Terry T. Haas

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OBJECTIVE Senior Firmware Development Engineer

EDUCATION **BSET in Control Systems** - University of Houston
Curriculum included microprocessor hardware, software (Assembly, FORTRAN, and C languages), instrumentation, and control systems classes.

AAS degree in Electronics Technology
GPA 3.93 (4.0 = A)
Texas State Technical Institute
Waco, Texas
Curriculum included AC/DC circuit analysis, digital and analog circuit theory, and microprocessor architecture. Studied Intel processor instruction set. Heavy emphasis on hardware interface techniques

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HONORS Campus President's Honor Roll -TSTI, Dean's List - University of Houston

INVENTION DISCLOSURES **Three invention disclosures related to USB BIOS code algorithms.**
One invention disclosure related to BIOS flash recovery.

HPE Patent **Booting a server using a remote read-only memory image**
Filed Jan 30, 2012 • Patent issuer and number US PCT/US2012/023113

WORK EXPERIENCE

Senior Firmware Engineer 3/2008 – Present, Hewlett Packard Enterprise, Industry Standard Server Division
I provide firmware, software, and BIOS code related to the HP Intelligent Lights Out (iLO) management controller. Just finished work on a new proprietary interface for HP iLO/BIOS. Duties include reading and writing specifications for new firmware and BIOS features incorporated into latest HP servers. I am familiar with Greenhills Multi-IDE, Integrity RTOS, and debugging using JTAG, network, or serial port. Also, I provide sample interface code to software engineering teams. Currently I am supporting and adding new features to iLO 5 embedded media solutions (NAND memory).

Senior BIOS Engineer 3/2006 – 3/2008, Hewlett-Packard Company, Industry Standard Server Division
I provided primary support for OHCI, UHCI, and EHCI legacy USB BIOS code for all Hewlett-Packard PC server products. Found and fixed 30+ major bugs in the HP server USB BIOS code. I worked on new development to support multiple EHCI controllers found in the latest Intel/AMD server chipsets. I provided BIOS support for HP DL365.

Systems Software/Hardware Engineer 12/2004 – 3/2006, Hewlett-Packard Company, TCE Mobile 3LS

Job duties included providing escalation support for HP notebook customer BIOS issues, new Windows/DOS application development using Borland C++ and Visual Studio .Net 2003, and updating existing NT/W2K/XP driver code to support new functionality. I provided customers with BIOS fixes (BIOS bootleg softpaqs), DOS and Windows utilities, and software workarounds. I met with the notebook BIOS team bi-weekly to discuss current notebook BIOS issues. Here are examples of software that I have written:
SBA/IBA SMBUS battery utilities to read/write to hardware registers and diagnose battery failures (also designed a charge/discharge test fixture for these batteries).
hpqDock.exe – detects whether a notebook is docked and detects type of docking station (saves dock info to WMI instance and a log file).
PanelId.exe/GetEdid.exe – utilities used to extract the EDID string from notebook LCD panel
OmniBookSerial.exe / kbfreeio.sys – This Windows utility and driver allow access to the notebook keyboard controller to reprogram the serial number without having to boot to DOS.
Wmitest.exe – sample C# .Net code that demonstrates how to properly invoke HP BIOS WMI method in the latest notebooks.
Desktop management DLL – Modified the DLL code to make 16-bit BIOS calls to HP and video BIOS from a Windows application. This DLL was used to extract data directly from the LCD panel and SBA battery registers.
I provided BIOS code to workaround bugs in the HP notebook BIOS pertaining to BIOS Setup, USB, ACPI, and PCI auto-configuration BIOS issues.

Senior BIOS Engineer 5/2002 – 12/2004, Hewlett-Packard Company, Business PC Division
I wrote the initial version of the USB keyboard emulation code for chipsets with OHCI USB controllers. I ported existing USB storage, USB hub, USB keyboard, and USB mouse code to work with Nvidia and Ali chipsets. I worked on all non-Intel projects and supported debug and problem resolution on all of those projects. I modified existing driver interface code from another programming team to create a BIOS Setup application with dynamic menus that allows users to modify BIOS configuration data without rebooting into F10 BIOS Setup.

Senior BIOS Engineer 5/97 – 5/2002, COMPAQ Computer Corp., Desktop/Workstation Division
Job duties included code development for a dual processor workstation using the Foster CPU, Colusa, ICH2, P64hub, and SuperIO. Familiar with the PCI IRQ routing table, MPS, SMI, and fan throttling code. Also, I am responsible for the flash code for the Intel FWH. Familiar with PCI auto-configuration and ROM architecture. Here are a few of the workstation products that I've worked on: Compaq Professional Workstation 5100, SP700, AP200, and AP550(Rdram), SP750(Rdram). Worked as the lead BIOS engineer on the Presario 6000/8000 (also branded D315 business desktop) that boasts the NForce Crush11 chipset (with integrated GeoForce2 AGP video) and supports the AMD Athlon XP CPU. Job duties for the 6000/8000/D315 project include; porting existing core BIOS code to work with new chipset and AMD CPU's, VSS/MKS source control maintenance, ROM architecture layout design and build files to accommodate Nvidia's special requirements, selection of proper flash device(s), interfacing with hardware engineers for necessary board changes, and assigning programming tasks to other members of the BIOS team.

Electrical Engineer 8/95 – 5/97, COMPAQ Computer Corp., PC Server Division
Job duties included writing Verilog stimulus for ASIC simulation. Have written several utilities in C, assembly, and PERL for hardware verification and debug. Have modified NT kernel mode

drivers using NTDDK and have written Win32 applications that can access hardware devices (PCI and EISA). I have written code that is currently still being used throughout HP/Compaq. Examples: I2C/SMBus utilities, various TSR's, NT drivers, and test code.

Applications Engineer 1/94 - 8/95, COMPAQ Computer Corp., CAE Dept.
Job duties included technical support for Powerview/Viewlogic software and all associated utilities, writing new utilities in C, Perl, UNIX shell script, Viewscript, and maintaining existing utilities such as netlisters, BOM applications, new software releases, etc. Many of the utilities and scripts that I wrote have been ported over to Windows and are still being used today at HP.

Senior Debug/Engineering Technician 5/89 - 12/93, COMPAQ Computer
I worked as a debug technician in the Houston Compaq factory (CCM4) and debugged Compaq desktops, portables, and PC servers based on Intel CPU's.