1010DATA

PowerLoader User's Guide

Contents

Pre-Load To-Do List

In order to use PowerLoader there are some preparatory steps you need to take. The following list contains items you should have in place on your computer before using PowerLoader:

1. **1010data account with API access**

   We'll assume that if you're reading this guide you're already a 1010data client (which automatically makes you awesome!). However, to use many of our supplemental products, such as TenDo, the ODBC driver, and yes, PowerLoader, you also need API access. If you're not sure if you have API access or not, contact your 1010data sales representative.

2. **PowerLoader FTP account**

   Once you have API access as part of your 1010data account, you automatically have access to PowerLoader. Your PowerLoader account is the same **Username** and **Password** as your normal 1010data account. However, if you intend to use PowerLoader you should contact 1010data to setup an FTP account. This account will provide you with the access needed to upload your raw data via FTP before you load it into 1010data with PowerLoader.

3. **The data you intend to load in a compatible file format**

   In order to load your data via PowerLoader, you will need to output your data from your current system into a file format that can be read by PowerLoader. The compatible file types are as follows:

   - `.txt` - a standard text file
   - `.csv` - a comma-separated values file
   - `.zip, .7z, .rar, .tar.gz` - a compressed file in one of these formats containing either of the above file formats

4. **An FTP Client**

   If you're not familiar with FTP, don't let it scare you. FTP simply stands for: File Transfer Protocol, and it's a very common way to transfer files between computer systems. There are many, many free FTP clients for almost every kind of operating system and environment you can imagine. However, most of our PowerLoader users simply use a free client called FileZilla. It is an open source, free software product that you can download here: *www.filezilla-project.org*. We will look at how to use the FTP client a little later in this guide. But for now, make sure you have one installed on your system.

Now that you have all the items above checked off the list, we can upload your data to 1010data with PowerLoader. In the next section, we'll take a look at each step in detail, as well as all the fields and options available during the upload process.

Login to PowerLoader

To login to PowerLoader, simply follow this link: *www2.1010data.com/powerloader2*. You should arrive at the following screen:
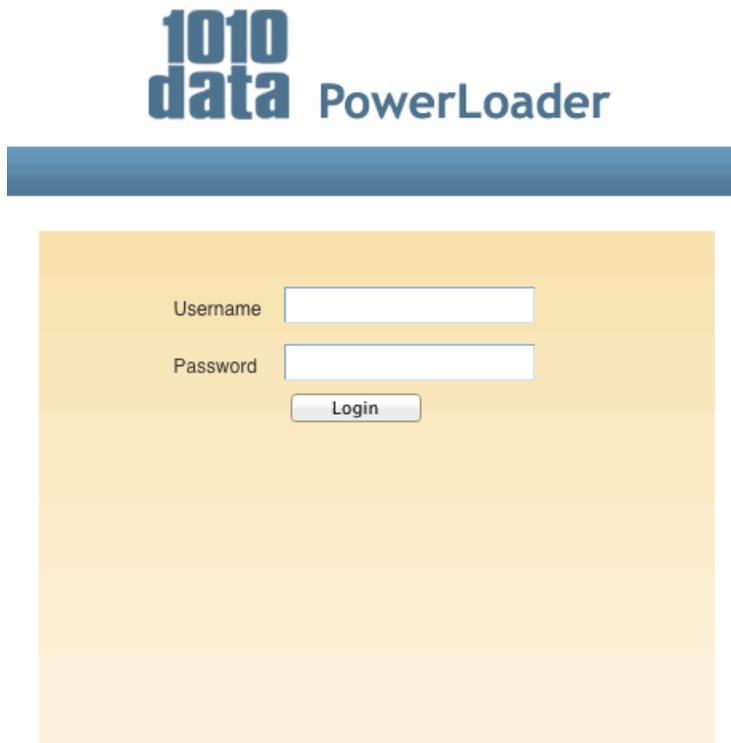
To login, enter your 1010data **Username** and **Password**. Then, click the **Login** button. After your credentials have been verified you'll end up at the following screen:

The screenshot above shows 1010data's generic folders in a test environment. You should see your own folders instead.

