



Implementing Out-Of-Band PC Management with AMD PRO Manageability on HP Business Systems with AMD Chipset

Commercial Managed IT

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https://www.dmtf.org/standards/dash	9

Introduction

This white paper provides instructions for enabling the AMD PRO Manageability on supported HP Business Systems with AMD Chipset and Realtek NIC. This paper also talks about different plugins and tools available to take advantage of AMD PRO Manageability.

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

DMTF standard - Desktop and mobile Architecture for System Hardware 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. AMD PRO Manageability uses standards-based management technologies for remote management and monitoring of Desktop and Notebook class systems that were previously unattainable. This paper describes the AMD PRO Manageability capabilities available on the HP Desktops and Notebook systems with AMD Chipset and Realtek Ethernet.

HP's Vision of Remote Management & AMD PRO Manageability

AMD PRO Manageability is based on a set of industry standard protocols (e.g. DASH) that allows system and network administrators to perform essential management tasks on HP's business class Desktops and Notebooks, regardless of their power state or operating system state. AMD PRO Manageability enabled systems achieves smarter, efficient control of your business. HP has shipped millions of AMD PRO Manageability enabled business class Desktops and Notebooks to our customers. HP Desktops and Notebooks today feature AMD PRO Manageability, certified for DASH 1.0 specification but have implemented most of DASH 1.1 profiles too.

Note

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

AMD PRO Manageability is designed to assist in the remote management of common Desktop and notebook infrastructure tasks, such as deploying new operating systems, monitoring of computer system health, power control and power state monitoring, and asset inventory report. As new hardware technologies are introduced, or additional requirements are placed on the IT infrastructure, AMD PRO Manageability will continue to scale and enable new functionality.

AMD PRO Manageability based on DASH standards 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 AMD PRO Manageability

- Service availability without the requirement of an installed operating system and/or system power states
- Enables interoperability between various AMD PRO devices as well as 3rd party DASH compatible devices 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 users and multiple access roles (administrator, operator, auditor)
- AMD PRO Manageability ecosystem can coexist with legacy Alert Standard Format (ASF) infrastructure
- Monitor the inventory of 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 AMD PRO Manageability ecosystem, the AMD PRO Manageability Implementation Requirements document is updated to reflect a new version of the standard. Profiles are continually being developed by the DMTF and AMD PRO Manageability 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 platforms supported with AMD PRO Manageability, you must have latest System BIOS, Realtek LAN network firmware and associated Realtek network driver and agent on your platforms.

Minimum versions of driver and firmware required

Realtek NIC:

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

NIC AMD PRO Manageability FW	System BIOS	NIC Driver Win 10
1.3.171371432	Shipping	10.23.1003.2017

Supported platforms.

Notebooks supported via manageability dongle:

Table 3.

HP EliteBook 855 G6,7 Notebook PC
HP EliteBook 845 G6,7 Notebook PC
HP EliteBook 835 G6,7 Notebook PC

Desktops:

Table 4. Supported desktop models

Realtek NIC systems

HP EliteDesk 805 G6 Desktop Mini	HP ProDesk 405 G6 Desktop Mini
HP EliteDesk 805 G8 Desktop Mini	HP ProDesk 405 G8 Desktop Mini
HP EliteDesk 805 G8 Small Form Factor	HP ProDesk 405 G6 Small Form Factor
HP EliteDesk 805 G6 Small Form Factor	HP ProDesk 405 G8 Small Form Factor

Supported profiles on HP Desktop and Notebook

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

Feature	2019	2020	2021 with Kensington Manageability Dongle (for Notebooks only)
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	Not supported		
BIOS Management Profile			
Boot control Profile	✓	✓	✓
CPU Profile	✓	✓	✓
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			
Opaque Management Profile			
OS Status Profile	✓	✓	✓
Physical Asset Profile	✓	✓	✓
Power State Management Profile	✓	✓	✓
Power Supply Profile	✓	✓	✓
Sensors Profile	✓	✓	✓
Software Inventory Profile	✓	✓	✓
Software Update Profile		✓	✓
System Memory Profile	✓	✓	✓
Text Console Redirection Profile	✓	✓	✓

USB Redirection Profile	✓	✓	✓
Record Log Profile	✓	✓	✓
Active Directory w/Kerberos	✓	✓	✓
Web GUI/Embedded Web Server	✓	✓	✓
PLDM/MCTP Interfaces for Health monitoring	✓	✓	✓
"Graceful"/"Soft" Shutdown	✓	✓	✓

Using AMD PRO Manageability functions on HP Desktop and Notebook

HP notebooks that support AMD PRO Manageability are shipped in a predefined management mode. There is no need for the end user to enable the AMD PRO Manageability functionality. The expectation to this is products that are ordered through a custom configuration service where the customer can specify various parameters supporting their infrastructure and deployment model.

