **GUI Setting**: None
MirrorPrompting	This entry is no longer used.
MirrorQueueLimit	Maximum number of mirror operations that can be queued on the source machine **Values: 1 - 65535** **Default: 1000** **GUI Setting**: Server Properties, Soruce tab, Mirror Queue, Maximum Pending Mirror Operations
MirrorZeroKFiles	Specifies whether or not empty files, zero byte files, are included in a mirror **Values: 0** Zero byte files are skipped and not mirrored to the target **1** All files are mirrored to the target **Default: 1** **GUI Setting**: None If MirrorZeroKFiles is enabled (0), zero byte files are skipped during a full mirror, file differences mirror, and a verification with synchronization. Zero byte files that contain alternate data streams that are not empty, will still be skipped if MirrorZeroKFiles is enabled.

Server Setting	Description
MissedHeartbeats	Specifies the number of heartbeats that can go unanswered by the source before failover occurs, when using Double-Take service responses to monitor for failover **Values:** 1 - 65535 **Default:** 20 **GUI Setting**: Failover Control Center, Monitor Settings, Missed Packets
MissedPackets	Specifies the number of requests sent by the target that go unanswered by the source before failover occurs, when using network responses to monitor for failover **Values:** 1 - 65535 **Default:** 5 **GUI Setting**: Failover Control Center, Monitor Settings, Missed Packets
MoveOrphaned Files	Specifies if orphaned files are deleted or moved to the directory specified by MoveOrphansDir **Values:** **1** Move **0** Delete **Default:** 0 **GUI Setting**: Connection/Restoration Manager, Orphans tab, Move/Delete Orphan Files
MoveOrphansDir	Indicates the name of the directory where orphaned files will be moved if MoveOrphanedFiles=**1** **Values:** any valid path **Default:** the location where the Double-Take files were installed **GUI Setting**: Connection/Restoration Manager, Orphans tab, Move Orphaned Files to following location
NetPort	Port connection for TCP communications **Values:** 1025 - 65535 **Default:** 1100 **GUI Setting**: Server Properties, Network tab, Interface, Service Listen Port If you change this value, the source service must be stopped and restarted to implement the change.
NetworkRetry	Specifies the interval, in seconds, at which Double-Take will attempt to reconnect to the target **Values:** any positive number **Default:** 10 **GUI Setting**: None
NetworkStatus Interval	This entry is no longer used.
NetworkTimeout	The maximum length of time, in seconds, to wait on a network connection. If data is not received over a network connection within the specified time limit, the connection is closed. During idle periods, Double-Take sends small amounts of keep-alive data at an interval 1/6 of the NetworkTimeout value to keep the socket from being inadvertently closed. **Values:** any integer **Default:** 120 **GUI Setting**: None

Server Setting	Description
OpBufferMax	Specifies the number of operations that can be stored in the memory queue prior to queuing to disk. **Values:** 0 There is no limit to the number of operations that can be stored in the memory queue **any integer 1 or larger** The number of operations that can be stored in the memory queue **Default:** 0 **GUI Setting**: None
PingFrequency	Specifies, in seconds, how often a ping is sent to the source from a monitoring target **Values:** 1 - 65535 **Default**: 5 **GUI Setting**: Failover Control Center, Monitor Settings, Monitor Interval
PostFailbackScript	Location on the target where the target post-failback script is located **Values:** Any valid path **Default: <null>** **GUI Setting**: Failover Control Center, Monitor Settings, Scripts, Target, Post-Failback
PostFailoverScript	Location on the target where the target post-failover script is located **Values:** Any valid path **Default: <null>** **GUI Setting**: Failover Control Center, Monitor Settings, Scripts, Target, Post-Failover
PreFailbackScript	Location on the target where the target pre-failback script is located **Values:** Any valid path **Default: <null>** **GUI Setting**: Failover Control Center, Monitor Settings, Scripts, Target, Pre-Failback
PreFailbackWait	Specifies whether or not to wait for the target pre-failback script to complete before finishing a failback **Values:** 0 Do not wait 1 Wait **Default:** 0 **GUI Setting**: Failover Control Center, Monitor Settings, Scripts, Target, Pre-Failback, Delay failback until script completes
PreFailoverScript	Location on the target where the target pre-failover script is located **Values:** Any valid path **Default: <null>** **GUI Setting**: Failover Control Center, Monitor Settings, Scripts, Target, Pre-Failover

Server Setting	Description
PreFailoverWait	Specifies whether or not to wait for the target pre-failover script to complete before finishing a failover **Values:** 0 Do not wait 1 Wait **Default:** 0 **GUI Setting**: Failover Control Center, Monitor Settings, Scripts, Target, Pre-Failover, Delay failover until script completes
ProductCode	Used by the Double-Take installation program to maintain the installation settings for an upgrade. Do not modify this entry.
ProductName	Used by the Double-Take installation program to maintain the installation settings for an upgrade. Do not modify this entry.
QJournalDir	The location where the queue is stored. **Values:** any valid path **Default:** the location specified during the installation **GUI Setting**: Server Properties, Queue tab, Location, Folder
QJournalFileSize	The size, in MB, of each queuing transaction log file. **Values:** any valid file size, up to 4095 MB **Default:** 5 **GUI Setting**: None
QJournalFree SpaceMin	The minimum amount of disk space, in MB, in the specified `QJournalDir` that must be available at all times. **Values:** dependent on the amount of physical disk space available **Default:** 50 **GUI Setting**: Server Properties, Queue tab, Memory and Disk Usage, Minimum Free Space The QJournalFreeSpaceMin should be less than the amount of physical disk space minus `QJournalSpaceMax`.
QJournalPreload	The number of operations being pulled from the disk queue at one time. Do not modify this setting.
QJournalSpaceMax	The maximum amount of disk space, in MB, in the specified `QJournalDir` that can be used for Double-Take queuing. When this limit is reached, Double-Take will automatically begin the auto-disconnect process. **Values:** dependent on the amount of physical disk space available **Default:** Unlimited **GUI Setting**: Server Properties, Queue tab, Memory and Disk Usage, Maximum disk space for queue The unlimited setting allows the disk queue usage to automatically expand whenever the available disk space expands. Setting this option to zero (`0`) disables disk queuing. Even if you are using the **Unlimited** option, Double-Take will only store 16,384 log files. If you are using the default 5MB file size, this is approximately 80GB of data. If you anticipate needing to be able to queue more data than this, you should increase the size of the log files.

Server Setting	Description
QLogWriteThrough	Specifies if the disk queues are write-through mode **Values:** **0** Disk queues are not write-through mode **1** Disk queues are write-through mode **Default:** 0 **GUI Setting**: None While write-through mode may decrease the frequency of auto-disconnects, it may also decrease the performance of the source server.
QmemoryBuffer Max	The amount of Windows system memory, in MB, that, when exceeded, will trigger queuing to disk. **Values:** dependent on the amount of physical memory available; minimum of 32 MB **Default:** 128 or 512 MB, depending on your operating system **GUI Setting**: Server Properties, Queue tab, Memory and Disk Usage, Maximum system memory for queue
QueueSizeAlert Threshold	The percentage of the queue that must be in use to trigger an alert message in the Windows Event Viewer. **Values:** any valid percentage **Default: 50** **GUI Setting**: Server Properties, Queue tab, Queue Usage Alert Threshold, Alert at following queue usage percentage
RemapLink	Specifies how Double-Take handles a soft link Values: **0** If a soft link exists in a replication set and points to a file or directory inside the replication set, the path contained in the link will retain its original mapping. **1** If a soft link exists in a replication set and points to a file or directory inside the replication set, Double-Take will remap the path contained in that link based on the Double-Take target path **Default**: 1
RemoveAllOrphans	Specifies if all orphan files will be removed or only those based on RemoveOrphanTime **Values: 0** Remove orphans based on the entry RemoveOrphansTime **1** Remove all orphans **Default: 1** **GUI Setting**: Connection/Restoration Manager, Orphans tab, Remove All Orphans
RemoveOrphans Time	Specifies the amount of time that must be expired before an orphan file is removed **Values: 1** - **131072** minutes **Default: 60** minutes **GUI Setting**: Connection/Restoration Manager, Orphans tab, Remove Orphans not modified within the following time period

Server Setting	Description
ReplaceTarget	Specifies whether or not to replace the target identity with the source identity during a failover **Values: 0** Do not replace **1** Replace **Default: 0** **GUI Setting**: Failover Control Center, Monitor Settings, Failover Method
RepSetDBName	Name of the database that contains replication set information **Values:** any valid file name **Default: DblTake.db** **GUI Setting**: Server Properties, Database tab, Database Files, Replication Set
RestoreOverwrite	Determines if the restoration process overwrites existing files **Values: 0** never overwrite **1** always overwrite **2** overwrite if older **Default: 2** **GUI Setting**: Restoration Manager, Servers tab, Overwrite existing data during restore
RestorePrompting	This entry is no longer used.
SaveStatFile	Determines if the statistic.sts (statistics logging) file is saved or ovewritten **Values: 0** overwrite **1** saved as statistic-old.sts **Default: 1** **GUI Setting**: None
ScheduleFile	Name of the database file that contains transmission scheduling information **Values:** any valid file name **Default: Schedule.sts** **GUI Setting**: Server Properties, Database tab, Database Files, Schedule If you change the name of the database file, the source service must be stopped and restarted to start logging to the new database file.
ScheduleInterval	The number of seconds to wait before checking the transmission schedules to see if transmission should be started or stopped **Values:** 1 - 3600 **Default:** 1 **GUI Setting**: None
ShareUpdate Interval	Specifies how often, in minutes, the share file will be sent to the target **Values:** 1 - **65535** **Default: 60** **GUI Setting**: None
SkipCompression FileExt	A period delimited list of file types that are not compressed, even if compression is enabled. **Values:** any period delimited list of file types **Default:** mp3.exe.wmv.wma.qt.mpg.mpeg.zip.jpg.jpeg.tiff.tar.rar.cab **GUI Setting**: None

Server Setting	Description
SourcePending Acks	The number of operations received by the target queue in which the source is waiting for a response **Values:** 100 **- 20,000** **Default:** 2000 **GUI Setting**: None
StatsFileName	Default file for logging statistics **Values:** any valid file name **Default: statistic.sts** **GUI Setting**: Server Properties, Logging tab, Statistics, Filename
StatsLoggingOn	Specifies if Double-Take logs statistics at startup **Values:** **0** Stats logging does not start when Double-Take starts **1** Stats logging starts when Double-Take starts **Default:** 0 **GUI Setting**: Server Properties, Setup tab, Setup Options, Log Statistics Automatically
StatsMaxFileSize	Maximum size, in MB, for the `statistic.sts` file **Values:** limited by available disk space **Default: 10485760** **GUI Setting**: Server Properties, Logging tab, Statistics, Maximum Length
StatsMaxObjects	This entry is no longer used.
StatsPort	Port used by DTStat to gather Double-Take statistics **Values:** 1025 - 65535 **Default:** 1106 **GUI Setting**: None If you change this value, the source service must be stopped and restarted to implement the change.
StatsShmSize	This entry is no longer used.
StatsWriteInterval	Interval, in minutes, in which statistics are written to the `statistic.sts` file **Values: 0 - 65535** **Default: 5** **GUI Setting**: Server Properties, Logging tab, Statistics, Write Interval
SystemMemory Limit	Set by the Double-Take service, each time it is started, to record the amount of available memory.
TargetPaused	Internal setting that indicates if the target machine is paused. Do not modify this setting.
TargetPaused Virtual	Internal setting that indicates which target machines are paused. Do not modify this setting.

