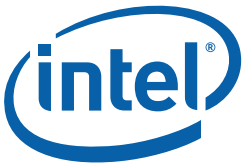

Intel® Management Engine BIOS Extension (Intel® MEBX)

User's Guide

For systems based on Intel® 5 Series Chipset Family and Intel® PCH

November 2009

Revision 1.1

Intel Confidential

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Revision History

Document Number	Revision Number	Description	Revision Date
	0.1	Initial draft	Mar 20, 2009
	0.2	Tech Pubs edits	April 7, 2009
	0.8	Reflect POR changes, add clarifications, add appendices	Jul 15, 2009
	0.9	Fixed/added various screenshots and menu selections, added section on remote assistance.	Aug 2, 2009
	1.0	First release	Sep. 18, 2009
	1.1	Clarification to the Password Policy section; update appendix D; add appendix B	Nov. 10, 2009

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1 Introduction

1.1 Intel® Management Engine (Intel® ME) and Intel® Management Engine BIOS Extension (Intel® MEBX) Overview

The Intel® Management Engine (Intel® ME) is an isolated and protected computing resource. The Intel ME provides the following IT management features independent of the installed OS:

- Intel® Active Management Technology (Intel® AMT 6.0), allowing improved management of corporate assets.
- Intel® Quiet System Technology (Intel® QST) to manage the acoustics of the client platform.

Intel ME configuration is included in the BIOS by the Intel® Management Engine BIOS Extension (Intel® MEBX). The Intel MEBX provides the ability to change and/or collect the system hardware configuration, pass it to the management firmware and provides the Intel ME configuration user interface.

1.2 Scope of document

This document describes how to configure the Intel MEBX for Intel® 5 Series Chipset Family/Intel® PCH platforms with Intel AMT 6.0 and Intel QST firmware.

Note: The Intel ME configuration procedures described in this guide are part of the larger Intel® vPro™ technology activation and provisioning process. These configuration procedures can vary significantly (or be performed automatically) and depend on which third-party management console you are using. See the Related Documentation section of this guide (section 1.5) for a list of Intel-authored provisioning guides that are specific to several popular management consoles. These provisioning guides provide the end-to-end process for provisioning your Intel® vPro™ computers with the specified management console, and may or may not include references to the Intel ME manual configuration procedures in this guide (depending on which provisioning model is used).

1.3 Target Audience

This user guide is primarily intended for Information Technology (IT) administrators and system integrators with experience in implementing complex computer and network installations. It is not intended for general audiences.

Note: Readers should have a basic understanding of networking and computer technology terms, such as TCP/IP, DHCP, IDE, DNS, Subnet Mask, Default Gateway and Domain Name. Explanation of these terms is beyond the scope of this document.

1.4 Acronyms

Acronym	Description
ASF	Alert Standard Format
BIOS	Basic Input Output System
DHCP	Dynamic Host Configuration Protocol
DNS	Domain Name Server
EIT	Embedded Information Technology (see VA)
EPS	VA Private Store Intel's VA Specific Store in an ME-owned flash area separate from 3PDS. The size is one (1) physical page (4K bytes)
FW	Firmware
G3	Complete Power loss (AC power plug pulled)
GbE	Gigabit Ethernet
GMT	Greenwich Mean Time
HW	Hardware
Intel® AMT	Intel® Active Management Technology
Intel® ME	Intel® Management Engine
Intel® MEBX	Intel® Management Engine BIOS Extension
Intel® MEI	Intel® Management Engine Interface
Intel® QST	Intel® Quiet System Technology
Intel® Remote PC Assist	Allows OEMs, managed service providers (MSP) and IT Outsourcers to connect with end user systems over the public internet and remotely manage enabled systems regardless of system state
IP	Internet Protocol
LAN	Local Area Network
MSP	Manageability Service Provider
OPK	OEM Pre-Installation Kit
OS	Operating system
PRTC	Protected Real Time Clock
RCFG	Remote Configuration
S3	Standby sleep state
S4	Hibernate sleep state

Acronym	Description
S5	Shutdown sleep state
SPI	Serial Peripheral Interface
SW	Software
TCP	Transmission Control Protocol
UTC	Coordinated Universal Time
VA	Virtual Appliance
VLAN	Virtual LAN
WOL	Wake on LAN
WOX	Wake on Event

1.5 Related Documentation

Refer to the Intel® vPro™ Expert Center's user documentation page, available at the link below, for a collection of documents containing further information on the Intel® vPro™ provisioning process, including specific documents for implementing Intel® vPro™ technology with a number of popular management consoles:

http://communities.intel.com/openport/docs/DOC-1370

In addition, please refer to the Intel® vPro™ Expert Center at the link below for general information about Intel® vPro™ technology:

http://communities.intel.com/community/vproexpert

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2 Client System Requirements

The client system referred to in this document is based on the Intel® 5 Series Chipset Family/Intel® PCH platform, and is managed by Intel Management Engine. The following firmware and software requirements are required to be installed and set up before the Intel Management Engine can be configured and run in the client system:

- An SPI flash device programmed with Intel AMT 6.0 flash image integrating BIOS, Intel Management Engine and GbE component images
- BIOS set up with Intel AMT enabled
- To enable all of the Intel Management Engine features within Microsoft Operating System, device drivers (Intel® MEI/SOL/LMS) must be installed and configured on the client system for features to work/run correctly run in the client system

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3 Intel® ME Manageability Features

The Intel MEBX menu for digital office SKUs provides platform level configuration options for the IT-administrator to configure the behavior of the Intel ME platform. The behavior includes platform configuration such as individual feature enable/disable and power configurations.

The following section provides the details on each Intel MEBX configuration option and the constraints, if any, for a given option.

Note: When you change Intel ME Platform Configuration settings, the changes are committed to the Intel ME's non-volatile memory when you exit from Intel MEBX (the changes are not cached). Therefore, if Intel MEBX crashes before you exit, the changes made until that point are **LOST** and the changed settings are **NOT** saved.

3.1 Access Intel® MEBX Configuration User Interface

The Intel MEBX configuration user interface can be accessed on a client system through the following steps:

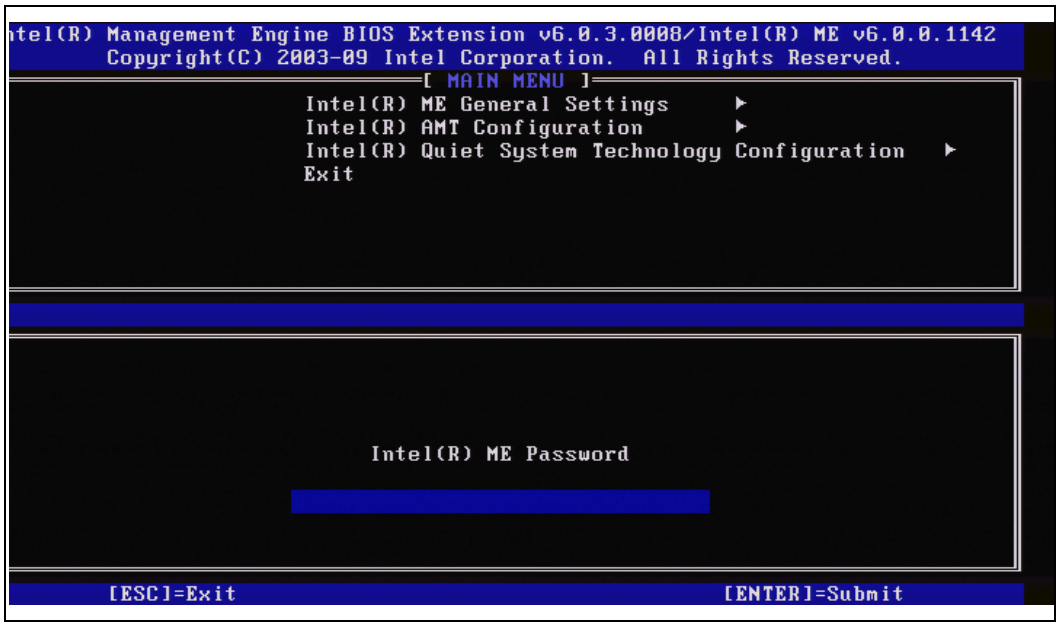
1. On rebooting the system, after the initial boot screen, the following message will be displayed: **'Press <Ctrl-P> to enter MEBX Setup'** or <CTRL-ALT-F1>
2. Press **<Ctrl-P>**. For more details on Remote Assistance, please refer section 3.21

Note: To enter the Intel MEBX, press <Ctrl-P> as soon as possible, since this message is displayed for only a few seconds. . Also note that the OEM may replace the control character <Ctrl-P> with another one.

3. Enter the Intel Management Engine password under **'MEBX Password'**. Press Enter. The default password is 'admin'. This default password can be altered by the user. Please refer to section 3.3 for Intel ME password details.
4. The Intel MEBX screen is displayed, as shown in section 3.2.

3.2 Intel® MEBX Main Menu

Figure 1: Intel® MEBX Configuration User Interface Main Menu



The options displayed in the main menu can vary depending on OEM implementation decisions. The main menu selections are:

- Intel ME General Settings
- Intel AMT Configuration
- Intel Quiet System Technology Configuration (Desktop only)
- Exit

Note: Intel MEBX will display only detected options. If one or more of these options does not appear, verify that the system supports the relevant missing feature.

3.3 Change Intel® ME Password

The default password is “admin” and is configured identically on all newly deployed platforms. When an IT administrator first enters the Intel MEBX configuration menu with the default password, he or she must change the default password before any feature can be used.

The new Intel MEBX password must meet the following requirements for strong passwords:

1. **Password Length**: At least 8 characters, and no more than 32.
2. **Password Complexity**: Password must include the following:

At least one digit character (‘0’, ‘1’, … ‘9’)

At least one 7-bit ASCII non alpha-numeric character (e.g. '!', '$', ';'), but excluding ':', ',' and '"' characters.

At least one lower-case letter ('a', 'b'…'z') and at least one upper case letter ('A', 'B'…'Z').

Note: '_' (underscore) and ' ' (whitespace) are valid password characters but do NOT contribute to the password's complexity.

Note: There are certain limitations creating passwords with non-US layout keyboards. Remote system connectivity may occur if different keyboard layouts are used on the same hardware.

3.4 Intel® ME Platform Configuration Menu

Under the Intel MEBX main menu,

1. Select 'Intel ME General Settings'.
2. Press Enter.

The following message is displayed: 'Acquiring General Settings configuration'.

The Intel MEBX main menu changes to the Intel ME Platform Configuration page. This page allows the IT administrator to configure the specific functionality of the Intel ME, such as password, power options, etc.

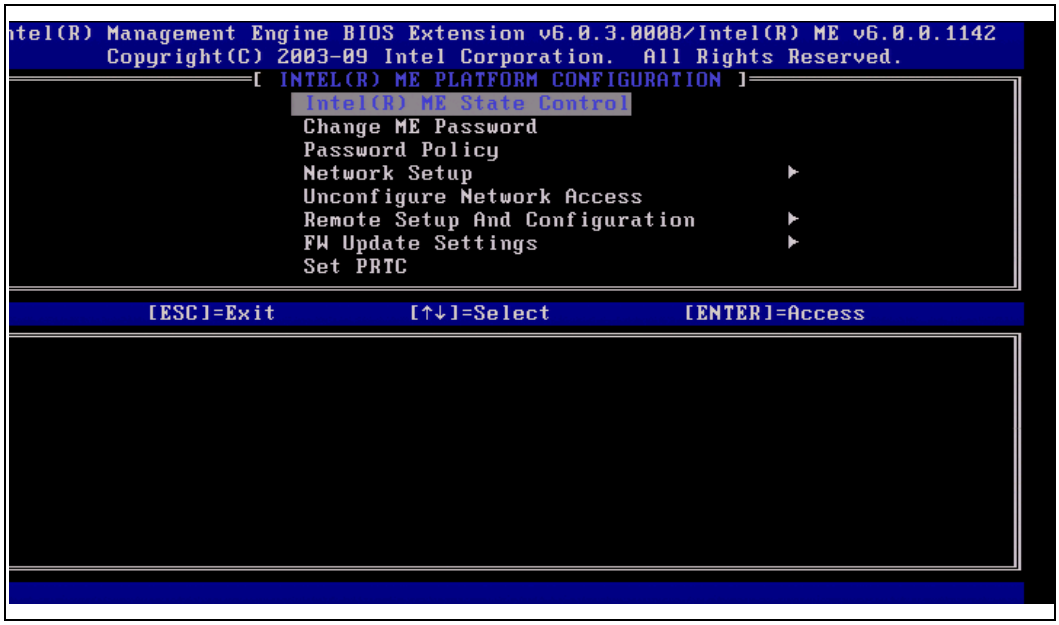
3.5 Intel® ME State Control

Under the Intel ME Platform Configuration menu,

1. Select 'Intel ME State Control'.
2. Press Enter.
3. If not selected already, select 'Enabled' and press Enter.

The Intel ME State Control menu is displayed as in Figure 2.

Figure 2: Intel® ME State Control



The **Intel ME State Control** option **(enable/disable)** provides the ability to disable the Intel ME for debugging purposes. Disabling the Intel ME through the MEBX prevents the Intel ME code from executing. This allows an IT technician to eliminate the Intel ME as the potential problem. Table 1 illustrates the details of the options.

Table 1: Intel® ME Platform State Control

Option	Description
Enabled	Enable Intel Management Engine on the platform
Disabled	Disable Intel Management Engine on the platform

Note: "Disabling" the Intel ME does not really disable it: it causes the Intel ME code to be halted at an early stage of the Intel ME's booting so that the system has no traffic originating from the Intel ME on any of the buses. This allows an IT technician to debug a system problem without any interference from the Intel ME.

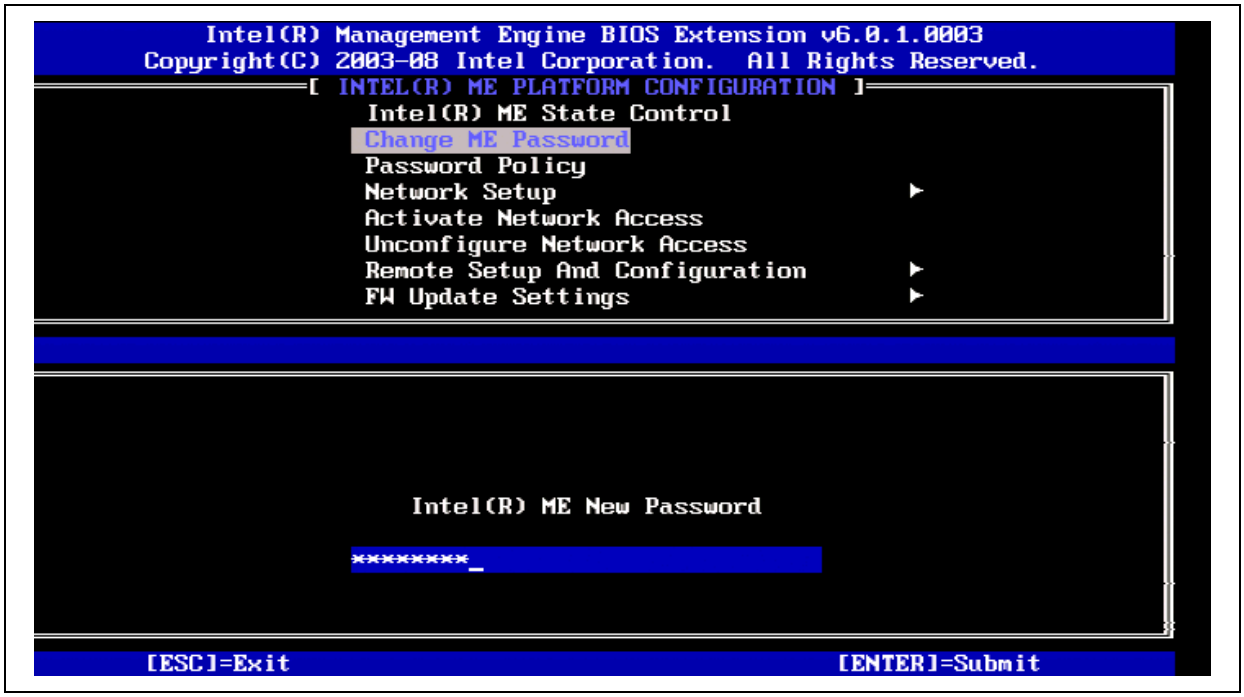
3.6 Change Intel® ME Password

Under the Intel ME Platform Configuration menu,

1. Select 'Change ME Password'.
2. Press Enter.

The Intel ME New Password prompt is displayed as in Figure 3.

Figure 3: Change Intel® ME Password



1. At the Intel ME New Password prompt, enter your new password. (Please be aware of the password policies and restrictions mentioned in section 3.3)
2. At the Verify Password prompt, re-enter your new password.

Your password is now changed.

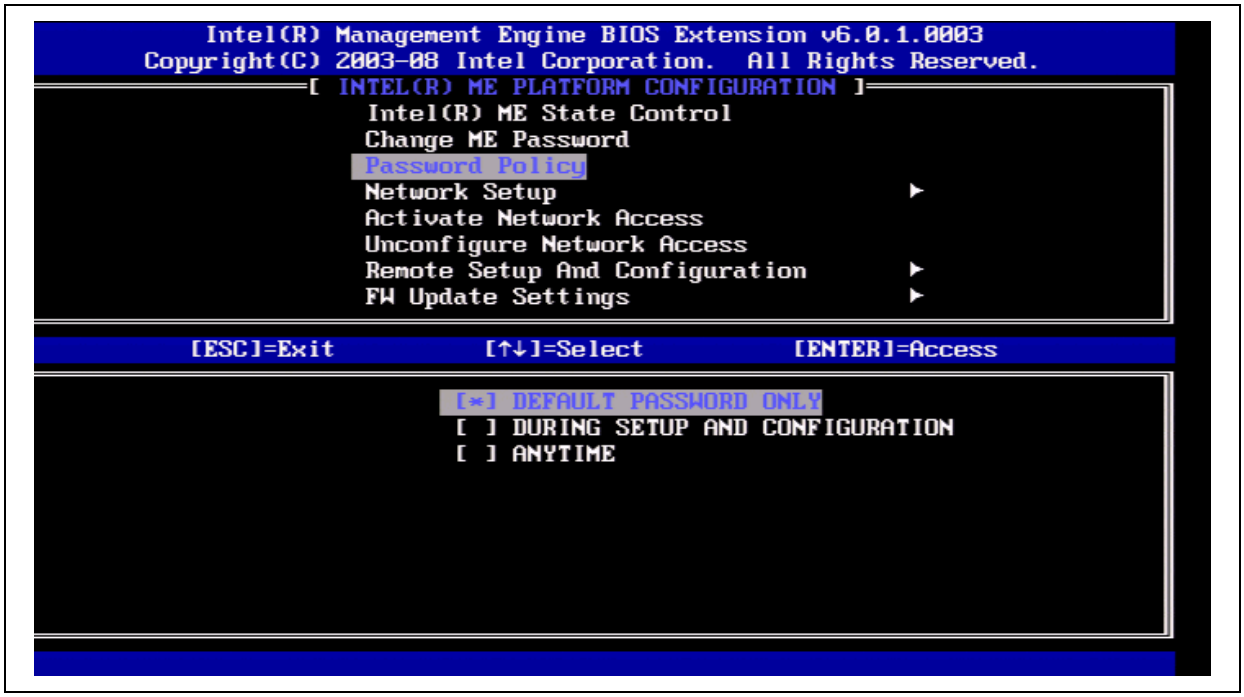
3.7 Password Policy

Under the Intel ME Platform Configuration menu,

1. Select ‘Password Policy’.
2. Press Enter.

The password policies are displayed is displayed as in Figure 4.

Figure 4: Password Policy



There are two passwords for the firmware. The Intel MEBX password is the password that is entered when a user is physically at the system. The network password is the password that is entered when accessing an Intel ME enabled system through the network. By default they are both the same until the network password is changed via the network. Once changed over the network, the network password will always be kept separate from the local Intel MEBX password.

This option determines when the user is allowed to change the Intel MEBX password through the network. **Note:** The Intel MEBX password can always be changed via the Intel MEBX user interface.

Options:

Default Password Only – The Intel MEBX password can be changed through the network interface if the default password has not been changed yet.

During Setup and Configuration – The Intel MEBX password can be changed through the network interface during the setup and configuration process but at no other time. Once the setup and configuration process is complete, the Intel MEBX password cannot be changed via the network interface.

Anytime – The Intel MEBX password can be changed through the network interface at any time.

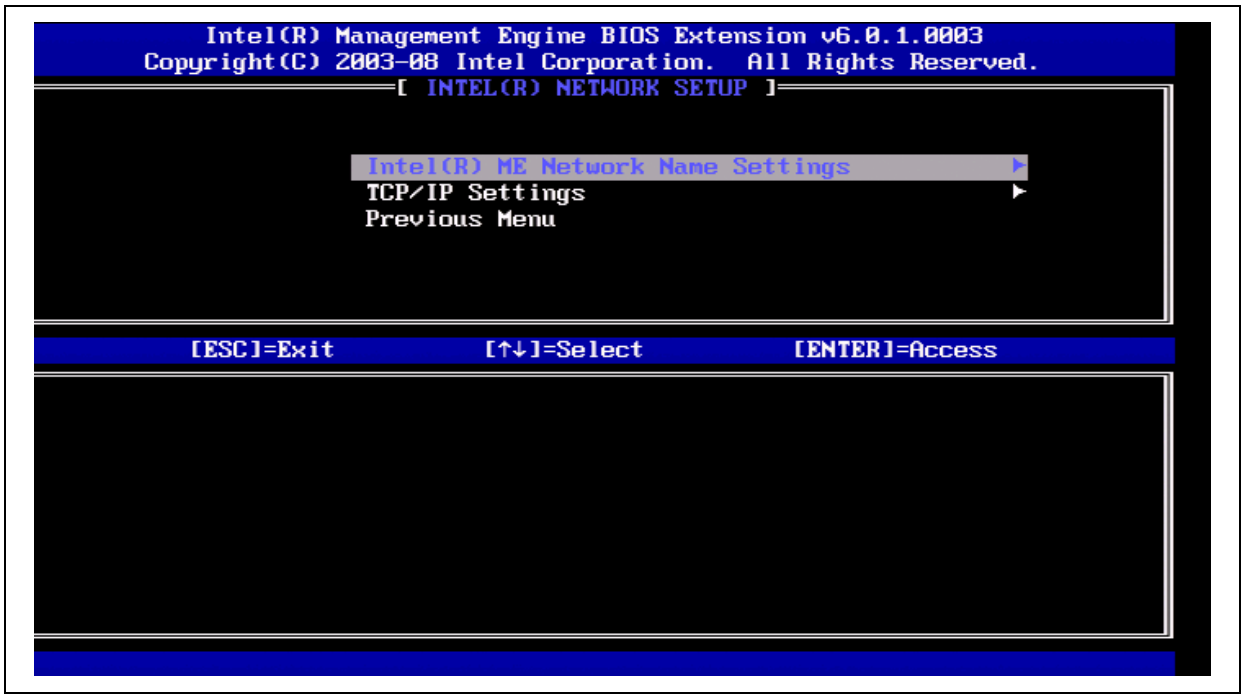
3.8 Network Setup

Under the Intel ME Platform Configuration menu,

1. Select 'Network Setup'.
2. Press Enter.

The Intel ME Platform Configuration menu changes to the Intel ME Network Setup page.

Figure 5: Intel ME Network Setup



3.8.1 Intel® ME Network Name Settings

Under the Network Setup menu,

1. Select 'Intel ME Network Name Settings'.
2. Press Enter.

The Intel Network Setup menu changes to the Intel ME Network Name Settings page.

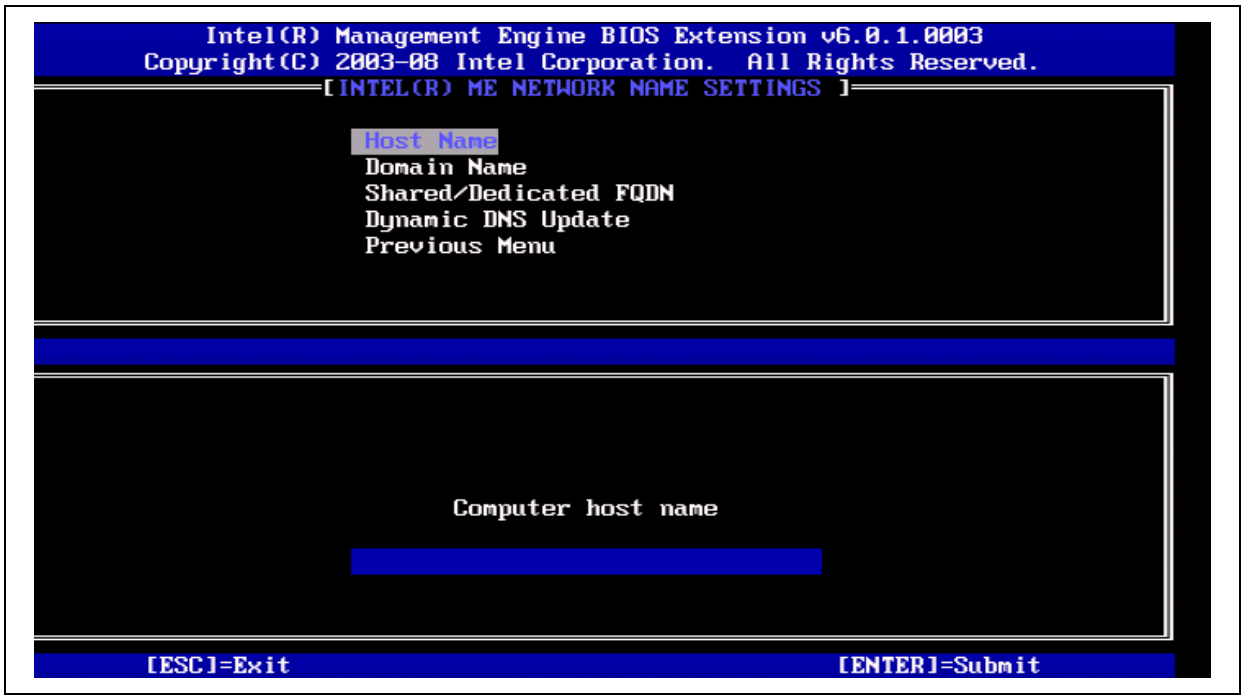
3.8.1.1 Host Name

Under the Intel ME Network Name Settings,

1. Select 'Host Name'.
2. Press Enter.

The Computer Host Name prompt is displayed as in Figure 6.

Figure 6: Host Name



A host name can be assigned to the Intel AMT machine. This will be the hostname of the Intel AMT enabled system.

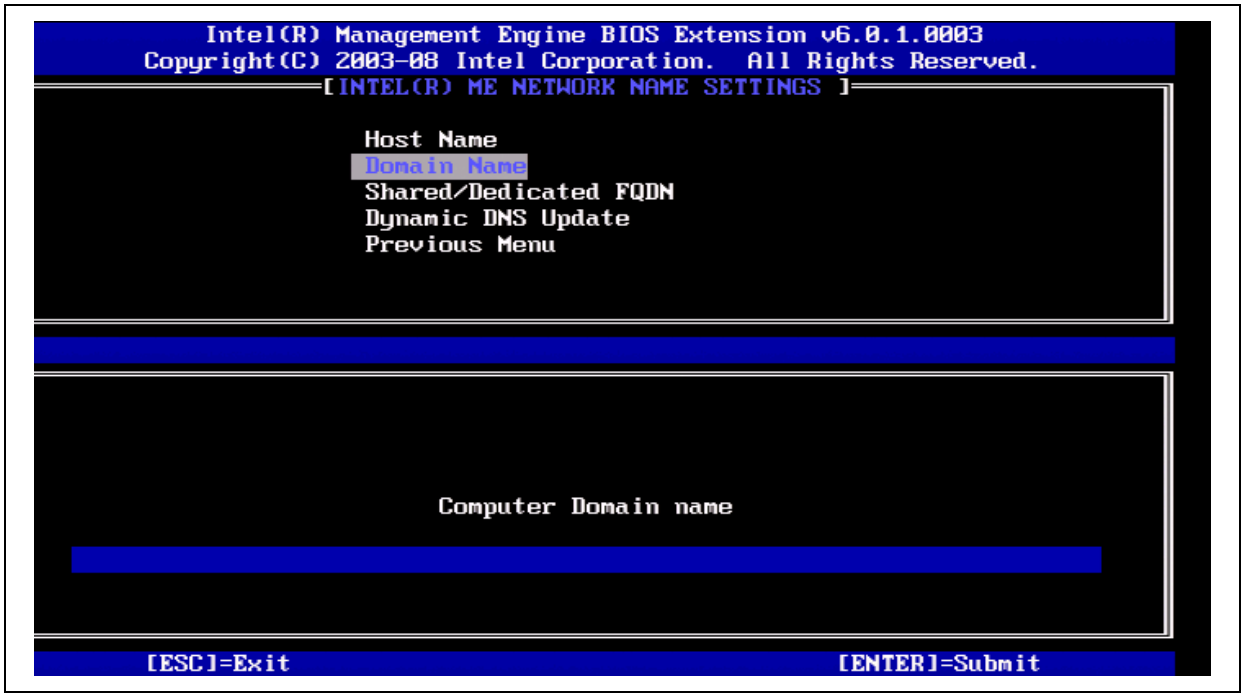
3.8.1.2 Domain Name

Under the Intel ME Network Name Settings,

1. Select 'Domain Name'.
2. Press Enter.

The Computer Domain Name prompt is displayed as in Figure 7.

Figure 7: Domain Name



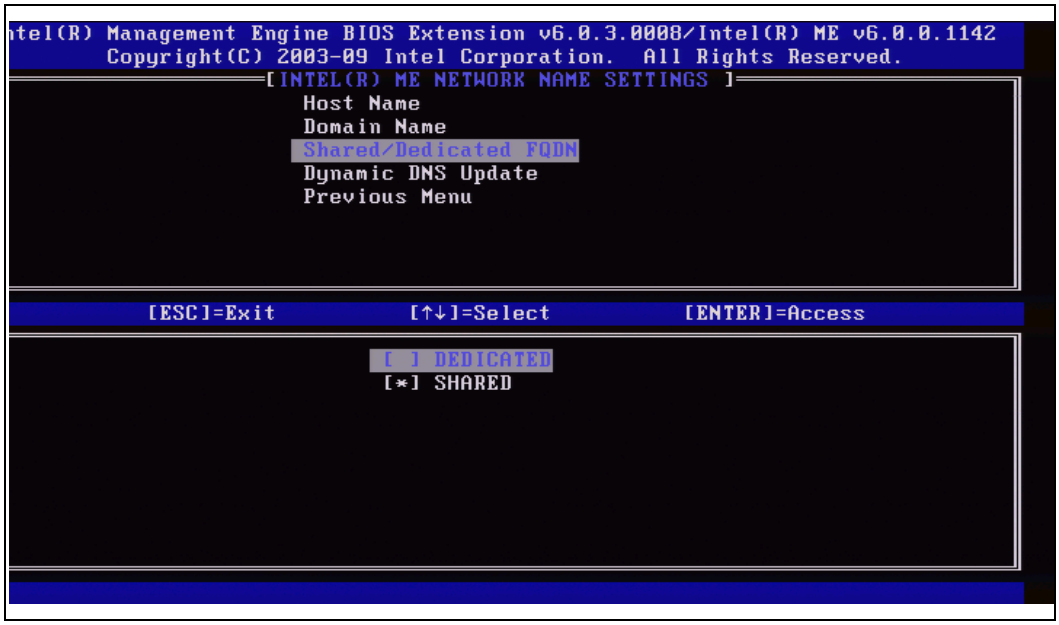
A domain name can be assigned to the Intel AMT machine.

3.8.1.3 Shared / Dedicated FQDN

Under the Intel ME Network Name Settings,

1. Select 'Shared/Dedicated FQDN'.
2. Press Enter.

Figure 8: Shared/Dedicated FQDN



This setting determines whether the Intel ME Fully Qualified Domain Name (FQDN) (i.e. the "HostName.DomainName") is shared with the host and identical to the operating system machine name or dedicated to the Intel ME.