DASH Support for Notebooks G7 and newer (no RJ45 connector)

For HP Notebooks G7 and newer that do not feature an RJ45 connector, AMD Pro Manageability is possible via the Kensington Manageability Dongle (sold separately). Please reference whitepaper titled: "Out-of-Band PC Management with the Kensington Manageability Dongle (K38295) on HP Business Notebooks"

DASH Support for Notebooks (G6 & Prior) & Desktops (all generations)

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.

Unit provisioning using Realtek ROM options settings from BIOS:

- 1) Press "F10" during post to boot into BIOS setup menu, select UEFI Drivers page, there is an option to launch 3rd party option ROM on next boot.
- 2) Press "F3" during post to launch 3rd party (Realtek) option ROM directly.

On January 1st, 2020, California Senate Bill 327 will become effective. In compliance with this law, the default account/password from the AMD PRO Manageability enablement process has been removed in 2020 or later HP platforms. The change will now require the end user to create an account/password prior to enabling AMD PRO Manageability. In order to provide better security, a credential check will be required for each account/password change.

Please be noted there will be two scenarios for AMD PRO Manageability login as following:

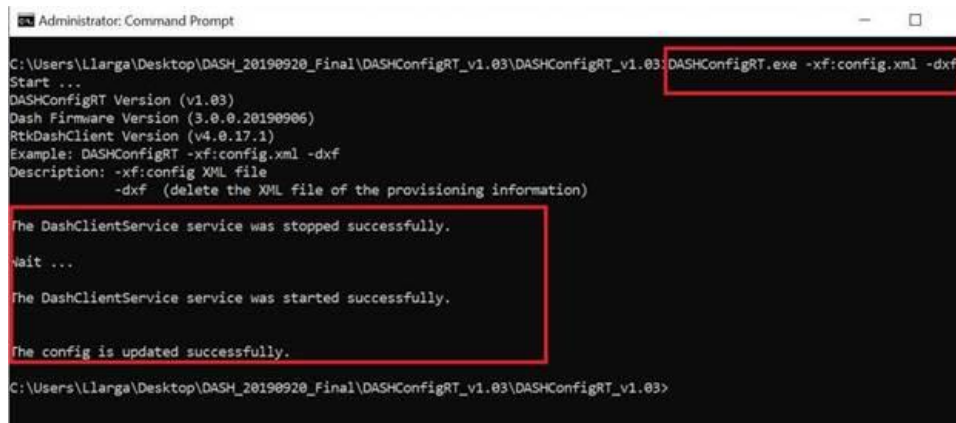
- Default account and password are set as "Administrator" and "Realtek".
- Default account and password has been removed and user need to set private account and password on the client units before login by using AMD PRO Manageability.

Please follow the steps below to create a private account and password:

- 1) Please boot to the SUT (AMD PRO Manageability enabled target) into Windows and make sure that you have installed AMD PRO Manageability Client utility and put DASHConfigRT tool (available from Realtek website) in any folder within the C: drive. A crab icon is shown in the notification area of task bar informing you that the AMD PRO Manageability Client utility is installed.
- 2) Find config.xml from DASHConfigRT tool folder and use "Notepad" to modify it – change "Administrator" to your desired account and "password" to your desired password then save.
- 3) Run a Command Prompt window as Administrator and input the command "DASHConfigRT.exe -xf:config.xml -dx" then

Press Enter key.

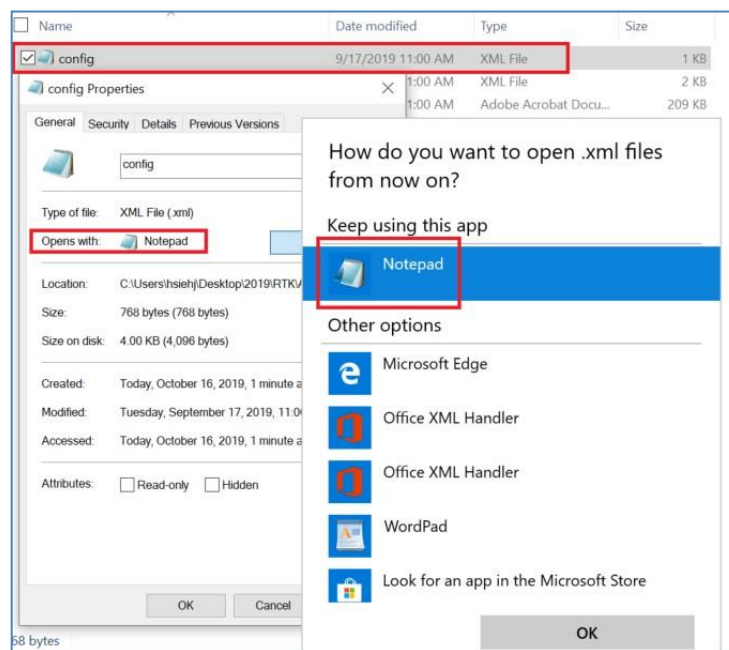
4) The new account and password are set successfully.



```
Administrator: Command Prompt
C:\Users\Llarga\Desktop\DASH_20190920_Final\DASHConfigRT_v1.03>DASHConfigRT.exe -xf:config.xml -dx
Start ...
DASHConfigRT Version (v1.03)
Dash Firmware Version (3.0.0.20190906)
RtkDashClient Version (v4.0.17.1)
Example: DASHConfigRT -xf:config.xml -dx
Description: -xf:config XML file
            -dx (delete the XML file of the provisioning information)

The DashClientService service was stopped successfully.
Wait ...
The DashClientService service was started successfully.
The config is updated successfully.
C:\Users\Llarga\Desktop\DASH_20190920_Final\DASHConfigRT_v1.03>
```

