

Telvent

Config@WEB RTU Firmware Update Instructions
(C3414 CPU)

Rev.	Date	By	Comment
0.0	17-Jul-2003	DGM	Created for A7 release.
0.1	30-Jul-2003	DGM	Revised for A8 release.
0.2	09-Sep-2003	DGM	Revised for A9 release.
0.3	11-Dec-2003	DGM	Revised for AA release.
0.4	19-Dec-2003	DGM	Revised to instruction the user to first archive the XML and to now enter Username and Password at the login screen.
0.5	02-Sep-2004	DGM	Revised to load GUI first to get good FTP Active X control.
0.6	22-Feb-2005	DGM	Revised for B0 release.
0.7	28-Mar-2005	DGM	Added Appendix A, Conversion Tool Overview, updated text font to Telvent standards.
0.8	20-Jul-2005	DGM	Revised for C1 release.
0.9	02-Sep-2005	DGM	Revised for C2 release.
1.0	20-Oct-2005	DGM	Revised for C3 release.
2.0	28-May-2008	BG	Revised for CD release
2.1	15-Oct-2009	KAB	Revised to first download and convert configuration before starting new uploads.
2.3	19-Nov-2010	KAB	Revised to make specific to C3414 CPU.
2.4	25-Jan-2011	KAB	Revised for G0 release. Make remove block in program which allows for a choice between CPUs

WARNING: Although the Configuration Converter program will work with any configuration from S2200-500-001A5 through S2200-500-001B6 firmware, and older versions of C3414-500-001YZ firmware, the output is designed to be used only on the following RTUs only: SAGE 2400, SAGE 3030M, SAGE 1410, SAGE 1430, SAGE 1450 and LANDAC II.

Note: You cannot convert a configuration from a newer version of firmware to an older version of firmware.

Overview

See the Appendix for an overview and quick instructions for the experienced user.

Description of Firmware Numbering System

The files required to update an RTU's firmware are located in a zip file. The file name is based on the firmware numbering system. The zip file is named either:

"C3414-500-XXXYZ_Update_Files.zip" for a release.

"C3414-500-XXXYZ_PN_Update_Files.zip" for a patch to the release.

The XXX field in the file name is the firmware number. Baseline firmware is number "001" while special firmware for a customer will have a number other than "001".

The Y field is the version number which started at E and will change by one letter for a new base release (XXXYY0 release). Version C3414-500-001G0 firmware will be newer than C3414-500-001F0 or any patch of version of C3414-500-001F0 firmware. A version number change occurs when any major function is added to the baseline firmware.

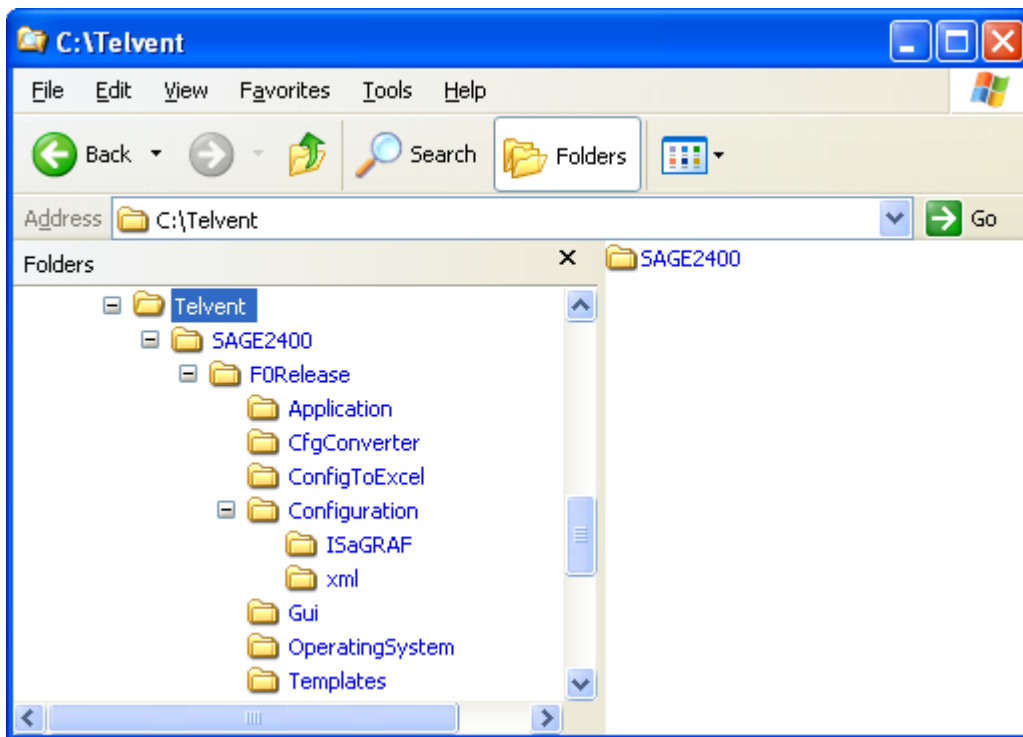
The Z field is the step of the version which starts at 0 and increases by 1 for new release until a new version number release is done. The firmware named C3414-500-001F2 is newer than C3414-500-001F1 firmware. A change in any of the configuration (XML) files used by the RTU forces a new step number to be created.

