Dell[™] Systems Management Administrator's Guide

About Intel® Active Management Technology Intel AMT Setup and Configuration Overview Intel Management Engine BIOS Extension (MEBx) Provisioning: Setup and Configuration Completion Deployment Using the Intel AMT WebGUI Redirecting Serial and IDE Communications Troubleshooting

Notes, Notices, and Cautions

NOTE: A NOTE indicates important information that helps you make better use of your computer.

O NOTICE: A NOTICE indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

CAUTION: A CAUTION indicates a potential for property damage, personal injury, or death.

Information in this document is subject to change without notice. © 2007 Dell Inc. All rights reserved.

Reproduction in any manner whatsoever without the written permission of Dell Inc. is strictly forbidden.

Intel Corporation is a contributing source of content in this document.

Trademarks used in this text: Dell and the DELL logo are trademarks of Dell Inc.: Intel is a registered trademark of Intel Corporation; Microsoft and Windows are either trademarks or registered trademarks of Microsoft Corporation in the United States and/or other countries.

Other trademarks and trade names may be used in this document to refer to either the entities claiming the marks and names or their products. Dell Inc. disclaims any proprietary interest in trademarks and trade names other than its own.

August 2007 Rev. A00

Back to Contents Page

Deployment

Dell[™] Systems Management Administrator's Guide

Once you are ready to deploy a computer to a user, plug the computer into a power source and connect it to the network. Use the integrated Intel[®] 82566DM NIC. Intel Active Management Technology (Intel AMT) does not work with any other NIC solution.

When the computer is turned on, it computer immediately looks for a setup and configuration server (SCS). If the computer finds this server, the Intel AMT capable computer sends 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 servers (SCS) IP address must be manually entered into the Intel AMT capable computer's MEBx.

The Hello message contains the following information:

- Provisioning ID (PID)
 Universally Unique Identifier (UUID)
 IP address
 ROM and firmware (FW) version numbers

The Hello message is transparent to the end user. There is no feedback mechanism to tell you that the computer is broadcasting the message. The SCS uses the information in the Hello message to initiate a Transport Layer Security (TLS) connection to the Intel AMT capable computer using a TLS Pre-Shared key (PSK) cipher suite if TLS is supported.

The SCS uses the PID to look up the provisioning passphrase (PPS) in the provisioning server database and uses the PPS and PID to generate a TLS Pre-Master Secret. TLS is optional. For secure and encrypted transactions, use TLS if the infrastructure is available. If you do not use TLS, then HTTP Digest is used for mutual authentication. HTTP Digest is not as secure as TLS. The SCS logs into the Intel AMT computer with the username and password and provisions the following required data items:

- New PPS and PID (for future setup and configuration) 1
- TLS certificates Private keys
- Current date and time HTTP Digest credentials
- 1 HTTP Negotiate credentials

The computer goes from the setup state to the provisioned state, and then Intel AMT is fully operational. Once in the provisioned state, the computer can be remotely managed.

Intel[®] Management Engine BIOS Extension (MEBx)

Dell[™] Systems Management Administrator's Guide

- Intel MEBx Overview
- Configuring the Intel Management Engine (ME)
- Configuring Your Computer to Support Intel AMT Features
- MEBx Default Settings

MEBx Overview

The Intel[®] Management Engine BIOS Extension (MEBx) provides platform-level configuration options for you to configure the behavior of Management Engine (ME) platform. Options include enabling and disabling individual features and setting power configurations.

This section provides details about MEBx configuration options and constraints, if any.

All the ME Configuration setting changes are not cached in MEBx. They are note committed to ME nonvolatile memory (NVM) until you exit MEBx. Hence, if MEBx crashes, the changes made until that point are NOT going to be committed to ME NVM.

Accessing MEBx Configuration User Interface

The MEBx configuration user interface can be accessed on a computer through the following steps:

1. Turn on (or restart) your computer. 2. When the blue DELL^m logo appears, press <Ctrl> immediately.

If you wait too long and the operating system logo appears, continue to wait until you see the Microsoft® Windows® operating system desktop. Then shut down your computer and try again.

3. Type the ME password. Press <Enter>.

The MEBx screen appears as shown below.

| Intel(R) (Copyright(C) (| Management Engine BIOS Extension 2003-07 Intel Corporation. Al [MAIN MENU] Intel(R) ME Configuration Intel(R) AMT Configuration Change Intel(R) ME Password Exit | on v3.0.2.0004 1 Rights Reserved. ▶ |
|------------------------------|--|---|
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access |
| | | |

The main menu presents three function selections:

Intel ME Configuration

Intel AMT Configuration Change Intel ME Password

The Intel ME Configuration and Intel AMT Configuration menus are discussed in the following sections. First, you must <u>change the password</u> before you can proceed through these menus.

Changing the Intel ME Password

The default password is admin and is the same on all newly deployed platforms. You must change the default password before changing any feature configuration options.

The new password must include the following elements:

- 1 Eight characters
- One uppercase letter One lowercase letter
- 1 A number
- A special (nonalphanumeric) character, such as !, \$, or ; excluding the :, ", and , characters.)

The underscore (_) and spacebar are valid password characters but do NOT add to the password complexity.

Configuring the Intel® Management Engine (ME)

To reach the Intel® Management Engine (ME) Platform Configuration page, follow these steps:

- Under the Management Engine BIOS Extension (MEBx) main menu, select ME Configuration. Press < Enter >. 1
- 2. The following message appears: System resets after configuration changes. Continue: (Y/N)
- 3. Press <Y>.

The ME Platform Configuration page opens. This page allows you to configure the specific functions of the ME such as features, power options, and so on. Below are quick links to the various sections.

- Intel ME State Control 1
- Intel ME Firmware Local Update Qualifier
 Intel ME Features Control
- o Manageability Feature Selection
 Intel ME Power Control
 o Intel ME ON in Host Sleep States



Intel ME State Control

When the ME State Control option is selected on the ME Platform Configuration menu, the ME State Control menu appears. You can disable ME to isolate the ME computer from main platform until the end of the debugging process

| Intel(R) Manag Copyright(C) 2003- INTEL INTEL Inte Inte Inte Rete | ement Engine BIOS Ex 37 Intel Corporation (R) ME PLATFORM CONF EL(R) ME State Contr el(R) ME Firmware Lo el(R) ME Features Co el(R) ME Power Contr urn to Previous Menu | tension v3.0.2.0004 . All Rights Reserved. IGURATION] Cal Update Qualifier ntrol ► ol ► |
|--|--|---|
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access |
| | [] DISABLED [*] ENABLED | |

When enabled, the **ME State Control** option lets you disable ME to isolate the ME computer from the main platform while debugging a field malfunction. The table below illustrates the details of the options.

| ME Platform State Control | | |
|---------------------------|---|--|
| Option Description | | |
| Enabled | Enable the Management Engine on the platform | |
| Disabled | Disable the Management Engine on the platform | |

In fact, the ME is not really disabled with the **Disabled** option. Instead, it is paused at the very early stage of its booting so the computer has no traffic originating from the ME on any of its busses, ensuring that an you can debug a computer problem without worrying about any role the ME might have played in it.

Intel ME Firmware Local Update Qualifier

This option on the **ME Platform Configuration** menu sets the policy for allowing the MEBx to be updated locally. The default setting is **Always Open**. The other settings available are **Never Open** and **Restricted**.



To assist with the manufacturing process as well as OEM-specific in-field firmware update processes, ME firmware provides an OEM- configurable capability that leaves the local firmware update channel always open no matter what value you select for the **ME Firmware Local Update** option.

The Always Open option allows OEMs to use the ME firmware local update channel to update the ME firmware without going through MEBx every time. If you select Always Open, the ME FW Local Update option does not appear under the ME configuration menu. The table below illustrates the detail of the options.

| | ME Firmware Local Update Qualifier Option |
|----------------|---|
| Option | Description |
| Always Open | The ME firmware local update channel is always enabled. A boot cycle does not change enabled to disabled. The ME FW Local Update option can be ignored. |
| Never | The ME firmware local update channel is controlled by the ME FW Local Update option, which can be enabled or disabled. A boot cycle changes enabled to disabled. |
| Restricted | The ME firmware local update channel is always enabled only if Intel AMT is in un-provision state. A boot cycle does not change enabled to disabled. |

Always Open qualifies the override counter and allows local ME firmware updates. The override counter is a value set in the factory that, by default, allows local ME firmware updates. The Never Open and Restricted options disqualify the override counter and do not allow local ME firmware updates unless explicitly permitted with the Intel ME Firmware Local Update option. Selecting Never Open or Restricted adds the Intel ME Firmware Local Update option, which can be set to Enable or Disable. By default it is disabled.

Intel ME Features Control

The ME Features Control menu contains the following configuration selection.

Manageability Feature Selection

When you select the Manageability Feature Selection option on the ME Features Control menu, the ME Manageability Feature menu appears.



You can use this option to determine which manageability feature is enabled.

ASF — Alert Standard Format. ASF is a standardized corporate assets management technology. The Intel ICH9 platform supports ASF specification 2.0.
 Intel AMT — Intel Active Management Technology. Intel AMT is an improved corporate assets management technology. Intel ICH9 platform supports Intel AMT 3.0.

The table below explains these options.

| Management Feature Select Option | | |
|----------------------------------|---|--|
| Option | Description | |
| None | Manageability Feature is not selected | |
| Intel AMT | Intel AMT manageability feature is selected | |
| ASF | ASF manageability feature is selected | |

When you change the option from Intel AMT to None, a warning that Intel AMT un-provisions automatically if you accept the change appears.

The None option has no manageability feature provided by the ME computer. In this case, the firmware is loaded (that is, ME is still enabled) but the management applications remain disabled.

Intel ME Power Control

The ME Power Control menu configures the ME platform power-related options. It contains the following configuration selection.

ME On in Host Sleep States

When the ME ON in Host Sleep States option is selected on the ME Power Control menu, the ME in Host Sleep States menu loads.

| Intel(R) Manag Copyright(C) 2003- [[Int Ret | ement Engine BIOS Ex 07 Intel Corporation INTEL(R) ME POHER CO el(R) ME ON in Host urn to Previous Menu | stension v3.0.2.0004 n. All Rights Reserved. INTROL J Sleep States |
|---|---|---|
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access |
| Desktop: ON in S6 Desktop: ON in S6, Desktop: ON in S8, | S3 S3, S4-5 ME HoL in S3 ME HoL in S3, S4-5 S3, S4-5, OFF After ME HoL in S3, S4-5, | · Power Loss OFF After Power Loss |

The power package selected determines when the ME is turned ON. The default power package turns off the ME in all Sx (S3/S4/S5) states.

The end user administrator can choose which power package is used depending on computer usage. The power package selection page can be seen above.

| Suppo | pported Power Packages | | | | | | |
|----------------------------------|------------------------|-----|----|-----------|-----------|-----|-----------|
| | Power Package | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| SO (Computer On) | ON | ON | ON | ON | ON | ON | ON |
| S3 (Suspend to RAM) | OFF | ON | ON | ME WoL | ME WoL | ON | ON |
| S4/S5 (Suspend to disk/Soft off) | OFF | OFF | ON | ON | ME WoL | ON | ME WoL |
| ME OFF After Power Loss | No | No | No | No | No | Yes | Yes |

* WoL - Wake on LAN

If the power package selected indicates OFF After Power Loss, Intel ME remains off after returning from a mechanical off (G3) state. If the power package selected does NOT indicate OFF After Power Loss Intel ME powers the computer on (S0) briefly, then turn the computer off (S5).

Configuring Your Computer to Support Intel AMT Management Features

After you completely configure the Intel® Management Engine (ME) feature, you must reboot before configuring the Intel AMT for a clean system boot. The image below shows the Intel AMT configuration menu after a user selects the Intel AMT Configuration option from the Management Engine BIOS Extension (MEBx) main menu. This feature allows you to configure an Intel AMT capable computer to support the Intel AMT management features.

You need to have a basic understanding of networking and computer technology terms, such as TCP/IP, DHCP, VLAN, IDE, DNS, subnet mask, default gateway, and domain name. Explaining these terms is beyond the scope of this document.

| nagement Engine BIOS Ext 03-07 Intel Corporation. E INTEL(R) AMT CONFIGURA HOST NAME TCP/IP Provision Model Setup and Configuration Un-Provision VLAN | ension v3.0.2.0004 All Rights Reserved. TION J |
|---|--|
| SOL/IDE-R Secure Firmware Update | |
| lî↓]=Select | LENTER J=Access |
| | |
| | |
| | |
| | nagement Engine BIOS Ext. 103-07 Intel Corporation. -[INTEL(R) AMT CONFIGURA HOST NAME TCP/IP Provision Model Setup and Configuration Un-Provision VLAN SOL/IDE-R Secure Firmware Update [t↓]=Select |

The Intel AMT Configuration page contains the user-configurable options listed below.

For images of these menu options, see Enterprise Mode and SMB Mode.

Menu Options

- 1 Host Name 1 TCP/IP
- Provision Model
- - Setup and Configuration Un-Provision

<u>VLAN</u> SOL/IDE-R Secure Firmware Update Set PRTC Idle Timeout

Host Name

A hostname can be assigned to the Intel AMT capable computer. This is the host name of the Intel AMT-enabled computer. If Intel AMT is set to DHCP, the host name MUST be identical to the operating system machine name.

TCP/IP

Allows you to change the following TCP/IP configuration of Intel AMT.

- Network interface ENABLE** / DISABLED If the network interface is disabled, all the TCP/IP settings are no longer needed.
 DHCP Mode ENABLE** / DISABLED If DHCP Mode is enabled, TCP/IP settings are configured by a DHCP server.

If DHCP mode is disabled, the following static TCP/IP settings are required for Intel AMT. If a computer is in static mode it needs a separate MAC address for the Intel Management Engine. This extra MAC address is often called the Manageability MAC (MNGMAC) address. Without a separate Manageability MAC address, the computer can NOT be set to static mode.

- IP address Internet address of the Intel Management Engine.
- IP address Internet address of the Intel Management Engine. Subnet mask The subnet mask used to determine what subnet IP address belongs to. Default Gateway address The default gateway of the Intel Management Engine. Preferred DNS address Preferred domain name server address. Alternate DNS address Alternate domain name server address. Domain name Domain name of the Intel Management Engine.

Provision Model

The following provisioning models are available:

- 1 Compatibility Mode Intel AMT 3.0** / Intel AMT 1.0
- Compatibility mode finer Awit 3.0^{or} / finer Awit 1.0 Compatibility mode allows user to switch between Intel AMT 3.0 and Intel AMT 1.0. **Provisioning Mode** Enterprise** / Small Business
- 1 This allows you to select between small business and enterprise mode. Enterprise mode may have different security settings than small business mode. Because of the different security settings, each of these modes requires a different process to complete the setup and configuration process.