Table 2: Shared/Dedicated FQDN

Option	Description
Dedicated	The FQDN domain name is dedicated to ME
Shared	The FQDN domain name is shared with the Host

To select Dedicated:

1. Select ‘Dedicated’.
2. Press Enter.

To select Shared:

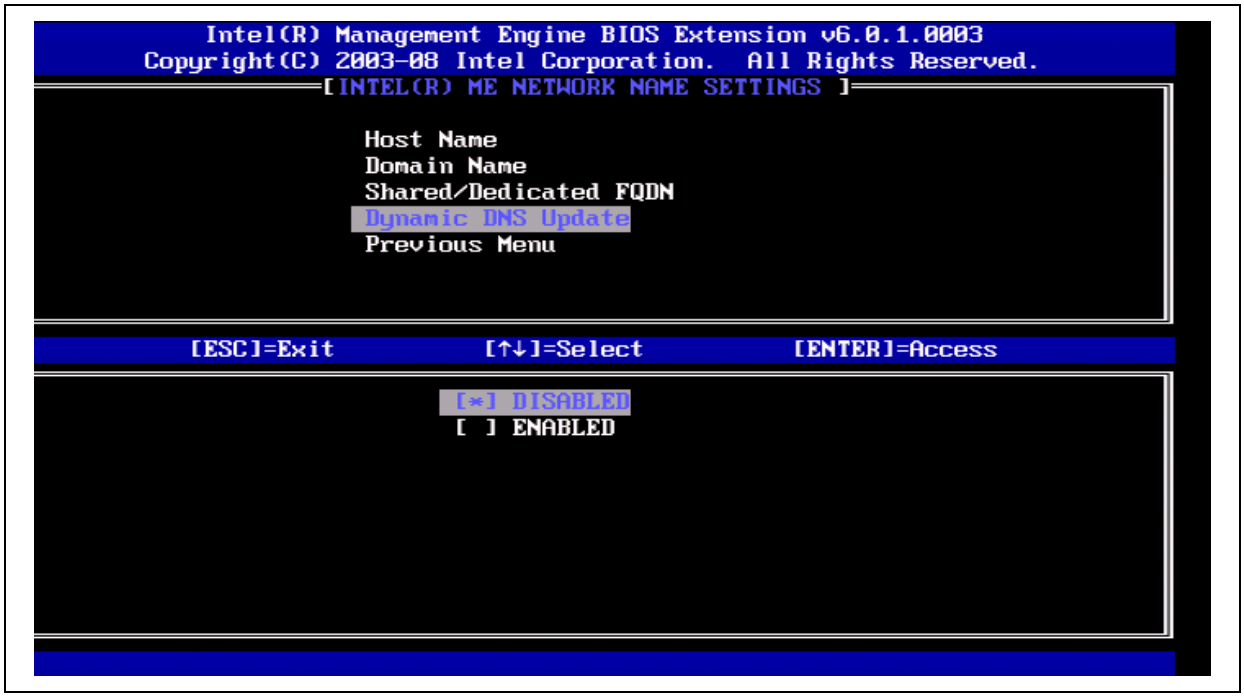
1. Select ‘Shared’.
2. Press Enter.

3.8.1.4 Dynamic DNS Update

Under the Intel ME Network Name Settings,

1. Select ‘Dynamic DNS Update’.
2. Press Enter.

Figure 9: Dynamic DNS Update



If Dynamic DNS Update is enabled then the firmware will actively try to register its IP addresses and FQDN in DNS using the Dynamic DNS Update protocol. If DDNS Update is disabled then the firmware will make no attempt to update DNS using DHCP option 81 or Dynamic DNS update. If the DDNS Update state (Enabled or Disabled) is not configured by the user at all then the firmware will assume its old implementation where the firmware used DHCP option 81 for DNS registration but did not directly update DNS using the DDNS update protocol. For selecting “Enabled” for Dynamic DNS Update it is required that the Host Name and Domain Name be set.

Table 3: Dynamic DNS Update

Option	Description
Enabled	The Dynamic DNS Update Client in FW is enabled.
Disabled	The Dynamic DNS Update Client in FW is disabled.

To select Disabled:

1. Select ‘Disabled’.
2. Press Enter.

To select Enabled:

1. Select ‘Enabled ID’.
2. Press Enter.

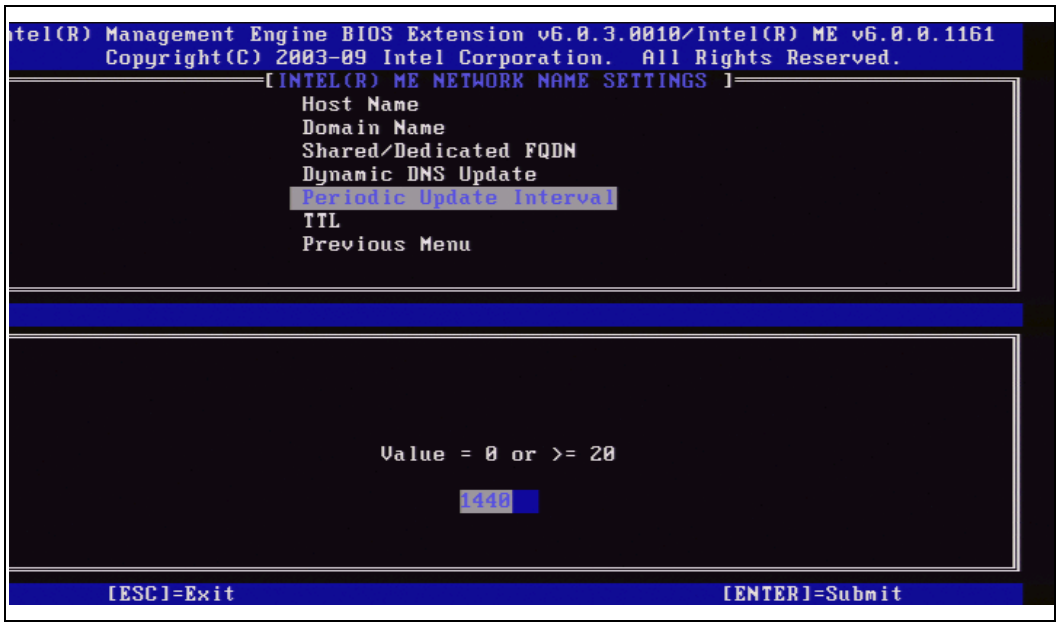
3.8.1.5 Periodic Update Interval

Under the Intel ME Network Name Settings,

1. Select ‘periodic update interval’.
2. Press Enter.

Note: This option is only available when Dynamic DNS Update is enabled.

Figure 10: Periodic Update Interval



Defines the interval at which the firmware DDNS Update client will send periodic updates. It should be set according to corporate DNS scavenging policy. Units are minutes. A value of 0 disables periodic update. The value set should be equal or greater than 20 minutes. The default value for this property is 24 hours - 1440 minutes.

3. Enter desired interval.
4. Press Enter.

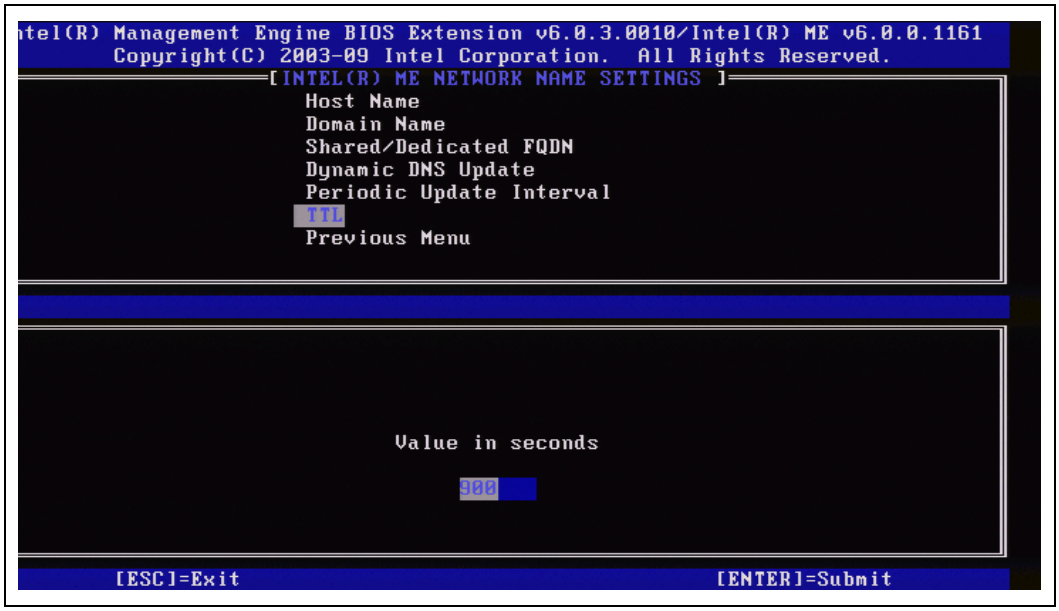
3.8.1.6 TTL

Under the Intel ME Network Name Settings,

1. Select ‘TTL’.
2. Press Enter.

Note: This option is only available when Dynamic DNS Update is enabled.

Figure 11: TTL



This setting allows configuring the TTL time in seconds. This number should be greater than zero. If set to zero firmware uses its internal default value which is 15 min or 1/3 of lease time for DHCP.

3. Enter desired time (in seconds).
4. Press Enter.

3.8.1.7 Previous Menu

Under the Intel ME Network Name Settings,

1. Select 'Previous Menu'.
2. Press Enter.

The Intel ME Network Name Settings menu changes to the Intel Network Setup page.

3.8.2 TCP/IP Settings

Under the Network Setup menu,

1. Select 'TCP/IP Settings'.
2. Press Enter.

The Intel Network Setup menu changes to the TCP/IP Settings page.

Note: The Intel MEBX has menus for Wireless IPV6, but no menu for wireless IPV4. When the Intel MEBX starts it will check for the wireless interface to make the decision to display the wireless IPV6 menu or not.

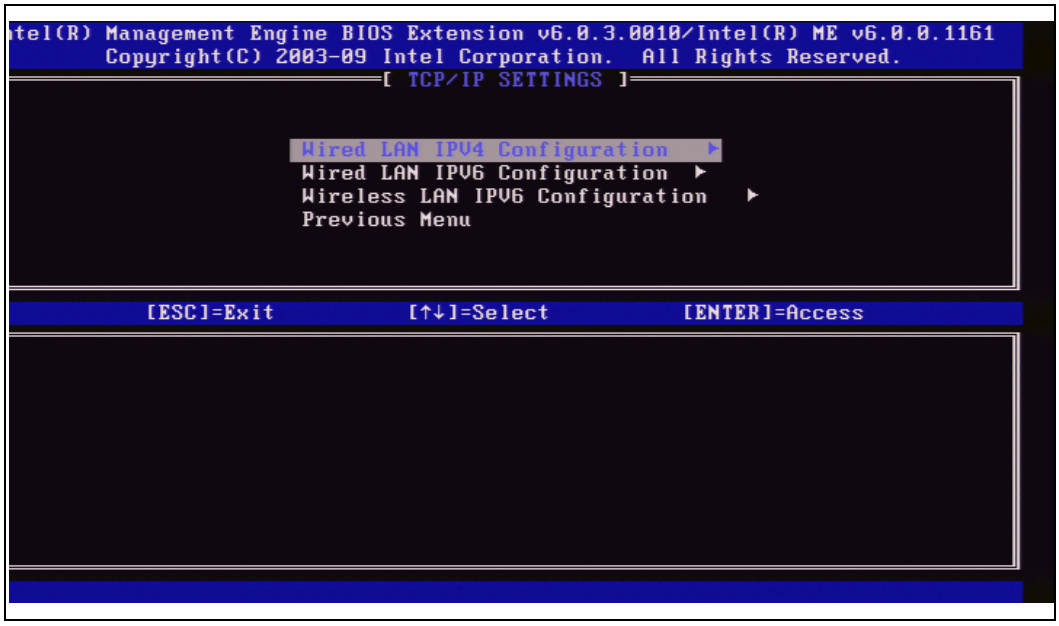
3.8.2.1 Wired LAN IPV4 Configuration

Under the TCP/IP Settings,

1. Select ‘Wired LAN IPV4 Configuration’.
2. Press Enter.

The TCP/IP Settings menu changes to the Wired LAN IPV4 Configuration page.

Figure 12: Wired LAN IPV4 Configuration



3.8.2.1.1 DHCP Mode

Under the Wired LAN IPV4 Configuration,

1. Select ‘DHCP Mode’.
2. Press Enter.

Figure 13: DHCP Mode Enabled

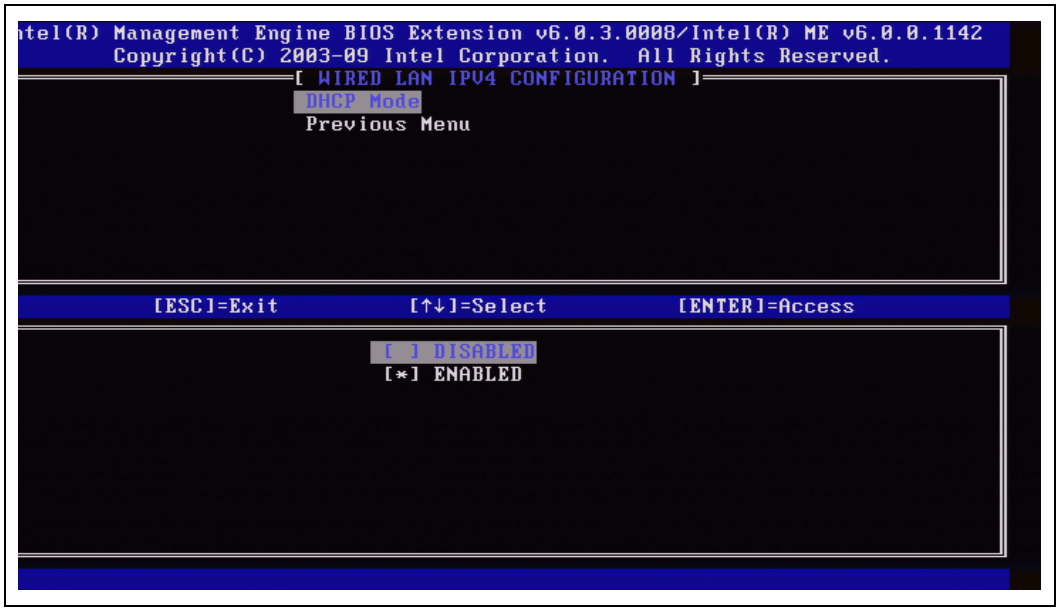
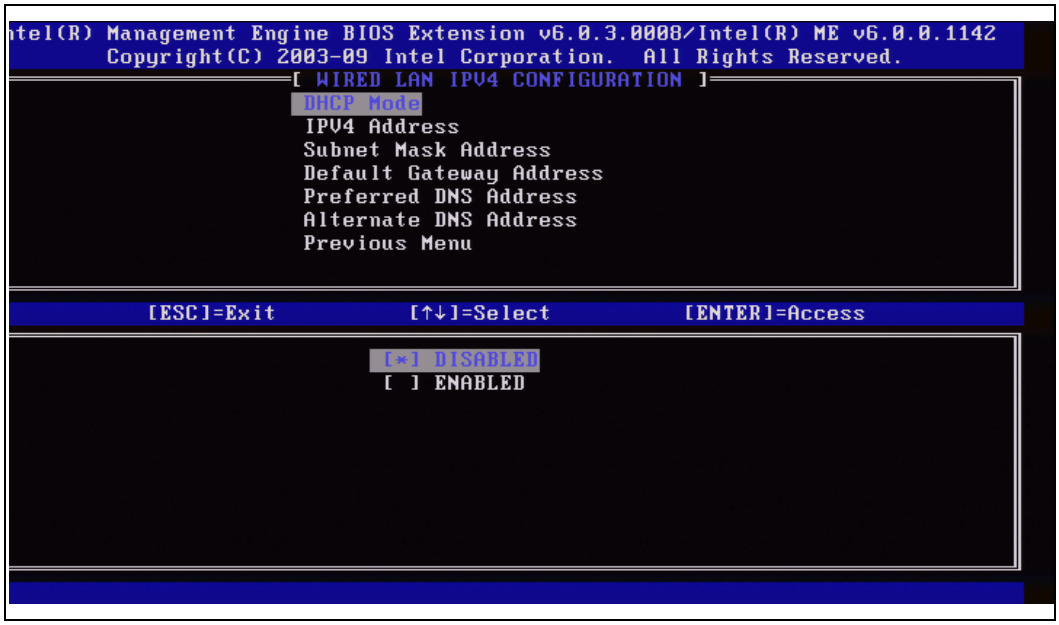


Figure 14: DHCP Mode Disabled



The following options can be selected:

DISABLED - If DHCP mode is disabled, the following static TCP/IP settings are required for Intel AMT. If a system is in static mode the system may require a second IP address. This IP address, often called the Intel ME IP address may be different from the host IP address.

ENABLED - If DHCP Mode is enabled, TCP/IP settings will be configured by a DHCP server. More option will be displayed on the screen.

To select ENABLED:

1. Select 'ENABLED'.
2. Press Enter.

No additional steps are required.

To select DISABLED:

1. Select 'DISABLED'.
2. Press Enter.

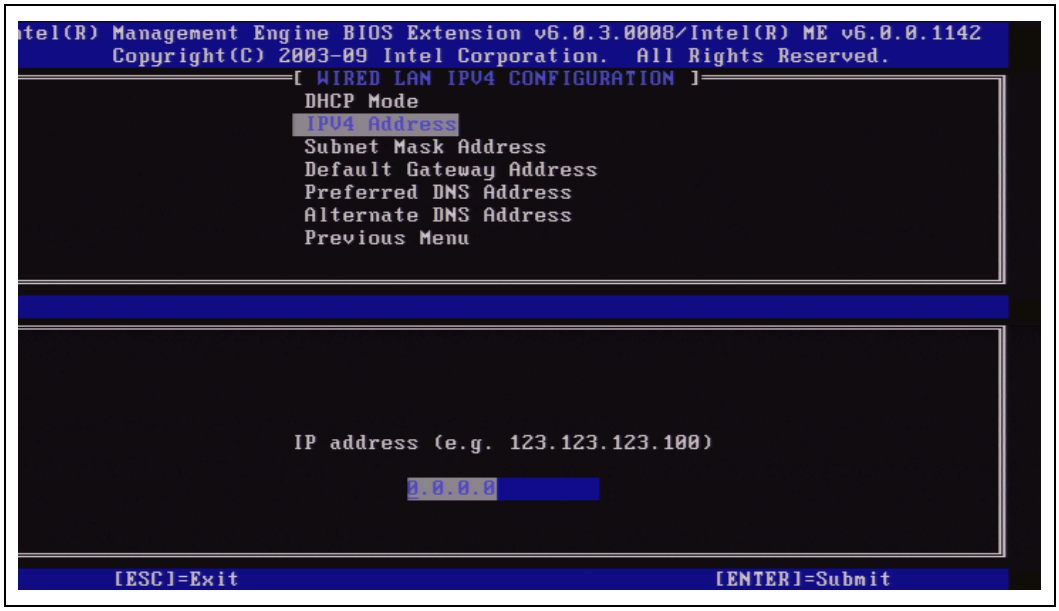
If you disable DHCP, more options will be displayed, as shown in Figure 15 below.

3.8.2.1.2 IPv4 Address

Under the Wired LAN IPV4 Configuration,

1. Select 'IPv4 Address'.
2. Press Enter.

Figure 15: IPv4 Address



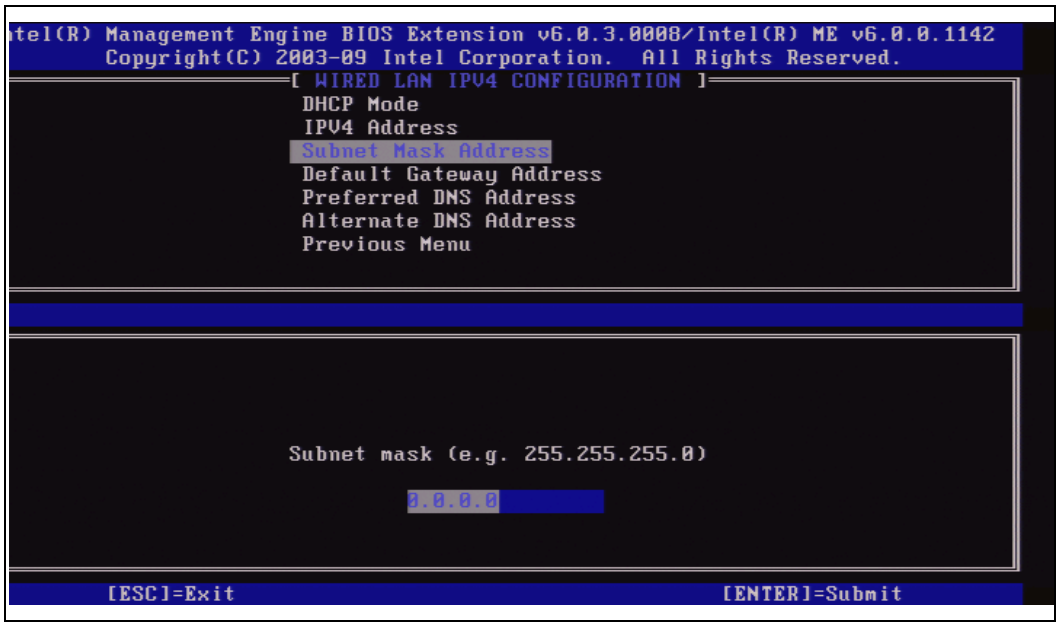
1. Enter the IPv4 Address.
2. Press Enter.

3.8.2.1.3 Subnet Mask Address

Under the Wired LAN IPV4 Configuration,

1. Select ‘Subnet Mask Address’.
2. Press Enter.

Figure 16: Subnet Mask Address



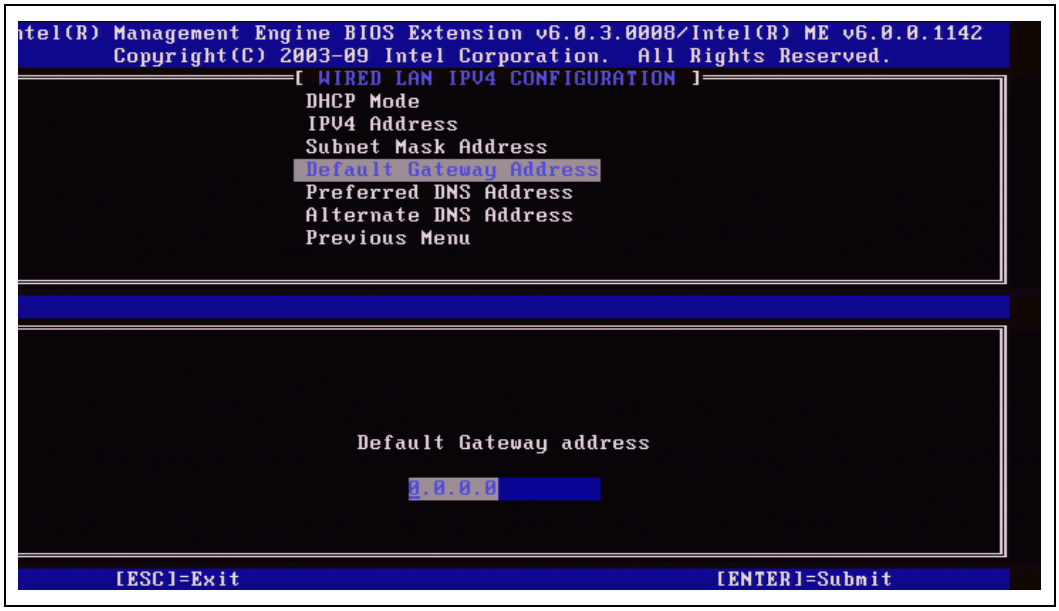
1. Enter the Subnet Mask Address.
2. Press Enter.

3.8.2.1.4 Default Gateway Address

Under the Wired LAN IPV4 Configuration,

1. Select ‘Default Gateway Address’.
2. Press Enter.

Figure 17: Default Gateway Address



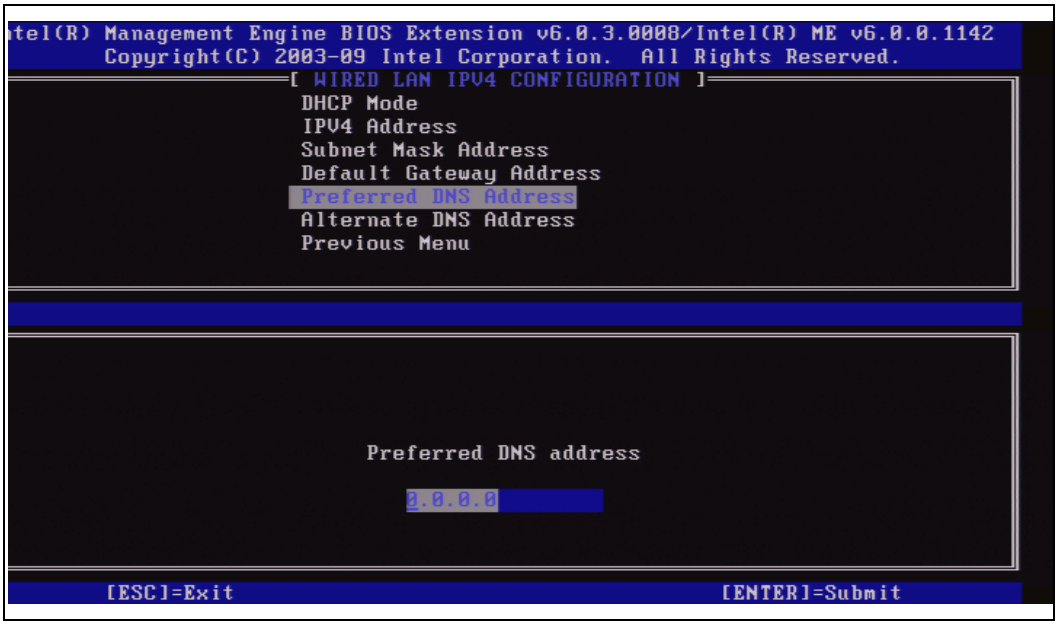
1. Enter the Default Gateway Address.
2. Press Enter.

3.8.2.1.5 Preferred DNS Address

Under the Wired LAN IPV4 Configuration,

1. Select ‘Preferred DNS Address’.
2. Press Enter.

Figure 18: Preferred DNS Address



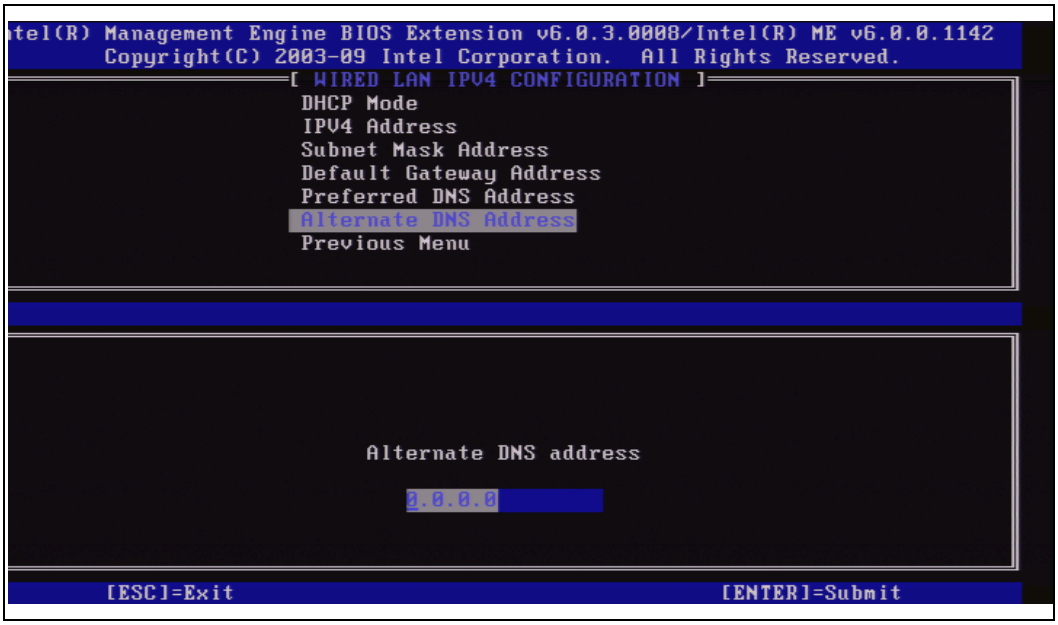
1. Enter the Preferred DNS Address.
2. Press Enter.

3.8.2.1.6 Alternate DNS Address

Under the Wired LAN IPV4 Configuration,

1. Select ‘Alternate DNS Address’.
2. Press Enter.

Figure 19: Alternate DNS Address



1. Enter the Alternate DNS Address.
2. Press Enter.

3.8.2.1.7 Previous Menu

Under the Wired LAN IPV4 Configuration,

1. Select ‘Previous Menu’.
2. Press Enter.

The Wired LAN IPV4 Configuration menu changes to the TCP/IP Settings menu.

3.8.2.2 Wired LAN IPV6 Configuration

Under the TCP/IP Settings,

3. Select ‘Wired LAN IPV6 Configuration’.
4. Press Enter.

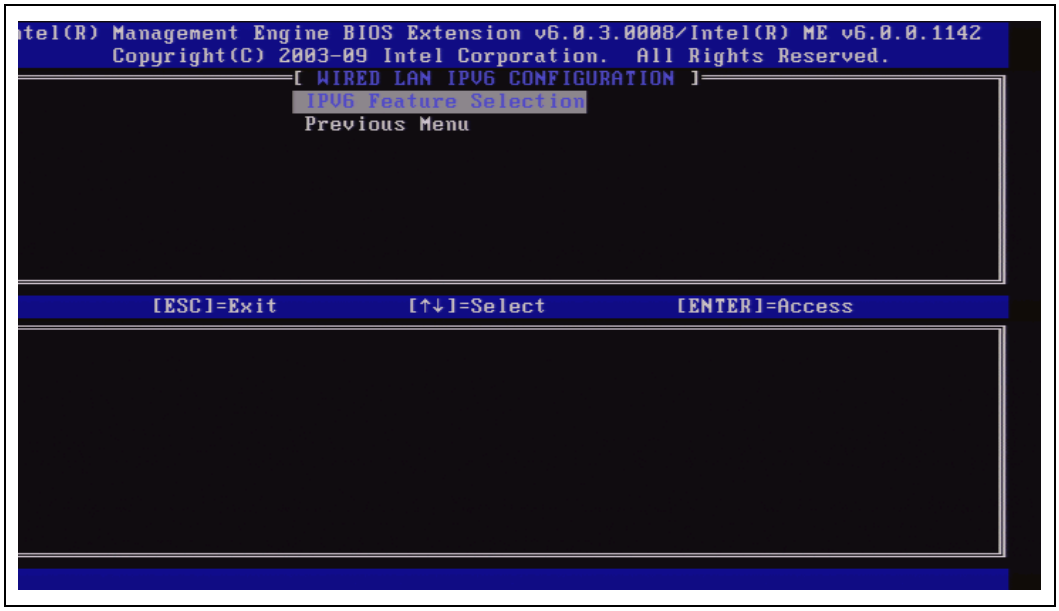
The TCP/IP Settings menu changes to the Wired LAN IPV6 Configuration page.

Note: The Intel® ME network stack supports a multi-homed IPv6 interface. Each network interface can be configured with the following IPv6 addresses:

1. One link local auto-configured address
2. Three auto-configured global addresses
3. One DHCPv6 configured address
4. One statically configured IPv6 address

The Intel ME IPv6 addresses are dedicated and not shared with the host operating system. To enable Dynamic DNS registration for IPv6 addresses it is required to configure a dedicated FQDN.