If a patch release is done, N is the patch number. C3414-500-001F0_P2 firmware is newer than C3414-500-001F0_P1 firmware. Patches use the same

version configuration as the base version number release. Changes to the Application or the GUI force a new patch.

Description of Zip File, Folders and Types

When you extract a firmware update zip file, you will have a file structure as shown below regardless of where you extract the set.



The **Telvent** folder serves as the root of the update set.

The **SAGE2400** folder is used as the base folder for the update set. The update set can be used on any of the supported products, not just the SAGE 2400.

The **F0Release** folder contains the rest of the folders associated with this set of firmware, in this case, C3414-500-001F0.

The **GUI** is a series of HTML (HyperText Markup Language) and other files that are used to give the RTU the graphical user interface that appears in Internet Explorer. These files must always be the first loaded into an RTU whenever the firmware is updated or restored. There are 3 files in the GUI folder, the compressed GUI file with a name of the firmware release number with an extension of ".gui", index.htm and profileC.xml

The **Application** is the actual firmware that runs the RTU. This is a binary file (has extension .out) and has the name C3414-500-XXXYZ, where XXX is the firmware number, Y is the version number and Z is the step of the version. Usually the firmware number will be 001. There is one file in the Application folder, the firmware release number with an extension of ".out".

The **Configuration** folder contains the following two folders, XML and Template described below.

The **XML** folder holds a series of XML (extensible markup language) files that contain all the port, hardware, and other configurations of the RTU. Whenever you configure an RTU and wish to save the configuration for future reference, these are the files you would "Get from RTU". Before a firmware update you should "Get" these files and store them in a known location to use with the configuration conversion program. During an update to a new revision of firmware you will need to run these configuration files through the Convert_to_*nn* program to ensure compatibility with the new Application and GUI files. The number of files varies from version number to version number, but all files have an extension of ".xml" and should never be 0 bytes in length. You can view these files in Internet Explorer by launching the file with Windows Explorer. If Internet Explorer presents any type of error, the content of the file is invalid and will not be usable by the RTU firmware.

The **Template** files are XML files that are created in the RTU that are used as a basis for common configuration parameters. The latest Convert_to_*nn* program includes an option to also convert template files. The Template(s) must be run through the conversion program separately from the configuration. This folder may contain only a "tpl.txt" file or if you have created templates, files with the extension ".xml". The template files can be viewed as a configuration file above.

The **Operating System** is the VxWorks program which manages the firmware on the RTU. There will be only one file in this folder, "vxworks".

The **CfgConverter** folder contains the conversion converter program that will take an existing configuration that is loaded onto the PC from the RTU and update it to run with the version of firmware that matches the name of the converter program. It may have to add tags to existing configuration files or add completely new files to the configuration to match the new firmware set. Existing configuration files may be run through the converter program multiple times. This document is also contained in the folder.

The **ConfigToExcel** folder contains two files, the Excel macro to convert the XML file configuration to an Excel spreadsheet and the documentation file that contains the directions on how to perform this task.

Step by Step Instructions:

Note that the files may be “unzipped” anywhere by the user, but the following instructions assume the file is unzipped into the C:\ folder and that the firmware to be installed is not a patch.

