

Intel® Centrino® 2 with vPro™ technology Setup and Configuration for HP Business Notebook PCs



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Introduction

Purpose

HP Compaq Business Notebook 2510p, 2710p, 6910p, 8510p and 8710p models use Intel Centrino Pro¹ technology and the HP EliteBook Business Notebook 2530p, 2730p, 6930p, 8530p and w, and 8730w use Intel Centrino 2 with vPro technology to simplify PC management and reduce IT related expenditures. Intel Centrino Pro technology is Active Management Technology (AMT), which allows for improved management of PC systems and better security.

AMT provides Out-of-Band (OOB) remote access to a system regardless of the system power state or operating system condition as long as the system is connected to a power source and a network. AMT is a hardware and firmware platform resident solution relying upon the Management Engine (ME).

AMT 2.5 shipped with HP Compaq Business Notebook 2510p, 2710p, 6910p, 8510p and 8710p models. Updates to AMT 2.6 are available at <http://www.hp.com>.

AMT 4.0 shipped with HP EliteBook Business Notebook 2530p, 2730p, 6930p, 8530p, 8530w, and 8730p models. Updates to AMT 4.1 are available at <http://www.hp.com>.

This whitepaper assumes some basic knowledge of Intel AMT.

AMT Setup and Configuration

AMT must be Setup and Configured in a system before it can be used.

AMT Setup involves the necessary steps to enable AMT like setting up the system for AMT mode and enabling network connectivity. It is generally performed only once for the lifetime of the system. When AMT is enabled, it can be discovered by management software over a network.

AMT Setup can be accomplished in two modes:

- Small Medium Business (SMB)
- Enterprise (default)

AMT Configuration is setting up all the other AMT options not covered in AMT Setup like enabling the system for Serial-Over-LAN (SOL) or IDE-Redirect (IDE-R). Settings modified in the Configuration phase can be changed many times over the course of a system's lifespan. Changes can be made to the system locally or through a management console.

AMT System Phases

An AMT system can be in one of three phases in regards to its current stage of AMT Setup and Configuration.

Three Phases of AMT Setup and Configuration:

¹ Some functionality of Intel Centrino Pro, such as Intel Active management technology and Intel Virtualization technology, requires additional 3rd party software in order to run. Availability of future "virtual appliances" applications for Centrino Pro technology is dependant on 3rd party software providers. Compatibility of this generation of Centrino Pro technology-based hardware with future "virtual appliances" and Microsoft Windows Vista operating system is to be determined.

- Factory
- In-Setup
- Operational

The Factory phase is the initial stage. The system has been built from the factory. No AMT Setup and Configuration has been done. The only way to access AMT in Factory phase is through the MEBx. This phase will end for SMB mode systems once the default password has been changed. Enterprise mode systems also require the Provisioning ID (PID) and Provisioning Passphrase (PPS) to be set. More details on passwords, PIDs, and PPS in later sections.

The In-Setup phase is the next stage where most AMT options are set. This can be a manual procedure or an automated one with a Setup and Configuration Server.

The Operational phase is the final stage. AMT is fully Setup and Configured in the system and ready for normal use.

SMB Mode – AMT Setup and Configuration with MEBx

SMB mode is for customers who do not have ISV management consoles, or the necessary network and security infrastructures to use encrypted Transport Layer Security (TLS). SMB mode AMT Setup and Configuration is a manual process done through the Intel ME BIOS Extension (MEBx).

SMB mode is the easiest to implement since it does not require much infrastructure, but it is the least secure since no network traffic is encrypted. HP recommends that this be done in a closed network.

Important Note: The MEBx is an option ROM module that is provided to HP by Intel to be included in the HP system BIOS. The MEBx is not HP-specific and contains options that are not used by HP. If an option is not used by HP, ignore it and do not modify from its default state.

Password Guidelines

MEBx passwords must meet the minimum criteria to be accepted. These restrictions are enforced by the MEBx to reduce vulnerability of passwords to a dictionary attack.