Figure 20: Wired LAN IPV6 Configuration



3.8.2.2.1 IPv6 Feature Selection

Under the Wired LAN IPV6 Configuration,

1. Select ‘IPv6 Feature Selection’.
2. Press Enter.

Figure 21: IPv6 Feature Selection – Disabled

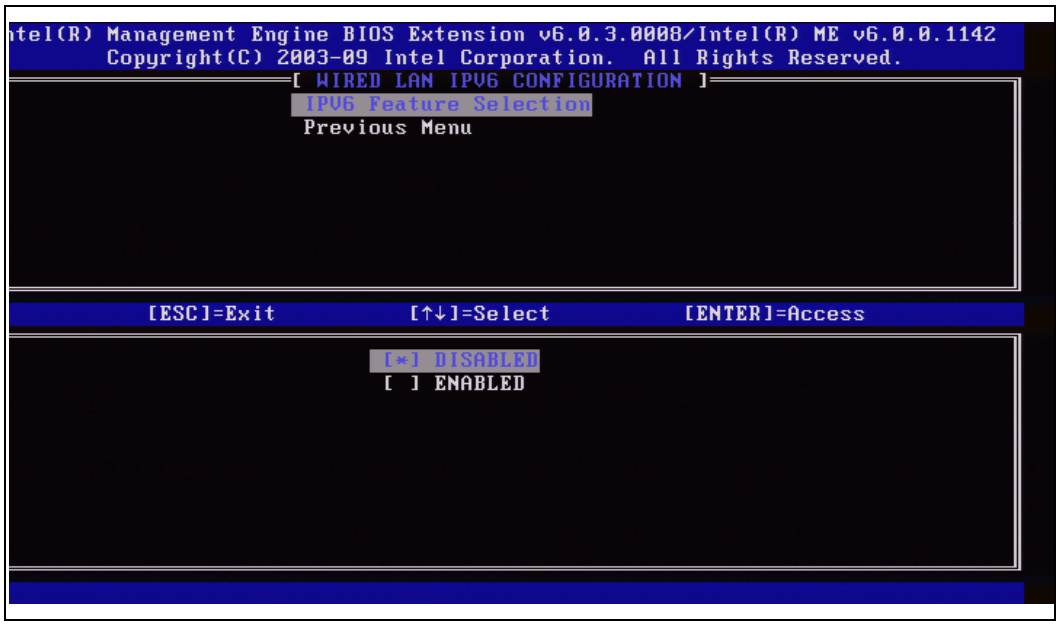


Figure 22: IPv6 Feature Selection – Enabled

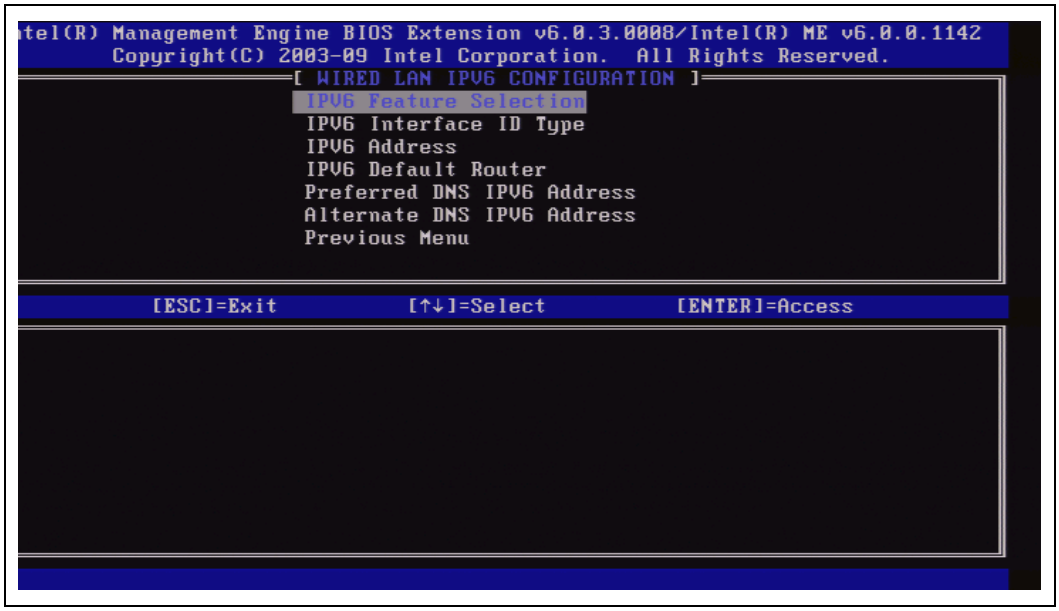


Table 4: IPv6 Feature Selection

Option	Description
Enabled	The IPv6 interface is currently enabled.
Disabled	The IPv6 interface is currently disabled.

To select Disabled:

1. Select ‘Disabled’.
2. Press Enter.

To select Enabled:

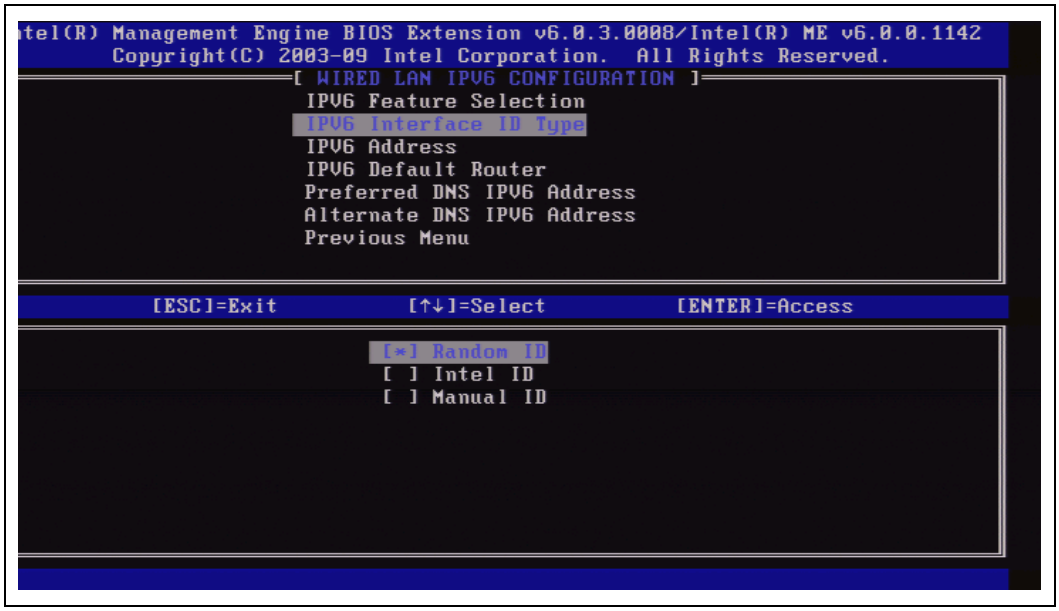
1. Select ‘Enabled ID’.
2. Press Enter.

3.8.2.2.2 IPv6 Interface ID Type

Under the Wired LAN IPV6 Configuration,

1. Select ‘IPv6 Interface ID Type’.
2. Press Enter.

Figure 23: IPv6 Interface ID Type



The auto-configured IPv6 address consists of two parts, the IPv6 Prefix set by the IPv6 router is the first and the interface ID is following part (64 bits each).

The following options can be selected:

RANDOM ID - The IPv6 Interface ID is automatically generated using a random number as described in RFC 3041. This is the default.

Intel ID - The IPv6 Interface ID is automatically generated using the MAC address.

Manual ID - The IPv6 Interface ID is configured manually. Selecting this type requires that the Manual Interface ID is set with a valid value.

To select Random ID:

1. Select ‘Random ID’.
2. Press Enter.

No additional steps are required.

To select Intel ID:

1. Select ‘Intel ID’.
2. Press Enter.

No additional steps are required.

To select Manual ID:

1. Select ‘Manual ID’.
2. Press Enter.

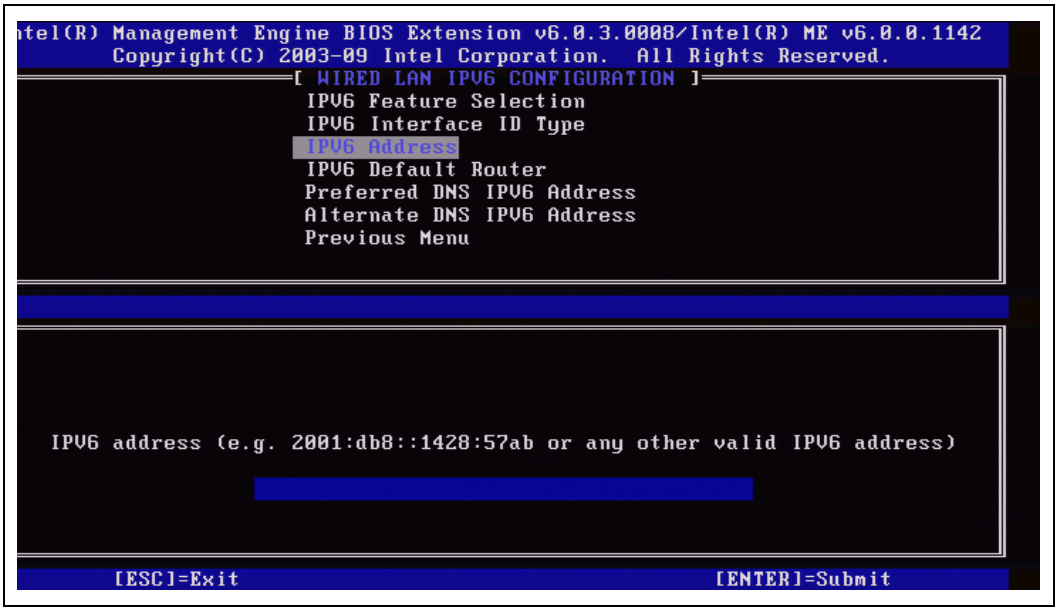
No additional steps are required.

3.8.2.2.3 IPv6 Address

Under the Wired LAN IPV6 Configuration,

1. Select ‘IPv6 Address’.
2. Press Enter.

Figure 24: IPv6 Address



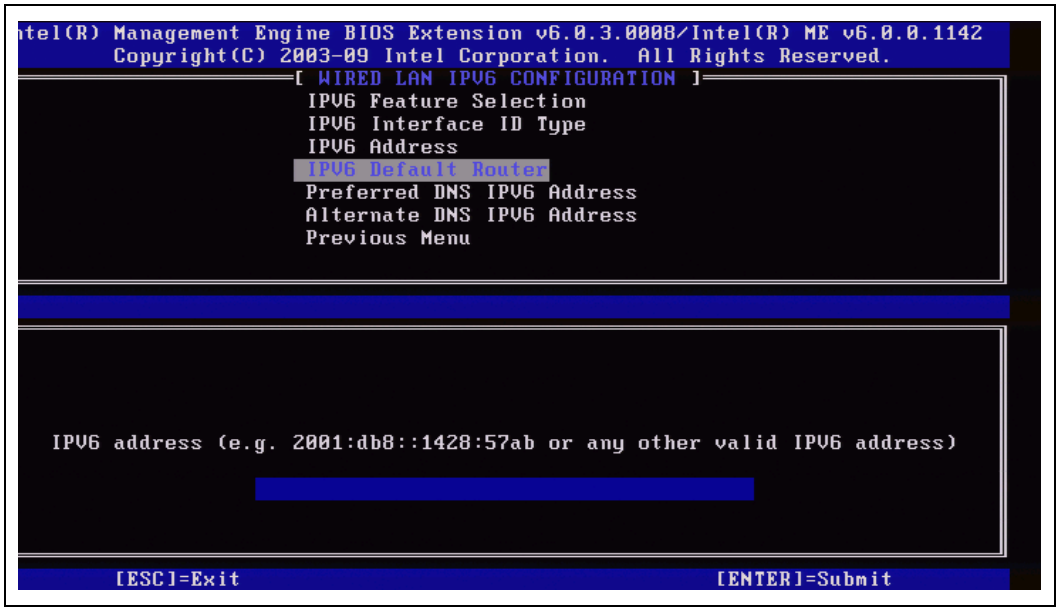
1. Enter the IPv6 Address.
2. Press Enter.

3.8.2.2.4 IPv6 Default Router

Under the Wired LAN IPV6 Configuration,

1. Select ‘IPv6 Default Router’.
2. Press Enter.

Figure 25: IPv6 Default Router



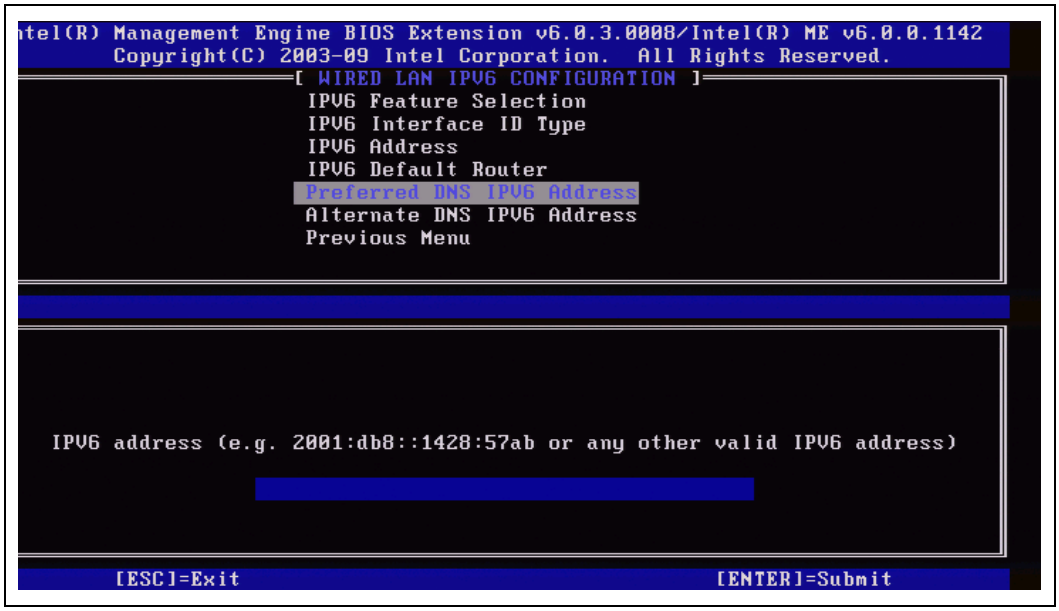
1. Enter the IPv6 Default Router.
2. Press Enter.

3.8.2.2.5 Preferred DNS IPv6 Address

Under the Wired LAN IPV6 Configuration,

1. Select 'Preferred DNS IPv6 Address'.
2. Press Enter.

Figure 26: Preferred DNS IPv6 Address



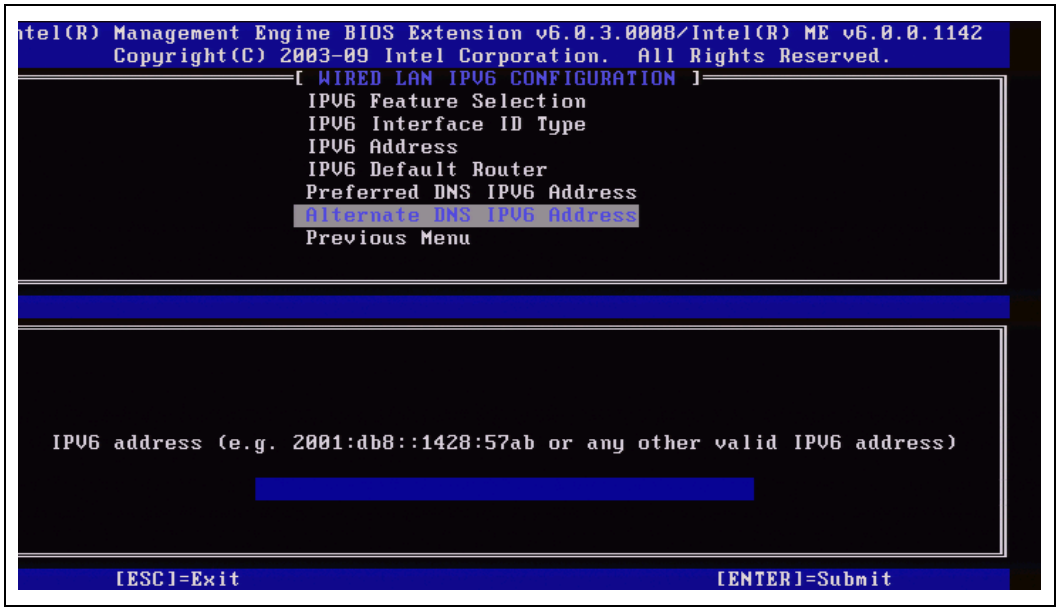
1. Enter the Preferred DNS IPv6 Address.
2. Press Enter.

3.8.2.2.6 Alternate DNS IPv6 Address

Under the Wired LAN IPV6 Configuration,

1. Select ‘Alternate DNS IPv6 Address’.
2. Press Enter.

Figure 27: Alternate DNS IPv6 Address



1. Enter the Alternate DNS IPv6 Address.
2. Press Enter.

3.8.2.2.7 Previous Menu

Under the Wired LAN IPV6 Configuration,

1. Select ‘Previous Menu’.
2. Press Enter.

The Wired LAN IPV6 Configuration menu changes to the TCP/IP Settings menu.

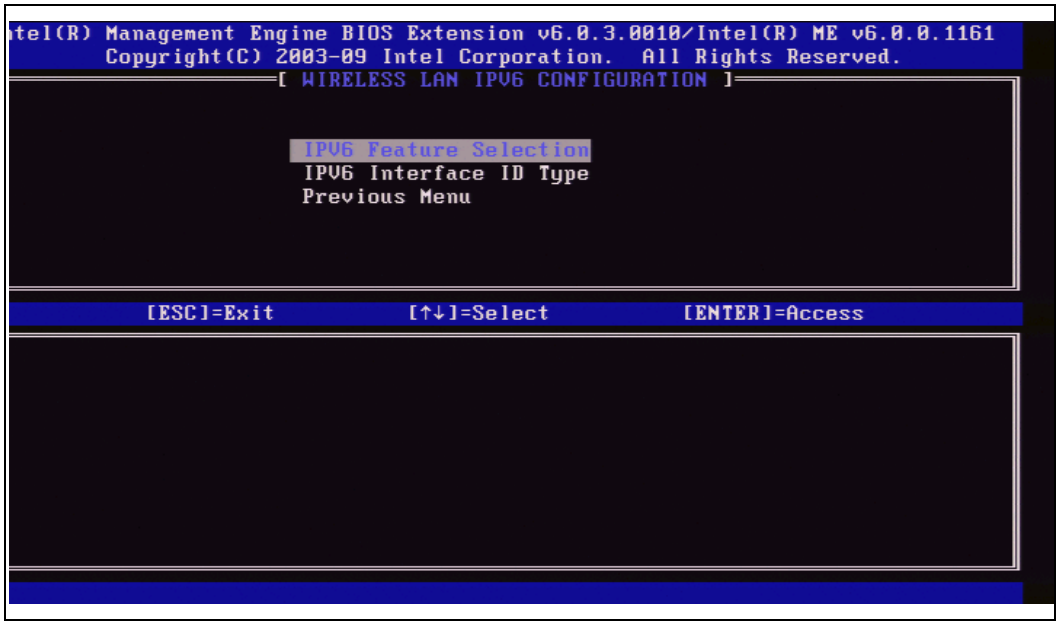
3.8.2.3 Wireless LAN IPV6 Configuration

Under the TCP/IP Settings,

1. Select ‘Wireless LAN IPV6 Configuration’.
2. Press Enter.

The TCP/IP Settings menu changes to the Wireless LAN IPV6 Configuration page.

Figure 28: Wireless LAN IPV6 Configuration



3.8.2.3.1 IPv6 Feature Selection

Under the Wireless LAN IPV6 Configuration,

1. Select ‘IPv6 Feature Selection’.
2. Press Enter.

Figure 29: IPv6 Feature Selection

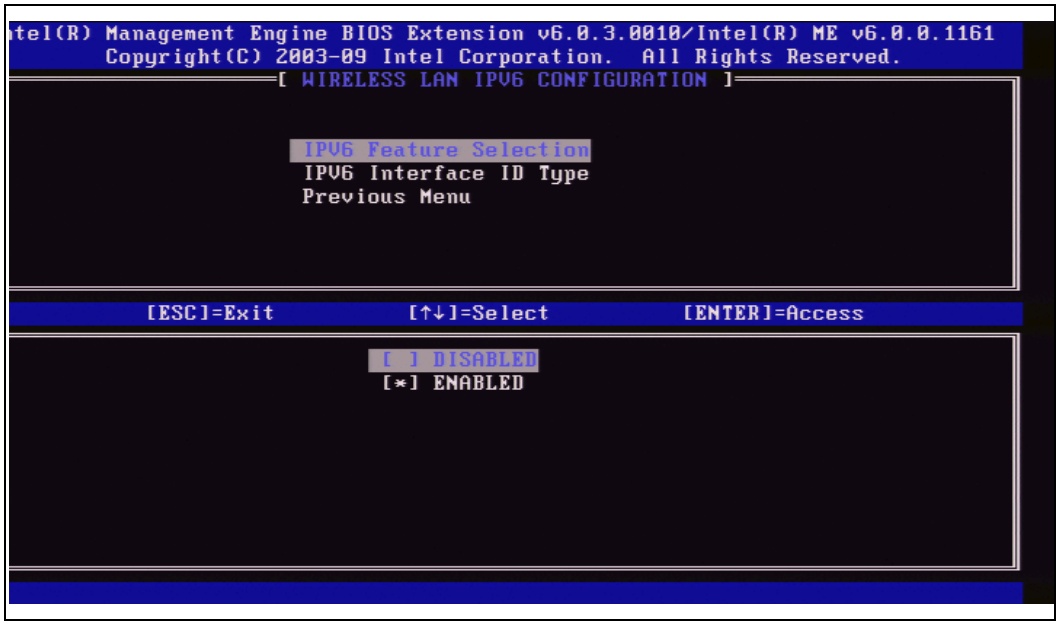


Table 5: IPv6 Feature Selection

Option	Description
Enabled	The IPv6 interface is currently enabled.
Disabled	The IPv6 interface is currently disabled.

To select Disabled:

1. Select ‘Disabled’.
2. Press Enter.

To select Enabled:

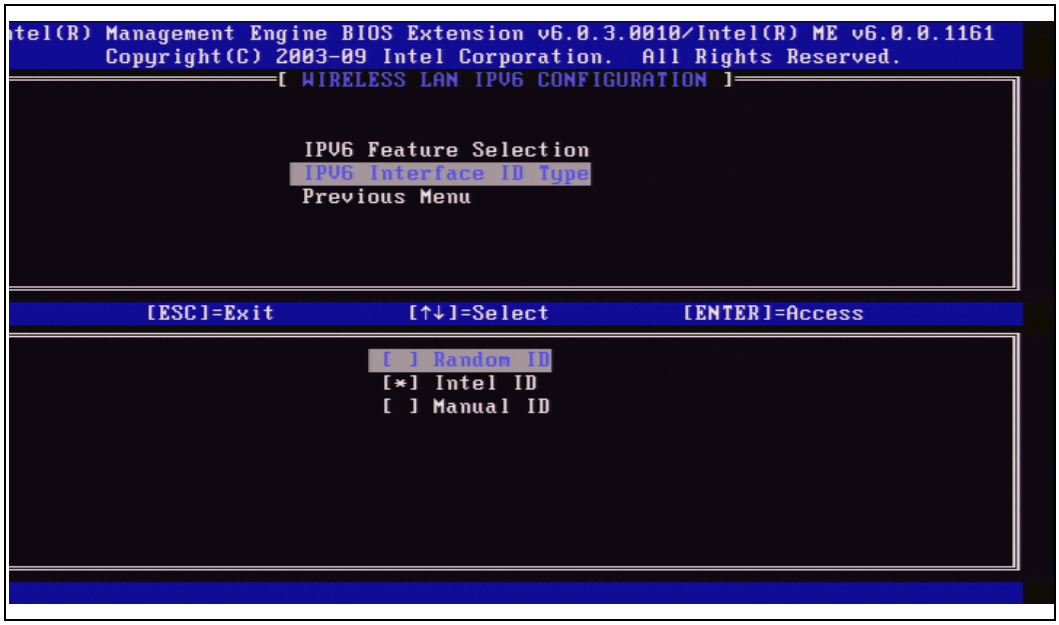
1. Select ‘Enabled ID’.
2. Press Enter.

3.8.2.3.2 IPv6 Interface ID Type

Under the Wireless LAN IPV6 Configuration,

1. Select ‘IPv6 Interface ID Type’.
2. Press Enter.

Figure 30: IPv6 Interface ID Type



An auto-configured IPv6 address consists of two parts, the IPv6 Prefix set by the IPv6 router is the first and the interface ID is following part (64 bits each).

The following options can be selected:

RANDOM ID - The IPv6 Interface ID is automatically generated using a random number as described in RFC 3041. This is the default.

Intel ID - The IPv6 Interface ID is automatically generated using the MAC address.

Manual ID - The IPv6 Interface ID is configured manually. Selecting this type requires that the Manual Interface ID is set with a valid value.

To select Random ID:

1. Select 'Random ID'.
2. Press Enter.

No additional steps are required.

To select Intel ID:

1. Select 'Intel ID'.
2. Press Enter.

No additional steps are required.

To select Manual ID:

1. Select 'Manual ID'.
2. Press Enter.

No additional steps are required.

3.8.2.3.3 Previous Menu

Under the Wireless LAN IPV6 Configuration,

1. Select ‘Previous Menu’.
2. Press Enter.

The Wireless LAN IPV6 Configuration menu changes to the TCP/IP Settings menu.

3.8.2.4 Previous Menu

Under the TCP/IP Settings menu,

1. Select ‘Previous Menu’.
2. Press Enter.

The TCP/IP Settings menu changes to the Intel ® ME Network Setup menu.

3.8.3 Previous Menu

Under the Intel ME Network Setup menu,

1. Select ‘Previous Menu’.
2. Press Enter.

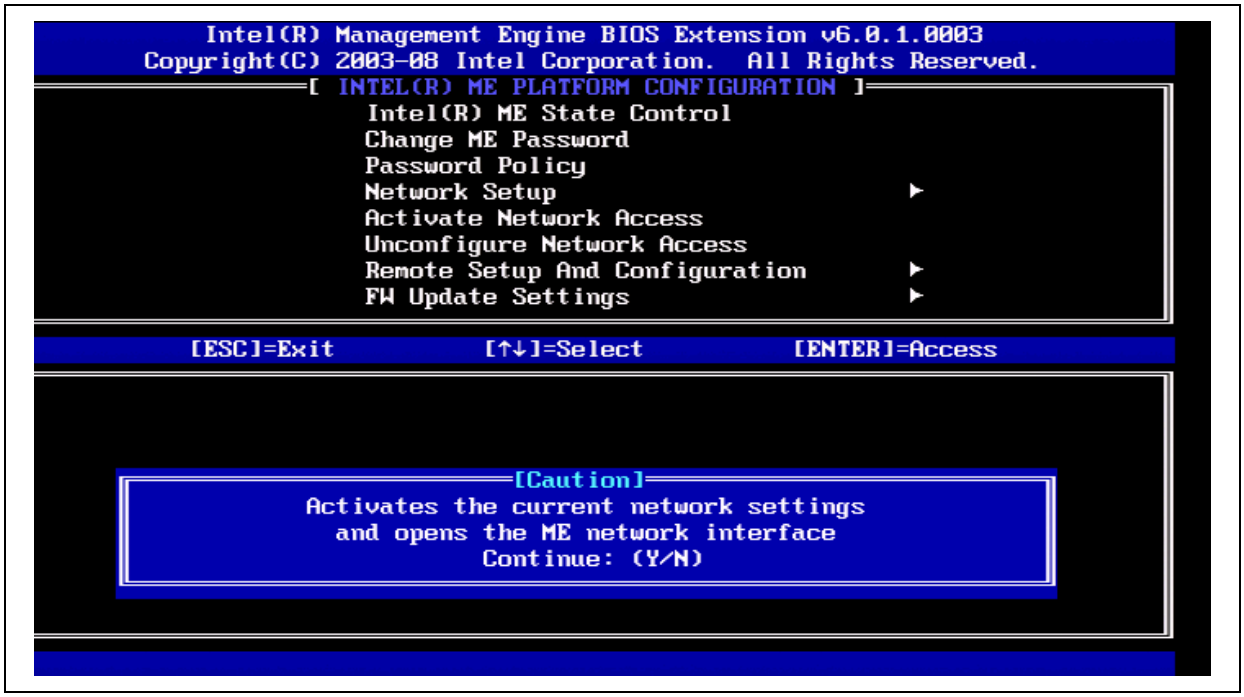
The Intel ME Network Setup menu changes to the Intel ME Platform Configuration menu.

3.9 Activate Network Access

Under the Intel ME Platform Configuration menu,

1. Select ‘Activate Network Access’.
2. Press Enter.

Figure 31: Activate Network Access



Activate Network Access causes the Intel ME to transition to the POST provisioning state if all required settings are configured.

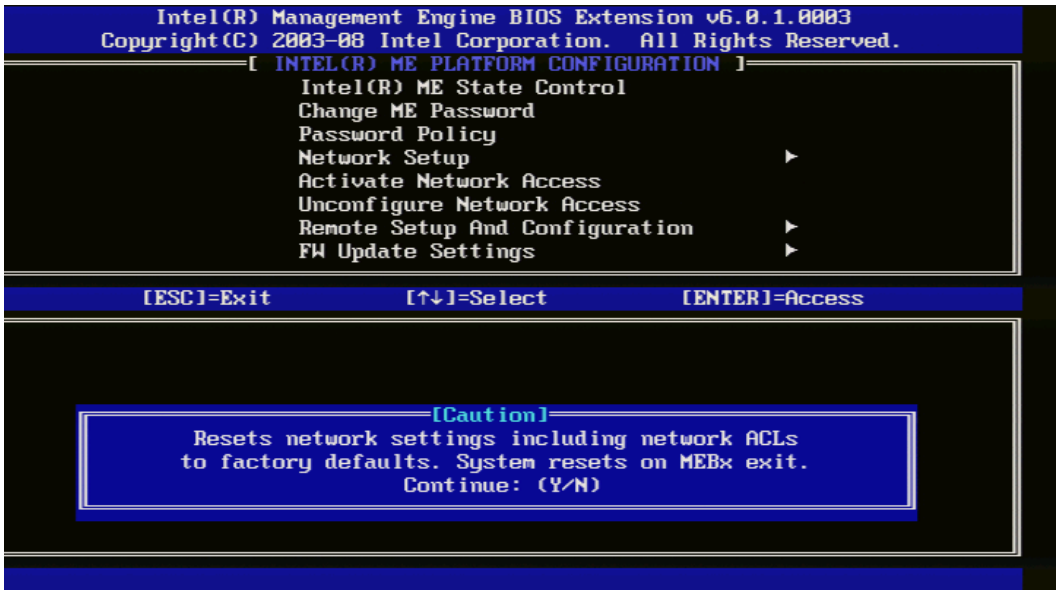
3.10 Unconfigure Network Access

Under the Intel ME Platform Configuration menu,

1. Select 'Unconfigure Network Access'.
2. Press Enter.

Note: This will cause Intel ME to transition to the PRE provisioning state.

