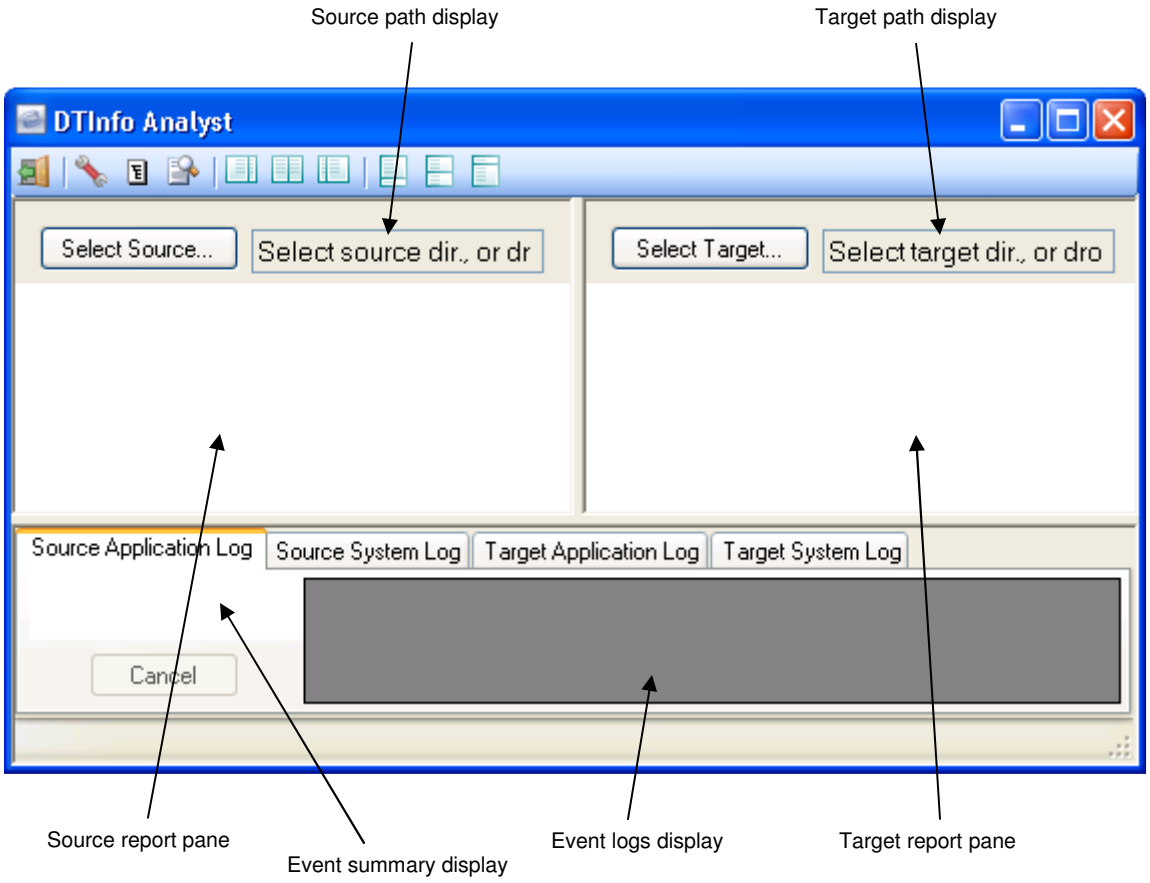
DTInfo Analyst

DTInfo Analyst is a tool designed to help Double-Take Software employees analyze and navigate DTInfo reports. Its primary goals are:

- To help the user gain an overview of the system and Double-Take configuration
- To alert the user to certain misconfigured or potentially misconfigured items
- To facilitate navigation of the numerous files that are included in a DTInfo report
- To facilitate investigation of various events

DTInfo Analyst is NOT a best practice analyzer, although it does have a few features along those lines. It does NOT find every misconfigured item—in fact, at this point it only points out a very few.

Please refer to the diagram below for identification of the visual components that will be referred to throughout this document.