1. Unzip (extract) all files into root (C:\) directory. Ensure to select "Use folder names", this will create a path as follows:
C:\Telvent\SAGE2400\YZUpdate, where “Y” is the version of update and Z is the step. A patch will create a path of the form
C:\Telvent\SAGE2400\YZ_PNUpdate.
2. Connect the RTU to PC via cross-over Ethernet cable or via in-house LAN connection (whichever is appropriate for RTU Ethernet connectivity)
3. Open Internet Explorer and type in the IP address of the RTU in the “Address” window.
4. When the RTU Logon screen appears, enter user name, password and click “Log In”, then click the “Up/Download” tab on RTU user interface.
5. For newer firmware versions, you may have to login on the Up/Download screen. Enter a valid User Name and Password and click “Connect”. The “Result” box should say “Connected to RTU” (See below)

The screenshot shows the 'Up/Download' tab of the RTU interface. It is divided into three main sections: File Transfer, Connection, and RTU Information.

File Transfer:

- File Type:** A dropdown menu currently showing 'Configuration'.
- Result:** A text box showing 'Connected to RTU'.
- Buttons:** 'Get from RTU', 'Send to RTU', and 'Cancel'.

Connection:

- IP Address:** 172.18.150.51
- User Name:** Admin
- Password:** A masked password field (XXXXXXXXXX).
- Button:** 'Connect'.

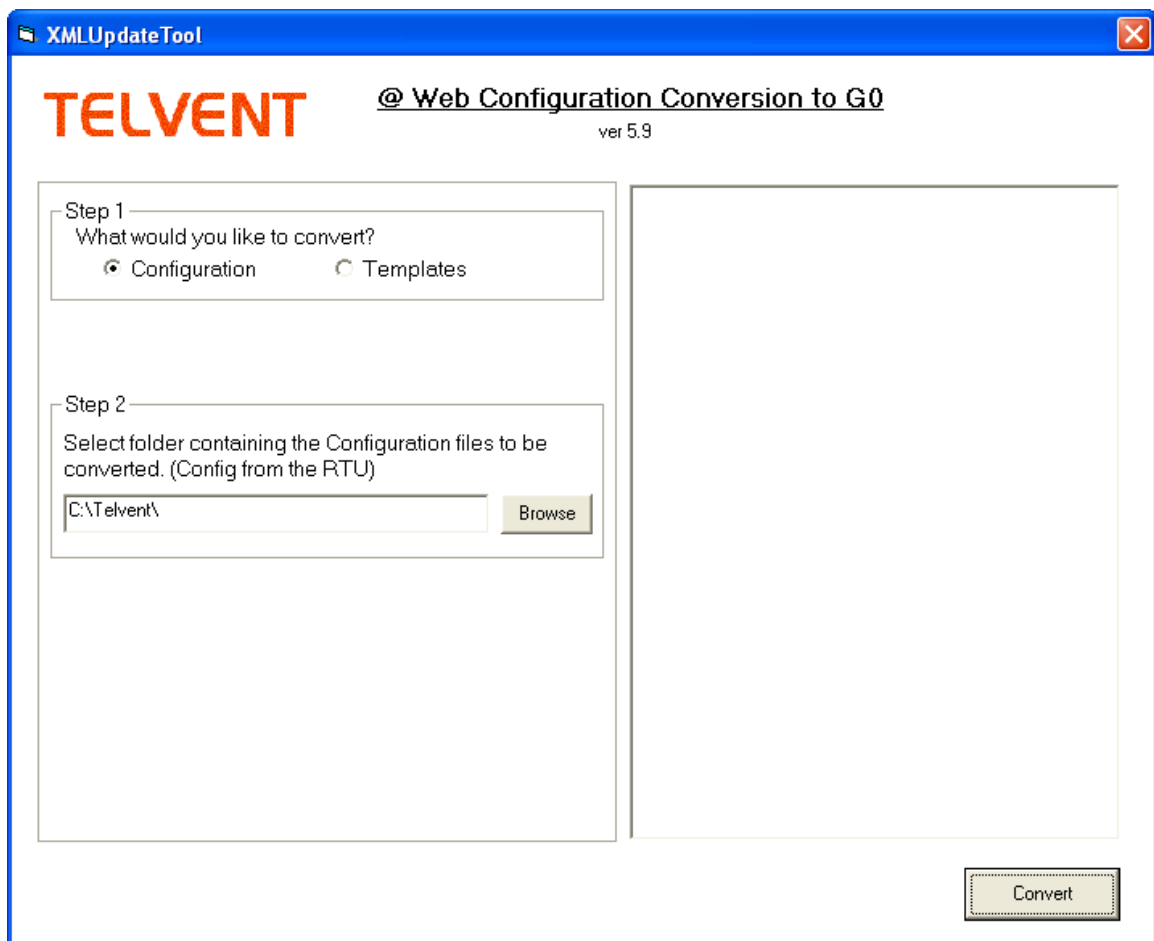
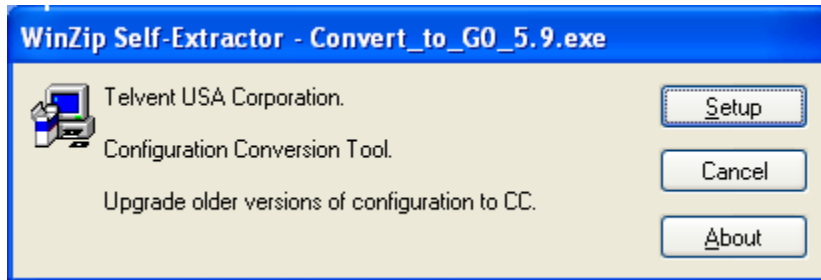
RTU Information:

	Name	Date	Size
RTU	F0_P1 Update		
Part No.	C3414-500-001F0_P1		
Configuration	C3414-500-001F0	11-15-10	
GUI	C3414-500-001F0_P1.gui	1/29/2011	4608000
App File	C3414-500-001F0_P1.out	1/29/2011	2625348
O/S	vxWorks	8/24/2010	5307434

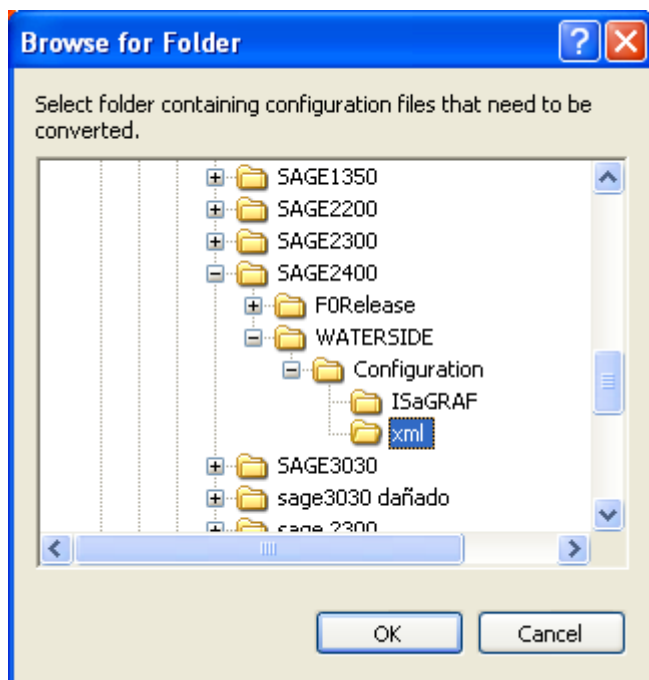
At the bottom right, there are two buttons: 'Reset' and 'Logout'.

6. Select "Configuration" from the drop-down combo box labeled "File Type" on the RTU user interface.
7. Click on "Get" button. For this step allow the RTU to send the file to the default path it comes up with, which will be:
C:\Telvent\rtutype\rtuname\Configuration, where rtutype is the RTU model and where rtuname is whatever the RTU is named in the CPU setup screen. NOTE: For A5 firmware the path will be C:\Metso... instead of C:\Telvent... **Make a backup copy of this configuration directory for archival purposes.** If a pop-up window appears that reads "ISaGRAF Configuration, Operation Cancelled", just click "OK".
8. Run the RTU configuration conversion tool (see Appendix A). The tool is in the folder: C:\Telvent\SAGE2400\YZUpdate\CfgConverter. This step will allow the user to merge an existing configuration (RTU firmware revision A5 or greater) with the latest XML released configuration format. NOTE: The result of the conversion will over-write your old configuration files with the new updated configuration files. When the Conversion Tool is executed a similar window will appear.

