Remote Management Options
on HP Z Workstations

The HP Z200, Z400, Z600, and Z800 Workstations provide new options and levels of remote management capabilities through the support of the DASH 1.1 management standard (with Broadcom NetXtreme Gigabit Ethernet Plus NIC) and, on some models, Intel® AMT technology. These new capabilities include full remote power on/off control, Out-Of-Band (OOB) management, USB media redirection, text console redirection and sensor information.

Windows®. Life without Walls™. HP recommends Windows 7.

All HP Workstation models (except the HP Z200) support the ASF 2.0 standard via their on-board LAN interface. These manageability solutions are supported on Microsoft® Windows® operating systems. For Linux manageability support, contact your HP representative.

The table below illustrates the standards supported by the most recent HP Workstations.

HP XW8600, 6600, 4600	LOM*	ASF 2.0
HP Z800, 600, 400	LOM*	ASF 2.0
	Broadcom NIC (FS215AA)	DASH 1.1
HP Z200	LOM*	AMT 6.0 and DASH 1.1
	Broadcom NIC (FS215AA)	DASH 1.1

*LOM indicates LAN on motherboard.

What is DASH ?
DASH (Desktop and mobile Architecture for System Hardware) is an initiative to define standards and processes for over-the-wire management of desktops, workstations, and laptops. It is defined by the Distributed Management Task Force (DMTF), an industry organization leading the development of management standards.

The DASH specification currently defines two versions: 1.0 and 1.1. The latter provides additional features like USB media redirection or text console redirection and is available on HP Z Workstations when using the Broadcom NetXtreme Gigabit Ethernet Plus LAN card. This card includes a Management Controller that communicates with the system via the System Management Bus (SMBus), and a specific USB cable installed as a factory integrated option or available in the HP Accessory Kit.
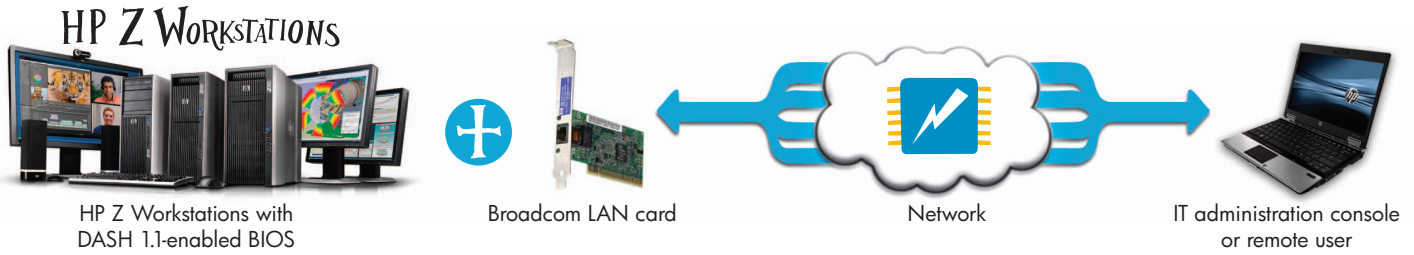
By using the auxiliary power present when the system is plugged into an AC outlet, the Management Controller runs independent from the system's state and can monitor LAN traffic for DASH or ASF requests, and perform OOB tasks like power control, inventory, reporting system state, etc. Once the system is powered on, additional services like remoting the BIOS post screen, event alerts, and alternate boot paths become available.

DASH 1.1 SETUP

HP Z WORKSTATIONS

HP Z Workstations with
DASH 1.1-enabled BIOS

Broadcom LAN card

Network

IT administration console
or remote user

DASH 1.1 high-level summary:
- OOB capabilities (system can be managed in the On, Sleep, Hibernate and Off power states)
- Boot redirection (remote USB drive/key: USB media redirection, bootable ISO image hosted on http server, PXE boot)
- Text redirection (Serial-On-LAN: redirecting the BIOS screen, or DOS or Linux command shells, for remote viewing and keyboard control)
- Full remote power control (graceful and forced OS shutdowns, button power-on)
- Event alerting
- Event logging
- Hardware and software inventory

What is Intel® AMT ?

Intel AMT (Intel Active Management Technology) is an Intel-developed technology unique to Intel chipsets. The current version supported on the HP Z200 is Intel AMT6.0. Intel AMT is part of vPro and Intel Standard Manageability and provides compatibility with the DASH standard (Intel AMT 6.0 and above). The HP Z200 also supports Intel VT-x, VT-d, and TXT, which are part of the requirement for vPro branding. However, the HP Z200 does not support the vPro brand itself since at the present time Intel does not offer vPro branding on workstation platforms. Intel AMT is supported within the HP Z200's internal circuitry and no additional add-in card is required. Similar to DASH, Intel AMT's dedicated Management Engine stays up on auxiliary power independent of the system state as long as the system is plugged into AC power and can monitor network traffic for special management commands via an independent path to the LAN port. When booted to an OS Intel's AMT drivers provide additional runtime management functionality.