Loading a DTInfo Report

A DTInfo report can be loaded by three different methods:

- By dragging and dropping the folder or archive containing the DTInfo files onto the source or target report windows, or the source or target path display textbox.
- By clicking the Select Source or Select Target buttons and selecting the folder that contains the DTInfo files.
- By right-clicking a folder or archive that contains the DTInfo files and selecting "Open as Source (DTInfo Analyst)" or "Open as Target (DTInfo Analyst)". This method can be used after clicking the "Register Folder Extensions" button in the Options dialog.

  Note: The Register Folder Extensions button may not register .zip files as expected if the shell extension handler is redirected to a third-party application. For example, if TUGZip is installed, the registry entries need to be placed under HKEY_CLASSES_ROOT\TzZIP

When a DTInfo is loaded, several of the files are parsed and queried to generate the summary report that is displayed in the source or target report pane. If the DTInfo contains a cluster log, a cluster report, or a DFO log, those files are processed to assist in readability and analysis. See the File Processing section for details.

Some items in the report panes are hyperlinks to provide the following:

- "Drill down" to a KB article that explains more about the item
- Click the link to find the associated time in the dtlog file. This functionality is available when process dumps are included in the DTInfo.

Some items in the reports can be expanded and collapsed to adjust readability, and are noted so with "(clickable)" to the right of the item.

Background threads begin loading the Application Log and System Log into the event log display tabs when a DTInfo is loaded. Due to the amount of time it can take to load all events, only Double-Take, Storage Mirroring, dblhook, and nsifiltr events are loaded.

The amount of time it takes for logs to be displayed depends on how many log messages are loaded. The number of months of events to display can be set on the Options dialog to balance the speed of loading and amount of data to your preference.

Navigating DTInfo Analyst

This section will cover the navigation features, but will omit some of the more obvious items. Most of the navigation is initiated through context menus by right-clicking on the source and target report panes, or on events. However, there are a few hotkeys for those who like less mouse and more keyboard:

- Ctrl+S shows the context menu for the source report pane
- Ctrl+T shows the context menu for the target report pane
- Ctrl+O opens the Options dialog

The context menus for the source and target report panes include a number of menu items that categorize underlying log files, as well as an All Files item that list all non-0K files. Not all log files are included as categorized menu items, but the most commonly used ones are and more can be

included as development progresses. These context menus also include an item to copy the report pane contents to the clipboard, export the statistics files to .csv format, and an item to fix those .csv files (see the File Processing section for details).

Context menus are also available in the event display pane. Event logs can be launched in a new window and opened in Event Log Explorer (if it is installed on the system). The time associate with an event can be looked up in the dtlog files by right-clicking an event and selecting "Find in dtlogs."

The three pane separators can be moved to allow more or less viewing area for each pane as desired. The toolbar also includes buttons that can be used to move the pane separators to their extremes, and then back to the middle. This allows the user to quickly "maximize" and "restore" panes as needed. Buttons to clear the source or target data, or to switch them are also available.

Events
The following functionality is available in the events pane:

- When an event log is loaded, a summary will appear to the left of the data grid. The summary will include clickable items that will filter for specific events. Appendix A includes a list of which events are summarized.
- Right-click in the summary window or on the data grid and select "Open All in Event Log Explorer" to open all event logs that are currently loaded in one Event Log Explorer window
- Right-click in the summary window or on the data grid and select "Open log in new window" to display the currently visible log in a new window.
- Right-click on an event and select "Find in dtlogs" to find the associated place in the Double-Take log file. One or two windows will appear momentarily with a line highlighted that either matched the event timestamp or was the next message logged after the event timestamp. The process searches through the dtlog files alphabetically, so if there are older dtlog files with lower sequence numbers, this could result in the wrong file and line being returned.
- Right-click on an event and select "Copy selection to clipboard" to copy the selected row of data to the clipboard.
- Right-click on an event or event summary pane and select "Get all events within 1 day" to display a window with all events from the visible log from the day previous, day of, and day after the selected event.
- Please note that event log files from Windows 2003 systems cannot be opened by DTInfo Analyst on Windows Vista/2008 systems. Additionally, event log files from Windows 2008 cannot be opened on Windows XP/2003 systems.

