



jGnash 3.5.x Manual

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February 18, 2020

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Chapter 1

Legal

jGnash Manual

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Chapter 2

Conventions and Typographical Features

Below are conventions used throughout this manual. With jGnash being a cross platform application, there may be slight variations in the user interface behavior depending on your operating system.

Convention	Usage
 + 	User Interface buttons, Keyboard shortcuts and individual keys. The  key is used generically for  and  depending on your operating system.
 >> 	Menu commands with the separator representing a level within the menu hierarchy.
 directory	Indicates a directory within your operating system.
Link	An internal or external hyperlink.
Monospace	Example text

Chapter 3

Introduction



jGnash is an open source application for personal finances.

jGnash enables you to record detailed account and transaction information using proven double entry accounting principles.

You do not have to be an accountant to understand or use jGnash, but jGnash provides options to make new and experienced users feel comfortable using it.

jGnash's mission is personal finance and it is not tailored for use as a business accounting application. jGnash is being used by small businesses and clubs, but if you require business specific features, you may be better served looking for a different solution.

3.1 Features

A brief list of features is below:

- Double Entry Accounting with reconciliation tools.
- Budgeting with multiple scenario options and export to spreadsheet capability.
- Investment Accounts and automatic import of Stocks, Bond, and Funds price history.
- Hierarchical accounts with automatic roll-up of totals and intelligent handling of mixed currencies.
- OFX, QFX, mt940, and QIF import with the ability to pre-process using JavaScript.

- Reminders and automatic transaction entry and notifications.
- Intelligent handling of multiple currencies and exchange rates with automatic online exchange rate updates.
- Printable reports with PDF and spreadsheet export capability.
- XML, Binary and SQL database file formats.
- Operates on most all modern PC operating system (*Java™ 11 is required*).
- jGnash will utilize multi-core processors.

3.2 Installation

jGnash is not currently distributed with an automatic installation tool. You will be required to perform a couple of manual operations that are easily performed for those with a basic understanding of how to use a zip file.

Java™ 11 or newer must be installed on your computer. jGnash has been tested with Java™ 12 and Java™ 13 if you have a need for a newer release.

Use of an OpenJDK package is recommended over use of Oracle JDK due to licensing requirements

OpenJDK is a free and open-source implementation of the Java Platform that is downloadable from various sources. Java installation is a simple matter of downloading the correct version for your operating system and using the automated installer.

AdoptOpenJDK

Easy to install and recommended for Windows users. See Section 3.2.1 for specifics.

[<https://adoptopenjdk.net/index.html?variant=openjdk11&jvmVariant=hotspot>]

Azul OpenJDK 11

A branded release that is easy to install for most users and is free to use.

[<https://www.azul.com/downloads/zulu/>]

OpenJDK

Will require manual installation and is free to use.

[<https://jdk.java.net/11>]

Oracle Java SE 11

Will require manual installation and licensing is required.

[<https://www.oracle.com/technetwork/java/javase/downloads/index.html>]



If performing a manual installation of Java, The `JAVA_HOME` Environment Variable must be set and the Java `bin` directory must be in the execution path.

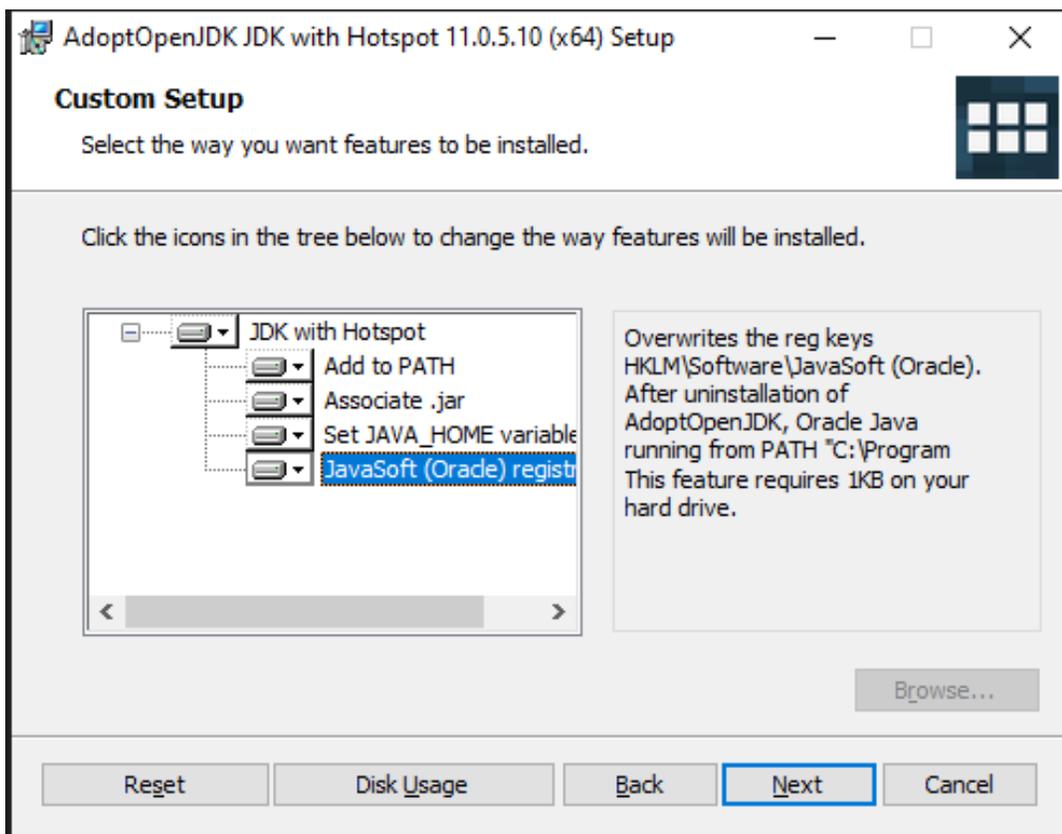
If you have multiple versions of Java installed on your computer, The `JAVA_HOME` Environment Variable must point to Java 11 or newer and the related Java `bin` directory must be the only version in the execution path. Mixing JVM and JDK versions will confuse the boot loader.

After Java is installed, you are ready to install jGnash. Simply open the zip file and extract the `jGnash` directory and it's complete contents to a directory of your choice, and do not alter the files or locations. I usually create a directory named `bin` in my home directory and keep the `jGnash` directory in it to better organize my computer. When upgrading between versions of jGnash, do not unzip to the same location and overwrite the existing files. Use a new location or delete the existing files first.

3.2.1 Windows Installation

Adopt OpenJDK works very well for jGnash primarily because it offers options to update the correct registry keys so that `jGnash.exe` can find Java. When installing, make sure the **Set `JAVA_HOME` variable** and the **JavaSoft (Oracle) registry entries** options are selected for proper jGnash operation.

Figure 3.1: Adopt OpenJDK Install Options





If you are a Windows user with restricted write access to the file system, you may encounter a `FileNotFoundException` exception with an underlying "Access is denied" error. This is caused by jGnash not being able to download and save the necessary JavaFX files for proper operation.

The solution is to place jGnash into your **AppData** folder which should ensure write access. The AppData folder is typically located within the `C:\Users\user` folder which is hidden by default. You can see the folder if you change the setting to show hidden files within Windows File Explorer.

3.3 Starting jGnash

After the jGnash directory has been extracted from the zip file, you should see several files in the directory. Of interest at this point are the Bash script and exe files.

If you are running on a Windows™ based computer, you can simply double click on the `jGnash.exe` file to start jGnash.

If you are running on a Un*x or BSD (macOS) based system you can start jGnash from a terminal as shown below using the included Bash script. You can also create your own application launcher using the Bash script in your desktop environment of choice.

```
./jGnash
```

jGnash has several advanced features such as running as a portable application or using jGnash as a multi-user home networked application. These advanced features are accessible via the command line. Please see [Command Line Options](#) for more details.

3.4 Running for the First Time

A license acceptance screen will be displayed the first time you start jGnash. jGnash will not run unless the license is accepted. The short of the license agreement is jGnash is a freely available program comprised of other freely available software, and should anything bad happen during use, the authors are not liable for any damages. The license also details how jGnash may be distributed and used.



If the license agreement sounds daunting, take a look at the license agreements of commercially available personal finance applications and you will see similar agreements. Myself and just about every other person making software available for free or purchase tries their best to ensure the software they create works well and as intended. Sometimes bugs do creep in and it does not work quite as planned. The advantage of free software is you generally have direct access to the authors, and you have a much larger voice in helping the application grow and evolve over time.

3.5 Getting Help and Giving Back

The intent of this user guide is to get you off to a good start using jGnash. Despite my best attempts, there are those who need a little bit of extra help or have a special need or circumstance and require the help of others that have already been around the block a few times.

The best place to start is the jGnash user group hosted at [jGnash-User](https://groups.google.com/forum/#!forum/jgnash-user) [https://groups.google.com/forum/#!forum/jgnash-user].

The user group contains a well rounded group of individuals who can help answer just about any question. As a courtesy to others, I encourage you to search the group prior to asking a question to see if it's already been answered.

If you have found a bug, or have suggestions for improvement, the group page has links to a bug and feature request tracker that can be used to log and track your requests. The group forum can be used to post a bug or request, but use of the tracker ensures the request is not lost in the mix of discussions.

If you are well versed in use of jGnash and other personal finance applications, you are encouraged to give back a little time and contribute your experience to the group and help others.

The [Frequently Asked Questions](#) chapter will help answer a few common questions.

Chapter 4

Getting Started

The basic elements of jGnash are Accounts, Currencies, Securities, and Transactions. Every account is assigned one currency and every transaction is associated with at least one account. Investment Accounts and Investment Transactions will be associated with a Security.

jGnash supports various Account types that can be arranged into a flexible hierarchical structure. The Accounts may be arranged by financial institution, by type, or some other structure. It's good practice to organize your Income and Expense Accounts into a logic arrangement that allows you to drill down into a layer of more detail.

The balance of an Account will roll up into it's parent Account within the Accounts view as well as in some reports.

Below is a typical Expense Account arrangement that allows you to differentiate between different type of automotive and food related expenses, but roll them up into more macro level expenses.

- Expense Accounts
 - Automobile
 - Fuel
 - Insurance
 - Service
 - Food
 - Dining Out
 - Groceries

The Account structure may be changed and reordered later, but Accounts may not be deleted if they contain transactions.

Transactions are used to record daily expenditures as well as income from the sale of personal items, investments, or paychecks.

If you are familiar with other personal finance applications, you may notice that jGnash uses income

and expense *accounts* instead of income and expense *categories*. Functionally, there is no difference, other than jGnash allows you see a detailed transaction register of the income and expense accounts as easily as you would look at your bank accounts.

4.1 Editing Environment

The jGnash editing environment is not much different then in other application with the exception that it provides a few shortcuts to speed up entry of transactions.

jGnash knows and understands just about any known locale and country setting. Depending on your settings, the decimal symbol will change accordingly as well as the displayed format of dates.

Error checking of required form fields is performed real-time. As information is entered you will notice buttons such as are enabled and disabled based on validity of what has been entered.

4.1.1 Date Fields

The date field is freely editable and jGnash will make the best attempt at interpreting an invalid entry, but the results are indeterminate. Clicking on the button to the right of the field will display a calendar dialog where you can select a date as well.

The field is flexible enough to allow use of multiple keys as the field separators regardless of the current locale. This is done to make entry easier on compact keyboards. The usable field separator characters are defined in the table below.



Also, dates can be modified using the keyboard shortcuts defined below.

