



Implementing Desktop Management with DASH on HP Desktop Systems with an AMD Chipset

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Executive summary

This white paper provides instructions for enabling the Distributed Management Task Force (DMTF) Desktop and Mobile Architecture for System Hardware (DASH) on supported HP desktops. This paper also covers the different tools available to take the advantage of DASH. This paper describes the DASH capabilities available on HP desktops with an AMD chipset and Broadcom Ethernet.

Target audience: This white paper is intended for IT staff.

DASH for HP

Development of DASH specifications is an ongoing collaborative effort between computer system manufacturers, component and peripheral suppliers, and management software vendors. HP has played an important role in fostering the DASH ecosystem with our partners and suppliers and in promoting both DASH-capable computers and management software that utilizes the DASH standard.

DASH is an industry standard that allows system and network administrators to perform essential management tasks on business-class desktops, notebooks, and workstations from HP, regardless of their power state or operating system state. DASH-enabled systems achieve smarter, more efficient control of your business. HP has shipped millions of DASH-enabled business-class desktops and workstations to customers. Current HP desktops are certified for DASH 1.0 specification and have implemented most of the DASH 1.1 profiles too.

The DASH standards are designed to assist in the remote management of common desktop infrastructure tasks, such as deploying new operating systems; monitoring computer system health, power control, and power state; and collecting asset inventory. As new hardware technologies are introduced or additional requirements are placed on the IT infrastructure, DASH continues to evolve to include new functions.

DASH has been designed to solve many of the pitfalls and constraints of previous management standards by leveraging well-proven technologies from the Service Oriented Architecture domain; advancements in security standards; and extensive modeling of management components, configuration data, and relationships first introduced in the server management domain.

DASH is a web services-based management protocol and relies on security and network routing concepts familiar to website and web services administrators.

Key features

- Service available without requiring an installed operating system or a specific power state
- Interoperability between various DASH-capable device implementations and management consoles
- Descriptive data model allowing for the discovery of iterative specification
- Updates (new profiles) and vendor-specific extensions (custom profiles)
- Well-understood transport level security (HTTPS basic and digest authentication models with optional TLS client/server certificate support)
- Secured setup with support for multiple DASH users and multiple access roles (such as administrator, operator, auditor)
- DASH ecosystem can coexist with legacy Alert Standard Format (ASF) infrastructure
- Control boot sources can redirect boot to redirected USB sessions
- Ability to forward POST logs to specified destination
- Ability to monitor and inventory the hardware of the managed clients

Management profiles

A management profile is a specification that defines a normative set of behaviors and characteristics for addressing a particular management domain. A profile consists of the following information:

- A data model, representing the problem domain, that consists of objects, properties, and methods exposed by the profile
- Use cases to be addressed by the profile
- Steps required to traverse the data model and derive results

When a substantive block of new profiles becomes available, or fundamental changes are introduced to the DASH ecosystem, the *DASH Implementation Requirements* document is updated to reflect a new version of the standard. Profiles are continually being developed by the DMTF, and DASH is designed to support them as they become available.

For more information about DASH profiles, go to <http://www.dmtf.org/standards/profiles/>.

System requirements and prerequisites

For HP DASH-supported desktops, you must have the latest system BIOS, Broadcom network firmware, and associated Broadcom network driver and agent installed on your platforms.

Supported desktops

- HP Compaq 6005
- HP Compaq 6305
- HP EliteDesk/EliteOne 705

Minimum version of driver and firmware required

	Windows® 8			Windows 7			Windows XP		
Model	NIC DASH FW	System BIOS	NIC Driver	NIC DASH FW	System BIOS	NIC Driver	NIC DASH FW	System BIOS	NIC Driver
HP Compaq 6005	N/A	N/A	N/A	1.50.0.1	1.17	15.0.4.2	1.50.0.1	1.17	15.0.4.2
HP Compaq 6305	1.54.1.0	2.57	16.2.0.4	1.54.1.0	2.57	16.2.0.4	1.54.1.0	2.57	15.4.4.1
HP EliteDesk 705 HP EliteOne 705	3.03.0.2	-	16.6.4.1	3.03.0.2	-	16.6.4.1	3.03.0.2	-	16.6.4.1

Supported profiles on HP desktops

The following table outlines the DASH profile support that is available with the Broadcom NetXtreme™ Gigabit Ethernet Plus controller on supported HP desktops.

