



# Implementing Out-Of-Band PC Management with DASH on HP Notebook Systems with AMD Chipset

Commercial Managed IT

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# Executive summary

This white paper provides instructions for enabling the DMTF DASH on supported HP systems. This paper also talks about different plugins and tools available to take the advantage of DASH.

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

## Introduction

DMTF standard - Desktop and mobile Architecture for System Hardware (DASH) defines a set of interoperability standards for managing, monitoring and controlling PCs regardless of system power state (on, off, stand-by) or operating system capability. DASH uses standards-based management technologies for remote management and monitoring of Desktop and Notebook class systems that were previously unattainable. This paper describes the DASH capabilities available on the HP Notebook systems with AMD Chipset and Realtek Ethernet.

## HP's Vision of Remote Management & DASH

In July 2008, the Distributed Management Task Force introduced the Desktop and mobile Architecture for Systems Hardware (DASH) specifications. Development of the DASH specification 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 promoting both DASH capable PCs 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 HP's business class Desktop, Notebook and Workstations, regardless of their power state or operating system state. DASH enabled systems achieves smarter, efficient control of your business. HP has shipped millions of DASH enabled business class desktops and workstations to our customers. HP Notebooks today are certified for DASH 1.0 specification but have implemented most of DASH 1.1 profiles too.

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### More on DASH

Visit the DMTF Learning Center at: <http://www.dmtf.org/education/>

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

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 web site and web services administrators.

## Key Features

- Service availability without the requirement of an installed operating system and/or system power states
- Interoperability between various DASH-capable device implementations and management consoles
- Descriptive data model allowing for the discovery of iterative specification
- Updates (new profiles) or 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 (administrator, operator, auditor)
- DASH ecosystem can coexist with legacy Alert Standard Format (ASF) infrastructure

- Monitor and inventory the HW 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 become 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.

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### More on DASH Profiles

DASH profile specification source material can be found at:

<http://www.dmtf.org/standards/profiles/>

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## System requirements and prerequisites

For HP DASH supported platforms, you must have latest System BIOS, Realtek network firmware and associated Realtek network driver and agent on your platforms.

### Supported Platforms

- HP Elitebook 725 G2
- HP Elitebook 745 G2
- HP Elitebook 755 G2

### Minimum version of driver and firmware required

Model	Windows 8.1			Windows 7		
	NIC DASH FW	System BIOS	NIC Driver	NIC DASH FW	System BIOS	NIC Driver
HP Elitebook 725 G2	2.47	1.00	8.30.328	2.47	1.00	8.30.328
HP Elitebook 745 G2	2.47	1.00	8.30.328	2.47	1.00	8.30.328
HP Elitebook 755 G2	2.47	1.00	8.30.328	2.47	1.00	8.30.328

## Supported profiles on HP Notebook

The following table outlines DASH profile level support that is available with the Realtek RTL8111EPH-CG Ethernet controller on supported HP platforms

Feature	HP Elitebook 725 G2	HP Elitebook 745 G2	HP Elitebook 755 G2
Alert Standard Format (ASF 2.0)	Y	Y	Y
DASH Implementation Requirements	Y	Y	Y
System inventory and control	Y	Y	Y
Boot control	N	N	N
User account management	Y	Y	Y
BIOS management	N	N	N
Indications	N	N	N
In-band NIC management	Y	Y	Y
WMI provider for Ethernet port & SW inventory	Y	Y	Y
WMI provider for User account Mgmt.	N	N	N
WMI provider for firmware update	N	N	N
USB redirection (storage media; read only)	N	N	N
Power State management or Power Control	Y	Y	Y
Out-of-band firmware update	Y	Y	Y
Event logging	Y	Y	Y
Record log audit or security log	Y	Y	Y
PLDM Platform Event Messages	N	N	N
Service Processor	N	N	N
Physical Computer System View	Y	Y	Y

# Using DASH Functions on HP Notebooks

HP notebooks that support DASH are shipped in a predefined management mode. Unless the products are ordered through a custom configuration service where the customer can specify various parameters supporting their infrastructure and deployment model. So there is no need for the end user to enable the DASH functionality.

## DASH Support

Ensure you have the latest system BIOS, Realtek network firmware and associated Realtek network driver and agent for your platforms. HP highly recommends you set the BIOS administrator password to prevent unauthorized access to system BIOS configuration options.

For instructions on how to configure DASH using Realtek Management Console (RMC) where you have local physical access to the system to be configured, please refer to **Appendix A: Configuring Management Functionality with RMC** in this document.

HP works closely with management console vendors and partners to ensure 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 available today are list below. For more details, please visit the vendor website.

- AMD DASH Plug-in for Microsoft Systems Center 2007
- Realtek Management Web Console <sup>TM</sup>
- AMD Management Console.

