Technical white paper

Implementing Out-Of-Band PC Management with DASH on HP Desktop Thin Client Systems with AMD Chipset

HP Thin-Client

Table of contents

Introduction

This white paper provides instructions for enabling the DMTF DASH on supported HP desktop Thin Client with AMD Chipset and Realtek NIC. This paper also talks about different plugins and tools available to take advantage of DASH.

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

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 desktop Thin-Client systems with AMD Chipset and Realtek Ethernet.

HP's Vision of Remote Management & DASH

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 t640/t740 Thin Clients have implemented most of DASH 1.1 profiles.

Note
For more information go to the DMTF Learning Center at: **http://www.dmtf.org/education/**

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 of DASH

- 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 specific 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.

Note
DASH profile specification source material can be found at: **http://www.dmtf.org/standards/profiles/**

System requirements and prerequisites

For HP DASH supported platforms, you must have latest a supported version of Windows OS, System BIOS, Realtek LAN network firmware and associated   Realtek network driver and agent on your platforms.

Note
HP DASH is not supported when using HP ThinPro OS.

Minimum versions of driver and firmware required

Realtek NIC:

Table 1. Minimum versions of driver and firmware of Realtek NIC required

NIC DASH FW	System BIOS	NIC Driver Win 10
3.0.0.20190117	1.01 or greater	10.35.510.2019

Supported platforms

Desktops:

Table 4. Supported desktop models

Realtek NIC systems
HP t740 Thin Client
HP t640 Thin Client

Supported profiles on HP Desktop Thin-Client

Table 5. The following table outlines DASH profile level support that is available with the Realtek Ethernet Family controller on supported HP   platforms.

Feature	DASH 1.0 Cert Req	t740/t640	Information Through
Base Desktop and Mobile Profile	✓	✓	
Profile Registration Profile	✓	✓	
Role Based Authorization Profile	✓	✓	
Simple Identity Management Profile	✓	✓	
WS-Management Specification		✓	
WS-Management CIM Binding Spec		✓	
WS-CIM Mapping Specification		✓	
Battery Profile			
Boot control Profile		✓	SMBus
DHCP Client Profile		✓	
DNS Client Profile		✓	
Ethernet Port Profile		✓	
Host Lan Network Port Profile		✓	
IP Interface Profile		✓	
Fan Profile			
Indications Profile		✓	
KVM Redirection Profile			
Media Redirection Profile			
OS Status Profile		✓	Realtek Client Tool
Physical Asset Profile		✓	SMBus
Power State Management Profile		✓	
Power Supply Profile			
Sensors Profile			
System Memory Profile		✓	SMBus
"Graceful"/"Soft" Shutdown		✓	Realtek Client Tool

Using DASH functions on HP Desktop Thin-Client

HP desktop Thin-Client (t640/t740) that support DASH are shipped in a predefined management mode: Disabled. If desired, the end User/IT manager should enable the DASH functionality via F10 setup or BiosConfigUtility. After Enabling the DASH function, the IT manager can Create, Modify, or Delete the remote management log-in account/password via management console which developed by DASH solution provider, Realtek.

Dash Support

Ensure that you have the latest system BIOS, Realtek Ethernet 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.

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 available today are list below. For more details, please visit the vendor website.

- **AMD DASH Plug-in for Microsoft Systems Center 2007**
- **Realtek Management Console**
- **AMD Management**

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.

1. Make sure your system has minimum supported BIOS/FW/Driver from Table 1 and Table 2 above
2. Power up the system and press F10 to enter the BIOS setup menu and enable the Onboard LAN DASH feature from   Security>Device Security
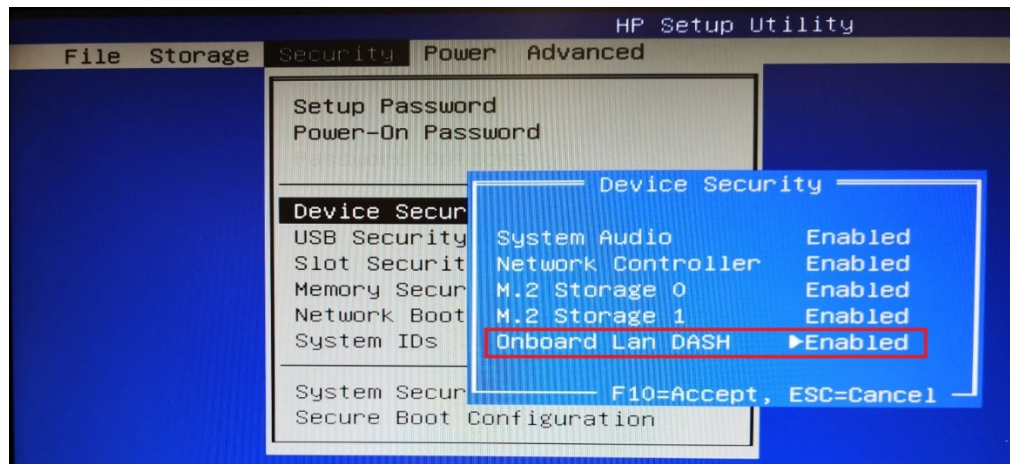
3. Boot to desktop and connect a LAN network cable to the test system.

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

Table 6. 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

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. The default password for "Administrator" account is "Realtek"

• Once your access has been authenticated, you will have access to a management portal similar to the figure below to do some simple management tasks.
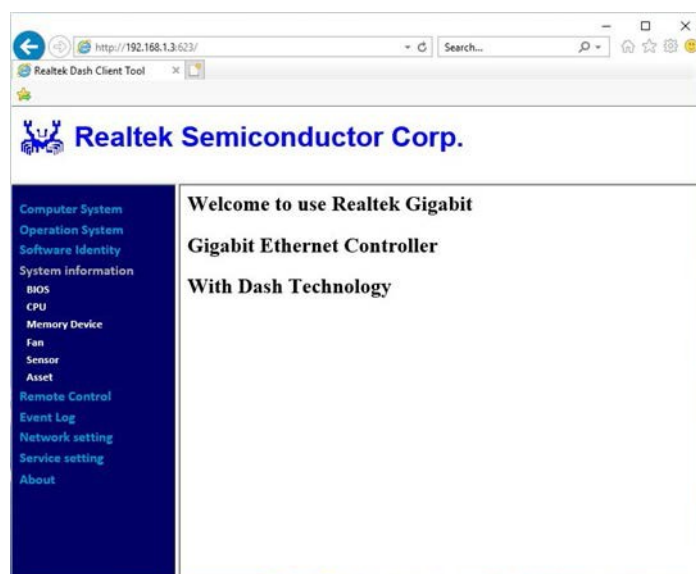
Note

Please make sure that 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.

Using DASH functions on HP Mobile Thin-Client

For instructions on how to use DASH functions on an HP Mobile Thin Client, please see the Implementing Out-Of-Band PC Management with DASH on HP Business Systems with AMD Chipset White Paper.

For more information

DMTF

https://www.dmtf.org/standards/dash

AMD Tools for DMTF DASH

https://developer.amd.com/tools-for-dmtf-dash/

HP Client Management Solutions

https://www8.hp.com/us/en/ads/clientmanagement/overview.html

Dash White Paper for Broadcom systems

ftp://ftp.hp.com/pub/caps-softpaq/cmit/whitepapers/DASH%20White%20Paper%20for%20HP%20Desktops.pdf

Realtek Real Manage User Manual

https://www.realtek.com/zh-tw/component/zoo/category/network-interface-controllers-10-100-1000m-gigabit-ethernet-pci-express-software

Sign up for updates
hp.com/go/getupdated