Table 4.1: Date Entry Shortcut Keys

Keys / Mouse	Function
<input type="button" value="+"/> <input type="button" value="↑"/> , Mouse Scroll Up	Increase the date by one day
<input type="button" value="-"/> <input type="button" value="↓"/> , Mouse Scroll Down	Decrease the date by one day
<input type="button" value="PgUp"/> , Mouse Thumb Wheel Up	Increase the date by one month
<input type="button" value="PgDn"/> , Mouse Thumb Wheel Down	Decrease the date by one month
<input type="button" value="t"/> <input type="button" value="T"/>	Change to today's date
<input type="button" value=","/> <input type="button" value="."/> <input <input="" type="button" value="\"/>	Valid field separator for all locales

4.1.2 Number Fields

Numerical entry in jGnash is as easy as typing the desired value into the field. Decimal separators are handled according to the configured locale.



You may also enter arithmetic operators and calculate values within the entry field.

The arithmetic operators that may be used are .

Traditional arithmetic operator precedence is followed for all calculations.

4.2 Creating a New File

When you start jGnash for the first time, you will be presented with a very simple screen. At the bottom of the screen application messages and background process indicators are shown.

Creating a new file is done in 5 steps using the wizard

1. Create a new file using the command and follow the prompts in the new file wizard. When given the choice to select the **storage type**, leave it as the default value for now. A default file name and location will be provided that you can change if desired. If the file already exists, you will be warned you are about to overwrite it.
2. After selecting the **storage type** and file name, you will be asked to choose the default currency. The default currency can be changed at a latter time, and if for some reason your currency of choice is not available, you can create a custom currency and set it as the default after the file is created.
3. Next you can choose the currencies that are available for use. Currencies may be added and removed as needed at a later time if needed.

If needed, custom currencies may be added using the command. As locales change, default currency availability will change as Java is updated. The typical need for a custom currency is to support legacy accounting information as countries standardize on the Euro.

4. After choosing the available currencies, default accounts can be selected if desired. If you are new to personal finance software, the defaults will be a good starting point. The accounts structure can be easily changed after creating the file to accommodate your own personal needs.
5. The last step is the Summary page of the wizard. Verify everything is to your liking and click on the button to create your new file.

After the file is created, you are now ready to change, add, or remove accounts as need and begin entering transactions.

Encryption and password protection options do not exist in jGnash with the exception of a clear text password for client/server operation.

Encryption is difficult when it involves exporting and distributing software throughout the world. jGnash is designed to support many nationalities, so control of distribution would be become very difficult if encryption was integrated.

If you do have the desire to encrypt your jGnash data, the best choice is to use the encryption capabilities of your operating system or install a freely available third party encryption tool.

4.2.1 File Types

jGnash supports different file types for storing data. File types can be easily changed by using the   command and naming the new file with the appropriate file extension.

The current file will be saved in the new format and automatically opened.

Regardless of file type used, jGnash automatically saves the data if changed every 30 seconds to minimize the chance of accidental data loss.



If you are using jGnash in the Client/Server mode, all changes are committed immediately.

4.2.2 H2 and HyperSql SQL Databases

An H2 or HyperSql SQL database is required when using the client / server functionality of jGnash. jGnash embeds the database server so that no additional configuration or installation of software is required to use a relational database.

The relational database may be used for a single user. If startup and shutdown performance is important to you, then the binary file format described below is a better choice.

The advantage of the relational database outside the requirement for client / server capability is the ability to use several available tools to browse and query your jGnash data. Also, a relational database is more tolerant of system crashes or power outages vs. use of an XML or Binary file.

The disadvantages of the relational database is a bit slower operation, larger file sizes, and increased memory consumption.

If using the H2 Database and operating over a network using Client/Server mode, you have the option of enabling encryption for network communication. This will not encrypt your database file. See the Command line options for specifics.



The default administrator for a jGnash relational databases is JGNASH and is not configurable at this time.

4.2.3 XML File

XML file format is human readable and easily read by other applications at the expense of a considerably larger file size. Memory usage is less when using the XML file format, but certain operations may take longer. The advantage of the XML file is easier parsing and manipulation of the file using another program external to jGnash. If you have a large amount of data, jGnash will use less system memory when using the XML file format.



The XML format is also used for creating automatic backups of jGnash files if enabled.

4.2.4 Binary File

The binary file format is the most compact file format and will open and close the quickest. This is the recommended file format if you do not need client / server functionality and you are using a laptop or a workstation with a UPS.

4.3 Accounts

Accounts are what you use to organize how you save and spend your money, and where it comes from. Account structures can be changed to organize the display of information to suit your specific needs.

Typically, you will have a separate jGnash account for each savings, checking, investment account, etc. that you have at a financial institution. Accounts can be organized under "placeholder" accounts to add different levels of organization.

For example, if you would like to see a summary of your accounts by financial institution, you can create a placeholder account that represents a single financial institution and group your savings and checking accounts from that particular institution.

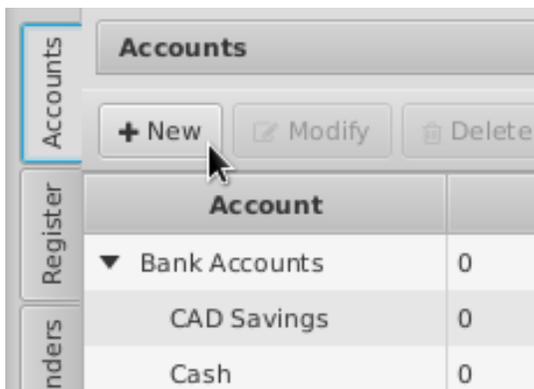
Maybe you want to see all savings accounts grouped together and checking accounts grouped together. It's just a matter of creating placeholder accounts for checking and savings and placing the respective accounts under them.

The account structure can be easily changed at any time with the exception of removing accounts after they have transaction in them. Transactions must be manually deleted from an account before you can remove it.

4.3.1 Creating Accounts

A new account is created by clicking on the **New** button in the toolbar of the account list view shown below.

Figure 4.1: New Account Button



A new dialog box will be displayed that allows you to create a new account to suit your particular needs.

Figure 4.2: New Account Dialog

The image shows a 'New Account' dialog box with the following fields and options:

- Account Information:**
 - Name: [Text Field]
 - Description: [Text Field]
 - Account Code: [Text Field]
 - Account Number: [Text Field]
 - Bank ID: [Text Field]
 - Currency: [Dropdown Menu: USD]
 - Securities: [Text Field: None]
 - Account Type: [Dropdown Menu: Bank]
 - Account Options:
 - Locked
 - Hide Account
 - Placeholder
 - Exclude From Budgets
 - Parent Account: [Text Field: Root]
- Notes:** [Large Empty Text Area]
- Buttons:** Cancel, OK

Account Information

Name

The name for the account. The name will be used to identify the account when creating transactions. Account names do not have to be unique, but may not be left blank.

Description

A description for the account. This field may be left blank if desired.

Account Number

The Account Number field is generally used for storing the account number provided by your financial institution. This field may be left blank if desired.

Account Code (General Ledger Code)

The Account Code field will default to a value of 0 and must be a numerical value. This value will also control the displayed order of accounts within the same branch. If the account code is left as a value of zero, sort order will be deferred to an alphanumeric sort against the account names. Best practice is to either use an assigned Account Code for all accounts within the same branch or leave the code as a value of 0 for all accounts. Otherwise, sort order may appear to be random.

Bank ID

This is the identification number of the financial institution and is generally used as an identifier when importing OFX files. This field may be left blank if desired.

Currency

The currency for the account. Account currencies cannot be changed if the account contains transactions.

Securities

This button will display a dialog that allows you to add and remove the available Securities for the account. This applies only to Investment accounts.

Account Type

Account Type determines what the account can be used for and the type of transactions that can be created. An Account's type may be changed after it is created to another type only if it is similar in function. For example, an Investment Account can be change to a Mutual Fund account and vice-versa, but they may not be changed into Bank or Credit accounts.

Account Options:Locked

If selected, the account will be locked and further changes will be prevented. This is useful to lock accounts that have been closed while retaining your historical data.

Account Options:Placeholder

If selected, child accounts may be placed under this account and the account will not accept transactions. This is useful for organizing accounts into a hierarchical structure.

Account Options:Hide Account

If selected, the account is hidden from view if the hide account filter is enabled.

Account Options:Exclude From Budgets

If selected, the account is hidden from view of the budgeting tool.

Parent Account

Clicking on this button will display a dialog that lets you select the account this account resides under. If you want the account to be placed at the top most level, then choose the Root account as the parent. Parent accounts may be changed as needed to suit your needs.

Notes

Room for extra information about the account if desired.

At any later time, the button may be used to change an existing account. If the account contains transactions, certain options may not be changed.



jGnash does not have a place to specify an opening balance in keeping with correct practices for double entry accounting.

However, it is still possible to set and opening balance:

To add an opening balance, create a transaction with an appropriate deposit or withdrawal against an Equity Account of your choice. Most people will choose or create an "Opening Balance" account.

This follows well known accounting practices.

If you are not concerned about correct accounting practices, you can create an Adjustment Transaction instead.

4.4 Account Types

jGnash allows use of several account types to make organization easier. The account type chosen can have a significant impact on how reports are generated and displayed, and the types of transactions you can create.

4.4.1 Asset

Asset accounts are intended to be used to track the value of durable items such as houses, cars, boats, collections, etc. Value of items can be adjusted over time against Income accounts to show gain or loss of value. If you were to sell an item and convert it cash, the sale of the item can be tracked against the Asset accounts containing the item.

4.4.2 Bank

Bank accounts are used for the savings accounts you would have at a bank.

4.4.3 Cash

Cash accounts represent the cash you carry with you. Cash accounts are also good for representing deposits and withdrawals from Flexible Spending Accounts.

4.4.4 Checking

Checking accounts are used for the checking account you would have at a bank.

4.4.5 Credit

Credit accounts are used to record purchases and payments made to a credit card account. Credit accounts are primarily used for short-term liabilities and great for representing overdraft and line of credit accounts at banks.

4.4.6 Equity

Equity accounts are used to record opening account balances against. Typically, you will have only one Equity account. Equity accounts are representative of another accounts net worth at the time you begin tracking its value.

4.4.7 Expense

Expense accounts are used to record expenses such as food, utilities, taxes, investment expenses, etc.

4.4.8 Income

Income accounts are used to record income such as salary, dividends, investment income, etc.

4.4.9 Investment

Investment accounts are used to buy and sell Securities. Investment accounts can be used to track 401k, IRA's, etc. Please see [Securities](#) for details specific to setting up Securities.

- Investment Accounts have a cash balance if you buy or sell transactions against the account.
- Investment purchases and sales fees can be made against the cash balance of the investment account or other specified accounts.
- Multiple investment fee entries per transaction may be entered.
- Multiple gains/loss entries per transaction may be entered.
- Investment Accounts support multiple securities.
- Investment Accounts can be used to model an on-line brokerage account.

4.4.10 Liability

Liability accounts are used to track long term loans or liabilities. Liability accounts have the added feature of allowing you to set-up a loan payment that takes some of the effort out of entering periodic loan payment transactions.

4.4.11 Money Market

Money Market accounts are typically a high interest yield account with withdrawal rules or limitations. They are generally used for long term savings accounts with the intent of keeping your cash readily accessible. Please see [Securities](#) for details specific to setting up Securities.

4.4.12 Mutual Fund

Mutual fund accounts are a specialized version of an Investment account and generally used to track mutual fund type investments. Please see [Securities](#) for details specific to setting up Securities.

4.4.13 Simple Investment

Simple investment accounts are for investments where you do not actively manage or are able to track purchases and sales of securities. The typical scenario would be a company pension plan that only provides cash balance information. Sometimes, these types of investment accounts are called Annuities or Guaranteed Retirement Accounts

4.4.14 Root

The root account is the top level account that holds all other accounts. You cannot remove or modify the root account. Normally, it is not visible unless you are changing the account structure.

4.5 Entering Transactions

jGnash follows well know double entry accounting practices while reducing the complexity of transaction entry.