Setup and Configuration

The menu contains the parameters for the setup and configuration server. This menu also contains the security settings for PSK and PKI configurations.

| Intel(R) Man Copyright(C) 200 IN P P T T R | Agenent Engine BIOS 1-07 Intel Corporation IEL(R) SETUP AND CON THE Provisioning Record Tovisioning Server S PSK S PKI Sturn to Previous Merican Sturn Sturn State Sturn State Sturn State Stat | Extension v3.0.2.0004 on. All Rights Reserved. PIGURATION] COLE |
|---|--|---|
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access |
| | | |

- Current Provisioning Mode Displays the current provisioning TLS Mode: None, PKI, or PSK. This configuration is only shown in Enterprise Provision Model
- Provisioning Record Displays the provision PSK/PKI record data of the computer. If the data has not been entered, the MEBx displays a message that states:
- that states:
 Provision Record not present
 If the data is entered, the Provision Record displays the following:

 TLS provisioning mode Displays the current configuration mode of the computer: None, PSK or PKI.
 Provisioning IP The IP of the setup and configuration server.
 Date of Provision Displays the date and time of the provisioning in the format MM/DD/YYYY at HH: MM.
 DNS Displays if Secure DNS is being used or not. O indicates DNS is not in use, 1 indicates secure DNS is being used (PKI only).
 Host Initiated Displays if the setup and configuration process was initiated by the host: 'No' indicates the setup and configuration process was bost initiated (PKI only).
 Hash Data Displays if the setup and configuration process was bost initiated (PKI only).
 Hash Data Displays if the setup and configuration process was bost initiated (PKI only).
 Hash Data Displays if the setup and configuration process was bost initiated (PKI only).
 Hash Data Displays if the setup and configuration process was bost initiated (PKI only).
 Hash Algorithm Describes the hash type. Currently only SHA1 is supported (PKI only).
 ISDefault Displays 'Yes' if the Hash algorithm is the default algorithm selected. Displays 'No' if the hash algorithm is not the default algorithm used (PKI only).

 - used (PKI only)

- b) Isochart "Display Teal in the fracting of them bench and opportunit opportunt opportunit opportunit opportunit opportunit opportunit oppor
- - o Remote Configuration Enable/Disable Disables or enables remote configuration. If this option is not enabled, remote configuration cannot occur.
 - O Manage Certificate Hashes Displays the list of hashes that are currently stored and the current status. To change the active status of the certificate press the <+ key. To delete the hash press the key. To add another key press the <ins> key.
 Set FODN Sets the fully qualified domain name for the computer.
 Set PKI DNS suffix Sets the PKI DNS suffix.

TLS PSK

The submenu contains the settings for TLS PSK configuration settings. Setting or deleting the PID/PPS causes a partial un-provision if the setup and configuration is "In-process'

- Set PID and PPS Sets the PID and PPS. Enter the PID and PPS in the dash format. (Ex. PID: 1234-ABCD ; PPS: 1234-ABCD-1234-AB 1234-ABCD) Note - A PPS value of '0000-0000-0000-0000-0000-0000-0000' does not change the setup configuration state. If this value is used Delete PID and PPS – Deletes the current PID and PPS stored in ME. If there is no PID and PPS entered, the MEBX returns an error message.

| Intel(R) Man Copyright(C) 200 [] D D R | agement Engine BIOS Ex: 3-07 Intel Corporation NTEL(R) TLS PSK CONFIG PID and PPS ** elete PID and PPS ** eturn to Previous Menu | tension v3.0.2.0004 . All Rights Reserved. URATION J |
|--|---|--|
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access |
| | | |

TLS PKI - Remote Configuration Settings

The remote configuration options are contained under the TLS PKI sub menu. There are four remote configuration items:

- Remote Configuration Enable/Disable Manage Certificate Hashes Set FQDN
- Set PKI DNS Suffix



Remote Configuration Enable/Disable

The selectable options are Enable and Disable. If Remote Configuration is disabled, the menu options underneath are still displayed, but are not be used until Remote Configuration is enabled.

This option cannot be modified once the setup and configuration process is in process. This parameter can only be modified while the computer is in the factory default or un-provisioned state.

Enabling/disabling remote configuration causes a partial un-provision if the setup and configuration is In-process.

Manage Certificate Hashes

Select the Manage Certificate Hashes option under the Remote Configuration menu to display the Manage Certificate Hashes menu. Four default hashes are available from the factory. Hashes can be deleted or added per customer needs.

| Intel(R) Management Engin Copyright(C) 2003-07 Intel Co (INTEL(R) REMU Remote Confign Manage Certif Set FQDN Set FQDN Set PKI DNS So Return to Prev | ne BIOS Extens prporation. f DTE CONFIGURAT uration Enable icate Hashes uffix vious Menu | sion v3.0.2. All Rights J FION J e/Disable ** | 0004 Reserved. * |
|--|--|--|------------------------|
| Hash Nane | Active | Default | t |
| VeriSign Class 3 Primary CA-G1 | [*] | [*] | |
| VeriSign Class 3 Primary CH-G3 | [*] | [*] | |
| Starfield Class 2 CA | [*] | [*] | |
| | | | |
| | | | |

The Manage Certificate Hash screen has several keyboard controls available to you to manage the hashes on the computer. The following keys are valid when in the Manage Certificate Hash menu:

- Escape key Exits from the menu
- Insert key Adds a customized certificate hash to the computer Delete key Deletes the currently selected certificate hash from the computer <+> key Changes the active state of the currently selected certificate hash
 Enter key Displays the details of the currently selected certificate hash

Adding a Customized Hash

- Press <Insert> in the Manage Certificate Hash screen. A text field is displayed requesting the hash name. You must enter the hash name. The hash name must be a maximum of 32 characters. Upon pressing <Enter> you are prompted to enter the certificate 2. hash value.
- 3. The certificate hash value is a 20 byte hexadecimal number. You must enter the hash data in the correct format or the message Invalid Hash
- The certificate Entered Try Again is displayed. Upon pressing <Enter> you are asked about setting the active state of the hash.
 This query allows for setting the active state of the customized hash.
 Yes The customized hash is be marked as active.
 No (Default) VA_Hash is be maintained within EPS.

Deleting a Hash

2.

- 1. Press < Delete> in the Manage Certificate Hash screen to display the Delete this certificate hash? (Y/N)
 - prompt.

 - o Yes MEBx shall send the message to FW to delete the selected hash.
 o No MEBx shall not delete the selected hash and returns to the Remote Configuration.

Changing the Active State

Press the <+> key in the $Manage\ Certificate\ Hash\ screen$ to display the Change the active state of this hash? (Y/N)prompt. Answering yes to this question toggles the active state of the currently selected certificate hash. Setting a hash as active indicates that the hash is available to use when during PSK provisioning.

Viewing a Certificate Hash

Press <Enter> in the Manage Certificate Hash screen. The details of the selected certificate hash are displayed to include: the hash name, the certificate hash data, and the active and default states

Set FQDN

When the Set FQDN option is selected under the Remote Configuration menu, you are prompted to enter the Fully Qualified Domain Name (FQDN) of the Provisioning Server



Set PKI DNS Suffix

When the Set PKI DNS Suffix option is selected under the Remote Configuration menu, you are prompted to enter the PKI DNS Suffix of the Provisioning Server. The Key Value is maintained in EPS.



Un-provision

The Un-Provision option allows you to reset the Intel AMT configuration to factory defaults. There are three types of un-provision:

- 1 Partial Un-provision This option resets all of the Intel AMT settings to their default values but leaves the PID/PPS. The MEBx password remains
- untouched.
- a Full Un-provision This option resets all of the Intel AMT settings to their default values. If a PID/PPS value is present, both values are lost. The MEBx password remains untouched.
 CMOS Clear This un-provision option is not available in the MEBx. This option clears all values to their default values. If a PID/PPS is present, both values are lost. The MEBx password resets to the default value (admin). To invoke this option, you need to clear the CMOS (i.e. system board jumper)

VLAN

This option enables or disables VLAN support for Intel AMT. If VLAN support is enabled, the VLAN Tag (1-4094) must be configured.

| Hos TCL | NTEL(R) AMT CONFIGURATI t Name I/ID | |
|-------------------|---|----------------|
| Pro | vision Model | |
| Set Un- VLA | up and Configuration Provision N | • |
| SOL | /IDE-R | |
| Sec | ure Firmware Update | |
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access |
| | | |
| | | |
| | [VLAN Disabled] | |
| | Enable VLAN: (Y/N) | |
| | | |

SOL/IDE-R

| Intel(R) M Copyright(C) 2 | anagement Engine BIOS Ext 803-07 Intel Corporation. =[INTEL(R) AMT CONFIGURA Host Name TCP/IP Provision Model Setup and Configuration Un-Provision ULAN SOLATOR Secure Firnware Update | ension v3.0.2.0004 All Rights Reserved. TION J |
|------------------------------|---|--|
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access |
| | | |

- Username and Password DISABLED** / ENABLED
 This option provides the user authentication for SOL/IDER session. If the Kerberos protocol is used, set this option to Disabled and set the user authentication through Kerberos. If Kerberos is not used, you have the choice to enable or disable user authentication on the SOL/IDER session.

 Serial-Over-LAN (SOL) DISABLED** / ENABLED
 SOL allows the Intel AMT managed client console input/output to be redirected to the management server console.

 IDE Redirection (IDE-R) DISABLED** / ENABLED
 IDE-R allows the Intel AMT managed client to be booted from remote disk images at the management console.

Secure Firmware Update

This option allows you to enable/disable secure firmware updates. Secure firmware update requires an administrator user name and password. If the administrator user name and password are not supplied, the firmware cannot be updated.

When the secure firmware update feature is enabled, you are able to update the firmware using the secure method. Secure firmware updates pass through the LMS driver.

| Intel(R) M Copyright(C) 2 | anagement Engine BIOS Ext 803-07 Intel Corporation. =[INTEL(R) AMT CONFIGURA TCP/IP Provision Model Setup and Configuration Un-Provision VLAN SOL/IDE-R Secure Firmuare Update Set PRTC | ension v3.0.2.0004 All Rights Reserved. TION] ► |
|------------------------------|--|---|
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access |
| | [3 DISABLED [*] ENABLED | |

Set PRTC

Enter PRTC in GMT (UTC) format (YYYY:MM:DD:HH:MM:SS). Valid date range is 1/1/2004 – 1/4/2021. Setting PRTC value is used for virtually maintaining PRTC during power off (G3) state. This configuration is only displayed for the Enterprise Provision Model.

| Intel(R) Management Engi Copyright(C) 2003-07 Intel C | ne BIOS Extension v3.0.2.0004 orporation. All Rights Reserved. |
|--|---|
| I INTEL(R) AM | T CONFIGURATION 1 |
| TCP/IP | |
| Provision Mod | el |
| Setup and Con | figuration 🕨 |
| Un-Provision | |
| VLAN | |
| SOL/IDE-R | |
| Secure Firmwa | re Update |
| Set PRTC | |
| Enter PRIC in GMT(UIC) | format(YYYY:MM:DD:HH:MM:SS) |
| [ESC]=Exit | [ENTER]=Submit |

I dle Timeout

Use this setting to define the ME WoL idle timeout. When this timer expires, the ME enters a low-power state. This timeout takes effect only when one of the ME WoL power policies is selected. Enter the value in minutes.

| Intel(R) Management Engine BI Copyright(C) 2003-07 Intel Corpor | OS Extension v3.0.2.0004 ation. All Rights Reserved. |
|--|---|
| [INTEL(R) AMT CON | FIGURATION 1 |
| Setup and Configur | ation 🕨 |
| | |
| SOL/INE-R | |
| Secure Firmware Un | date |
| Set PRTC | |
| Idle Timeout | |
| Return to Previous | Menu |
| Timeout Value | (1-65535) |
| | |
| [ESC]=Exit | [ENTER]=Submit |

Intel AMT in DHCP Mode Settings Example

The table below shows a basic field settings example for the Intel AMT Configuration menu page to configure the computer in DHCP mode.

| Intel AMT | Configurations Example in DHCP Mode |
|------------------------------------|---|
| Intel AMT Configuration Parameters | Values |
| Intel AMT Configuration | Select and press <enter>.</enter> |
| Host Name | Example: IntelAMT This is the same as the operating system machine name. |
| тср/ір | Set the parameters as follows: I Enable Network interface I Enable DHCP Mode I Set a domain name (e.g., amt.intel.com) |
| Provision Model | 1 Intel AMT 3.0 Mode 1 Small Business |
| SOL/IDE-R | 1 Enable SOL 1 Enable IDE-R |
| Remote FW Update | Enabled |

Save and exit MEBx and then boot the computer to the Microsoft® Windows® operating system.

Intel AMT in Static Mode Settings Example

The table below shows a basic field settings example for the Intel AMT Configuration menu page to configure the computer in static mode. The computer requires two MAC addresses (GBE MAC address and Manageability MAC Address) to operate in static mode. If there is no Manageability MAC address, Intel AMT cannot be set in static mode.

| Intel AMT | Configurations Example in Static Mode |
|------------------------------------|--|
| Intel AMT Configuration Parameters | Values |
| Intel AMT Configuration | Select and press <enter></enter> |
| Host Name | Example: IntelAMT |
| TCP/IP | Set the parameters as follows: 1 Enable Network interface 1 Disable DHCP Mode 1 Set an IP address (e.g., 192.168.0.15) 1 Set a subnet mask (e.g., 255.255.255.0) 1 The default gateway address is optional 1 The preferred DNS address is optional 1 The Alternate DNS address is optional 1 Set the domain name (for example., amt.intel.com) |
| Provision Model | 1 Intel AMT 3.0 Mode 1 Small Business |
| SOL/IDE-R | 1 Enable SOL 1 Enable IDE-R |

Remote FW Update

Enabled

Save and exit MEBx and then boot computer to the Microsoft® Windows® operating system.

MEBx Default Settings

The table below lists all the default settings for the Intel® Management Engine BIOS Extension (MEBx).

| Password | admin |
|---|---|
| Intel ME Platform | Configuration Default Settings |
| Intel ME Platform State Control | Enabled * Disabled |
| Intel ME Firmware Local Update Qualifier | Always Open * Never Open Restricted |
| Intel ME Features Control | |
| Manageability Feature Selection | None Intel AMT * ASF |
| Intel ME Power Control | |
| Intel ME ON in Host Sleep States | Desktop: ON in S0 Desktop: ON in S0, S3 Desktop: ON in S0, S3, S4-5 * Desktop: ON in S0, ME WoL in S3 Desktop: ON in S0, ME WoL in S3, S4-5 Desktop: ON in S0, S3, S4-5, OFF After Power Loss Desktop: ON in S0, ME WoL in S3, S4-5, OFF After Power Loss |
| NOTE: For certain E-Star or low-power configurations, the defau | It setting will be Desktop: ON in SO. |
| Intel AMT Co | nfiguration Default Settings |
| Host Name | |
| TCP/IP | |
| Disable Network Interface? | Ν |
| DHCP Enabled. Disable? | Ν |
| Domain Name | blank ² |
| Provision Model | |
| Enterprise. Change to Small Business? | Ν |
| Setup and Configuration | |
| Current Provisioning Mode | Provisioning Mode: PKI |
| Provisioning Record | Displays the provision <u>PSK/PKI record data</u> of the computer. |
| Provisioning Server | |
| Provisioning Server Address | 0.0.0.0 |
| Port Number (0-65535) | 0 |
| TLS PSK | |
| Set PID and PPS ** | blank (format ABCD-1234) |
| Delete PID and PPS ** | |
| TLS PKI | |
| Remote Configuration Enable/Disable ** | Enabled |
| Manage Certificate Hashes | Four default hashes active |
| Set FODN | blank |
| Set PKI DNS Suffix | blank |
| Un-Provision ³ | |
| VIAN | |
| VI AN Disabled, Enable? | Ν |
| VLAN ID (1-4094) | 0 (only if enabled) |
| SOL/IDE-R | - ()) |
| | Disabled |
| Username & Password | Enabled * |
| Serial Over LAN | Enabled * |
| IDE Redirection | Disabled Enabled * |
| Secure Firmware Update | Disabled Enabled * |
| Set PRTC | blank |
| I dle Timeout | |
| Timeout Value (0x0-0xFFFF) | 1 |

*Default setting **May cause Intel AMT partial unprovision ¹ Intel ME Platform State Control is only changed for Management Engine (ME) troubleshooting. ² In Enterprise mode, DHCP automatically loads the domain name.

 $^{\rm 3}$ Un-provision setting only seen if the box is provisioned.

