Crimson 3.1 Migration Guide

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Moving from Crimson 3.0

This document provides a quick guide on how to migrate your database from Crimson 3.0 to Crimson 3.1, and lists some of the new features that you are likely to want to use. It also explains some of the differences between the hardware supported by the two versions and how these will impact database import.

Importing Databases

Databases created by Crimson 3.0 can be opened directly by Crimson 3.1 by changing the file type selection in the bottom right-hand corner of the File Open dialog box. When you come to save the database, Crimson will note that the file must be saved in Crimson 3.1 format and will ask you where you wish to save it and under what name. The new name will typically be the old one with the `cd3` extension replaced with `cd31`. Crimson 3.0 databases may also be opened via the File Import command, which essentially performs the same operation but without any need to change the selected file type.
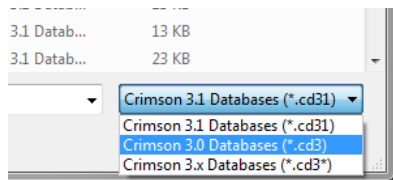
If you open or import a Crimson 3.0 database that was designed for a product not supported by Crimson 3.1, you will be asked to which device you wish to convert the file. You may be offered several options, depending on which products are best capable of supporting the display resolution of the original device.
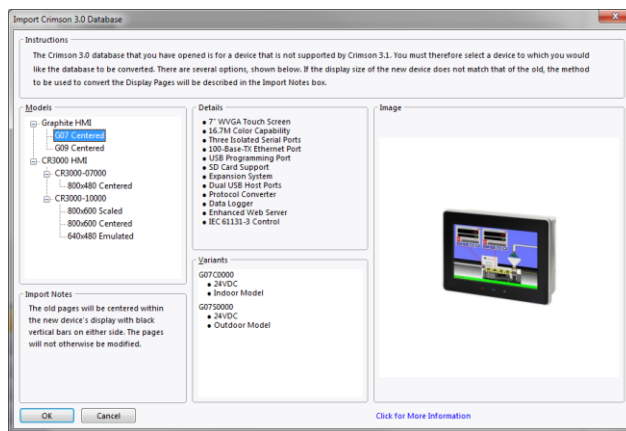
If the target device's display resolution does not match that of the original device, you may be offered several options relating to how display pages will be converted. Options labelled as *Scaled* take each display page and resize its contents to the new display format, adjusting font sizes where possible. Options labelled as *Centered* leave the display page contents unchanged but center them within the new display size, leaving either vertical bars or a frame around them. Options labelled as *Emulated* switch the target device's display into a mode

where it scales its display output to emulate the original device's resolution. Where the scaling is by an integral factor, this will typically produce a clear display but with larger and thus more noticeable pixels. Where a non-integral factor is used, you should assess the results to see if you consider the resulting display quality to be acceptable.

Symbol Selection

When you import a Crimson 3.0 database, the symbol library will continue to supply the database with old-style symbols that do not contain the smoother edges and more subtle shading that characterize new-style versions. The images below illustrate the difference, with the tank on the left being obviously the old-style version…
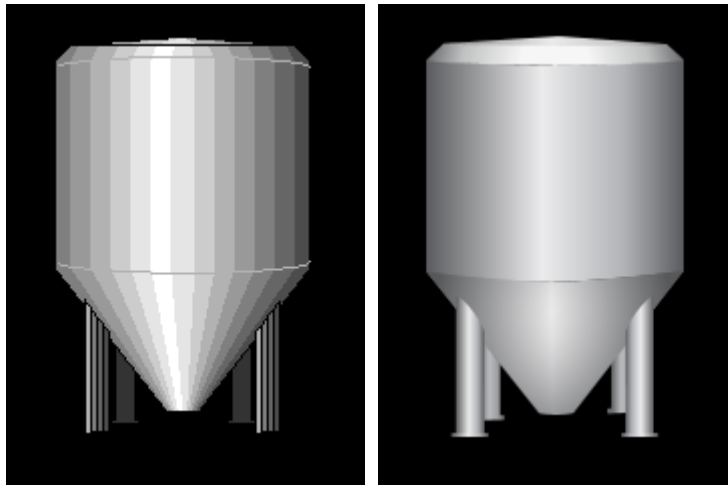
You may switch your database to use new-style symbols by going to the Display Pages category and selecting the Pages item in the root of the navigation list. On the Images tab, edit the *Symbol Library* property to select the preferred symbol set. While most old-style symbols have a new equivalent, it is possible that the rendering will not be precisely the same, with, for example, a symbol being one pixel narrower or wider. If this makes a difference in your database, you may have to decide between manually adjusting each of your pages and continuing to use the old-style symbols.

Model Conversion

Crimson 3.1 does not support all the models supported by Crimson 3.0. To offer the features that our customers were demanding, we had to leave behind support for older, less powerful hardware and target only devices with sufficient memory and processing power to handle the demands of more modern software.