If you are familiar with other personal finance applications, you may notice that jGnash uses income and expense accounts instead of income and expense categories. Functionally, there is no difference, other than jGnash allows you see a detailed transaction register of the income and expense accounts as easily as you would look at your bank accounts.

When creating your file, if you selected the available default accounts, you will have income and expense accounts to work with. These accounts can be changed to suit your needs at any time.

The benefit of double entry accounting in jGnash is the ability to use reports and charts to see where your money is going and coming from. Single entry transactions hide those details and make tracking difficult and tedious.

For simplicity, the terms used here to discuss changes in account balances will be **Increase** and **Decrease**.

Business accounting practices use the Credit and Debit terms which can appear to be backwards depending on account type and cause confusion for those who are not familiar.

4.5.1 Common Transaction Properties

The properties below are common to all basic transaction types. *Investment transactions will require additional information not covered in this section.*

Payee

The Payee is almost always the name of a person or business. The Payee field may be empty, but it is good practice to always use a payee for a transaction entry. jGnash will automatically learn and auto complete a transaction using the Payee field. This helps aid speed of transaction entry and helps to establish consistency making searching and filter much easier.

Number

A transaction may be assigned a number or abbreviated description. If working with a Checking account, the number is almost always the same as the check number you wrote. Use of a check number also makes reconciliation against a bank statement easier.

Date

Every transaction has a date that is usually the date the transaction occurred. Some people will choose to edit the transaction to match the posting date.

Please review the [Date Fields](#) shortcuts that may be used to save a significant amount of time when selecting and editing dates.



jGnash also maintains an internal timestamp for the actual date and time the transaction was created or last modified for auditing and tracking purposes.

Memo

The Memo is a brief description of the transaction so you can remember what it was. jGnash will automatically learn the Memos you commonly use. This helps aid speed of transaction entry and helps to establish consistency making searching and filter much easier.

Split transactions have an option to Concatenate or automatically merge the Memos of the split entries.

Amount

This is the transaction amount. If entering a multi-currency transaction, this field will be expanded to handle the correct exchange of currencies.

The [Number Fields](#) section details how to enter amounts using mathematical operations in the same manner as a calculator.

Reconciliation State

The Cleared CheckBox at the bottom of the register form is a tri-state box that allows you to toggle through all three of the reconciliation states described below.

A jGnash transaction has three reconciliation states

Not Reconciled

The transaction has not been reconciled against a bank or online statement

Cleared

The intended use is for manual reconciliation of a specific transaction prior to a full reconciliation for the period.

Reconciled

The transaction has been reconciled manually or through use of the Reconciliation tool

Transaction Attachments

jGnash allows the attachment of an image file to the transaction using the chain link button at the bottom of the transaction form. The attachment will be moved to a managed directory called `attachments` located in the same directory as your jGnash file. The eye button allows you to view the attachment and the broken chain loop button allows for removal of the attachment.

4.5.2 Double Entry Transactions

A double entry transaction follows standard accounting practices. A double entry transaction will always increase the balance of one account and decrease the balance of another account. The amount of the change will always equal and opposite in value.

Double entry transactions using accounts with different currencies will not be equal and opposite numerically due to exchange rates between currencies. jGnash automatically handles the difficult part of the currency exchange within the transaction.

A double entry transaction normally begins within the register of some type of Cash or Bank account. In the example below, a Withdrawal is being made from a Cash account. The balance of the account will be decreased by 25.67 and the balance of the Expense Accounts:Automobile:Fuel will be increased by 25.67.

The account to withdraw funds from (Decrease) or deposit to (Increase) is selected in the Account ComboBox.

Figure 4.3: Double Entry Transaction

The screenshot shows a transaction entry dialog box with the following fields and controls:

- Buttons: Deposit, Withdrawal (selected), Transfer, Adjust
- Payee: Acme Gasoline
- Number: []
- Account: Expense Accounts:Automobile:Fuel
- Splits: []
- Date: 01/22/17
- Memo: Gasoline
- Amount: 25.67
- Buttons: Cleared, [Link], [Eye], [Refresh], Cancel, Enter

4.5.3 Split Entry Transaction

A Split Entry Transaction is a Double Entry Transaction, but the amount is split across multiple accounts.

A Split Entry Transaction is started by clicking the **Splits** Button. A dialog will be shown that allows an entry for multiple accounts to be made.

Notice the **Concatenate Memos** Checkbox. If the Checkbox is selected, the Transaction memo will be a generated list of the unique memos of the split entries. This saves entry time for the Transaction and reduces the file size.

Editing of the Transaction amount will be disabled as it is the sum of the Entries. The Memo field will be disabled as well if the **Concatenate Memos** in the Split Transaction dialog was selected.

If a memo is not entered for a Split Transaction and the **Concatenate Memos** button is not selected, the Transactions register will display the memo of the first Split Entry.

A Split Transaction may consist of multiple Deposits and Withdrawals as shown in Figure 4.5. This is a typical example of a paycheck where insurance and taxes are deducted from the gross salary.

Figure 4.4: Split Transaction Entry

Split Transaction ✕

Memo	Account	Clr	Deposit	Withdrawal	Balance +
Batteries	Misc Consumables			7.99	(\$7.99)
Groceries	Groceries			105.08	(\$113.07)
Shampoo	Toiletries			4.56	(\$117.63)

Concatenate Memos

Account:
 Amount:

Memo:

Cleared



Options specific to reconciliation of Split transactions will be covered in a later Chapter. You have the option of manual reconciliation, but there are other ways to speed up the process.

4.5.4 Single Entry / Adjustment Transaction

A Single Entry Transaction is primarily used to adjust (*fudge*) an Account balance when you simply do not have the information to correctly balance the account.

In Figure 4.6, you can see a negative amount of -1.23 was used to decrease the balance of the account.

Figure 4.5: Mixed Split Transaction Entry

Memo	Account	Clr	Deposit	Withdrawal	Balance +
Federal Taxes	Federal			246.23	(\$246.23)
Insurance Premium	Insurance			55.00	(\$301.23)
Pay Check	Checking			700.00	(\$1,001.23)
Salary	Salary		1,230.00		\$228.77

Buttons: New, Delete, Delete All

Concatenate Memos

Deposit | Withdrawal

Account: Income Accounts:Salary Amount: 1230.00

Memo: Salary

Cleared Clear Enter

Close

Figure 4.6: Adjustment Transaction Entry

04/04/14	My Employer	Pay Check	[4 Splits]		700.00	\$2,069.70
12/31/16	Big Bank	Year end adjustment to bala...	Checking	R	1.23	\$2,068.47
01/22/17	Acme Gasoline	Gasoline	Fuel		25.67	\$2,042.80

Buttons: New, Duplicate, Jump, Delete

Deposit | Withdrawal | Transfer | Adjust

Payee: Big Bank Number: [dropdown]

Memo: Year end adjustment to balance Date: 12/31/16

Cleared [lock] [eye] [refresh]

Amount: -1.23

Cancel Enter

The half black and half white circular button at the bottom of the form is a utility to help convert the Single Entry transaction into a Double Entry Transaction after you find the needed information.

4.5.5 Transfer Transaction

The Transfer tab provides a slightly faster way to move money between accounts without requiring as much information. If go back to edit the Transaction, the edits will be performed within the Deposit or Withdrawal forms.

4.6 Investment Accounts

Investment Accounts need to be populated correctly if the Portfolio report is to work correctly.

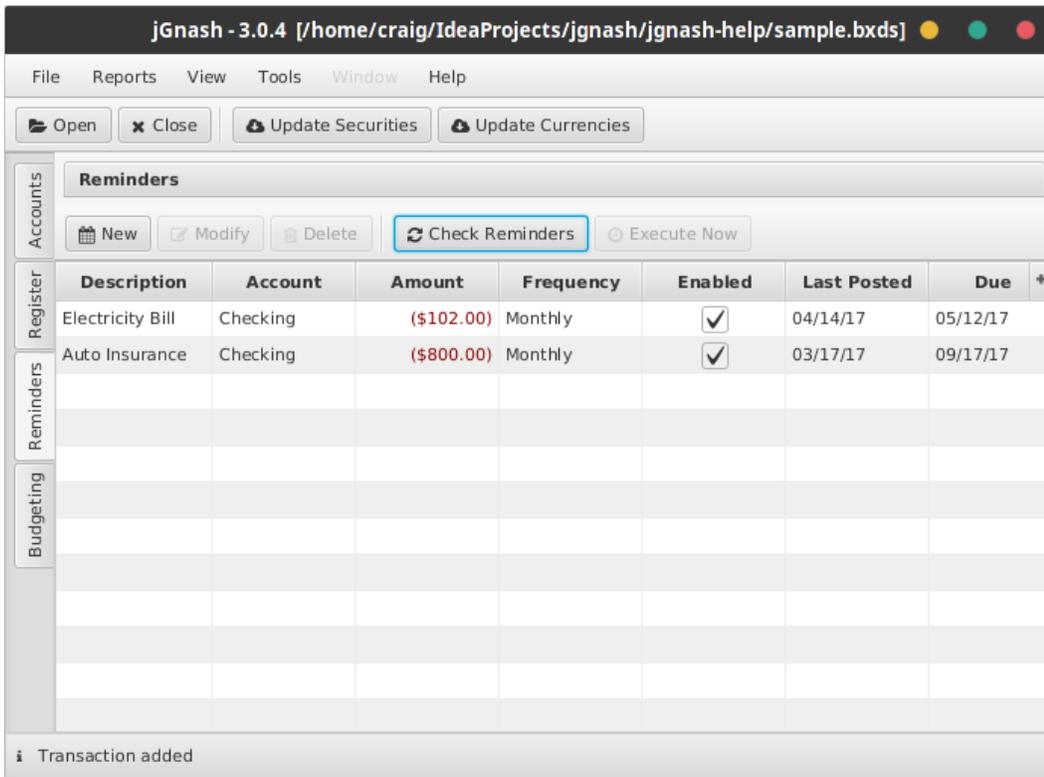
- Accounts with prior history should purchase securities from the "Opening Balance" Equity account. Ensure the quantity of securities is correct and use the current price.
- Cash balances should be transfers from the "Opening Balance" Equity account.
- Dividends, sells, etc. should occur after opening securities and cash balances are established.

Please see the [Securities](#) chapter for details specific to setting up Securities.

Chapter 5

Reminders

If you find yourself recreating the same transaction on a regular basis, Reminders can be created to automate the process.



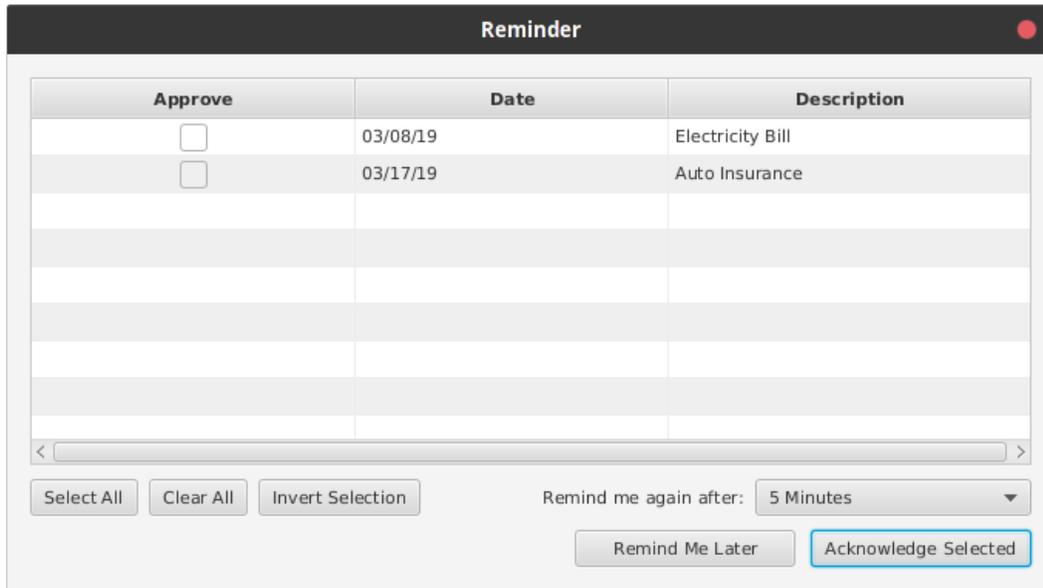
The table shown above displays all the Reminders you have created with some basic information.