Server Setting	Description
TCPBufferSize	Size of the TCP/IP buffer in bytes. **Values:** 4096-7500000 **Default:** 375000 **GUI Setting**: None The default setting creates a TCP window that will accommodate most environments. In most environments, this value will not need to be adjusted. However, if your Double-Take network has a long end-to-end route and the throughput is not where you would expect it to be, then adjusting this parameter may have beneficial results. This value is the bandwidth delay product, which is calculated using the bandwidth of the network (in bits/second) times the round trip time (in seconds) between the two ends. Some recommended settings to improve Double-Take throughput performance are: Gigabit LAN—The setting should be changed to 375000. WAN—The setting should be adjusted to 130000. While the calculations are fairly straight forward, the values that have been suggested are not exact because they depend on round trip time. Some improvements could be gained by adjusting these values either higher or lower. The value suited for your environment can best be determined through trial and error testing.
TGCloseDelay	The length of time, in milliseconds, a file is held open on the target **Values: 0 - 2000** **Default: 1000** **GUI Setting**: None If disk caching on the target is disabled either manually or by default (for example, by default on disks that host Active Directory database files), the target system may be slow during a mirror. If so, descreasing this setting to 100, 10, and 0 will result in incremental improvements, with 0 returning the system performance to normal.
TGExecutionRetry Limit	The number of times an unfinished operation will be retried on the target before it is discarded. If this value is set to zero (0), an operation will never be discarded and will be retried on the target until it is applied. **Values: 0 - 65536** **Default: 0** **GUI Setting**: None
TGMirrorCapacity High	Maximum percentage of system memory that can contain mirror data before the target signals the source to pause the sending of mirror operations. **Values:** 2-75 **Default:** 75 **GUI Setting**: Server Properties, Target tab, Files, Target Mirror Capacity High Percentage
TGMirrorCapacity Low	Minimum percentage of system memory that can contain mirror data before the target signals the source to resume the sending of mirror operations. **Values:** 1-75 **Default:** 15 **GUI Setting**: Server Properties, Target tab, Files, Target Mirror Capacity Low Percentage The maximum value forTGMirrorCapacityLow is either 75 or TGMirrorCapacityHigh, which ever is lower.

Server Setting	Description
TGRetryLocked	Minimum number of seconds to wait before retrying a failed operation on a target **Values:** 0–65536 **Default:** 3 **GUI Setting**: Server Properties, Target tab, Queues, Retry Delay for Incomplete Operations
TGThreadCount	This setting is no longer used
TGWriteCache	Specifies whether or not Double-Take uses the intermediate cache **Values:** 0 Bypass the intermediate cache and write directly to disk 1 Do not bypass the intermediate cache **Default**: 1 **GUI Setting**: None
UNetPort	Port connection for UDP communications **Values:** 1025 **- 65535** **Default:** 1100 **GUI Setting**: Server Properties, Network tab, Interface, Heartbeat Transmit Port Management Console, File, Options, Configuration tab, Automatic Service Discovery, Heartbeat Advertisement, Port If you change this value, the source service must be stopped and restarted to implement the change.
UpdateInterval	Interval, in seconds, at which the Failover Control Center updates the monitored machines display **Values:** 1 - 9999 **Default:** 1 **GUI Setting**: Failover Control Center, Settings, Refresh Rate
UpgradeCode	Used by the Double-Take installation program to maintain the installation settings for an upgrade
UserIntervention	Specifies whether or not user intervention is required to initiate a failover **Values:** 0 User intervention is not required 1 User intervention is required **Default**: 1 **GUI Setting**: Failover Control Center, Monitor Settings, Manual Intervention
VerifyLogAppend	Specifies whether the `DTVerify.log` file will be appended to or overwritten **Values: 0** Overwrite 1 Append **Default:** 1 **GUI Setting**: Server Properties, Logging tab, Verification, Append
VerifyLogLimit	Maximum size of the `DTVerify.log` file in bytes **Values:** limited by available hard drive space, up to 4 GB **Default:** 1048576 **GUI Setting**: Server Properties, Logging tab, Verification, Maximum Length

Server Setting	Description
VerifyLogName	Name of the verification log file **Values:** any valid file name **Default:** `DTVerify.log` **GUI Setting**: Server Properties, Logging tab, Verification, Filename
VerifyRetryInterval	The time, in minutes, between when one verification fails and a retry is scheduled to begin. **Values:** any valid number **Default:** 3 **GUI Setting**: None
VerifyRetryLimit	The number of time a verification will be retried. **Values:** any valid number **Default:** 5 **GUI Setting**: None
VersionInfo	The version of Double-Take that was installed **Value:** determined by the version installed **Default:** determined by the installation **GUI Setting**: None
WarningPings	This entry is no longer used.

Double-Take Commands 14

The Double-Take commands are listed in alphabetical order on the following pages. Each command includes the following:

- Command name
- Description of the command
- Exact syntax for using the command
- Options, if any
- Examples, if necessary
- Notes, if any

For details on the conventions used for the command syntax, see ***Conventions used in this guide*** on page 1-2.

Compression Disable

Command	COMPRESSION DISABLE
Description	Disables compression
Syntax	**COMPRESSION DISABLE <*con_id*>**
Options	***con_id***—Connection ID assigned to the source/target connection
Examples	compression disable 1

Compression Enable

Command	COMPRESSION ENABLE
Description	Enables compression
Syntax	**COMPRESSION ENABLE <*con_id*>**
Options	***con_id***—Connection ID assigned to the source/target connection
Examples	`compression enable 1`

Compression List

Command	COMPRESSION LIST
Description	Identifies the compression level set and if compression is enabled
Syntax	**COMPRESSION LIST**

Compression Set

Command COMPRESSION SET

Description Sets the compression level

Syntax **COMPRESSION SET <*con_id*> <*level*>**

Options
- ***con_id***—Connection ID assigned to the source/target connection
- ***level***—Any whole number from 1 to 3 where 1 is minimum compression and 3 is maximum compression

Examples
```
compression set 1 2
```

Notes This command only sets the level of compression. It does not initiate compression.

ConID

Command CONID

Description
- Allows you to to assign the value of a connection ID to a variable
- Lists the target and replication set for all connection IDs for a source

Syntax
- **<*variable*>=CONID <*repset*> TO <*target*>**
- **CONID LIST [*source*]**

Options
- ***variable***—Name of the variable that you want to use to store the connection ID
- ***repset***—Replication set that was used to establish the connection
- ***target***—Name of the target, an IP address on the target, or a virtual IP address
- ***source***—Name of the source

Examples
- `$con_id=conid DataFiles to beta`
- `$ConnectionNumber=conid UserData to beta`
- `conid list alpha`

Notes
- The `conid list` and `variable=conid` commands are two separate commands.
- If no machine name is specified in the conid list command, the active source will be used.
- Options Machine names that contain non-alphanumeric characters must be enclosed in quotation marks.

Connect

Command CONNECT

Description Establishes a connection between a replication set and a target machine

Syntax

```
CONNECT <repset> TO <target> MAP EXACT
| MAP BASE <target_path>
| MAP <source_path> TO <target_path> [,...]
[MIRROR | NOMIRROR] [, REPLICATE | NOREPLICATE]
[, MONITOR | NOMONITOR] [, ORPHANS | NOORPHANS]
[, COMPRESSION <level>]  [CLEARRESTOREREQUIRED]
```

Options

- *repset*—Name of the replication set
- *target*—Name of the target, an IP address on the target, or a virtual IP address
- **MAP EXACT**—Specifies that the replication set data will be sent to the same logical volume or block device on the target
- **MAP BASE** *target_path*—Substitute a complete path where you want the replicated data to be stored on the target. For a block device, the target will be a flat file on the file system under the specified path. A loopback device will be needed to access the device.

Options

- **MAP** *source_path* **TO** *target_path*—Specify a custom location (a file location, a device in /dev, a loop device in /dev that is attached to another device or file, or a loop device that is attached to another device or file using DTLOOP) that specifies each directory on the source and where that data will be copied to on the target machine
- *...*—Indicates that the *source_path* **TO** *target_path* option can be used more than once for each source directory in the replication set
- **MIRROR**—Automatically initiates a mirror when the connection is established
- **NOMIRROR**—Does not initiate a mirror when the connection is established
- **REPLICATE**—Automatically initiates replication when the connection is established
- **NOREPLICATE**—Does not initiate replication when the connection is established
- **MONITOR**—Specifies that the target is going to monitor the specified source machine for failover. The source machine must have already been defined as a monitor machine.
- **NOMONITOR**—Specifies that the target is not going to monitor the source machine for failover
- **ORPHANS**—Moves or deletes orphan files on the target
- **NOORPHANS**—Does not move or delete orphan files on the target
- **COMPRESSION** *level*—Enables compression of data being sent to the target at the level specified. Valid levels are 1 (minimum), 2 (moderate), or 3 (maximum).
- **CLEARRESTOREREQUIRED**—Clears the restore required flag and initiates the connection

Examples

- `connect DataFiles to beta map exact`
- `connect UserData to beta map base /dev`
- `connect UserFiles to beta map exact orphans, compression 2`

Notes

- The default settings for this command are mirror, replicate, nomonitor, and noorphans.
- The options (no)mirror, (no)replicate, (no)monitor, (no)orphans, and compression can be used in any combination and in any order. The first option does not require a comma, but the second and remaining options do require a comma before the option.
- Options that contain non-alphanumeric characters must be enclosed in quotation marks.
- If you are establishing a connection within a NAT or firewall environment, you will need to specify the target using the IP address and port number (separated by a colon) of the router. For example, connect DataFiles to 10.10.1.57:1105 map exact.
- When scripting with this command, if a successful connection is established, the command will return a positive number, which is the connection ID assigned to that connection.

Connect TDU

Command CONNECT TDU

Description Establishes a simulation connection between a replication set and the Throughput Diagnostics Utility. This connection imitate a normal connection without transmitting any data across the network.