About Intel[®] Active Management Technology

Dell[™] Systems Management Administrator's Guide

Intel[®] Active Management Technology (Intel AMT, or iAMT[®]) allows companies to easily manage their networked computers. IT management can:

- 1 Discover computing assets on a network regardless of whether the computer is turned on or off Intel AMT uses information stored in nonvolatile system memory to access the computer. The computer can even be accessed while it is powered off (also called out-of-band or OOB access).
- Remotely repair systems even after operating system failures In the event of a software or operating system failure, Intel AMT can be used to access the computer remotely for repair purposes. IT administrators can also detect computer system problems easily with the assistance of Intel AMT's out-ofband event logging and alerting.
- 1 Protect networks from incoming threats while easily keeping software and virus protection up to date across the network

Software Support

Several independent software vendors (ISVs) are building software packages to work with Intel AMT features. This provides IT administrators many options when it comes to remotely managing the networked computer assets within their company.

Features and Benefits

| | Intel AMT |
|---|--|
| Features | Benefits |
| Out-of-band (OOB) access | Allows remote management of platforms regardless of system power or operating system state |
| Remote troubleshooting and recovery | Significantly reduces desk side visits, increasing the efficiency of IT technical staff |
| Proactive alerting | Decreases downtime and minimizes repair times |
| Remote hardware and software asset tracking | Increases speed and accuracy over manual inventory tracking, reducing asset accounting costs |
| Third-party nonvolatile storage | Increases speed and accuracy over manual inventory tracking, reducing asset accounting cost |

The Intel® Management Engine BIOS Extension (MEBx) is an optional ROM module provided to Dell from Intel that is included in the Dell BIOS. The MEBx has been customized for Dell computers.

Back to Contents Page

Redirecting Serial and IDE Communications

Dell[™] Systems Management Administrator's Guide

Intel[®] AMT makes it possible to redirect serial and IDE communications from a managed client to a management console regardless of the boot and power state of the managed client. The client need only have the Intel AMT capability, a connection to a power source, and a network connection. Intel AMT supports Serial Over LAN (SOL, text/keyboard redirection) and IDE Redirection (IDER, CD-ROM redirection) over TCP/IP.

Serial Over LAN Overview

Serial Over LAN (SOL) is the ability to emulate serial port communication over a standard network connection. SOL can be used for most management applications where a local serial port connection is normally required.

When an active SOL session is established between an Intel AMT-enabled client and a management console using the Intel AMT redirection library, the client's serial traffic is redirected through Intel AMT over the LAN connection and made available to the management console. Similarly, the management console may send serial data over the LAN connection that appears to have come through the client's serial port.

IDE Redirection Overview

IDE Redirection (IDER) is capable of emulating an IDE CD drive or a legacy floppy or LS-120 drive over a standard network connection. IDER enables a management machine to attach one of its local drives to a managed client over the network. Once an IDER session is established, the managed client can use the remote device as if it were directly attached to one of its own IDE channels. This can be useful for remotely booting an otherwise unresponsive computer. IDER does not support the DVD format.

For example, IDER is used to boot a client with a corrupt operating system. First, a valid boot disk is loaded into the management console disk drive. This drive is then passed as an argument when the management console opens the IDER TCP session. Intel AMT registers the device as a virtual IDE device on the client, regardless of its power or boot state. Both SOL and IDER may be used together since the client BIOS may need to be configured to boot from the virtual IDE device.

Intel[®] AMT Setup and Configuration Overview

Dell[™] Systems Management Administrator's Guide

Terms

Setup and Configuration States

Terms

The following is a list of important terms related to the Intel[®] AMT setup and configuration:

- Setup and configuration The process that populates the Intel AMT-managed computer with usernames, passwords, and network parameters that 1 Provisioning — The act of setting up and fully configuring Intel AMT.
 Configuration service — A third-party application that completes the Intel AMT provisioning for the Enterprise operational mode.

- Configuration service A third-party application that completes the Intel AMT provisioning for the Enterprise operational mode. Intel AMT WebGUI A Web browser-based interface providing limited remote computer management. Operational modes Intel[®] AMT can be set up for use in either Enterprise mode (for large organizations) or Small and Medium Business (SMB) mode (also called provisioning models). Enterprise mode requires a configuration service to complete provisioning; SMB mode is set up manually, does not require much infrastructure, and completes provisioning through the Intel ME BIOS Extension (MEBx). Enterprise mode Once Intel AMT is set up in Enterprise mode, it is ready to initiate configuration of its own capabilities. When all required network elements are available, simply connect the computer to a power source and the network, and Intel AMT automatically initiates its configuration. The configuration service (a third-party application) completes the process for you. Intel AMT is then ready for remote management. This configuration typically takes only a few seconds. When Intel AMT is set up and configured, you can reconfigure the technology as needed for your business
- solution ment. SMB mode Once Intel AMT is set up in SMB mode, the computer does not have to initiate any configuration across the network. It is set up manually and is ready to use with the Intel AMT WebGUI. 1

You must set up and configure Intel AMT in a computer before using it. Intel AMT setup readies the computer for Intel AMT mode and enables network connectivity. This setup is generally performed only once in the lifetime of a computer. When Intel AMT is enabled, it can be discovered by management software over a network.

Setup and Configuration States

An Intel AMT capable computer can be in one of three setup and configuration states:

- Factory-default state The factory-default state is a fully unconfigured state in which security credentials are not yet established and Intel AMT capabilities are not yet available to management applications. In the factory-default state, Intel AMT has the factory-defined settings.
 Setup state The setup state is a partially configured state in which Intel AMT has been set up with initial networking and transport layer security (TLS) information: an initial administrator password, the provisioning passphrase (PPS), and the provisioning identifier (PID). When Intel AMT has been set up, Intel AMT is ready to receive Enterprise mode configuration settings from a <u>configuration service</u>.
 Provisioned state The provisioned state is a fully configured state in which the Intel Management Engine (ME) has been configured with power options, and Intel AMT has been configured with its security settings, certificates, and the settings that activate the Intel AMT capabilities. When Intel AMT has been configured, the capabilities are ready to interact with management applications.

Methods for Completing the Provisioning Process

The computer has to be configured before the Intel AMT capabilities are ready to interact with management application. There are three methods to complete the provisioning process (in order from least complex to most complex):

- Remote configuration This new feature of Intel AMT 3.0 allows you to connect AC power to the Intel AMT ready computer and the provisioning process begins automatically without any user input. The provisioning passphrase (PPS) and provisioning identifier (PID) fields are completed automatically
- Configuration service A configuration service allows you to complete the provisioning process from a GUI console on their server with only one touch on each of the Intel AMT capable computers. The PPS and PID fields are completed using a file created by the configuration service saved to a USB
- MEBx interface The IT administrator manually configures the Management Engine BIOS Extension (MEBx) settings on each Intel AMT ready computer. The PPS and PID fields are completed by typing the 32 character and 8 character alpha-numeric keys created by the configuration service into the MEBx interface

Back to Contents Page

Provisioning: Completing the Setup and Configuration Process Dell[™] Systems Management Administrator's Guide

- Using Remote Configuration to Complete Provisioning
- Using a Configuration Service to Complete Provisioning
- Using MEBx Interface to Complete Provisioning

The computer has to be configured before the Intel[®] AMT capabilities are ready to interact with the management application. Three methods are available to complete the provisioning process (in order from least complex to most complex):

- Remote configuration This new feature of Intel AMT 3.0 allows you to connect AC power to the Intel AMT ready computer and the provisioning process begins automatically without any user input. The provisioning passphrase (PPS) and provisioning identifier (PID) fields are completed
- configuration service A configuration service allows you to complete the provisioning process from a GUI console on their server with only one touch 1 on each of the Intel AMT capable computers. The PPS and PID fields are completed using a file created by the configuration service saved to a USB mass storage device.
- MEBs interface The IT administrator manually configures the Management Engine BIOS Extension (MEBx) settings on each Intel AMT ready computer. The PPS and PID fields are completed by typing the 32 character and 8 character alpha-numeric keys created by the configuration service into the MEBs interface.

Using Remote Configuration to Complete Provisioning

Remote configuration allows you to automatically provision an Intel[®] AMT capable computer when power is applied to the computer. By default from the Dell factory, four certificate hashes are configured which allow the remote configuration function to work. The hashes can be deleted or added per customer needs.

| ctive | Defaul | t |
|-------|-----------------------------------|---|
| [*] | [*] | |
| [*] | [*] | |
| [*] | [*] | |
| | | |
| | ctive [*] [*] [*] [*] | ctive Defaul [*] [*] [*] [*] [*] [*] [*] [*] [*] [*] [+]=Active |

For remote configuration to fully function, the ProvisionServer and the Intel AMT-capable computer must be configured on the network and the DNS server. When power is plugged into the Intel AMT-capable computer, a "Hello packet" is broadcast to the ProvisionServer. If the hashes on the server match the computer, the provisioning process starts automatically. When provisioning is complete, the Hello packet broadcast stops.

The provisioning passphrase (PPS) and provisioning identifier (PID) fields are completed automatically

For more information about the **Hello** packet, see Deployment.

Using a Configuration Service to Complete Provisioning

Using a USB Storage Device

This section discusses Intel® AMT setup and configuration using a USB storage device. You can set up and locally configure password, provisioning ID (PID), and provisioning passphrase (PPS) information with a USB drive key. This is also called *USB provisioning*. USB provisioning allows you to manually set up and configure computers without the problems associated with manually typing in entries.

USB provisioning only works if the MEBx password is set to the factory default of admin. If the password has been changed, reset it to the factory default by clearing the CMOS. For instructions, see "System Setup" in the User's Guide for your computer.

The following is a typical USB storage device key setup and configuration procedure. For a detailed walk-through using Altiris® Dell™ Client Manager (DCM), see Configuring Intel AMT With the Dell Client Management Application

- An IT technician inserts a USB drive key into a computer with a management console
- The technician requests local setup and configuration records from a setup and configuration server (SCS) through the console. 2
- 3

6.

- The SCS does the following: o Generates the appropriate passwords, PID, and PPS sets
- o Stores this information in its database
 o Returns the information in its database
 o Returns the information to the management console
 The management console writes the password, PID, and PPS sets to a setup.bin file in the USB drive key.
 The technician takes the USB drive key to the staging area where new Intel AMT capable computers are located. The technician then does the following:
 o Unpacks and connects computers, if necessary 5.
 - Inserts the USB drive key into a computer
 Turns on that computer
- 7.
- o Turns on that computer
 The computer BIOS detects the USB drive key.
 o If found, the BIOS looks for a setup.bin file at the beginning of the drive key. Go to step 7.
 o If no USB drive key or setup.bin file is found, then restart the computer. Ignore the remaining steps.
 The computer BIOS displays a message that automatic setup and configuration will occur.
 o The first available record in the setup.bin file is read into memory. The process accomplishes the following:

 n Validates the file header record
 n Locates the next available record
 if the next available record
 if the next exceeding it the current record is invalidated so it cannot be used again.

 - If the procedure is successful, the current record is invalidated so it cannot be used again
 The process places the memory address into the MEBx parameter block.
- o The process calls MEBx. MEBx processes the record.
- MEBx writes a completion message to the display. The IT technician turns off the computer. The computer is now in the setup state and is ready to be distributed to users in an Enterprise mode 10.
- environment. 11. Repeat step 5 if you have more than one computer

Refer to the management console supplier for more information on USB drive key setup and configuration.

USB Storage Device Key Requirements

The USB storage device key must meet the following requirements to be able to set up and configure Intel AMT:

- It must be greater than 16 MB. It must be formatted with the FAT16 file system.
- The sector size must be 1 KB. The USB drive key is not bootable
- The setup.bin file must be the first file landed on the USB drive key. The USB key must not contain any other files whether hidden, deleted, or otherwise.

Configuring Intel AMT With the Dell Client Management Application

The default console package provided is the Dell[™] Client Management (DCM) application. This section provides the procedure to set up and configure Intel® AMT with the DCM package. As mentioned earlier in the document, several other packages are available through third-party vendors.

The computer must be configured and seen by the DNS server before you begin this process. Also, a USB storage device is required and must conform to the requirements listed in the previous section.

The nature of management software is that it is not always dynamic or real time. In fact, sometimes if you tell a computer to do something, such as to reboot, you may have to reboot again for it to work.

Setup and Configuration Using a USB Storage Device

1. Format a USB device with the FAT16 file system and no volume label and then set it aside.



2. Open the Altiris® Dell Client Manager application by double-clicking the desktop icon or through the Start menu



3. Select AMT Quick Start from the left navigation menu to open the Altiris Console.



4. Click the plus (+) to expand the Intel AMT Getting Started section.



5. Click the plus (+) to expand the Section 1. Provisioning section.

| Altiris Console 6.5 - Windows Internet Explorer | | | | X |
|---|----------------------------------|-------------------|---------------------------------|----------------------------|
| | aspx?ConsoleGuid=3faa8b67-250b-4 | ad-8186-fe2f49a9e | 7078WiewGuid=1 💽 47 🗙 Live Sear | dh 🖉 • |
| Akiris Console 6.5 | | | 🙆 • 🖸 | • 🖶 • 🔂 Page • 🎯 Tools • * |
| 🗧 altiris console | altirisbox.trvpro.local - TRVPR | O\Administrator | 19210 | Search |
| Home View Manage Tools Reports Configure H | elp > | | | |
| 1 5 | 2. | | | |
| 🖹 🛅 Out of Band Management | | | | ~~~~ |
| Aert Standard Format Getting Started Collections | Intel® AMT Getti | ng Started | 1 | |
| Configuration | Namo | Type Desc | viption Modified By | Modified Date |
| 😑 🚍 Intel® AMT Getting Started | Section 1 Provisioning | Folder | TRVPRO\Administrator | 6/14/2007 1-17-14 PM |
| 🗟 🧰 Section 1. Provisioning | Section 2. Intel® AMT Tasks | Folder | TRVPR0\Administrator | 6/14/2007 1:17:13 PM |
| Section 2. Intel® AMT Tasks | | | | |
| Reports | | | | |
| B 165/5 | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| A My Experime | | | | |
| Altris Console Home | Rows: 1 to 2 of 2 | | | |
| Re contra secondaria contra | Page: 1 of 1 Row | s per page: All | | |
| Done | | | 🛛 🚺 🚺 🚺 Intern | et 🔍 100% 🔹 |

6. Click the plus (+) to expand the Basic Provisioning (without TLS) section.



7. Select Step 1. Configure DNS.

The notification server with an out-of-band management solution installed must be registered in DNS as "ProvisionServer."

| Altiris Console 6.5 - Windows Internet Explorer | | | | | ē × |
|--|---|--------------------------|--|--|----------------|
| G v Ktp://altirisbox.trvpro.local/Altiris/Console/Default. | aspx?ConsoleGuid=3faa8b67-250b-4 | 2ad-8186-fe2f49a9e7078We | wGuid=1 + X Live Search | h | - م |
| 😭 🏟 🌍 Altiris Console 6.5 | | | 🙆 • 🖾 • | 🖶 🔹 🔂 Bage 🔹 🌀 Toole | - * |
| 🗘 altiris console | altirisbox.trvpro.local - TRVPR | O\Administrator | 19270 | > Search | |
| Home View Manage Tools Reports Configure H | elp > | | | | |
| G Dut of Band Management Alert Standard Extrant Cattion Startad | t• | | | ₽ २ २ द | |
| Colections | Intel® AMT Getti | ng Started | | | |
| 🛞 🧰 Configuration | Name | Type Description | n Modified By | Modified Date | |
| Control Started Control Started Control - Provision Contro Control - Provision | Section 1. Provisioning Section 2. Intel®AMT Tesks | Folder | TFVPF0Vsdministrator TRVPR0Vsdministrator | 6/14/2007 1:17:14 PM 6/14/2007 1:17:13 PM | |
| Favorites V My Favorites Airis Console Home | Rovai 1 to 2 of 2 Pagei 1 of 1 Rov | s per page: All 🗴 | | a References | |

8. Click **Test** on the **DNS Configuration** screen to verify that DNS has the ProvisionServer entry and that it resolves to the correct Intel setup and configuration server (SCS).