Converting from Graphite

All Graphite HMIs and Graphite Controllers are supported by Crimson 3.1, so converting your database is as simple as completing the import process describe above.

Converting from G3

The migration path from the G3 to the CR3000 series is complicated by the differences in screen resolution between the two ranges. The table below describes the options available when converting between various models…

G3 Model	CR3000 Model	Description
G306A	7-inch	The G306A's 320 x 240 display can be hardware or software scaled to fit the CR3000's 800 x 480 display. Hardware scaling converts each pixel to a 2 x 2 block of pixels, while software scaling adjusts the size of the primitives to the new format. Software scaling may need you to edit the pages to adjust font sizes, line widths etc.
G308, G310	10-inch	The G308 and the G310 both have 640 x 480 displays which can be hardware or software scaled to fit the CR3000's 800 x 600 display. Hardware scaling blends adjacent pixels and thus may not produce perfect results. Software scaling may need you to edit the pages to adjust font sizes, line widths etc.
G315	15-inch	The G315 can be imported directly with no screen adjustments.

The other issue you may encounter is that the CR3000 has neither the MENU key nor the soft-keys provided by the G3. You must therefore remove any functionality from these keys and replace it with on-screen buttons and other elements that achieve the same result. We recommend that you do this in Crimson 3.0 before converting to Crimson 3.1.

Converting from G3 Kadet

In terms of screen resolution, the G304K2 can be imported directly into a CR1000 4-inch model and a G307K2 can likewise be directly imported into a CR1000 7-inch model. There are however some differences between the two ranges in terms of serial ports. Specifically, the CR1000 models have a single RS-232 programming port and a dual-mode RS-232 or RS-485 communications port. The G304K has one dual-mode port and one RS-485 port. If your application needs two RS-485 ports, you must use an adapter. The G307K has one RS-232 programming port and two dual-mode ports. If your application needs three serial links, the CR1000 will not be suitable and you must use a CR3000 model instead.

Converting from Other Devices

The Data Station Plus, the Modular Controller and the ProducTVity Station do not currently support Crimson 3.1 and you must therefore continue to use Crimson 3.0 to program these products. Red Lion will soon be releasing updated hardware that will allow you to make the transition to Crimson 3.1. Please check the Red Lion website for details.

Custom Web Sites

If you have developed a custom website in Crimson 3.0, you may find that it does not operate in precisely the same way when it is transferred to Crimson 3.1. You should thus consult the chapter on creating a custom website, and consider how the newly-available facilities will help you harmonize your site with the standard Crimson 3.1 pages.

New Features

Crimson 3.1 provides many new features and improvements. Lots of changes have been made to increases usability and decrease the amount of time it takes to create a database, and a number of major features have been added.

Zero Config

- Crimson 3.1 supports a zero-configuration network option that allows a device to be connected to your network and referenced by name from your PC without the need to add DNS or HOST file entries. Crimson will also create a webserver SSL certificate using that name, allowing error-free development of secure websites.
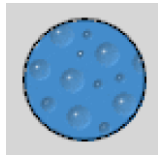
New Primitives

- Crimson 3.1 provides more attractive primitives with smoother edges…

- Newer primitives can be filled with a greater variety of graduated patterns, including patterns that simulate cylindrical containers or metallic surfaces.
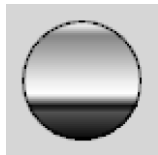
- Newer primitives can be filled with a variety of texture from the Symbol Library, allowing natural or man-made materials to be represented.

- Newer primitives support edges of any thickness, providing a better quality of display on high-resolution devices where one pixel is very small. These edges may be a solid color, but they may also be filled with any of the graduated patterns or textures used to fill the figure itself. A solid line may be applied to the inside or outside of the edge, better delineating it from other display elements.
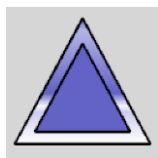
- Crimson 3.1 provides a richer line primitive that can be an arbitrary width. The line can be filled and edged just as for other primitives. Lines may thus be filled with graduated fills and textures and may have edges applied to their outline. Lines may also have a variety of end styles applied, allowing arrows to be easily created.

- Crimson 3.1 provides more flexible rounded, beveled and fileted figures, with the ability to omit the corner effect on any set of corners. This permits greater flexibility in creating custom shapes.


- Crimson 3.1 supports new primitives for triangles, parallelograms and trapeziums, with proportional handles allowing the figures to be adjusted in a manner that is invariant under scaling. Crimson 3.1 also provide a new more flexible arrow primitive with several handles to adjust its appearance.
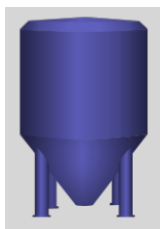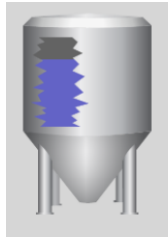

Symbol Library

- Symbols have smoother edges and more subtle shading.
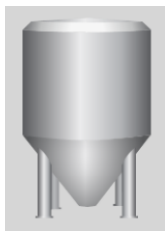
- Symbols can be recolored dynamically at runtime to represent state information.

