

WinXINU Software Manual

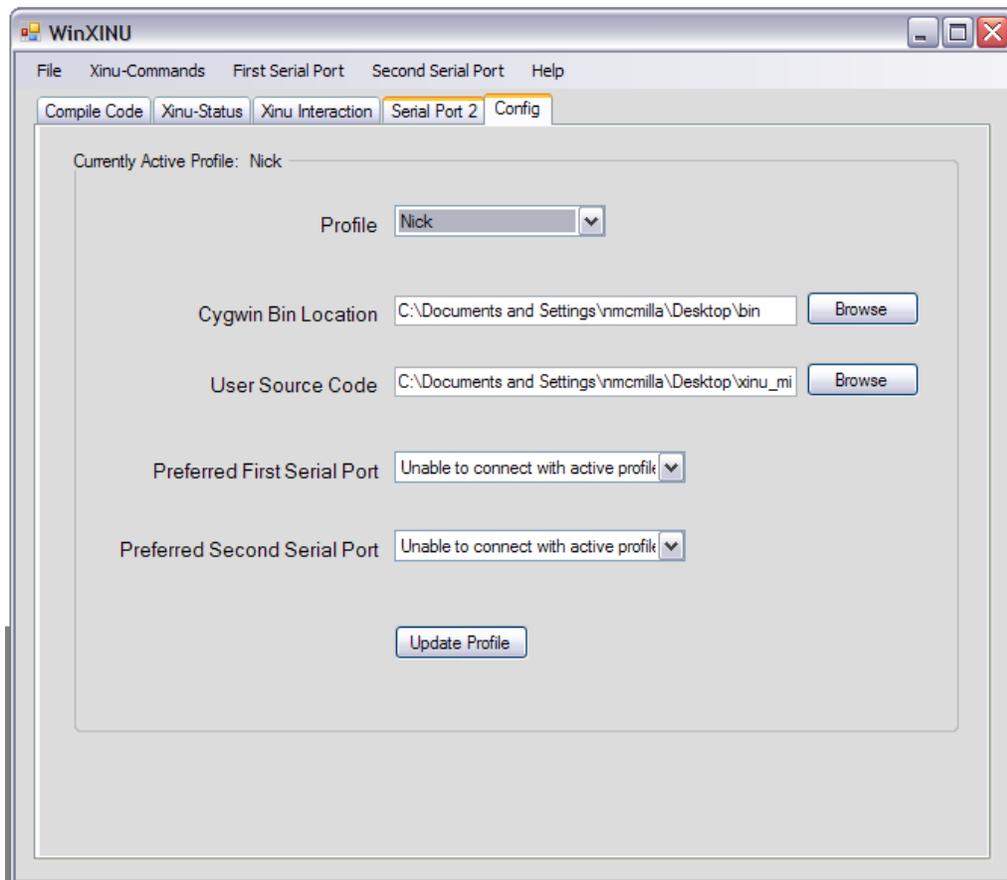
I. Installation Requirements

Windows XP / Vista

Cygwin Linux Emulator

Cygwin must be installed for the program to successfully compile your code to the targeted architecture. The Cygwin installer can be downloaded from its website – <http://www.cygwin.com>. When selecting packages to install, the only one that is needed by WinXINU is the devel package, all of the other packages are not needed by WinXINU and can be installed at the user's discretion. After installing Cygwin, run the WinXINU installer and follow the instructions.

II. Initial Setup



When you run WinXINU for the first time, there are a couple of configuration paths that need to be set. Create a profile by going to File->New Profile. After creating the profile, go to the

'Config' tab and set your cygin bin location and the location of your makefile. Click the update profile button and you are set to go.

III. Settings XML Files

WinXINU uses two XML files to store the user profiles and server settings. The server settings XML file shouldn't be edited unless instructed to do so by your instructor. The WinXINU program needs the server settings file to run, but the user profile one is optional.

IV. Usage

The WinXINU program contains five tabs for compiling your code, getting the status of the backend pool, interacting with the serial ports on the backend, and setting configuration options. The various commands that can be sent to the backend are contained in the Xinu-Commands drop down menu. The first and second serial port drop down menus contain the connect and disconnect functionality. The following chart describes each of the commands:

Command	Description
Send Break	Sends a break character to the backend, allowing for the user to break the code running on the backend
Continue Session	If output from the backend is paused, it will un-pause the output and allow it to continue displaying
Download	Downloads the xinu.boot image to the backend so it can be run. The two options are standard location, which is specified in the config tab, or else the user can browse to a different location
Powercycle	Reboots the router backend
Power On	Turns the backend on
Power Off	Turns the backend off
Connect	Connects the user to an available backend. Get available will select a random backend and connect the user. Specify allows the user to type in a backend name. Get preferred connects the user to their preferred backend

Disconnect	Disconnects the user from the backend – the two available options are to leave the power on or turn it off after disconnecting
Mips-Console	Automates the steps required to boot the router to the xinu.boot image, rather than the firmware O/S

V. Compile Tab

This tab is used for compiling the user's kernel. There are options for make and make clean which operate on the target specified in the user's configuration tab. Any output from the compiler is displayed in the text box – including errors and warnings. Also, there is a checkbox for only displaying errors and warnings from the compiler to make reading their messages easier.

VI. Xinu Status Tab

This tab is for displaying the status of the backend pool. If a user is connected to a backend, this tab will display the username and the length of time that person has been connected. There is a 10 minute grace period during which a user cannot be kicked off a backend, however, after being connected for 10 minutes, the user can be kicked off the backend by another person. This tab displays the connection information for both serial ports of a backend.

VII. Xinu Interaction Tabs

These tabs are for interacting with the O/S running on the backend. They display any output being sent and allow the user to send keystrokes to the running system. Also, if Ctrl+Space Bar is pressed, the output will pause. The output can be resumed and any information sent while paused will be displayed so the user does not miss any important information.

VIII. Config Tab

This tab allows the user to select a couple of configuration options. These include the location of the cygwin binary folder, the location of the user's makefile, and a preferred backend. These settings are stored in an XML file.