Upload Data Files to PowerLoader

There are two ways you can upload your data into 1010data PowerLoader. This section will cover both methods.

In order to upload your data for use with PowerLoader, you will require a 1010data FTP account. If you're not sure whether you have an account, contact 1010data.

Before you can upload a file, you need to make sure it is in the correct format. PowerLoader accepts files in the following formats:

• **Text file**: A file with a ".txt" extension that contains only text data.
• **Comma Separated Values file**: A file whose values are separated (or delineated) by a comma character (' **,** ').

Most applications can out put their data in either of these files types, including MS Excel.

> **Note:** To export your Excel spreadsheet choose one of the following options: **File** > **Save as...** > **Format** > **Comma Separated Values (.csv)** or **File** > **Save as...** > **Tab Delimited Text (.txt)**.

If you save your data in a **Text** file format, it will look something like this when you open it in a text editor:

```
Transaction ID  Account Store   Date     Item SKU     Units   Sales  Cost
531     957     1       20120515      366   -1      -5      -1.84
532     478     1       20120515      98A   1       0.5     0.25
532     478     1       20120515      3B7   1       1.1     0.56
534     738     1       20120516      A96   2       6       2.9
534     738     1       20120516      65B   1       2.25    1.35
535     709     2       20120515      CB7   1       1.65    1.1
535     709     2       20120515      96A   1       1.1     1
535     709     2       20120515      969   1       1.1     1
536     748     2       20120517      3A4   3       1.02    0.39
536     748     2       20120517      366   1       5       1.8
537     523     3       20120515      CB7   1       1.65    1.1
537     523     3       20120515      A96   2       6       2.9
537     523     3       20120515      98A   1       0.5     0.25
537     523     3       20120515      96A   1       1.1     1
537     523     3       20120515      3B7   1       1.1     0.56
538     668     1       20120518      CB7   1       1.65    1.1
538     668     1       20120518      98A   4       2       1
538     668     1       20120518      96A   1       1.1     1
538     668     1       20120518      969   1       1.1     1
538     668     1       20120518      3B7   1       1.1     0.56
539     25      2       20120619      65B   1       5       3.35
540     361     2       20120619      3B7   1       1.1     0.56
540     361     2       20120519      3A4   1       0.34    0.13
541     469     3       20120522      A96   1       4       1.45
541     469     3       20120522      98A   1       0.5     0.25
541     469     3       20120522      96A   1       1.1     1
541     469     3       20120522      969   1       1.1     1
541     469     3       20120522      3B7   3       3.3     1.68
543     876     1       20120603      CB7   1       1.65    1.1
543     876     1       20120603      A96   1       4       1.45
543     876     1       20120603      98A   2       1       0.5
543     876     1       20120603      96A   1       1.1     1
543     876     1       20120603      969   1       1.1     1
543     876     1       20120603      3B7   2       2.2     1.12
543     876     1       20120603      3A4   1       0.34    0.13
```

If you save your data in the **Comma Separated Values** file format it will look like this when you open it in a text editor:

```
Sales Item Detail,,,,,,,
,,,,,,,
Transaction ID,Account,Store,Date,Item SKU,Units,Sales,Cost
531,957,1,5/15/12,366,-1,-5,-1.84
532,478,1,5/15/12,98A,1,0.5,0.25
532,478,1,5/15/12,3B7,1,1.1,0.56
534,738,1,5/16/12,A96,2,6,2.9
534,738,1,5/16/12,65B,1,2.25,1.35
535,709,2,5/15/12,CB7,1,1.65,1.1
535,709,2,5/15/12,96A,1,1.1,1
535,709,2,5/15/12,969,1,1.1,1
536,748,2,5/17/12,3A4,3,1.02,0.39
536,748,2,5/17/12,366,1,5,1.8
537,523,3,5/15/12,CB7,1,1.65,1.1
537,523,3,5/15/12,A96,2,6,2.9
537,523,3,5/15/12,98A,1,0.5,0.25
537,523,3,5/15/12,96A,1,1.1,1
537,523,3,5/15/12,3B7,1,1.1,0.56
538,668,1,5/18/12,CB7,1,1.65,1.1
538,668,1,5/18/12,98A,4,2,1
538,668,1,5/18/12,96A,1,1.1,1
538,668,1,5/18/12,969,1,1.1,1
538,668,1,5/18/12,3B7,1,1.1,0.56
539,25,2,6/19/12,65B,1,5,3.35
540,361,2,6/19/12,3B7,1,1.1,0.56
540,361,2,5/19/12,3A4,1,0.34,0.13
541,469,3,5/22/12,A96,1,4,1.45
541,469,3,5/22/12,98A,1,0.5,0.25
541,469,3,5/22/12,96A,1,1.1,1
541,469,3,5/22/12,969,1,1.1,1
541,469,3,5/22/12,3B7,3,3.3,1.68
543,876,1,6/3/12,CB7,1,1.65,1.1
543,876,1,6/3/12,A96,1,4,1.45
543,876,1,6/3/12,98A,2,1,0.5
543,876,1,6/3/12,96A,1,1.1,1
543,876,1,6/3/12,969,1,1.1,1
543,876,1,6/3/12,3B7,2,2.2,1.12
543,876,1,6/3/12,3A4,1,0.34,0.13
```