Criteria:

- Password must be between 8 and 32 characters long.
- Password must contain both upper and lower case Latin characters (e.g. A, a, B, b).
- Password must have at least one digit character (e.g. 0, 1, 2, ... 9).
- Password must have at least one 7-bit ASCII non-alphanumeric character with an ASCII value between 33d and 126d that is not part of the invalid character list below.

Some examples:

- Exclamation !
- At @
- Number #
- Dollar \$
- Percent %
- Caret ^
- Asterisk *

The underscore '_' is considered alpha-numeric.

An example of an acceptable password would be P@sswOrd

The following characters are not allowed:

- Quotation mark "
- Apostrophe '
- Comma ','
- Greater than >
- Less than <
- Colon :
- Ampersand &
- Space

SMB Mode – AMT Setup and Configuration Steps:

When going through the options in the MEBx for the first time (Factory phase), the default settings are in place. This whitepaper details HP recommended settings on options, some of which may be the same as the default selection. Even though the default setting is set and used for certain options, it is good practice to double check important options.

- 1) Hit F10 during the Power On Self Test (POST) to enter Computer Setup.
- 2) Select AMT Options from the System Configuration menu.
- 3) Enable Firmware Verbosity, AMT Setup Prompt, USB Key Provisioning Support and Firmware Progress Event Support.

Note: Intel specifies the FAT16 protocol for the USB Key Provisioning.

- 4) Hit F10 to accept, then select Save Changes And Exit under the File menu to reboot.
- 5) Hit Ctrl-P when prompted at the Intel Active Management screen to enter Management Engine BIOS Extension (MEBx) Setup.
- 6) Enter the default password.

The default password is "admin". Passwords are case sensitive.

The user must change the default password before any changes can be made in the MEBx.

- 7) Change the password for the MEBx. (e.g., P@sswOrd)

The new password must meet the criteria defined in the Password Guideline Section, also known as a strong password. It must be entered twice for verification.

Changing the password indicates that AMT ownership has been established. The system will go from Factory phase to In-Setup phase. The ME and AMT options within the MEBx are accessible.

- 8) Go into the Intel ME Configuration.
 - a. A message window telling the user that the system resets after configuration will appear.
 - b. Select Y.
- 9) Check the Intel ME State Control.
Default Setting : Enabled
Recommended Setting : Enabled

- a. Select Enabled.

This option enables or disables the ME. It is only used for diagnostic purposes. If there is a problem where the ME is affected, it can be removed from the system to eliminate it from the suspect list until root cause is found.

Note that if the ME is disabled, then all AMT is also disabled. The system will not be remotely manageable.

- 10) Skip the Intel ME Firmware Local Update Qualifier.

Default Setting : Disabled (for AMT 2.x)

Default Setting : Always Open (for AMT 4.x)

Recommended Setting : Disabled

- 11) Skip LAN Controller. (For AMT 2.x; this is not available for AMT 4.x)

Default Setting : Enabled

Recommended Setting : Enabled

This option enables or disables the Intel 82566DM NIC.

If the user needs to disable the NIC, the ME management mode must be set to "None" before the MEBx will allow the user to proceed (see Step 8). This is to insure that the ME is not in the middle of a transaction when the NIC is disabled. Disabling the NIC will cause the system to lose all remote management capabilities.

- 12) Go into the Intel ME Features Control.

- a. Check the Manageability Feature Selection.

Default Setting : None (for AMT 2.x)

Default Setting : Intel AMT (for AMT 4.x)

Recommended Setting : Intel AMT

This option sets the platform management mode: None or Intel AMT.

By default, HP Business Notebooks are set to None.

Note that setting the None option will disable all remote management capabilities.

- i. Select Intel AMT option.
- ii. Return to previous menu.

- b. Return to previous menu.

- 13) Go into Intel ME Power Control

- a. Check the Intel ME ON in Host Sleep States.