The IP address for the ProvisionServer and Intel SCS are now visible.

| | P • » |
|---|-------|
| | k • * |
| Interference Altristexcet/organs/local = 1 AVVA/O/Administrator Itome View Hanage Total Section Itome View Hanage Total Section Itome Out of Band Management Itome Itome Itome Out of Band Management Itome Itome Itome Out of Band Management Itome Itome Itome Other Sections Itome Itome Itome Other Sections Itome Itome Itome Itome Itome Sections Itome Itome Itome Itome Itome Sections Itome Itome Itome Itome Itome Itome Sections Itome Itome <td< th=""><th></th></td<> | |
| Imme Vew Nanage Tools Reports Configure Help > Imme Second Configure Imme | - |
| Configuration DNS Set Set Onsome (infourting) Step 1. Configuration Set 2. Set Coalese | |
| Configuration Configu | |
| Aler Standard Format Geting Started DONS Configuration Configuration Intel® AMT Geting Started DONS Configuration Intel® AMT Geting Started DONS Configuration Intel® AMT device setup and configuration requires the presence of a Domain Name System (DNS) Server. The DNS must have information for two entities: The computer running Intel® SCS Server must be registered in the DNS Step 1. ConfiguretS Step 2. ConfiguretS | |
| Collectors DNS Configuration DNS Configuration DNS Configuration DNS Configuration DNS Configuration DNS Configuration DNS Configuration requires the presence of a Domain Name System (DNS) Server. The DNS must have information for two entities: The computer running Intel® SCS Server must be registered in the DNS Step 1. ConfiguretNS Step 1. ConfiguretNS | |
| Configuration Configuration Started Configuration requires the presence of a Domain Name System (DNS) Server. The DNS must have information for two entities: Section 1. Provisioning Configuration Section 1. Provisioning The computer running Intel® SCS Server must be registered in the DNS Section 1. Configuration Configuration A configuration requires the presence of a Domain Name System (DNS) Server. The DNS must have information for two entities: The computer running Intel® SCS Server must be registered in the DNS A configuration A configuration | |
| Betton 1.Provisioning The computer running Intel⊗ SCS Server must be registered in the DNS Step 1. Configure NS Step 1. Configure NS Step 2. Configure Coables | |
| Base Protounny (where its) Sho 1. Configure ONS A configured, operational Intel® AMT device must be registered within DNS Sho 2. Docower (capabilities | |
| A Step 2. Discover Capabilities | |
| | |
| 1 Step 3. View Intel® AMT Capable Computers Intel® SCS | |
| Step 4. Create Profile Step 4. Create Profile Step 5. Create Scorthr Keys Step 5. Create Scorthr Keys Step 5. Create Scorthr Keys Step 5. Configure Automatic Profile Assymments Step 7. Nontror Provisioning Process Step 5. Nontror Provising Process | |
| Click on the Test button below to verify that DNS has the "ProvisionServer" entry and that resolves to the correct Intel® SCS Server. | č. |
| Tosis Test | |
| Resolved "ProvisionServer" IP: 192.158.20.10 | |
| Resolved Intel® SCS IP: 192.168.20.10 | - 10 |
| Intel® AMT Devices | |
| Ensure that the DNS is configured with the Fully Qualified Domain Names (FQDN) of the Intel® AMT-enabled machines that are being configured. | |
| Intel® AMT devices must be configured to have the same FQDN as the host OS. This stems from the fact the Intel® AMT device is not a secure DNS client and it relies on the host OS to maintain the DNE record. For this resume, the Intel® AMT device ones the DNPD | |
| Favorites | |
| E My Favorites provided by the DHCP to the host OS as its own. | |
| Altris Console Home When the host OS is down, the Intel® AMT device requests DNS registration of its configured FQDN from the DHCP (option 81). This works only if the DNS and DHCP are | |
| Done 😼 🕞 Internet 👎 100% | - / |

9. Select Step 2. Discovery Capabilities.



10. Verify that the setting is Enabled. If Disabled, click the checkbox next to Disabled and click Apply.



11. Select Step 3. View Intel AMT Capable Computers



Any Intel AMT capable computers on the network are visible in this list.



12. Select Step 4. Create Profile



13. Click the plus (+) to add a new profile.

| 🖉 Altiris Console 6.5 - Windows Internet Explorer | | | _ # × |
|--|--|------------------|----------------------|
| G - Ktp://altirisbox.trvpro.local/Altiris/Console/Defaul | t.aspx?ConsoleGuid=3faa8b67-250b-42ad-8186-fe2f49a9e7078WewGuid= | 47 🗙 Live Search | P - |
| 😪 🍻 🌍 Altiris Console 6.5 | | 🐴 • 📾 • 🖶 • 🗄 | 🔆 Page 🔹 🍈 Tools 🔹 🍟 |
| 🗧 altiris console | altirisbox.trvpro.local - TRVPRO\Administrator | | Search |
| Home View Manage Tools Reports Configure I | telp > | | |
| 1 6 | Red Alx | | |
| Cut of Band Management Cut of Band Management Cut of Band Management Cut of Band Management Getting Started Configuration Configuration Second Started Second Started | Manage Profiles | | _ |
| ster 1. Loongute Lins Ster 2. Toologie Capabilities Ster 2. Toologie Capabilities Ster 2. Vew Intel® AVT Capabil Computers Ster 3. Content Profile Ster 3. Content Profile Ster 3. Content Profile Ster 3. Monitor Provisioning Process Ster 5. Another Provisioning Process Ster 5. Another Profile Asignments Ster 5. Another Provisioning Process Ster 5. Another | | | |
| Favorites | | | |
| My Favorites | | | |
| 📳 Altris Console Home | | | |
| Done | | Internet | * 100% - |

14. On the **General** tab the administrator can modify the profile name and description along with the password. The administrator sets a standard password for easy maintenance in the future. Select the **manual** radio button and enter a new password.

| rofile name: default_2 rofile description: Default profile | User name: ADMIN Intel® AMT 2.0 password: |
|--|--|
| Profile description: Default profile | Intel® AMT 2.0 password: |
| Default profile | |
| | Random creation |
| | Manual: |
| | Password: |
| (erberos | Confirm password: |
| fax clock tolerance: 5 minutes | Intel® AMT 1.0 password: |
| | Password: |
| | Confirm password: |
| | |
| | |
| | |
| | |
| | Commin password. |

15. The Network tab provides the option to enable ping responses, VLAN, WebUI, Serial over LAN, and IDE Redirection. If you are configuring Intel AMT manually, all these settings are also available in the MEBx.

| Altiris Console Webpage Dialog | | j |
|---|-----------------|-----------|
| http://akirisbox.trvpro.local/Akiris/OOBSC/EditProfileDig.aspx?action=add | | <u>_</u> |
| Configure Intel® AMT Setup & Configuration | Service Profile | 🌍 altiris |
| General Network TLS ACL Power Policy | | |
| General | | |
| I Enable ping response | | |
| VLAII | | |
| T Use VLAN | | |
| VLAN tag: 5 | | |
| Enabled Interfaces | | |
| T Web UI | | |
| Serial over LAN | | |
| IDE redirection | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | - | 1 |
| | OK | Cancel |
| to://akirisbox.trvpro.local/Akiris/OOBSC/EditProfileDig.aspx?action=add | Internet | |

16. The **TLS** (Transport Layer Security) tab provides the ability to enable TLS. If enabled, several other pieces of information are required including the certificate authority (CA) server name, CA common name, CA type, and certificate template.

| Altiris Console Webpage Dia http://altirisbox.trvpro.local/Altiris/ | log IOC65C/EdtProfileDig.aspx?action=add | 2 |
|--|---|------------------|
| Configure Intel® | AMT Setup & Configuration Service Profile | altiris |
| General Network TLS A | CL Power Policy | |
| TLS | | |
| Configure the Profile Certifi | cates | |
| CA server name: | | |
| CA common name: | | |
| CA type: | Enterprise | ¥. |
| cerumcate pengnato. | | |
| tp://altirisbox.trvpro.local/Altiris/OOB | SC/EdiProfileD(g.aspx?action=add | Cancel |

17. The ACL (access control list) tab is used to review users already associated with this profile and to add new users and define their access privileges.

| Altiris Console Web | page Dialog | | | × |
|----------------------------|------------------------------------|-----------------|-----------------|---------|
| Configure Int | tel® AMT Setup | & Configuration | Service Profile | altiris |
| General Network | TLS ACL Power Policy | 1 | | |
| View and Configure | the Profile ACL | | | |
| User Access Per | rmission Realms | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | _ | | | |
| Add | Delete | Edit | | |
| | | | ОК | Cancel |
| (latirishov trypen locally | Altiris/OORSC/EditProfileDia.asny? | action=add | Internet | |

18. The **Power Policy** tab has configuration options to select the sleep states for Intel AMT as well as an **Idle Timeout** setting. It is recommended that Idle timeout is always set to **1** for optimal performance.

NOTICE: The setting for the **Power Policy** tab can potentially impact a computer's ability to remain E-Star 4.0 compliant.

| Altiris Console Webpage Dialog | | |
|--|----------|---------|
| Configure Intel® AMT Setup & Configuration Service P | rofile | 🔇 altir |
| General Network TLS ACL Power Policy | | |
| ntel® AMT is ON in the following host sleep states: Intel® AMT is always ON (S0-S5) | | |
| de tineout: D minutes | | |
| | ОК | Cancel |
| | Internet | |

19. Select Step 5. Generate Security Keys.



20. Select the icon with the arrow pointing out to Export Security Keys to USB Key.



21. Select the Generate keys before export radio button.



22. Enter the number of keys to generate (depends on the number of computers that need to be provisioned). The default is 50.

| price and board aprove | entries of a construction to the state of the state | |
|--|--|------------------------------|
| Export Secur | ity Keys to USB Key |) altiris |
| Export keys | | |
| C All | | |
| C Only selected | | |
| Generate keys t | pefore export: | |
| Generate Security K | eys | |
| Number of security | keys to generate: 50 | |
| Factory Default Inte | l® Management Engine Password | |
| Intel® ME Passwor | rd: admin | |
| New Intel® Manager This password is either Engine BIOS Extension | ment Engine Password uploaded from USB key or typed in manus screen. | Ily into the Management |
| Intel® ME Passwor | rd: Dell123! | |
| | | |
| | | |
| | | |
| | | |
| Export Result | USB key file, first configure settings and c | lick Generate file, and then |
| | me, made dominarded file to the USB stor | age Dente. |
| to allable. | Allow of the second second second second | an area to a fillen a |

23. The Intel ME default password is admin. Configure the new Intel ME password for the environment.

| | Wave to USB Kov | altiris a |
|---|--|---|
| Export Securi | ty keys to 030 key | C) anns |
| Export keys | | |
| C All | | |
| C Only selected | | |
| Generate keys be | efore export: | |
| Generate Security Ke | ys | |
| Number of security | keys to generate: 50 | |
| | | |
| Factory Default Intel | Management Engine Password — | |
| Intel® ME Password | t: admin | |
| New Intel® Managem | ent Engine Password | |
| This password is either u Engine BIOS Extension a | ploaded from USB key or typed in manua creen. | lly into the Management |
| This password is either u Engine BIOS Extension a Intel® ME Password | ploaded from USB key or typed in manus creen. 1: Dell123! | ly into the Management |
| This password is either o Engine BIOS Extension a Intel® ME Password | ploeded from USB key or typed in manus creen. 1: Dell1231 | ly into the Management |
| This password is either o Engine BIOS Extension s Intel® ME Password | ploaded from USB key or typed in manus creen. 5: Dell123! | ly into the Management |
| This password is either u Engine BIOS Extension a Intel® ME Password | ploaded from USB key or typed in manua creen. 5: Dell 1231 | ly into the Management |
| This password is either u Engine BIOS Extension a Intel® ME Password | pleated from UEB key or typed in manus treen. 5: Dell1231 | ly into the Management |
| This passiond is either u Engine BIOS Extransion s Intel® ME Password | pleated from USB key or typed in manua reren. 5: Dell1231 | ly into the Management |
| This passion is either a Engine BIDS Extension a Intel® ME Password Export Result To create and download dick Download USE key 1 | ploaded from UBB key or typed in manua rene 5: Dell1231 UBB key file, first configure settings and d file. Place downloaded file to the UBB Bion | ly into the Management lick Generate Ille, and then ege Device. |

24. Click Generate. Once the keys have been created, a link appears to the left of the Generate button.

| http://altirisbox.trvpre | o.local/Altir | is/OOB5C/Security/MEBxSettingsPage.asp | x?selected=&op=exp | ort |
|--|---------------|---|--------------------------------------|----------|
| Export Secu | rity I | (eys to USB Key | 9 | altiri |
| Export keys | | | | |
| C All | | | | |
| C Only selected | | | | |
| Generate keys | before | export: | | |
| Generate Security | Keys | | | |
| Number of securi | ty keys | to generate: 50 | | |
| actory Default In | tel® Ma | nagement Engine Password — | | |
| Intel® ME Passw | ord: | admin | | |
| New Intel® Manag | ement l | Engine Password | ally into the Manag | ement |
| Engine BIOS Extensio | in screen | | | |
| Intel® ME Passw | ord: | Dell123! | | |
| | | | | |
| | | | | |
| | | | | |
| xport Result | | | | |
| | ad USB k | ey file, first configure settings and ace downloaded file to the USB Sto | click Generate file, rage Device, | and then |
| o create and downlo lick Download USB k | | | | |

- Insert the previously formatted USB device into a USB connector on the ProvisioningServer.
 Click the **Download USB key file** link to download **setup.bin** file to the USB device. The USB device is recognized by default; save the file to the USB device.

If additional keys are needed in the future, the USB device must be reformatted before saving the setup.bin file to it.

| | Wave to USB Kow | 🕥 altiri |
|---|--|--|
| export securit | y keys to USB key | anun anun |
| Export keys | | |
| C All | | |
| C Only selected | | |
| Generate keys be | fore export: | |
| Generate Security Key | /s | |
| Number of security k | eys to generate: 50 | |
| | | |
| Factory Default Intel® | Management Engine Password | |
| Intel® ME Password | admin | |
| This password is either up Engine BIOS Extension so | Ht Engine Password loaded from USB key or typed in manual reen. | y into the Management |
| Intel® ME Password | Dell123! | |
| | | |
| | | |
| | | |
| | | |
| | | |
| Export Result | | |
| Export Result | ISB key file, first configure settings and cli e. Place downloaded file to the USB Stora | ck Generate file, and then |
| Export Result To create and download U click Download USB key fil | ISB key file, first configure settings and cli e. Place downloaded file to the USB Stora Download USB key file | ck Generate file, and then ge Device. |

a. Click Save in the File Download dialog box.



b. Verify the Save in: location is directed to the USB device. Click Save.



c. Click Close in the Download complete dialog box.



The setup.bin file is now visible in the drive explorer window.

| e/ | | | | | | |
|---------------------------------------|--------|-----------------|-------|----------|--------------------|-----------|
| Edit Yew Favorites | Tools | Help | | | | 1 |
| Back - 🕘 - 🗊 🔎 S | Search | 🔁 Folders 🛛 🖽 • | | | | |
| ess 🖙 E:\ | | | | | | 💌 🛃 Gi |
| | | Name A | Size | Туре | Date Modified | Attribute |
| ile and Folder Tasks | * | setup.bin | 26 KB | BIN File | 6/27/2007 11:12 AM | A |
| ther Places | ¥ | | | | | |
| Details | * | | | | | |
| Removable Disk (E:) Removable Disk | | | | | | |
| ile System: FAT | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

 Close the Export Security Keys to USB Key and drive explorer windows to return to the Altiris Console.
 Take the USB device to the computer, insert the device, and turn on the computer. The USB device is recognized immediately and the following message appears:

Continue with Auto Provisioning $(\,\mathrm{Y}/\mathrm{N}\,)$

29. Press < y>.

Intel(R) Management Engine BIOS Extension v3.0.2.0004 Copyright(C) 2003-07 Intel Corporation. All Rights Reserved.