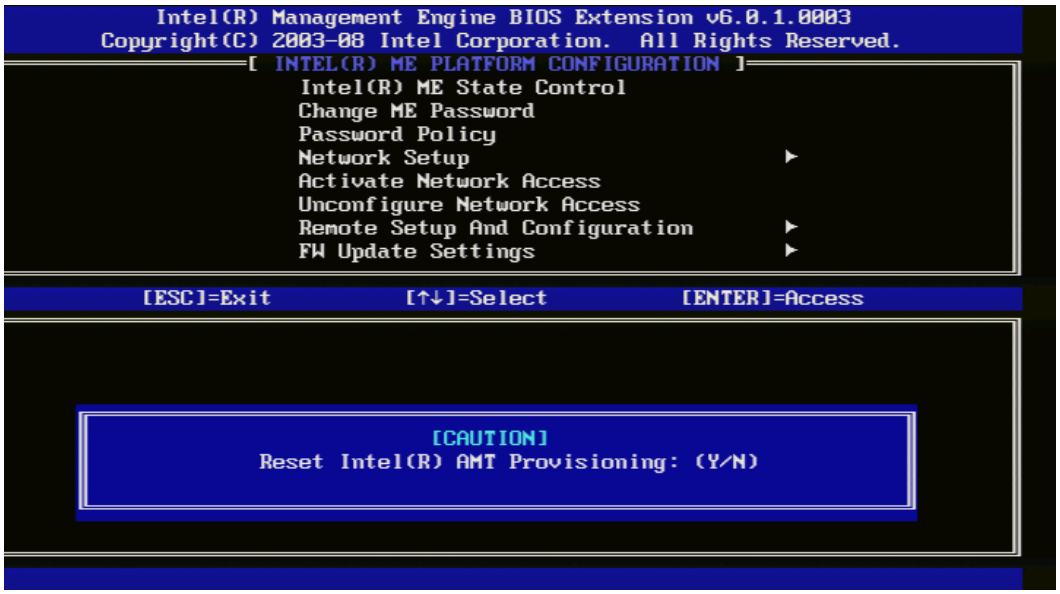
Figure 32: Unconfigure Network Access



3. Select Y to unconfigure.

The following screen appears:

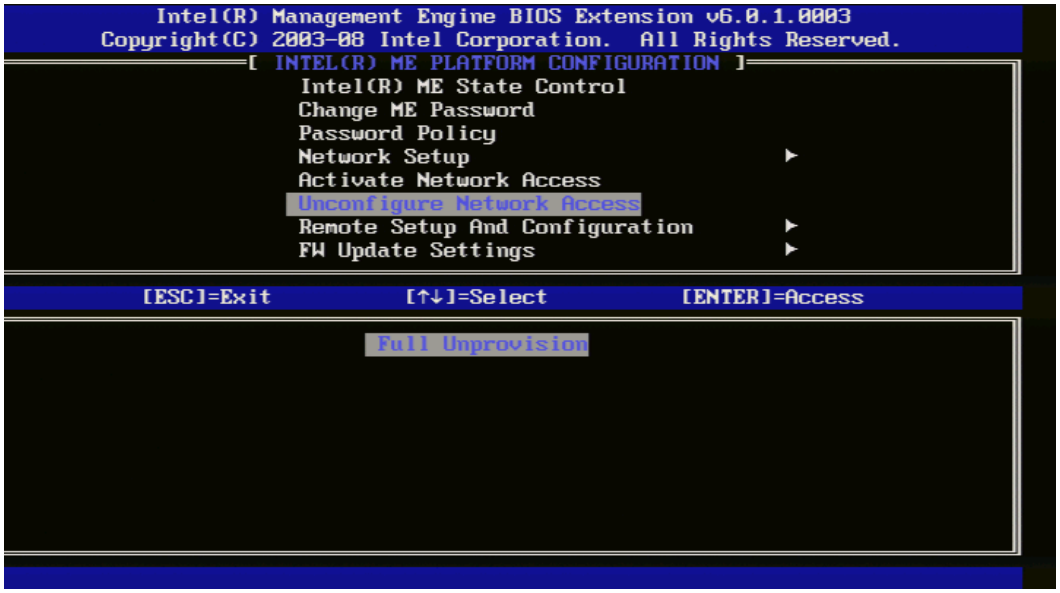
Figure 33: Unconfigure Network Access



4. Select Y to unconfigure.

The following screen appears:

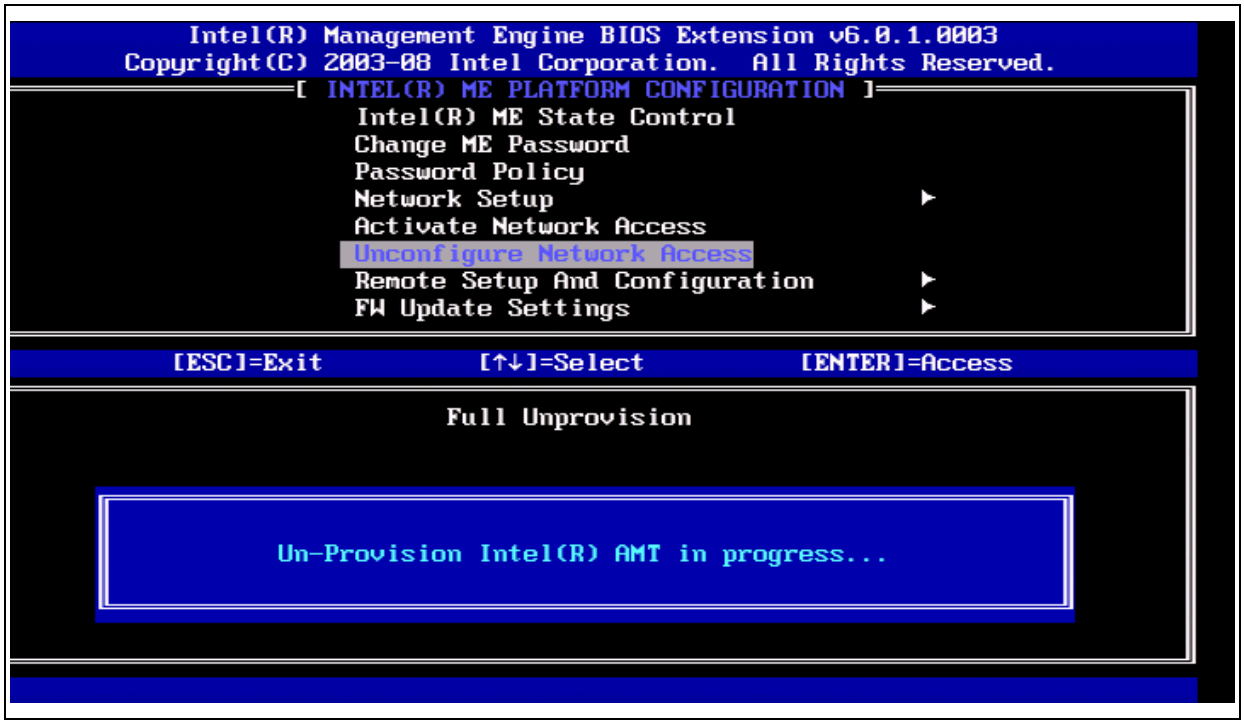
Figure 34: Unconfigure Network Access



5. Select Full Unprovisioning.
6. Press Enter.

The following screen appears:

Figure 35: Unconfigure Network Access



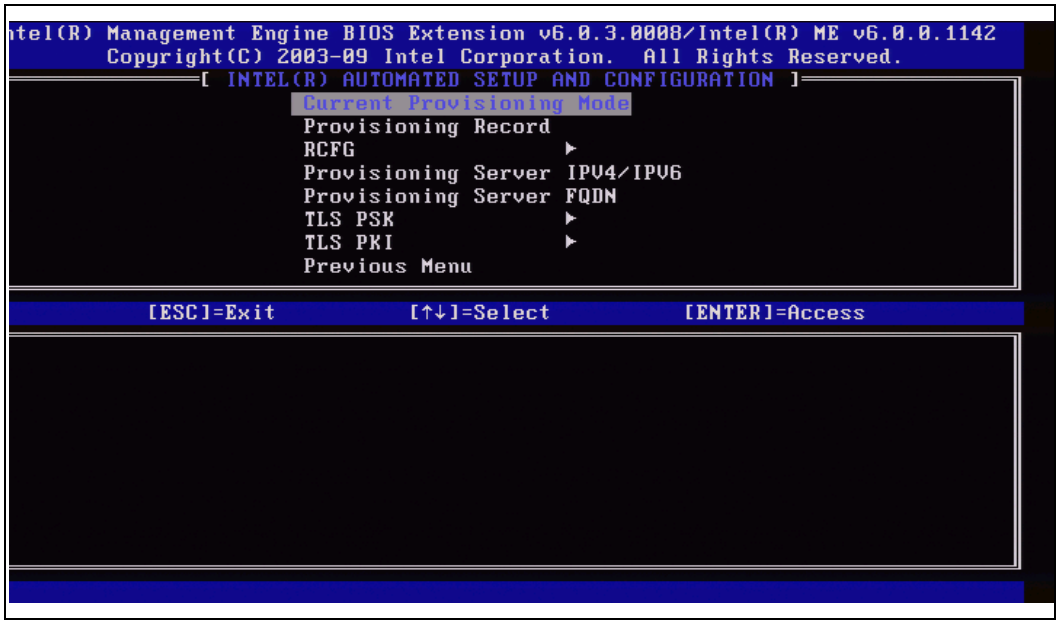
3.11 Remote Setup and Configuration

Under Intel ME Platform Configuration,

1. Select ‘Automated Remote Setup and Configuration’.
2. Press Enter.

The Intel ME Platform Configuration screen changes to the Intel Automated Setup and Configuration screen.

Figure 36: Remote Setup and Configuration

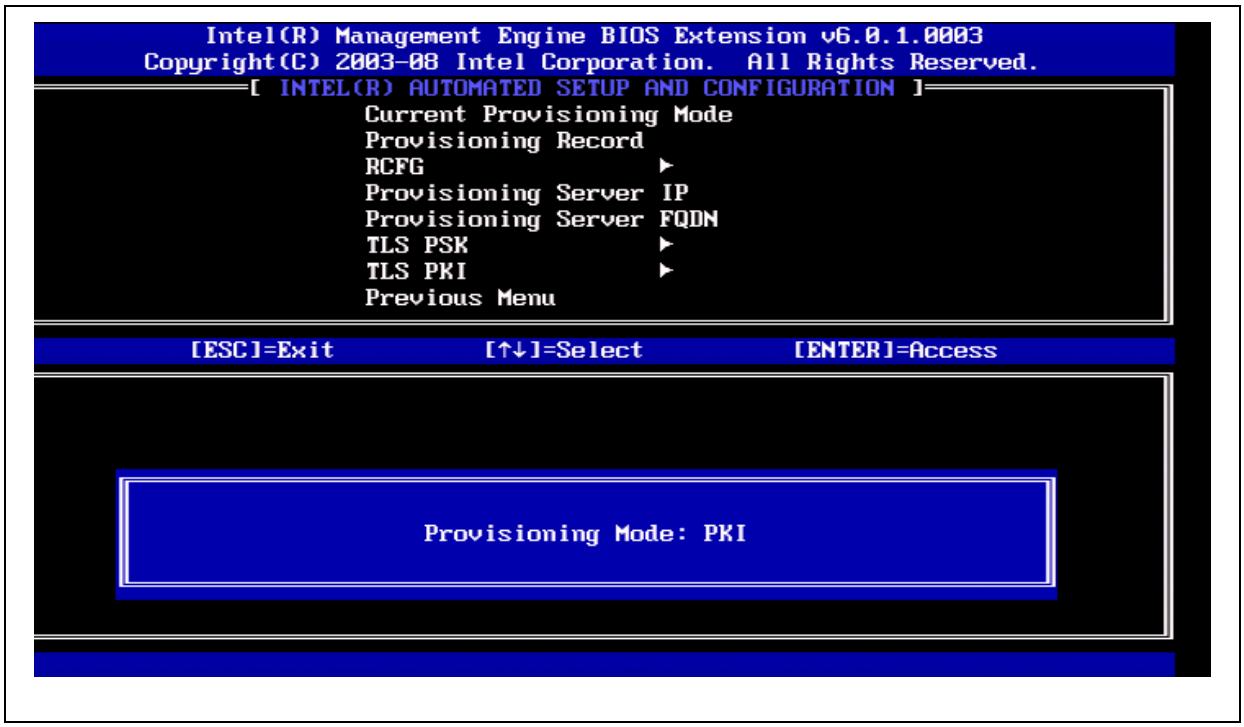


3.11.1 Current Provisioning Mode

Under Intel Automated Setup and Configuration,

1. Select 'Current Provisioning Mode'.
2. Press Enter.

Figure 37: Current Provisioning Mode



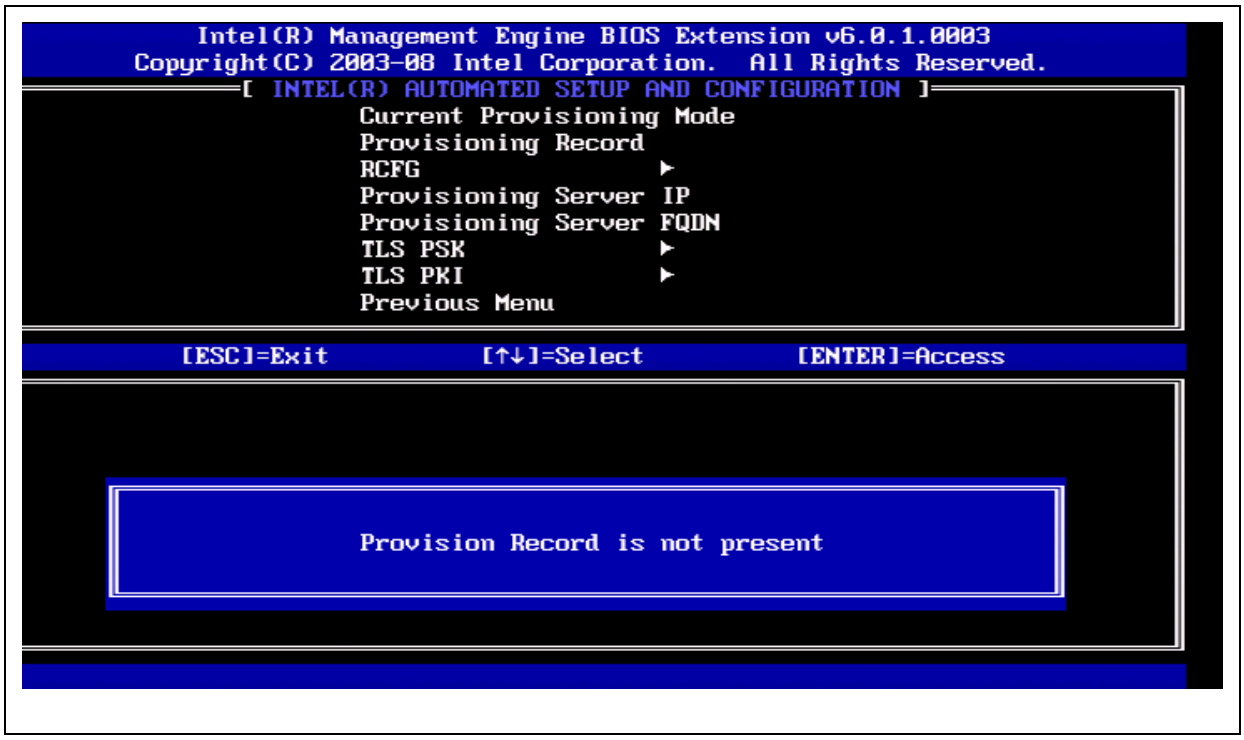
Current Provisioning Mode – Displays the current provisioning TLS Mode: None, PKI, or PSK.

3.11.2 Provisioning Record

Under Intel Automated Setup and Configuration,

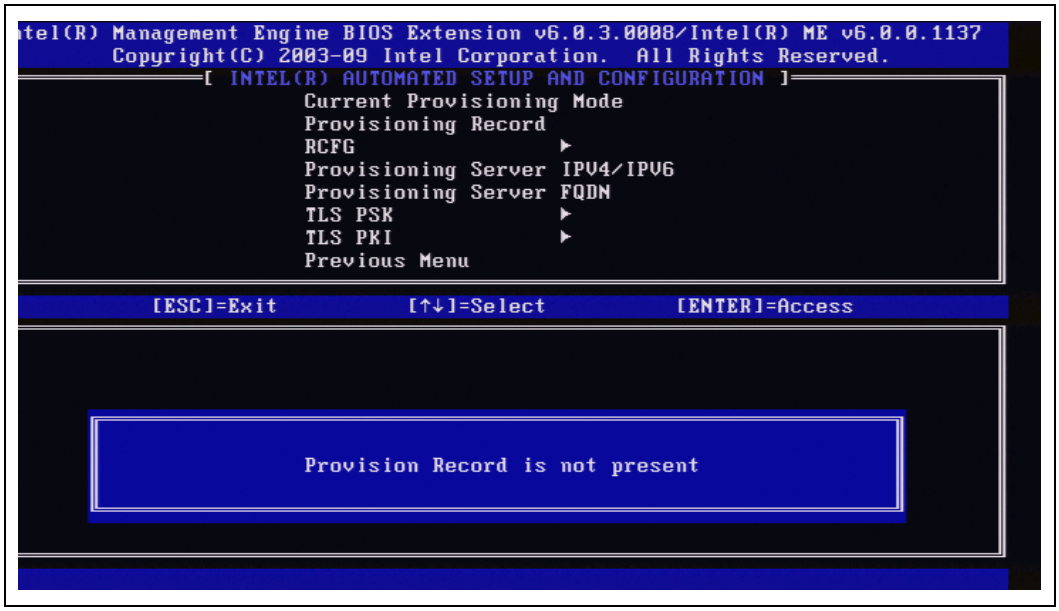
1. Select 'Provisioning Record'.
2. Press Enter.

Figure 38: Provisioning record



Provisioning Record – Displays the system's provision PSK/PKI record data. If the data has not been entered, the Intel MEBX displays a message stating "Provision Record not present".

Figure 39: Provisioning record "not present"



If the data is entered, the Provision record will display the following:

- TLS provisioning mode – Displays the current configuration mode of the system: None, PSK or PKI.
- Provisioning IP – The IP address 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 – indicates whether the "PKI DNS Suffix" was configured in Intel MEBX before remote configuration took place or not. A value of 0 indicates that the DNS Suffix was not configured and the firmware will rely on DHCP option 15 and compare this suffix to the FQDN in the Configuration Server's client certificate . A value of 1 indicates that the DNS Suffix was configured and the firmware matched it against the DNS Suffix in the Configuration Server's client certificate. Host Initiated – Indicates whether the setup and configuration process was initiated by the host: 'No' indicates that the setup and configuration process was NOT host-initiated, 'Yes' indicates the setup and configuration process was host-initiated (PKI only).
- Hash Data – Displays the 40-character certificate hash data (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).
- FQDN – FQDN of the provisioning server mentioned in the certificate (PKI only).
- Serial Number – The 32-character string that indicates the Certificate Authority serial numbers.
- Time Validity Pass – Indicates whether the certificate passed the time validity check.

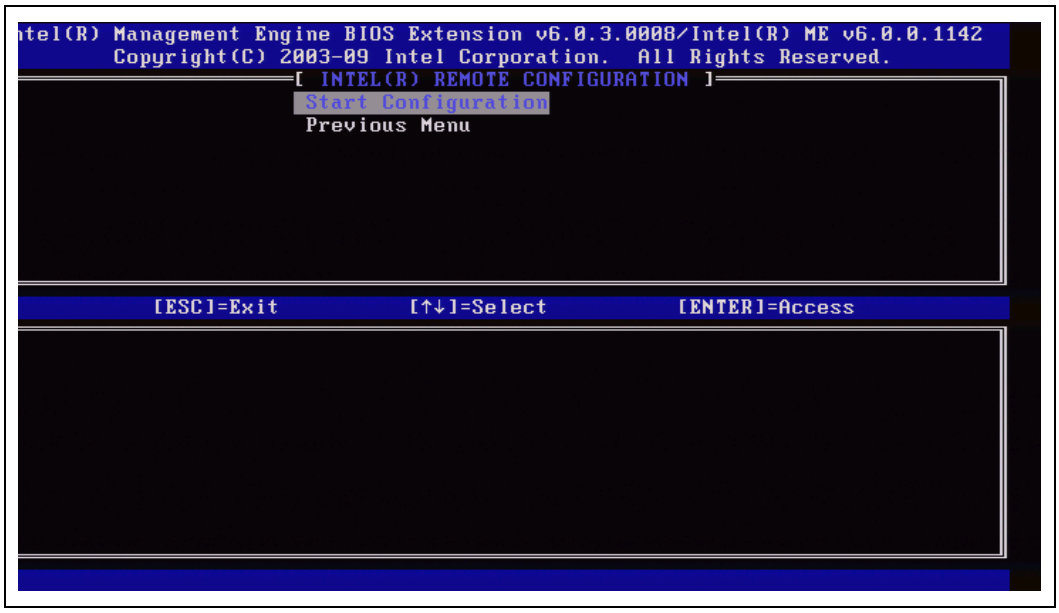
3.11.3 RCFG

Under Intel Automated Setup and Configuration,

1. Select ‘RCFG’.
2. Press Enter.

The Intel Automated Setup and Configuration screen changes to the Intel® Remote Configuration screen.

Figure 40: Intel Remote Configuration screen

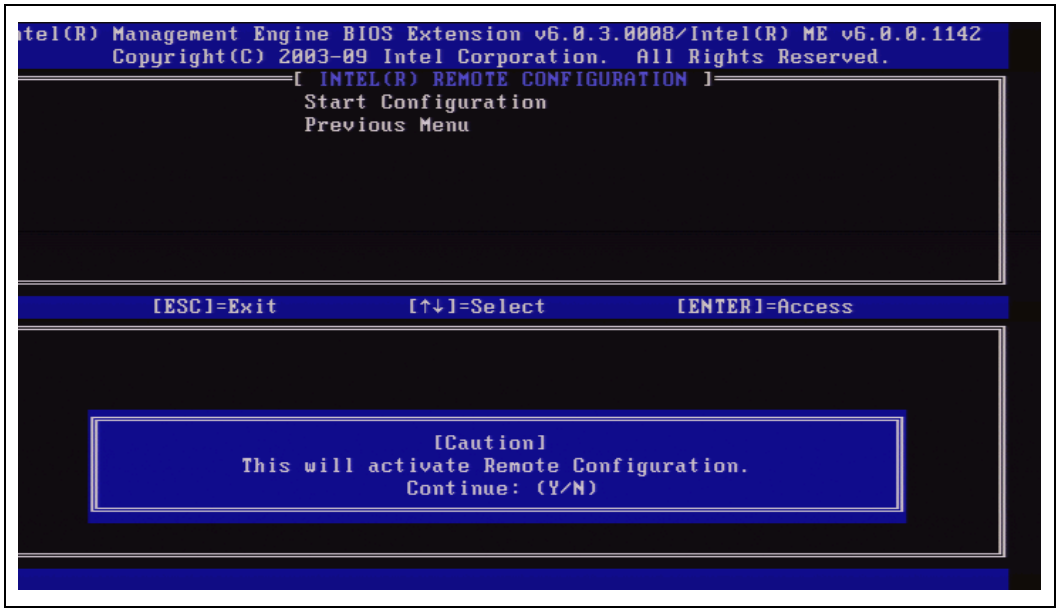


3.11.3.1 Start Configuration

Under the Intel Remote Configuration screen,

1. Select ‘Start Configuration’.
2. Press Enter.

Figure 41: Activate RCFG



If Remote Configuration is not activated , Remote configuration cannot occur.

To activate (enable) remote configuration, select Y.

3.11.3.2 Previous Menu

Under the Intel Remote Configuration menu,

1. Select ‘Previous Menu’.
2. Press Enter.

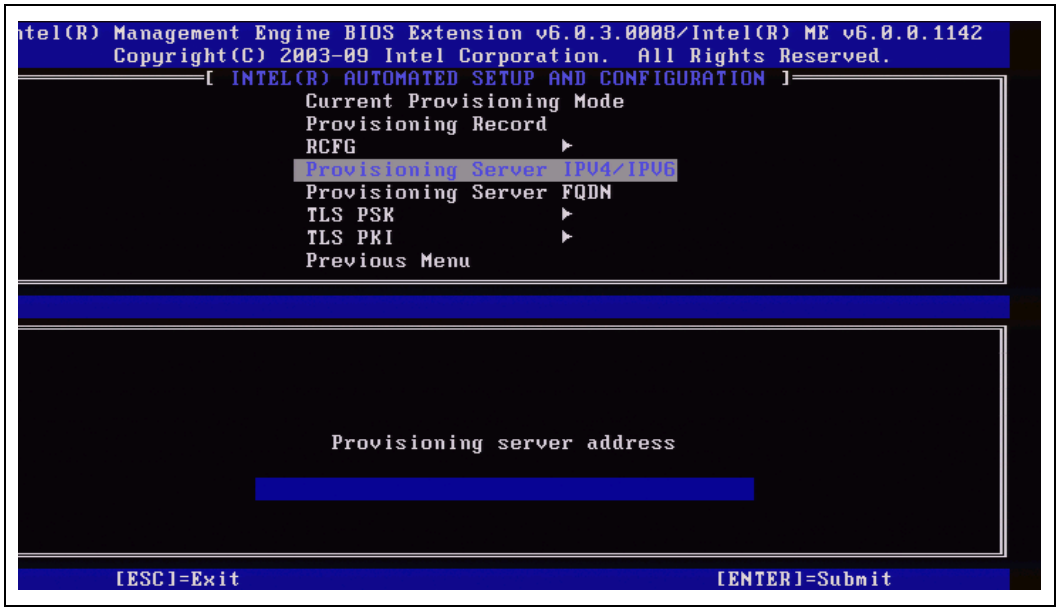
The Intel Remote Configuration screen changes to the Intel Automated Setup and Configuration screen.

3.11.4 Provisioning Server IPV4/IPV6

Under the Intel Automated Setup and Configuration screen,

1. Select ‘Provisioning Server IPV4/IPV6’.
2. Press Enter.

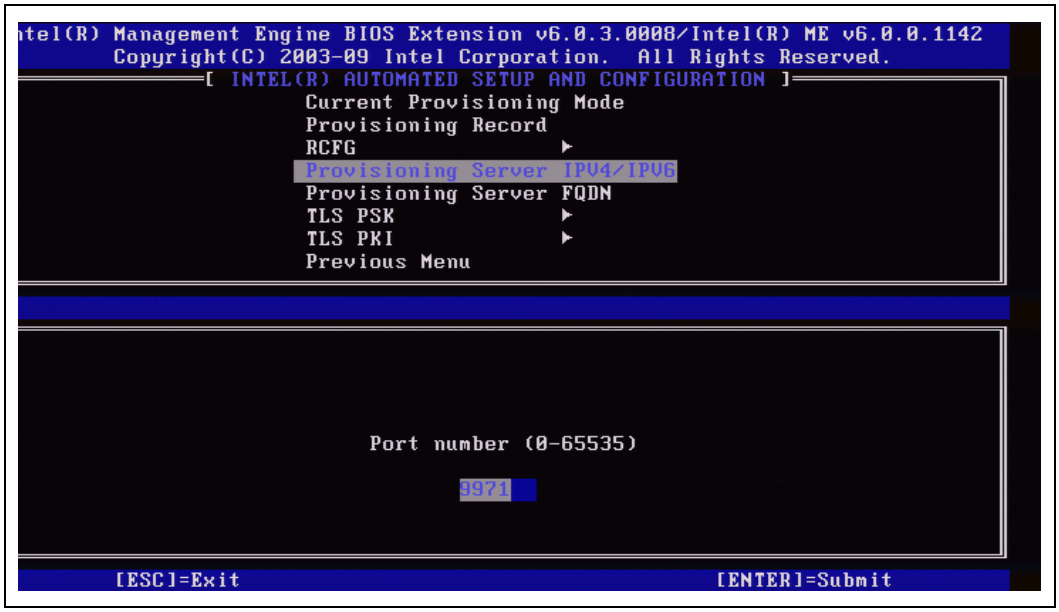
Figure 42: Provisioning Server IPV4/IPV6



The IP address of the Intel AMT provisioning server.

1. Enter provisioning server address.
2. Press Enter.

Figure 43: Provisioning Server Port number



The port number (0 – 65535) of the Intel AMT provisioning server. The default port number is 9971.

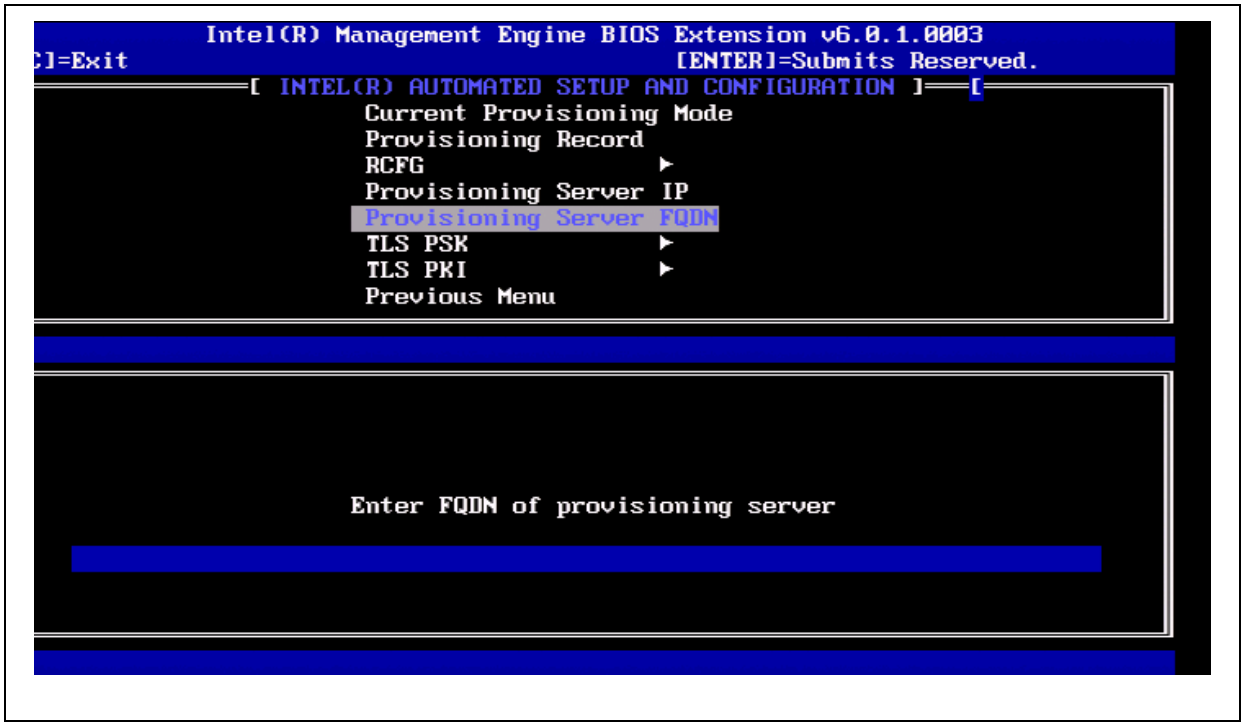
3. Enter provisioning server port number.
4. Press Enter.