- Symbols can be recolored dynamically at runtime using a tank fill, allowing for example the Tank Cutaway symbols to be used with the Tank symbols to create attractive visualizations of tank level information.
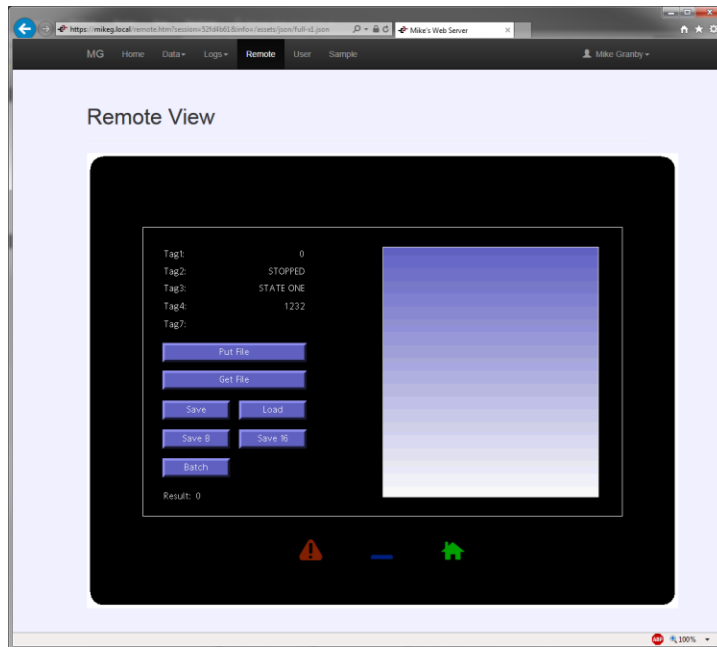

Web Server

- The web server has been completely reworked to provide an appearance based on the Bootstrap and JQuery libraries. The page layouts automatically adjust for use on mobile devices.
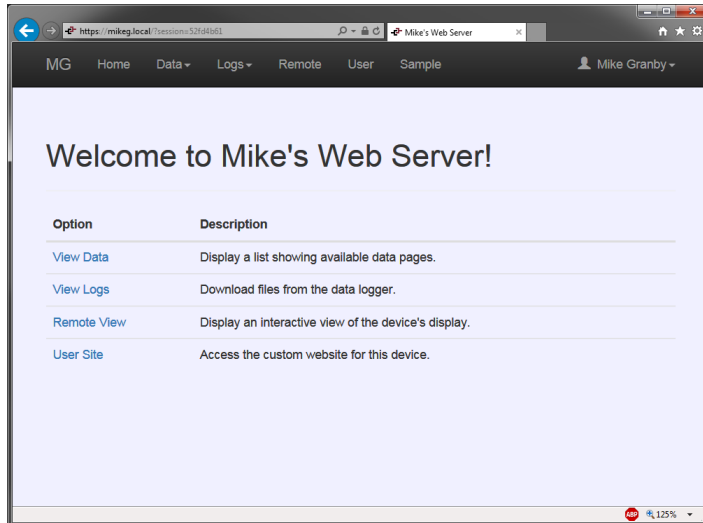
- The web server now supports secure HTTPS operation, and allows for the provision of certificates to indicate the server identity. HTTP redirect is also supported, avoiding the new for your clients to type the https prefix.

- The web server now provides form based authentication for secure connections, proving a better log on experience, including redirection to previously selected pages.

- The web server now supports individual security descriptors for each feature and for each tag-driven page. This allows finer granularity of access control.

- The web server now supports input directly from the keyboard when using the remote-control facility. The user no longer needs to press the buttons on the popup keypad with the mouse. Typing the data enters it into the field.

- The web server now includes an updated remote view and remote control feature that operates far more smoothly and sends only a small fraction of the data required by the previous implementation, while increasing color depth from 8 to 16 bits.

- The web server now uses AJAX technology to update tag-driven pages, providing much faster updates without any flicker and with only minimal data usage. The same techniques are made available for in custom webpages.

- The web server now supports reply compression. Together with the last two features, this vastly reduces data requirements. This is especially important in cellular operation, both for performance and billing control.

- The web server allows custom stylesheets and JavaScript to be included in every page, allowing modification of the site's appearance and behavior.

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- The control engine now supports more deterministic execution, ensuring that scan times and I/O updates are not disrupted by page updates and other activity.

- The control editor now supports online debugging, allowing the execution of a program in a remote device to be monitored in real time.

- The control editor support for offline simulation has been improved, allowing navigation between pages without leaving simulation mode.

- The control editor now supports clipboard and drag-and-drop operations, allowing programs and variables to be moved around within Crimson, and even between Crimson databases.

- The control editor has been optimized to provide a more fluid navigation experience, and avoiding some of the pauses that could previously be seen.

- The control editor allows initial values to be defined for variables, ensuring that they are correctly initialized upon system start-up.