- The **Last Posted** column shows the last date the Reminder was processed. It will be empty for a new Reminder.
- The **Due** column shows the next due date if a configured end date has not been reached.
- The **Modify** button is for editing the selected Reminder.
- The **Execute Now** button will process the selected Reminder if it is due.

- The `Check Reminders` button looks for any pending Reminders and displays them. If there are not any pending Reminders, the dialog will not be displayed.

5.1 Notification of Reminders

The pending Reminders dialog will be shown shortly after jGnash has been started or when manually checked as described earlier.



- The `Remind Me Later` button lets you to snooze the dialog for a selectable period of time if you do not want to process the transactions at that time.
- The `Acknowledge Selected` button processes *only* the transactions marked in the **Approve** column.

Below the **Approve** column are buttons to make it easier to mark a large number of transactions for approval.

5.2 Creating New Reminders

Creating new Reminders is a process of filling in some basic information, creating your transaction, and configuring the frequency of the Reminder.

An Account must be selected for the Reminder and fields exist to provide a description and additional notes. A transaction is optional A Reminder without a transaction will simply be a Reminder to do something.

The typical approach for assigning the Account is to use a bank or cash account of some sort. When you create the transaction, it will be against an expense or income account unless it is a periodic transfer between accounts.

However, if you prefer to organize Reminders by expense type or account, you can pick an expense or income account and create the transaction against a bank account. Regardless of approach, be consistent to avoid confusion later.

New Reminder

Transaction

Account: Bank Accounts:Checking

Description: Electricity Bill

Transaction: Edit Delete

Notes: Bill is on the budget plan

Frequency

Date of first payment: 4/14/17 Enabled

None Day Week Month Year

Every: 1 Month By: Day

End On: No End Date 4/8/19

Entry

Automatically enter number of days before

Last Occurrence:

Cancel OK

Configuring the Frequency of a Reminder is easy despite there being a lot of options. The **Date of first payment** field establishes the first date the Reminder process starts as well as the day of the month it occurs on.

The **Enabled** check box will be selected by default. Unselecting it will pause the Reminder should you want to disable it for a period of time instead of deleting it.

The **Month** frequency tab provides an option of **Month By Day** or **Month by Date**. As an example, selecting **Month By Day** indicates you may want a Reminder to occur every 2nd Tuesday of the month. Selecting **Month by Date** would indicate you want a Reminder to occur of the 15th of every month.

Creating a transaction for a Reminder is identical to creating a transaction in the register. The Date field will be ignored and replaced by the recurrence date of the transaction defined in the Frequency section.

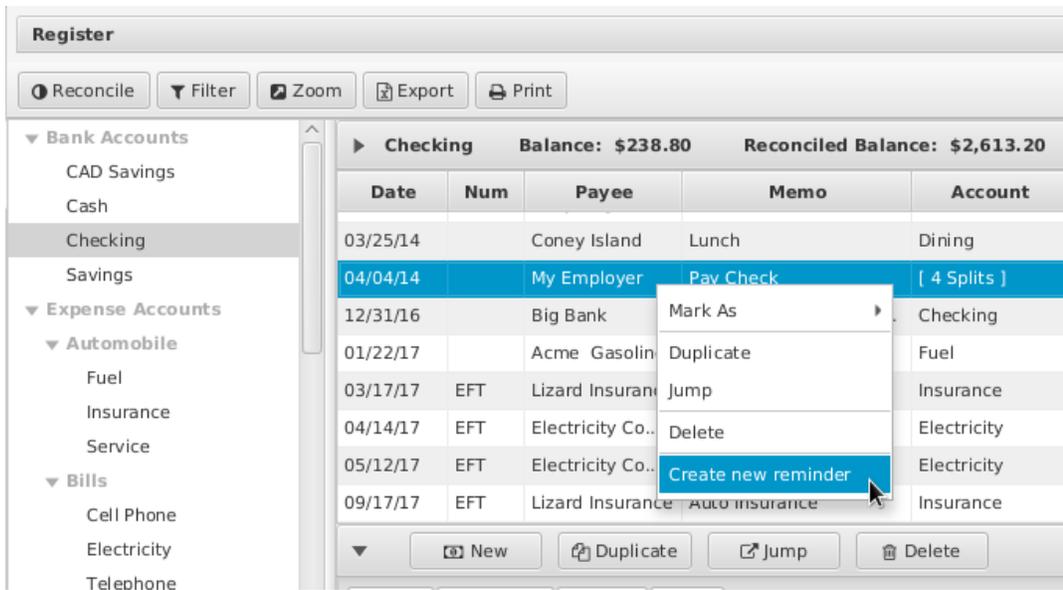
The **Entry** section of the New Reminder form gives you option to automatically enter a new transaction a defined number of days prior to the date defined by the Frequency section. When enabled, you will not see the Notification dialog. Typical use is for automatic withdrawals or deposits into an account.

5.3 Tips

5.3.1 Quick Generation of new Reminders

New reminders may be created from an existing transaction.

Within the Register, right click on a transaction to display the context menu. From the context menu, the `Create new reminder` command will generate a new reminder using the existing transaction as a template and display the New Reminder Dialog. You will need to ensure the Frequency parameters are correct and simply click the `OK` to save it.



5.3.2 Special Dates

Be careful when creating Reminders near the end of the month with a Month frequency.

- What happens if you select February 29th (Leap Day)?
- Do you receive a paycheck every two weeks (26 pay periods) or twice a month (24 pay periods)?

jGnash makes the best attempt to ensure correctness of dates, but minor date shifts can occur should you select leap days, the 1st day of a 5 week month, etc.

Chapter 6

Budgets

jGnash has a budgeting feature that makes it easy for you to define spending and income goals by account and bump those goals up against your actual transactions. A compact graphical overview of each budgeting period is provided to highlight how well you are following your budget based on selectable periods.

Tracking how well you follow your budget can be an eye opening experience and can lead to better financial health.



jGnash budget periods follow rules established by ISO 8601. Weeks begin on Monday and the first week of the year may begin with the last few days of the prior year.

Budget Features

- Multiple budgets are supported and may be copied making it easy to try out different scenarios and create year specific budgets if desired.
- Allowed accounts for budget are limited to Income and Expense accounts.
- Accounts may be excluded from budgets by setting the exclude flag in the account properties dialog. Sub-accounts will not be displayed if the parent account is excluded.
- The reporting period for budgets may be daily, weekly, bi-weekly, monthly, or quarterly and can be changed as needed.
- The per account budget goals may also be entered in daily, weekly, bi-weekly, monthly, or quarterly periods and are independent of the budget reporting period.
- The budget may be exported to a spreadsheet.



The reported period of the budget is independent of the per account budget goal period. Example: Your salary is paid in bi-weekly intervals, but you want to see your budget reported by month. You can change the period for the income account to weekly or daily and enter your salary.

When reported by month, jGnash automatically handles the difference in the periods and distributes your bi-weekly salary income across monthly boundaries.

6.1 Graphical Overview

The main budget panel is shown below.

Account	01/2011			02/2011			Summary		
	Budgeted	Actual	Remaining	Budgeted	Actual	Remaining	Budgeted	Actual	Remaining
Expense Accounts	\$390.66	\$710.82	(\$320.16)	\$373.66	\$671.11	(\$297.45)	\$4,620.02	\$1,691.72	\$2,928.30
Automobile	\$390.66	\$51.36	\$339.30	\$373.66	\$68.65	\$305.01	\$4,620.02	\$128.57	\$4,491.45
Fuel	\$215.00	\$51.36	\$163.64	\$215.00	\$68.65	\$146.35	\$2,580.00	\$128.57	\$2,451.43
Insurance	\$149.83	\$0.00	\$149.83	\$135.33	\$0.00	\$135.33	\$1,740.02	\$0.00	\$1,740.02
Service	\$25.83	\$0.00	\$25.83	\$23.33	\$0.00	\$23.33	\$300.00	\$0.00	\$300.00
Bills	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Cell Phone	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Telephone	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Food	\$0.00	\$57.00	(\$57.00)	\$0.00	\$0.00	\$0.00	\$0.00	\$57.00	(\$57.00)
Dining	\$0.00	\$57.00	(\$57.00)	\$0.00	\$0.00	\$0.00	\$0.00	\$57.00	(\$57.00)
Groceries	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Health	\$0.00	\$110.00	(\$110.00)	\$0.00	\$110.00	(\$110.00)	\$0.00	\$275.00	(\$275.00)
Insurance	\$0.00	\$110.00	(\$110.00)	\$0.00	\$110.00	(\$110.00)	\$0.00	\$275.00	(\$275.00)
Major Medical	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Income	\$3,985.71	\$2,460.00	(\$1,525.71)	\$3,600.00	\$2,460.00	(\$1,140.00)	\$46,799.96	\$6,659.58	(\$40,140.38)
Expense	\$390.66	\$710.82	(\$320.16)	\$373.66	\$671.11	(\$297.45)	\$4,620.02	\$1,691.72	\$2,928.30

The width of the account column is adjustable by placing the cursor between the Account header and the period header columns and then clicking and dragging the mouse cursor right or left.

At the top of the panel, a toolbar exists that allows you to change how much information is displayed, modify the budgets, and export the active budget to a spreadsheet.

The budget drop down list lets you quickly select between different budgets you have created. The **Budget Manager** button displays a dialog that let you create, duplicate, and delete budgets.

The year spinner allows you to bump the selected budget up against the selected year's transaction data. The selected year also effects the calendar periods when editing period amounts.

6.1.1 Properties

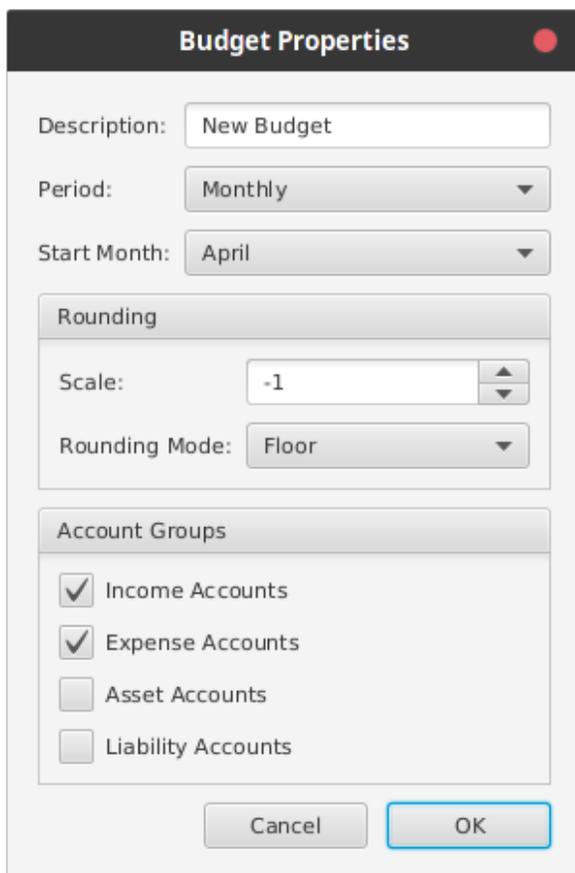
The `Properties` button will display the dialog shown below with various options for the active budget.

The period used for the budget display can be changed in this dialog as well as the budget description. You may also select the account groups that are visible for the selected budget.