Syntax **CONNECT <*repset*> TO TDU <*filename*> [*connection_flags*]**

Options

- ***repset***—Name of the replication set
- ***filename***—Name of the file to store the connection statistics generated by the TDU
- ***connection_flags***—The same options available in the standard connect command

Examples

- `connect DataFiles to TDU`
- `connect UserData to TDU map exact /dev`

Notes

- The statistic file that the TDU creates can be viewed using DTStat. By default, the file is called statistic.sts. To view the statistic file, type DTStat -f <filename>. For details on DTStat, see the Double-Take User's Guide.
- Options that contain non-alphanumeric characters must be enclosed in quotation marks.

Device List

Command DEVICE LIST

Description Displays the block devices available on a machine

Syntax **DEVICE LIST <*filter*> [ON <*machine*>]**

Options

- ***filter***—Use one of the following options for the device filter
  - **ALL**—Lists all unique devices on the specified machine. If there is no machine specified, the source, if designated, will be tried first. The target, if designated, will be tried second.

Options

- **OKSOURCE**—List all devices on the specified source that are replication capable. If a target is specified, an error will be returned.
- **OKTARGET**—List all devices on the specified target that are capable of being used as a target path. If a source is specified, an error will be returned.
- ***machine***—Name of the machine

Examples

```
device list all on alpha
```

Notes

Machine names that contain non-alphanumeric characters must be enclosed in quotation marks.

Disconnect

Command

DISCONNECT

Description

Disconnects a specified source/target connection for the currently selected source

Syntax

DISCONNECT <*con_id* | *>

Options

- ***con_id***—Connection ID assigned to the source/target connection
- ***—Specifies all connection IDs

Examples

- `disconnect 1`
- `disconnect *`

Email Add

Command

EMAIL ADD

Description

Adds an e-mail address to the e-mail notification distribution list

Syntax

EMAIL ADD <*email_address*>

Options

email_address—A valid e-mail address enclosed in quotation marks

Examples

```
email add "administrator@domain.com"
```

Notes

- You can repeat this command to add additional addresses to the distribution list.
- You must have an active source specified for any e-mail command to work properly.

Email Disable

Command

EMAIL DISABLE

Description

Disables e-mail notification

Syntax

EMAIL DISABLE

Notes

You must have an active source specified for any e-mail command to work properly.

Email Enable

Command EMAIL ENABLE

Description Enables e-mail notification

Syntax **`EMAIL ENABLE`**

Notes You must have an active source specified for any e-mail command to work properly.

Email Filter

Command EMAIL FILTER

Description Displays the filter configuration from the email setfilterinclude command

Syntax **`EMAIL FILTER`**

Notes You must have an active source specified for any e-mail command to work properly.

Email From Address

Command EMAIL FROMADDRESS

Description Specifies the e-mail address that will appear in the From field of Double-Take generated e-mail messages

Syntax **`EMAIL FROMADDRESS <`*`email_address`*`>`**

Options ***email_address***—A valid e-mail address enclosed in quotation marks

Examples `email fromaddress "administrator@domain.com"`

Notes You must have an active source specified for any e-mail command to work properly.

Email Get Email Config

Command EMAIL GET EMAILCONFIG

Description Displays e-mail notification configuration information

Syntax **`EMAIL GET EMAILCONFIG`**

Notes You must have an active source specified for any e-mail command to work properly.

Email MailServer

Command EMAIL MAILSERVER

Description Specifies the name of the SMTP mail server for e-mail notification

Syntax **EMAIL MAILSERVER <*server_name* | *ip_address*> [*username*] [*password*]**

Options

- ***server_name***—Name of the SMTP mail server
- ***ip_address***—IP address of the SMTP mail server
- ***username***—User ID required for SMTP server authentication
- ***password***—Password associated with the specified user name

Examples

```
email mailserver xchng administrator *******
```

Notes

- Your SMTP server must support the LOGIN authentication to supply a username and password. If your server supports a different authentication method or does not support authentication, you may need to add the Double-Take server as an authorized host for relaying e-mail messages. This option is not necessary if you are sending exclusively to e-mail addresses that the SMTP server is responsible for.
- You must have an active source specified for any e-mail command to work properly.
- Options that contain non-alphanumeric characters must be enclosed in quotation marks.

Email Remove

Command EMAIL REMOVE

Description Removes an e-mail address from the e-mail notification distribution list

Syntax **EMAIL REMOVE <*email_address*>**

Options ***email_address***—An e-mail address, listed in the current distribution list, enclosed in quotation marks

Examples

```
email remove "administrator@domain.com"
```

Notes You must have an active source specified for any e-mail command to work properly.

Email Set Filter Include

Command EMAIL SETFILTERINCLUDE

Description Specifies which Event Viewer messages are sent via e-mail

Syntax

```
EMAIL SETFILTERINCLUDE [INFO, WARNING, ERROR]
[EXCLUDEIDS "<ID1,ID2-ID4,...>"]
```

Options

- **INFO**—Information messages will be sent via e-mail
- **WARNING**—Warning messages will be sent via e-mail
- **ERROR**—Error messages will be sent via e-mail
- **EXCLUDEIDS** *ID1*,*ID2-ID4*,*...*—A comma separated list of IDs or ID ranges. A space should separate the EXCLUDEIDS switch from the list but within the list, there should be no spaces. Ranges are specified with a begin and end number and separated with a dash (-). The entire list should be enclose in quotation marks.

Examples

- `email setfilterinclude warning, error`
- `email setfilterinclude warning, error excludeids "4007, 4012, 4015"`
- `email setfilterinclude excludeids "4000-4010, 5100"`

Notes

- The default settings for this command are info and warning. No IDs are excluded, by default.
- The options info, warning, and error can be used in any combination and in any order. The first option does not require a comma, but the second and remaining options do require a comma before the option.
- When changing the filter options, e-mail notification will automatically be stopped and restarted. If a failure occurs while stopping or restarting e-mail notification, Double-Take will output a related error message
- You must have an active source specified for any e-mail command to work properly.

Email Subject

Command EMAIL SUBJECT

Description Specifies if additional text will be displayed in the subject of the e-mail message

Syntax

```
EMAIL SUBJECT [PREFIX <prefix> | NOPREFIX]
[DESCRIPTION | NODESCRIPTION]
```

Options

- **PREFIX** ***prefix***—Text which will be inserted at the front of the subject line for each Double-Take generated e-mail message. This will help distinguish the Double-Take messages from other messages.
- **NOPREFIX**—No prefix will be inserted at the front of the subject line for each Double-Take generated e-mail message
- **DESCRIPTION**—Append the message description to the end of the subject line
- **NODESCRIPTION**—Do not append the message description to the end of the subject line

Examples

- `email subject prefix "Double-Take Notification" description`
- `email subject prefix "Double-Take Notification" nodescription`

Notes

- Prefix phrases that contain non-alphnumeric characters must be enclosed in quotation marks.
- The entire subject line is limited to 150 characters.
- You must have an active source specified for any e-mail command to work properly.

Email Test

Command EMAIL TEST

Description Sends a test message to demonstrate e-mail notification

Syntax

EMAIL TEST [SENDTO <*email_address*[,*email_address*,...]>] [TEXT <*message_text*>]

Options

- ***email_address***—Specifies the e-mail address(es) to send the test message to if you do not want to use the e-mail addresses configured with the EMAIL ADD command. This is a comma separated list of addresses. The entire list should be enclosed in quotation marks. A space should separate the SENDTO switch from the list of addresses but within the list, there should be no spaces.
- ***message_text***—Text to be displayed in the body of the test e-mail message. The test message is limited to 1024 characters and must be enclosed in quotation marks.

Examples

- `email test sendto "admin@domain.com, suppport@domain.com"`
- `email test sendto "admin@domain.com" text "This is a test message."`

Notes

- The default setting for this command are to use the addresses configured with the email add command. and to appends the word Test to the prefix defined in the email subject prefix command.
- You must have an active source specified for any e-mail command to work properly.

Environment

Command ENVIRONMENT

Description Displays a list of all Double-Take machines available to the specified machine. Each machine is identified by machine name, IP addresses and whether or not the source and/or target modules are loaded. If no machine is specified, the information is provided for the machine currently specified as the source.

Syntax

ENVIRONMENT [*machine*]

Options ***machine***—Name of the machine to poll for environment information

Examples

```
environment alpha
```

Exit

Command EXIT

Description Exits the Command Line Interactive client

Syntax

EXIT

Failback

Command FAILBACK

Description Initiates the failback process for the specified monitor machine

Syntax **FAILBACK <*monitor*> [ON <*target*>] [REMONITOR|NOREMONITOR]**

Options

- ***monitor***—Name of the source machine designated as the monitor
- ***target***—Name of the target, an IP address on the target, or a virtual IP address
- **REMONITOR**—Automatically continues monitoring the source machine after failback
- **NOREMONITOR**—Automatically discontinues monitoring the source machine after failback.

Examples

```
failback alpha on beta
```

Notes

- If you do not select remonitor or noremonitor, you will be prompted after failback is complete to select whether or not to continue monitoring.
- Options that contain non-alphanumeric characters must be enclosed in quotation marks.

Failover

Command FAILOVER

Description Manually initiates the failover process for the specified monitor machine

Syntax **FAILOVER <*monitor*> [ON <*target*>]**

Options

- ***monitor***—Name of the source machine designated as the monitor
- ***target***—Name of the target, an IP address on the target, or a virtual IP address

Examples

```
failover alpha on beta
```

Notes If failover is configured for manual intervention, you must open the Failover Control Center to access the intervention prompt.

Get

Command GET

Description Requests the value of a Double-Take program setting from the specified server

Syntax **GET <*setting*> [*machine*]**

Options

- ***setting***—See the table ***Double-Take Server Settings*** on page 13-2 for a complete list of the Double-Take program settings
- ***machine***—Name of the machine

Examples

- `get netport`
- `get VerifyLogName`
- `get DefaultAddress`

Notes

- If you do not specify a machine name, the value from the current source will be returned. If you have not identified an active source, no data will be returned.
- Machine names that contain non-alphanumeric characters must be enclosed in quotation marks.

Get Env Str

Command GETENVSTR

Description Retrieves an operating system environment variable and stores the value in a Double-Take variable

Syntax **GETENVSTR <*env_variable*> $<*variable_name*>**

Options

- ***env_variable***—Name of the operating system environment variable that you want to store in the user defined variable
- ***variable_name***—Name of the variable you want to create. This variable will store the operating system environment variable specified.

Examples `getenvstr computername $server`

Notes It is not necessary for either the environment or Double-Take variable to exist when using this command. A non-existent environment variable will store a null string in the Double-Take variable.