Default Setting : Mobile: ON in S0

Recommended Setting : Mobile: ON in S0, S3/AC, S4-5/AC

The options for this setting are:

Mobile: ON in S0

Mobile: ON in S0, S3/AC

Mobile: ON in S0, S3/AC, S4-5/AC
Mobile: ON in S0, ME Wake in S3/AC (for AMT 4.x)
Mobile: ON in S0, ME Wake in S3/AC, S4-5/AC (for AMT 4.x)

S0 is the ON state. The PC is fully functioning. All system devices and operating system, if available, are running. S0 is also known as G0.

S3 is the Standby (Microsoft terminology) or Suspend-to-RAM state. The memory subsystem and Vaux power rail remains powered, while the rest of the system including the processor are not powered. When the system resumes from S3, the system context remains intact because the system memory was preserved and powered at all times.

S4 is the Hibernate (Microsoft terminology) or Suspend-to-Disk state. The system context (memory) is saved to the hard drive as a hibernation file. When the system resumes from S4, the system context is restored from the hibernation file. Vaux remains powered, but all other subsystems including system memory and the processor are not powered.

S5 is the Soft Off state. It is identical to S4 with the exception that the system context is not saved. When the system resumes from S5, it will power up and going through POST.

Important Note: In DC mode, AMT is only available in the S0 (ON) state.

- 14) Return to previous menu.
- 15) The system will display an Intel ME Configuration Complete message.
- 16) The system will reboot.

Once the ME Configuration is complete, the user can go on to configure the AMT on the next boot.

- 17) Go into the Intel AMT Configuration.
- 18) Go into Host Name.
 - a. Enter a host name
Default Setting : None
Recommended Setting : User Dependent

Note that spaces are not accepted in the host name. Make sure there is not a duplicate host name on the network. Hostnames can be used in place of the system's IP for any applications requiring the IP address.

For AMT 2.x only, if you use DHCP for networking, the Host Name must match the computer name under Windows.

For AMT 2.x only, if you use static IP addresses, the Host Name must be different than the computer name under Windows.

- 19) Go into TCP/IP.
 - a. Disabling Network Interface
Default Setting : Network Interface Enabled
Recommended Setting : Network Interface Enabled
 - i. Select N.

If network is disabled, then all remote AMT capabilities are disabled and TCP/IP settings will not be necessary.

This option is a toggle, the next time it is accessed the opposite setting is prompted.

- b. DHCP Disable
 - Default Setting* : *DHCP Enabled*
 - Recommended Setting* : *User Dependent*

- i. Select Y.

DHCP can be used if it is available. If DHCP is used, then steps 19c through 19g are not necessary. Otherwise, the system administrator will have to configure TCP/IP settings.

For the purpose of this whitepaper, DHCP is disabled so steps 19c through 19g can be illustrated. Step h will appear for both DHCP and Static configurations.

- c. IP Address
 - i. Enter a static address
 - Default Setting* : *10.0.0.2*
 - Recommended Setting* : *Network Dependent*

Example: 192.168.0.1

Make sure all AMT systems have a unique static IP address if more than one system is on the same network. Multiple systems sharing the same static IP address can lead to network collisions, which will cause the systems to not respond correctly.

- d. Subnet Mask
 - i. Enter subnet mask
 - Default Setting* : *255.255.255.0*
 - Recommended Setting* : *Network Dependent*

Example: 255.255.255.0

- e. Default Gateway Address
 - i. Leave as default value and hit Enter
 - Default Setting* : *0.0.0.0*
 - Recommended Setting* : *Network Dependent*

Leave as 0.0.0.0 if this option is not needed.

- f. Preferred DNS Address
 - i. Leave as default value and hit Enter
 - Default Setting* : *0.0.0.0*
 - Recommended Setting* : *Network Dependent*

Leave as 0.0.0.0 if this option is not needed.

- g. Alternate DNS Address
 - i. Leave as default value and hit Enter
 - Default Setting* : *0.0.0.0*
 - Recommended Setting* : *Network Dependent*

Leave as 0.0.0.0 if this option is not needed.

h. Domain Name

i. Enter a domain name

Default Setting : None

Recommended Setting : Network Dependent

20) Skip Provisioning Server.