Notice in the second file example there are no spaces or blank lines. Instead, the values for each record (i.e., row) are separated by the comma character (','). Hense the name of this file format.

As you can see, neither of these formats is very practical for human consumption. However, these options are the fastest options for a computer to read data and store it remotely.

Once you have your data in one of these formats you are ready to upload it to PowerLoader with either of the following two options.

Upload a File using an FTP Client

While you do have access to a lightweight, web-based FTP tool within PowerLoader, 1010data strongly recommends using a third-party FTP client to upload your files. You can use any FTP client you can find. Almost all are free to download and use. Below is a list of common FTP clients and sites where they can be downloaded:

> **Note:** 1010data does not recommend or support any specific FTP software. The table below consists only of examples for your convenience.

Table 1: Common FTP Clients

FTP Client Name	Download Location
FileZilla	
SmartFTP	
CuteFTP	

FTP Client Name	Download Location
CoreFTP	

Regardless of the FTP client you chose, the basic anatomy is the same. The screenshots below are taken from the FileZilla FTP client, but all FTP clients require and display the same basic information. First, you'll need to enter the correct connection information, as follows:


In order to connect to the 1010data FTP server you need to enter all four pieces of this information. The table belows gives more detail about each:

Table 2: FTP Connection Options

FTP Connection information	Description	Value
Host	The URL of 1010data's FTP server. **Note:** Some 1010data clients may use a different FTP server. Contact your 1010data representative if the default server doesn't allow you to connect.	ftp2.1010data.com
Username	Your 1010data FTP account username. This is a separate account from your normal 1010data login information.	*Your 1010data FTP account username*
Password	Your 1010data FTP account password. This is a separate account from your normal 1010data login information.	*Your 1010data FTP account password*
Port	The TCP/IP port your computer uses to communicate with the 1010data FTP server. **Note:** 1010data uses the secure FTP protocol.	22

Note: Corporate firewalls and proxy servers sometimes block FTP transactions. If you are having trouble using FTP for PowerLoader, contact your IT department.