3.11.5 Provisioning Server FQDN

Under the Intel Automated Setup and Configuration screen,

1. Select 'Provisioning Server FQDN'.
2. Press Enter.

Figure 44: Provisioning Server FQDN



FQDN of the provisioning server mentioned in the certificate (PKI only). This is also the FQDN of the server that AMT sends hello packets to for both PSK and PKI

3. Enter the FQDN of the provisioning server.
4. Press Enter.

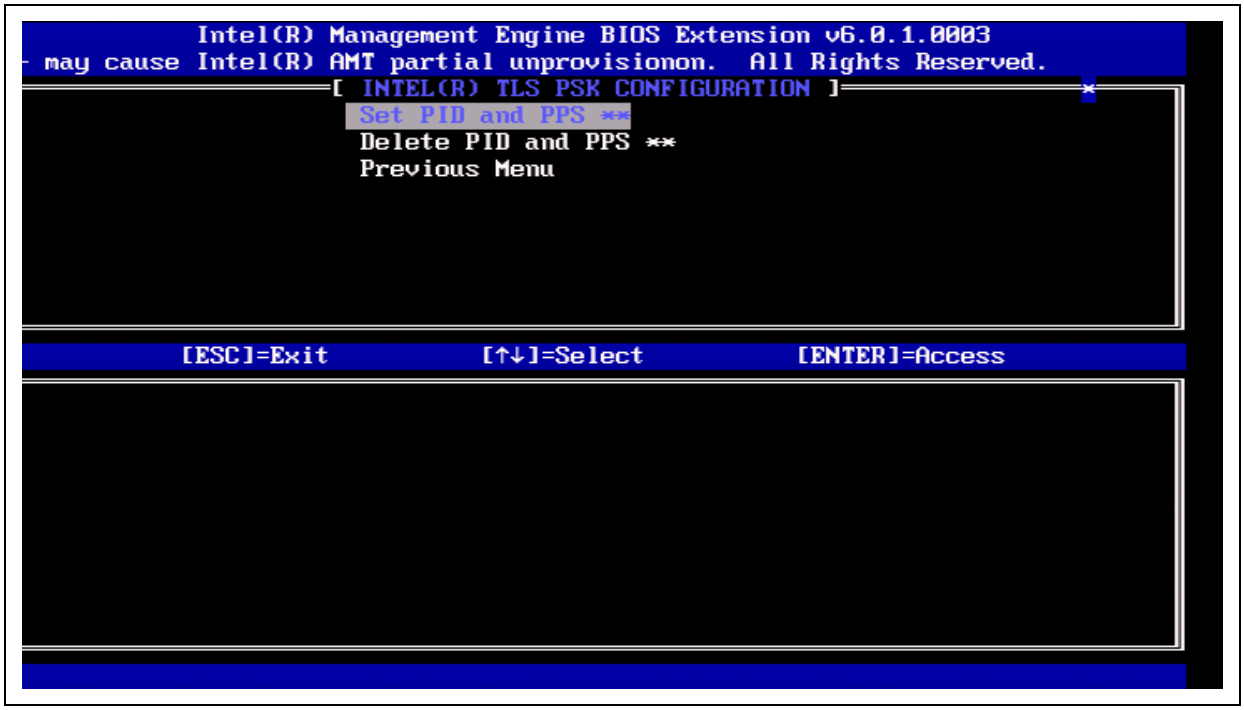
3.11.6 TLS PSK

Under Intel Automated Setup and Configuration,

1. Select 'TLS PSK'.
2. Press Enter.

The Intel Automated Setup and Configuration screen changes to the Intel TLS PSK Configuration screen.

Figure 45: Intel TLS PSK Configuration screen



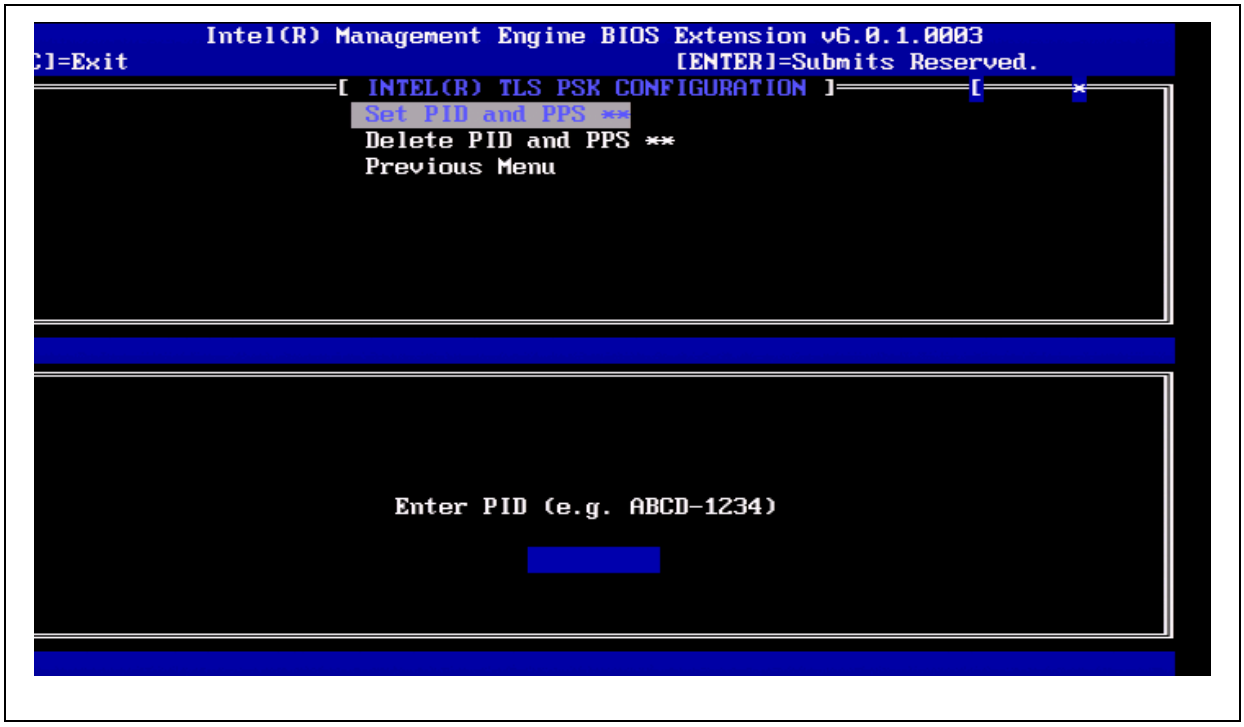
This submenu contains the settings for TLS PSK configuration settings.

3.11.6.1 Set PID and PPS

Under the Intel TLS PSK Configuration screen,

1. Select ‘Set PID and PPS’.
2. Press Enter.

Figure 46: Set PID and PPS



Setting the PID/PPS will cause a partial unprovision if the setup and configuration is “In-process”. The PID and PPS should be entered in the dash format. (Ex. PID: 1234-ABCD ; PPS: 1234-ABCD-1234-ABCD-1234-ABCD-1234-ABCD).

Note- A PPS value of ‘0000-0000-0000-0000-0000-0000-0000-0000’ will not change the setup configuration state. If this value is used, the setup and configuration state will remain ‘Not-started’.

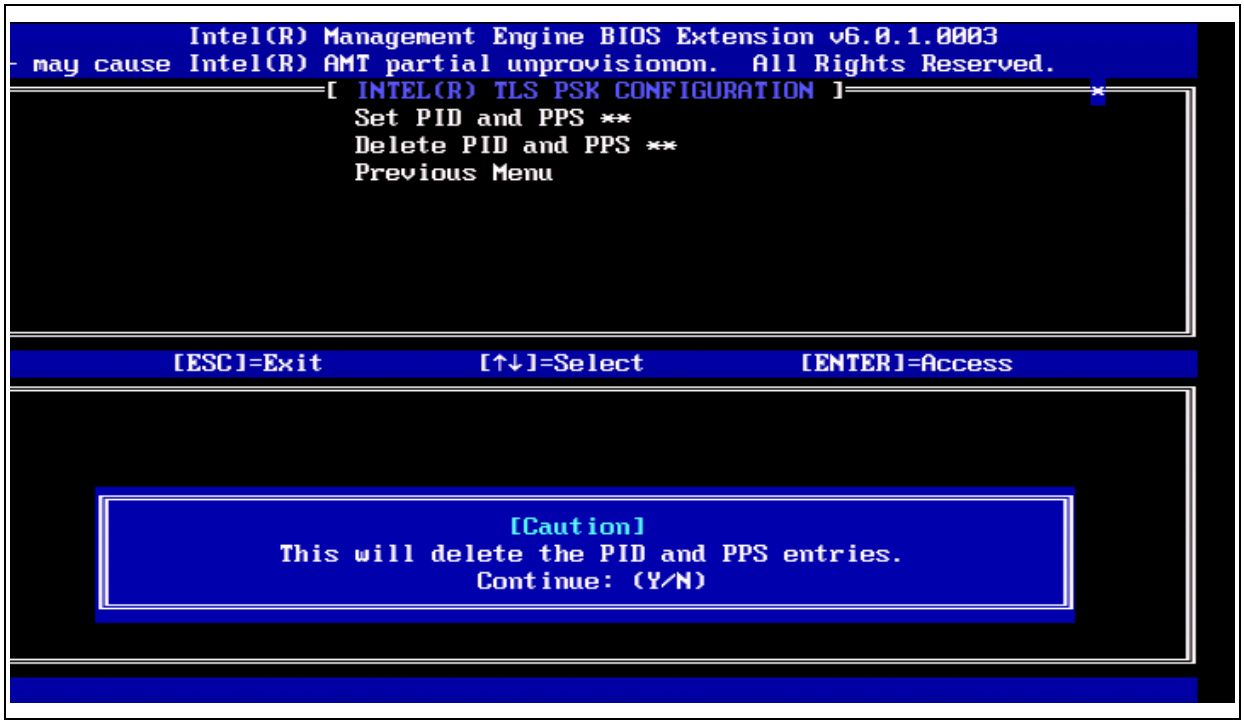
3. Enter PID.
4. Press Enter.
5. Enter PPS.
6. Press Enter.

3.11.6.2 Delete PID and PPS

Under the Intel TLS PSK Configuration screen,

1. Select 'Delete PID and PPS'.
2. Press Enter.

Figure 47: Delete PID and PPS



This option deletes the current PID and PPS stored in Intel ME. If the PID and PPS were not entered previously, the Intel MEBX will return an error message.

To delete the PID and PPS entries, select Y, else N.

3.11.6.3 Previous Menu

Under the Intel TLS PSK Configuration screen,

1. Select 'Previous Menu'.
2. Press Enter.

The Intel TLS PSK Configuration screen changes to the Intel Automated Setup and Configuration screen.

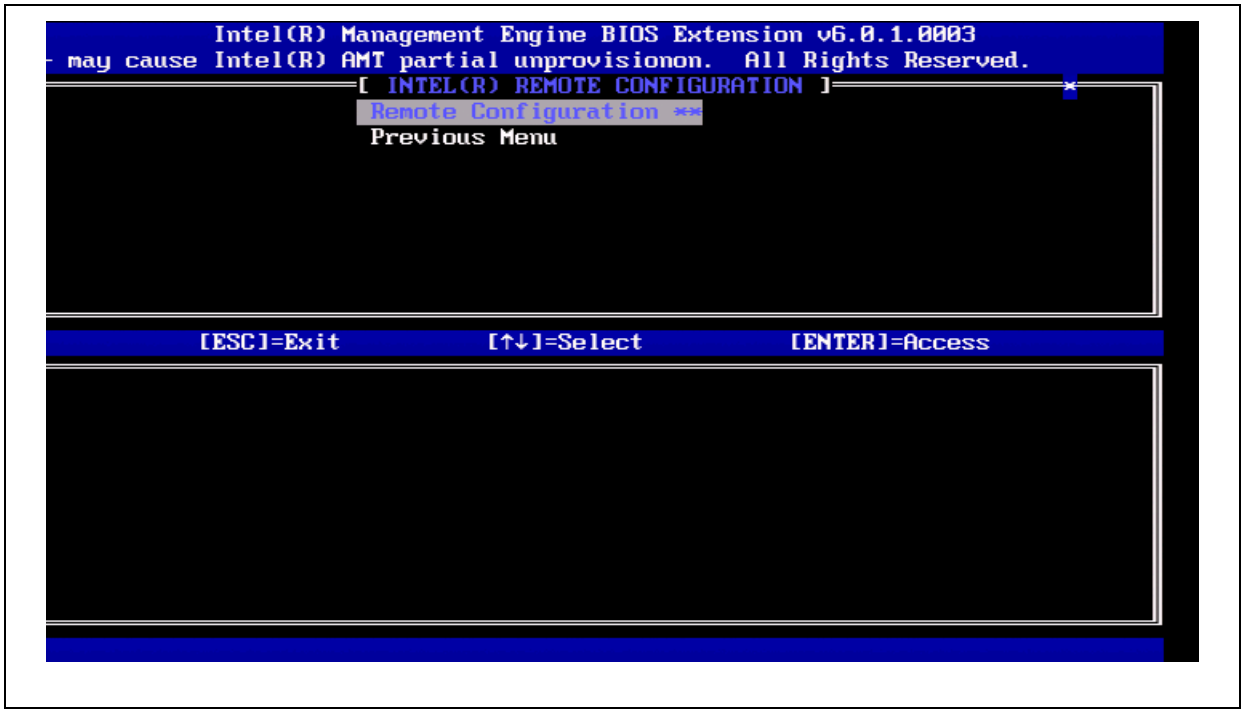
3.11.7 TLS PKI

Under Intel Automated Setup and Configuration,

1. Select ‘TLS PKI’.
2. Press Enter.

The Intel Automated Setup and Configuration screen changes to the Intel Remote Configuration.

Figure 48: Intel Remote Configuration screen

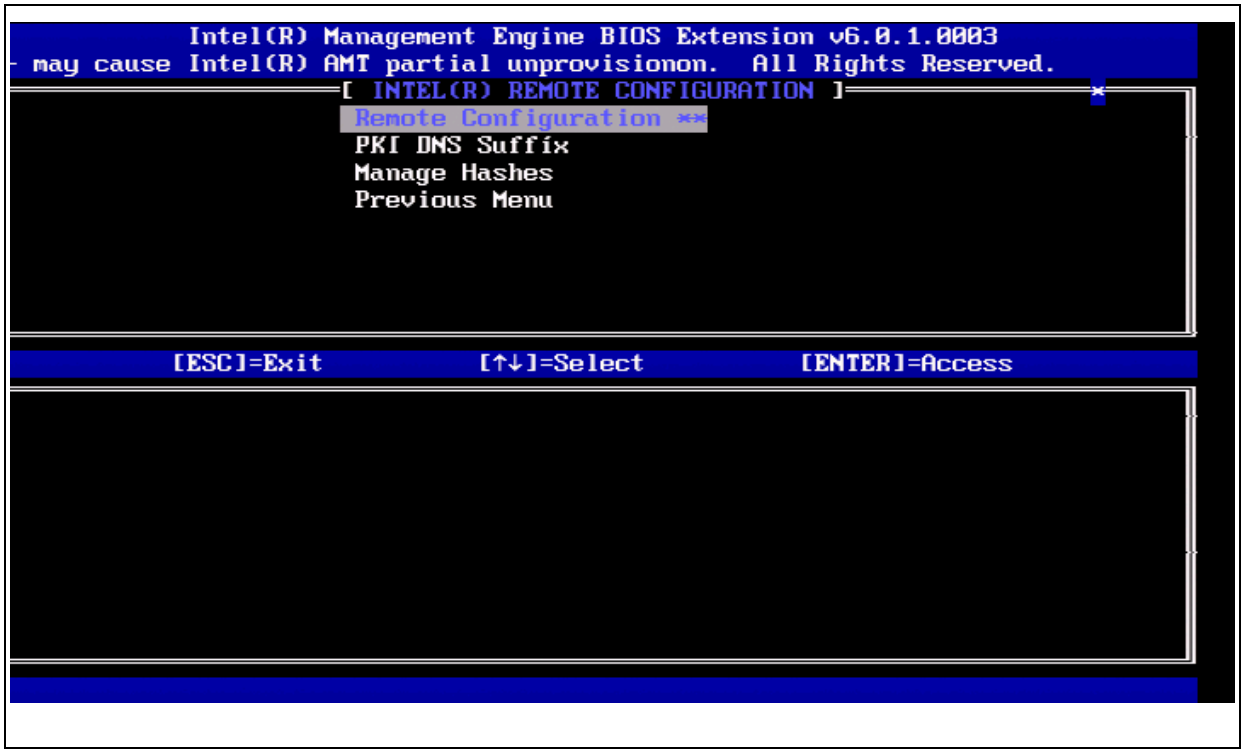


3.11.7.1 Remote Configuration

Under the Intel Remote Configuration screen,

1. Select ‘Remote Configuration’.
2. Press Enter.

Figure 49: Remote Configuration



Enabling/Disabling Remote configuration will cause a partial un-provision if the setup and configuration server is “In-process”.

The following options can be selected:

Disabled- remote configuration is disabled. Only ‘Remote Configuration’ and ‘Previous Menu’ items are visible.

Enabled- remote configuration is enabled, this will show additional fields.

To select Disabled:

3. Select ‘Disabled’.
4. Press Enter.

No additional steps are required.

To select Enabled:

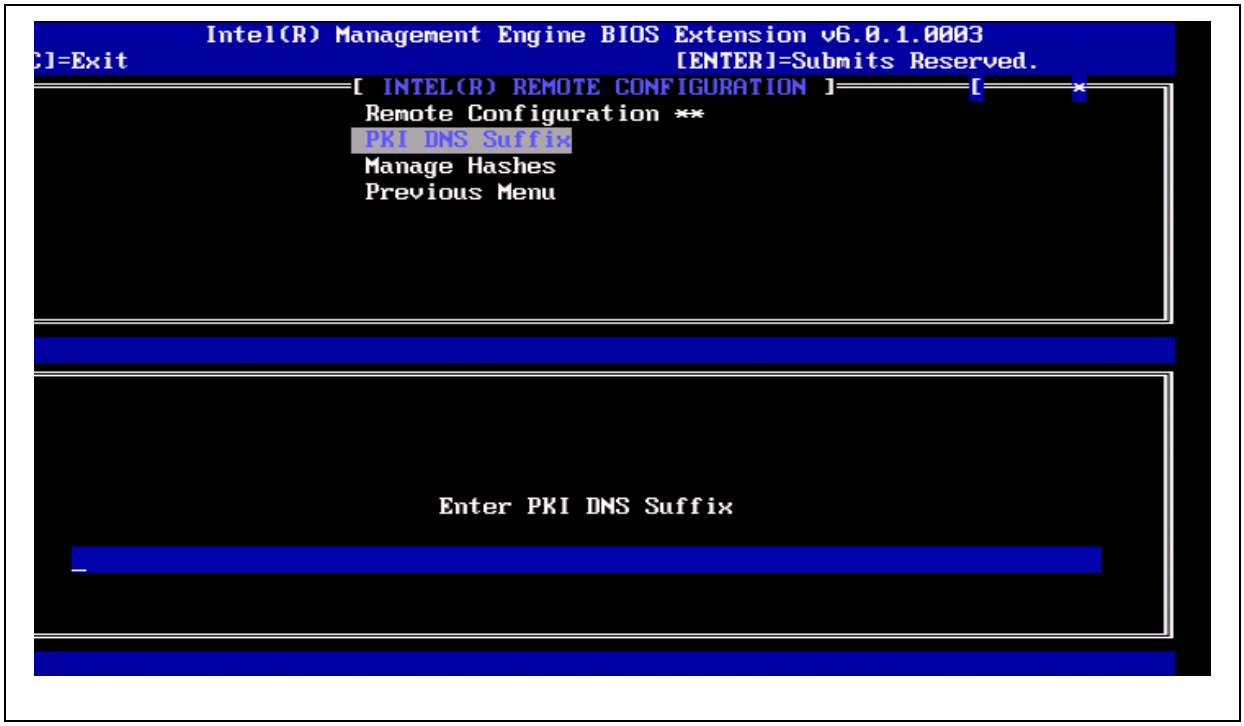
5. Select ‘Enabled ID’.
6. Press Enter.

3.11.7.2 PKI DNS Suffix

Under the Intel Remote Configuration screen,

1. Select ‘PKI DNS Suffix ’.
2. Press Enter.

Figure 50: PKI DNS Suffix



Key Value will be maintained in the EPS.

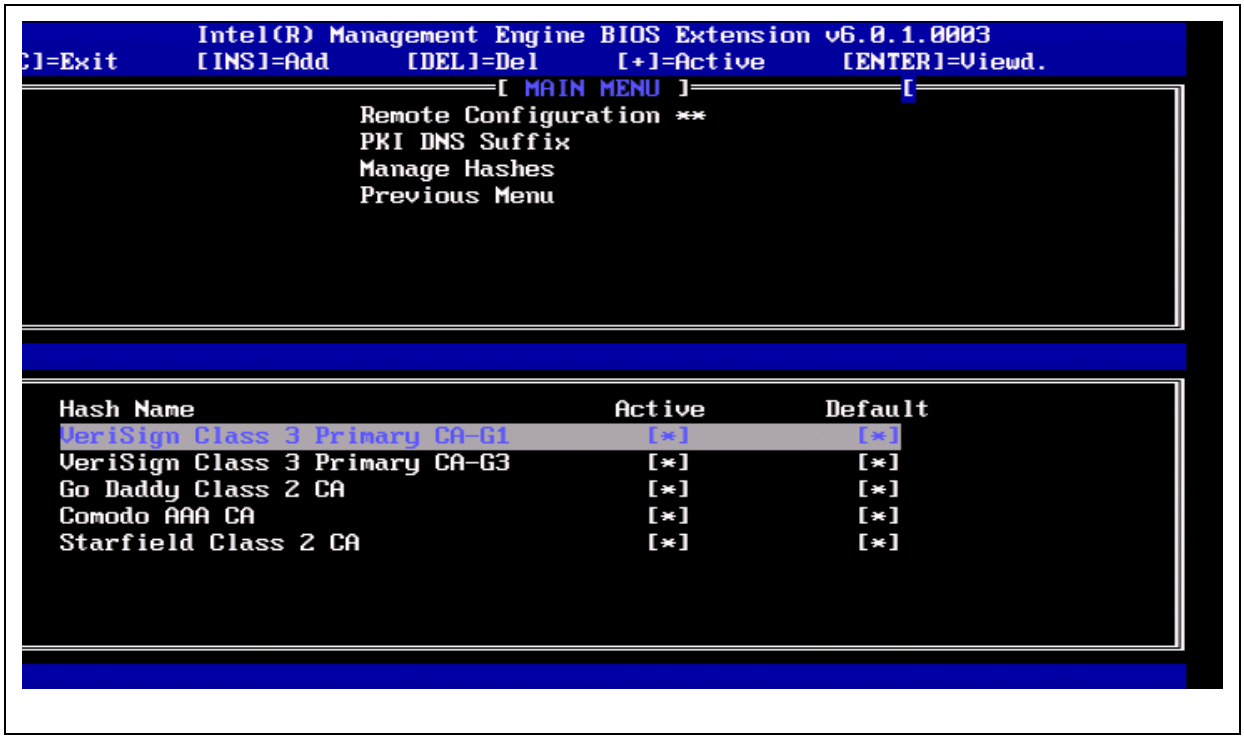
3. Enter the PKI DNS Suffix.
4. Press Enter.

3.11.7.3 Manage Hashes

Under the Intel Remote Configuration screen,

1. Select ‘Manage Hashes ’.
2. Press Enter.

Figure 51: Manage Hashes



Selecting this option will enumerate the hashes in the system and display the Hash Name and the active and default state. If the system does not contain any hashes yet, Intel MEBX will display the following screen.

Figure 52: No hash detected

Answering 'Yes' will begin the process of adding customized hash. Please see the next section below.

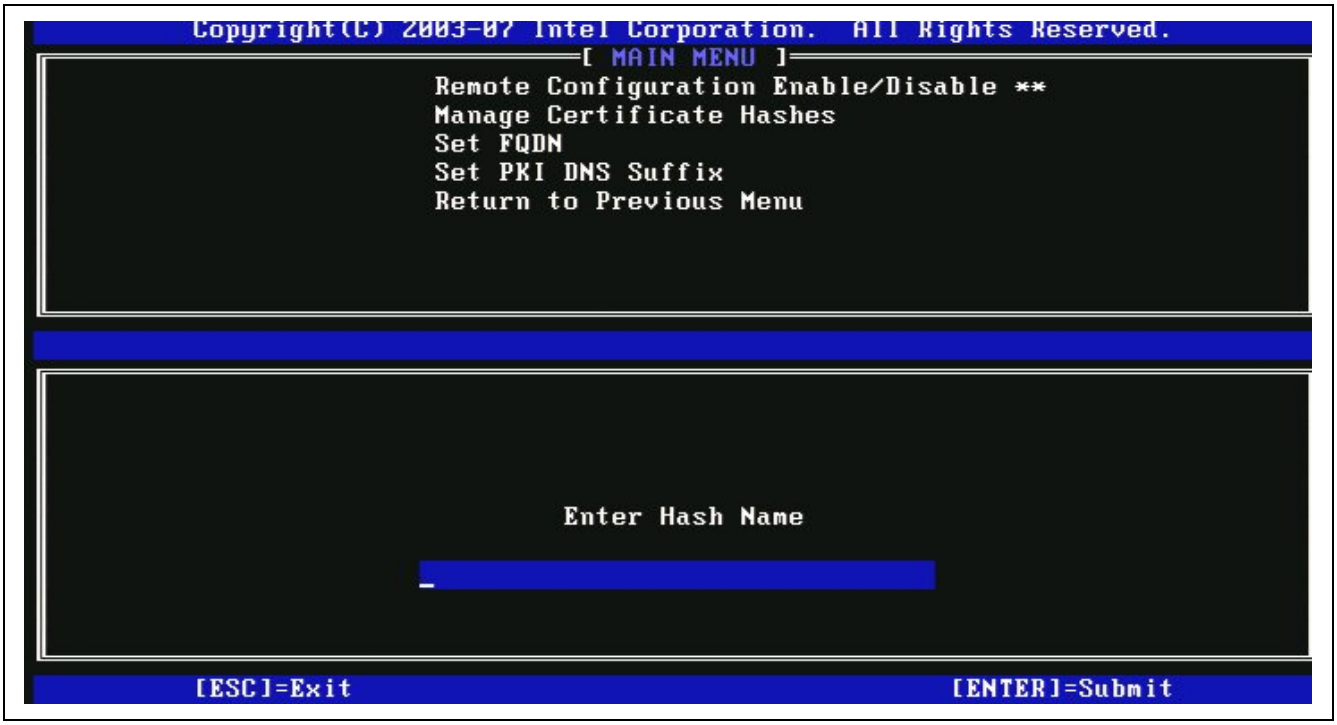
The Manage Certificate Hash screen provides keyboard controls for managing the hashes on the system. The following keys are valid when in the Manage Certificate Hash menu:

- **Escape** key – exits from the menu
- **Insert** key – adds a customized certificate hash to the system.
- **Delete** key –deletes the currently selected certificate hash from the system.
- '**+**' key – Changes the active state of the currently selected certificate hash.
- **Enter** key – Displays the details of the currently selected certificate hash.

3.11.7.3.1 Adding a Customized Hash

When the Insert key is pressed in the Manage Certificate Hash screen, the following screen is displayed.

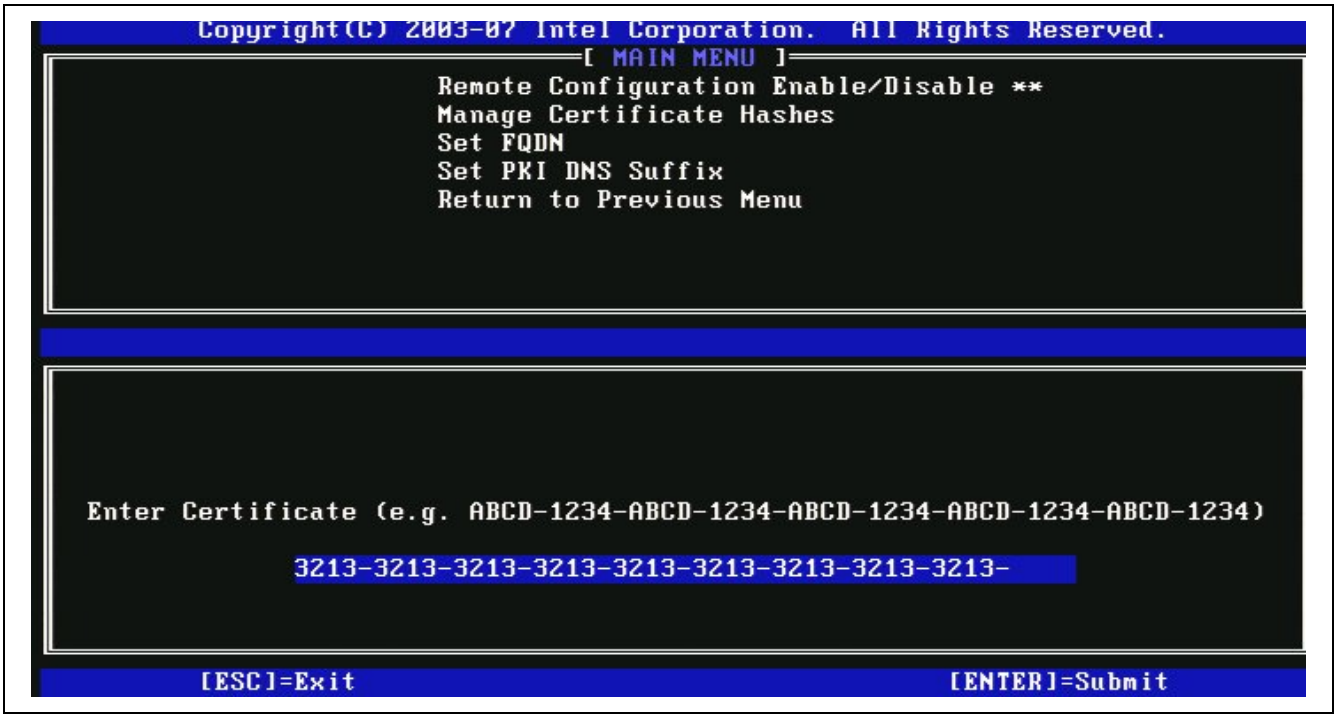
Figure 53: Adding a new hash name



To add a customized certificate hash:

Enter the hash name (up to 32 characters). When you press 'Enter' , you are prompted to enter the certificate hash value.

Figure 54: Add Hash - certificate



The Certificate hash value is a hexadecimal number (for SHA-1 it is 20 bytes for SHA-2 it is 32 bytes). If the value is not entered in the correct format, the message "Invalid Hash Certificate Entered - Try Again" is displayed. When you press 'Enter', you are prompted to set the active state of the hash.

Figure 55: Add Hash - active

Your response sets the active state of the customized hash as follows:

- **Yes** – The customized hash will be marked as active.
- **No (Default)** – The customized hash will added to the EPS but will not be active

3.11.7.3.2 Deleting a hash

Note: A certificate hash that is set to Default cannot be deleted.

When the Delete key is pressed in the Manage Certificate Hash screen, the following screen is displayed.

Figure 56: Deleting a hash

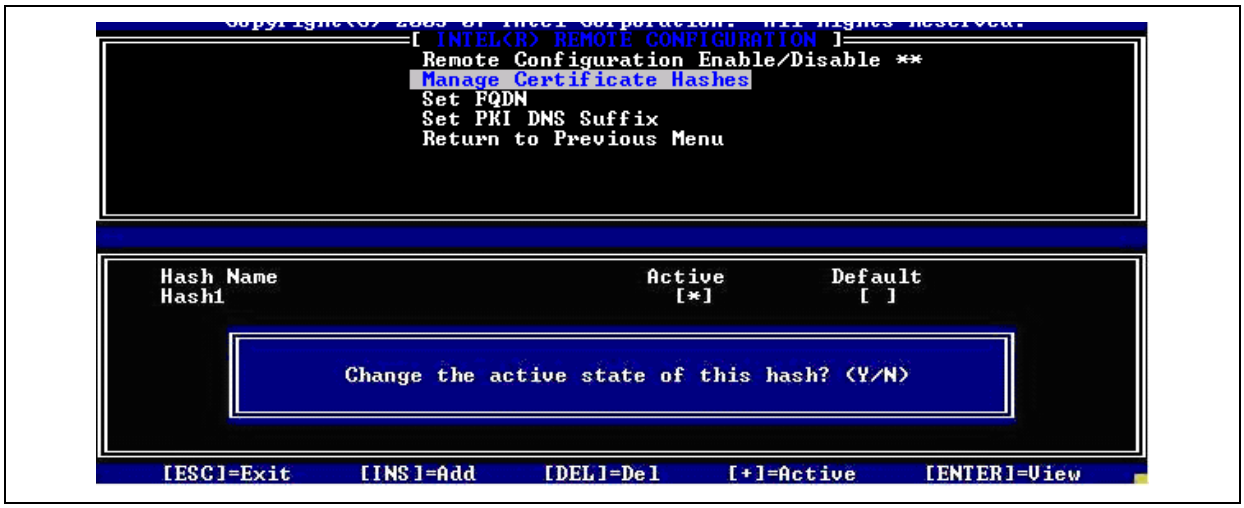
This option allows deleting of the selected certificate hash.