Default Setting : 0.0.0.0

Recommended Setting : Network Dependent

This option is used in Enterprise mode when an Intel AMT Setup and Configuration (Provisioning) server is available. This option will disappear once SMB mode is set in step 21.

21) Go into Provision Model.

a. Change to Small Business

Default Setting : Enterprise

Recommended Setting : Small Business

i. Select Y.

This option is a toggle, the next time it is accessed the opposite setting is prompted.

Notice that the Provisioning Server and Set PID and PPS options are no longer available once the system is in Small Business mode. These options are used in Enterprise Mode.

b. Return to previous menu.

22) Skip Un-Provision.

This option is to return the system to factory defaults. See the Return to Default section for more information on unprovisioning.

23) Check SOL/IDE-R.

a. A message window telling the user that the system resets after configuration changes will appear.

i. Select Y.

b. Username and Password

Default Setting : Enabled

Recommended Setting : Enabled

i. Select Enabled.

This option allows users and passwords to be added from the WebGUI. If it is disabled, then only the administrator has MEBx remote access.

c. Serial Over LAN

Default Setting : Enabled

Recommended Setting : Enabled

- i. Select Enabled.

This option enables / disables Serial Over LAN (SOL) functionality.

- d. IDE Redirection

Default Setting : Enabled

Recommended Setting : Enabled

- i. Select Enabled.

This option enables / disables IDE Redirection (IDE-R) functionality.

- 24) Skip Secure Firmware Update.

This option enables / disables the ability to remotely update the ME FW.

- 25) Skip Set PRTC.

- 26) Skip Idle Timeout.

Default Setting : 0

Recommended Setting : 0

- 27) Hit Esc to return to previous menu.

- 28) Hit Esc to Exit

- a. Select Y.

This will exit the MEBx Setup and save settings.

- 29) The system will display the state of Intel AMT and an Intel ME Configuration Complete message.

- 30) System will continue into the OS.

After the configuration is complete, it will go from In-Setup phase to Operational phase. AMT is fully operational. Once in the Operational phase, the system can be remotely managed through the Intel AMT WebGUI or ISV remote console and can be provided to the end-user for regular use.

Once an AMT system is configured, it will display its status and show that the AMT tables are valid on every boot.

Intel AMT WebGUI

The Intel AMT WebGUI is a web browser based interface for limited remote system management.

The WebGUI is often used as a test to determine if AMT Setup and Configuration was performed properly on a system. A successful remote connection between a remote system and the host system running the WebGUI indicates proper AMT Setup and Configuration on the remote system.

The AMT WebGUI is accessible from the following web browsers:

- Microsoft Internet Explorer 6 SP1 or newer
- Netscape Navigator 7.1 or newer
- Mozilla Firefox 1.0 or newer
- Mozilla 1.7 or newer

Limited remote system management includes:

- System status
- Managing of wireless profiles
- Hardware inventory
- Event logging
- Remote system reset
- Changing of network settings
- Addition of new users and passwords
- Updating ME firmware

WebGUI support is enabled by default for SMB Setup and Configured systems.

WebGUI support for Enterprise Setup and Configured systems is determined by the Setup and Configuration Server.

Connecting with the Intel AMT WebGUI - SMB Example:

- 1) Power on an AMT system that has completed AMT Setup and Configuration.
- 2) Execute a web browser from a separate system – a Management PC that is also on the same subnet as the AMT PC.
- 3) Connect to the IP address specified in the MEBx and port of the AMT system.
 - a. By default the port is 16992.
 - b. If DHCP was used, then use the Fully Qualified Domain Name (FQDN) for the ME. The FQDN is the combination of the hostname and domain.

Example A: <http://192.168.0.1:16992>

Example B: <http://intelamt.intel.com:16992> (from Steps 18 and 19h)

- 4) The Management PC makes a TCP connection to the AMT system and accesses the top level AMT embedded webpage within the Management Engine of the AMT system.
- 5) Enter username and password. The default username is “admin” and the password is the one set during AMT Setup in the MEBx.
- 6) Review system information and/or make any necessary changes.

Important Note: The AMT Admin password can be changed for the remote system in the WebGUI.