After you successfully authenticate with the 1010data FTP server you should be able to navigate to the local file on your computer you want to upload and send it to the FTP server. Again, all FTP clients will look something similar to the following:
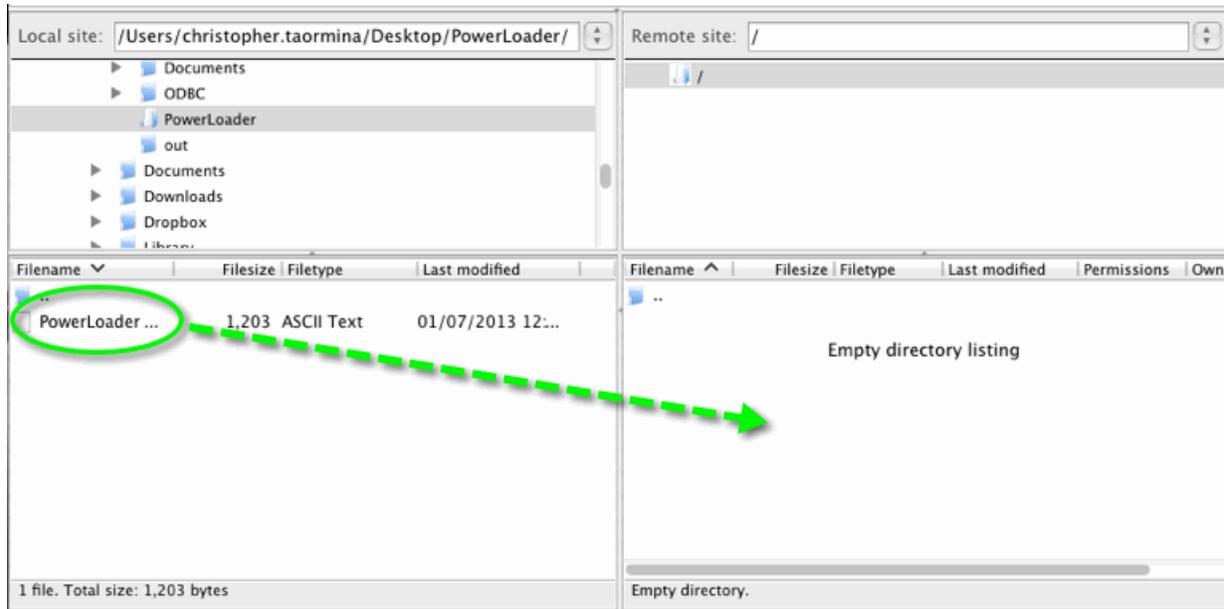
In the screenshot above, the left side contains the local folders and files on your computer. The right side contains the remote folders and files; in other words the folders and files on the FTP server. Simply click and drag the file(s) you want to upload from the pane on the left side of the window to the empty pane on the right side. Your file will automatically be transferred to the 1010data FTP server.

The 1010data FTP web interface

If you don't feel comfortable downloading and installing a third-party FTP client, or if you don't have permission to install third-party applications on your office computer, you can use the 1010data web-based FTP client.

> **Note:** The 1010data web-based FTP client does not work on Macintosh computers. If you have a Mac, please download a third-party FTP client and follow the directions in the previous section.

To upload your data with the web-based FTP utility provided by 1010data, login to Power Loader using your 1010data account. Once logged into PowerLoader, click the **Load Table** link at the top-right corner of your screen, circled in red below:

Once you've clicked the **Load Table** link you'll be at the main PowerLoader screen. The top of this screen is shown below:

To upload a new table, click the **Upload** link (circled in red above). Upon clicking the link a pop-up window will appear. In the screenshot below, the **Select a file to add to Queue** drop-down menu is used to browse to the file you want to upload.

