

Development of the Linux Redundant Host (RH) for Compact PCI systems

Client

Pigeon Point Systems (“PPS”) is a privately held software and hardware development company based in the United States. It focuses on products and services supporting the adoption of open modular platforms to replace proprietary architectures, with a primary focus on the telecommunications market and PICMG standards. PPS provides products and services that enable cost-effective management of standards-based platforms including AdvancedTCA, AdvancedMC (AMC), MicroTCA, CompactTCA and CompactPCI and is a leader in the definition of those platforms. PPS serves such industry leaders as Motorola Computer Group, Intel Corporation, Force Computers, Microsoft Corporation, Siemens Mobile, Texas Instruments, along with many others.

Scope

Development of the Redundant Host (RH) support for Linux. RH support is a level of Compact PCI High Availability system that allows replacement of the hosts’ managing peripheral CompactPCI boards without changing the state of the boards.

Statistics

- **Team size:** up to 4 people in Auriga
- **Client relationship duration:** 7 years

Objectives

Full life-cycle development and maintenance of the complex software, including:

- failure recovery
- inter-host communication and synchronization
- switch-over strategies
- Results
- Final version of RH layer has the following features:

- it has been built on top of the PPS HSK and Intel IPMI management layer—and due to the nature of HA it is deeply integrated with the Linux init and PCI kernel facilities
- it has a host detection facility and allows switching peripheral boards from Active host to Backup in case of failure
- it provides RH API, which provides basic functions to control boards switchover behavior and fault tolerance policies
- it provides limited control on boards and hosts (like reset, power on/off, get healthy status and etc
- it is able to imitate the presence of peripheral boards on Backup host (fake copy of the boards population from the Active host) and thus it allows to start drivers on this boards simultaneously after any general failover on Active host
- it is integrated into Intel Net Structure SDK
- it is fully tested with Intel Dialogic System Release 6.0 for Linux OS software

Tools and Technologies

- Red Hat Linux Enterprise Edition, Advanced Server 3.0 Update 4
- PCI, CompactPCI
- Intelligent Platform Management Interface (IPMI).

Customer’s Quote

“The Auriga engineering teams have been highly competent, effective and disciplined.”

Mark Overgaard
President