Found USB Key for provisioning Intel(R) AMT Continue with Auto Provisioning (Y/N)

30. Press any key to continue with system boot...

Intel(R) Management Engine BIOS Extension v3.0.2.0004 Copyright(C) 2003-07 Intel Corporation. All Rights Reserved. Found USB Key for provisioning Intel(R) AMT Continue with Auto Provisioning (Y/N) Intel(R) AMT Provisioning complete Press any key to continue with system boot... Intel(R) Management Engine BIOS Extension v3.0.2.0004 Copyright(C) 2003-07 Intel Corporation. All Rights Reserved. Found USB Key for provisioning Intel(R) AMT Continue with Auto Provisioning (Y/N) Intel(R) AMT Provisioning complete Press any key to continue with system boot... ME-BIOS Sync - Successful

31. Once complete, turn off the computer and move back to the management server.

32. Select Step 6. Configure Automatic Profile Assignments.



33. Verify that the setting setting is enabled. In the Intel AMT 2.0+ dropdown, select the profile created previously. Configure the other settings for the environment.



34. Select Step 7. Monitor Provisioning Process.
| - Shttp://altirisbox.trvpro.local/Altiris/Console/Default. | aspx?ConsoleGuid=3faa8b67-250b-42ad-8186-fe2f49a9e7078.ViewGuid== ++ × Live Search |
|---|--|
| Akiris Console 6.5 | 🐴 - 🔂 - 🖶 - 🕞 Page - 🎯 Tgols - ** |
| 🗘 altiris console | altirisbox.trvpro.local - TRVPRO\Administrator |
| Home View Manage Tools Reports Configure H | elp > |
| So Out of Sand Management Art Standard Pormat Getting Started Detecting Started Detecting Started Detecting Started Societaria Detecting Started Societaria Soci | |
| Favorites ♥ G In y Favorites Ø Atris Console Home | Run now Cancel Cancel |
| Done | 100% - A |

The computers for which the keys were applied begin to appearing in the system list. At first the status is **Unprovisioned**, then the system status changes to **In provisioning**, and finally it changes to **Provisioned** at the end of the process.



35. Select Step 8. Monitor Profile Assignments

| Altiris Console 6.5 - Windows Internet Explorer | | × |
|---|---|----------------------------------|
| C C + C http://altirisbox.trvpro.local/Akiris/Console/Default | .aspx?ConsoleGuid=3faa8b67-250b-42ad-8186-fe2f49a9e7078WewGuid= | 🖬 💽 😚 🗙 Live Search 🖉 • |
| 😭 🍻 🎒 Akiris Console 6.5 | | 🟠 • 🔂 - 🖶 • 📴 Bage • 🎯 Tools • 👌 |
| 🗘 altiris console | altirisbox.trvpro.local - TRVPRO\Administrator | Search 3 |
| Home View Manage Tools Reports Configure H | telp > | |
| 1 5 | 5- CIS-7 2 0 @ @ 5 2 1 X | |
| Cut of Band Management Control Standard Exercise Catilities Charled | | |
| Collections | Intel® AMT Systems | |
| Configuration | | |
| 🖃 📇 Intel® AMT Getting Started | UUID FQDN Status Provision Date Version | Profile |
| E C Section 1. Provisioning | | |
| Basic Provisioning (without TLS) | | |
| Step 1. Configure DNS Step 2. Discours Capabilities | | |
| Step 3. View Intel® AMT Capable Computers | | |
| gT Step 4. Create Profile | | |
| of Step 5. Generate Security Keys | | |
| Step 6. Configure Automatic Profile Assignments | | |
| Step 7. Monitor Provisioning Process Step 8. Monitor Profile Assignments | | |
| Enable Security (TLS) | | |
| 🗉 🦲 Section 2. Intel® AMT Tasks | | |
| 🗷 🧰 Reports | | |
| 🕀 🧰 Tasks | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | By Ver10 By InProvid | sioning 💌 🛛 Records: All |
| Favorites 👻 | By profile Idefault 2 | |
| My Favorites | name: default_s | date: 6/27/2006 12:00:00 AM |
| Altiris Console Home | Order by: UUID v direction: Ascendi | ing 💌 |
| r | | |
| Doné | | 🔰 💓 Internet 🕴 💐 100% 🔹 |

The computers for which profiles were assigned appear in the list. Each computer is identified by the FQDN, UUID, and Profile Name columns.



Once the computers are provisioned, they are visible under the Collections folder in All configured Intel AMT computers.



Using MEBx Interface to Complete Provisioning

Intel® AMT can be set up for either Enterprise or Small and Medium Business operational modes (also called provisioning models). Both operational modes support dynamic and static IP networking.

If you use dynamic IP networking (DHCP), the Intel AMT host name and the operating system host name must match. You must also configure both the operating system and Intel AMT to use DHCP as well.

If you use static IP networking, the Intel AMT IP address must be different from the operating system's IP address. Additionally, the Intel AMT hostname must be different from the operating system's hostname.

- Enterprise mode This mode is for large organizations. This is an advanced networking mode that supports Transport Layer Security (TLS) and requires a configuration service. Enterprise mode allows IT administrators to set up and configure Intel AMT securely for remote management. The Dell[™] computer is defaulted to Enterprise mode when it leaves the factory. The mode can be changed during the setup and configuration process. Small Medium Business (SMB) mode This mode is a simplified operational mode that does not support TLS and does not require a setup application. SMB mode is for customers who do not have independent software vendor (ISV) management consoles or the necessary network and security infrastructures to use encrypted TLS. In SMB mode, Intel AMT setup and configuration is a manual process completed through the Intel ME BIOS Extension (MEBx). This mode is the easiest to implement since it does not require much infrastructure, but it is the least secure all network traffic is not encounted. not encrypted.

Intel AMT Configuration sets up all other Intel AMT options not covered in Intel AMT Setup, such as enabling the computer for Serial-Over-LAN (SOL) or IDE-Redirect (IDE-R)

You can change the settings modified in the configuration phase many times over the course of a computer's life span. You can make changes to the computer locally or through a management console

Enterprise Mode Provisioning Methods

There are two methods of provisioning a computer with Enterprise mode:

Legacy
 IT TLS-PSK

Legacy

If you want Transport Layer Security (TLS), execute the legacy method of Intel AMT setup and configuration on an isolated network separate from the corporate network. A setup and configuration server (SCS) requires a secondary network connection to a certification authority (an entity which issues digital certificates) for TLS configuration.

Initially the computers are shipped in the factory-default state with Intel AMT ready for configuration and provisioning. These computers must go through Intel AMT setup in order to go from the factory-default state to the setup state. Once the computer is in the setup state, you can continue to configure it manually or connect it to a network where it connects with an SCS and begin Enterprise Mode Intel AMT configuration.

IT TLS-PSK

IT TLS-PSK Intel AMT setup and configuration is usually performed in a company's IT department. The following are required:

- Setup and configuration server Network and security infrastructure

Intel AMT capable computers in the factory-default state are given to the IT department, which is responsible for Intel AMT setup and configuration. The IT department can use any method to input Intel AMT setup information, after which the computers are in Enterprise mode and in the In-Setup phase. An SCS must generate PID and PPS sets.

Intel AMT configuration must occur over a network. The network can be encrypted using the Transport Layer Security Pre-Shared Key (TLS-PSK) protocol. Once the computers connect to an SCS, Enterprise mode configuration occurs.

Enterprise Mode

The Intel® Management Engine BIOS Extension (MEBx) is an optional ROM module that Intel provides to Dell™ to be included in the Dell BIOS. The MEBx has been customized for Dell computers.

Enterprise mode (for large corporate customers) requires a setup and configuration server (SCS). An SCS runs an application over a network that performs Intel AMT setup and configuration. The SCS is also known as a provisioning server as seen in the MEBx. An SCS is typically provided by independent software vendors (ISVs) and is contained within the ISV management console product. Consult with the management console supplier for more information.

To setup and configure a computer for Enterprise mode, you must enable the Management Engine for Enterprise mode and configure Intel AMT for Enterprise mode. For instructions, see <u>ME Configuration: Enabling Management Engine for Enterprise Mode</u> and <u>AMT Configuration: Enabling Intel AMT for Enterprise Mode</u>.

ME Configuration: Enabling Management Engine for Enterprise Mode

To enable Intel ME configuration settings on the target platform, perform the following steps:

1. Turn on the computer and during the boot process, press <Ctrl> when the Dell logo screen appears to enter the MEBx application.



2. Type $_{\tt admin}$ in the $Intel\,ME\,Password$ field. Press <Enter>. Passwords are case sensitive.

You must change the default password before making changes to the MEBx options.

| Intel(R) Copyright(C) | Management Engine BIOS Extensi 2003-07 Intel Corporation. Al EMAIN MENU] | on v3.0.2.0004 1 Rights Reserved. |
|--------------------------|--|--------------------------------------|
| | Intel(R) ME Configuration Intel(R) AMT Configuration Change Intel(R) ME Password Exit | } |
| | | |
| | Intel(R) ME Password | |
| [ESC]=Exit | | [ENTER]=Submit |

3. Select Change Intel ME Password. Press <Enter>. Type the new password twice for verification.

The new password must include the following elements:

- Eight characters
 One uppercase letter
 One lowercase letter
 A number
 A special (nonalphanumeric) character, such as !, \$, or ; excluding the :, ", and , characters.)

The underscore (_) and spacebar are valid password characters but do NOT add to the password complexity.

Change the password to establish Intel AMT ownership. The computer then goes from the factory-default state to the setup state.

| Intel(R) Copyright(C) | Management Engine BIOS Extensio 2003-07 Intel Corporation. All | on v3.0.2.0004 l Rights Reserved. |
|--------------------------|--|--------------------------------------|
| | Intel(R) ME Configuration Intel(R) AMT Configuration Change Intel(R) ME Password Exit | ★ |
| | Intel(R) New ME Password | |
| [ESC]=Exit | | [ENTER]=Submit |

4. Select Intel ME Configuration. Press < Enter >.

ME Platform Configuration allows you to configure ME features such as power options, firmware update capabilities, and so on.

| Intel(R) Management Engine BIOS Extension v3.0.2.0004 Copyright(C) 2003-07 Intel Corporation. All Rights Reserved. ———————————————————————————————————— | | |
|---|-------------|----------------|
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access |

5. The following message appears:

System resets after configuration change. Continue $({\rm Y}/{\rm N})\,.$

Press <y>.

| Intel(R) ME Configuration Intel(R) AMT Configuration Change Intel(R) ME Password Exit [ESC]=Exit [↑↓]=Select [ENTER]=1 | |
|--|--------|
| [ESC]=Exit [↑↓]=Select [ENTER]=(| |
| | ICCESS |
| [Caution] System resets after configuration changes Continue: (Y/N) | |

 Intel ME State Control is the next option. The default setting for this option is Enabled. Do not change this setting to Disabled. If you want to disable Intel AMT, change the <u>Manageability Feature Selection</u> option to None.

| Intel(R) Manag Copyright(C) 2003- [INTEL INT Int Int Int Ret | ement Engine BIOS Ex 87 Intel Corporation (R) ME PLATFORM CONF el(R) ME State Contr el(R) ME Firmware Lo el(R) ME Features Con el(R) ME Power Contro urn to Previous Menu | tension v3.0.2.0004 . All Rights Reserved. IGURATION] DI cal Update Qualifier ntrol |
|--|--|---|
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access |
| | () DISABLED (*) ENABLED | |

Select Intel ME Firmware Local Update Qualifier. Press <Enter>.
 Select Always Open. Press <Enter>. The default setting for this option is Always Open.

| Intel(R) Manag Copyright(C) 2003- [INTEL Int Int Int Int Ret | ement Engine BIOS Exte 87 Intel Corporation. (R) ME PLATFORM CONFIC el(R) ME State Control el(R) ME Firmume For el(R) ME Features Cont el(R) ME Features Control urn to Previous Menu | ension v3.0.2.0004 All Rights Reserved. GURATION J I I I Update Qualifier I I |
|--|---|---|
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access |
| | [*] ALMAYS OPEN [] NEVER OPEN [] RESTRICTED | |

9. Select Intel ME Features Control. Press <Enter>.

| Intel(R) M Copyright(C) 2 [] | anagement Engine B10S Extens 003-07 Intel Corporation. A NTEL(R) ME PLATFORM CONFIGUE Intel(R) ME State Control Intel(R) ME Firmware Local Intel(R) ME Power Control Intel(R) ME Power Control Return to Previous Menu | ion v3.0.2.0004 11 Rights Reserved. ATION J Update Qualifier |
|-------------------------------------|---|---|
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access |
| | | |

10. Manageability Feature Selection is the next option. This feature sets the platform management mode. The default setting is Intel AMT.

Selecting the $\ensuremath{\textbf{None}}$ option disables all remote management capabilities.

| Intel(R) Management Engine BIOS Extension v3.0.2.0004 Copyright(C) 2003-07 Intel Corporation. All Rights Reserved. [INTEL(R) ME FEATURES CONTROL] [Manageability Feature Selection Return to Previous Menu | | |
|---|-------------|----------------|
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access |
| [*] NUNE [*] Intel(R) AMT [] ASF | | |

11. Select Return to Previous Menu. Press <Enter>.

| Intel(R) M Copyright(C) 2 | anagement Engine BlOS Ex 1803-07 Intel Corporation =[INTEL(R) ME FEATURES C Manageability Feature S Return to Previous Menu | tension v3.0.2.0004 . All Rights Reserved. ONTROL] election |
|------------------------------|--|---|
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access |
| | | |

12. Select Intel ME Power Control. Press <Enter>.

| Intel(R) H. Copyright(C) 20 | magement Engine BIOS Ex 103-07 Intel Corporation ITEL(R) ME PLATFORM CONF Intel(R) ME State Contr Intel(R) ME Firmware Lo Intel(R) ME Features Co Intel(R) ME Power Contr Return to Previous Menu | tension v3.0.2.0004 All Rights Reserved. IGURATION] ol cal Update Qualifier ntrol ► ol |
|--------------------------------|--|---|
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access |
| | | |

13. Intel ME ON in Host Sleep States is the next option. The default setting is Desktop: ON in S0, S3, S4-5.

NOTE: For certain E-Star or low-power configurations, the default setting will be Desktop: ON in S0.

| Intel(R) Management Engine BIOS Extension v3.0.2.0004 Copyright(C) 2003-07 Intel Corporation. All Rights Reserved. [INTEL(R) ME POWER CONTROL] Intel(R) ME ON in Host Sleep States Return to Previous Menu [ESC]=Exit [↑↓]=Select [ENTER]=Access | | | |
|--|--|--|--|
| | | | |

14. Select Return to Previous Menu. Press < Enter>.



15. Select Return to Previous Menu. Press <Enter>.

| Intel(R) M Copyright(C) 2 | anagement Engine BIOS Extens 003-07 Intel Corporation. A | ion v3.0.2.0004 11 Rights Reserved. |
|------------------------------|--|--|
| | NIEL(R) HE PLAIFORM CONFIGUE Intel(R) HE State Control Intel(R) HE Firmware Local I Intel(R) HE Features Contro Intel(R) HE Power Control Return to Previous Henu | HILON J Update Qualifier I ÷ |
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access |
| | | |

16. Exit the MEBx Setup and save the ME configuration. The computer displays an Intel ME Configuration Complete message and then restarts. After the ME configuration is complete, you can configure the Intel AMT settings. For instructions, see Intel AMT Configuration: Enabling Intel AMT for Enterprise Mode.