Once you find the file on your computer, click the **Upload File** button, indicated by the red arrow in the following screenshot:
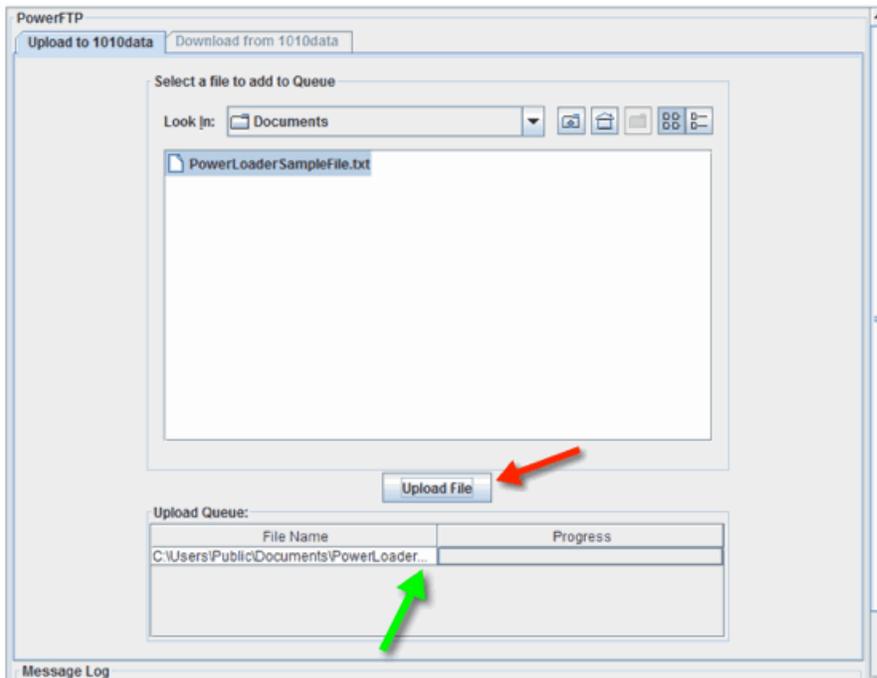
Your file should now appear in the **Upload Queue** section of the screen in the **File Name** column as indicated by the green arrow in the screenshot above. When the progress bar finishes, your file will be available in PowerLoader.
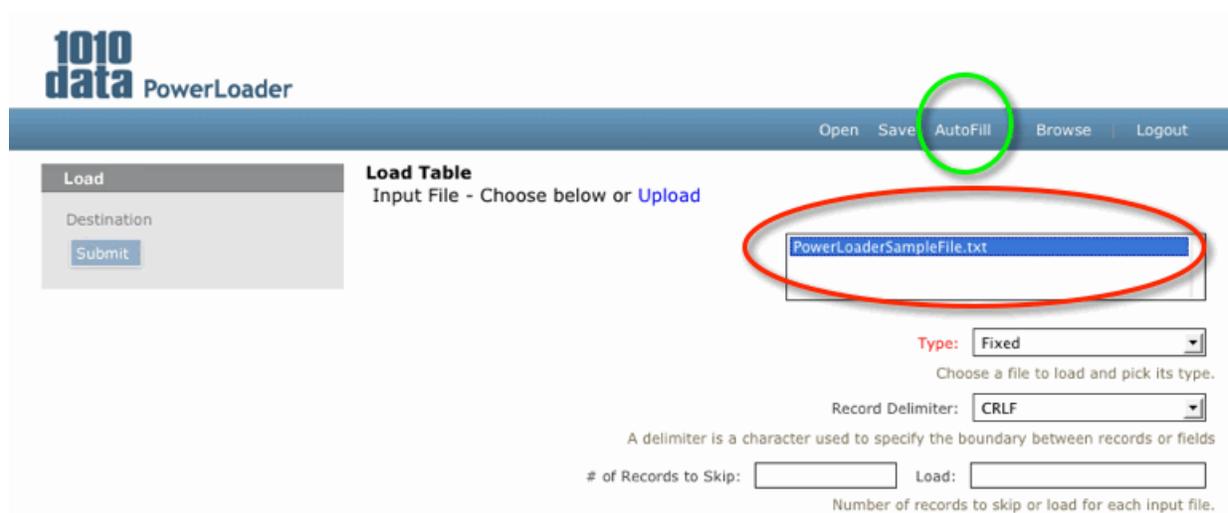
PowerLoader File Configuration

This section describes how to use PowerLoader to load data into the 1010data environment once you've uploaded it to your FTP account. If you've successfully done this, you're ready to load it into 1010data.