The **Start Month** property sets the month you begin a new budget. For most, it's the beginning of the year, but others may prefer a month such as April which is tax season for some. If you are new to jGnash and you've started mid-year, then the month you begin is a good start. The **Start Month** may be changed at any time without negatively impacting your budget goals.

Regardless of the **Start Month** selected, jGnash will use a rolling 12 month period based upon the **Start Month** you have selected.

Figure 6.1: Budget Properties



The screenshot shows a dialog box titled "Budget Properties". It has a dark header bar with the title and a red close button. The main area is light gray and contains several sections:

- Description:** A text input field containing "New Budget".
- Period:** A dropdown menu currently showing "Monthly".
- Start Month:** A dropdown menu currently showing "April".
- Rounding:** A section with a "Scale" input field set to "-1" and a "Rounding Mode" dropdown menu set to "Floor".
- Account Groups:** A list of four items with checkboxes: "Income Accounts" (checked), "Expense Accounts" (checked), "Asset Accounts" (unchecked), and "Liability Accounts" (unchecked).

At the bottom of the dialog are two buttons: "Cancel" and "OK".

The rounding method and number of decimals used to report budget results may be changed. The default Rounding Mode is *Floor* which will round up expenses and round down income values which is a conservative view of current income and expenses.

Table 6.1: Rounding Modes

Mode	Description
Ceiling	Rounds towards positive infinity (<i>Optimistic View</i>)
Down	Rounds towards zero
Half Down	Rounds towards nearest neighbor or down if equal distance
Half Even	Rounds towards nearest neighbor or towards even if equal distance
Half Up	Rounds towards nearest neighbor or up if equal distance (<i>Banking</i>)
Floor	Rounds towards negative infinity (<i>Conservative View</i>)
Up	Rounds away from zero

Reported values are rounded based on the selected value for **Scale**. Negative values for **Scale** will round to the left of the decimal point while positive values round to the right of the decimal point.

The upper limit of the **Scale** option is limited by the largest **Scale** value of the Currencies you have configured.

6.1.2 Budget Management

Double clicking on an account name to the left of the panel will display a dialog that allows you to change the account specific budget period and period amounts.

Budget Manager - Insurance

Period:

Currency: USD

Period	Amount
Quarter 1 of 2011	435.00
Quarter 2 of 2011	435.00
Quarter 3 of 2011	435.00
Quarter 4 of 2011	435.00

Smart Fill

Fill All:

Pattern:

Start Row:

End Row:

Amount:

The Smart Fill panel may used to enter repeating patterns or fill in the amounts automatically based on the last 12 months. Alternatively, you may directly edit the amount of each period by clicking and typing in a table cell.

The per account budget amounts as well as the **Change** and **Remaining** values are hierarchical in that the values of the child account are summed and are added to the parent account. If a parent account is not configured has a placeholder, it may also be assigned period goals that are inclusive of any children.

At the bottom of each reported budget period, a summary by account group is displayed. To the right, a summary by account is displayed. The summary's made be disabled if desired by unselecting the appropriate check boxes.

The button will export a file to your choice of an .xls or .xlsx file. The exported spreadsheet does contain formulas which makes it easier to manipulate the file externally.

6.1.3 Budgeting Tips

When planing a budget, you need to consider how you spend and receive your money versus how you want to report your budget.

jGnash has to make assumptions when entering per account period amounts. Internally, jGnash is keeping a list of 366 days (365 + 1 leap day) per account with the list starting at the first calendar day of

the year.

When a period goal for an account is entered, the amount is averaged across each day of the period. Entry of amounts is also sensitive to the current year. If you select Monthly for the account period, the monthly boundary for days is established by the current year calendar months and the amount is then averaged across the number of days per each month.

Averaging of periods has an impact on how exact the tracking of your budget is. If you choose to enter a monthly average for income, but are paid on certain days on the month, your budget will show slight variations through the year.

If you want the budgeted vs. Remaining amounts to be exact for a particular account, then you will want to set the account period to be Daily and take the effort to enter your daily amount goals.

Minor discrepancies can occur during leap years due to the extra day. Budgets are typically dynamic due to continuous changes in income and expenses which means you will naturally address these small discrepancies as you maintain your budget

You will not be able to export a spreadsheet when the report period is daily due to memory requirements and limitations of some spreadsheet applications.

Chapter 7

Reconciliation

Reconciliation is a simple and visual process of matching up the transactions listed in an account's register against a paper or electronic statement provided by a financial institution. If differences do exist, then any missing or erroneous transactions must be addressed until the differences are resolved. Statements should come from you bank, investment broker, credit card issuer, etc. on a periodic basis.

Periodically reconciling an account helps ensure transaction entry errors do not creep in over time.



Reconciliation is also a great tool for monitoring your accounts for fraudulent transactions.

Accounts may be reconciled using a manual process or using the Reconciliation Wizard. For any given reconciliation period, using a combination of both methods will be difficult.

Regardless of the Reconciliation process used, it is good practice to reconcile all accounts periodically.

7.1 Basics

Every transaction entry will have two independent reconciliation states that applies to both of the related crediting and debiting accounts. Split transactions may have even more reconciliation states depending on how many accounts it touches. Reconciliation states are explained a bit later in this chapter.

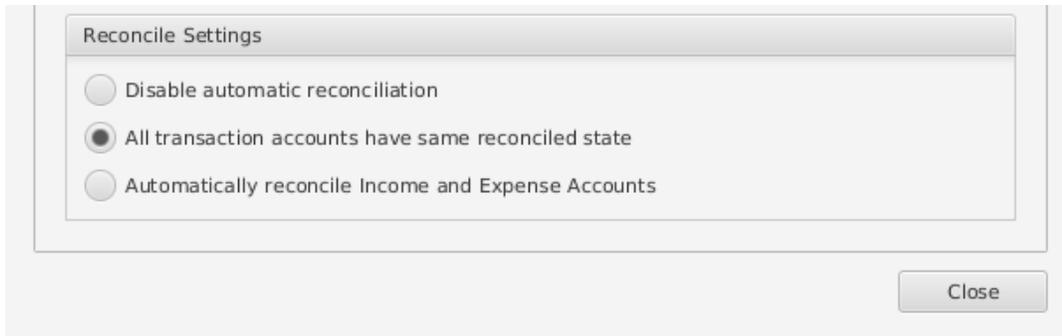
The default assumed reconciliation states can be configured depending on your preferred method of reconciliation. Taking time to understand these options is important for a successful reconciliation process.



If this is your first time reconciling an account and you have prior transaction history with a mix of Reconciled and Cleared transactions, you may need to manually reconcile prior transaction history.

7.1.1 Reconcile Settings

jGnash makes it easier to manage reconciliation by providing some options described below. These can be access in the **Register** options tabs using the **Tools** > **Options** menu.



Unless you have very specific needs, it is recommend that you choose to have the option **All transaction accounts have same reconciled state** or **Automatically reconcile Income and Expense Accounts** selected as the default.

Selecting **Automatically reconcile Income and Expense Accounts** requires a bit more work on your part in that you are required to reconcile all institution statements, but it will not create any issues when transferring between accounts. *This is the recommended option if you are using the Reconciliation Wizard.*

Selecting **All transaction accounts have same reconciled state** will reduce the effort of reconciling transactions, but can create problems reconciling transfers between bank accounts later. If you manually reconcile your accounts and do not use the Reconciliation Wizard, this option saves a significant amount of work at the risk of making an assuming a transaction occurred correctly between two institutions. *Use of this option in conjunction with use of the Reconciliation Wizard can create problems with bank transfers when you reconcile both accounts.*

Choosing to disable automatic reconciliation will require you to reconcile Income and Expense accounts for which you may not have been provided a reconciliation statement.

7.1.2 Reconcile States

jGnash transactions have three reconciliation states that are presented in order below:

Not Reconciled

The transaction has not been cleared or reconciled.

Cleared

The transaction has been marked by the user to have been cleared during a manual or unfinished reconciliation process. A transaction may be marked as cleared to draw attention to it without impairing use of the reconciliation wizard.

Reconciled

The transaction has been automatically or manually reconciled.



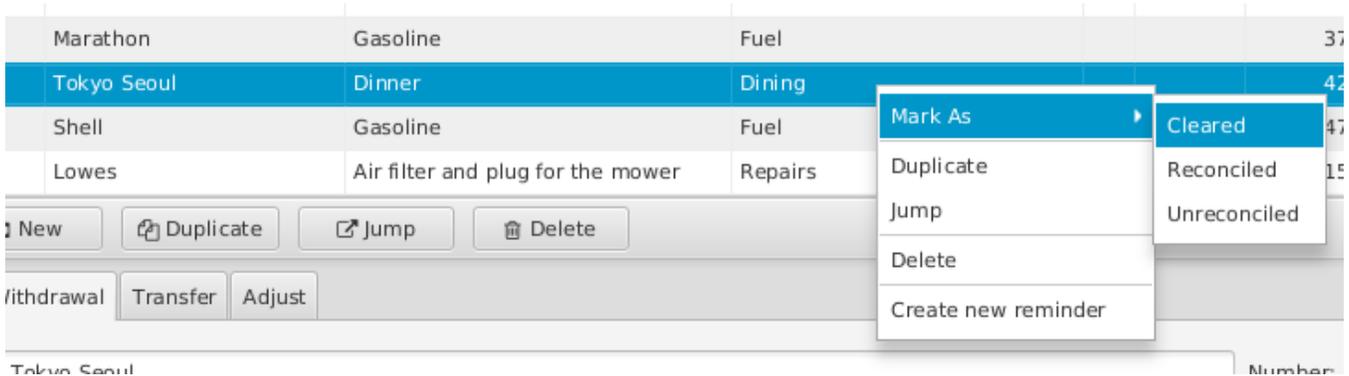
Manually marking transactions is not recommended if you are going to use the Reconcile Wizard.

7.2 Manual Reconciliation

Manual reconciliation is the process of individually comparing the account register against the institution provided statement and marking the matching transactions as reconciled.

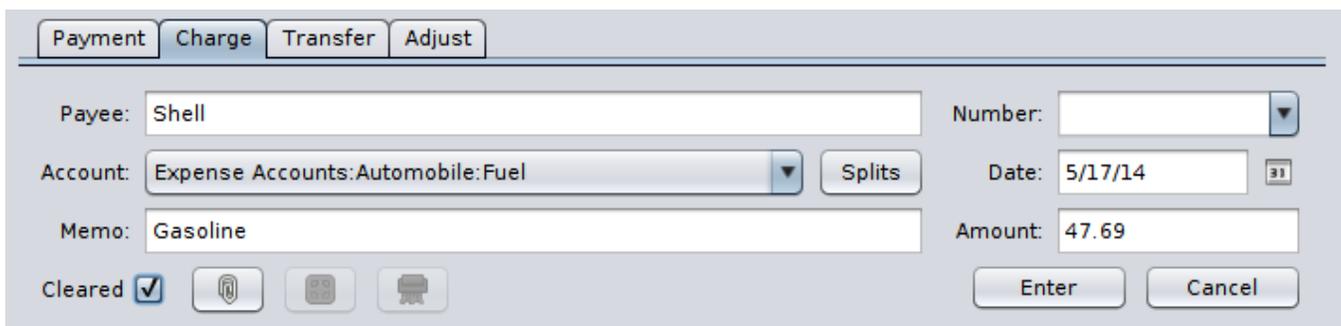
The downside to manual reconciliation is not all checks and balances are performed against the reported opening and closing balance for a given period. This increases the likely-hood of missing a recorded transaction or incorrectly entered amount.

To manually mark a transaction as reconciled, use the context menu in the register to display options to change the reconciled state.



Use of the context menu is currently the only means of marking a transaction as reconciled other than using the reconciliation tool. It may also be used to clear transaction erroneously marked as reconciled.