With Intel AMT customers can utilize many of the same features listed in the high level summary above for DASH 1.1 to remotely manage their workstations in order to reduce IT costs and minimize the down time of the systems being managed. Both DASH and Intel AMT can also be used to cost effectively control systems in embedded applications.

AMT SETUP
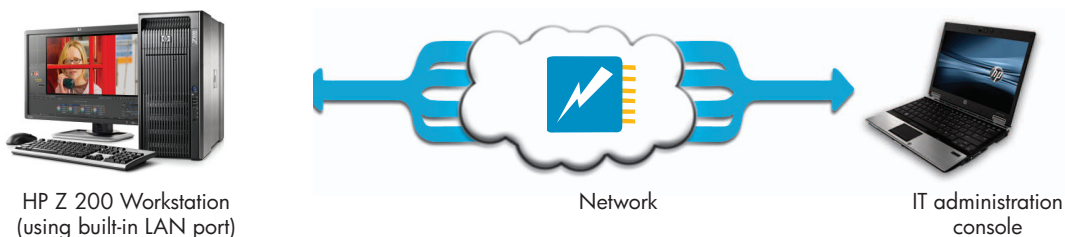
HP Z 200 Workstation
(using built-in LAN port)

Network

IT administration
console

The following table shows some of the differences between the various standard manageability solutions offered on HP Workstations.

FEATURE	ASF 2.0	BROADCOM NIC DASH 1.1	HP Z200 AMT 6.0/DASH 1.1
Remote power on/off and reset	●	●	●
System alerts	●	●	●
Hardware and software inventory		●	●
Text console redirection		●	●
USB redirection		●	●
Remote firmware update		●	
Remotely change BIOS settings		●	
Remote alerts outside of firewall			●
Out-Of-Band web server		●	●
OOB IPv6 support		●	
Network defense filters		●	●

The Broadcom NetXtreme Gigabit Ethernet Plus LAN card supports some of the optional DASH 1.1 profiles. See the "Implementing Out-of-Band Desktop Management With DASH" whitepaper at hp.com for details.

Solutions

HP both developed and enabled a large set of tools and applications to take advantage of DASH and Intel AMT on HP Z Workstations and HP Business PCs. The solutions available cover a large spectrum of customer profiles, from the single professional user to large enterprises, and a large set of needs, from global turn-key solutions to programmable interfaces for custom applications.

HP Software Solutions

- HP Client Automation Starter, Standard, and Enterprise

Designed for medium and large enterprises that require automated solutions for total system management of a large number of systems, from the hardware to the software level. Both HP Software Solutions and Symantec-Altiris now support DASH and Intel® AMT on HP Z Workstations and Business PCs
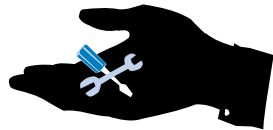
Symantec Solutions

- Altiris Client Management Suite
- Altiris Out-Of-Band Management Solution
- Altiris Real-Time System Manager Solution
- HP Client Manager for Altiris

HP Out-Of-Band Management Console

(now integrated into HP Client Automation 7.5 and greater)

Web-based, remote management console that provides DASH and Intel AMT OOB management capabilities regardless of system power or OS state

HP Client Manager Interface

With HP CMI users can manage HP systems through their own IT Management solution, by using scripts or API interfaces. HP CMI is based on industry standards (WMI, WBEM, SMBIOS, ACPI) and includes support for DASH and Intel AMT capabilities

HP Client Management Web View

Web browser-based interface for basic remote system management, enabled in the Broadcom LAN card, and accessible from virtually any web browser by just entering the card's IP address and logging in. It provides OOB DASH capabilities at the tip of a simple web browser without special infrastructure or software requirements.

More Information

- Enabling DASH on HP Workstations: see the instructions in the HP Accessory Kit for the Broadcom NetXtreme Gigabit Ethernet Plus LAN card, or download that card's white paper from hp.com
- HP Management central resource (information, downloads, papers): www.hp.com/go/easydeploy
- DMTF web site (DASH spec, papers, DASH 1.1 features and benefits): www.dmtf.org/standards/mgmt/dash/
- Intel AMT at the Intel website www.intel.com/technology/platform-technology/intel-amt/
- For Intel AMT setup on the HP Z200 Workstation download the "Intel AMT Setup and Configuration for the HP Z200 Workstation with Intel AMT Technology" white paper from hp.com