Once you've sent your file to 1010data via FTP, login to PowerLoader if you haven't already. You will arrive at a screen which shows the folders you currently have access to in the 1010data system. Select the location in 1010data where you want to save the new table you're creating by loading the new file. If you're loading sales data and you have a sales folder, it's likely the sales folder is what you want to select. I'm using sample files that we here at 1010data created for training purposes, so I'm going to select my **Training Examples** folder. Once you've highlighted your desired location, click the **load table** link shown in the screenshot below:
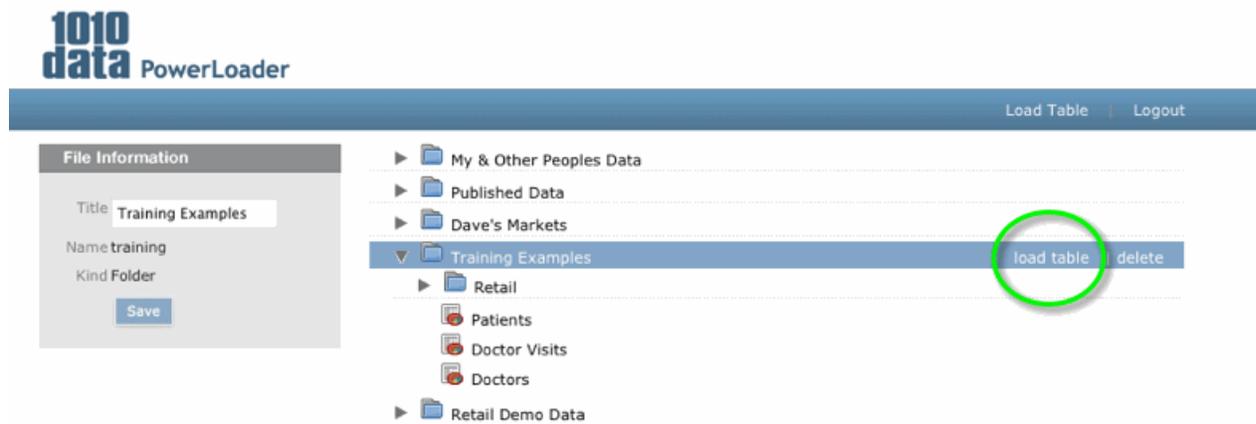
You should now be on the **Load Table** screen of PowerLoader. This is where we tell PowerLoader how we want it to be formatted in 1010data. The first section of this screen is to choose the file you want to load (and you hopefully have uploaded via FTP) and several other pieces of information about the data in this file. This screenshot shows the **Input File** section:

> **Note:** Once you've selected all the options for your file in PowerLoader you can save the settings so they can be used again. This is a great feature if you regularly use PowerLoader to load files with the same data format (such as weekly sales data). We'll cover this more in a bit, but for now, we just thought you'd like to know.

At the top of the **Load Table** screen there are several menu items as follows:

Table 3: Load Table Menu

Menu Option	Description
Open	Open a previously saved PowerLoader configuration
Save	Save your current PowerLoader configuration
AutoFill	Tells PowerLoader to make its best guess as to the correct settings for your file
Browse	Select another location to load your file

To get started, make sure your file is selected in the file list (just above the **type** drop-down). Now, before you do anything else, click the **AutoFill** link (circled in green above). The **AutoFill** feature tells PowerLoader to look at the data in your file and make the best guess it can as to the columns and records the file contains. While you may need to make some adjustments afterward, **AutoFill** can save you a lot of work. The next screenshot shows the **Load Table** screen before clicking **AutoFill**.

The next screenshot shows what happens after clicking **AutoFill**:

1010data PowerLoader

Open   Save   AutoFill | Browse | Logout

Load

Destination

Submit

Load Table
Input File - Choose below or Upload

PowerLoaderSampleFile.txt

Type: Delimited
Choose a file to load and pick its type.

Record Delimiter: CRLF   Field Delimiter: Tab
A delimiter is a character used to specify the boundary between records or fields

# of Records to Skip: 1   Load:
Number of records to skip or load for each input file.

Table Information

Name: training.
Table path selected in file browser. If this is not the desired path, click here to pick a new path.

Title: Short Description:
Choose a title and description you want displayed in the 1010data filesystem view.

Long Description:
Long description you want displayed under table information.

Link Header: Time Series: NO
Link header is used to denote foreign columns as the result of a link operation.

User:
User who can view the table. Click here to add another user

Column Information

Name: transaction_id   Header: transaction_id
Choose a name (unique identifier) and title for the column. ex. name: loan_id title: Loan Id.

Column Help:
Meta information that describes the context of the column data.

Expression:
Write a 1010data expression to modify the data as it loads.

Fixed Column (Pink): N   Hide column: N   Destroy column: N

Type: Integer   Format Type: Number (w/ cc

Display Width: 3

Column Information

Name: account   Header: account
Choose a name (unique identifier) and title for the column. ex. name: loan_id title: Loan Id.

Column Help:
Meta information that describes the context of the column data.