Intel AMT Configuration: Enabling Intel AMT for Enterprise Mode

To enable Intel AMT configuration settings on the target platform, perform the following steps:

- Turn on the computer and during the boot process, press <Ctrl> when the Dell logo screen appears to enter the MEBx application.
 A prompt for the password appears. Enter the new Intel ME password.
 Select Intel AMT Configuration. Press <Enter>.

| Intel(R) M Copyright(C) 2 | anagement Engine BlOS Exte 003-07 Intel Corporation. E MAIN MENU] Intel(R) ME Configuration | nsion v3.0.2.0004 All Rights Reserved. ► |
|------------------------------|---|--|
| | Intel(R) AMT Configuratio Change Intel(R) ME Passwo Exit | n ► rd |
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access |
| | | |
| | | |

4. Select Host Name. Press <Enter>. Then type in a unique name for this Intel AMT machine. Press <Enter>.

Spaces are not accepted in the host name. Make sure there is not a duplicate host name on the network. Host names can be used in place of the computer's IP for any applications requiring the IP address.

| Intel(R) M Copyright(C) 2 | fanagement Engine BIOS Extensio 2003–07 Intel Corporation. All | n v3.0.2.0004 Rights Reserved. |
|------------------------------|---|-----------------------------------|
| | TCP/IP Provision Model Setup and Configuration Un-Provision VLAN SOL/IDE-R Secure Firmware Update | } ► |
| | Computer host name | |
| [ESC]=Exit | | [ENTER]=Submit |

5. Select TCP/IP. Press <Enter>.

The following messages appear:

1 Disable Network Interface: (Y/N)

Press <n>.

If the network is disabled, then all remote AMT capabilities are disabled and TCP/IP settings are not necessary. This option is a toggle, and the next time it is accessed you are prompted with the opposite setting.

| Intel(R) Manaç Copyright(C) 2003- | gement Engine BIOS Exte -07 Intel Corporation. | ension v3.0.2.0004 All Rights Reserved. |
|--|---|--|
| Hos TCI | INTEL(R) AMT CONFIGURAT st Name P/IP | 10N] |
| Pro Set Un- VLf SOI Sec | ovision Model tup and Configuration -Provision NN -/IDE-R cure Firmware Update | F |
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access |
| | | |
| | | |
| Disa | uble Network Interface: | (Y/N) |

1 [DHCP Enable] Disable DHCP (Y/N)

Press <n>.

| Intel(R) M Copyright(C) 2 | anagement Engine BIOS Exte 803-07 Intel Corporation. =[INTEL(R) AMT CONFIGURAT Host Name TCP/IP Provision Model Setup and Configuration Un-Provision ULAN SOL/IDE-R Secure Firmware Update | ension v3.0.2.0004 All Rights Reserved. TON J |
|------------------------------|---|---|
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access |
| | [DHCP Enabled] Disable DHCP: (Y/N) | |

1 Domain Name

Type the domain name into the field.

| Intel(R) Management Engine BIOS | Extension v3.0.2.0004 |
|-------------------------------------|---------------------------|
| Copyright(C) 2003-07 Intel Corporat | ION. HII KIGNTS RESErved. |
| L INIEL(R) HAI CONFI | GURHIION |
| HOST Name | |
| TGP/TP | |
| Provision Model | |
| Setup and Configurat | ion 🕨 |
| Un-Provision | |
| VLAN | |
| SOL/IDE-R | |
| Secure Firmware Upda | te |
| | |
| | |
| | |
| | |
| | |
| | |
| Down to see the | |
| Domain nam | e |
| | |
| | |
| | |
| | |
| [ESC]=Exit | [ENTER]=Submit |
| | |

6. Select Provision Model from the menu. Press <Enter>.

The following message appears:

1 [Intel (R) AMT 3.0 Mode] [Enterprise] change to Small Business: (Y/N)

Press <n>.

| UN-Frovision VLAN SOL/IDE-R Secure Firmware Update [ESC]=Exit [↑↓]=Select [ENTER]=Access [Intel(R) AMT 3.0 Mode] | Intel(R) M Copyright(C) 2 | anagement Engine BIOS Exten 003-07 Intel Corporation. =[INTEL(R) AMT CONFIGURAT Host Name TCP/IP Provision Model Setup and Configuration | nsion v3.0.2.0004 All Rights Reserved ION J |
|---|------------------------------|---|---|
| [Intel(R) AMT 3.0 Mode] | [ESC]=Exit | Un-Provision ULAN SOL/IDE-R Secure Firmware Update [↑↓]=Select | [ENTER]=Access |
| [Fntownwice] | | [Intel(R) AMT 3.0 Mode |] |

7. Select Setup and Configuration from the menu. Press < Enter>.

| Intel(R) M Copyright(C) 2 | anagement Engine BIOS Ex 803-07 Intel Corporation | tension v3.0.2.0004 . All Rights Reserved. |
|------------------------------|--|---|
| | =L INTEL(R) ANT CONFIGUR Host Name TCP/IP Provision Model Setup and Configuration Un-Provision VLAN SOL/IDE-R Secure Firmware Update | |
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access |
| | | |

Select Current Provisioning Mode to display the current mode. Press <Enter>. The current provisioning mode is displayed. Press <Enter> or <Esc> to exit.

| Intel(R) Manay copyright(C) 2003: [INT] Cur Pro Pro TL: Re | yement Engine BIOS D -87 Intel Corporatio EL(R) SETUP AND CON rrent Provisioning M ovisioning Record ovisioning Server S PSK S S PKI S turn to Previous Men | Extension v3.0.2.0004 on. All Rights Reserved. FIGURATION J Mode | |
|---|---|---|--|
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access | |
| | Provisioning Mode | : PKI | |

9. Select Provisioning Record.

The provisioning record displays the provision PSK/PKI record data of the computer. If the data has not been entered, the MEBx displays a message that states Provision Record not present. If the data is entered, the **Provision Record** displays one of several messages.

| Coj | Intel(R) Management Engine BIOS Extension v3.0.2.0004 Copyright(C) 2003-07 Intel Corporation. All Rights Reserved. | | | |
|-----|---|-------------------------------------|---------------------------|--|
| | I INTEL(R) SETUP AND CONFIGURATION 1 | | | |
| | Cur | rent Provisioning Mod | le | |
| | Pro | uisioning Server | | |
| | TLS | PSK > | | |
| | TLS | PKI + | | |
| | Ret | urn to Previous Menu | | |
| | | | | |
| l | | | | |
| | [ESC]=Exit | [↑↓]=Select | [ENTER]=Access | |
| | [ESC]=Exit | [↑↓]=Select | (ENTER)=Access | |
| | [ESC]=Exit Pro | [↑↓]=Select vision Record is not | (ENTER]=Access present | |

10. Select Provisioning Server from the menu. Press <Enter>.

11. Type the provisioning server IP in the **Provisioning server address** field and press <Enter>. The default setting is 0.0.0.0. This default setting works only if the DNS server has an entry that can resolve the provision server to the IP of the provisioning server.

| Intel(R) Copyright(C) | Management Engine BIOS Extensi 2003-07 Intel Corporation. Al | on v3.0.2.0004 1 Rights Reserved. |
|--------------------------|--|--------------------------------------|
| | Current Provisioning Mode Provisioning Record Provisioning Server TLS PSK TLS PKI Return to Previous Menu | |
| | Provisioning server addres | S |
| [ESC]=Exit | | [ENTER]=Submit |

12. Type the port in the **Port number** field and press <Enter>. The default setting is 0. If left at the default setting of 0, the Intel AMT attempts to contact the provisioning server on port 9971. If the provisioning server is listening on a different port, enter it here.

| Intel(R) Management Engine Copyright(C) 2003-07 Intel Corp | BIOS Extension v3.0.2.0004 poration. All Rights Reserved. |
|---|--|
| [INTEL(R) SETUP AN Current Provisio | ND CONFIGURATION] |
| Provisioning Rec | cord |
| Provisioning Ser | ver |
| TLS PSK | |
| Return to Previo | ous Menu |
| | |
| | |
| | |
| | |
| | |
| | |
| Port number | (0-65535) |
| 3 | |
| | |
| | |
| [ESC]=Exit | [ENTER]=Submit |

13. Select TLS PSK from the menu. Press <Enter>.

| Intel(R) Management Engine BIOS Extension v3.0.2.0004 Copyright(C) 2003-07 Intel Corporation. All Rights Reserved. | | | |
|---|--------------------------------------|----------------|--|
| | I INTEL(R) SETUP AND CONFIGURATION 1 | | |
| | urrent Provisioning Mod | le | |
| l P | rovisioning Record | | |
| | rovisioning Server | | |
| 1 | LS PSR | | |
| 1 | LS PKI 🕨 | | |
| R | eturn to Previous Menu | | |
| | | | |
| | | | |
| | | | |
| LESU J=Exit | [↓↑]=26lect | LENTERJ=HCCess | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | - | | |

14. Set PID and PPS is the next option. The PID and PPS can be input manually or by using a USB key once the SCS generates the codes.

This option is for entering the provisioning ID (PID) and provisioning passphrase (PPS). PIDs are eight characters and PPS are 32 characters. There are dashes between every set of four characters, so including dashes, PIDs are nine characters and PPS are 40 characters. An SCS must generate these entries.

| Intel(R) H Copyright(C) 2 | lanagement Engine BIOS Extension 2003-07 Intel Corporation. All R | v3.0.2.0004 Rights Reserved. |
|------------------------------|--|---------------------------------|
| | INTEL(R) TLS PSK CONFIGURATION Set PID and PPS ** Delete PID and PPS ** Return to Previous Menu |] |
| | Enter PID (e.g. ABCD-1234) | |
| [ESC]=Exit | | [ENTER]=Submit |

15. Skip the **Delete PID and PPS** option. This option returns the computer to factory defaults. See <u>Return to Default</u> for more information about unprovisioning.

16. Select Return to Previous Menu. Press <Enter>.

| Intel(R) Management Engine BIOS Extension v3.0.2.0004 Copyright(C) 2003-07 Intel Corporation. All Rights Reserved. | | | |
|---|----------------------|---------------------|--|
| Set PID and PPS ** Delete PID and PPS ** Return to Previous Menu | | | |
| | | | |
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access | |
| | | | |
| | | | |
| | | | |
| | | | |
| ** - ma | u cause Intel(R) AMT | martial unmrouision | |

17. Select TLS PKI from the menu. Press <Enter>.

| Intel(R) Management Engine BIOS Extension v3.0.2.0004 Copyright(C) 2003-07 Intel Corporation. All Rights Reserved. | | |
|--|-------------|----------------|
| [INTEL(R) SETUP AND CONFIGURATION] Current Provisioning Mode Provisioning Record Provisioning Server TLS PSK ► TLS PSK ► Return to Previous Menu | | |
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access |
| | | |

18. Select Remote Configuration Enable/Disable from the menu. Press <Enter>. This option is Enabled by default and can be Disabled if the network infrastructure does not support a Certificate Authority (CA).

| Intel(R) Manag Copyright(C) 2003- | ement Engine BIOS Ex 07 Intel Corporation | tension v3.0.2.0004 . All Rights Reserved. |
|---------------------------------------|--|--|
| r The Reg Man Set Set Ret | TEL(R) REMOTE CONFIG ote configuration Em age Certificate Hash FQDN PKI DNS Suffix urn to Previous Menu | URATION J . able/Disable ** es |
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access |
| | (] DISABLED [*] ENABLED | |
| ** - may ca | use Intel(R) AMT par | tial unprovision |

19. Manage Certificate Hashes option is the next option. Four hashes are configured by default. Hashes can be deleted or added per customer needs.

| [INTEL(R) REMO Remote Configu Manage Certif Set FQDM Set PKI DNS Su Return to Prev | TE CONFIGURAT Iration Enable icate Hashes Iffix vious Menu | II Rights Reserved. ION] /Disable ** |
|--|--|---|
| | Actius | Default |
| Hash Name | | [x] |
| Hash Name VeriSign Class 3 Primary CA-G1 VeriSign Class 3 Primary CA-G3 | [*] | [*] [*] |
| HASh Name VeriSign Class 3 Prinary CA-G1 VeriSign Class 3 Prinary CA-G3 Go Daddy Class 2 CA | [*] [*] | [*] [*] [*] |
| Hash Name JeriSign Class 3 Prinary CA-G1 VeriSign Class 3 Primary CA-G3 Go Daddy Class 2 CA Starfield Class 2 CA | [*] [*] [*] [*] | [*] [*] [*] [*] |

20. Select Set FQDN from the menu. Press <Enter>. Type the FQDN of the provisioning server in the text field and press <Enter>.



21. Select Set PKI DNS Suffix from the menu. Press <Enter>. Type the PKI DNS Suffix in the text field and press <Enter>.



22. Select Return to Previous Menu. Press <Enter>.

| Intel(R) Management Engine BIOS Extension v3.0.2.0004 Copyright(C) 2003-07 Intel Corporation. All Rights Reserved. | | |
|---|----------------------|---------------------|
| [INTEL(R) REMOTE CONFIGURATION] Remote Configuration Enable/Disable ** Manage Certificate Hashes Set FQDN Set PKI DNS Suffix Return to Previous Menu | | |
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access |
| | | |
| ** - na | u cause Intel(R) AMT | partial unprovision |

23. Select Return to Previous Menu. Press <Enter>. This returns you to the Intel AMT Configuration menu.

24. Skip the Un-Provision option. This option returns the computer to factory defaults. See Return to Default for more information about unprovisioning.

25. Select VLAN from the menu. Press <Enter>.

The following message appears:

1 [VLAN Disabled] Enable VLAN: (Y/N)

Press <n>.

| Intel(R) M Copyright(C) 2 | anagement Engine BIOS Exte 303-07 Intel Corporation. | nsion v3.0.2.0004 All Rights Reserved. |
|------------------------------|--|---|
| | =[INTELCR) ANT CONFIGURAT Host Name TCP/IP Provision Model Setup and Configuration Un-Provision ULAN SOL/IDE-R Secure Firmware Update | F |
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access |
| | [VLAN Disabled] Enable VLAN: (Y/N) | |

26. Select SOL/IDE-R. Press <Enter>.

| Intel(R) M Copyright(C) 2 | anagement Engine BIOS Ext 803-07 Intel Corporation. | ension v3.0.2.0004 All Rights Reserved. |
|------------------------------|---|--|
| | - INFLUCED HAT CONFIGURE HOST Name TCP/IP Provision Model Setup and Configuration Un-Provision VLAN SOLATOR: Secure Firnware Update | • |
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access |
| | | |

- 27. The following messages appear, and require the response indicated in the following bulleted list:
- 1 [Caution] System resets after configuration changes. Continue: $(\ensuremath{\mathtt{Y/N}})$

Press <y>.

| Intel(R Copyright(C |) Management Engine BIOS Extens) 2003–07 Intel Corporation. A | ion v3.0.2.0004 11 Rights Reserved. |
|------------------------|---|--|
| | [INTEL(R) ANT CONFIGURATIO Host Name TCP/IP Provision Model Setup and Configuration Un-Provision ULAN SOL/IDE-R Secure Firmware Update | ► |
| [ESC]=Ex | it [↑↓]=Select | [ENTER]=Access |
| | | |
| s | [Caution] ystem resets after configuratio Continue: (Y/N) | n changes |
| | | |

l User name & Password

Select Enabled and then press <Enter>.