Transactions may also be marked as **Cleared** through the transaction form. Some users may prefer to clear certain transactions manually during a given period to draw attention to them. **Cleared** transactions will still be visible within the Reconciliation Wizard if used later while manually **Reconciled** transactions will not.



7.3 Reconciliation Wizard

Use of the Reconciliation Wizard helps to simplify the reconciliation process by comparing opening and closing balances reported by the institution against the sum of the transactions as you mark them as reconciled. You receive instantaneous visual feedback as you mark transactions, and at the end of the process you should have a net difference of zero.



The Reconcile Wizard has a nice feature that is not immediately obvious. While the wizard is displayed, you can still go back to the account register and enter missing transactions, correct erroneous amounts, or modify and delete transactions if entered into the wrong account. The Wizard's credit and debit lists are fully dynamic. You are not required to exit the Wizard without completing the process if you discover missing transactions or errors.

The image of the account register shown next is representative of a small but typical reconciliation period. The amounts and balances shown correspond with the other images as the Reconcile Wizard is explained in this chapter. Refer back to this image as necessary for clarification.

Take note of the Reconciled Balance: \$2,614.43 and that it is the last transaction marked as reconciled. Also, take note of the transaction dated 03/25/14 and the corresponding balance of \$1,369.70. You will see these same values later in the Reconcile Settings dialog.

Checking				Balance: \$2,069.70		Reconciled Balance: \$2,614.43	
Date ▲	Payee	Memo	Account	Clr	Deposit	Withdrawal	Balance
01/19/11	Acme Gasoline	Gasoline	Fuel	R		23.68	\$619.32
01/21/11	My Employer	Pay Check	[4 Splits]	R	700.00		\$1,319.32
01/28/11	Acme Gasoline	Gasoline	Fuel	R		27.68	\$1,291.64
02/04/11	My Employer	Pay Check	[4 Splits]	R	700.00		\$1,991.64
02/08/11	Acme Gasoline	Gasoline	Fuel	R		25.67	\$1,965.97
02/18/11	My Employer	Pay Check	[4 Splits]	R	700.00		\$2,665.97
02/19/11	Slow Pumps Gasoline	Gasoline	Fuel	R		29.67	\$2,636.30
02/21/11	Slow Pumps Gasoline	Gasoline	Fuel	R		13.31	\$2,622.99
03/02/11	Acme Gasoline	Gasoline	Fuel	R		8.56	\$2,614.43
03/04/11	My Employer	Pay Check	[4 Splits]		700.00		\$3,314.43
03/16/14	Acme Gasoline	Gasoline	Fuel	C		25.67	\$3,288.76
03/17/14	Food Mart	Groceries	Groceries			78.45	\$3,210.31
03/17/14	Pet Shop	Dog food	Misc Consum...			14.56	\$3,195.75
03/18/14	Auto shop	Repair trans...	Service			1,799.95	\$1,395.80
03/22/14	Salty Dog	Softener Salt	Misc Consum...			19.56	\$1,376.24
03/25/14	Coney Island	Lunch	Dining			6.54	\$1,369.70
04/04/14	My Employer	Pay Check	[4 Splits]		700.00		\$2,069.70

The Reconcile Wizard is started by using the context menu in the Account List, or by clicking the **Reconcile** button in the transaction register.

A small dialog will be shown requesting some information.

Statement Date

This is the closing date for the reconciliation period. This should be reported on your account statement. The date will typically be the end of the month, but may be different due to institution

or locale rules. Transactions entered after this date will not appear within the Reconciliation Wizard

Opening Balance

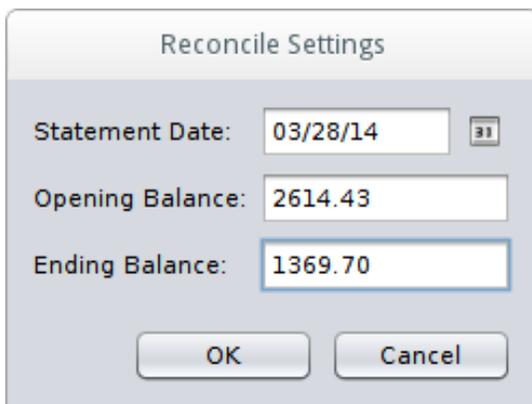
The opening balance should also be provided by your institution and should be equal to the closing balance of the last reconciliation period. In your account register, this will also be the account balance of the last reconciled transaction.

Ending Balance

This amount should also be provided by you institution.

These values should be provided to you by your banking institution in paper or electronic format and it's important these values are entered correctly, otherwise balances will not zero out.

Pay special attention to the account type, the selected option for *Reverse Displayed Account Balances* and if you are entering a positive or negative opening and ending balance.



Reconcile Settings

Statement Date: 03/28/14

Opening Balance: 2614.43

Ending Balance: 1369.70

OK Cancel

After clicking the **OK** button, the settings dialog will be replaced by a dialog showing all of the transactions prior and inclusive of the statement date that have not been marked as Reconciled. *Transactions marked as cleared will be shown.*

The next step is to go through the institution provided statement and mark every matching transaction as reconcilable by clicking on the transactions. As you click each transaction, totals will update and you should see the **Difference** value approach zero. The symbol in the *Clr* column will also change when marked as **Reconciled**. When the **Difference** is zero, the **Finish** button will become active. Transactions marked as cleared will also need to be selected if they are to be reconciled.

It is not unusual to find transactions that go unmarked for reconciliation near the end of the statement period. These are transactions you have entered that were not processed through the system fast enough to show up on your statement and impact your account balance. Simply ignore these transactions and they will be captured at the start of the next statement and reconciliation cycle.

Reconcile - Bank Accounts:Checking

Withdrawal				
Clr	Date	Num	Payee	Amount
C	03/16/14		Acme Gasoline	(25.67)
	03/17/14		Food Mart	(78.45)
	03/17/14		Pet Shop	(14.56)
	03/18/14		Auto shop	(1,799.95)
	03/22/14		Salty Dog	(19.56)
	03/25/14		Coney Island	(6.54)
				0.00

Deposit				
Clr	Date	Num	Payee	Amount
	03/04/11		My Employer	700.00
				0.00

Select All Clear All

Opening Balance: 2,614.43
 Target Balance: 1,369.70
 Reconciled Balance: 2,614.43

Difference: 1,244.73

Select All Clear All

Cancel Finish Later Finish

Clicking on the **Finish** button will close the dialog and will mark the selected transactions as Reconciled. Depending on the number of transactions and type of file format being used, it could take awhile for the changes to be saved. A wait message will be displayed during the change process.

What do you do if you have marked all transactions as reconciled and the difference is not zero?

- Not all paper and electronic statements clearly identify fees, earned interest, etc. Make sure you have captured these transactions.
- Were any transactions amounts entered incorrectly?
- Transactions manually marked as Reconciled during the statement period will not show in the transaction columns and are guaranteed to throw off balances. Mark the transactions as **Cleared** instead.
- Do you have your Reconcile Settings configured appropriately for the process you are using? If in doubt, use **Automatically reconcile Income and Expense Accounts**.
- Incorrectly entered opening and ending balances will cause errors in calculated balances.

If you need to to exit the Reconciliation Wizard before finishing, the **Finish Later** button may be used. This will close the dialog and mark selected transactions as **Cleared**. This makes it easy to restart the process with transaction you have already marked as reconcilable identified. You will still need to re-select those transactions when you restart the process.

Chapter 8

Securities

Securities must be managed when entering Investment Transactions within jGnash.

At a minimum, a Security is assigned a unique Symbol, a Reported Currency and a Scale (*the number of decimal places for entering and reporting prices*).

Tracking of prices and historical information for the Security is optional and not required to enter investment transactions. However, the reported **Market Balance** of an account will more accurately reflect prices if prices are entered.

The same Security may be used for multiple accounts.



The term Securities is used within jGnash generically for Stocks, Mutual Funds, Bonds and when trading commodities such as gold and oil.

8.1 Create and Modify Securities

Securities may be created or modified using **Tools > Securities > Create / Modify**. All of the properties are accessible when modifying an existing Security.

To create a new Security, simply fill out the form with the required properties and click the **Apply** button to save.

You can modify an existing Security by selecting it in the list to the left and click the **Apply** button to save the changes.

Symbol (required)

The Symbol is typically the Ticker symbol assigned to the Security. Depending on the Quote Source used, the Symbol may be appended with a market or region code. This value may be left empty.

CUSIP / ISIN

An internationally unique identifier for a Security. Some Quote Sources may require use of this

Figure 8.1: Create / Modify Securities

The screenshot shows a window titled "Create / Modify Securities". On the left side, there is a list of securities, with "RHT (Redhat)" selected. To the right of the list are several input fields and dropdown menus:

- Symbol: RHT
- CUSIP / ISIN: (empty)
- Quote Source: Yahoo!
- Description: Redhat
- Scale: 2
- Reported Currency: USD

At the bottom of the window, there are five buttons: "New", "Delete", "Cancel", "Apply", and "Close".

field instead of using the Symbol. At this time, it is not required.

Quote Source *(required)*

The Quote Source is the online data source chosen to download prices and events. This is discussed later in the chapter.

Description

A general description for the Security. This value may be left empty.

Scale *(required)*

This is the number of decimal places used for entry of security prices. Mutual funds will typically be traded at fractional prices. This allows you to override the number of decimal places used by the Reported Currency.

Reported Currency *(required)*

Sometimes called the Base Currency, this is the currency the Security is being traded with.

8.1.1 Quote Sources

jGnash currently supports use of Yahoo and IEX Cloud as online data providers.

None

The default quote source is **None**. If used, all pricing, stock splits and dividends will need to be entered manually.

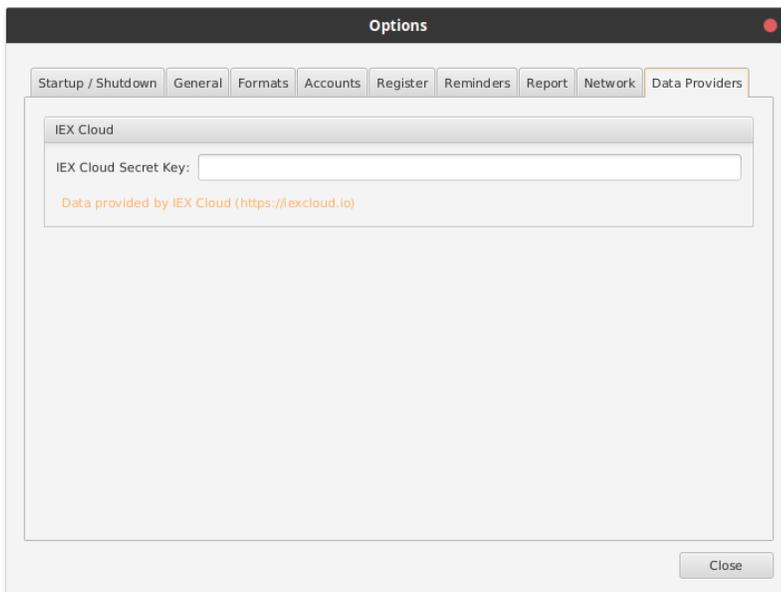
IEX Cloud

Using IEX Cloud as a Data Provider requires opening an account which may be free for use or a paid subscription depending on the amount of data being consumed.

An account can be created at [IEX Cloud](https://iexcloud.io/) [https://iexcloud.io/]. After creating your account, the *Secret Key* provided by IEX Cloud must be entered into the Data Providers Options Tab as shown in Figure 8.2.

The *Secret Key* is stored within your jGnash file. If the key is not entered, jGnash will report an error when attempting to download information.

Figure 8.2: Data Providers



Yahoo

Prices and historical events are downloaded from [Yahoo Finance](https://finance.yahoo.com/) [https://finance.yahoo.com/]. Usage is subject to the conditions and terms of the Yahoo website.