Expression:
Write a 1010data expression to modify the data as it loads.

Fixed Column (Pink): N   Hide column: N   Destroy column: N

Type: Integer   Format Type: Number (w/ cc

Display Width: 3

Column Information

Name: store   Header: store
Choose a name (unique identifier) and title for the column. ex. name: loan_id title: Loan Id.

Column Help:
Meta information that describes the context of the column data.

Expression:
Write a 1010data expression to modify the data as it loads.

The screenshot, while long, is actually truncated. But, you can see that PowerLoader went through the data file and identified every column in it and filled in some basic information about each of them. Now you don't have to manually added a new **Column Information** section for each column in your data file. Now that we've had a little help, let's go back to the top and look at each setting for each section.

Table Information

The following table provides descriptions for each option in the **Table Information** section of the PowerLoader utility. Required fields are titled in red.

Table 4: Table Information fields

Field	Description
Name	The name of your table. This is the *unique* name of the table used for identification in the 1010data system.
Title	The title of your table. This is for your own recognition of the table and doesn't necessarily have to be unique.
Short Description	A brief description of the data contained in your table
Long Description	A detailed explanation of the data contained in your table
Link Header	Denotes columns that were not originally part of your table but have made part of the table as the result of linking another table.
Time Series	**See next section**
User	Shows which user(s) have permission to view the table. You can specify additional users you want to have access to the table in this field.

The Time Series Option

One of the features that makes 1010data such a powerful analytics platform is its ability to efficiently perform operations on data over time. The 1010data XML Macros Language has several dozen functions designed specifically for time series analysis operations. We don't have enough space for a full explanation of Time Series analysis in this document, but if you want to learn more you can find lots of useful information in the 1010data General Help documentation.

If you've used Time Series functions or Group functions in 1010data in the past, you might be aware of the fact that these functions only operate on specific chunks of the data in a table. These chunks are called segments. Without getting into too much detail we can say that the data is broken into segments because it is more efficient to perform operations on smaller segments of data than it is to do so on a large chunk. The only drawback to this model is that sometimes when a value appears at the end of one segment there may not be enough room left in the segment for all the records with that value to be contained within it. The **Time Series** option in PowerLoader allows you to make sure everything stays grouped, or, *segmented* correctly. If you set this option to **YES** a new box will appear in all the **Column Information** sections of PowerLoader, as follows:

The **Time Series Break Order** text box accepts whole number values starting with **1**. If we placed a **1** in the box above, 1010data would know to break the table up in such a way that all entries with the same transaction number should be located in the same segment. That way any Time Series or Group functions that you perform which include that transaction number are able to operate on all instances of it. If you need to make sure a combination of values is properly grouped together, simply order the numbers you place in the **Time Series Break Order** box sequentially. If you place a **1** in the **AccountID** column and a **2** in the **Store** column and a **3** in the **Date** column, then 1010data will break the data up into groups and make sure that all records with a unique combination of **AccountID** and **Store** are in the same group. Putting a **3** in the **Date** column tells the system to sort the table by**Date**. In fact, the system will always initially sort the base table being loaded by the column with the highest value in the **Time Series Break Order** box. So, if in our previous example we did not include a **3** in the **Date** column, then the system would make sure the data is grouped in such a way that all unique **AccountID** values are in the same segment. Then, it would sort the table by the **Store** column, not the **Date**.

Column Information

For every column in your table you will need to provide PowerLoader with information required by the 1010data system. If your data file was formatted and deliniated properly, the **AutoFill** feature should identify the number of columns in your table, create a section for you to provide the necessary information and populate the fields it can. However, it can't write descriptions for you. The following table provides descriptions of all fields and options in the **Column Information** sections of PowerLoader.