- **Yes** – Intel MEBX sends the firmware a message to delete the selected hash.
- **No** – Intel MEBX does not delete the selected hash, and returns to Remote Configuration.

3.11.7.3.3 Changing the Active State

When the '+' key is pressed in the Manage Certificate Hashes screen, the following screen is displayed as seen in the following screen.

Figure 57: Change Active State of Hash

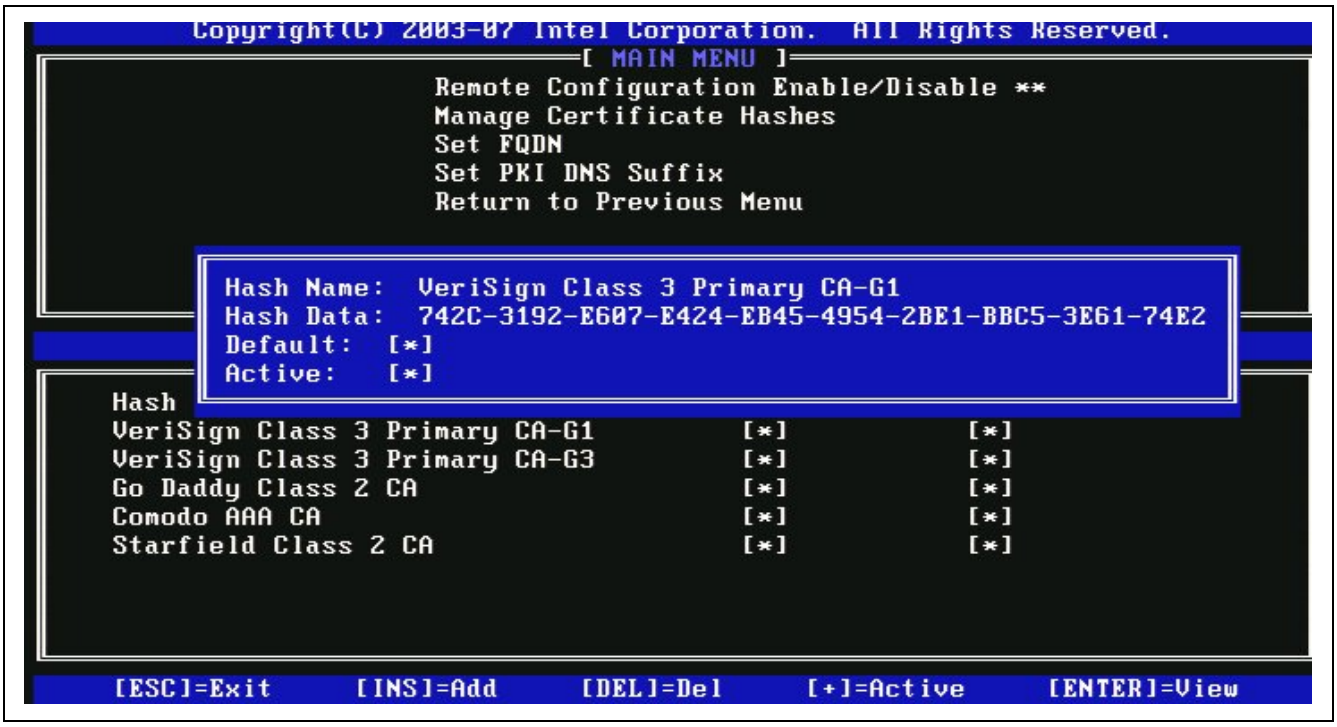


Answering **Y** toggles the active state of the currently selected certificate hash. Setting a hash as active indicates that the hash is available for use during PSK provisioning.

3.11.7.3.4 Viewing a Certificate Hash

When the Enter key is pressed in the Manage Certificate Hash screen, the following screen is displayed.

Figure 58: View Hash details



The details of the selected certificate hash are displayed to the user and include the following:

- hash name
- certificate hash data
- active and default states

3.11.7.4 Previous Menu

Under the Intel Remote Configuration screen,

1. Select ‘Previous Menu’.
2. Press Enter.

The Intel Remote Configuration screen changes to the Intel Automated Setup and Configuration screen.

3.11.8 Previous Menu

Under the Intel Automated Setup and Configuration screen,

1. Select ‘Previous Menu’.
2. Press Enter.

Intel Automated Setup and Configuration screen changes to the Intel ME Platform Configuration screen.

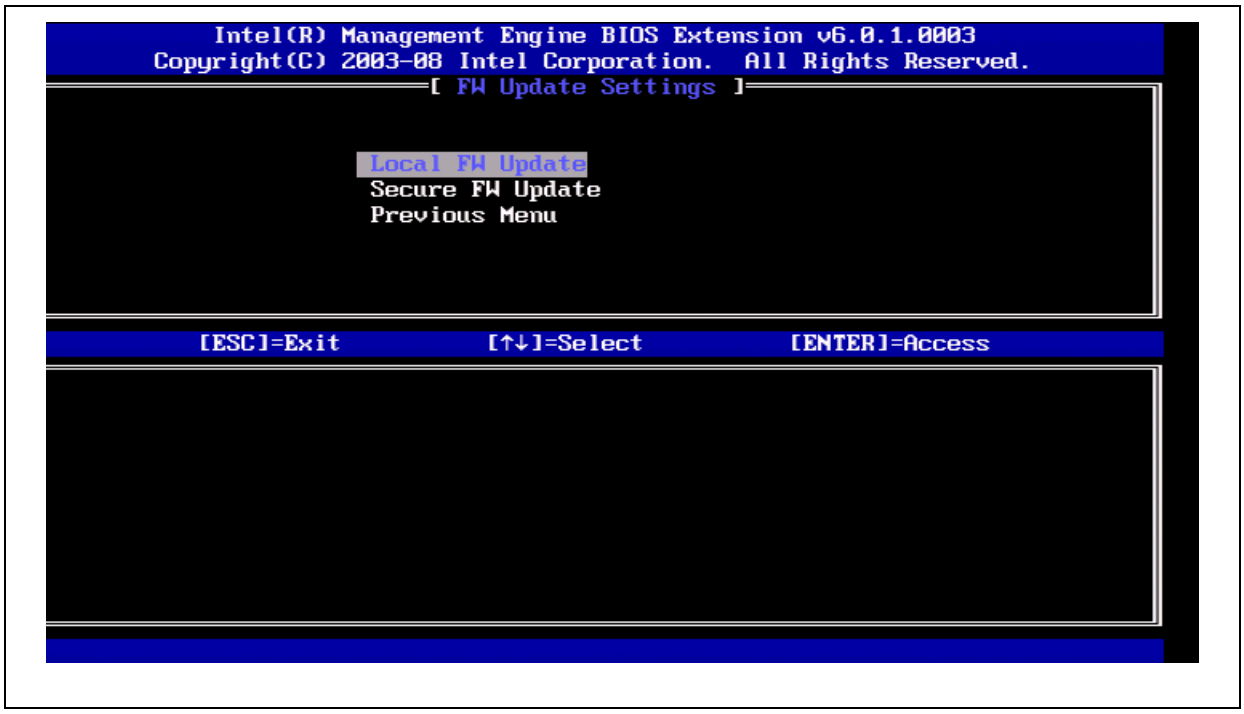
3.12 FW Update Settings

Under Intel ME Platform Configuration,

1. Select ‘FW Update Settings’.
2. Press Enter.

The Intel ME Platform Configuration screen changes to FW Update Settings page.

Figure 59: FW Update Settings

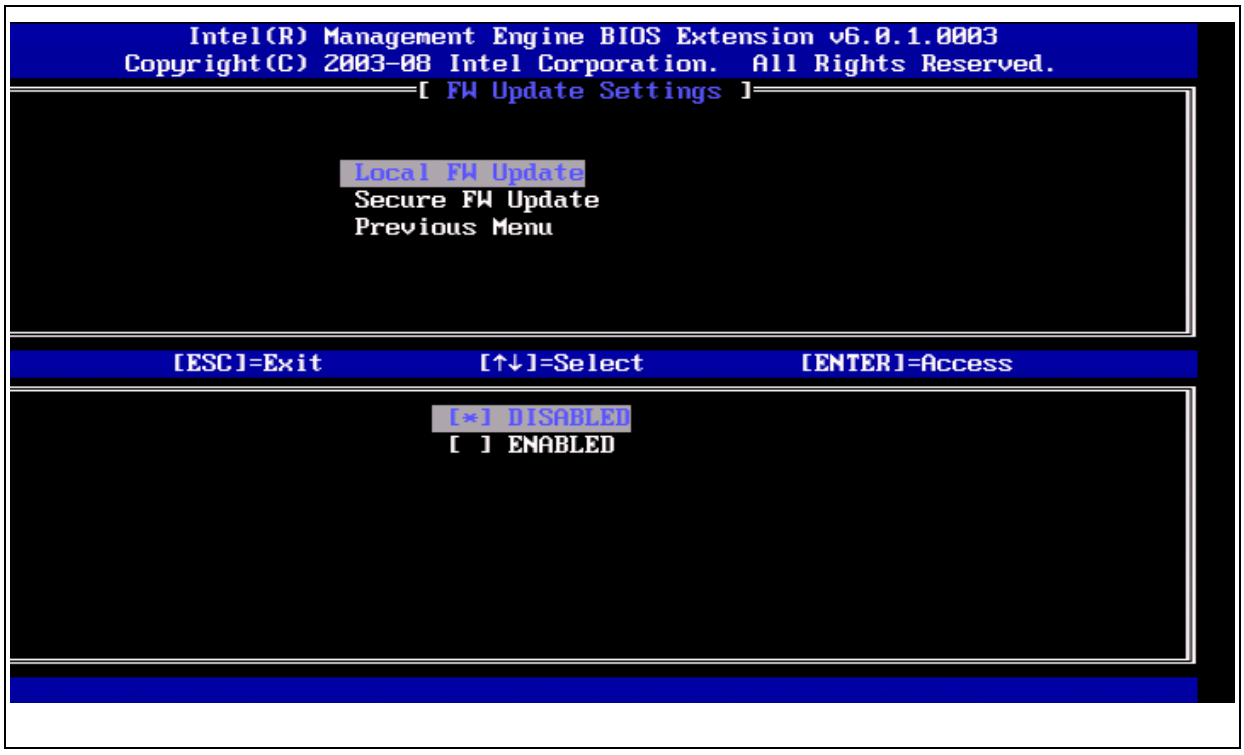


3.12.1 Local FW Update

Under the FW Update Settings,

1. Select 'Local FW Update'.
2. Press Enter.

Figure 60: Local FW Update



Intel ME Firmware Local Update provides the capability to allow or prevent firmware local update in the field. When the "Enabled" option is selected, the IT-admin is able to update the Intel ME firmware locally via the local Intel Management Engine interface or via the local secure interface.

This local firmware update does not require an administrator user name and password. Therefore, once the local update is complete, this setting is automatically set to "Disabled" by the Intel ME firmware. This option must be set to "Enabled" when a local update is needed.

Table 6: Intel® ME Firmware Local Update Option

Option	Description
Enabled	Allow Local Intel ME FW Update
Disabled	Do NOT allow Local Intel ME FW Update

To select Disabled:

1. Select ‘Disabled’.
2. Press Enter.

To select Enabled:

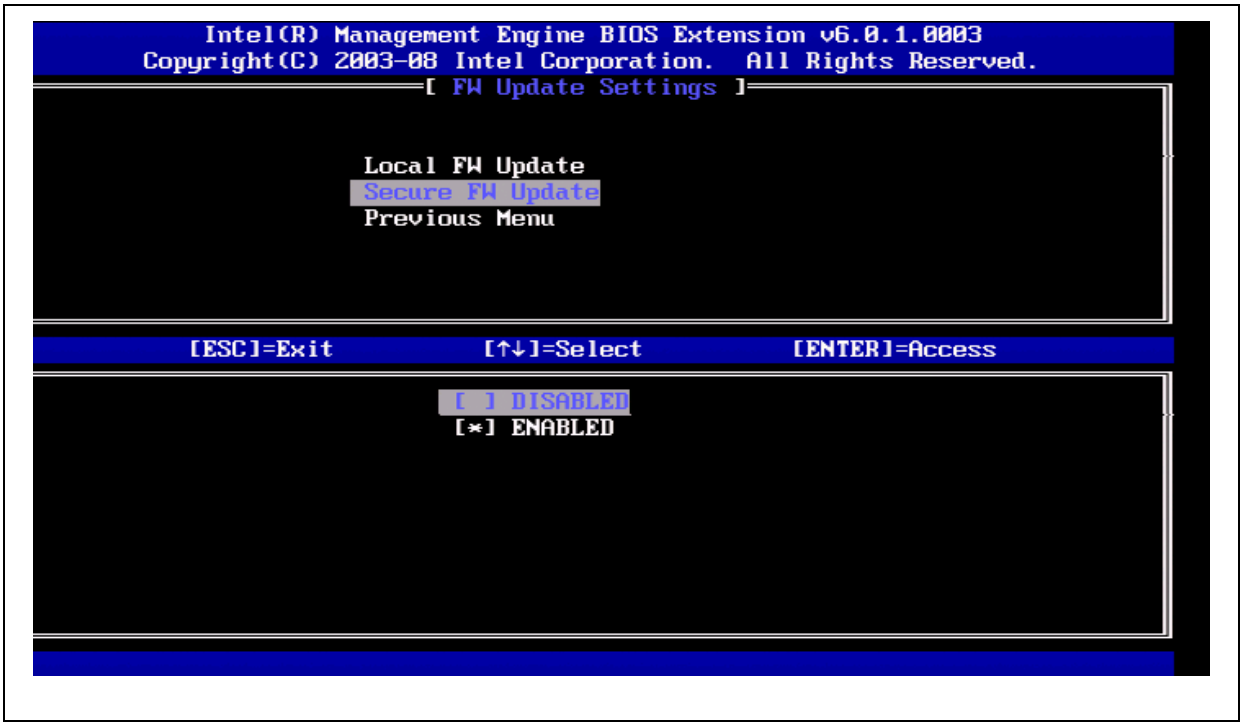
1. Select ‘Enabled ID’.
2. Press Enter.

3.12.2 Secure FW Update

Under the FW Update Settings,

1. Select ‘Secure FW Update’.
2. Press Enter.

Figure 61: Secure FW Update



This option allows the user to enable or disable secure firmware updates. The Secure Firmware Update function 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, the IT administrator can update the firmware using the secure method. Secure firmware updates are performed via the LMS driver.

The following options can be selected:

Disabled- Secure FW Update is disabled.

Enabled- Secure FW Update is enabled.

To select Disabled:

1. Select ‘Disabled’.
2. Press Enter.

To select Enabled:

1. Select ‘Enabled ID’.
2. Press Enter.

3.12.3 Previous Menu

Under the FW Update Settings screen,

1. Select ‘Previous Menu’.
2. Press Enter.

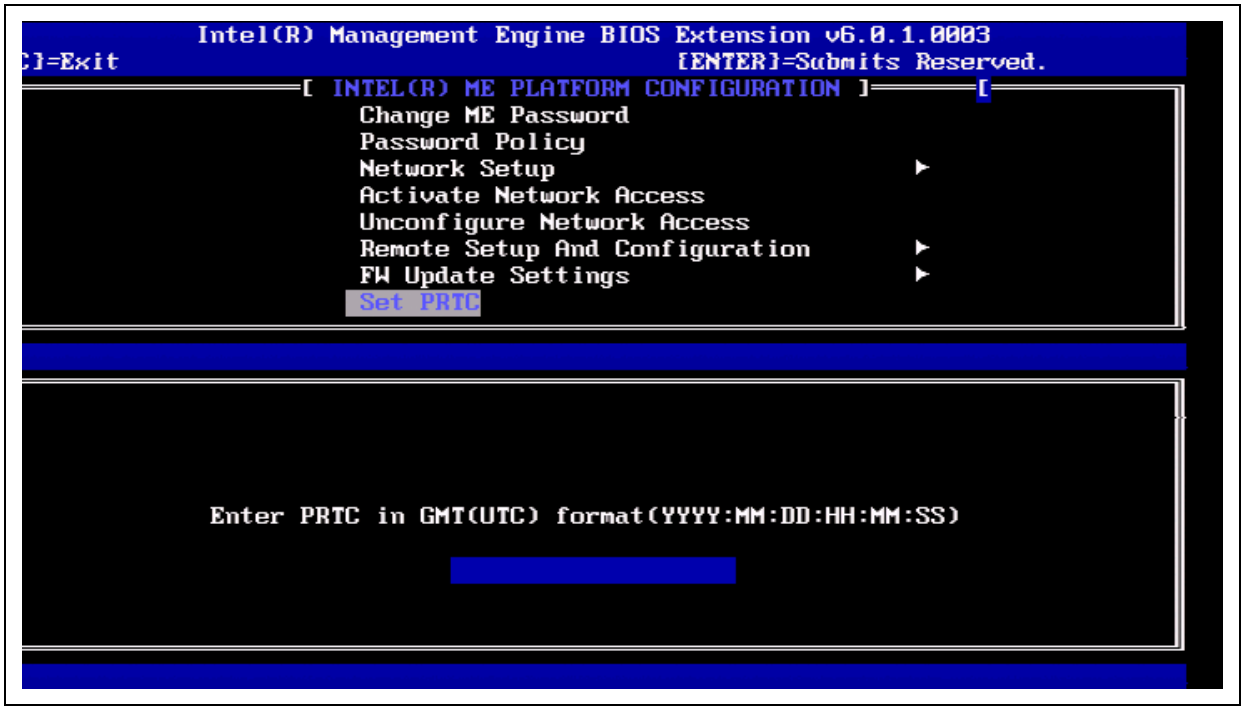
The FW Update Settings screen changes to the Intel ME Platform Configuration screen.

3.13 Set PRTC

Under Intel ME Platform Configuration,

1. Select 'Set PRTC'.
2. Press Enter.

Figure 62: Set PRTC



Valid date range: 1/1/2004 – 1/4/2021. Setting the PRTC value is used for virtually maintaining PRTC during the power-off (G3) state.

1. Enter PRTC in GMT (UTC) format (YYYY:MM:DD:HH:MM:SS)
2. Press Enter.

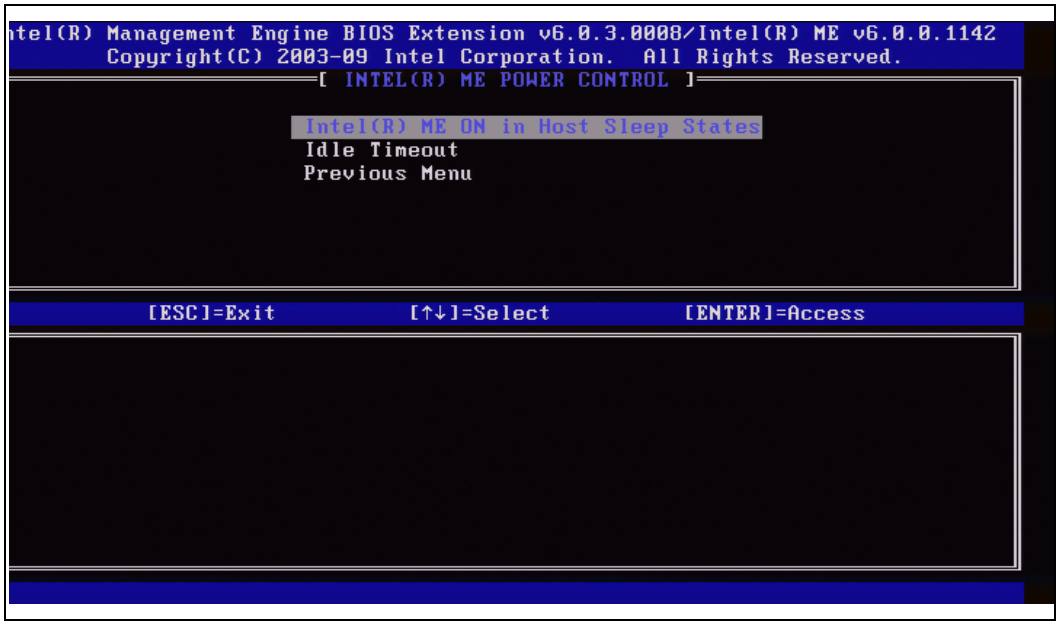
3.14 Power Control

Under Intel ME Platform Configuration,

1. Select 'Power Control'.
2. Press Enter.

The Intel ME Platform Configuration screen changes to the Intel ME Power Control screen.

Figure 63: Power Control



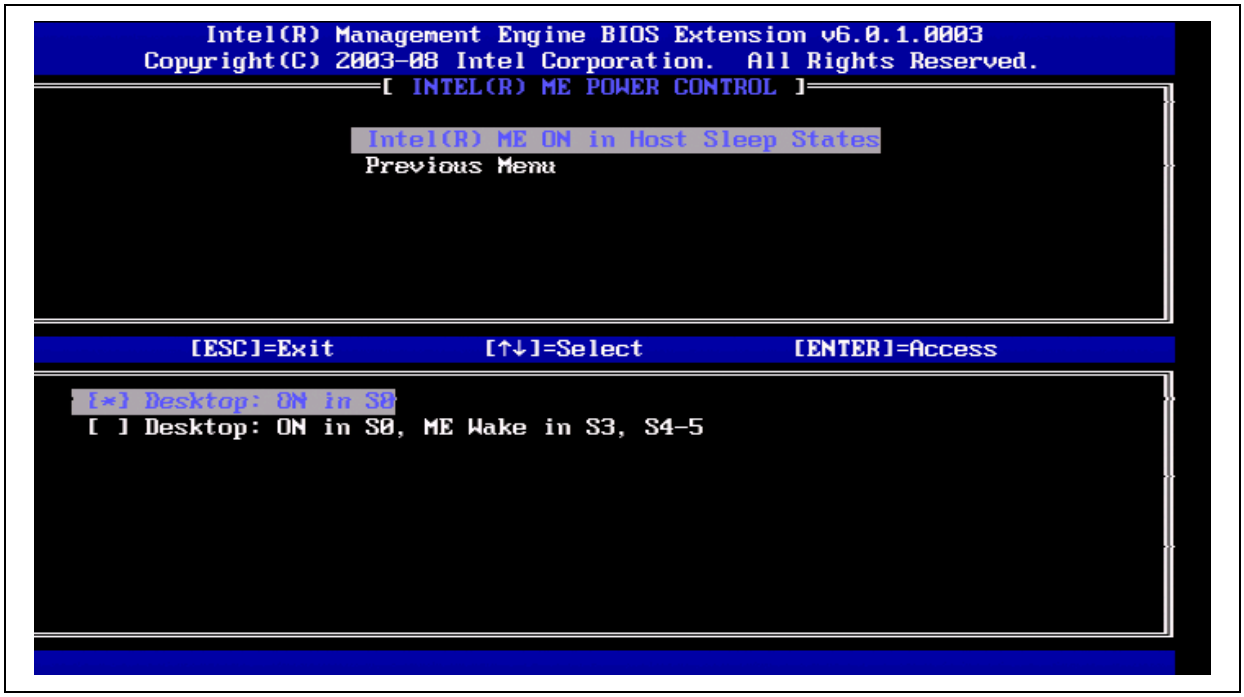
To comply with ENERGY STAR* and EUP LOT6 requirements, the Intel ME can be turned off in various sleep states. The Intel ME Power Control menu configures the Intel ME platform power related policies.

3.14.1 Intel® ME ON in Host Sleep States

Under Intel ME Power Control,

1. Select 'Intel ME ON in Host Sleep States'.
2. Press Enter.

Figure 64: Intel® ME ON in Host Sleep States



The selected power package determines when the Intel ME is turned ON. The default power package can be modified by using FITC or by FPT.

The end user administrator can choose which power package to use depending on the systems usage.

The table below illustrates the details of the power packages.

With Intel ME WoL, after the time-out timer expires, the Intel ME remains in the M-off state until a command is sent to the ME. After this command has been sent, the Intel ME will transition to an M0 or M3 state and will respond to the next command that is sent. A ping to the Intel ME will also cause the Intel ME to go into an M0 or M3 state.

The Intel ME takes a short time to transition from the M-off state to the M0 or M3 state. During this time, Intel AMT will not respond to any Intel ME commands. When the Intel ME has reached the M0 or M3 state, the system will respond to Intel ME commands.

Table 7: Supported Power Packages

Power Package	1	2
S0	ON	ON
S3	OFF	ON /ME WoL
S4 / S5	OFF	ON/ ME WoL

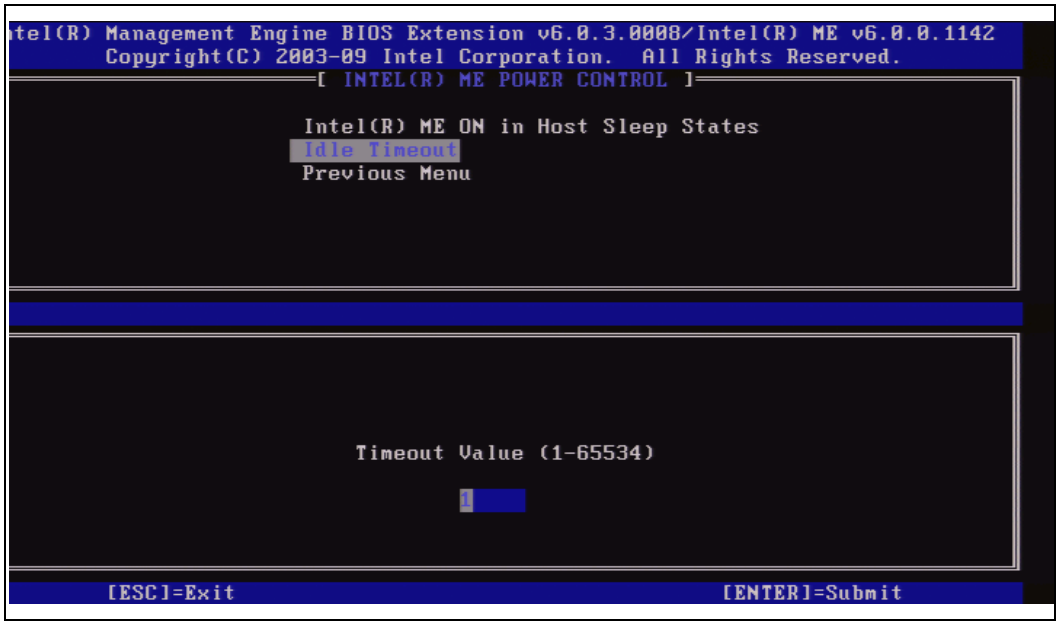
3. Select the desired Power Policy
4. Press Enter.

3.14.2 Idle Time Out

Under Intel ME Power Control,

1. Select 'Idle Time Out'.
2. Press Enter.

Figure 65: Intel® ME Power Control



This setting is used to enable the Intel ME Wake on and to define the Intel ME idle timeout in M3 state. The value should be entered in minutes. The value indicates the amount of time that the Intel ME is allowed remain idle in M3 before transitioning to the M-off state. **Note:** If the Intel ME is in M0, it will NOT transition to M-off.

3.14.3 Previous Menu

Under Intel ME Platform Configuration,

1. Select ‘Previous Menu’.
2. Press Enter.

The Intel ME Power Control screen changes to the Intel ME Platform Configuration screen.

3.15 Previous Menu

Under Intel ME Platform Configuration,

1. Select ‘Previous Menu’.
2. Press Enter.

The Intel ME Platform Configuration screen changes to the Main Menu.

3.16 Intel® AMT Configuration

Under the Main Menu,

1. Select ‘Intel AMT Configuration’.
2. Press Enter.

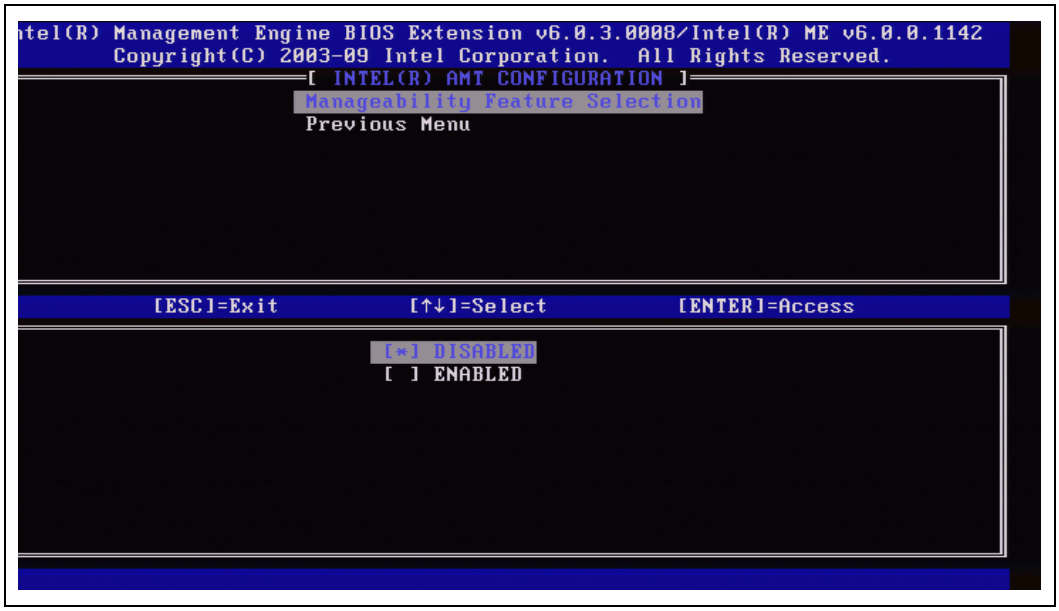
The Main Menu changes to the Intel AMT Configuration screen.

3.16.1 Manageability Feature Selection

Under the Intel AMT Configuration screen,

1. Select ‘Manageability Feature Selection’.
2. Press Enter.

Figure 66: Manageability Feature Selection



When the Manageability Feature Selection is enabled, the Intel ME manageability feature menu will be shown. Leaving it disabled means that manageability will not be enabled.

To select Disabled:

1. Select ‘Disabled’.
2. Press Enter.

To select Enabled:

1. Select ‘Enabled’.
2. Press Enter.

3.16.2 SOL/IDER

Under the Intel AMT Configuration (with Intel AMT enabled),

1. Select ‘SOL/IDER’.
2. Press Enter.

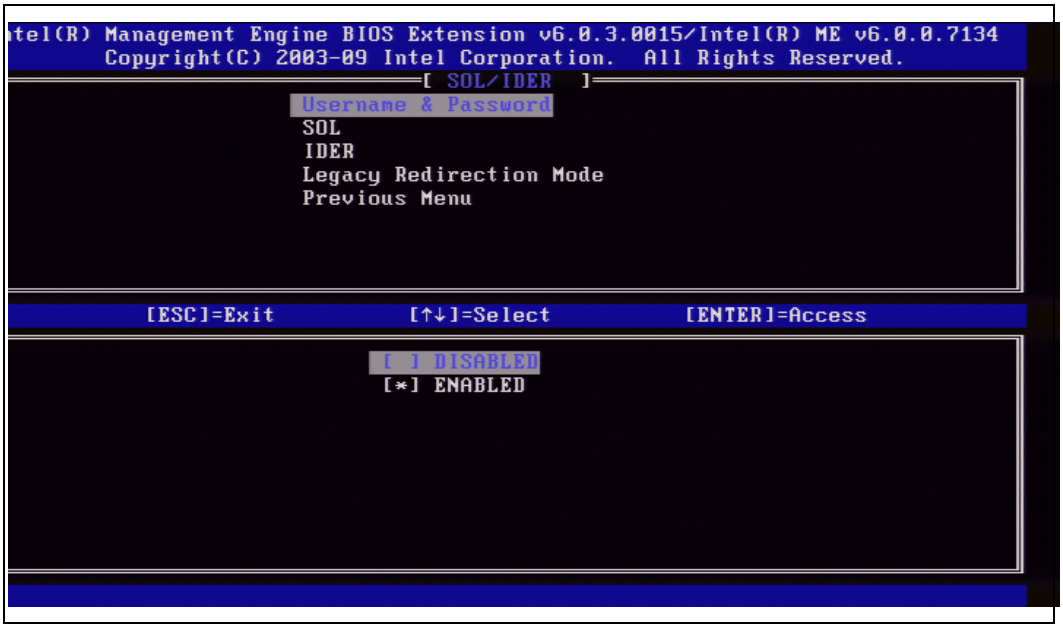
The Intel AMT Configuration changes to the SOL/IDER screen.