Changing the password in the WebGUI or a remote console will result in two passwords. The new password, known as the AMT Admin password, will only work remotely with the WebGUI or remote console. The local MEBx password used to access the MEBx locally will not be changed! The user will have to keep track of both the AMT Admin password and local MEBx password to be able to access the AMT system remotely or the system MEBx locally.

When the MEBx password is initially set in AMT Setup, it serves as both the local and remote password. They are in sync. If the remote password is changed, then the passwords are out of sync.

The AMT Admin password must also follow the criteria defined in the Password Guideline section for a strong password.

- 7) Exit.

Enterprise Mode Setup and Configuration

Enterprise mode is for large corporate customers. In this mode, a Setup and Configuration Server (S&CS) is required. An S&CS is a server that runs an application over a network that performs AMT Setup and Configuration.

The S&CS is also known as a Provisioning Server as seen in the MEBx. The act of setting up and configuring the AMT is also known as “provisioning”.

An S&CS is typically provided by ISVs and is contained within the ISV management console product. Customers should consult with their management console supplier for more information.

Enterprise Mode – AMT Setup and Configuration Steps:

The ME Setup portion for Enterprise mode is the same as SMB mode. Repeat Steps 1 through 12 to perform ME Setup. This will take the system from Factory mode to In-Setup Mode.

The following are quick steps for ME Setup.

- 1) Get into the MEBx by pressing Ctrl-P during POST.
- 2) Enter the default password “admin”.
- 3) Change the MEBx password, follow strong password guidelines.
- 4) Go into Intel ME Configuration.
- 5) Check the Intel ME State Control, select Enabled.
- 6) Skip the Intel ME Firmware Local Update Qualifier.
- 7) Skip LAN Controller. (The LAN controller option is not available for AMT 4.x)
- 8) Go into Intel ME Features Control
 - a. Check Manageability Features Selection, select Intel AMT.
- 9) Go into Intel ME Power Control. (for AMT 2.x only)
 - a. Go into ME State upon Initial Power-On, select mobile: ON in S0, S3/AC, S4-5/AC.
- 10) Exit and save. (for AMT 2.x only)
- 11) Look for Intel ME Configuration Complete message. (for AMT 2.x only)
- 12) System will reboot. (for AMT 2.x only)

Once the system reboots, starting with Step 13, some of the options will be set differently than SMB mode. (for AMT 2.x only)

- 13) Enter the MEBx password.
- 14) Go into the Intel AMT Configuration.

The Intel AMT Configuration screen has more options than could be displayed in one page. More options are available if the menu is scrolled down.

- 15) Go into Host Name.
 - a. Enter a host name
Default Setting : None
Recommended Setting : User Dependent

Spaces are not accepted in the host name.

- 16) Go into TCP/IP.
 - b. Disabling Network Interface
Default Setting : Network Interface Enabled

Recommended Setting : Network Interface Enabled

- i. Select N.

If network is disabled, then all remote AMT capabilities are disabled and TCP/IP settings will not be necessary.

This option is a toggle, the next time it is accessed the opposite setting is prompted.

- a. DHCP Disable
 - Default Setting : DHCP Enabled*
 - Recommended Setting : User Dependent*

- i. Select N.

For the purpose of this whitepaper, DHCP is enabled.

17) Go into Provisioning Server.

- a. Enter Provisioning Server IP
 - Default Setting : 0.0.0.0*
 - Recommended Setting : Network Dependent*
- b. Enter Port
 - Default Setting : 9971*
 - Recommended Setting : S&CS Dependent*

This option is used in Enterprise mode when an Intel AMT Setup and Configuration (Provisioning) Server is available. It points to the IP address of the S&CS.

If the IP and port is left as the default, the ME will look for "ProvisionServer" on DNS at port 9971.

Some ISV's may require additional settings, such as the SC&S port number and SC&S IP address. Contact your Management Console ISV for more details.

18) Check Provision Model.

- a. Change to Small Business
 - Default Setting : Enterprise*
 - Recommended Setting : Enterprise*

- i. Select N.