## HP Client Management Web View

In addition to managing the DASH-enabled PC through a management console, HP provides a convenient method to access out-of-band management functions through a web browser.

The HP Client management Web View is a web browser-based interface for limited remote system management. The web view is only functional once the management controller has been provisioned for DASH management and an Administrator account has been enabled. The HP Client management Web View is accessible using any modern browser.

Management functions accessible from the web-based user interface include:

- Access to hardware inventory information for system, processors, and memory
- Visibility to system power state and remote power control operations
- Network configuration settings

The following steps outline connecting to the out-of-band management service from the embedded web server included on the Realtek Ethernet controller. This interface provides an alternative control mechanism for utilizing the DASH functionality without requiring a DASH enabled management console.

Using your web browser of choice from a separate computer system, connect to the IP address and DASH management port of the remote system than you wish to manage.

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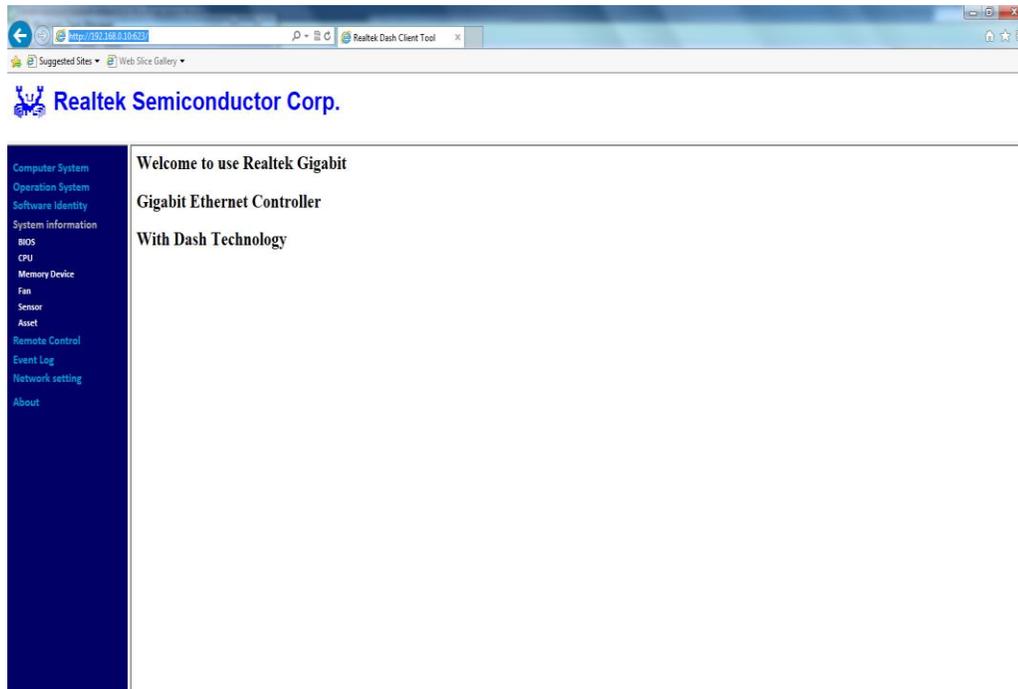
### DASH Management Ports:

TCP Port	Purpose	Example
623	WS-Man over HTTP	http://172.16.2.17:623
664	WS-Man over HTTPS	https://172.16.2.17:664

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These are the well-known IANA ports reserved for DASH management traffic. By default the Realtek Ethernet controller will use these ports for DASH traffic.

- The web browser makes a connection to the HP Client management Web View, but will require authentication to grant access to the web page.
- Enter the user name and password to use for authentication. If you have not created any additional accounts, you can connect with predefined “Administrator” account.
- Once your access has been authenticated, you will have access to a management portal similar to the figure below:



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**Note:**

Please make sure you have opened ports 623 and 664 in the Windows or any third party firewall you might have installed. If these ports are blocked you will not be able to communicate with the DASH protocol to remotely manage the PC.

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## For more information

### DMTF

- <http://dmtf.org/standards/dash>

### AMD Tools for DMTF DASH

- <http://developer.amd.com/tools-and-sdks/cpu-development/tools-for-dmtf-dash/>

### Essential Client Management with DMTF DASH

- [http://www.amd.com/Documents/44474B\\_DASH\\_1\\_0.pdf](http://www.amd.com/Documents/44474B_DASH_1_0.pdf)

### HP Client Management Solutions

- <http://www.hp.com/go/clientmanagement>

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## Get connected

[hp.com/go/getconnected](http://hp.com/go/getconnected)

Current HP driver, support, and security alerts  
delivered directly to your desktop

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