Feature	HP 6005	HP 6305	HP 705
Alert Standard Format (ASF 2.0)	Y	Y	Y
DASH implementation requirements	Y	Y	Y
System inventory and control	Y	Y	Y
Boot control	Y	Y	Y
User account management	Y	Y	Y
BIOS management	N	N	Y
Offline mailboxes/Opaque management data	Y	Y	Y
Indications	Y	Y	Y
In-band NIC management	Y	Y	Y
Sensors	Y	Y	Y
Text console redirection (+Telnet and SSHv2)	Y	Y	Y
Broadcom-defined SMBIOS Extensions for sensors	Y	Y	Y
MCTP/SMBus	Y (Shared Memory)	Y (Shared Memory)	Y
PLDM	Y	Y	Y
PLDM for SMBIOS Data Transfer	Y	Y	Y
PLDM for BIOS Control and Configuration	Y	Y	Y
PLDM Numeric Sensors	Y	Y	Y
WMI provider for Ethernet port & software inventory	Y	Y	Y
WMI provider for user account management	Y	Y	Y
WMI provider for firmware update	Y	Y	Y
USB redirection (storage media; read only)	Y	Y	Y
Power state management or power control	Y	Y	Y
Out-of-band firmware update	N	N	Y (nvram space limitation might be applicable)
Event logging	Y	Y	Y
Record log audit or security log	Y	Y	Y
WMI provider for opaque management data	Y	Y	Y
PLDM Platform Event Messages	Y	Y	Y
Service processor	N	N	Y
Physical computer system view	N	N	Y

Using DASH functions on HP desktops

Typically, HP does not ship desktops in a predefined management mode, unless the products are ordered through a custom configuration service where you can specify various parameters supporting your infrastructure and deployment model. DASH must be enabled on HP desktops.

Ensure you have the latest system BIOS, Broadcom network firmware, and associated Broadcom network driver and agent for your installed platforms. HP highly recommends that you set a BIOS administrator password to prevent unauthorized access to system BIOS configuration options (see [Setting a BIOS administrator password](#)).

For instructions on enabling DASH where you have local physical access to the system to be configured, see [Enabling DASH management functions using Computer Setup](#) and [Enabling management functions using BACS](#). DASH can be enabled and configured in an automatable fashion via Windows Management Instrumentation (WMI). HP BIOS Configuration Utility (BCU) can be used to change BIOS settings, and scripts provided with Broadcom Advance Control Suite (BACS) can enable DASH.

HP works closely with management console vendors and partners to ensure that an ecosystem of supporting products is available to help you realize the full potential of DASH in your environment.

Some of the different consoles and software currently available are listed as follows. For more details, go to the vendor's website (see [For more information](#)).

- Persistent Radia Client Automation
- AMD DASH Plug-in for Microsoft Systems Center 2007
- Broadcom True Manage™
- AMD Management Console

Setting a BIOS administrator password

You can set a BIOS administrator password through the Hewlett-Packard Setup Utility **Security** tab, HP System Software Manager (SSM), or BCU. For more information about BCU and SSM, go to www.hp.com/go/clientmanagement.



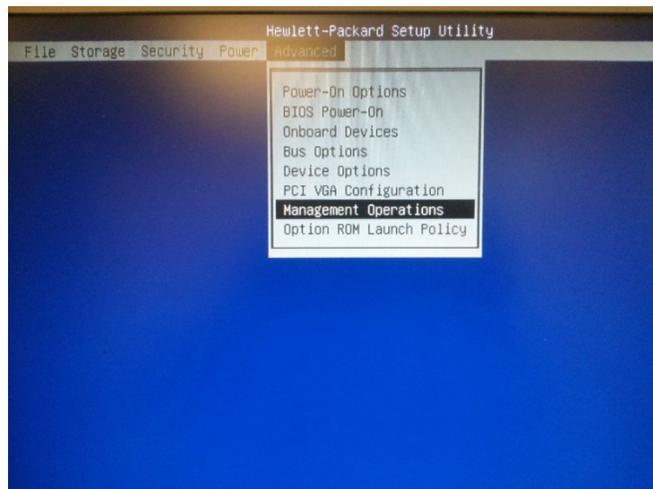
Enabling DASH management functions using Computer Setup

Enabling DASH management functions using the BIOS Setup menu

To enable DASH management functions through the BIOS Setup menu on the HP Compaq Pro 6305 MT:

1. Boot the system from a cold boot state.
2. As soon as the system shows the HP BIOS splash screen, press **F10** to enter the BIOS.
3. Using the arrow keys, navigate to the **Advanced** tab at the top of the screen.

4. Scroll down to select **Management Operations**.



5. Press **Enter**. A new window appears.



6. Ensure that the properties are set your system DASH requirements, according to your system documents. The standard setup is DASH Support **Enabled**, DASH Console Redirection **Enabled**, DASH Terminal Type **VT100**, ASF BIOS Mode **ON**, and ASF WatchDog Time **Disabled**.
7. Press **F10** to save the settings. Navigate to the **File** tab, select **Save Changes**, and then select **Exit**.