File Processing

When a DTInfo is loaded, a few files are processed to make them easier to read and analyze:

- The cluster.log file is processed to replace the resource GUIDs with the associated resource names. The file that is created with the GUIDs replaced is ~cluster.log.
- The ClusRpt.txt report is reformatted to remove most of the empty lines and to consolidate the property names and data on the same line. This allows the user to see far more data on one screen. The new file is name ~ClusterReport.txt.
- The dfolog.log file is processed to remove most of the detail. The new file that is created, dfolog.summarized.log, contains only the line showing when DFO.exe started, the DNS server being accessed, the "Failback Mode = True" line if present, and any error messages.
- On Windows 2008 and Vista systems, .evt files are converted to .evtx format

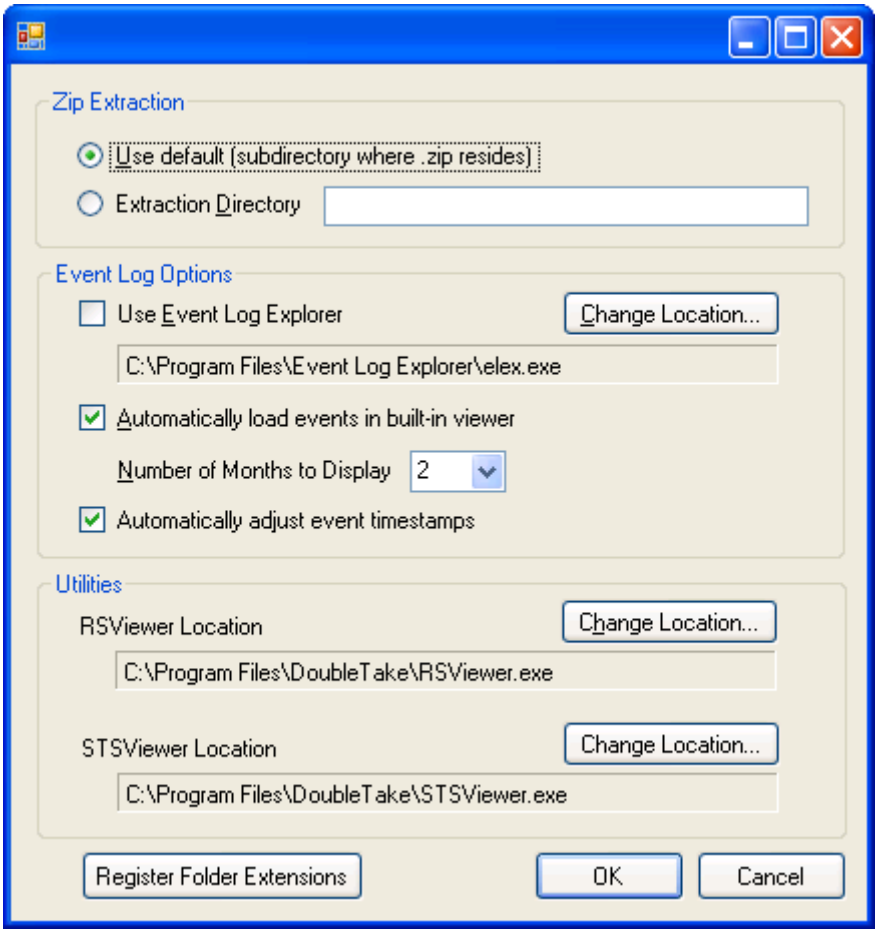
The processed files are available in the context menus when available.

After a DTInfo is loaded, statistics files can be converted to .csv files by selecting Statistics -> Convert statistic.sts to .csv. Selecting this item will launch dtstat.exe processes to convert both statistic.sts and statistic-old.sts. The converted files use the same file name, replacing the .sts extension with .csv.

After statistic file conversion, the .csv file can be fixed by selecting Statistics -> Delimit fields in .csv w/ quotes. This fixes the condition where commas in the filenames in the Last File Touched column skew the following columns.

