

JMRI/DecoderPro Information Sheet

Dave Duchamp, November 2011



The JMRI project provides computer software for decoder programming and model railroad computer control. The project is run by a group of volunteer computer programmers, who also enjoy model railroading. JMRI software is coded in the Java programming language to allow it to run on many computer systems in a system independent way. JMRI software is

available for download to all – there is no charge. JMRI continues to grow and expand as our hobby grows. Several new test and/or production versions are released each year.

Current JMRI production version is 2.12 (Recommended for most users.)

Current JMRI test version is 2.13.3

JMRI Applications

JMRI is an extensive library of model railroading software. This common library is made available as several front-end applications, each focusing on different areas of model railroading.

JMRI applications include:

DecoderPro – focused on programming DCC decoders in a user-friendly manner.

PanelPro – focused on layout display, running trains, and controlling your layout.

Since all JMRI applications use a common software library, all can perform the same model railroading tasks. For example, you can program decoders from ***PanelPro*** as well as from ***DecoderPro***. ***DecoderPro3*** (now in testing) is an exception; it will only program decoders.

Downloading and Installing JMRI:

A single download contains the JMRI software library, all JMRI applications (including DecoderPro and PanelPro), documentation, and all data files needed by the applications. A separate Java download may be required on Windows. If so, the JMRI installer walks you through it.

For download and install instructions for your system, go to the JMRI web site

<http://jmri.org/>

New Users: On the home page scroll down to “Supported computers” (on the left side), and click the name of your computer system. This will bring up an “Install Guide” for your computer system with detailed instructions on how to download and install JMRI and any other components required by your computer system. The JMRI web site also contains hints on how to test an installation in a logical manner.

Upgrading Users: On the home page, click “download” at the top of the page to go directly to the download page. From there you can download the latest production or test releases.

Users with slow Internet connections: The JMRI download is large (about 40-50 megabytes).

Without a high-speed Internet connection this can take a very long time. Two alternatives: 1) go to a friend or a library that has high-speed Internet, download there, and copy the download to a thumb drive or a CD, or 2) purchase a CD. Litchfield Station has a CD available at very nominal cost. <http://www.litchfieldstation.com/xcart/product.php?productid=410024>

Documentation and Clinics:

The JMRI web site (<http://jmri.org/>) has concise documentation on all parts of JMRI, including DecoderPro, PanelPro, and all JMRI tools. Documentation is easily accessed from the web site home page. Documentation is also available via the Help menu of any application. JMRI documentation has been greatly improved in the latest releases, and continues to improve. **The DecoderPro Manual was recently updated, and is available online or as a printable PDF file at <http://jmri.org/help/en/manual/>.**

The JMRI web site has a clinic page (<http://jmri.org/community/clinics/>) with links to DecoderPro and PanelPro clinics and presentations. To access Dick Bronson's clinics, go to <http://rr-cirkits.com/Clinics/Clinics.html>.

Join the “jmriusers” E-mail Discussion Group on Yahoo:

The “jmriusers” group is an excellent place to get help and information on JMRI and its applications. Comments, including complaints, are also welcome. New release announcements are posted to this list. User problems are discussed there. Ideas and suggestions for JMRI enhancements often arise there. The list is monitored by many JMRI expert users and by JMRI developers.

If you have a JMRI question or problem (with DecoderPro, PanelPro, or any other JMRI application), **first** look for the answer on the JMRI web site. To help find things, there's a search field in the upper right, and there's an index and table of contents for the help documentation. If you cannot find the answer on the web site, **then** post your question/problem on the “jmriusers” list. Someone will usually respond on the same or next day.

To join the “jmriusers” discussion group, go to <http://groups.yahoo.com/group/jmriusers/> and click the “Join This Group” button.

Hints on Asking Questions on the “jmriusers” List:

When asking any question, remember there are a large numbers of possible configurations for DCC systems, and Windows, Linux, and Macintosh computers out there. Just asking, "How do I get it to work" is not going to get any useful help. With any question, please include: specific details of your problem, DCC or other hardware type(interface, command station), JMRI version, and computer - Mac/Linux/Windows. And, of course, include error messages if any.

Note: Include all information sent to “jmriusers” in the text of your E-mail. Yahoo automatically deletes any attachments in messages to the “jmriusers” group.

User-Specific JMRI Files:

JMRI applications normally store files with information specific to your model railroad separate from the JMRI directory (folder) where the JMRI software is stored. This makes upgrading easier and avoids unintentionally deleting user-specific files. You should become familiar with the

location of these files so that you can periodically back them up to external media to protect against having to reenter all your information in case of a computer failure.

Each JMRI application, e.g. DecoderPro and PanelPro, has its own start-up configuration file that contains information you set in the “Preferences” window telling about your layout system and how it is interfaced to your computer. Configuration files are stored in different places on different computer systems, wherever application “preferences” are stored. The files are named: DecoderProConfig2.xml, PanelProConfig2.xml, etc. You can find their location on your computer system by starting the program, and selecting “Locations” in the Help menu.

For each decoder programmed, DecoderPro stores a roster file. These files are normally in a directory (folder) called “roster” that is located with your preferences files, alongside the DecoderProConfig2.xml file. These roster files are used to construct locomotive selection menus (roster lists) in various JMRI tools. You can find their location by searching on “roster”. All JMRI applications access the same “roster” directory.

Information on layout defining objects, e.g. turnouts (track switches), signals, or sensors, are stored in a layout definition file (panel file). You set the name of the file, and you also have control over where it is stored. Remember what you name it and where it is located.

JMRI Names and Naming:

JMRI applications follow a specific convention when naming objects that need to be referenced. Each object has a “system name” and a “user name”. The “user” name may be set to anything you find informative, but must be different for each object. The “system” name must follow a set convention to allow JMRI to reference the correct hardware and device. Example “system” names are:

LT23 – for LocoNet Turnout 23.

CS12 – for the 12th C/MRI input line (Sensor)

Note that the first letter refers to the **hardware** system (Loconet, C/MRI, etc.) and the second refers to the **type** of object (Turnout, Sensor, etc.). These are followed by numbers (usually hardware addresses), which need not be consecutive. Each object must be uniquely identified by its system name, so duplicate system names are not allowed. System names must be modified from the above if more than one connection to the same type of hardware system is configured.

For more information on JMRI naming conventions, including what system name letters have been defined, go to the “JMRI: Names and Naming” page at:

<http://jmri.org/doc/Technical/Names.shtml>

Scripting:

JMRI has many preprogrammed tools that handle the vast majority of layout automation and control tasks. However, if there isn’t a preprogrammed JMRI tool to do what you want, you can usually write a script that does exactly what is needed. Instead of defining our own language, JMRI scripting uses “Jython”, based on the “Python” language that’s commonly used in web development. Although it will take you a little time to get used to scripting, in the end it provides a lot of power to control your layout anyway you’d like.

Go to the JMRI web site (<http://jmri.org/>) to get more information about JMRI scripting, including tutorials to help you get going. On the home page, scroll down until you see “Scripting” on the left side, and click on it. It occurs in two places—both links bring you to the same place.

Source Code:

No computer programming is required to install and run JMRI applications. For those few users who want to learn more about JMRI internals, or to modify JMRI for their specific needs, the JMRI web site provides instructions on how to download the current Java computer source code from our Source Forge host. Go to the JMRI web site (<http://jmri.org/>) and click “developers” at the top of the home page. This will bring up the “JMRI: Technical Info” page, where you’ll find instructions on how to download the source code via SVN. This page also contains links to lots of information on JMRI software internals, and instructions on how to build JMRI applications using popular Java tools.