Table 5: Column Information fields

Field	Description
Name	This is the unique name of your column. The **Column Name** provides a unique identifier for each column of a table in the 1010data interface. The **Column Name** must be all lower-case letters with no spaces.
Header	The header of a column is the name you designate for the top of each column of your table in the 1010data interface. Unlike the **Column Name**, your header can contain capital letters and spaces.
Column Help	Explains the values and their meaning in a given column. Visible when you click on the '?' character in a column or go to column info.
Expression	Macro language expression for computed columns. Also helps control formatting for date and time data. **Note:** Expressions are built from a subset of the 1010data Macros Language. All functions from the Macro Language are available for use in expressions except for g_ (group), r_ (row) and ts_ (time-series) functions.
Fixed Column (Pink)	When you choose the **Y** option in this drop-down menu, the column will remain in its current position

Field	Description
	when you scroll horizontally through the table columns in the 1010data GUI.
Hide column	Creates the column in 1010data, but hides it. The column will be available in the **Rearrange columns** dialog in 1010data. Hidden columns are also available for use in expressions.
Destroy column	Does not load at all. The column will be unavailable in 1010data base table after it is created. This setting is often used to eliminate column headers from the data file so that are not listed in the first row of the 1010data table that is created.
Type	This is the data type of the values in a particular column. 1010data columns support many data types. See the next section of this document for short descriptions of each data type supported.
Format Type	**See the "Type" section below**
Display Width	Specifies the number of characters or decimal places in the value of the column.

You may have noticed that above each **Column Information** dialog there are several small icons that look like this:

➕ 🖫 ⬆ ⬇ ✖

The following table contains a description of the function of each of these buttons:

Table 6: Column Information buttons

Button	Function
➕	Add a new column to the table. All the values in the new column will be blank.
🖫	Clone a column so that an exact copy, with all associated values, is created.
⬆	Move this column up in the order. This will move the column to the left in the final table
⬇	Move this column down in the order. This will move the column to the right in the final table
✖	Delete this column

The Type, Format Type and Force Case Options

In the **Column Information** sections of PowerLoader you have the ability to select a **Type** for the data in a column. This option tells 1010data what kind of data is contained in the column. For instance, if the column contains only whole numbers, the **Type** is **Integer**. If the column holds dollar values or any other kind of number with decimal places, the **Type** is **Float**. Once a **Type** is selected, you then have the option to select a **Format Type**. This option tells the system how the data should look on the screen. For example, you can select **Number (w/ commas)** or **Number (w/o commas)**. Neither of these changes the kind of

data in the column. Either way the data in the column is still a number. Instead, this option determines the appearance of the numbers when displayed on the screen. Below is an outline of the major **Type** options:

> **Note:** When building 1010data expressions, the type of data in the column is used to determine the type of data passed to the expression. However, the resulting column type is controlled by the expression itself.

Table 7: Format and Type options

Type	Description
Text	Signals that the column contains text, as opposed to numbers.
	> **Note:** Notice that when this option is active, the **Format Type** drop-down changes to the **Force Case** drop-down. This allows you to convert all the text data in the column to all upper or lower case letters.
Integer	Any whole number. **1**, **53** and **1,234,597** are all examples of integers.
Float	Any number with place values to the right of a decimal point. **1.1**, **23.845** and **0.37383636833930** are all examples of floating point numbers.
Expression	Allows you to derive the value of a column with a 1010data Macro Language expression.

In addition to the types mentioned above, there are also numerous options for date and time data. These data formats apply 1010data date formatting measures to the date data found in the source file. Dates in an input file can be formatted with dashes ('-'), forward-slashes ('/') and spaces (' '). Data loaded with just date information are created as integers in 1010data, with time-handling formats applied as specified in the **Type** drop-down menu. Data with date and time data are created as floats in 1010data, with the applicable time-handling formats applied as specified in the **Type** drop-down menu.

Once you've completed all necessary fields it's time to send your data to the 1010data system. You may have noticed a small box with a header that says **Load** at the top following you up and down the PowerLoader screen. When you have entered all the table and column information necessary to load your file, click the **Submit** button on the **Load** box to complete your data-load onto 1010data. The **Submit** button is circled in red below:
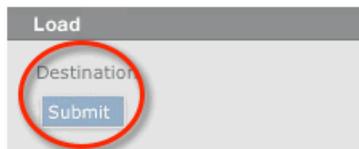
Once you gain some comfort and familiarity with PowerLoader it will become a valueable tool in your 1010data toolbox. Afterall, it's what you do with your data once it's on our system that really matters. PowerLoader will get you to that point faster and more efficiently.