Get Local

Command GETLOCAL

Description Requests the value of a Double-Take program setting from the local machine

Syntax **GETLOCAL <*setting*>**

Options ***setting***—See the table ***Double-Take Server Settings*** on page 13-2 for a complete list of the Double-Take program settings

Examples

- `getlocal netport`
- `getlocal VerifyLogName`
- `getlocal DefaultAddress`

Help

Command HELP

Description Displays the DTCL commands and their syntax

Syntax HELP

Notes

- Press any key to scroll through the list of commands.
- Press q to exit the help function.
- You can also type dtcl help from the directory where the Double-Take program files are installed to display the DTCL commands and their syntax.

Limit Bandwidth

Command LIMIT BANDWIDTH

Description Sets a fixed bandwidth limitation for transmitting data from the source to the target

Syntax **LIMIT BANDWIDTH <*bytes*>, <*seconds*> TO <*target*>**

Options

- ***bytes***—Number of bytes to be transmitted
- ***seconds***—Maximum number of seconds to wait before transmitting again
- ***target***—Name of the target, an IP address on the target, or a virtual IP address. Depending on the network route Double-Take uses to access the target, you may need to specify the fully qualified domain name.

Examples

```
limit bandwidth 19300, 5 to beta
```

Notes

- This command transmits in bursts, not bytes per seconds. The time identifies how long to wait before transmitting again. For example, if 5 seconds are specified and it only takes 2 seconds to send the specified bytes, Double-Take will wait an additional 3 seconds before transmitting again.
- Target names that contain non-alphanumeric characters must be enclosed in quotation marks.

Load Source

Command LOAD SOURCE

Description Loads the Double-Take source module

Syntax **LOAD SOURCE <*machine*>**

Options ***machine***—Name of the machine

Examples

```
load source alpha
```

Notes Machine names that contain non-alphanumeric characters should be enclosed in quotation marks.

Load Target

Command LOAD TARGET

Description Loads the Double-Take target module

Syntax **LOAD TARGET <*machine*>**

Options ***machine***—Name of the machine

Examples

```
load target beta
```

Notes Machine names that contain non-alphanumeric characters should be enclosed in quotation marks.

Login

Command LOGIN

Description Log on to a Double-Take machine

Syntax **LOGIN <*machine*> <*username*> <*password*> [*domain*]**

Options

- ***machine***—Name of the machine
- ***username***—Name of the user. The username is limited to 100 characters.
- ***password***—Password associated with the user name. The password is limited to 100 characters.
- ***domain***—If logging in using a domain account, this is the domain name. If logging in using a local account, this is the machine name. The domain is limited to 100 characters.

Examples

```
login alpha administrator ******
```

Notes

- Options that contain non-alphanumeric characters must be enclosed in quotation marks.
- The password cannot be a Double-Take keyword. These are any DTCL command (source, target, and so on.) or any DTCL shortcut command (env, mon, rep, and so on).
- When scripting with this command, it will return one of three positive numbers: 0 (no access granted), 1 (monitor access granted), or 2 (full access granted).

Logout

Command LOGOUT

Description Logs off of a Double-Take machine

Syntax **LOGOUT <*machine*>**

Options ***machine***—Name of the machine

Examples

```
logout alpha
```

Notes Machine names that contain non-alphanumeric characters must be enclosed in quotation marks.

Mirror Pause

Command MIRROR PAUSE

Description Pauses a mirror that is in progress

Syntax **MIRROR PAUSE <*con_id* | *>**

Options

- ***con_id***—Connection ID assigned to the source/target connection
- ***—Specifies all connection IDs.

Examples

- `mirror pause 1`
- `mirror pause *`

Mirror Resume

Command MIRROR RESUME

Description Resumes a paused mirror

Syntax **MIRROR RESUME <*con_id* | *>**

Options

- ***con_id***—Connection ID assigned to the source/target connection
- *—Specifies all connection IDs.

Examples

- `mirror resume 1`
- `mirror resume *`

Mirror Start

Command MIRROR START

Description Initiates the mirror process

Syntax

```
MIRROR START <con_id> [DIFFERENT [,NEWER]
,CHECKSUM | NOCHECKSUM] [ORPHANS |NOORPHANS]
[CALCULATE | NOCALCULATE] [CLEARRESTOREREQUIRED]
```

Options

- *con_id*—Connection ID assigned to the source/target connection
- **DIFFERENT**—Mirrors only those files that are different based on the file date, time, and/or size
- **NEWER**—Mirrors only those files that are newer on the source than on the target
- **CHECKSUM**—Mirrors only those blocks that are different based on block checksum comparisons
- **NOCHECKSUM**—Does not perform a checksum comparison when mirroring files
- **ORPHANS**—Moves or deletes orphan files on the target
- **NOORPHANS**—Does not move or delete orphan files on the target
- **CALCULATE**—Calculate the size of the replication set prior to mirroring
- **NOCALCULATE**—Does not calculate the size of the replication set prior to mirroring
- **CLEARRESTOREREQUIRED**—Clears the restore required flag and initiates the mirror

Examples

- `mirror start 1 different, newer`
- `mirror start 2 different, checksum orphans calculate`

Notes The default settings for this command are noorphans and calculate.

Mirror Stop

Command MIRROR STOP

Description Stops a paused mirror

Syntax **MIRROR STOP <*con_id* | *>**

Options
- ***con_id***—Connection ID assigned to the source/target connection
- ***—Specifies all connection IDs

Examples
- `mirror stop 1`
- `mirror stop *`

Monitor Account Add

Command MONITOR ACCOUNT ADD

Description Identifies a user account with update permissions within Active Directory

Syntax **MONITOR ACCOUNT ADD <*username*> <*password*> [*monitor*]**

Options
- ***username***—Name of the user in the format domain\user or user@domain
- ***password***—Password associated with the user name
- ***monitor***—Name of the source machine designated as the monitor

Examples `monitor account add administrator ***** alpha`

Notes
- The password cannot be a Double-Take keyword. These are any DTCL commands (source, target, and so on) or any DTCL shortcut commands (env, mon, rep, and so on).
- The password cannot be blank.
- Options that contain non-alphanumeric characters must be enclosed in quotation marks.

Monitor Account Remove

Command MONITOR ACCOUNT REMOVE

Description Removes the user account used to failover Active Directory

Syntax **MONITOR ACCOUNT REMOVE <*monitor*>**

Options ***monitor***—Name of the source machine designated as the monitor

Examples
```
monitor account remove alpha
```

Notes
- If you do not specify a monitor, the current source designated as the monitor will be used. If you have not identified a monitor, you will receive an error message stating that a monitor has not been selected.
- Monitor names that contain non-alphanumeric characters must be enclosed in quotation marks.

Monitor Clear

Command MONITOR CLEAR

Description Clears all of the failover configuration and monitoring parameters for the specified monitor machine

Syntax **MONITOR CLEAR [*monitor*]**

Options ***monitor***—Name of the source machine designated as the monitor

Examples
```
monitor clear alpha
```

Notes
- If you do not specify a monitor, the current source designated as the monitor will be used. If you have not identified a monitor, you will receive an error message stating that a monitor has not been selected.
- Monitor names that contain non-alphanumeric characters must be enclosed in quotation marks.

Monitor Create

Command MONITOR CREATE

Description Establishes a source as a failover monitor. This is the machine that will be monitored by a target in case it should experience a failure.

Syntax **MONITOR CREATE <*source*>**

Options ***source***—Name of the source

Examples
```
monitor create alpha
```

Notes Machine names that contain non-alphanumeric characters must be enclosed in quotation marks.

Monitor Delete

Command MONITOR DELETE

Description Deletes the specified failover monitor and all of its parameters

Syntax **MONITOR DELETE <*monitor*>**

Options ***monitor***—Name of the source machine designated as the monitor

Examples
```
monitor delete alpha
```

Notes
- In order to successfully delete a monitor, the monitor must not be running on the server. Use the monitor stop command to ensure the monitor is not running.
- Monitor names that contain non-alphanumeric characters must be enclosed in quotation marks.

Monitor Display

Command MONITOR DISPLAY

Description Displays the monitoring and failover configuration settings for the specified monitor machine

Syntax **MONITOR DISPLAY <*monitor*>**

Options ***monitor***—Name of the source machine designated as the monitor

Examples
```
monitor display alpha
```

Notes
- If you do not specify a monitor, the current source designated as the monitor will be used. If you have not identified a monitor, you will receive an error message stating that a monitor has not been selected.
- Monitor names that contain non-alphanumeric characters must be enclosed in quotation marks.

Monitor Get

Command MONITOR GET

Description Retrieves and displays the machines that are currently being monitored by the specified target machine

Syntax **MONITOR GET <*target*>**

Options ***target***—Name of the target, an IP address on the target, or a virtual IP address

Examples
```
monitor get beta
```

Notes Monitor names that contain non-alphanumeric characters must be enclosed in quotation marks.

Monitor List

Command MONITOR LIST

Description Displays a list of all failover monitor machines

Syntax MONITOR LIST

Monitor Move

Command MONITOR MOVE

Description Designates the IP address that will be failed over to the specified target NIC

Syntax

```
MONITOR MOVE <IP_address> TO NIC <target_NIC>
INTERVAL <interval> TIMEOUT <timeout> [monitor]
  | NOTEST [monitor]
```

Options

- ***IP_address***—The IP address which should be moved during failover
- ***target_NIC***—The integer value of the target NIC obtained from the niclist command
- **INTERVAL** ***interval***—The frequency, in seconds, of the monitor requests sent to the source machine to see if it is online and active
- **TIMEOUT** ***timeout***—The number of seconds before failover will occur. This number is reset to its maximum each time the source sends a response to the monitor request.
- **NOTEST**—Allows you to failover an IP address without sending monitor requests or expecting responses from the source. This option should only be used if you are monitoring multiple IP addresses but do not want to send monitor requests to each address.
- ***monitor***—Name of the source machine designated as the monitor

Examples

- `monitor move 205.31.2.57 to nic 1 interval 5 timeout 25`
- `monitor move 205.31.2.68 to nic 2 notest`

Notes

- If you do not specify a monitor, the current source designated as the monitor will be used. If you have not identified a monitor, you will receive an error message stating that a monitor has not been selected.
- Monitor names that contain non-alphanumeric characters must be enclosed in quotation marks.

