GO-HotSwap

VxWorks Quick Start Guide

The following pages will guide you through the process of installing GO-HotSwap and creating your Hot Swappable device driver.

GO-HotSwap is a software suite of tools that adds the necessary software modules required to enable CompactPCI Hot Swap, and provides the tools and development environment to develop the Hot Swappable drivers.

GO-HotSwap supports Windows 2000 \ NT \ 9x \ ME, Linux, Solaris and VxWorks. Check the Jungo web site for updates on new operating systems support.

GO-HotSwap includes Jungo's driver development tools (Jungo's WinDriver), designed to dramatically reduce the time spent on device driver development for peripheral hardware connected through the PCI / Compact PCI / ISA / Serial / Parallel bus. Jungo's WinDriver features a unique cross platform technology: the same Hot Swappable driver written with WinDriver, will run on all supported operating systems. Just compile and run!

For additional information and documentation please see the Jungo web page at: www.jungo.com/resources.html

Four Steps to Developing your Hot Swappable Driver

1. Set Up:

GO-HotSwap development environment should be installed in your host machine (on which Tornado 2 is installed).

(a) Unpack the GO-HotSwap file HSxxxVX.zip - for example:

c:\> unzip - HSxxxVX.zip

This process will install the GO-HotSwap package on your host machine, which includes:

- windrvr.o - The kernel mode element of GO-HotSwap
- windrvr.h - GO-HotSwap and WinDriver API (in GoHotSwap\include\)
- GO-Hot Swap Samples (user mode source code included):
    - GoHotSwap\hotswap\hs_detect

- GoHotSwap\hotswap\hs_reenum
- \GoHotSwap\samples\... includes the following samples: BASIC_IO, INT_IO, PCI_DIAG, PCI_DUMP, PCI_SCAN, PCI_DMA, WDDEBUG, WDREG, ISAPNP_SCAN, SPEAKER, SPEAKER_GUI, CMOS and SHARED

- Utilities
  - \GoHotSwap\util\... - includes the following utilities: ISAPNP_SCAN, PCI_DIAG, PCI_DUMP, PCI_SCAN, WDREG, WDDEBUG
- Documentation
  - GoHotSwap\Docs
- Enhanced support for specific PCI chip-sets
  - GoHotSwap\altera
  - GoHotSwap\amcc
  - GoHotSwap\Galileo
  - GoHotSwap\plx
  - GoHotSwap\v3

2. Using Go-HotSwap with VxWorks

[Note: In x86 only: Make sure MMU is set to basic support ("hardware/memory/MMU/MMU Mode")]

(a) Load Go-HotSwap: download the object file (\GoHotSwap\redist\eval\...\...\windrvr.o) from the WinShell:

=> ld < windrvr.o

(b) Initialize Go-HotSwap from the WinShell:

=> drvrInit

Function returned (return value = 0)

(c) Load and run hs_detect which is a sample detection utility: (\GoHotSwap\hotswap\hs_detect\...\hs_detect.out) from the WindShell:

=>ld < hs_detect.out

(d) Now run the utility from the WinShell:

=> hs_detect_main

(e) Now insert/removal your compact PCI card and watch for messages to appear on the screen.

3. Create your driver

Choose one of the following methods:

(a) Using GO-HotSwap Sample

(i) Start with the pci_diag sample. (GoHotSwap/samples/pci_diag/). This sample contains:

- API for accessing your hardware from the application level
- Application that uses the above API to access your hardware
- Project make-files to compile the sample

(ii) Scan your PCI bus (choose menu option #1) to locate your hardware

(iii) Choose your card (choose menu option #3, and enter your card's VendorID and DeviceID)

(iv) Access your card's memory, IO and interrupts through the menu options

(v) Use the source code (pci_diag.c and pci_diag.h) as a template for your driver

(b) Using Windows Machine as Development Platform

Generate code for your specific device with the Go-HotSwap DriverWizard, on a Windows machine.

(3) Write your own Driver without using Jungo's Tools.

GO-HotSwap provides the software modules to supports device drivers, which were written with out Hot Swap implementation.

4. Add Hot Swap Capabilities to your Driver

Add the GO-HotSwap and WinDriver API to your code in order to register your driver or application to receive notifications about Hot Swap events (insertion/removal of your cPCI board) and to perform re-enumeration.

Please refer to GO-HotSwap user's guide and to WinDriver user's guide for information regarding the API. You can also refer to the utility HS_Detect and HS_Reenum (.../GoHotSwap/hotswap/hs_detect/... /hs_detect.out and .../GoHotSwap/hotswap/hs_reenum/... /hs_reenum.out - source code included) as sample for implementation of the above API.

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