# 6000 Series System Maintenance

**N6800**

## 1.0 Course Description

The Night Hawk HN6x00 series is a family of real-time, multiprocessing, super-microcomputer based on the PowerPC 604 microprocessor. Consisting of the two processor HN6200 and the eight processor HN6800, these systems provide the customer with off-the-shelf technology coupled with industry-standard interfaces to satisfy their real-time processing demands. In order to effectively perform system installation/configuration, preventive maintenance and initial corrective maintenance procedures, support personnel require some knowledge of the HN6800 system hardware and software. The primary course objective of the HN6800 System Maintenance course is to provide the student with the necessary instruction and hands-on experience to achieve this level of knowledge.

This course is designed to provide the necessary instruction required for line replaceable unit (LRU) level corrective maintenance of any Night Hawk HN6800 computer system. Major course topics include system physical description, a detailed console command set description, and in-depth functional overviews of all major system components. Installation procedures for both hardware and PowerMAXOS software are presented, and the HN6800 diagnostic products are described in full. Disaster recovery is presented to teach proper system backup and restore methods. System upgrades are also discussed, with procedures for installing and configuring additional system modules into an existing HN6800 computer system.

## 2.0 Intended Audience

The HN6800 System Maintenance course is designed for those support personnel who are responsible for installation, configuration, corrective, restorative and corrective maintenance to the LRU level of the HN6800 computer system. This includes Customer Support personnel and customer engineers responsible for the maintenance of HN6x00 series computer systems.

## 3.0 Course Prerequisites

UNIX Software Overview (N1900) or comparable UNIX users/administration experience is required prior to attending this course.

# 4.0 Course Objectives

Upon successful completion of this course, students are able to:

- Perform various system operational procedures, including system power-up and initialization, boot procedures for PowerMAXOS, and both standalone and online diagnostic execution.
- Utilize console commands to perform system initialization, booting, and initial fault analysis.
- Boot PowerMAX OS into both single and multi-user modes of operation, and define the purposes of each mode.
- Execute both standalone diagnostics and online exercisers, to both verify system operation, and to isolate system malfunctions to the failing component.
- Define the physical design of the Night Hawk computer system, including system rack breakdown, major assembly locations, and peripheral device breakdowns. Also identify both intra-rack, and external cabling requirements for external devices.
- List all modules required by the Night Hawk computer system, and provide brief functional descriptions of each.
- Define the components which make up the disc, tape, and communications subsystems, and provide a brief functional description of each component.
- Monitor system error logs to detect system malfunctions, and interpret error indicators/messages to identify the most probable cause of failure.
- Perform a complete system backup, then restore that backup onto a replacement master disk drive.
- Perform corrective maintenance to the LRU level on the Night Hawk computer system and associated peripherals.

## 5.0 Course Outline

I. HN6800 System Overview

II. Physical Description

III. Operational Description

- A. Front Panel Operation
- B. Console Command Overview

IV. System Start-up

- A. System Power-on Process
- B. Console Initialization Operations
- C. PowerMAXOS Booting Operations

V. Diagnostics

- A. Micro-Diagnostics
- B. Standalone Diagnostics
- C. Online Exercisers

VI. PowerMAXOS Interface

- A. PowerMAXOS Initialization
- B. PowerMAXOS Configuration
- C. PowerMAXOS Device Configuration
- D. PowerMAXOS Backup/Restore procedures

## 6.0 Lab Overview

Students practice system operational procedures, diagnostic execution, and basic trouble-shooting on dedicated Night Hawk training systems. All laboratory sessions are designed to allow the student to develop logical troubleshooting techniques