Monitor Option

Command MONITOR OPTION

Description Configures the settings to determine how failover will be performed

Syntax

```
MONITOR OPTION [MOVENAME | NOMOVENAME]
[, MOVEADDRESSES | NOMOVEADDRESSES]
[, MOVESHARES | NOMOVESHARES] [, ADD | REPLACE]
[, USESHAREFILE | NOUSESHAREFILE] [, FAILONE | FAILALL]
[, TRIGGERONE | TRIGGERALL] [, FODELAY | NOFODELAY]
[, FBDELAY | NOFBDELAY]
[, INTERVENTION | NOINTERVENTION]
[, FOHOSTNAME | NOFOHOSTNAME]
[, FBHOSTNAME | NOFBHOSTNAME] [monitor]
```

Options

- **MOVENAME**—Moves the server name during failover
- **NOMOVENAME**—Does not move the server name during failover
- **MOVEADDRESSES**—Moves the IP address(es) during failover
- **NOMOVEADDRESSES**—Does not move the IP address(es) during failover
- **MOVESHARES**—Moves the shares during failover
- **NOMOVESHARES**—Does not move the shares during failover
- **ADD**—Specifies the source machine's identity is added to the target machine's identity when failover occurs
- **REPLACE**—Specifies that the source machine's identity replaces the target machine's identity when failover occurs
- **USESHAREFILE**—Use the Double-Take generated .shr file to determine shares
- **NOUSESHAREFILE**—Do not use the Double-Take generated .shr file to determine shares

Options

- **FAILONE**—When multiple IP addresses exist on a monitor machine, only the failed address is failed over to the target machine
- **FAILALL**—When multiple IP addresses exist on a monitor machine, all of the addresses will fail over to the target machine even if only one address fails
- **TRIGGERONE**—When multiple IP addresses are being monitored, failover occurs when one of the IP addresses fails
- **TRIGGERALL**—When multiple IP addresses are being monitored, failover occurs when all of the IP addresses fail
- **FODELAY**—Guarantees that the pre-failover script has completed before failing over
- **NOFODELAY**—Does not guarantee that the pre-failbover script has completed before failing over
- **FBDELAY**—Guarantees that the pre-failback script has completed before failing back
- **NOFBDELAY**—Does not guarantee that the pre-failback script has completed before failing back
- **INTERVENTION**—Specifies that network administrator intervention is required before failover begins
- **NOINTERVENTION**—Specifies that network administrator intervention is not required before failover begins
- **FOHOSTNAME**—Removes the host SPN from Active Directory on the source and adds it to Active Directory on the target during failover
- **NOFOHOSTNAME**—Does not modify Active Directory on the source or target during failover
- **FBHOSTNAME**—Returns the host SPN on the source and target back to their original settings during failback
- **NOFBHOSTNAME**—Does not modify Active Directory on the source or target during failback
- ***monitor***—Name of the source machine designated as the monitor

Examples

- `monitor option alpha`
- `monitor option nomoveshares, nousesharefile, failone, nointervention`

Notes

- The default settings are movename, moveaddress, moveshares, add, usesharefile, failall, fodelay, fbdelay, intervention, nofohostname, and nofbhostname.
- The options can be used in any combination and in any order. The first option does not require a comma, but the second and remaining options do require a comma before the option.
- Monitor names that contain non-alphanumeric characters must be enclosed in quotation marks.

Monitor Remove

Command MONITOR REMOVE

Description Removes an IP address that is currently being monitored

Syntax **MONITOR REMOVE <*IP_address*> [*monitor*]**

Options

- ***IP_address***—The currently monitored IP address that should be removed
- ***monitor***—Name of the source machine designated as the monitor

Examples

- `monitor remove 205.31.2.57 alpha`
- `monitor remove 205.31.2.68`

Notes

- If you do not specify a monitor, the current source designated as the monitor will be used. If you have not identified a monitor, you will receive an error message stating that a monitor has not been selected.
- Monitor names that contain non-alphanumeric characters must be enclosed in quotation marks.

Monitor Script Add

Command MONITOR SCRIPT ADD

Description Specifies the scripts that should be run during the failover and failback processes

Syntax **MONITOR SCRIPT ADD <*type*> <*script_name*> [*monitor*]**

Options

- ***type***—Any of the following script types
  - **PREFAILOVER**—The file is a pre-failover script to be run on the target before failover
  - **POSTFAILOVER**—The file is a post-failover script to be run on the target after failover
  - **PREFAILBACK**—The file is a pre-failback script to be run on the target before failback
  - **POSTFAILBACK**—The file is a post-failback script to be run on the target after failback
  - **SRCPOSTFAILBACK**—The file is a post-failback script to be run on the source after failback
- ***script_name***—Full path and name of the script file
- ***monitor***—Name of the source machine designated as the monitor

Examples

```
monitor script add prefailback /home/username/preback
```

Notes

- If you do not specify a monitor, the current source designated as the monitor will be used. If you have not identified a monitor, you will receive an error message stating that a monitor has not been selected.
- Options that contain non-alphanumeric characters must be enclosed in quotation marks.

Monitor Script Remove

Command MONITOR SCRIPT REMOVE

Description Specifies the scripts that should not be run during the failover and failback processes

Syntax **MONITOR SCRIPT REMOVE <*type*> [*monitor*]**

Options

- ***type***—Any of the following script types
  - **PREFAILOVER**—The file is a pre-failover script to be run on the target before failover
  - **POSTFAILOVER**—The file is a post-failover script to be run on the target after failover
  - **PREFAILBACK**—The file is a pre-failback script to be run on the target before failback
  - **POSTFAILBACK**—The file is a post-failback script to be run on the target after failback
  - **SRCPOSTFAILBACK**—The file is a post-failback script to be run on the source after failback
- ***monitor***—Name of the source machine designated as the monitor

Examples

- `monitor script remove prefailback`
- `monitor script remove postfailover`

Notes

- If you do not specify a monitor, the current source designated as the monitor will be used. If you have not identified a monitor, you will receive an error message stating that a monitor has not been selected.
- Monitor names that contain non-alphanumeric characters must be enclosed in quotation marks.

Monitor Start

Command MONITOR START

Description Initiates failover monitoring

Syntax **MONITOR START <*monitor*> [ON <*target*>]**

Options

- ***monitor***—Name of the source machine designated as the monitor
- ***target***—Name of the target, an IP address on the target, or a virtual IP address

Examples `monitor start alpha on beta`

Notes Options name that contain non-alphanumeric characters must be enclosed in quotation marks.

Monitor Stop

Command MONITOR STOP

Description Stops monitoring the source machine for a failure

Syntax **MONITOR STOP <*monitor*> [ON <*target_machine*>]**

Options
- ***monitor***—Name of the source machine designated as the monitor
- ***target***—Name of the target, an IP address on the target, or a virtual IP address

Examples
```
monitor stop alpha on beta
```

Notes Option names that contain non-alphanumeric characters must be enclosed in quotation marks.

Monitor Use

Command MONITOR USE

Description Specifies the source machine designated as the monitor that will be used in subsequent monitor commands

Syntax **MONITOR USE <*monitor*>**

Options ***monitor***—Name of the source machine designated as the monitor

Examples
```
monitor use alpha
```

Notes Monitor names that contain non-alphanumeric characters must be enclosed in quotation marks.

NICList

Command NICLIST

Description Displays the NICs available on the specified target machine. Each NIC is assigned an integer value and this value is used in the monitor move command.

Syntax **NICLIST [*target*]**

Options ***target***—Name of the target, an IP address on the target, or a virtual IP address

Examples
```
niclist beta
```

Notes
- If you do not specify a machine name, the value from the current target will be returned. If you have not identified a target, no data will be returned.
- If you have not logged into the target machine, no data will be displayed.
- Target names that contain non-alphanumeric characters must be enclosed in quotation marks.

Orphans Start

Command ORPHANS START

Description Manual operation to remove any orphan files on the target

Syntax **ORPHANS START *con_id* [CLEARRESTOREREQUIRED]**

Options
- ***con_id***—Connection ID assigned to the source/target connection
- **CLEARRESTOREREQUIRED**—Clears the restore required flag and initiates the orphan operation

Examples
```
orphans start 1
```

Orphans Stop

Command ORPHANS STOP

Description Stops the process to remove orphan files on the target

Syntax **ORPHANS STOP *con_id***

Options ***con_id***—Connection ID assigned to the source/target connection

Examples
```
orphans stop 1
```

Pause Target

Command PAUSETARGET

Description Allows you to pause the execution of Double-Take operations on the target

Syntax **PAUSETARGET <*target*> [FROM <*source*>]**

Options

- ***target***—Name of the target, an IP address on the target, or a virtual IP address
- ***source***—Name of the source

Examples

```
pausetarget beta
```

Notes

- You must be logged on to the target machine for this command to work.
- If the target machine has not been identified using the target command, you must specify the target name in the command.
- Options that contain non-alphanumeric characters must be enclosed in quotation marks.

Ping

Command PING

Description Checks a specified machine to see if Double-Take is running

Syntax **PING <*machine*>**

Options ***machine***—Name of the machine

Examples

```
ping alpha
```

Notes Machine names that contain non-alphanumeric characters must be enclosed in quotation marks.

Queue Task

Command QUEUETASK

Description Queues tasks inline with replication data.

Syntax

```
QUEUETASK <job_name> TO <target>  ONQUEUE = <task> [args]
| ONTRANSMIT = <task> [args] | ONRECEIVE = <task> [args]  |
ONEXECUTE = <task> [args]  [TIMEOUT = <timeout>]
[INTERACT | NOINTERACT]
```

Options

- ***job_name***—Unique job name assigned to this task. This will be the identifier you see in the log files.
- ***target***—Name of the target, an IP address on the target, or a virtual IP address. Depending on the network route Double-Take uses to access the target, you may need to specify the fully qualified domain name. The target is required even if you are only queuing a task to be executed on the source.
- **ONQUEUE**—Execute the specified task on the source machine as soon as the source receives and queues the task. During heavy replication, there may be a delay while the task is queued inline with the replication operations.
- **ONTRANSMIT**—Execute the specified task on the source machine just before the source transmits the task to the target.
- **ONRECEIVE**—Execute the specified task on the target machine as soon as the target receives and queues the task.
- **ONEXECUTE**—Execute the specified task on the target when the target processes the task from the queue. Since the task is not executed until it is processed, if the target is paused, the task will be held in queue.
- ***task***—The path and filename of the task to run relative to the machine it will be run on. Tasks include any valid executable or batch file. The executables or files must exist in the specified location on the machine where they will be executed
- ***args***—Arguments or options which need to be supplied with the task. Multiple arguments can be supplied in a space-separated list enclosed in quotation marks.