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

| Intel(R) Mana Copyright(C) 2003 | gement Engine BIOS Ext -07 Intel Corporation. | ension v3.0.2.0004 All Rights Reserved. |
|---|---|--|
| [Ho TC Pr Se Un VL Se Se | INTEL(R) AMT CONFIGURA st Name P/IP ovision Model tup and Configuration -Provision AN INTEL COLOR FIT AND | TION] |
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access |
| | Usernane & Password [] DISABLED [*] ENABLED | |

1 Serial Over LAN

Select Enabled and then press <Enter>.

| Intel(R) Mana Copyright(C) 2003 | gement Engine BIOS Ext -07 Intel Corporation. | tension v3.0.2.0004 All Rights Reserved. |
|---|---|---|
| L Ho TC Pr Se UT VI Se Se | INTEL(R) ANT CONFIGURE sst Name SP/IP rovision Model stup and Configuration -Provision AN INTIDE R cure Firmware Update | ITION] |
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access |
| | Serial Over LAN [] DISABLED [*] ENABLED | |

1 IDE Redirection

Select Enabled and then press <Enter>.

| Intel(R) M Copyright(C) 2 | anagement Engine BIOS Ext 803-07 Intel Corporation. | ension v3.0.2.0004 All Rights Reserved. |
|------------------------------|---|--|
| | =[INTEL(R) ANT CONFIGURA Host Name ICP/IP Provision Model Setup and Configuration Un-Provision VLAN SOLZIDE-R Secure Firnware Update | TION 1 |
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access |
| | IDE Redirection [] DISABLED [*] ENABLED | |

28. Secure Firmware Update is the next option. The default setting is Enabled.

| Intel(R) Manag Copyright(C) 2003- ICF TCF Pro Set Un- VLF SOI SOI | Penent Engine BIOS Ext -07 Intel Corporation. INTEL(R) AMT CONFIGURA -/IP ovision Model | ension v3.0.2.0004 All Rights Reserved. TION] |
|--|---|--|
| [ESC]=Exit | [↑↓]=Select ()] DISABLED [*] ENABLED | [ENTER]=Access |

29. Skip Set PRTC.

| Intel(R) Management Engin Copyright(C) 2003-07 Intel Co | e BIOS Extension v3.0.2.0004 rporation. All Rights Reserved. |
|--|---|
| I INTEL(R) AMT | CONFIGURATION] |
| TCP/IP | |
| Provision Mode | |
| Setup and Conf | iguration F |
| Un-Provision | |
| VLAN | |
| SOL/IDE-R | |
| Secure Firmwar | e Update |
| Set PRTC | |
| Enter PRTC in GMT(UTC) f | ormat(YYYY:MM:DD:HH:MM:SS) |
| [ESC]=Exit | [ENTER]=Submit |

30. Idle Timeout is the next option. The default setting is 1. This timeout is applicable only when a WoL option is selected in step 13 of the process for enabling ME for the Enterprise operating mode.

O NOTICE: To maintain E-Star compliance for certain systems, the **Desktop**: **ON in SO** setting must be used in <u>step 13</u>.

| Intel(R) Management Engine Copyright(C) 2003-07 Intel Cor | BIOS Extension v3.0.2.0004 poration. All Rights Reserved. |
|--|--|
| Setup and Confi | guration |
| Un-Provision | |
| | |
| Secure Firmware | lindate |
| Set PRIC | opuure |
| Idle Timeout | |
| Return to Previ | ous Menu |
| | |
| | |
| | |
| | (1.05505) |
| Timeout Val | ue (1-65535) |
| 1 | |
| | |
| | |
| [ESC]=Exit | [ENTER]=Submit |

31. Select Return to Previous Menu. Press <Enter>.

| Intel(R) H Copyright(C) 2 | anagement Engine BIOS Exte 003-07 Intel Corporation. =[INTEL(R) AMT CONFIGURAT Setup and Configuration Un-Provision ULAN SOL/IDE-R SOL/IDE-R Secure Firnware Update Set PRTC Idle Tineout Return to Previous Henu | ension v3.0.2.0004 All Rights Reserved. TION J |
|------------------------------|---|--|
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access |
| | | |

32. Select Exit. Press < Enter>.

| Intel(R) M Copyright(C) 2 | anagement Engine BlOS Extensi 803-07 Intel Corporation. Al MAIN HENU] | on v3.0.2.0004 1 Rights Reserved. |
|------------------------------|---|--------------------------------------|
| | Intel(R) ME Configuration Intel(R) AMT Configuration Change Intel(R) ME Password Extin | * |
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access |
| | | |

33. The following message appears:

Are you sure you want to exit? (Y/N):

Press <y>.

| (| Intel(R) Manag Copyright(C) 2003- | ement Engine BIOS Exte 07 Intel Corporation. | nsion v3.0.2.0004 All Rights Reserved. |
|---|--------------------------------------|---|---|
| | Int Int Cha Exi | el(R) ME Configuration el(R) AMT Configuratio nge Intel(R) ME Passuo t | ► n ► rd |
| | [ESC]=Exit | [↑↓]=Select | [ENTER]=Access |
| | Are yo | ——[CONFIRM EXIT]— u sure you want to exi | t? (Y/N): |

34. The computer restarts. Turn off the computer and disconnect the power cable. The computer is now in setup state and is ready for deployment.

SMB Mode

The Intel® Management Engine BIOS Extension (MEBx) is an optional ROM module that Intel provides to Dell™ to be included in the Dell BIOS. The MEBx has been customized for Dell™ computers.

Dell also supports setup and configuration of Intel AMT in the Small and Medium Business (SMB) mode. The only setting not required in the SMB mode is the **Set PID and PPS** option. Also, the **Provision Model** option is set to **Small Business** instead of **Enterprise**.

To setup and configure a computer for SMB mode, you must enable the Management Engine for SMB mode and configure Intel AMT for SMB mode. For instructions, see <u>ME Configuration: Enabling Management Engine for SMB Mode</u> and <u>Intel AMT Configuration: Enabling Intel AMT for SMB Mode</u>.

ME Configuration: Enabling Management Engine for SMB Mode

To enable Intel ME configuration settings on the target platform, perform the following steps:

1. Turn on the computer and during the boot process, press <Ctrl> when the Dell logo screen appears to enter the MEBx application.



2. Type admin in the Intel ME Password field. Press <Enter>.

Passwords are case sensitive. You must change the default password before making changes to the MEBx options.



3. Select Change Intel ME Password. Press <Enter>. Type the new password twice for verification.

The new password must include the following elements:

- Eight characters One uppercase letter One lowercase letter A number 1
- 1
- 1 A special (nonalphanumeric) character, such as !, \$, or ; excluding the :, ", and , characters.)

The underscore (_) and spacebar are valid password characters but do NOT add to the password complexity.

Change the password to establish Intel AMT ownership. The computer then goes from the factory-default state to the setup state.



4. Select Intel ME Configuration. Press < Enter >.

ME Platform Configuration allows you to configure ME features such as power options, firmware update capabilities, and so on.

| Intel(R) Management Engine BIOS Extension v3.0.2.0004 Copyright(C) 2003-07 Intel Corporation. All Rights Reserved. [MAIN MENU] Intel(R) HE Configuration Intel(R) AMT Configuration Change Intel(R) ME Password Exit | | | |
|--|-------------|----------------|--|
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access | |
| | | | |

5. The following message appears:

System resets after configuration change. Continue $({\rm Y}/{\rm N})\,.$

Press <y>.

| (| Intel(R) Manag Copyright(C) 2003- | ement Engine BIOS Extensi 87 Intel Corporation. Al [MAIN MENU] | ion v3.0.2.0004 Il Rights Reserved. | |
|---|--------------------------------------|--|--|--|
| | Int Int Cha Exi | el(R) ME Configuration el(R) AMT Configuration nge Intel(R) ME Password t | k | |
| | [ESC]=Exit | [↑↓]=Select | [ENTER]=Access | |
| | System r | [Caution] esets after configuration Continue: (Y/N) | n changes | |

6. Intel ME State Control is the next option. The default setting for this option is Enabled. Do not change this setting to Disabled. If you want to disable Intel AMT, change the Manageability Feature Selection option to None.

| Intel(R) Manag Copyright(C) 2003- [INTEL INTEL Int Int Int Ret | ement Engine BIOS Ex 07 Intel Corporation (R) HE PLATFORM CONF el(R) HE State Contr el(R) ME Firmware Lo el(R) ME Features Con el(R) ME Power Contro urn to Previous Menu | tension v3.0.2.0004 . All Rights Reserved. IGURATION] Cal Update Qualifier ntrol |
|--|--|---|
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access |
| | (*) DISABLED | |

Select Intel ME Firmware Local Update Qualifier. Press <Enter>.
 Select Always Open. Press <Enter>. The default setting for this option is Always Open.

| Intel(R) Manag Copyright(C) 2003- [INTEL Int Int Int Ret Ret | ement Engine BIOS Ext B7 Intel Corporation. (R) ME PLATFORM CONFI el(R) ME State Contro el(R) ME Firmuare Loc el(R) ME Features Cor el(R) ME Features Cor el(R) ME Power Contro urn to Previous Menu | tension v3.0.2.0004 All Rights Reserved. IGURATION J Pal Update Qualifier htrol bl | |
|--|--|---|--|
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access | |
| | [*] ALWAYS OPEN [] NEVER OPEN [] RESTRICTED | | |

9. Select Intel ME Features Control. Press <Enter>.

| Intel(R) M Copyright(C) 2 [] | anagement Engine B10S Extens 003-07 Intel Corporation. A NTEL(R) ME PLATFORM CONFIGUE Intel(R) ME State Control Intel(R) ME Firmware Local Intel(R) ME Power Control Intel(R) ME Power Control Return to Previous Menu | ion v3.0.2.0004 11 Rights Reserved. ATION J Update Qualifier |
|-------------------------------------|---|---|
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access |
| | | |

10. Manageability Feature Selection is the next option. This feature sets the platform management mode. The default setting is Intel AMT. Selecting the None option disables all remote management capabilities.

| Intel(R) Management Engine BIOS Extension v3.0.2.0004 Copyright(C) 2003-07 Intel Corporation. All Rights Reserved. [INTEL(R) ME FEATURES CONTROL] Manageability Feature Selection Return to Previous Menu | | |
|---|---|----------------|
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access |
| | [*] NONE [*] Intel(R) AMT [] ASF | |

11. Select Return to Previous Menu. Press <Enter>.

| Intel(R) M Copyright(C) 2 | anagement Engine BlOS Ex 003-07 Intel Corporation [INTEL(R) ME FEATURES C Manageability Feature S Return to Previous Menu | tension v3.0.2.0004 . All Rights Reserved. ONTROL] election |
|------------------------------|--|---|
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access |
| | | |

12. Select Intel ME Power Control. Press <Enter>.

| Intel(R) Ha Copyright(C) 20 [] | magement Engine BIOS Ex 103-07 Intel Corporation ITEL(R) ME PLATFORM CONF Intel(R) ME State Contr Intel(R) ME Firmware Lo Intel(R) ME Features Co Intel(R) ME Power Contr Return to Previous Menu | tension v3.0.2.0004 All Rights Reserved. IGURATION] ol cal Update Qualifier ntrol ► ol |
|---------------------------------------|--|---|
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access |
| | | |

13. Intel ME ON in Host Sleep States is the next option. The default setting is Desktop: ON in S0, S3, S4-5.

NOTE: For certain E-Star or low-power configurations, the default setting will be Desktop: ON in S0.

| Intel(R) Management Engine BIOS Extension v3.0.2.0004 Copyright(C) 2003-07 Intel Corporation. All Rights Reserved. [INTEL(R) ME POWER CONTROL] Intel(R) HE ON in Host Sleep States Return to Previous Menu | | |
|--|--|------------------------------------|
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access |
| [] Besktop: ON in S0 [] Desktop: ON in S0, [*] Desktop: ON in S0, [] Desktop: ON in S0, [] Desktop: ON in S0, [] Desktop: ON in S0, [] Desktop: ON in S0, | S3 S3, S4-5 ME WoL in S3 ME WoL in S3, S4-5 S3, S4-5, OFF After ME WoL in S3, S4-5, | Power Loss OFF After Power Loss |

14. Select Return to Previous Menu. Press < Enter>.



15. Select Return to Previous Menu. Press <Enter>.

| Intel(R) M Copyright(C) 2 | anagement Engine BIOS Extens 803–07 Intel Corporation. f | sion v3.0.2.0004 All Rights Reserved. |
|------------------------------|--|---|
| | NTEL(R) ME PLATFORM CONFIGU Intel(R) ME State Control Intel(R) ME Firnware Local Intel(R) ME Features Control Intel(R) ME Power Control Return to Previous Henu | AATION] Update Qualifier pl ⊢ ► |
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access |
| | | |

16. Exit the MEBx Setup and save the ME configuration. The computer displays an Intel ME Configuration Complete message and then restarts. After the ME configuration is complete, you can configure the Intel AMT settings.

Intel AMT Configuration: Enabling Intel AMT for SMB Mode

To enable Intel AMT Configuration settings on the target platform, perform the following steps:

- Turn on the computer and during the boot process, press <Ctrl> when the Dell logo screen appears to enter the MEBx application.
 A prompt for the password appears. Enter the new Intel ME password.
 Select Intel AMT Configuration. Press <Enter>.

| Intel(R) H Copyright(C) 2 | anagement Engine BlOS Extension 003-07 Intel Corporation. Al [MAIN MENU] Intel(R) ME Configuration Intel(R) AMI Configuration Change Intel(R) ME Password Exit | on v3.0.2.0004 1 Rights Reserved. ▶ |
|------------------------------|--|---|
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access |
| | | |

- 4. 5.
- Select Host Name. Press <Enter>. Then type in a unique name for this Intel AMT machine. Press <Enter>.

Spaces are not accepted in the host name. Make sure there is not a duplicate host name on the network. Host names can be used in place of the computer's IP for any applications requiring the IP address.

| Intel(R) M Copyright(C) 2 | anagement Engine BIOS Extension 003-07 Intel Corporation. All | n v3.0.2.0004 Rights Reserved. |
|------------------------------|--|-----------------------------------|
| | - INTEL(R) AMT CONFIGURATION |]] |
| | Host Name | |
| | TCP/IP | |
| | Provision Model | |
| | Setup and Configuration | ► |
| | Un-Provision | |
| | VLAN | |
| | SOL∕IDE-R | |
| | Secure Firmware Update | |
| | Computer host name | |
| | | |
| [ESC]=Exit | | [ENTER]=Submit |

- 6. Select TCP/IP. Press <Enter>.
 7. The following messages appear and require the response indicated in the following bulleted list:
- 1 Disable Network Interface: (Y/N)

Press <n>.

If the network is disabled, then all remote Intel AMT capabilities are disabled and TCP/IP settings are not necessary. This option is a toggle, and the next time it is accessed you are prompted with the opposite setting.

| Intel(R) Manag Copyright(C) 2003- | rement Engine BIOS Exte 107 Intel Corporation. | nsion v3.0.2.0004 All Rights Reserved. | |
|--------------------------------------|---|---|--|
| [] Hos | (NTEL(R) AMT CONFIGURAT t Name | ION J | |
| TCF | P/IP | | |
| Pro | ovision Model | | |
| Set | up and Configuration | • | |
| UI- UI.A | N | | |
| SOL | /IDE-R | | |
| Sec | cure Firmware Update | | |
| | | | |
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access | |
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access | |
| [ESC]=Exit Disa | [↑↓]=Select ble Network Interface: | (Y/N) | |
| [ESC]=Exit Disa | [↑↓]=Select ble Network Interface: | (Y/N) | |

1 [DHCP Enable] Disable DHCP (Y/N)

Press <n>.

| Intel(R) Mana Copyright(C) 2003 [Ho TC Pr Se Un VL SO Se | gement Engine BIOS Exte -87 Intel Corporation. INTEL(R) AMT CONFIGURAT st Name P/IP ovision Model tup and Configuration -Provision AN L/IDE-R cure Firmware Update | nsion v3.0.2.0004 All Rights Reserved. ION] |
|---|--|--|
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access |
| | [DHCP Enabled] Disable DHCP: (Y/N) | |

1 Domain Name

Type the domain name into the field.

| Intel(R) Management Engine BIO | S Extension v3.0.2.0004 |
|--------------------------------|--|
| | tennation 1 |
| | IGURHIIUN J |
| HOST Name | |
| TGP/TP | |
| Provision Model | |
| Setup and Configura | tion 🕨 |
| Un-Provision | |
| VLAN | |
| SOL/IDE-R | |
| Secure Firmware Upd | ate |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| Domain na | me |
| | 가에 가는 도비와 가운데 전에 가지 않는 것은 것을 가 있는 것을 하는 것을 통하는 것을 들었다. |
| | |
| | |
| | |
| | |
| [ESC]=Exit | [ENTER]=Submit |

Select Provision Model from the menu. Press <Enter>.
 The following message appears:

Press <y>.