Enabling DASH management functions using BCU

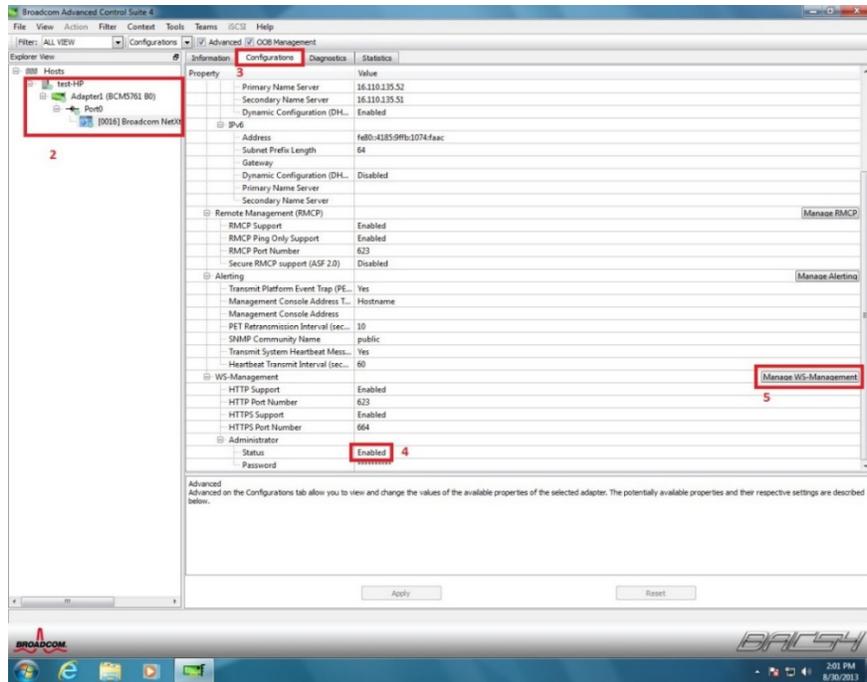
You can enable the DASH management functions in the BIOS using BCU. For more information, go to www.hp.com/go/clientmanagement.

Enabling management functions using BACS

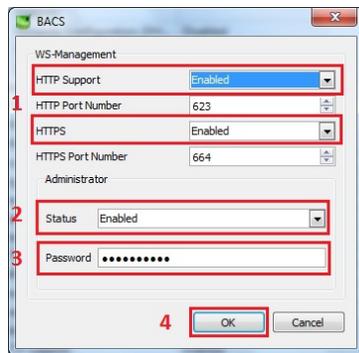
Manageability features such as DASH and ASF are disabled by default on the Broadcom NetXtreme™ Gigabit Ethernet Plus network adapter. There are configuration tools available to enable DASH on the Broadcom NetXtreme™ Gigabit Ethernet Plus network adapter. Enabling DASH in this manner is an alternative to WMI deployment methods, and requires that the Broadcom NetXtreme™ Gigabit Ethernet Plus network adapter is set as the primary management device within the system BIOS to function properly. BACS is included in the NIC Driver Softpaq released on the Driver Download page on the HP Support website.

1. Launch BACS. This application must be run with elevated privileges.
2. Select the **Information** tab. Browse to **ASIC** and **Firmware of 5761**. Select the **Broadcom NetXtreme™ Gigabit Ethernet Plus** network adapter.

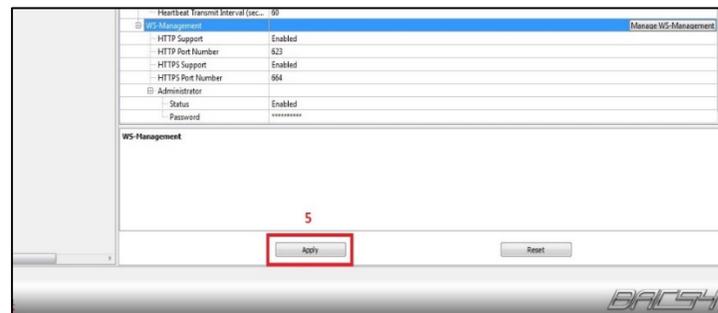
3. Select the **Configuration** tab. Expand the **WS-Management** list to determine whether DASH is enabled. By default, DASH is disabled. Click the **Manage WS-Management** button to open a new window.



4. In the WS-Management window, enable both **HTTP** and **HTTPS**.
5. Under Status, select **Enabled**.
6. In the password box, enter your chosen password.
7. Press **OK** to save these settings and close the window.



8. Press the Apply button at the bottom of the main BACS 4 screen to apply the settings. A dialog box displays a note that the network connection will be lost as the settings are saved. This is normal.



Note

BACS is released with the Broadcom NIC Drivers SoftPak and can be found on the Download Drivers page on the HP Support website. It can also be downloaded from Broadcom’s website.

For more information

For more information about DASH, go to the DMTF Learning Center at <http://www.dmtf.org/education/>.

For more information about DMTF, go to <http://dmtf.org/standards/dash>.

For more information about Broadcom Windows Management Applications, go to http://www.broadcom.com/support/ethernet_nic/management_applications.php.

For more information about AMD Tools for DMTF DASH, go to <http://developer.amd.com/tools-and-sdks/cpu-development/tools-for-dmtf-dash/>.

For more information about Essential Client Management with DMTF DASH, go to http://www.amd.com/Documents/44474B_DASH_1_0.pdf.

For more information about Persistent Client Automation, go to <http://www.persistent.com/persistent-IP/radia-client-automation>.

For more information about HP Client Management Solutions, go to <http://www.hp.com/go/clientmanagement>.

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