9. The first window to appear will be the following splash screen:
Click Setup to continue to the next screen, shown below.

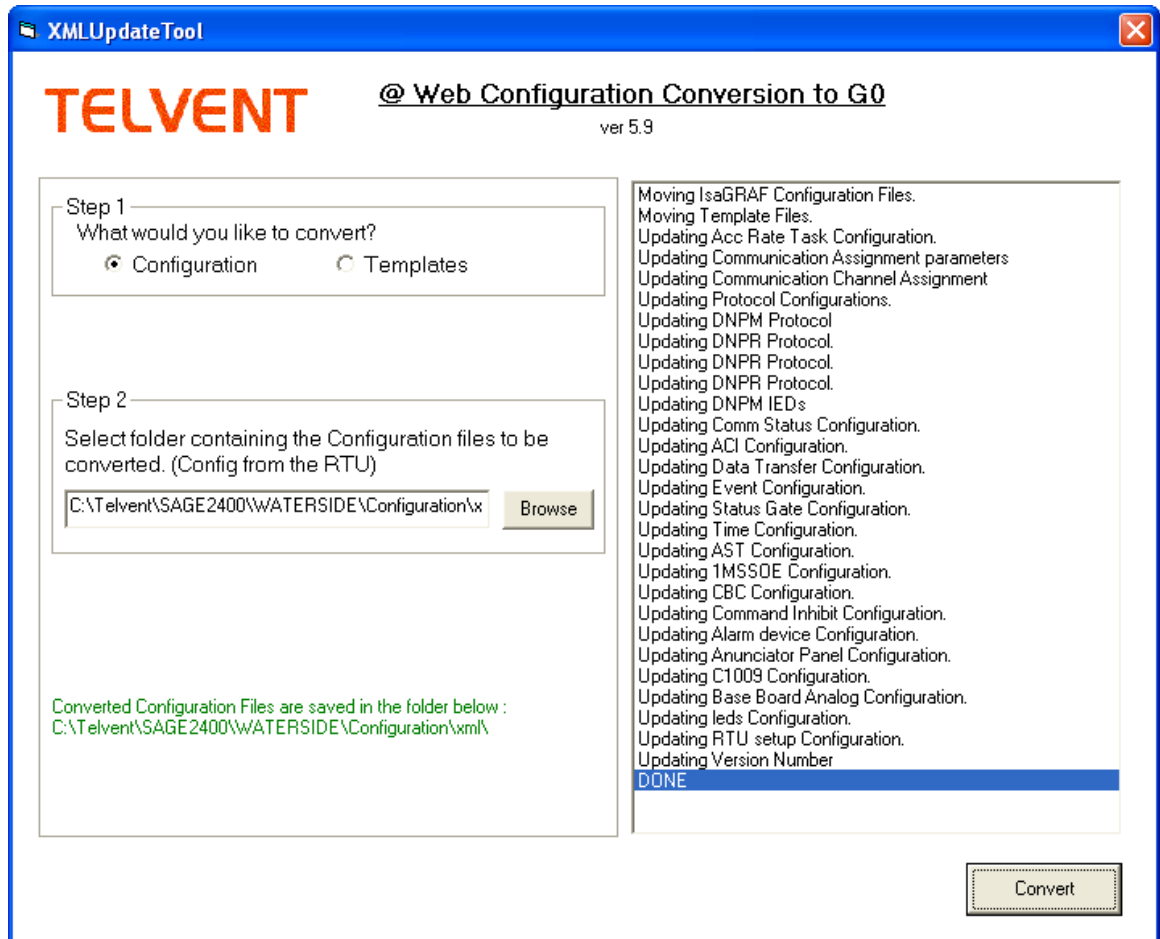


10. In Step 1 of the XML Update Tool (see above), select whether you want to convert Configuration files or Template files (you can come back and do the other when you finish with either type).



11. In Step 2 of the XML Update Tool, type in the path, C:\Telvent\SAGE2400\YZ_PNUpdate\Configuration\xml or browse to the 'xml' folder, for the old configuration files, as shown above. The conversion program automatically creates a backup copy of the old configuration files.
12. To convert files, click the convert button. An example result is shown below.