Options

- **TIMEOUT** ***timeout***—Valid number followed by an optional time indicator indicating the length of time ot pause while waiting for the task to complete. The valid time indicators include seconds, minutes, hours, and days. If you do not specify a time indicator, it will default to seconds. The number zero (0) indicates there is no timeout delay and the next operation is immediately processed. The keyword FOREVER indicates that the next operation is not processed until the task has completed execution. If you do not specify this option, the timeout will default to forever.
- **INTERACT**—Tasks interact with the desktop and, therefore, display on screen and run in the foreground
- **NOINTERACT**—Tasks do not interact with the desktop

Examples

```
qtask backup to beta onrec=PauseAndBackup.bat
onexec=resume.bat
```

Notes

- The default setting for this command is nointeract.
- Any combination of one or more execution points can be used with the same queuetask command.
- All script processing messages, including errors, can be viewed in the Double-Take logs and the Windows Event Viewer.
- Onqueue will still execute as soon as the task is placed on the queue even if transmission is stopped (manually stopped or paused, unmet scheduled transmission criteria, etc.). Any other option will not execute until transmission is restarted.
- If your source is in a restore required state, any task placed on the queue will be executed immediately. Use caution when submitting tasks while in this state so that the target does not get inadvertently updated.
- A task may be discarded if all connections to a target are manually disconnected, replication is stopped for all connections to a target, or an auto-disconnect occurs.
- If a task is submitted after replication is stopped, the task will be executed immediately.
- If you disable task command processing while tasks are in queue, those tasks will not be executed.
- The user submitting the task command must be a member of the **Double-Take Admin** security group on both the source and target and the Double-Take service must have proper privileges to access the files or run the commands specified in the task.
- Options that contain non-alphanumeric characters must be enclosed in quotation marks.

Quit

Command QUIT

Description Quits the Command Line Interactive client

Syntax QUIT

Replication Start

Command REPLICATION START

Description Initiates the replication process

Syntax **`REPLICATION START <`*`conid`*` | *> [CLEARRESTOREREQUIRED]`**

Options

- ***conid***—Connection ID assigned to the source/target connection
- *****—Specifies all connection IDs
- **CLEARRESTOREREQUIRED**—Clears the restore required flag and initiates replication

Examples

- `replication start 1`
- `replication start *`

Replication Stop

Command REPLICATION STOP

Description Stops the replication process

Syntax **REPLICATION STOP <*conid* | *>**

Options
- ***conid***—Connection ID assigned to the source/target connection
- ***—Specifies all connection IDs

Examples
- `replication stop 1`
- `replication stop *`

Repset Calculate

Command REPSET CALCULATE

Description Calculates the size of a replication set

Syntax **REPSET CALCULATE [*repset*]**

Options ***repset***—Name of the replication set

Examples `repset calculate DataFiles`

Notes
- If a replication set name is not specified, the active replication set will be used.
- The results of the calculation are logged to the Double-Take log file.
- Replication set names that contain non-alphanumeric characters must be enclosed in quotation marks.

Repset Create

Command REPSET CREATE

Description Creates a replication set

Syntax **REPSET CREATE <*name*>**

Options ***name***—Name of the replication set

Examples `repset create DataFiles`

Notes
- The name of the replication set should not be a Double-Take keyword. These are any DTCL command (source, target, and so on.) or any DTCL shortcut command (env, mon, rep, and so on).
- Replication set names that contain non-alphanumeric characters must be enclosed in quotation marks.

Repset Delete

Command REPSET DELETE

Description Deletes the specified replication set

Syntax **REPSET DELETE <*repset*>**

Options ***repset***—Name of the replication set

Examples
```
repset delete DataFiles
```

Notes Replication set names that contain non-alphanumeric characters must be enclosed in quotation marks.

Repset Display

Command REPSET DISPLAY

Description Displays the replication set rules

Syntax **REPSET DISPLAY [*repset*]**

Options ***repset***—Name of the replication set

Examples
```
repset display DataFiles
```

Notes

- If you do not specify a replication set name, the current replication set will be used.
- Replication set names that contain non-alphanumeric characters must be enclosed in quotation marks.

Repset List

Command REPSET LIST

Description Lists all replication set names for the currently selected source

Syntax **REPSET LIST**

Repset Resync

Command REPSET RESYNC

Description Retrieves the last saved replication set settings, clearing any unsaved changes

Syntax REPSET RESYNC

Repset Rule Add

Command REPSET RULE ADD

Description Adds a rule to a replication set. A rule is the specification of a path including volume, directories, wild cards, and/or file names.

Syntax

```
REPSET RULE ADD <path> [INCLUDE|EXCLUDE]
[, RECURSIVE|NONRECURSIVE] [TO <repset>]
```

Options

- ***path***—Volume, directory, wild card, and/or file name
- **INCLUDE**—Include the specified path in the replication set
- **EXCLUDE**—Exclude the specified path in the replication set
- **RECURSIVE**—All subdirectories and files of the specified path are recursively included or excluded
- **NONRECURSIVE**—No subdirectories and files of the specified path are included or excluded
- ***repset***—Name of the replication set

Examples

```
repset rule add "c:\data" to DataFiles
```

Notes

- The default settings for this command are include and recursive.
- The options include/exclude and recursive/nonrecursive can be used in any combination and in any order. The first option does not require a comma, but the second option does require a comma before the option.
- If you do not specify a replication set name, the current replication set will be used.
- Options that contain non-alphanumeric characters must be enclosed in quotation marks.

Repset Rule Remove

Command REPSET RULE REMOVE

Description Removes a rule from a replication set

Syntax

```
REPSET RULE REMOVE <path> [FROM <repset>]
```

Options

- ***path***—Volume, directory, wild card, and/or file name
- ***repset***—Name of the replication set

Examples

```
repset rule remove "c:\data" from DataFiles
```

Notes

- If you do not specify a replication set name, the current replication set will be used.
- Options that contain non-alphanumeric characters must be enclosed in quotation marks.

Repset Save

Command REPSET SAVE

Description Saves all replication set rules for the currently selected source

Syntax REPSET SAVE

Repset Use

Command REPSET USE

Description Specifies a replication set as the active replication set

Syntax **REPSET USE <*repset*>**

Options ***repset***—Name of the replication set

Examples

```
repset use DataFiles
```

Notes Replication set names that contain non-alphanumeric characters must be enclosed in quotation marks.

Restore

Command RESTORE

Description Initiates the restoration process

Syntax

```
RESTORE <repset> FROM <target> ORIGINAL <original_source>
[, OVERWRITE | NOOVERWRITE] [, OVERWRITENEWER |
NOOVERWRITENEWER] [, USETARGETDB | NOUSETARGETDB]
[, RESTOREDBTOO | NORESTOREDBTOO] [, CHECKSUM |
NOCHECKSUM][, ORPHANS | NOORPHANS]
```

Options

- *repset*—Name of the replication set
- *target*—Name of the target, an IP address on the target, or a virtual IP address
- *original_source*—Name of the original source
- **OVERWRITE**—Overwrites files on the source
- **NOOVERWRITE**—Does not overwrite files on the source
- **OVERWRITENEWER**—Overwrites files on the source even if the source file is newer than on the target
- **NOOVERWRITENEWER**—Does not overwrite files on the source that are newer on the source than on the target
- **USETARGETDB**—Uses the replication set from the target machine
- **NOUSETARGETDB**—Uses the replication set from the source machine
- **RESTOREDBTOO**—Restores the replication set database from the target to the source
- **NORESTOREDBTOO**—Does not restore the replication set database from the target to the source
- **CHECKSUM**—Performs a block checksum comparison and only restores those blocks that are different
- **NOCHECKSUM**—Does not perform a block checksum comparison and restores those files that are different
- **ORPHANS**—Moves or deletes orphan files on the source
- **NOORPHANS**—Does not move or delete orphan files on the source

Examples

```
restore DataFiles from beta ,overwritenewer ,usetargetdb
```

Notes

- The default settings for this command are overwrite, overwritenewer, usetargetdb, restoredbtoo, and noorphans.
- The options can be used in any combination and in any order. The first option does not require a comma, but the second and remaining options do require a comma before the option.
- The source command is required before each use of the restore command.
- This command requires the original source option.
- Options that contain non-alphanumeric characters must be enclosed in quotation marks.

Resume Target

Command RESUMETARGET

Description Allows you to resume the execution of Double-Take operations on the target

Syntax **RESUMETARGET <*target*> [FROM <*source*>]**

Options

- ***target***—Name of the target, an IP address on the target, or a virtual IP address
- ***source***—Name of the source

Examples

```
resumetarget beta
```

Notes

- You must be logged on to the target machine for this command to work.
- Options that contain non-alphanumeric characters must be enclosed in quotation marks.

Schedule Clear

Command SCHEDULE CLEAR

Description Clears the existing transmission schedule for the specified target

Syntax **SCHEDULE <*target*> CLEAR**

Options ***target***—Name of the target, an IP address on the target, or a virtual IP address Depending on the network route Double-Take uses to access the target, you may need to specify the fully qualified domain name.

Examples

```
schedule beta clear
```

Notes Target names that contain non-alphanumeric characters must be enclosed in quotation marks.

Schedule Disable

Command SCHEDULE DISABLE

Description Disables the transmission schedule without clearing the schedule data

Syntax **SCHEDULE <*target*> DISABLE**

Options ***target***—Name of the target, an IP address on the target, or a virtual IP address Depending on the network route Double-Take uses to access the target, you may need to specify the fully qualified domain name.

Examples

```
schedule beta disable
```

Notes Target names that contain non-alphanumeric characters must be enclosed in quotation marks.

Schedule Enable

Command SCHEDULE ENABLE

Description Enables the transmission schedule

Syntax **SCHEDULE <*target*> ENABLE**

Options ***target***—Name of the target, an IP address on the target, or a virtual IP address Depending on the network route Double-Take uses to access the target, you may need to specify the fully qualified domain name.

Examples

```
schedule beta enable
```

Notes Target names that contain non-alphanumeric characters must be enclosed in quotation marks.

Schedule End

Command SCHEDULE END

Description Sets criteria to end the transmission of data from the source to the target

Syntax **SCHEDULE <*target*> END [DURATION = <*number*> <*time_units*>] [BYTES = <*bytes*>]**

Options

- ***target***—Name of the target, an IP address on the target, or a virtual IP address Depending on the network route Double-Take uses to access the target, you may need to specify the fully qualified domain name.
- ***number***—Any number indicating the length of time before the transmission ends
- ***time_units***—Minutes (min), hours (hr), or days (day)
- ***bytes***—Number of bytes transmitted before the transmission ends

Examples

```
schedule beta end duration=3 hr bytes=1500000
```

Notes

- If you use both of the end options, duration and bytes, the transmission will be stopped when the first end option value is met.
- Target names that contain non-alphanumeric characters must be enclosed in quotation marks.