Also, please always make sure you use “Notepad” to open and save config.xml while setting private account and password.



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 AMD PRO Manageability in your environment.

Some of the different consoles and software available today are list below. For more details, please visit the vendor website.

- [AMD PRO Manageability Plug-in for SCCM](#)
- [Realtek Management Console](#)
- [AMD Management](#)

For systems with Broadcom Ethernet network please refer to the support link at the end of this document.

HP Client Management Web View

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

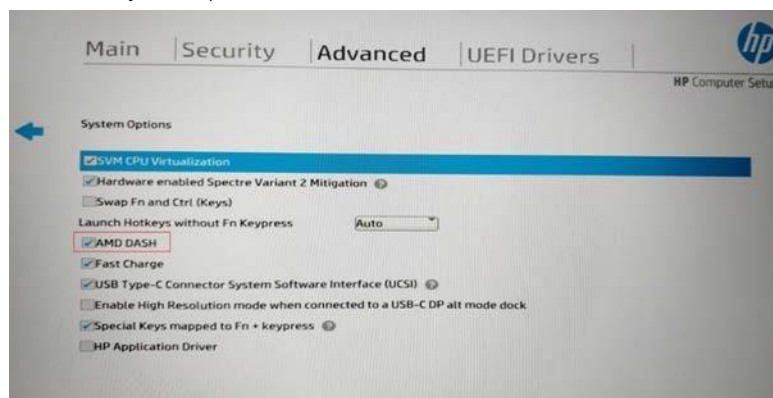
The HP Client management Web View is a web browser-based interface for limited remote system management. The web view is only functional once the management controller has been provisioned for AMD PRO Manageability management and an Administrator account has been enabled. The HP Client management Web 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 AMD PRO Manageability functionality without requiring an AMD PRO Manageability 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 AMD DASH feature from Advanced>System Options



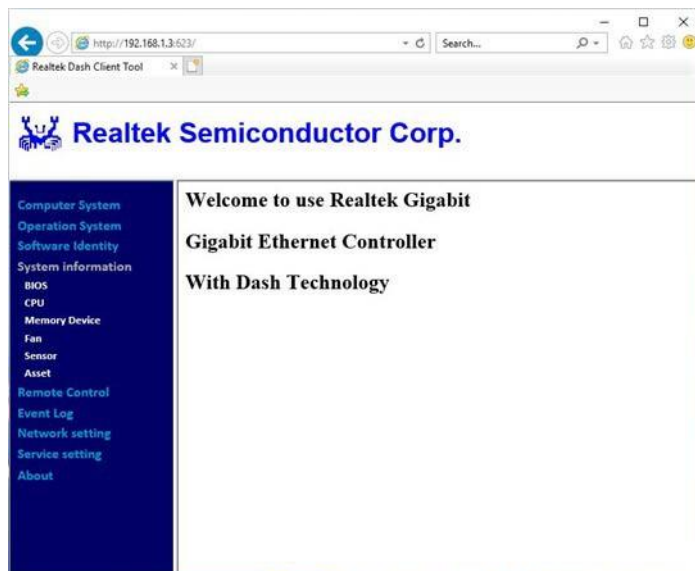
3. Boot to Desktop and connect a LAN network cable to the test system.
4. Using your web browser of choice from a separate computer system on the same network, connect to the IP address and AMD PRO Manageability management port of the remote system than you wish to manage.

Table 6. AMD PRO Manageability Management Ports

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

These are the well-known IANA ports reserved for AMD PRO Manageability management traffic. By default, the Realtek Ethernet controller will use these ports for AMD PRO Manageability 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 username 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 AMD PRO Manageability protocol to remotely manage the PC.

For more information

DMTF

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

AMD Tools for AMD PRO Manageability

<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 RealManage User Manual and all related documents and tools (including AMD PRO Manageability ConfigRT tool under - RTL8111DP/EP/FP AMD PRO Manageability console tool for Windows 7/8/10)

<https://www.kensington.com/p/products/device-docking-connectivity-products/usb-connectivity/managed-usb-c-to-22.5g-ethernet-pxe-boot-and-dash-adapter-1/>

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