3.16.2.1 Username and Password

Under the SOL/IDER screen,

1. Select ‘Username and Password’.
2. Press Enter.

Figure 67: Username and Password



This option provides the user authentication for SOL/IDER session. If Kerberos* is used, this option should be set to DISALBED. The user authentication is handled through Kerberos. If Kerberos is not used, the IT administrator has the choice to enable or disable user authentication on SOL/IDER session.

The following options can be selected:

Disabled- Username and Password is disabled.

Enabled- Username and Password is enabled.

To select Disabled:

1. Select ‘Disabled’.
2. Press Enter.

To select Enabled:

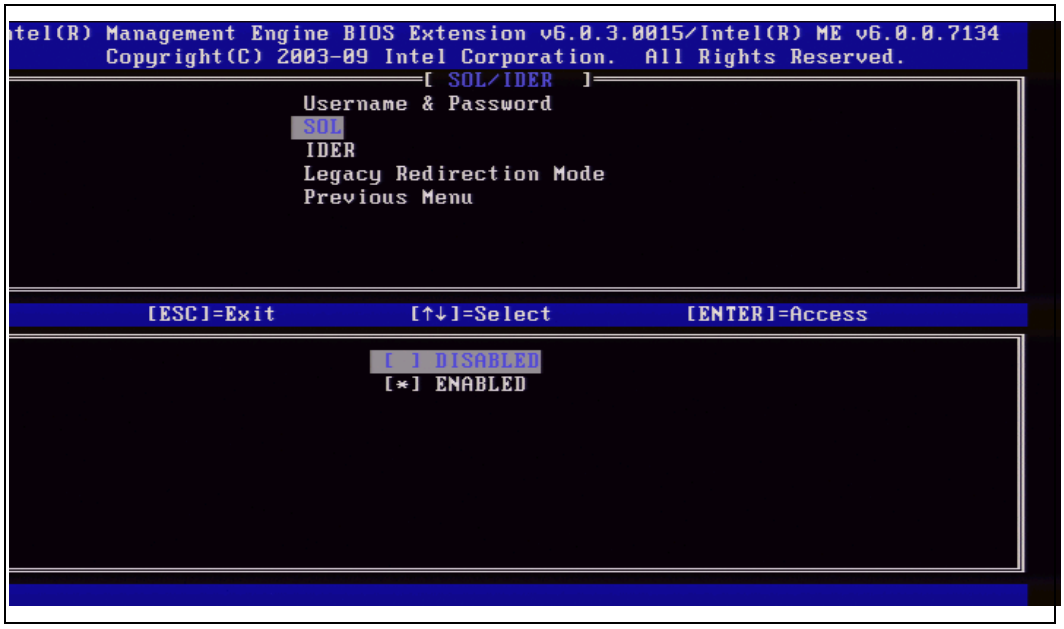
1. Select ‘Enabled ID’.
2. Press Enter.

3.16.2.2 SOL

Under the SOL/IDER screen,

1. Select ‘SOL’.
2. Press Enter.

Figure 68: SOL



SOL allows the console input/output of an Intel AMT managed client to be redirected to a management server console (if the client system supports SOL). If the system does not support SOL, this value cannot enable it.

The following options can be selected:

Disabled- SOL is disabled.

Enabled- SOL is enabled.

To select Disabled:

1. Select ‘Disabled’.
2. Press Enter.

To select Enabled:

1. Select ‘Enabled ID’.
2. Press Enter.

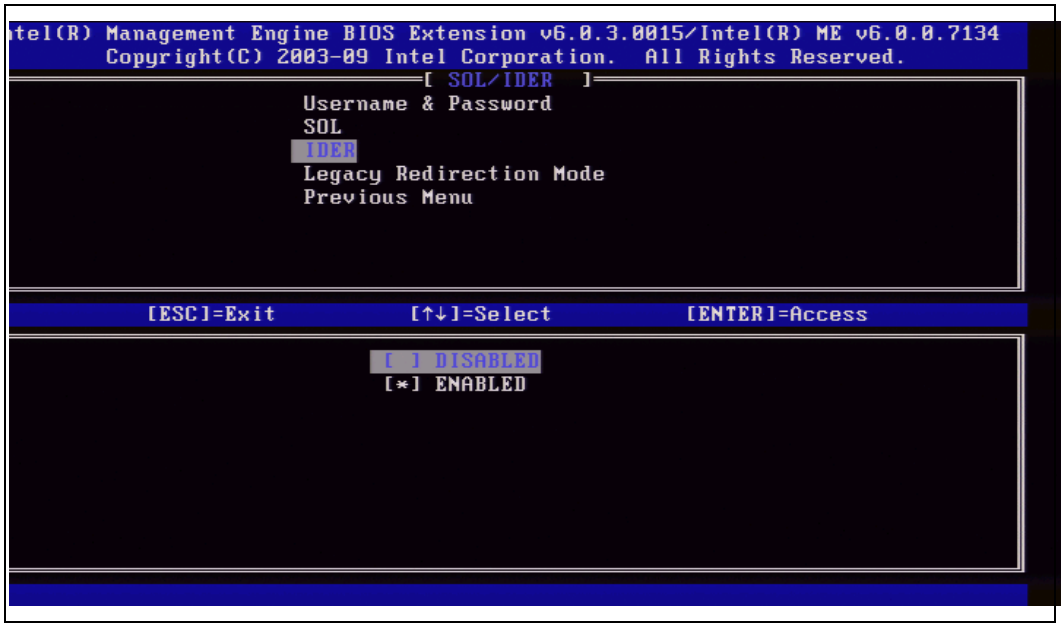
Note: disabling SOL does not remove this feature but just blocks it from being used.

3.16.2.3 IDER

Under the SOL/IDER screen,

1. Select ‘IDER’.
2. Press Enter.

Figure 69: IDER



IDE-R allows an Intel AMT managed client to be booted by a management console from a remote disk image. If the client system does not support IDE-R, this value cannot enable it.

The following options can be selected:

Disabled- IDER is disabled.

Enabled- IDER is enabled.

To select Disabled:

1. Select ‘Disabled’.
2. Press Enter.

To select Enabled:

1. Select ‘Enabled ID’.
2. Press Enter.

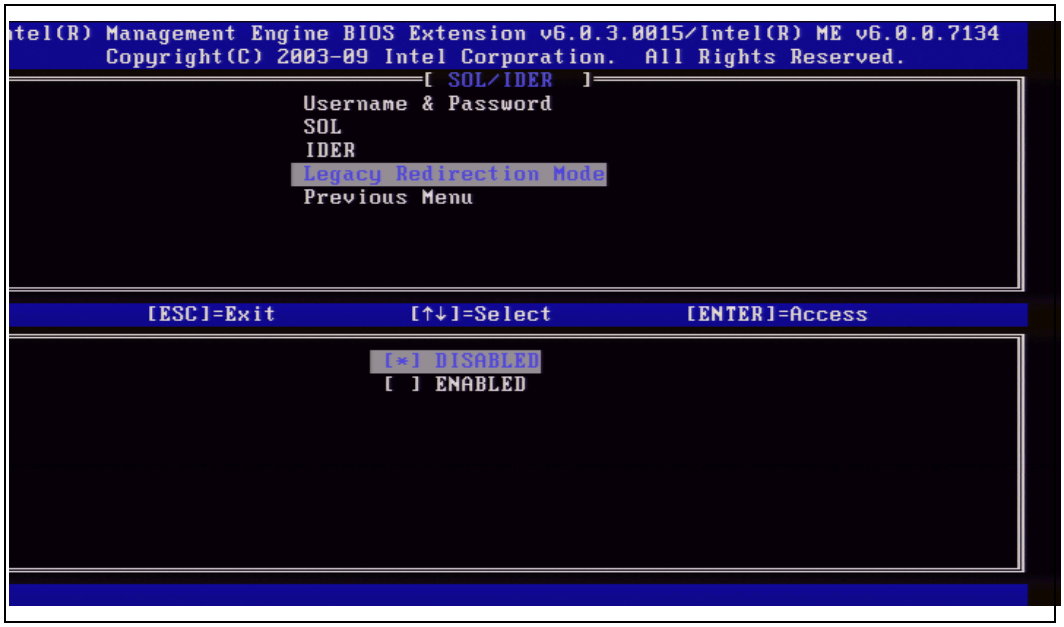
Note: disabling IDER does not remove this feature but just blocks it from being used.

3.16.2.4 Legacy Redirection Mode

Under the SOL/IDER screen,

1. Select ‘Legacy Redirection Mode’.
2. Press Enter.

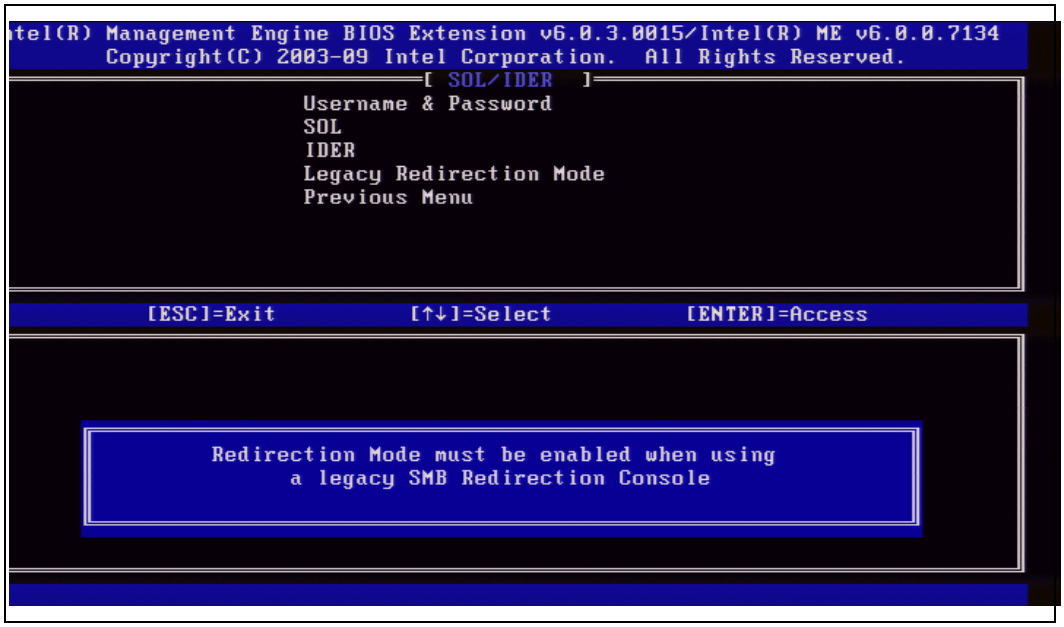
Figure 70: Legacy Redirection Mode



Legacy Redirection Mode controls how the redirection works. If set to disabled, the console needs to open the redirection ports before each session. This is meant for enterprise consoles and new SMB consoles that support opening the redirection ports. The old SMB consoles (before Intel AMT 6.0) which don’t support opening the redirection ports function need to manually turn on the redirection port through this

Intel MEBX option. When selecting the mode, the message shown in Figure 71 below is displayed:

Figure 71: Legacy Redirection Mode "notification"



The following options can be selected:

Disabled- legacy redirection Mode is disabled. (default)

Enabled- the port is left open at all times when redirection is enabled in the Intel MEBX. It is the same as what used to be SMB mode in previous projects. Old (before Intel AMT 6.0) SMB consoles will need this mode in order to succeed opening redirection sessions.

To select Disabled:

1. Select 'Disabled'.
2. Press Enter.

To select Enabled:

1. Select 'Enabled ID'.
2. Press Enter.

3.16.2.5 Previous Menu

Under the SOL/IDER screen,

1. Select 'Previous Menu'.
2. Press Enter.

The SOL/IDER screen changes to the Intel AMT Configuration screen.

3.16.3 KVM Configuration

Under the Intel AMT Configuration,

1. Select ‘KVM Configuration’.
2. Press Enter.

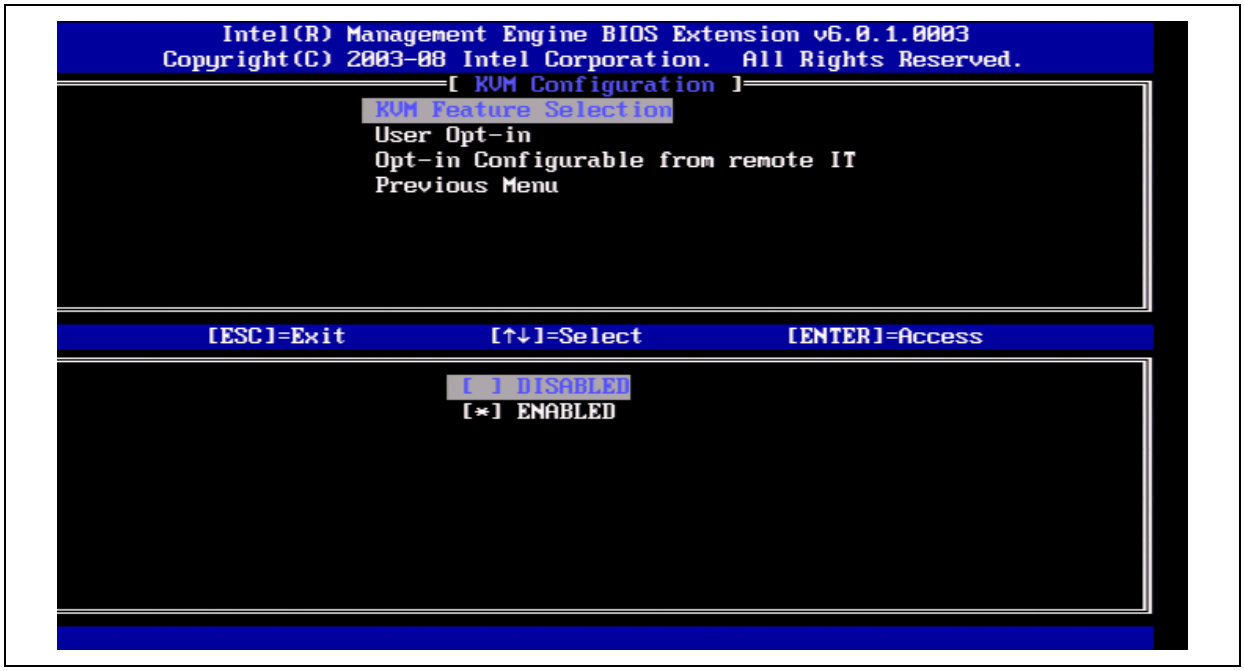
The Intel AMT Configuration changes to the KVM Configuration screen.

3.16.3.1 KVM Feature Selection

Under the KVM Configuration screen,

1. Select ‘KVM Feature Selection’.
2. Press Enter.

Figure 72: KVM Feature Selection



The following options can be selected:

Disabled - Disable KVM Feature.

Enabled - Enable KVM Feature.

To select Disabled:

1. Select ‘Disabled’.
2. Press Enter.

To select Enabled:

1. Select ‘Enabled’.
2. Press Enter.

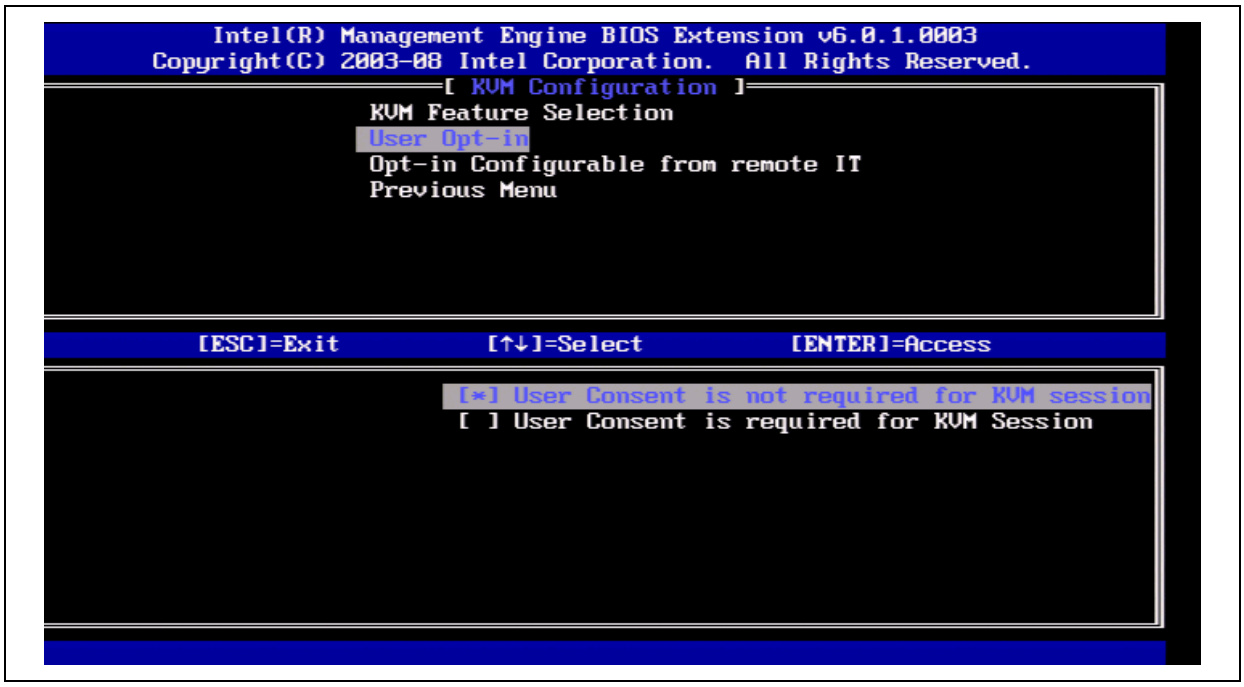
Note: disabling KVM does not remove this feature but disables it. KVM will not work in this case.

3.16.3.2 User Opt-in

Under the KVM Configuration screen,

1. Select 'User Opt-in'.
2. Press Enter.

Figure 73: User Opt-in



The following options can be selected:

Local User Consent is not required for remote establishment of KVM session

Local User Consent is required for remote establishment of KVM session

To select User Consent is not required for KVM session:

1. Select 'User Consent is not required for KVM session'.
2. Press Enter.

To select User Consent is required for KVM session Enabled:

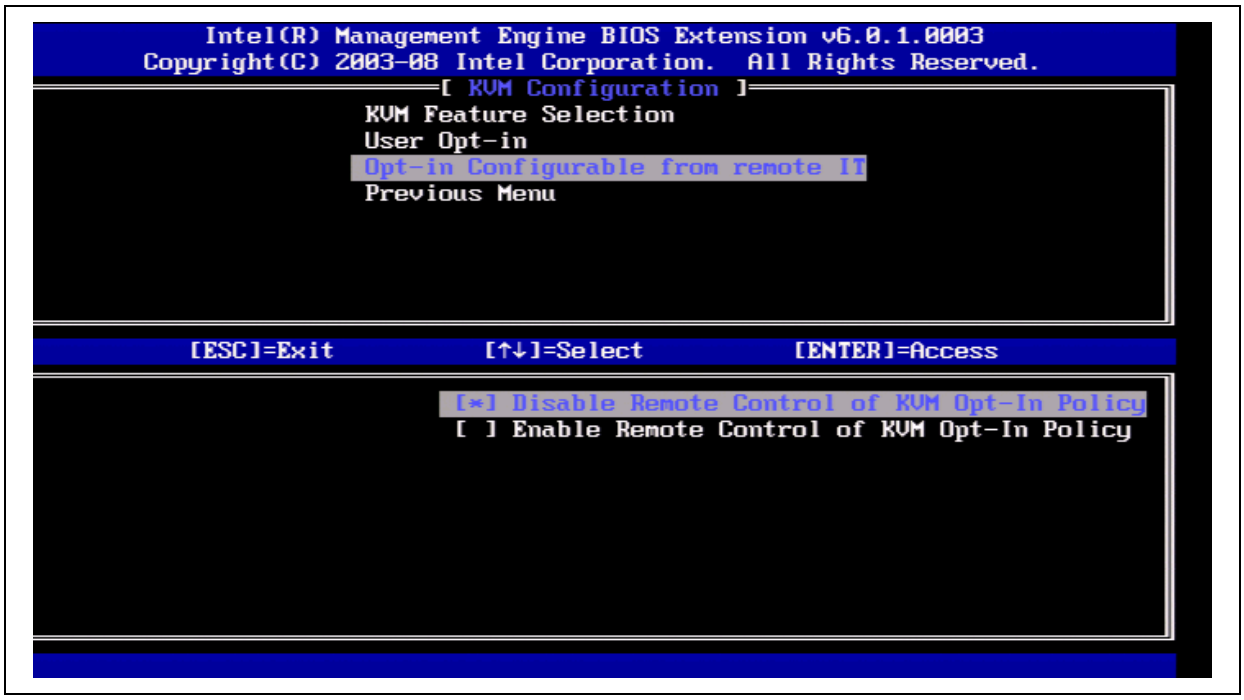
1. Select 'User Consent is required for KVM session'.
2. Press Enter.

3.16.3.3 Opt-in Configurable from remote IT

Under the KVM Configuration screen,

1. Select 'Opt-in Configurable from remote IT'.
2. Press Enter.

Figure 74: Opt-in Configurable from remote IT



The following options can be selected:

Disable Remote Control of KVM Opt-in Policy – This option disables the Remote User's ability to select User OPT-IN Policy. In this case only the local user can control the opt-in policy.

Enable Remote Control of KVM Opt-in Policy - Enables Remote User's ability to select User OPT-IN Policy.

To select Disable:

1. Select 'Disable Remote Control of KVM Opt-in Policy'.
2. Press Enter.

To select Enable:

1. Select 'Enable Remote Control of KVM Opt-in Policy'.
2. Press Enter.

3.16.3.4 Previous Menu

Under the KVM Configuration screen,

1. Select ‘Previous Menu’.
2. Press Enter.

The KVM Configuration screen changes to the Intel AMT Configuration screen.

3.16.4 Previous Menu

Under the Intel AMT Configuration,

1. Select ‘Previous Menu’.
2. Press Enter.

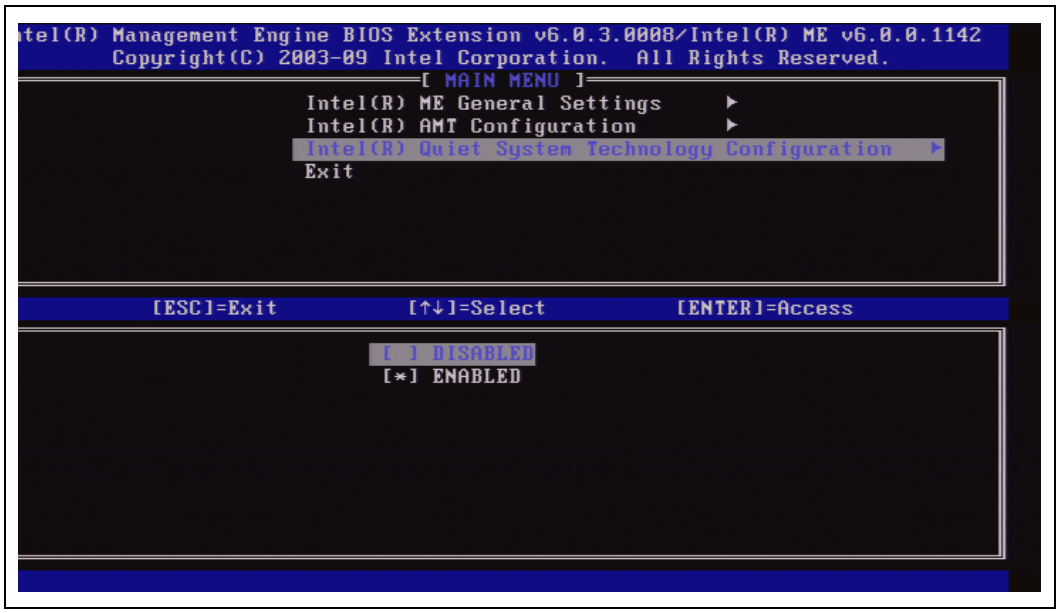
The Intel AMT Configuration screen changes to Main Menu.

3.17 Intel® Quiet System Technology Configuration

Under the Main Menu,

1. Select ‘Intel Quiet System Technology Configuration’.
2. Press Enter.

Figure 75: Intel® Quiet System Technology Configuration



Intel® Quiet System Technology (Intel® QST) is Intel’s advanced system temperature and fan speed control technology, which utilizes the internal and external thermal sensors to optimize the acoustic and thermal performance of the system in both steady state and transient power conditions.

When the Intel QST Feature Select option is selected in the Intel ME Feature Control menu, the Advanced Fan Speed Control Feature Select menu is displayed

Table 8: Advanced Fan Speed Control Feature Select Option

Option	Description
Enabled	Intel Quiet System Technology is enabled
Disabled	Intel Quiet System Technology is disabled

To select Disabled:

1. Select 'Disabled'.
2. Press Enter.

To select Enabled:

1. Select 'Enabled ID'.
2. Press Enter.

3.18 Intel® IPT Configuration

Note: Intel® Identity Protection Technology (Intel® IPT) is not available in all SKU's. It will not be an option or be visible in the Intel MEBX when not supported.

Under the Main Menu,

1. Select 'Intel IPT Configuration'.
2. Press Enter.

The Main Menu changes to the Intel IPT Configuration screen.

3.18.1 Intel® IPT State Control

Under the Intel IPT Configuration,

1. Select 'Intel IPT State Control'.
2. Press Enter.

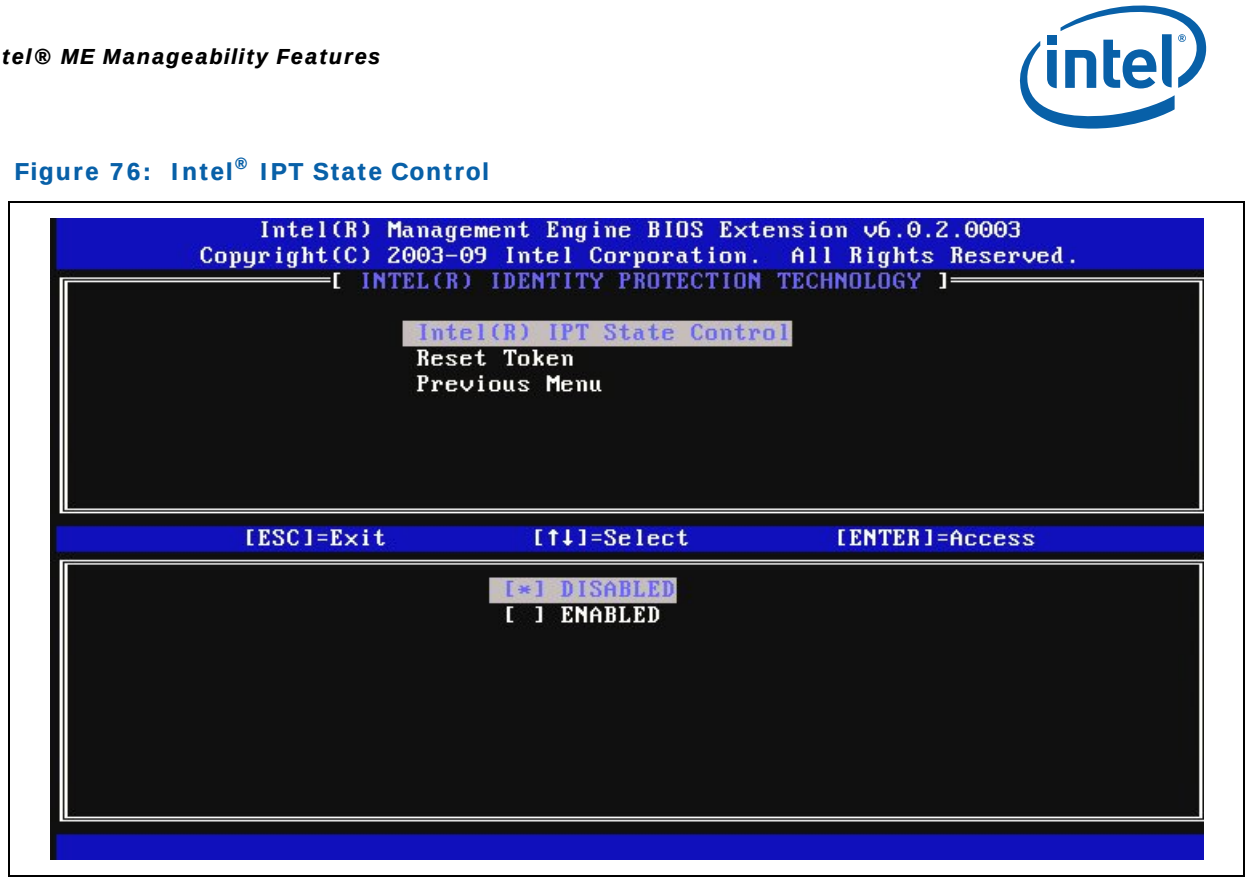


Figure 76: Intel® IPT State Control

The following options can be selected:

Disabled- Intel IPT State Control is disabled.

Enabled- Intel IPT State Control is enabled.

To select Disabled:

1. Select 'Disabled'.
2. Press Enter.

To select Enabled:

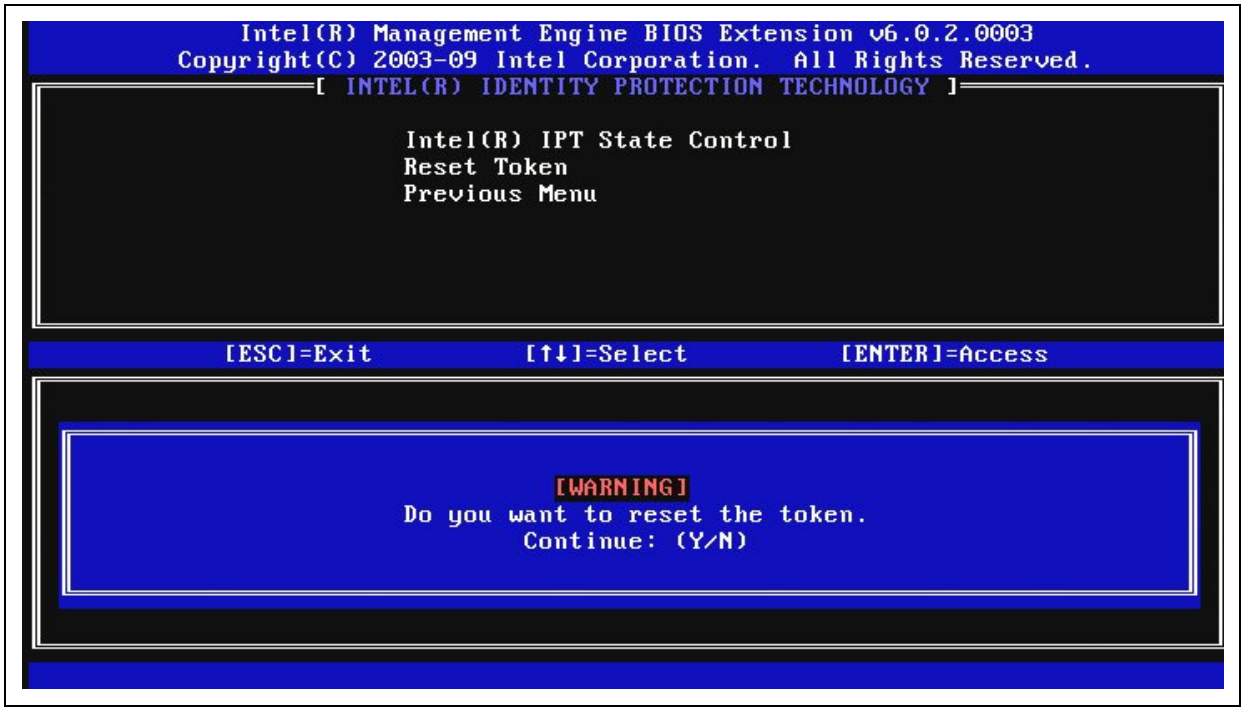
1. Select 'Enabled ID'.
2. Press Enter.

