Creating a Macro Load

Macro loads are the most commonly used loads in DataLoad and are the start point for most users. This white paper explains the basics of creating a Macro load. The links in this white paper link to the DataLoad User Guide where more detailed information is available.

The beauty of Macro loads is their simplicity – no technical knowledge is required and they can load data in to *any* application. However, as with most things, simplicity doesn't mean everything required to create a Macro load is obvious. Before creating a Macro load it is important to understand what this load does. Macros replicate a user's actions by sending data, keystrokes and mouse clicks to an application. The user can also control how quickly the action is performed. By creating a load containing data and the keystrokes & mouse clicks necessary to navigate through the application DataLoad will load data in to that application as if it was being entered by the user. In fact, applications can't tell whether data is entered by DataLoad or a “real” user!

The first step in creating a load is to setup the DataLoad spreadsheet(s). DataLoad contains header, main and footer spreadsheets and these are processed in that order. Most loads use only the main spreadsheet but the header and footer spreadsheets are available for any actions required before and/or after the main spreadsheet is loaded. When DataLoad runs a load it starts at the top left cell and works left to right and top to bottom through the spreadsheet, processing each cell in turn. The spreadsheets' cells can be used in whatever way is required but normally each row will represent a record to be loaded and the use of cells will be consistent in each column. That is, every cell within a given column will do the same thing.

Each cell contains data, keystrokes or a command. Anything in a cell that isn't keystrokes or a command will be treated as data. Where the cell contains data it is sent to the target application as-is. Given that DataLoad is mostly used for loading data it can be seen that many of the spreadsheets' columns will contain data. A keystroke cell will make DataLoad press the desired keys on the keyboard. While that can be used to send data, keystrokes are normally used to perform some navigation, for example press the TAB or ENTER keys, press a keystroke shortcut or select a menu entry. Keystroke cells have a leading '\' and if a cell's contents starts with a '\' then everything after the '\' is sent as keystrokes.

There are two types of DataLoad command. Most commands are simply an alias for commonly used keystrokes. For example, the keystroke syntax for pressing the TAB key is `\{TAB}` but there is a standard command alias for this called `TAB` and that is generally used to press the TAB key. Each command may have multiple definitions in case the command requires different keystrokes in different applications. DataLoad comes with a large number of pre-built commands and these can be viewed by selecting Commands from the Edit menu. The Commands window can also be used to add, edit and delete command definitions.

In addition to keystroke alias commands there are built-in commands that provide some special functionality. These include commands to make DataLoad sleep for a period of time, change to a new target application window, press a mouse button or show a message to the user.

The rate at which DataLoad processes the spreadsheets' cells is controlled by time delays. Without these DataLoad would send data to the target application too quickly. The target application would not be able to process the data, keystrokes and mouse clicks quickly enough and errors will occur. Delays can be set at three levels – global delays, command delays and cell delays. The global delays apply throughout the load and, for example, can cause DataLoad to pause after every cell or every data cell is processed. A command delay causes a pause after a particular command is executed. For example, if a save action always takes around 1 second to complete then a 1 second delay could be associated with the *SAVE command. Attaching delays to commands ensures the delay always occurs when the command is used and reduces the number of cell delays that must be added to the spreadsheet. The *SL*n* command can be used in spreadsheet cells to cause DataLoad to pause for the specified time. These cell delays allow pauses to be inserted at specific points in the load and should be used whenever the load should pause for longer than is provided by the global and command delays.

When the load is run for the first time the delays should be set fairly high because at this stage the aim is to test and refine the actions of the load. This is most easily achieved by increasing the global delays. When the load is working as required the global delays should be reduced. If that makes specific parts of the load run too quickly a command or cell delay can be used to avoid having to increase the global delays again.

Having setup the spreadsheet(s) and checked the delays the load is almost ready to run. The name of the target application should be selected from the Window Name drop list, which is just under DataLoad's toolbar. When the load is started DataLoad will activate this window and send to it the data, keystrokes and mouse clicks. Finally, select the appropriate Command Group from the other droplist just below the toolbar. The Command Group specifies the correct command definitions to use. DataLoad comes with Command Groups for many popular applications. If the target application is not listed in the Command Groups then the “Other” Group can be used or a new Group can be added in the Commands window.

The load is now ready to run. By default DataLoad will load all cells but if certain cells are selected when the load is started then DataLoad will load just those cells. Before starting the load, ensure the target application is open and the cursor is in the correct field. Now select Start Load from the Tools menu or click the load icon (a white arrow on a blue background) on the toolbar. The Run Load window will be displayed where various settings can be checked or changed. This includes which cells will be loaded, the target Window Name, the Command Group and options for Browser Control and Load Control. The Step Mode Load checkbox can be used to run the load one cell at a time, which is useful for investigating load issues. When the load is ready to run click the OK button and the load will start.

If the load structure and delays were correctly setup the load will now run to completion. However, the load can be terminated if a problem occurs by pressing the Esc key. The load can now be refined, any issues fixed and then performance improved by tuning the delays. Further performance improvements can be achieved using Load Control and/or Browser Control, which are described in other white papers.