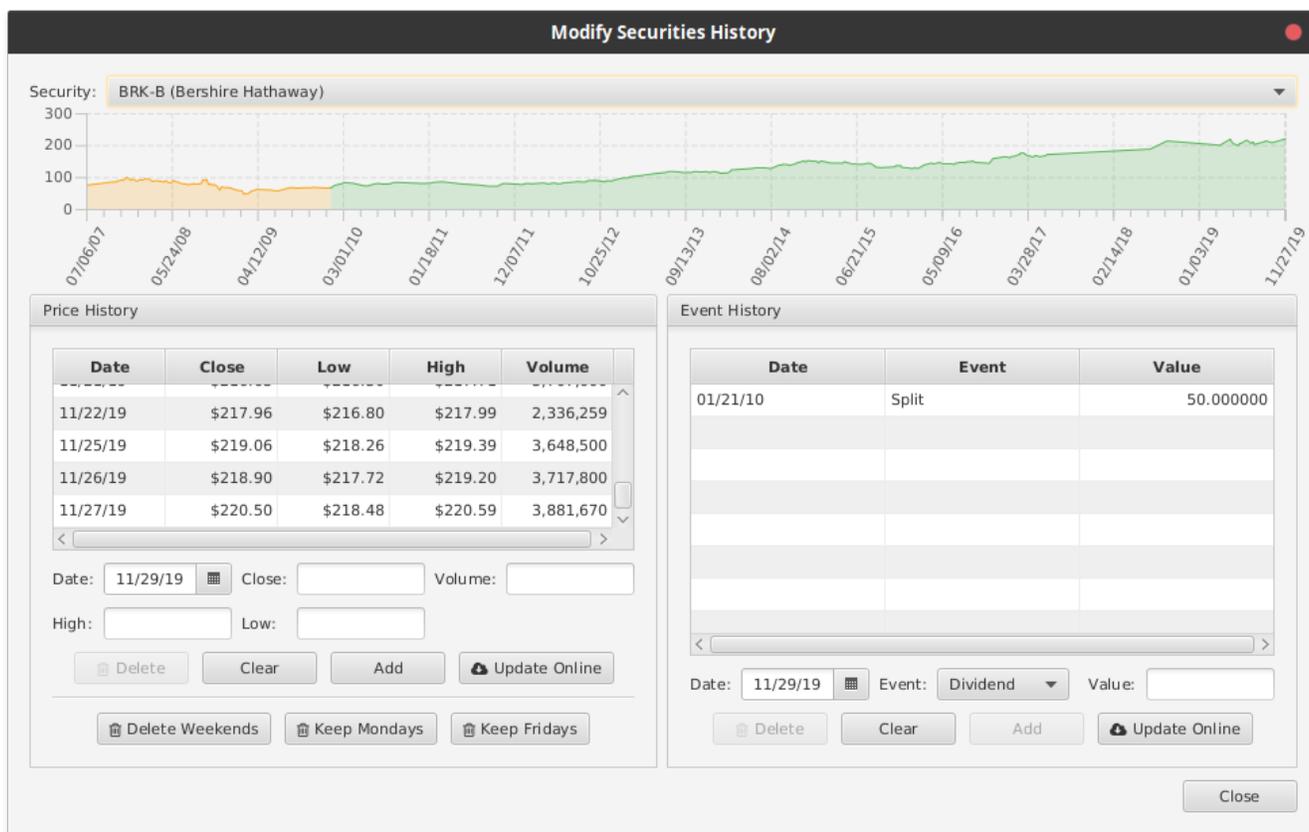
Yahoo does not make all Securities available, and it is not uncommon to experience periods of inaccessibility.

8.1.2 Security Price History

Securities history is managed using `Tools >> Securities >> History`.

The **Security** of interest is selected at the top of the form. A chart is displayed using on the historical closing price. As shown in Figure 8.3, periods divided by a stock split are shown using a different color.

Figure 8.3: Modify Securities History



Price History Panel

The closing price as well as the daily high, low and trade volume can be filled in and added by clicking on the **Add** button. The **Clear** button will reset the entry form. Selecting a date in the list and clicking the **Delete** button will permanently remove the entry.

At the bottom of the **Price History Panel** are some convenience buttons to help pare down the amount of data that can accumulate over time.

Thinning out the data can significantly reduce the size of your file and improve application performance.

Please see [Price Lookup and Reporting](#) Section for specifics of how jGnash uses the Price History for reporting and estimating Investment Account balances.

Event History Panel

Similar to the **Price History Panel**, Dividends and Splits may be entered.

Dividends can be added for informational purposes but are not required.

Split entries help to correctly manage the visual trend of the chart. They are not used or required to correctly calculate the value of your Investment Account.



When Splits or Dividends do occur, it's important to remember to create a Split Transaction within the Investment Account register. Splits and Dividend chart events do not automatically register has transaction events.



When entering splits, the value is typically greater than 1. For example, a 2:1 split is recorded as 2.0. However, if a 1:2 split or similar occurs (known as a reverse split), a value of 0.5 would be entered.

8.1.3 Security Price Historical Download

Historical price information for Securities may be downloaded using **Tools** » **Securities** » **Historical Import**.

Shown below Figure 8.4, you need to specify the start and end dates as well as check the boxes of the Securities you want to download the historical information for.

Click the **Start** button at the bottom of the form. The download and import process can take awhile depending on the file type you are using.

If desired, you can click the **Stop** button to interrupt the process. Interrupting the process will not undo what has already been downloaded and imported prior to stopping.

Figure 8.4: Historical Import

The screenshot shows a dialog box titled "Historical Import". At the top, there are two date input fields: "Start Date: 10/29/19" and "End Date: 11/29/19". Below these are three buttons: "Select All", "Clear All", and "Invert Selection". A list of securities is displayed with checkboxes: "GOOG (Google)" and "RHT (Redhat)". At the bottom, there are "Start" and "Stop" buttons, and a "Close" button in the bottom right corner.

8.1.4 Price Lookup and Reporting

When reporting balances for [Investment Accounts](#), jGnash will perform a search for the most recent or closet price.

- If an Investment Transaction occurs on the same day as a price record, the Transaction price will be used.
- For reporting periods such as Months or Quarters, the closest or exact match to the end of the period is used.
- In all cases, the latest price if it's a Transaction or a Historical record is used for the last period of a Report and as well as the reported **Market Value** of the account shown in the Register.

Deleting price records near the end of a reporting period can skew the reported interim values.

Chapter 9

Importing Transactions

Importing of OFX, QFX, MT940, and QIF transaction files is supported within jGnash. The files are downloaded manually from your financial institution and then imported. jGnash does not currently support an automatic download process.

QIF is an old format that was not well defined and is generated inconsistently between financial institutions. There are two significantly different formats with one consisting of transnational data only and the other format attempts to serve as an export / import format with account information for financial applications. Use of date formats within the QIF format will vary and can lead to incorrect or failed import of transactions. If at all possible, avoid use of QIF files and use an OFX or QFX file.

OFX and QFX files are a well defined standard and jGnash will easily process these. This is the preferred file format for importing transactions into jGnash. OFX and QFX files are XML based and human readable in that you can open the file with a text editor and easily understand the information contained within.

MT940 is another well defined standard commonly used between financial institutions. The format consists of fields separated by colons and commas with well defined numeric codes. MT940 is very compact and efficient to transfer electronically.



The Import Process below describes the basic import of transactions. jGnash can also process OFX and QFX files with Investment transactions. Additional columns will be present and enabled when applicable for these advanced types of transactions.

9.1 Import Process

Importing transactions is an easy process that is guided with a simple wizard. It begins with **File** > **Import** > **OFX / QFX**, **File** > **Import** > **QIF**, or **File** > **Import** > **MT940** and selecting a file that has been downloaded.

The first step of the import process requires selecting the correct account the import file is for. This is the base account all imported transactions will be associated with.



When importing OFX or QFX files, jGnash will preselect the correct account after it has learned from the first import.

The second step of the process is reviewing the transactions as shown below.

	Date	Num	Payee	Memo	Account	Amount
+	06/22/11		Payment - Thank You		Checking	24.00
+	07/08/11		Finance Charge		Bank Fees	-3.00

The first column consists of import status symbols:

- A plus symbol indicates the transaction has been detected as new. Double clicking on it will change it to a negative symbol to indicate you do not want it to be imported.
- An equals symbol indicates the transaction has been detected as a duplicate of a manually entered transaction or already imported transaction. Double clicking on it will change it to a plus symbol to indicate you want to force the import of the transaction.

The second, third, and fourth columns are not editable. The Payee and Memo columns may be pre-processed using JavaScript Filters as described later.

The Account column can be double clicked and changed to suit. The selected account will normally be an income or expense account unless it was a transfer to another bank account or financial institution. This column is also the equivalent to *Categories* for some other financial applications.

The Amount column can be double clicked and edited. This is normally not needed and not recommended, but allowed for some specialized uses when working with multiple currencies.

The button may also be used to remove a transaction being imported.



When importing transactions, jGnash uses what is called a Naive Bayes Classifier to help preselect the best account for the transaction. Consistent use of memo and payee fields will help accuracy of account selection. Accuracy also improves with increased quantity of transactions over time.

The last step of the Import Wizard allows you to review basic information about the import before committing to the changes. After clicking on `Finish`, the dialog will close and jGnash will begin the import process.

9.2 OFX imports

Taking the time to correctly configure your jGnash Account properties can help reduce the effort needed to automatically identify Accounts when importing OFX transactions.

OFX files may contain enough information to identify transfers between accounts. Most financial institutions will correctly identify transactions between checking and savings accounts with the bank, but others may include enough information when transferring between finance institutions.

Below is a fragment of the OFX file content defining the transfer. jGnash will attempt to match the `<ACCTID>` identifier on line 4 to an existing Account Number that is specified within the properties of your jGnash account.

Listing 9.1: OFX File Fragment

```
1 <BANKACCTTO >
2 <BANKID >100000009
3 <BRANCHID >TEST
4 <ACCTID >555555 - C01
5 <ACCTTYPE >CHECKING
6 </BANKACCTTO >
7
```

The **Account Number** is easily changed by modifying the Account properties as described in the [Creating Accounts](#) section of the manual.

9.3 JavaScript Filters

When importing transactions from OFX/QFX, mt940, and QIF bank statements downloads, transactions may be preprocessed using custom JavaScript files. As of jGnash release 2.32.0, the scripts may be used to alter the memo or payee of the transactions being imported.

You have three options for making a JavaScript file available for use:

- Some scripts are included by default. These show up as `/jgnash/imports/xxx.js` in the **Script** column of the table.

Below is an example JavaScript file. The first four functions are required for correct operation.

The first function accepts an **ImportTransaction** for advanced manipulation of the imported data.

The second and third functions accept a **string** and are expected to return a **string**.

The **getDescription** function should return a meaningful description of the script.

Listing 9.2: Example Import Script

```
1      /* Normalizes the case of the payee and memo fields */
2
3      // place holder for the passed ImportTransaction
4      var importTransaction;
5
6      // This will be called first and passed the ImportTransaction
7      function acceptTransaction(transaction) {
8
9          // does nothing with it in this script
10         importTransaction = transaction;
11     }
12
13     // This is a required function
14     function processMemo(memo) {
15         return capitalizeFirstLetter(memo.toLocaleLowerCase());
16     }
17
18     // This is a required function
19     function processPayee(payee) {
20         return titleCase(payee.toLocaleLowerCase());
21     }
22
23     // This is a required function
24     var getDescription = function (locale) {
25         var Locale = Packages.java.util.Locale;
26
27         switch (locale) {
28             case Locale.ENGLISH:
29                 return "Tidy Memo and Payee fields";
30             default:
31                 return "Tidy Memo and Payee fields";
32         }
33     };
34
35     // Capitalizes the first letter or a String
36     function capitalizeFirstLetter(str) {
37         return str.charAt(0).toUpperCase() + str.slice(1);
38     }
39
40     // Converts a string to Title Case
41     function titleCase(str) {
42         return str.replace(/(~|\s)[a-z]/g,function(f){return f.toUpperCase();});
43     }
44
```

The full jGnash API may be accessed within these scripts for advanced processing capabilities. See the [JavaScript](#) section of the manual for more details.