- b. Return to previous menu.

19) For AMT 2.x, go into Set PID and PPS. For AMT 4.x, go to Setup and Configuration => TLS PSK => Set PID and PPS

- Default Setting : None*
- Recommended Setting : System Dependent*

This option is for Provisioning ID (PID) and Provisioning Passphrase (PPS) entry. PIDs are 8 characters and PPS are 32 characters. There are dashes between every set of four characters

so counting dashes PIDs are 9 characters and PPS are 40 characters. They must be generated by an S&CS.

The Admin Password, PID, and PPS can be populated by the use of a pre-generated USB key generated by the ISV Management Console.

20) Skip Un-Provision.

For AMT 2.x, this option is to return the system to factory defaults. For AMT 4.x, the unprovision option in MEBx will not reset the system to factory default. See the Return to Default section for more information on unprovisioning.

21) Check SOL/IDE-R.

- a. A message window telling the user that the system resets after configuration will appear.
 - i. Select Y.

- b. Username and Password
 - Default Setting* : Enabled
 - Recommended Setting* : Enabled

- i. Select Enabled.

This option allows users and passwords to be added from the WebGUI. If it is disabled, then only the administrator has MEBx remote access.

- c. Serial Over LAN
 - Default Setting* : Enabled
 - Recommended Setting* : Enabled

- i. Select Enabled.

- d. IDE Redirection
 - Default Setting* : Enabled
 - Recommended Setting* : Enabled

- i. Select Enabled.

22) Skip Secure Firmware Update.

Important Note: You may have to use the arrow keys to scroll down and see the following options.

23) Go into Set PRTC.

- Default Setting* : None
- Recommended Setting* : Current Date and Time in GMT (UTC)

This option sets the PRTC (Protected Real Time Clock). It is used with TLS mutual authentication which checks for the client certificate for expiration based on its PRTC.

PRTC has a valid date range of 1/1/2004 to 1/4/2021.

24) Skip Idle Timeout.

Default Setting : 0x0

Recommended Setting : 0x0

25) Return to previous menu.

26) Hit Esc to exit.

a. Select Y.

This will exit the MEBx Setup and save settings.

27) The system will continue to the operating system.

At this point the system is out of Factory Mode and is in In-Setup mode. It is ready to be deployed in a corporation.

28) User plugs system into a power source and connects the network.

Only use the integrated Intel NIC. Intel AMT does not work with any other NIC solution.

29) When power is reapplied to the system, it will immediately look for a Setup and Configuration Server. If one is found, the AMT system will send a "Hello" message to the server.

DHCP and DNS must be available for the Setup and Configuration Server search to automatically succeed. If DHCP and DNS are not available, then the Setup and Configuration Server's IP address must be manually entered into the AMT system's MEBx.

The "Hello" message will contain the following information:

- PID
- UUID (Universally Unique Identifier)
- IP address

The "Hello" message is transparent to the end-user. There is no feedback mechanism to tell the user the "Hello" message is being broadcast.

30) The Setup and Configuration Server will use the information in the "Hello" message to initiate a Transport Layer Security (TLS) connection to the AMT system using TLS Pre-Shared-Key (PSK) cipher suite if TLS is supported.

31) The Setup and Configuration server uses the PID to lookup PPS in provisioning server database and uses the PID and PPS to generate TLS Pre-Master Secret.

TLS is optional. For secure and encrypted transactions, TLS should be used if the infrastructure is available.

If TLS is not used, then HTTP Digest will be used for mutual authentication. It is not as secure as TLS.

32) Setup and Configuration Server logs into AMT system with the username and password, and provisions all required data items:

- a. TLS certificates
- b. Private keys
- c. Current date and time

- d. HTTP Digest credentials
- e. HTTP Negotiate credentials

Other options can be set depending on S&CS implementation.

- 33) The system goes from In-Setup phase to Operational phase. AMT is fully operational. Once in the Operational phase, the system can be remotely managed and can be provided to the end-user for regular use.

Check with your management console supplier for information on how to prepare your Setup and Configuration Server.