Schedule Start

Command SCHEDULE START

Description Sets criteria to start the transmission of data from the source to the target

Syntax

```
SCHEDULE <target> START [STARTTIME = <mm/dd/yy> <hh:mm>]
[MEMLIMIT = <percent>] [QUEUESIZE = <bytes>]
[EVERY <number> <time_units>]
```

Options

- ***target***—Name of the target, an IP address on the target, or a virtual IP address Depending on the network route Double-Take uses to access the target, you may need to specify the fully qualified domain name.
- ***mm/dd/yy***—Date in month/day/year format indicating when the transmission will begin
- ***hh:mm***—Time in hour:minute format using the 24-hour clock indicating when the transmission will begin
- ***percent***—Any number between 0 and 100 indicating the percentage of system memory that must be in use to initiate the transmission process
- ***bytes***—Number of bytes that must be in the source disk queue to initiate the transmission process
- ***number***—Any number indicating how often the transmission process will be repeated
- ***time_units***—Minutes (min), hours (hr), or days (day)

Examples

```
schedule beta start starttime=03/11/07 03:30,
queuesize=10000, every 6 hr
```

Notes

- The start option EVERY cannot be used by itself and cannot be the first option in a string of options.
- If you use more than one start option, the transmission will begin when the first start option value is met. Additionally, each option after the first must be separated by a comma, as illustrated in the Examples.
- Target names that contain non-alphanumeric characters must be enclosed in quotation marks.

Schedule Window

Command SCHEDULE WINDOW

Description Sets criteria to only allow transmissions during a certain period of time

Syntax **SCHEDULE <*target*> WINDOW <*hh:mm*> TO <*hh:mm*>**

Options

- ***target***—Name of the target, an IP address on the target, or a virtual IP address Depending on the network route Double-Take uses to access the target, you may need to specify the fully qualified domain name.
- ***hh:mm***—Time in hour:minute format using the 24-hour clock. The first time is when the transmission will begin and the second time is when the transmission will end.

Examples

```
schedule beta window 23:00 to 06:00
```

Notes

- Establishing a transmission window by itself is not sufficient to start a transmission. You will need to specify a start criteria.
- Target names that contain non-alphanumeric characters must be enclosed in quotation marks.

Set

Command SET

Description Modifies the value of a Double-Take program setting for the specified server

Syntax **SET <*setting*>=<*value*> [*machine*]**

Options

- ***setting***—See the table ***Double-Take Server Settings*** on page 13-2 for a complete list of the Double-Take program settings
- ***value***—See the table ***Double-Take Server Settings*** on page 13-2 for a complete list of the Double-Take program settings
- ***machine***—Name of the machine

Examples

```
set netport=1100
set DefaultAddress="129.12.34.3"
```

Notes

- Some settings, although immediately applied to Double-Take, will not take effect until the service is restarted.
- If you do not specify a machine name, the value from the current source will be updated. If you have not identified an active source, no changes will be made.
- Options that contain non-alphanumeric characters must be enclosed in quotation marks.

Set Local

Command SETLOCAL

Description Modifies the value of a Double-Take program setting for the local machine

Syntax **SETLOCAL <*setting*>=<*value*>**

Options

- ***setting***—See the table ***Double-Take Server Settings*** on page 13-2 for a complete list of the Double-Take program settings
- ***value***—See the table ***Double-Take Server Settings*** on page 13-2 for a complete list of the Double-Take program settings

Examples

```
setlocal netport=1100
setlocal VerifyLogName="HA server.log"
setlocal DefaultAddress="129.12.34.3"
```

Notes

- Some settings, although immediately applied to Double-Take, will not take effect until the service is restarted.
- Program setting values that contain non-alphanumeric characters must be enclosed in quotation marks.

Shutdown

Command SHUTDOWN

Description Stops the Double-Take service

Syntax **SHUTDOWN <*machine*>**

Options ***machine***—Name of the machine

Examples

```
shutdown alpha
```

Notes Machine names that contain non-alphanumeric characters must be enclosed in quotation marks.

Source

Command SOURCE

Description Identifies a machine as the active source machine

Syntax **SOURCE <*source*>**

Options ***source***—Name of the source

Examples
```
source alpha
```

Notes Source names that contain non-alphanumeric characters must be enclosed in quotation marks.

StatsLog Start

Command STATSLOG START

Description Starts the DTStats statistics logging utility.

Syntax **STATSLOG START <*machine*> [TO <*filename*>] [EVERY <*minute*>] [MAXSIZE <*kilobytes*>]**

Options

- ***machine***—Name of the machine
- ***filename***—Any valid path and filename to which the statistical information will be logged
- ***minutes***—The number of minutes to write to the log file
- ***kilobytes***—The maximum file size in kilobytes

Examples
```
statslog start alpha to "dtstat.sts" every 20 maxsize
200000
```

Notes

- The default settings are the file name statistic.sts, a five (5) minute interval, and a file size of 10485760 bytes (10 MB).
- Machine names that contain non-alphanumeric characters must be enclosed in quotation marks.

StatsLog Status

Command STATSLOG STATUS

Description Identifies whether or not the DTStats statistics logging utility is currently running

Syntax **STATSLOG STATUS <*machine*>**

Options ***machine***—Name of the machine

Examples

```
statslog status alpha
```

Notes Machine names that contain non-alphanumeric characters must be enclosed in quotation marks.

StatsLog Stop

Command STATSLOG STOP

Description Stops the DTStats statistics logging utility.

Syntax **STATSLOG STOP <*machine*>**

Options ***machine***—Name of the machine

Examples

```
statslog stop alpha
```

Notes Machine names that contain non-alphanumeric characters must be enclosed in quotation marks.

Status

Command STATUS

Description Requests connection and statistical information

Syntax

```
STATUS | CONNECT <con_id>
       | MIRROR <con_id>
       | REPLICATE <con_id>
       | TRANSMIT <con_id>
```

Options

- **CONNECT**—Displays connection information for the connection ID specified
- *con_id*—Connection ID assigned to the source/target connection
- **MIRROR**—Displays mirroring information for the connection ID specified
- **REPLICATE**—Displays replication information for the connection ID specified
- **TRANSMIT**—Displays transmission information for the connection ID specified

Examples

- `status connect 1`
- `status replicate 1`

Target

Command TARGET

Description Identifies a machine as the active target machine

Syntax **TARGET <*target*>**

Options *target*—Name of the target, an IP address on the target, or a virtual IP address

Examples `target beta`

Notes

- You must be logged into a machine using the login command before using the target command.
- Target names that contain non-alphanumeric characters must be enclosed in quotation marks.

Test Connections

Command TESTCONNECTIONS

Description Sends a test command to determine if Double-Take is running. If there are active connections, the replication set(s), IP address(es), and connection ID(s) will be included in the testcon log file.

Syntax **TESTCONNECTIONS <*machine*> [*filename* [OVERWRITE]]**

Options

- ***machine***—The name of the machine
- ***filename***—The name of the log file. The file extension .dts is appended to any file name supplied.
- **OVERWRITE**—Indicates that existing data in the file will be overwritten

Examples

```
testconnections alpha connectionstat
```

Notes

- The default log file is status.dts and is located in the same directory as the other Double-Take log files. By default, the log file is not overwritten.
- Machine names that contain non-alphanumeric characters must be enclosed in quotation marks.

Time Now

Command TIMENOW

Description Prints the current date and time. This command is useful for scripting to determine process start and stop times.

Syntax TIMENOW

Transmission Pause

Command TRANSMISSION PAUSE

Description Pauses the transmission pause

Syntax **TRANSMISSION PAUSE <*target*>**

Options ***target***—Name of the target, an IP address on the target, or a virtual IP address. Depending on the network route Double-Take uses to access the target, you may need to specify the fully qualified domain name.

Examples

```
transmission pause beta
```

Notes Target names that contain non-alphanumeric characters must be enclosed in quotation marks.

Transmission Resume

Command TRANSMISSION RESUME

Description Resumes a paused transmission

Syntax **TRANSMISSION RESUME <*target*>**

Options ***target***—Name of the target, an IP address on the target, or a virtual IP address. Depending on the network route Double-Take uses to access the target, you may need to specify the fully qualified domain name.

Examples

```
transmission resume beta
```

Notes Target names that contain non-alphanumeric characters must be enclosed in quotation marks.

Transmission Start

Command TRANSMISSION START

Description Initiates the transmission process

Syntax **TRANSMISSION START <*target*>**

Options ***target***—Name of the target, an IP address on the target, or a virtual IP address. Depending on the network route Double-Take uses to access the target, you may need to specify the fully qualified domain name.

Examples

```
transmission start beta
```

Notes Target names that contain non-alphanumeric characters must be enclosed in quotation marks.

Transmission Stop

Command TRANSMISSION STOP

Description Stops the transmission process

Syntax **TRANSMISSION STOP <*target*>**

Options ***target***—Name of the target, an IP address on the target, or a virtual IP address. Depending on the network route Double-Take uses to access the target, you may need to specify the fully qualified domain name.

Examples

```
transmission stop beta
```

Notes Target names that contain non-alphanumeric characters must be enclosed in quotation marks.

Unload source

Command	UNLOAD SOURCE
Description	Unloads the Double-Take source module
Syntax	**UNLOAD SOURCE <*machine*>**
Options	***machine***—Name of the machine
Examples	`unload source alpha`
Notes	Machine names that contain non-alphanumeric characters must be enclosed in quotation marks.

Unload Target

Command	UNLOAD TARGET
Description	Unloads the Double-Take target module
Syntax	**UNLOAD TARGET <*machine*>**
Options	***machine***—Name of the machine
Examples	`unload target beta`
Notes	Machine names that contain non-alphanumeric characters must be enclosed in quotation marks.

Verify

Command VERIFY

Description Verifies the integrity of the data between the source and target machines.

Syntax

```
VERIFY <con_id> [ SYNC [,NEWER] | NOSYNC]
[,CHECKSUM | NOCHECKSUM] [STARTTIME=<mm/dd/yy> [hh:mm]]
[EVERY <number> <time_units>] [ORPHANS | NOORPHANS]
[CLEARRESTOREREQUIRED]
```

Options

- ***con_id***—Connection ID assigned to the source/target connection
- **SYNC**—Synchronizes any data that is different
- **NEWER**—Synchronizes only those files that are newer on the source than on the target
- **NOSYNC**—Do not synchronize any data that is different
- **CHECKSUM**—Compares and/or synchronizes those blocks that are different on the source than on the target based on checksum comparisons
- **NOCHECKSUM**—Does not perform a checksum comparison when comparing and/or synchronizing files
- **STARTTIME**—Starts the verification process at the time specified
- ***mm/dd/yy***—Date in month/day/year format when the verification process will begin
- ***hh:mm***—Time in hour:minute format using the 24-hour clock when the verification process will begin
- **EVERY**—Repeat the verification process at the frequency specified
- ***number***—Length of time to repeat the verification process
- ***time_units***—Minutes (min), hours (hr), or days (day)
- **ORPHANS**—Moves or deletes orphan files on the target
- **NOORPHANS**—Does not move or delete orphan files on the target
- **CLEARRESTOREREQUIRED**—Clears the restore required flag and initiates the verification

Examples

- `verify 1`
- `verify 2 sync, newer`
- `verify 2 every 2 hr`

Notes The default verification settings are sync, checksum, and noorphans.