JavaScript files are expected to be encoded as UTF-8 Files. An incorrect file encoding may cause script failures.

Chapter 10

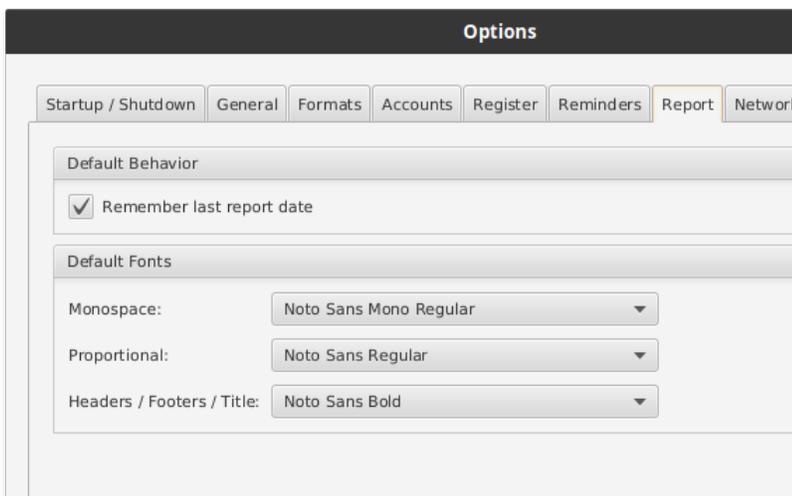
Reports

A variety of reports exist that present your financial history and status in different ways. There are currently three classes of reports available. Text reports can be exported and easily imported into a spreadsheet for advanced manipulation. Chart based reports may be altered and exported to a graphic file or printed using the context sensitive pop-up menu. Tabular type reports may be printed or saved as *PDF*, *XLS*, or *XLSX* files.

10.1 Tabular Reports

Tabular reports are displayed in a viewer that allows you to change the page and print or export the report. The font size of the displayed report can be changed from the toolbar of the report window.

The fonts used to display the report may be changed in the **Tools >> Options** dialog shown below. The **Proportional** font is typically used for report headers and footers. The **Monospace** font, also called a fixed-width font, is used to display the reported values.



If a proportional spaced font is chosen for the **Monospace** font, numeric report values may not line up correctly in the report.



Information on font types as well as a wide selection of freely available fonts can be found on the Internet. Once a new font is properly installed in your operating system, it will be available for use in jGnash the next time it is started.

10.2 Tips

Depending on your operating system, or locale you may need to change the font type and font size to achieve the best looking report. The font size can be changed on the report toolbar and is remember for each report type.

10.2.1 Nothing displays in the report and I'm not getting any errors

Try increasing your font size, and if that does not work, choose a different font. Depending on your operation system, fonts may not render correctly at reduced sizes.

10.2.2 I get an error that tells me to reduce my font size

The selected font size is too large to display the report correctly. You will need to choose a smaller font size. Many times, the column heading text may dictate the displayed width of a column. Try choosing a proportional font with condensed spacing. You may also want to check the default paper size and adjust if needed.

10.2.3 My PDF exports are missing information or don't look correct on different computers

Not all fonts are able to be embedded within a PDF file. You may need to experiment with different fonts to achieve good portability. In most cases, the defaults jGnash chooses will give you good results.

10.2.4 The IRR is not being displayed in my Portfolio report

Your investment account may not be setup properly. Ensure that stocks have been added or purchased prior to sells, buys, dividends, etc.

Chapter 11

Administration

Several administration options and tools are provided to help with management of your data.

11.1 File | Save As

An open file may be saved as a new file of the same type, or a new file with a new file type. To save the file as a different type, you must change the file extension to a supported type. Correct file extensions are shown below.

Table 11.1: File Types

XML File	.xml
Binary File	.bxds
H2 Relational Database (B-Tree)	.h2.db
H2 Relational Database (MVStore)	.mv.db <i>(newest H2 format and is more compact)</i>
HyperSql (hsql) Relational Database	.script <i>(.lobs, .log, .properties are used as support files)</i>

Depending on the file type, jGnash may generate an intermediate file for the conversion process. When saving to a relational database, the process may take awhile to complete.

11.2 File | Export | Export Accounts and File | Import | Import Accounts

Use of these commands allows you to export your account structure and import it back into and new file. This is handy if you want to start a new file without manually recreating your accounts. This does not preserve existing transactions.

11.3 Change Database Password

By default, when a new relational database is created, a password is not specified. This allows you to password protect your file. This does not encrypt your data, so a person with the right tools can easily access your data. It is useful for casual protection only. If encryption is important, use OS level encryption capability available on any modern operating system. This is disabled while a file is open.

11.4 Shutdown Server

Issues a shutdown request to a remote server. This is disabled while a file is open.

Chapter 12

Plugins and JavaScript

jGnash support the addition of JavaScript and Plugins to add additional functionality to the application.

12.1 Plugins

Plugins are tightly integrated into jGnash, and once loaded, behave as if they are a standard part of the application. Plugins are coded in Java using a jGnash specific API as the entry point so they may be loaded into jGnash.

Standard Plugins are packaged into JAR files and are typically located within the `plugins` directory located in the directory jGnash is installed.

You have two options for manually installing a Plugin:

- Place the JAR file into the `plugins` sub directory where jGnash is installed and restart jGnash.
- Place the JAR file into your home directly where jGnash will find it.
 - `$HOME/.jgnash/plugins` for UNIX and BSD based operating systems.
 - `USER_HOME\AppData\Local\jgnash\plugins` for Windows operating systems.

The jGnash JavaDoc may be referenced if you are interested in creating a jGnash Plugin. The MT940 import is written as a standard Plugin and may be referenced as an example of how to write one.

12.2 JavaScript

In addition to use of Plugins, jGnash allows you to create and run JavaScript programs. The internals of the jGnash engine and some user interface functions can be accessed to create custom reports, create and modify transactions, etc.

Running a JavaScript program is as simple as using **Tools >> Run JavaScript** command from the menu bar.

Below is an example JavaScript program that displays the accounts in the currently loaded file and demonstrates how to display a simple dialog. To try the program, create a text file using your favorite editor with a name of your choice that ends with a `.js` extension. After creating the file, simply using the **Tools >> Run JavaScript** command to select the program and run it.

```
1      load("nashorn:mozilla_compat.js"); // Load compatibility script
2
3      importPackage(javax.swing);
4      importPackage(Packages.jgnash.ui);
5      importPackage(Packages.jgnash.engine);
6
7      // helper function to print messages to the console
8      function debug(message) {
9          java.lang.System.out.println(message);
10     }
11
12     // show the console dialog to see the debug information
13     var Console = Java.type("jgnash.uifx.views.main.ConsoleDialogController");
14     Console.show();
15
16     // this is how to get the default Engine instance
17     var engine = EngineFactory.getEngine(EngineFactory.DEFAULT);
18
19     // get a list of accounts
20     var accountList = engine.getAccountList();
21
22     // loop and print the account names to the console
23     for (var i = 0; i < accountList.size(); i++)
24     {
25         var account = accountList.get(i);
26         debug(account.getName());
27     }
28
```



JavaScript files are expected to be encoded as UTF-8 Files. An incorrect file encoding may cause script failures.

JavaScript programs have the advantage of not requiring the use of an IDE or Java compiler to create and test a program. The disadvantage is troubleshooting syntax and logic errors can be more difficult than writing a jGnash Plugin.

Chapter 13

Command Line Options

jGnash has several command line options for advanced users.

Parameters such as file names that include a space in the path must be escaped using double quotes.

Example

The path to the file `"/home/craig/jgnash files/jgnash.h2.db"` must be escaped as shown.

```
jGnash --server "/home/craig/jgnash files/jgnash.h2.db" --password fh56dy
```

13.1 Options

-h, --help

Detailed display of all command line options.

-f, --file *filename*

Specifies a file to load at startup.

-p, --portable

If portable is specified on the command line, jGnash preferences will be stored to a file name `pref.xml` instead of using the system registry. Use of this option is intended for users who want to run jGnash from a thumb drive on multiple computers and maintain their preferences without using the system registry. The `pref.xml` file will usually be stored at the location jGnash was started from.

--portableFile *filename*

If you don't like the location the `pref.xml` file is stored, or wish to use a different name, use this option to change the location and name to suit.

--bypassBootloader

Bypasses the boot loader and requires manual installation of any OS specific files.

-u, --uninstall

Removes all registry and configuration settings jGnash has created. This will not have any effect if you have been using the `-portable` option.

13.2 Client/Server Options

--server *filename*

Starts the jGnash server using the specified file which must be a jGnash relational database. The file must exist and not be in use by another program. A user interface will not be displayed.

--host *servername*

Specifies the name of the remote server. This starts jGnash and automatically connects to the specified server. If running on the same computer as the server, `localhost` may be used as the name of the server.

--shutdown

Issues a shutdown request to a server. If `--host` is not specified, then `localhost` is assumed for the server name

--password *password*

The password that the client must correctly specify to connect to the jGnash database. This is not required if the database is not protected. A password does nothing to encrypt a file.

--port *port*

An empty port for network communications. The specified port and `port+1` may not be used by any other application at the same time. The default port is 5300.



It is possible to start the jGnash client and specify the server, and password settings from the `File >> Open` dialog.

13.3 Client/Server Examples

Start the jGnash server using the default port with a password protected database

```
jGnash --server "/home/craig/jgnash.mv.db" --password fh56dy
```

Start the jGnash client and connect to the local server running a password protected database

```
jGnash --host localhost --password fh56dy
```

Issue a shutdown request to a remote server that is password protected

```
jGnash --shutdown --host serv1 --password fh56dy
```

Issue a shutdown request to a local server that is not password protected

```
jGnash --shutdown
```


Chapter 14

Frequently Asked Questions

Where do I set my opening account balance?

Create an Equity Account called "Opening Balances" and transfer money from the Equity account to the new account which will establish an opening balance. The "Opening Balances" account may be hidden later if you do not want it visible.

What happened to transaction categories?

Most commercial personal finance applications use categories to help track spending and income. jGnash uses Income and Expense accounts instead of categories for tracking where your money comes from and where it goes.

Can I use multiple currencies?

Yes, the `Tool > Currencies > Add/Remove` menu will let you add additional currencies.

After adding new currencies, simply create new accounts that use the new currency. When creating a transaction between accounts with different currencies, a field for the exchange rate will be enabled.

How do I add Securities / Stocks to my Investment and Mutual Fund Account?

First, you need to have created your stocks/securities. `Tools > Commodities > Create / Modify`.

When creating the securities, the scale field must be filled in and the prefix field should be filled in. The scale will generally be the same scale as the currency the securities value is reported in. In most cases, a scale of 2 will work fine. For the prefix, the currency prefix of the reported value should be used.

After creating your securities, you can go back and modify the existing account or select the securities when creating a new account. Use the `Securities` button in the dialog to make changes.

Appendix A

Keyboard Shortcuts

This Appendix contains application keyboard shortcuts that are available to you throughout jGnash

Depending on your operating system and how you have it configured, other shortcuts may be available that perform the same function.

Table A.1: Shortcut Keys

Keys	Function
CTRL + F4	Closes the active register window if you have one open
CTRL + A	Displays the About dialog (<i>When a register table does not have the focus</i>)
CTRL + A	Selects all transactions (<i>When a register table has the focus</i>)
CTRL + C	Copies selected transaction information to the clipboard

Table A.2: Editing Keys

Keys	Function
CTRL + C	Copy
CTRL + X	Cut
CTRL + V	Paste

Appendix B

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Version 3, 29 June 2007

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