GO Hot Swap

<u>Quick Start Guide - Linux</u>

When you finish following the instructions on the next 3 pages, you will have a skeleton code for a fully CompactPCI hot-swappable driver.

Your driver will compile and run on Windows 2000, NT, NT Embedded, 9x, CE, Linux, Solaris and VxWorks and on all CompactPCI systems.

Who should use *GO Hot-Swap*?

1. **Hardware vendors** – Use the *GO Hot-Swap* Development Toolkit to develop fully "hot swappable" CompactPCI device drivers from scratch. Includes advanced graphical tools and Wizards for hardware diagnostics and automatic driver code generation/debugging.

2. **System integrators** – Use the *GO Hot-Swap* Agent to add Hot-Swap capabilities to CompactPCI hardware, without any change to its existing PCI drivers.

3. **System board vendors / OS vendors** – Use the *GO Hot-Swap* Extender as an OS extension to immediately add Hot-Swap capabilities under any OS.

Which operating systems does *GO Hot-Swap* support?

1. **Multi Platform –** The *GO Hot-Swap* OS agent/extension supports Windows 2000, NT, NT Embedded, 9x, CE, Linux, Solaris, and VxWorks. Check the Jungo web site for updates on new operating systems support.

2. **Cross platform -** Same Hot-Swap driver written with the *GO Hot-Swap* development toolkit runs on Windows 2000, NT, NT Embedded, 9x, CE, Linux, Solaris, and VxWorks. To learn how *GO Hot-Swap* does this, see the *GO Hot-Swap* technical white paper.

Where can I get more in-depth information?
For additional information and white papers please see the Jungo web page at:
http://www.jungo.com/manuals.html

How can I try the GO Hot-Swap?
For a free 30 day evaluation of *GO Hot-Swap*, please contact us at: hotswap@jungo.com.

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4 Steps to developing your "Hot Swappable" Driver

1 Set Up:

Install GOHS440LN.tgz. This will install the following:

a) The kernel mode element of the "*GO Hot-Swap*" engine: windrvr.o in /lib/modules/misc/

b) The "*GO Hot-Swap*" API and the driver development toolkit API:
   GoHotSwap/include/windrvr.h

c) Sample applications that demonstrate the use of the "*GO Hot-Swap*" API (user mode source code included):
   i) GoHotSwap/hotswap/hs_detect
   ii) GoHotSwap/hotswap/hs_activate

1) Create a directory /usr/bin/GoHotSwap
   /usr/bin> mkdir GoHotSwap

2) Make GoHotSwap your active directory
   /usr/bin> cd GoHotSwap

3) **Installing from a GoHotSwap CD** - Extract the file GOHS440LN.tgz
   /usr/bin/GoHotSwap > tar xvzf /mnt/cdrom/LINUX/GOHS440LN.tgz

   Installing from a downloaded file - Extract the file GOHS440LN.tgz
   /usr/bin/GoHotSwap > tar xvzf / GOHS440LN.tgz

4) Install GoHotSwap
   /usr/bin/GoHotSwap > make install

2 Create your driver

Choose one of the following methods:

1) Start with the pci_diag sample. (GoHotSwap/samples/pci_diag/). This sample contains:
   a) API for accessing your hardware from the application level.
   b) Application that uses the above API to access your hardware.
   c) Project make files to compile the sample

   - Scan your PCI bus (choose menu option #1) to locate your hardware.
   - Choose your card (choose menu option #3, and enter your card's VendorID and DeviceID).
   - Access your card's memory, IO and interrupts through the menu options.
   - Use the source code (pci_diag.c and pci_diag.h) as a template for your driver.

2) Use a Windows machine to generate code for your specific device from the Go HotSwap Driver Wizard (the Driver Wizard will be soon available on a Linux machine).

3) Write your own driver without using Jungo's tools.

3 Add Hot-Swap capabilities to your driver

Add the following functions to your code to detect and act upon insertion/removal of Compact PCI devices:
WD_WatchPciStart(), WD_WatchPciStop() – Starts/stops the Hot-Swap engine.

WD_HsEventRegister(),WD_HsEventUnregister() – Register/unregister to accept notification from the Hot-Swap engine upon insertion/removal of devices.

WD_HsEventPull() – Retrieve the data formed upon insertion/removal (vendor/device ID, Physical location and type of action).

You can refer to the HotSwap Detect and HotSwap Activate samples (source code included) as examples for the above functions.

4 Define actions upon hot insertion/removal

1) Edit the hs_conf.rul (GoHotSwap/hotswap/hs_activate/LINUX/hs_conf.rul).

   This file contains the database of the actions to be carried out upon insertion/removal of each device type. You can alter this file according to your requirements.

2) Run the HotSwap Activate utility (GoHotSwap/hotswap/hs_activate/LINUX/hs_activate).

   This utility will activate the Go HotSwap engine. On each insertion/Removal of a Compact PCI card it will perform the actions defined in hs_conf.rul

3) You may also activate the HotSwap Detect sample from /GoHotSwap/hotswap/hs_detect/LINUX/hs_detect

   The HotSwap Detect will prompt on each insertion/removal of a Compact PCI device and display its vendor/device ID and physical location.

That's it – If you have anymore questions, please contact us at:

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