Options

The Options dialog can be accessed by clicking on the Tools button on the toolbar  or by using the Ctrl+O hotkey.



- Zip Extraction: The default location for archives to be extracted is to a subdirectory where the archive currently resides. The subdirectory is the name of the zip file less the extension. If the Extraction Directory option is selected, a valid path must be entered in the adjoining textbox. All archives extracted by DTInfo Analyst will be directed to this location.
- Event Log Options: If Use Event Log Explorer is enabled, both event log files will be loaded in Event Log Explorer when a DTInfo is loaded. If "Automatically load events in built-in viewer" is selected, the Application Log and System Log will be loaded when a DTInfo is loaded. The number of prior months' events that will be loaded is specified by the Number of Months to Display option. "Automatically adjust event timestamps" causes event timestamps to be adjusted to the time zone of the system represented by the DTInfo. This facilitates cross-referencing event logs to text-based log files.
- Utilities: Toolbar buttons are available for launching RSViewer.exe and STSViewer.exe. The locations of the associated executables and be set here.
- Register Folder Extensions: This button registers "Open as Source (DTInfo Analyst)" and "Open as Target (DTInfo Analyst)" items in the context menu of folder and archive files. When one of these menu items is selected, a new DTInfoAnalyst.exe process is started,

if one is not already running, and the DTInfo contained in the folder or archive is loaded as the source or target respectively. If a DTInfoAnalyst.exe process is already running, the selected DTInfo is loaded into it. If there is more than one DTInfoAnalyst.exe process running, it will be loaded into all of them.

Appendix A

Reports

The following data is collected and displayed in the report windows:

- Server Name (Windows 2003 only)
- Versions of doubletake.exe, dblhook.sys, repdrv.sys, and dtam.exe (if present)
- Activation code
- Non-default Double-Take parameters (due to new parameters and defaults in the 5.1 Windows 2008 Feature Pack, this list may not be 100% correct those builds)
- Contents of the dtinfo_testcon.dts file (Due to a defect in 5.0 and 5.1, this is typically useless for those versions)
- Contents of IPConfig.txt file
- Contents of the Filter Information.txt file
- The SystemPages configuration
- Whether the /3GB switch is present in boot.ini
- Whether the system is a cluster node (specifically, tests whether "the system cannot find the file specified" is present in cluster.txt)
- System model (Windows 2003 and later only)
- System Manufacturer (Windows 2003 and later only)
- Time zone setting (Windows 2003 and later only)
- DisableKfaiCaching setting (displayed in red with link to KB if SQL Server or Exchange Server is also detected)
- If IgnoreSystemVolume = 1 (nothing reported if it is 0)
- If SQL Server is installed (nothing reported if it is not)
- If Exchange Server is installed (nothing reported if it is not)
- List of process dump files, which can be clicked to locate the associated time in the Double-Take log.

Events

The following events are summarized in the events summary pane:

Application Log

- 4006: Service has aborted due to an unrecoverable error.
- 4007: Auto-disconnect occurred.
- 4044: An error was encountered and replication has been stopped. It is necessary to stop and restart the service to correct this error.
- 4046: This service failed to start because of a possible port conflict.

- 4067: No replication ops have been received from the driver for an extended period of time.
- 4068: Failed to write to a replicating volume.
- 4110: Target cannot write file due to target disk being full.
- 4111: Target cannot write file due to a sharing violation.
- 4112: Target cannot write file due to access denied.
- 4113: Target cannot write file due to unknown reason.
- 4204: Error running in band script.
- 4408: Unable to move some orphans.
- 4409: Unable to delete some orphans.
- 4410: Registry hive dump failed.
- 10002: Disk check failed.
- 10003: Quorum owner could not access arbitration path.

System Log

- 8192: Kernel memory (paged pool) was exhausted.
- 8196: The maximum amount of memory for replication queuing has been reached.
- 16384: Encountered an unrecoverable error. Replication is stopped. A reboot of the server is required to re-enable replication.
- 16392: An internal error occurred.