^{1 [}Intel (R) AMT 3.0 Mode] [Enterprise] change to Small Business: $(\ensuremath{\mathtt{Y/N}})$
| Intel(R) Man Copyright(C) 200 | nagement Engine BIOS Exte 33-07 Intel Corporation. | nsion v3.0.2.0004 All Rights Reserved. |
|----------------------------------|---|---|
| | l INTELCED AND CONFIGURAT lost Name repute | ION 1 |
| | Provision Model Setup and Configuration | + |
| | Jn-Provision JLAN | |
| | SOL/IDE-R Secure Firmware Update | |
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access |
| | [Intel(R) AMT 3.0 Mode [Enterprise] Change to Small Business: |] (Y/N) |
| | | |

- Skip the Un-Provision option. This option returns the computer to factory defaults. See <u>Return to Default</u> for more information about unprovisioning.
 Select VLAN from the menu. Press <Enter>.
 The following message appears:
- 1 [VLAN Disabled] Enable VLAN: (Y/N)

Press <n>.

| Intel(R) Manage yright(C) 2003-0 | ment Engine BIOS Exte 17 Intel Corporation. | nsion v3.0.2.0004 All Rights Reserved. | |
|--|---|--|---|
| L IN Host ICP/ Prov Setu Un-F VLAN SOL/ Secu | ITELCR) ANT CONFIGURAT Name 'IP vision Model pp and Configuration rovision IDE-R re Firnware Update | LON] | |
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access | |
| | [VLAN Disabled] Enable VLAN: (Y/N) | | |
| | Intel(R) Manage yright(C) 2003-0 [IN Host TCP/ Prov Setu Un-F VLAM SOL/ Secu (ESC]=Exit | Intel(R) Management Engine BIOS Exter yright(C) 2003-07 Intel Corporation. [INTEL(R) AMT CONFIGURAT Host Name TCP/IP Provision Model Setup and Configuration Un-Provision VLAN SOL/IDE-R Secure Firmware Update [ESC]=Exit [1]=Select [VLAN Disabled] Enable VLAN: (Y/N) | Intel(R) Management Engine BIOS Extension v3.0.2.0004 yright(C) 2003-07 Intel Corporation. All Rights Reserved. [INTEL(R) AMT CONFIGURATION] Host Name TCP/IP Provision Model Setup and Configuration Un-Provision VLAM SOL/IDE-R Secure Firmware Update [ESC]=Exit [1+]=Select [ENTER]=Access [VLAN Disabled] Enable VLAN: (Y/N) |

13. Select SOL/IDE-R. Press <Enter>.

| Intel(R) Management Engine BIOS Extension v3.0.2.0004 Copyright(C) 2003-07 Intel Corporation. All Rights Reserved. | | |
|---|---|----------------|
| | =[INTEL(R) ANT CONFIGURA Host Name TCP/IP Provision Model Setup and Configuration Un-Provision ULAN SOLVIDEER Secure Firnware Update | > |
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access |
| | | |

- 14. The following messages appear and require the response indicated in the following bulleted list:
- 1 [Caution] System resets after configuration changes. Continue: (Y/N) $\,$

Press <y>.

| Intel(R) Management Engine BIOS Extension v3.0.2.0004 Copyright(C) 2003-07 Intel Corporation. All Rights Reserved. | | |
|---|---|----------------|
| | [INTEL(R) ANT CONFIGURATIO Host Name TCP/IP Provision Model Setup and Configuration Un-Provision ULAN SOL/IDE-R Secure Firmware Update | ► |
| [ESC]=Ex | it [↑↓]=Select | [ENTER]=Access |
| | | |
| [Caution] System resets after configuration changes Continue: (Y/N) | | |
| | | |

l User name & Password

Select Enabled and then press <Enter>.

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

| Intel(R) Management Engine BIOS Extension v3.0.2.0004 Copyright(C) 2003-07 Intel Corporation. All Rights Reserved. | | |
|---|---|----------------|
| | -[INTEL(R) AMT CONFIGURA Host Name TCP/IP Provision Model Setup and Configuration Un-Provision VLAN SOCIMER Secure Firmware Update | F 10N 1 |
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access |
| | Username & Password [] DISABLED [*] ENABLED | |

1 Serial Over LAN

Select Enabled and then press <Enter>.

| Intel(R) Management Engine BIOS Extension v3.0.2.0004 Copyright(C) 2003-07 Intel Corporation. All Rights Reserved. | | |
|--|---|----------------|
| [INTEL(R) AMT CONFIGURATION] Host Name TCP/IP Provision Model Setup and Configuration ► Un-Provision VLAN SOL/IDE-R Secure Firmware Update | | |
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access |
| | Serial Over LAN []DISABLED [*]ENABLED | |

1 IDE Redirection

Select Enabled and then press <Enter>.

| Intel(R) Man Copyright(C) 200 | nagement Engine BIOS Ext 03-07 Intel Corporation. | ension v3.0.2.0004 All Rights Reserved. |
|----------------------------------|--|--|
| | [INTEL(R) AMT CONFIGURA Host Name TCP/IP Provision Model Setup and Configuration Jn-Provision JLAN SUCCIDE Secure Firmware Update | TION J |
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access |
| | IDE Redirection [] DISABLED [*] ENABLED | |

15. Secure Firmware Update is the next option. The default setting is Enabled.

| Intel(R)) Copyright(C) 2 | anagement Engine BIOS Exten 1903-07 Intel Corporation. =[INTEL(R) AMT CONFIGURAT: TCP/IP Provision Model Setup and Configuration Un-Provision VLAN SOL/IDE-R Secure Pirmare Update Set PRIC | nsion v3.0.2.0004 All Rights Reserved. ION J |
|------------------------------|---|--|
| [ESC]=Exit | [14]=Select [] DISABLED [*] ENABLED | [ENTER]=Access |

16. Skip Set PRTC.

| Intel(R) Management Engin Copyright(C) 2003-07 Intel Co | ne BIOS Extension v3.0.2.0004 prporation. All Rights Reserved. |
|--|---|
| L INTEL(R) AM | CUNFIGURATION |
| Provision Mode | |
| Setup and Conf | iguration ► |
| Un-Provision | |
| VLAN | |
| SOL/IDE-R | |
| Secure Firmwar | e Update |
| Set PRTC | |
| Enter PRTC in GMT(UTC) f | `ornat(YYYY:MM:DD:HH:MM:SS) |
| [ESC]=Exit | [ENTER]=Submit |

- 17. Idle Timeout is the next option. The default setting is 1. This timeout is applicable only when a WoL option is selected in step 13 of the process for enabling the ME for SMB operating mode.
 - **O** NOTICE: To maintain E-Star compliance for certain systems, the **Desktop**: **ON in SO** setting must be used in <u>step 13</u>.

| Intel(R) Management Engin Copyright(C) 2003-07 Intel Co | ne BIOS Extension v3.0.2.0004 Orporation. All Rights Reserved. |
|--|---|
| Setup and Cont | iguration |
| Un-Provision | |
| SOL/IDE-R | |
| Secure Firmwar | e Update |
| Set PRIC | |
| Return to Prev | vious Menu |
| | |
| r | |
| | |
| | |
| | |
| Timeout Va | lue (1-65535) |
| | |
| | |
| | |
| [ESC]=Exit | [ENTER]=Submit |

18. Select Return to Previous Menu. Press <Enter>.

| Intel(R) H Copyright(C) 2 | anagement Engine BIOS Exte 803-07 Intel Corporation. =[INTEL(R) AMT CONFIGURAT Setup and Configuration Un-Provision VLAN SOL/IDE-R Secure Firmware Update Set PRTC Idle Timeout Return to Previous Henu | nsion v3.0.2.0004 All Rights Reserved. ION J |
|------------------------------|--|--|
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access |
| | | |

19. Select Exit. Press <Enter>.

| Intel(R) M Copyright(C) 2 | anagement Engine BIOS Extensi 903-07 Intel Corporation. Al Intel(R) ME Configuration Intel(R) AMT Configuration Change Intel(R) ME Password Exif | on v3.0.2.0004 1 Rights Reserved. |
|------------------------------|---|--------------------------------------|
| [ESC]=Exit | [↑↓]=Select | [ENTER]=Access |
| | | |

20. The following message appears:

Are you sure you want to exit? $({\rm Y}/{\rm N})$:

Press <y>.

| C | Intel(R) Manaç Copyright(C) 2003- | ement Engine BIOS Exten 07 Intel Corporation. | ision v3.0.2.0004 All Rights Reserved. | |
|---|--------------------------------------|--|---|--|
| | Int Int Cha Ex : | tel(R) ME Configuration tel(R) AMT Configuration tage Intel(R) ME Passwor t | ► ↓ ► rd | |
| | [ESC]=Exit | [↑↓]=Select | [ENTER]=Access | |
| | Are yo | CONFIRM EXIT] Du sure you want to exit | ? (Y/N): | |

21. The computer restarts. Turn off the computer and disconnect the power cable. The computer is now in setup state and is ready for deployment.

Back to Contents Page

Back to Contents Page

Troubleshooting

Dell[™] Systems Management Administrator's Guide

- Return to Default (Un-Provisioning)
- Firmware Flash
- Serial-Over-LAN (SOL) and IDE Redirection (IDE-R)

This section describes a few basic troubleshooting steps to follow if problems are experienced with the Intel[®] AMT configuration.

Return to Default (Un-Provisioning)

Return to default is also known as un-provisioning. An Intel AMT setup and configured computer can be un-provisioned using the Intel AMT Configuration screen and the Un-Provision option.

Follow the steps below to un-provision a computer:

1. Select Un-Provision and then select Full Un-provision.

Full un-provisioning is available for SMB Mode provisioned computers. This option returns all Intel AMT configuration settings to factory defaults and does NOT reset ME configuration settings or passwords. Full and partial un-provisioning is available for Enterprise Mode provisioned computers. Partial un-provisioning returns all Intel AMT configuration settings to factory defaults with the exception of the PID and PPS. Partial un-provisioning does NOT reset ME configuration settings or passwords.

An un-provisioning message displays after about 1 minute. After un-provisioning completes, control is passed back to the Intel AMT Configuration screen. **Provisioning Server**, Set PID and PPS, and Set PRTC options are available again because the computer is set to the default Enterprise Mode.

- 2
- Select Return to previous menu. Select Exit and then press <y>. The computer restarts. 3.

Full Return to Factory Defaults

All Intel AMT settings can be returned to factory default by clearing the CMOS (via the jumper or CMOS battery). This includes resetting the password to the default password of admin. However, settings in the ME, such as the **ME Power Settings**, are not reset. These settings must be manually reset to for the computer to be in a true factory-default state. The table below lists the default MEBx settings. The client cannot be remotely managed until it is set up and configured again.

| MEBx Default Settings | | | | |
|--|-----------------------------|--|--|--|
| MEBx Settings | Default Setting | | | |
| Intel ME State Control | Enabled | | | |
| Intel ME Firmware Local Update Qualifier | Always Open | | | |
| LAN Controller | Enabled | | | |
| Intel ME Features Control | | | | |
| Manageability Feature Selection | Intel AMT | | | |
| Intel ME Power Control | | | | |
| Intel ME ON in Host Sleep States | Desktop: ON in S0, S3, S4-5 | | | |
| SOL/IDE-R | | | | |
| Username and Password | Enabled | | | |
| Serial Over LAN | Enabled | | | |
| IDE Redirection | Enabled | | | |
| Remote Firmware Update | Enabled | | | |

Firmware Flash

Flash the firmware to upgrade to newer versions of Intel AMT. The firmware flash is built into the BIOS flash utility and therefore flashed automatically when the BIOS is flashed. The automatic flash feature can be disabled by selecting **Disabled** under the **Secure Firmware Update** setting in the <u>MEBx interface</u>. If this setting is disabled, a firmware error message appears when flashing the BIOS.

The firmware CANNOT be flashed to an older version or to the current version installed. The firmware flash is available on the support.dell.com site for download

Serial-Over-LAN (SOL) and IDE Redirection (IDE-R)

If you cannot use IDE-R and SOL, follow these steps:

- At the initial boot screen, press <Ctrl> to enter the MEBx screens. 1.
- A prompt for the password appears. Enter the new Intel ME password Select Intel AMT Configuration. 2
- 3.
- 4. Press < Enter >

- Select Un-Provision.
 Press <Enter>.
 Select Full Unprovision.
 Press <Enter>.
 Reconfigure the settings on the Intel AMT Configuration screen.

Back to Contents Page

Back to Contents Page

Using the Intel[®] AMT WebGUI

Dell[™] Systems Management Administrator's Guide

The Intel[®] AMT WebGUI is a Web browser-based interface for limited remote computer management. The WebGUI is often used as a test to determine if Intel AMT setup and configuration was performed properly on a computer. A successful remote connection between a remote computer and the host computer running the WebGUI indicates proper Intel AMT setup and configuration on the remote computer.

The Intel AMT WebGUI is accessible from any Web browser, such as the Internet Explorer[®] or Netscape[®] applications.

Limited remote computer management includes:

- Hardware inventory
- Event logging
- Remote computer reset Changing of network settings Addition of new users

WebGUI support is enabled by default for SMB setup and configured computers. WebGUI support for Enterprise setup and configured computers is determined by the setup and configuration server

Information on using the WebGUI interface is available on the Intel website at www.intel.com.

Follow the steps below to connect to the Intel AMT WebGUI on a computer that has been configured and set up:

- Turn on an Intel AMT capable computer that has completed Intel AMT setup and configuration. Launch a Web browser from a separate computer, such as a management computer on the same subnet as the Intel AMT computer. 3. Connect to the IP address specified in the MEBx and port of the Intel AMT capable computer. (example: http://ip_address:16992 or http://192.168.2.1:16992)
 - 1 By default, the port is 16992. Use port 16993 and https:// to connect to the Intel AMT WebGUI on a computer that has been configured and
 - If DHCP is used, then use the fully qualified domain name (FQDN) for the ME. The FQDN is the combination of the host name and domain. (example: http://host_name:16992 or http://systeml:16992)

The management computer makes a TCP connection to the Intel AMT capable computer and accesses the top level Intel AMT-embedded Web page within the Management Engine of the Intel AMT capable computer.

4. Type the username and password.

The default username is admin and the password is what was set during Intel AMT setup in the MEBx.

5. Review the computer information and make any necessary changes.

You can change the MEBx password for the remote computer in the WebGUI. Changing the password in the WebGUI or a remote console results in two passwords. The new password, known as the remote MEBx password, only works remotely with the WebGUI or remote console. The local MEBx password used to locally access the MEBx is not changed. You have to remember both the local and remote MEBx passwords to access the computer MEBx locally and remotely. When the MEBx password is initially set in Intel AMT setup, the password serves as both the local and remote password. If the remote password is changed, then the passwords are out of sync.

6. Select Exit.

Back to Contents Page