Version

Command VERSION

Description Displays the Double-Take version currently installed

Syntax **`VERSION [MACHINE]`**

Options **MACHINE**—Name of the machine

Examples

```
version alpha
```

Notes

- If no machine name is specified, the version of the active source will be displayed. If there is no active source, no version information will be displayed.
- Machine names that contain non-alpanumeric characters must be enclosed in quotation marks.

Wait

Command WAIT

Description This command is used in scripts to force the script to stop executing until the specified number of milliseconds has elapsed.

Syntax **`WAIT <`*`ms`*`>`**

Options ***ms***—Length of time in milliseconds

Examples

```
wait 5000
```

Notes This sample waits for 5 seconds.

Wait on Mirror

Command WAITONMIRROR

Description This command is used in scripts to force the script to stop executing until the connection has finished mirroring or verifying.

Syntax **`WAITONMIRROR <`*`con_id`*`>`**

Options ***con_id***—Connection ID assigned to the source/target connection

Examples

```
waitonmirror 1
```

Wait on Restore

Command WAITONRESTORE

Description This command is used in scripts to force the script to stop executing until the connection has finished restoring.

Syntax **WAITONRESTORE <*rest_id*>**

Options ***rest_id***—Restoration ID assigned to the source/target connection

Examples
```
waitonrestore 1
```

Notes This command requires using the source command immediately before the waitonrestore command.

Wait on Target

Command WAITONTARGET

Description This command is used in scripts to force the script to stop executing until the target queue has been empty for the time specified.

Syntax **WAITONTARGET <*target*> [FROM <*source*>] <*time*>**

Options
- ***target***—Name of the target, an IP address on the target, or a virtual IP address
- source—Name of the source
- ***time***—Nnumber of seconds that the target queue needs to be empty before the command will return

Examples
```
waitontarget beta from alpha 30
```

Notes Machine names that contain non-alphanumeric characters must be enclosed in quotation marks.

Write

Command WRITE

Description Displays the value of a Double-Take variable

Syntax **WRITE $<*variable_name*>**

Options ***variable_name***—The name of the variable that you have established and want to display its value

Examples
- `write $thetarget`
- `write $dbrepset`

Scripting Examples

15

This chapter contains sample Double-Take scripts. Most of the sample scripts must be modified. They cannot be used as-is. Modify them to fit your environment. If you need basic assistance with script modifications, contact Technical Support. Assistance with advanced scripting will be referred to Professional Services.

NOTE: See ***Double-Take scripts*** on page 2-3 for information on using Double-Take scripts.

Creating and connecting a replication set

The following script will start a Double-Take connection by creating a repset called DataFiles and connecting it to the machine beta.

```
source alpha;
repset create DataFiles;
repset rule add c:\files include, recursive;
repset rule add c:\files\users exclude;
repset rule add d:\data include, recursive;
repset save;
connect DataFiles to beta map exact;
```

Creating and connecting a replication set with failover monitoring

The following script will start a Double-Take connection by creating a repset called DataFiles and connecting it to the machine beta. This script will also set up failover.

```
source alpha;
repset create DataFiles;
repset rule add c:\files include, recursive;
repset rule add c:\files\users exclude;
repset rule add d:\data include, recursive;
repset save;
connect DataFiles to beta map exact;
target beta;
monitor create alpha;
monitor move 205.31.4.193 to nic 3 interval 5 timeout 25;
monitor start alpha;
```

Restoring a replication set

The following script will restore the data in the DataFiles replication set from the target machine to the source machine.

```
source alpha;
restore DataFiles to beta nooverwritenewer, usetargetdb;
```

Using variables to create and connect a replication set and run verification

The following script uses variables to identify the source, target, and replication set. These variables are then used in the Double-Take commands. The $connectionID variable will contain the connection ID for the connection established. This variable can then be used to establish a verification schedule.

```
$TheTarget = "beta";
$TheSource = "alpha";
$TheRepset = "DataFiles";
source $TheSource;
repset create $TheRepset;
repset rule add c:\files include, recursive;
repset rule add c:\files\users exclude;
repset rule add d:\data include, recursive;
repset save;
$ConnectionID = connect $TheRepset to $TheTarget map exact;
verify $ConnectionID sync, newer, checksum, every 12 hr;
```

Controlling a mirror using flow control

The following script uses the IF conditional, FOR loop, and WHILE loop commands. In the following examples the FOR loop will start a mirror for all connections between 1 and 10. The IF conditional will return the error command "mirror failed to start" if a value of 0 is not obtained. The WHILE loop will wait for a mirror to end and disconnect as long as the returned value is less than 10. The IF conditional will return the error message "failed to disconnect" if a value of 0 is not obtained.

```
# Start mirror for all connections 1-10. #
# Notify user of any errors.             #
SOURCE alpha;
FOR $x = 1 TO 10 DO
   $ret = MIRROR START $x;
   IF $ret != 0 THEN
     WRITE "Mirror failed to start";
     WRITE $x;
     WRITE $ret;
   END
END


# Wait for mirror to end and disconnect all connections 1-10. #
# Notify user of any errors.                                  #
SOURCE alpha;
$x = 1;
WHILE $x <= 10 DO
   waitonmirror $x;
   $ret = disconnect $X;
   IF $ret != 0 THEN
     WRITE "Failed to disconnect";
     WRITE $x;
     WRITE $ret;
   END
   $x = $x + 1;
END
```

Using variables to pause a target

The following script uses variables to identify the target and credentials to login to that target. These variables are then used in the Double-Take commands to pause the target.

```
$TheTarget = "beta";
$TheUser = "admin";
$ThePassword = "password";
$TheDomain = "domain.com";
login $TheTarget $TheUser $ThePassword $TheDomain;
target $TheTarget;
pausetarget $TheTarget;
```

Using variables to resume a target

The following script uses variables to identify the target and credentials to login to that target. These variables are then used in the Double-Take commands to resume the target.

```
$TheTarget = "beta";
$TheUser = "admin";
$ThePassword = "password";
$TheDomain = "domain.com";
login $TheTarget $TheUser $ThePassword $TheDomain;
target $TheTarget;
resumetarget $TheTarget;
```

Creating a backup or snapshot of the target by inserting a task command during replication

The following script stops the services on the source, pauses the script to allow the source time to write the remaining application data to disk, inserts a Double-Take task command into the Double-Take replication process, and then restarts the services.

```
REM     Stop the services on the source so that data changes are stopped.
net stop "Service Name 1"
net stop "Service Name 2"
net stop "Service Name 3"
net stop "Service Name 4"


REM     Pause the source (for a specified number of seconds) to allow time for
REM     the application data to be written to disk. The sleep command is available
REM     from the Windows Resource Kit.
sleep 120


REM     At this point the source application is stable (service is stopped and data
REM     is written). Now, initiate your Double-Take task command, for example to
REM     trigger a snapshot or backup. The process you want to run on the target
REM     must be contained in the batch file specified in the queuetask command.
REM     That batch file must be stored on the target so that it can be executed
REM     on the target.
/usr/bin/dtcl $TheSource = "alpha"
/usr/bin/dtcl $TheTarget = "beta"
/usr/bin/dtcl $TheUserName = "administrator"
/usr/bin/dtcl $ThePassword = "password"
/usr/bin/dtcl $TheDomain = "domain.com"
/usr/bin/dtcl login $TheSource $TheUserName $ThePassword $TheDomainName
/usr/bin/dtcl login $TheTarget $TheUserName $ThePassword $TheDomainName
/usr/bin/dtcl queuetask backup to $TheTarget onexecute=Backup.bat timeout=forever


REM     Now that the task command has been inserted inline with Double-Take
replication, the
REM     services can be restarted New changes to the data will fall inline behind
the task
REM     command just inserted.
net start "Service Name 1"
net start "Service Name 2"
net start "Service Name 3"
net start "Service Name 4"
```

Creating a backup of the target by rotating connections

The following two scripts create multiple copies of your data on the target, but only one copy is active at a time. This allows you the time and availability to backup the inactive copy of data. This is especially helpful when you have applications with interdependent files.

Backups occur sequentially from the first file to the last file. Therefore, when you are using applications that have interdependent files, such as a database application whose database and log files must be synchronized, Double-Take cannot be actively updating files on the target while the backup is running, or there becomes an opportunity for interdependent files to become mismatched, causing a corrupt application on the backup. For example, suppose the following scenario occurs on a target machine that contains a replica of a database.

1. The backup process which is currently running sequentially through the files on the target, reaches the database log file and starts writing the log file to tape. At the same time, Double-Take receives additional updates to the database. The database file on the target is updated, but since the log file is in use by the backup, the associated log operation is placed on the Double-Take queue on the target.
2. When the log file is finished being backed up, the backup process continues with the next sequential file, which is not necessarily the database that corresponds with that log file.
3. Since the log file is no longer in use, Double-Take applies the log operation from the Double-Take queue.
4. Eventually, the backup process reaches the database file and writes it to tape.

At this point, the database file on the tape backup contains an extra update that the log file on the tape backup does not. The two files do not correspond, so the database on the tape backup will not be time consistent.

The two scripts identify an existing connection, disconnect it, establish a new connection, and initiate a difference mirror. The connections in the two scripts transmit the same data to two different locations, allowing you to backup the idle files on the inactive connection.

```
REM    Script 1
$TheSource = "alpha";
$TheTarget = "beta";
$TheUser = "admin";
$ThePassword = "password";
$TheDomain = "domain.com";
$TheRepSet = "DataFiles";

login $TheSource $TheUser $ThePassword $TheDomain;
login $TheTarget $TheUser $ThePassword $TheDomain;
source $TheSource;

$FirstConnection = conid $TheRepSet to $TheTarget map base c:\first_location;
disconnect $FirstConnection;

$SecondConnection = connect $TheRepSet to $TheTarget map base c:\second_location, nomirror;
mirror start $SecondConnection different, checksum;
```

```
REM    Script 2
$TheSource = "alpha";
$TheTarget = "beta";
$TheUser = "admin";
$ThePassword = "password";
$TheDomain = "domain.com";
$TheRepSet = "DataFiles";

login $TheSource $TheUser $ThePassword $TheDomain;
login $TheTarget $TheUser $ThePassword $TheDomain;
source $TheSource;

$SecondConnection = conid $TheRepSet to $TheTarget map base c:\second_location;
disconnect $SecondConnection;

$FirstConnection = connect $TheRepSet to $TheTarget map base c:\first_location, nomirror;
mirror start $FirstConnection different, checksum;
```

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