3.18.2 Reset Token

Under the Intel IPT Configuration,

1. Select 'Reset Token'.
2. Press Enter.

Figure 77: Reset token



To select yes, enter 'Y'.

To select no, enter 'N'.

3.18.3 Previous Menu

Under the Intel IPT Configuration,

1. Select 'Previous Menu'.
2. Press Enter.

The Intel IPT Configuration screen changes to the Main Menu.

3.19 Exit

Under the Main Menu,

1. Select 'Exit'.
2. Press Enter.

A message will be displayed: "Are you sure you want to exit? (Y/N)"

Enter 'Y' to exit.

3.20 Remote Assistance

```
Intel(R) Management Engine BIOS Extension v3.2.0003
Copyright(C) 2003-08 Intel Corporation, all rights reserved

Intel(R) ME Firmware version 6.0.3.1337
Press <CTRL-ALT-F1> to enter Remote Assistance
Press <CTRL-P> to enter Intel(R) ME setup
```

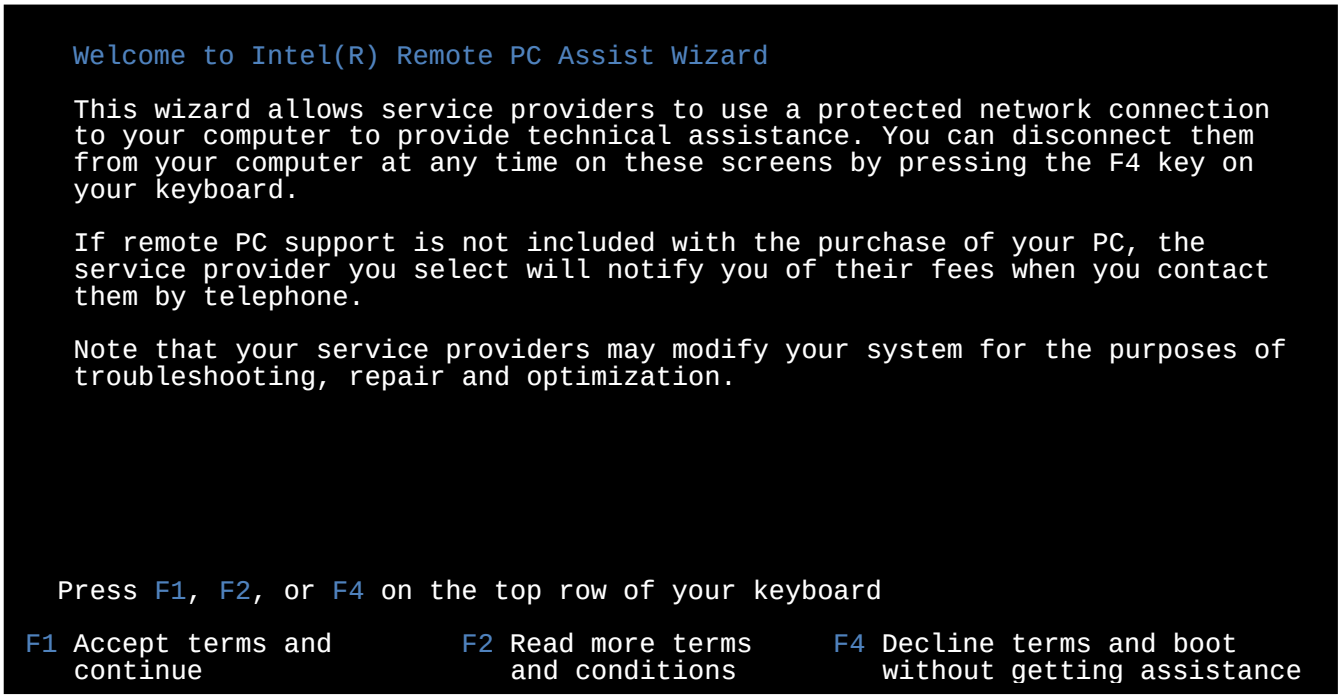
When the user hits CTRL_ALT_F1, he will either be taken to RPAT flow or CIRA (Fast Call for Help) flow. This section describes the RPAT flow.

The user will taken into series of screen during the Remote assistance process. These screens are:

1. Legal Text Screen
2. MSP By Passcode
3. Marketplace
4. Intel Contacts
5. Connection Hub
6. Auto-Connect Hub
7. Connectivity Error
8. Full Legal Text
9. Connected with MSP

10. Connected with CCK
11. Connected with Passcode
12. Options

3.20.1.1 Legal Text Screen



Press F1 – Goto MSP by Passcode (if no previous enrolled MSP present) or Auto-Connect Screen(if previous enrollment present)

Press F2 – Goto Full Legal Text Screen

Press F4 – Exit

3.20.1.2 MSP by Passcode Screen

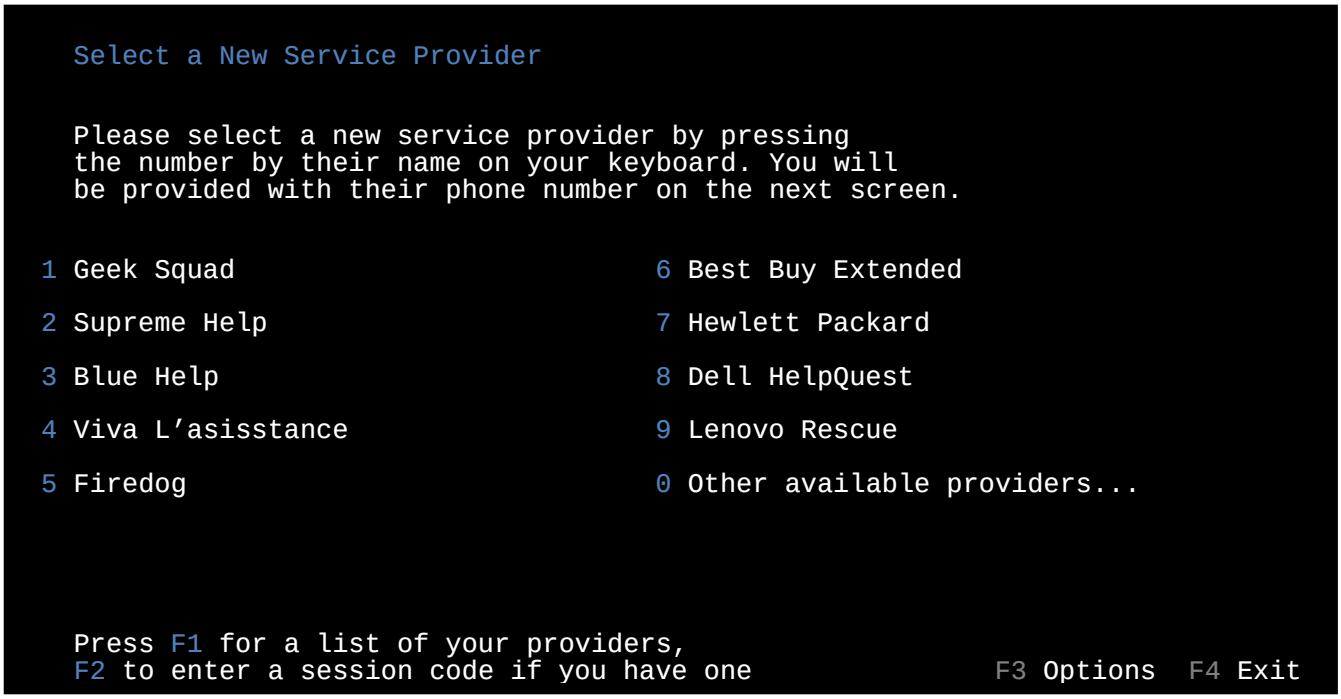
Press F1 – Goto Connection Hub Screen (this option is displayed only when user is already enrolled with at least 1 MSP)

Press F2 – Goto MarketPlace Screen (if Support Channel ID !=0) or Intel Contact Screen depending on Support Channel ID (Support Channel ID = 0).

Press F3 – Goto Options screen.

Press F4 – Exit

3.20.1.3 Market Place Screen



Press F2 – Goto MSP With Passocde Screen

Press F1 – Goto Connection Hub Screen (This option will be displayed only when you have atleast 1 MSP already enrolled)

Press F3 – Press Options Screen

Press F4 – Exit

3.20.1.4 Intel Contacts Screen

```
Find a Service Provider through Intel

Please contact an Intel representative to find a service provider
in your area. Finding a service provider through Intel is free of
charge, phone fees may apply.

Intel Americas                          Intel Pacific US
1-800-455-7245            1-800-235-5626

Intel Netherlands
624 6637 7457
```

3.20.1.5 Connection Hub Screen

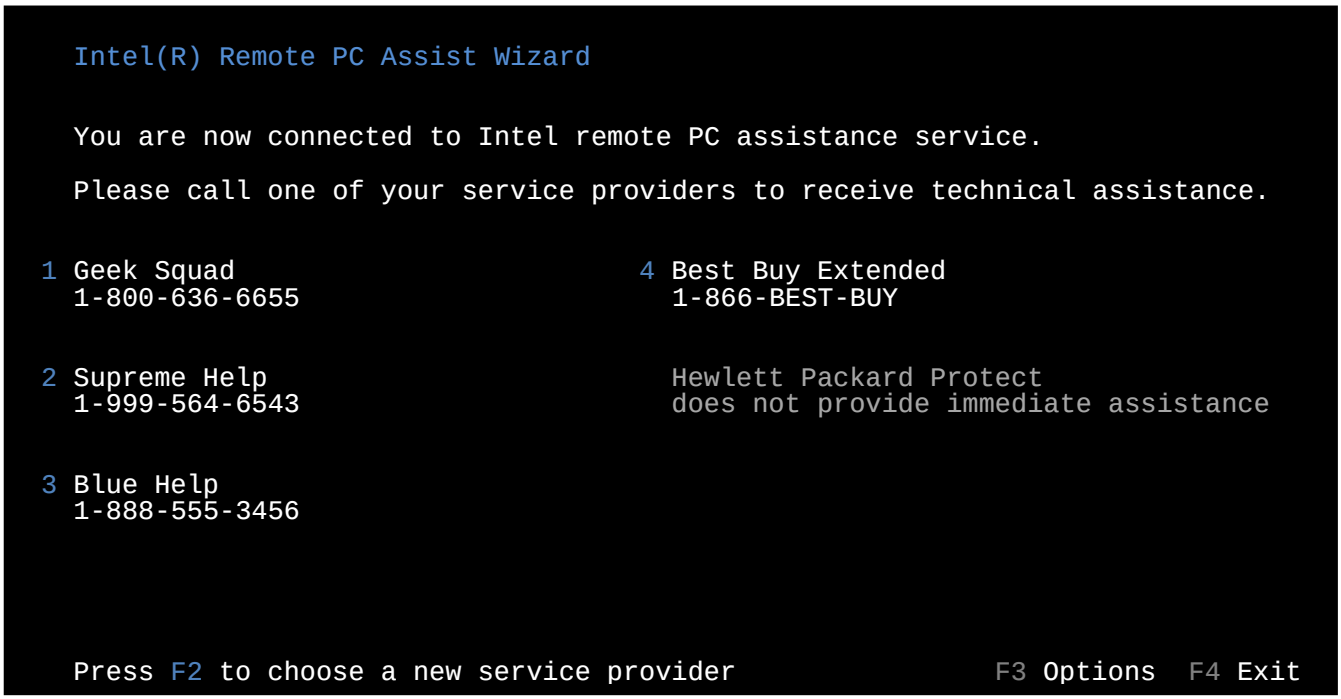
```
Connect to a Service Provider

Please select a service provider by pressing the number by their name
or call them to receive technical assistance.

1 Geek Squad                            4 Best Buy Extended
  1-800-636-6655                          1-866-BEST-BUY

2 Supreme Help                          5 Hewlett Packard Gold
  1-999-564-6543                          1-888-33-PC911

3 Blue Help
  1-888-555-3456

Press F2 to choose a new service provider              F3 Options  F4 Exit
```

Press F2 – Goto MSP with Passcode Screen

Press F3 – Options Screen

Press F4 – Exit

3.20.1.6 Auto-connect Hub Screen

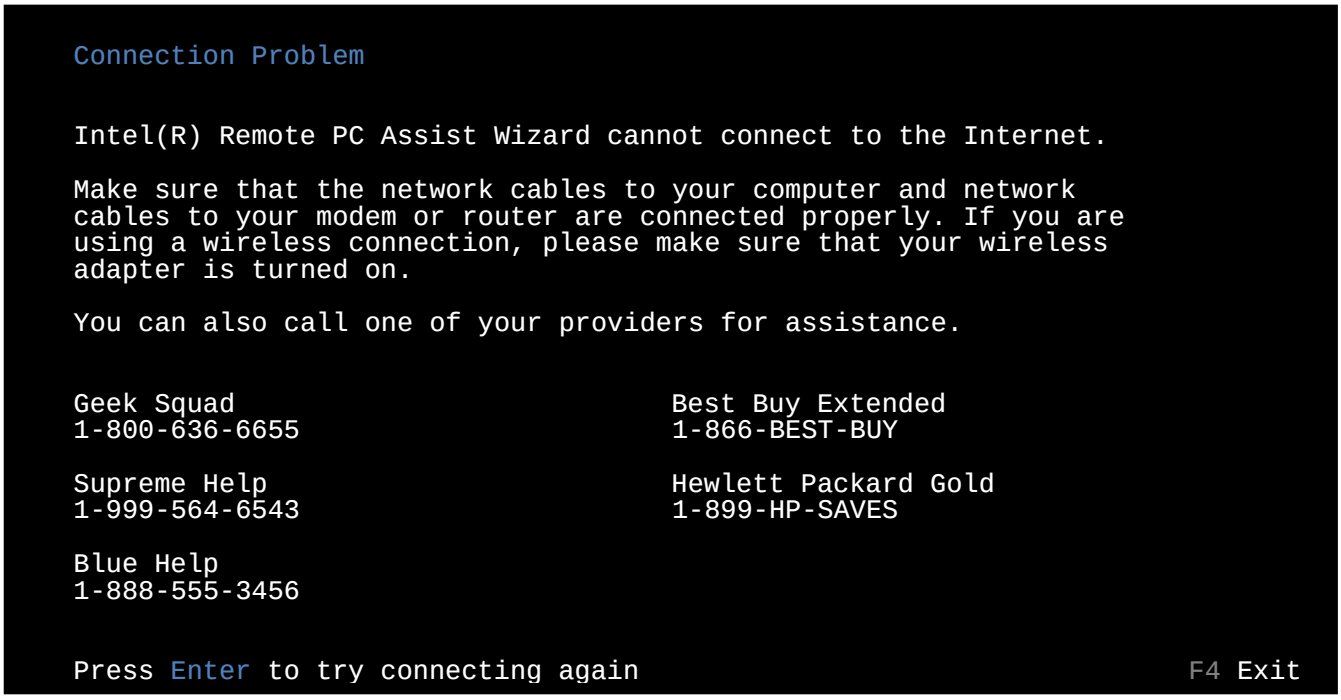


Press F2 – Goto MSP with Passcode Screen

Press F3 – Options Screen

Press F4 – Exit

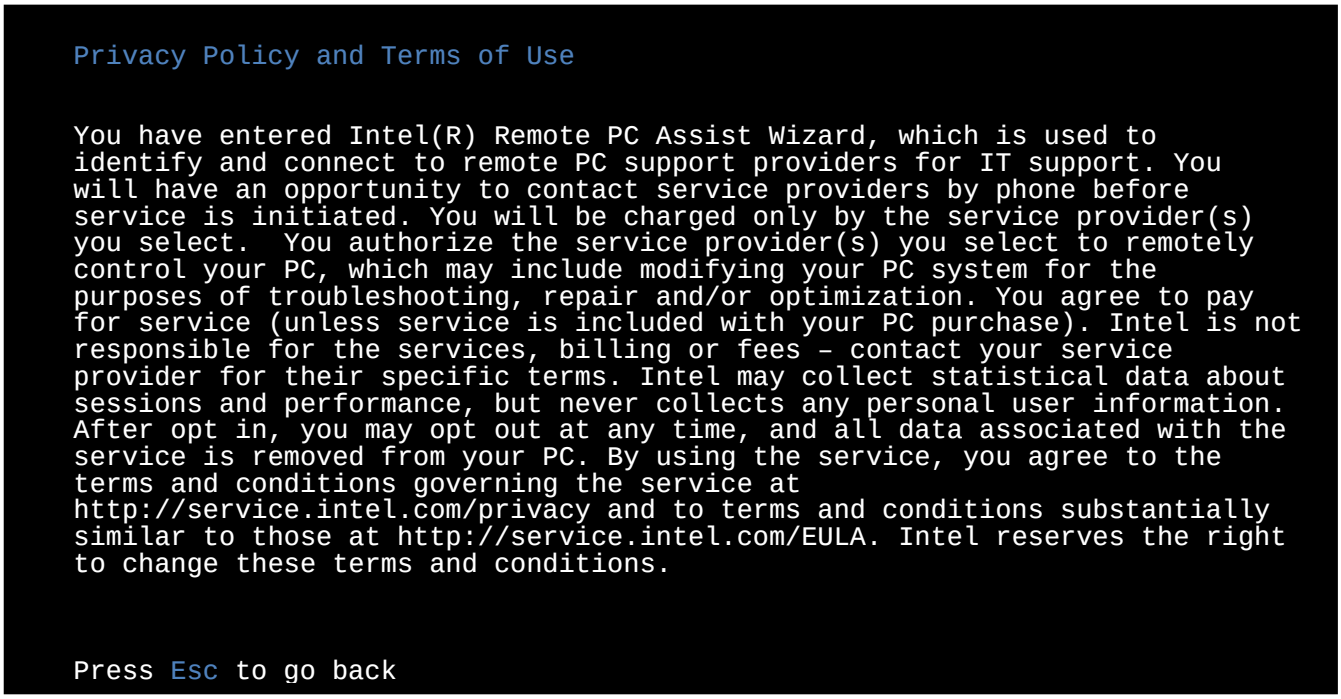
3.20.1.7 Connectivity Error Screen



Press ENTER – Try connecting again

Press F4 – Exit

3.20.1.8 Full Legal Text Screen



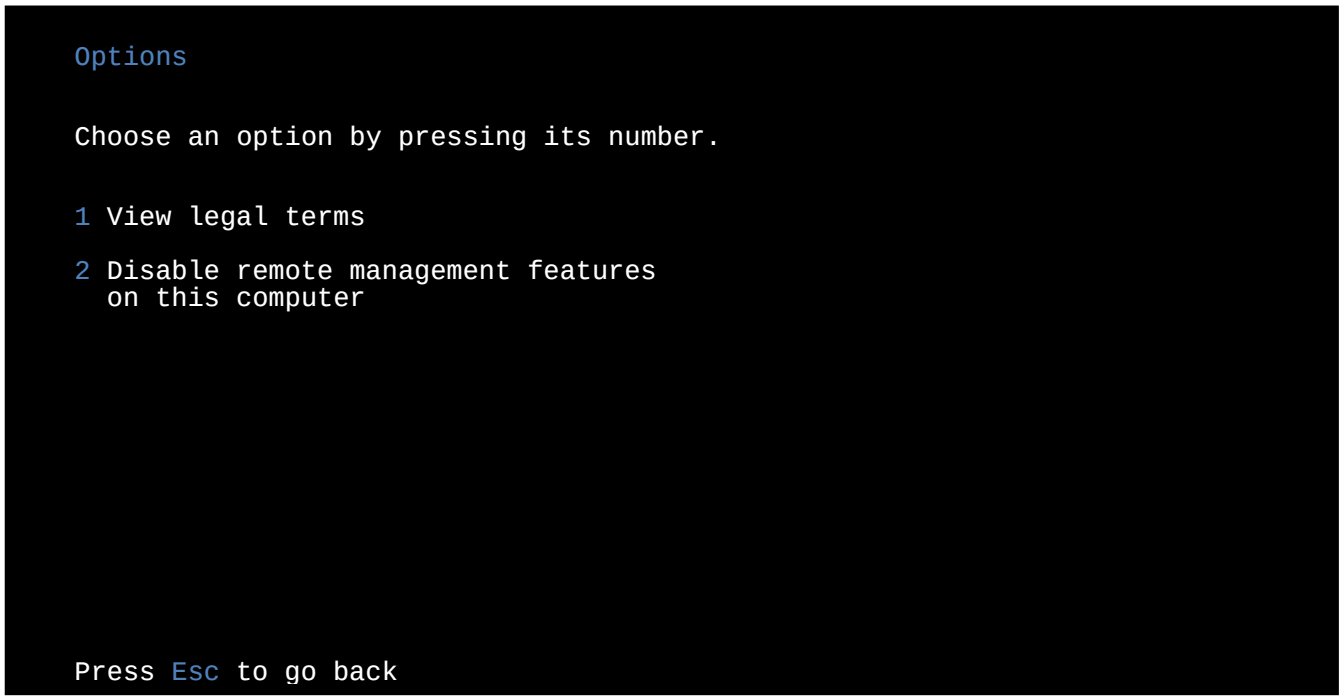
3.20.1.9 Connected With MSP Screen

Press Esc – Goto MSP with Passcode (if user has no enrollment) or Connection Hub screen (user has at least enrolled with 1 MSP)

F3 – Options Screen

F4 - Exit

3.20.1.10 Options Screen



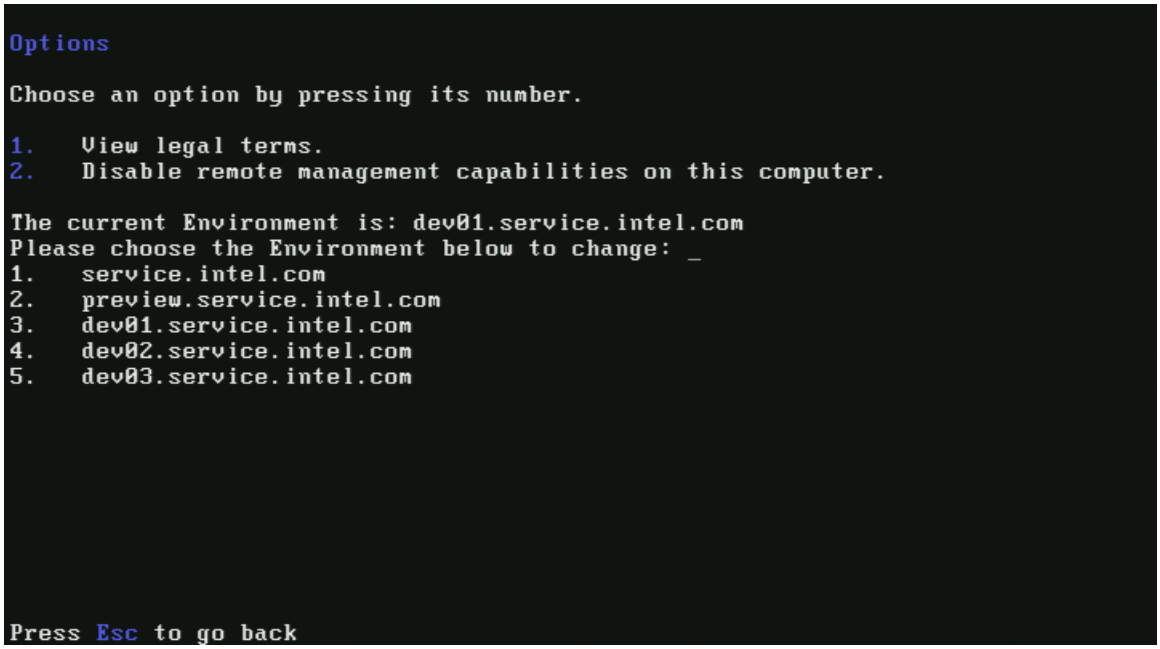
Press Esc – Goto previous screen

Press 1 – Goto Full Legal Text Screen

Press 2 – Remove all the RPAT related info from FW (Unregister CCK)

CTRL+E (hidden option) – go to enviorment switchin g screen

Environment switching :



Press ESC – Goto previous screen

Choose the preferred environment (RPAT server)

Press 1 – service.intel.com

Press 2 – preview.service.com

Press 3 - dev01.service.com

Press 4 - dev02.service.intel.com

Press 5 - dev03.service.intel.com

Appendix A: Changes to Configuration Modes

In Intel AMT 5.0 and under, there were two operational modes – SMB and Enterprise. In Intel AMT 6.0, their functionality has been integrated to provide the same functionality previously available in Enterprise mode. The new configuration options are “Manual Setup and Configuration” available for SMB customers and “Automatic Setup and Configuration.

Figure 78: Configuration Modes

Setting	Intel® AMT 5.0 Default		Intel® AMT 6.0 Default
	Enterprise Mode	SMB Mode	
TLS mode	Enabled	Disabled	Disabled, can be enabled at a later time
Web UI	Disabled	Enabled	Enabled
IDER/SOL/KVM Redirection network interface enabled	Disabled	Enabled if feature enabled in Intel® MEBX	Enabled, can be disabled at a later time
Legacy Redirection Mode (Controls FW listening for incoming redirection connections)	Disabled	Enabled if feature enabled in Intel® MEBX	Disabled (Need to set to “Enabled” in order to work with Legacy SMB consoles)

Manual configuration can be performed using the following six steps:

Note: you must have a DHCP server in your environment.

1. Burn the firmware.
2. Enter the Intel MEBX and change the password.
3. Enter Intel ME General Settings menu.
4. Select Activate Network Access.
5. Choose “y” in the confirmation message.
6. Exit the Intel MEBX.

Appendix B: Changes to Redirection Protocols

Before Intel AMT 6, firmware had the small/medium business (SMB) and the enterprise (ENT) provisioning modes. ENT was inherently more secure than SMB, which was meant to be more open and easy, but less secure. This change had an effect on the redirection protocols.

Before Intel AMT 6:

SMB: redirection ports were left open and Intel ME was listening constantly to the ports. ISV's writing consoles that dealt with redirection would then just open a connection to the ME machine. No extra steps were needed. The following flow was used:

1. Open a connection
2. Perform redirection actions (SOL/IDER)
3. Close the connection.

ENT: Redirection ports were closed meaning Intel ME was not listening for redirection connections. An SMB console wishing to open a connection to an ENT machine would fail since the ports were closed. For the connection to succeed (and how ENT consoles are implemented in the market) the following flow was used:

1. Send "open port" command to the Intel ME machine
2. Open a connection
3. Perform redirection actions (SOL/IDER)
4. Close the connection
5. Send "close port" command to the Intel ME machine

In Intel AMT 6:

Since both provisioning modes are combined, the more secure option was chosen, but to ensure backwards compatibility for older SMB consoles (that need the ports left open to succeed in creating SOL/IDER connections since they do not send the open/close commands) we needed another setting, the "legacy redirection mode".

If "legacy redirection mode" is set to enabled, the ports are left open, and SMB consoles will be able to connect (open and close the port is not needed)

If "legacy redirection mode" is set to disabled, the ports are closed and the console needs the extra command to open/close the ports in order to connect.

The user can go into Intel MEBx, or use a USB key to set this setting. If the USB key is a legacy one prepared by an SMB console, Intel MEBx automatically sets the legacy redirection mode to Enabled. Since SMB configuration required manual touch anyway, this poses no customer issue.

Appendix C: List of Intel® MEBX Options

This appendix provides a list of Intel MEBX options and when they are saved and reflected in the firmware.

Option	Reflected in the firmware
MEBx Login	Instantly
Intel(R) Quiet System Technology Configuration	Instantly
Intel(R) ME State Control	Upon Exiting Intel MEBX
Change ME Password	Instantly
Set PRTC	Upon Exiting Intel MEBX
Local FW Update	Upon Exiting Intel MEBX
Local FW Update Qualifier	Upon Exiting Intel MEBX
Secure FW Update	Upon Exiting Intel MEBX
Intel(R) ME ON in Host Sleep States	Upon Exiting Intel MEBX
Idle Timeout	Upon Exiting Intel MEBX
Manageability Feature Selection	Upon Exiting Intel MEBX
Password Policy	Upon Exiting Intel MEBX
Activate Network Access	Instantly
Unconfigure Network Access	Instantly
Username and Password	Instantly
SOL	Instantly
IDER	Instantly
Legacy Redirection Mode	Instantly
KVM Feature Selection	Instantly
User Opt-in	Upon Exiting Intel MEBX
Opt-in Configurable from Remote IT	Upon Exiting Intel MEBX
Host Name	Upon Exiting Intel MEBX
Domain Name	Upon Exiting Intel MEBX
Shared/Dedicated FQDN	Upon Exiting Intel MEBX
Dynamic DNS Update	Upon Exiting Intel MEBX

Option	Reflected in the firmware
Periodic Update Interval	Upon Exiting Intel MEBX
TTL	Upon Exiting Intel MEBX
DHCP Mode	Upon Exiting Intel MEBX
IPV4 Address	Upon Exiting Intel MEBX
Subnet Mask Address	Upon Exiting Intel MEBX
Default Gateway Address	Upon Exiting Intel MEBX
Preferred DNS Address	Upon Exiting Intel MEBX
Alternate DNS Address	Upon Exiting Intel MEBX
VLAN	Instantly
IPV6 Feature Selection	Upon Exiting Intel MEBX
IPV6 Interface ID Type	Upon Exiting Intel MEBX
IPV6 Interface ID	Upon Exiting Intel MEBX
IPV6 Address	Upon Exiting Intel MEBX
IPV6 Default Router	Upon Exiting Intel MEBX
Preferred DNS IPV6 Address	Upon Exiting Intel MEBX
Alternate DNS IPV6 Address	Upon Exiting Intel MEBX
IPV6 Feature Selection	Upon Exiting Intel MEBX
IPV6 Interface ID Type	Upon Exiting Intel MEBX
IPV6 Interface ID	Upon Exiting Intel MEBX
Current Provisioning Mode	Upon Exiting Intel MEBX
Provisioning Record	None
Provisioning Server IPV4/IPV6	Upon Exiting Intel MEBX
Provisioning Server IPV4/IPV6	Upon Exiting Intel MEBX
Provisioning Server FQDN	Upon Exiting Intel MEBX
Start Configuration	Instantly
Halt Configuration	Instantly
Set PID and PPS **	Instantly
Set PID and PPS **	Instantly
Delete PID and PPS **	Instantly
Remote Configuration **	Instantly
Manage Hashes	Instantly
PKI DNS Suffix	Upon Exiting Intel MEBX
Intel(R) IPT State Control	Instantly
Reset Token	Instantly
Intel(R) Remote Wake Technology Support	Instantly

Option	Reflected in the firmware
Reset Password	Instantly
CPU String Emulation	Instantly
Idle time based M3 to Moff entry OVERRIDE	Instantly
Force South CLINK Enabled	Instantly

Appendix D: Intel® AMT 6.0 Errata

On exiting PRE provisioning state in corporate platforms, Intel® AMT / Configuration Server provisioning logic shall automatically set power package 2 as the current power package (S0 only + ME Wake on Sx for desktop, S0 only + ME Wake on Sx/AC for mobile).

Note: This behavior is specific to Intel ® AMT 6.0 only. No assumptions should be made that this behavior will be carried forward into future Intel ® AMT product releases.

The following Intel MEBX issues listed in the Intel AMT 6.0 release notes will not be fixed due to their low impact and criticality:

3022879: Entering configuration server FQDN and then entering PSK pair will cause the MEBx to generate an error and to delete the FQDN.

This is a BIOS Intel MEBX issue with low impact as it only occurs during manual entry.

3023325: When trying to enable Dynamic DNS Update the Intel MEBX updates the value but prints an error to the screen.