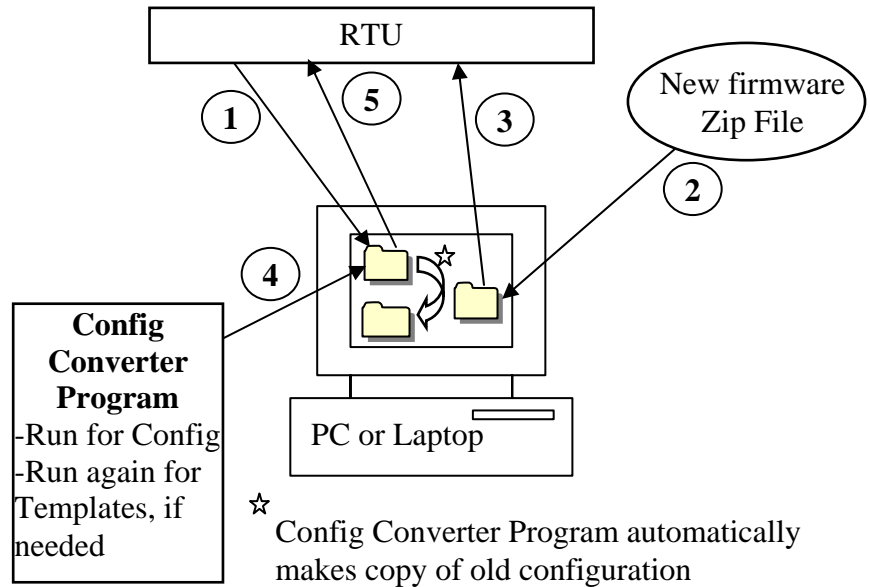
13. Once the conversion is DONE, Select "GUI" from the drop-down combo box labeled "File Type" on the RTU user interface.
14. Click on "Send" button. You will get a pop-up file navigation screen. Navigate to C:\Telvent\SAGE2400\YZUpdate\GUI.
15. You will see a "C3414-500-XXXYZ.gui" file. Select this file. Click on "Open".
16. A dialogue box will pop up asking if you want to over-write the existing GUI files. Click "OK". The GUI is the largest portion of the RTU update and may therefore take several minutes.
17. When the "Result" window shows "OK", refresh the Up/Download page by pressing the F5 key. This will allow the new FTP control to load.
18. Select "Application" from the drop-down combo box labeled "File Type" on the GUI.

19. Click on "Send" button. You will get a pop-up file navigation screen. Navigate to "C:\Telvent\SAGE2400\YZUpdate\Application\C3414-500-XXXYZ.out".
20. Click on that file to highlight it and click on "Open".
21. A dialogue box will pop up asking if you want to over-write the existing application. Click "OK". The transfer should take under 30 seconds.
22. Now use the "Up/Download" feature to 'Send' the converted configuration back to the RTU. Note: The directory to be selected should be the default one containing the current RTU configuration files that were originally downloaded from the RTU in step 7. This directory now contains the modified files after the conversion.
23. Ensure "Configuration" is visible on drop-down combo box labeled "File Type" on RTU user interface.
24. Click on "Send" button. You will get a pop-up file navigation screen. Navigate to C:\Telvent\SAGE2400\rtuname\Configuration\xml, where rtuname is whatever the RTU is named in the CPU setup screen.
25. Click on "Open".
26. A dialogue box will pop up asking if you want to replace the existing xml files. Click "OK".
27. Repeat steps 18 - 21 for sending the "Operating System" and "Template" file(s). Navigate to the appropriate directory in step 22 (i.e. Operating System/ Templates).
28. Press "Reset" button and confirm you wish to reset when the pop-up dialogue box asks. The RTU will reset in about 60 seconds.
29. The RTU is now updated with the newer firmware and should still be configured as it was before the update process.

Appendix A

Configuration Upgrade Quick Instructions

1. GET Config (and/or Templates) from RTU to PC
2. Unzip new firmware to PC
3. Run Config Converter program on items from step 1 (see details below)
4. SEND new firmware GUI and Application to RTU
5. SEND Config (and/or templates) to RTU



End of File