Return to Default

Return to Default is also known as Unprovisioning.

An AMT Setup and Configured system can be unprovisioned. It is done through the AMT Configuration Screen and the Un-Provision option.

- 1) Go into Un-Provision.
 - a. Select Full Unprovision.

Full unprovisioning is available for SMB mode provisioned systems. It will return all AMT Configuration settings to factory defaults. It does not reset ME Configuration settings or passwords.

Full and Partial unprovisioning is available for Enterprise mode provisioned systems. Partial unprovisioning will return all AMT Configuration settings to factory defaults with the exception of the PID and PPS. It does not reset ME Configuration settings or passwords.

- b. Un-provisioning message will appear. This usually takes about one minute.
 - c. After unprovisioning is done, control is passed back to the AMT Configuration screen.

Notice that the Provisioning Server and Set PID and PPS options are available again since the system is set to the default Enterprise mode.

- 2) Return to previous menu.
- 3) Exit.
 - a. Select Y.
- 4) System will reboot.

Important Note: The system will need to be Setup and Configured again. The system cannot be remotely managed until it is Setup and Configured again.

Full Return to Factory Defaults

For AMT 2.x, once the MEBx password has been changed, the unit can not be returned to the factory default state without a service call.

For AMT 4.x, once the MEBx password has been changed, the unit can be returned to the factory default state by enabling the "Unconfigure AMT on next boot" option in F10.

Appendix A: Power / Sleep / Global States Explained

Under Advanced Configuration and Power Interface (ACPI) specification a PC can be in one of several Power states. These power states are also known as Sleep (Sx) states or Global (Gx) states.

- S0** is the ON state. The PC is fully functioning. All system devices and operating system, if available, are running.
- S3** is the Standby (Microsoft terminology) or Suspend-to-RAM state. The memory subsystem and V_{aux} power rail remains powered, while the rest of the system including the processor are not powered. When the system resumes from S3, the system context remains intact because the system memory was preserved and powered at all times.
- S4** is the Hibernate (Microsoft terminology) or Suspend-to-Disk state. The system context (memory) is saved to the hard drive as a hibernation file. When the system resumes from S4, the system context is restored from the hibernation file. V_{aux} remains powered, but all other subsystems including system memory and the processor are not powered.
- S5** is the Soft Off state. It is identical to S4 with the exception that the system context is not saved. When the system resumes from S5, it will power up and going through POST.

Appendix B: Questions and answers

How can the MEBx be locally accessed?

The MEBx can be locally accessed by pressing CTRL-P during POST.

What is the default username and password for the MEBx?

The default username and password are both "admin".

Why does the MEBx not accept my new password?

All MEBx passwords, other than the default password, must comply with the strong password guidelines. See the Password Guidelines section for more details.

What happens if the wrong password is entered incorrectly multiple times?

Once the password is entered incorrectly three times, the system will reboot. The user can go back into the MEBx after the reboot and attempt to enter the password again.

Can the WebGUI be used locally to access the MEBx on the system it is running from?

No. This is because WebGUI access has to come from an outside network to a specific IP and port. Local access does not originate from an outside network.

Why does a new password set with the WebGUI cannot be used locally in the MEBx?

An AMT Admin password set with the WebGUI is a remote password and will only work when accessing the AMT system remotely. It does not work with the MEBx locally. The local password must be used to locally access the MEBx.

Is TLS required?

No. TLS is optional.

If TLS is not used, then what is used?

HTTP Digest will be used for mutual authentication if TLS is not used.

Who provides Setup and Configuration Servers?

HP OpenView and ISVs such as Altiris provide Setup and Configuration Servers. Check with your management console supplier to see if they offer this service.

Can AMT be set for static address and the OS set for DHCP or vice versa?

No. Although it can be done, this is not a supported setting by Intel and may cause unexpected system behavior.

What is the default port used by the Intel WebGUI?

The Intel WebGUI listens to port 16992.

What is the difference between the ME and AMT?

The ME is the controller that manages AMT. Notice, clearing AMT settings does not affect ME settings since the ME is a separate entity.

For more information

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