Intel® Deployment Assistant v2.5

User Guide

December 2008

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1. Introduction

This User Guide describes how to use the Intel® Deployment Assistant (IDA) v2.5 -- an easy to use browser based graphical application -- to reduce the time associated with setting up Intel® servers. It provides an overview of the features and instructions on how to set up and operate the IDA.

1.1. Target Audience

This guide is intended for system administrators who are responsible for upgrading, troubleshooting, and configuring the Intel® Deployment Assistant. As a system administrator, you can use it to update an Intel® server with the latest system software, configure the most common options of the BIOS and firmware, and configure a RAID volume on attached hard drives and install an operating system.

1.2. Terminology

The following table lists the terminology used in this document and the description:

Table 1: Terminology

Term	Description
IDA	Intel® Deployment Assistant
BMC	Baseboard Management Controller
BIOS	Basic input/output system
Firmware	Software embedded in flash memory that controls the BMC, HSC, and LCP
Flash	Non-volatile storage used to store server-resident firmware ,including BIOS
FRU	Field Replaceable Unit
HSC	Hot Swap Controller (Hot Swap Backplane Controller)
RAID	Redundant Array of Independent
SUP	JunturaSystemUpdatePackage(BIOS,firmware,FRU/SDRs)
LCP	LED Local Control Panel
NIC	Network Interface Controller (RJ45 LAN connection)
OFU	One-Boot Flash Update
SDR	Sensor Data Record
SysConfig	System Configuration Utility.This includes BIOS and Firmware configuration
UI	User Interface
XML	Extensible Markup Language
XUL	XML User Interface

2. Getting Started

2.1. Product Overview

Intel® Deployment Assistant reduces the complexity and time associated with setting up Intel® servers. Server deployment time is often cut by an hour or more per system, and even more time can be saved when using the cloning feature to deploy identical servers. The wizard automatically locates and retrieves the latest drivers, BIOS, and firmware updates. It guides you through questions to help quickly configure the server via automatic recognition of server hardware, with minimal reboots and an automated unattended OS installation.

Intel® Deployment Assistant helps a system administrator do the following:

- Update an Intel® server with the latest system software. Updates can be got from a set URL (http://support.intel.com which can be customized by OEM), a network drive, or removable media. The firmware components that can be updated using Intel® Deployment Assistant are: BIOS, ESB2 BMC, Integrated BMC(iBMC), non expander HSCs, and SDRs.
- Configure the most common options of the BIOS and firmware.
- Configure a RAID volume on attached hard drives and install an operating systems
- Save SUP, driver updates, and limited configuration settings in a Profile for later use. This allows quick restoration of the same server or “cloning” (migration of configuration) to identical model servers.

Note: The installation is fully unattended *except* for a license screen agreement that you can agree to *and* any changing of CDs.
The latest drivers for all the on-board components are added from IDA CD or from other supported locations during the OS installation

Intel® Deployment Assistant is a browser based graphical application that provides an easy to use, wizard style interface to the system administrator for performing all the above tasks. It is packaged onto a single CD which contains its own operating system (Linux*), a GUI, Intel® Deployment Assistant core, and supporting files for setup and deployment. Intel® Deployment Assistant boots automatically off a CD-ROM/USB drive and runs completely in a RAMDISK.

2.2. Supported Platforms

Multi-Core Intel® Xeon® Processor 3000 Sequence-based Servers

Intel® Server Board S3000AH
Intel® Server Board S3000PT
Intel® Server Board S3200SH
Intel® Server Board X38ML
Intel® Server System SR1520ML
Intel® Server System SR1530AH
Intel® Server System SR1530AHLX
Intel® Server System SR1530HAHLX

Multi-Core Intel® Xeon® Processor 5000 Sequence-based Servers

Intel® Server Board S5000PAL
Intel® Server Board S5000PSL
Intel® Server Board S5000VCL
Intel® Server Board S5000VSA
Intel® Server Board S5000XAL
Intel® Server Board S5000XSL
Intel® Server Board S5400SF
Intel® Server System SR1500AL
Intel® Server System SR1500ALSAS
Intel® Server System SR1530CL
Intel® Server System SR1530HCL
Intel® Server System SR1530HCLS
Intel® Server System SR1550AL
Intel® Server System SR1550ALSAS
Intel® Server System SR1560SF
Intel® Server System SR2500ALLX
Intel® Server System SR2500BRP
Intel® Server System SR2520SAF
Intel® Server System SR2520SAX
Intel® Server System SR2520SAXS
Intel® Workstation Board S5000XVN

Multi-Core Intel® Xeon® Processor MP 7000 Sequence

Intel® Server System S7000FC4UR

2.3. Hardware Requirements

- **CD-ROM Drive**

A USB, IDE, or SATA CD/DVD-ROM drive is required to be able to boot and run Intel® Deployment Assistant. The CD/DVD-ROM drive is mandatory for OS installation.

- **Mouse**

Some functions of the IDA require a standard mouse (PS/2 or USB) for navigation.

- **USB Disk on Key device**

Some functions of the IDA require a USB disk on key. Example: Saving a system profile.

- **RAM**

IDA requires a minimum of 512MB RAM. If available RAM is less than the minimum recommended value, IDA cannot function properly. To use thermal throttling feature for close loop, CLTT enable DIMMS are required.

- **Network Adapter**

Some optional functions of the IDA require network access. Any single on-board Intel® NIC adapter connection is supported. Example: downloading latest system update packages and OS drivers from support.intel.com.

- **RAID Cards**

RAID Configuration and OS installation are supported on the selected controllers as listed in the PRD under section 3.2.2.

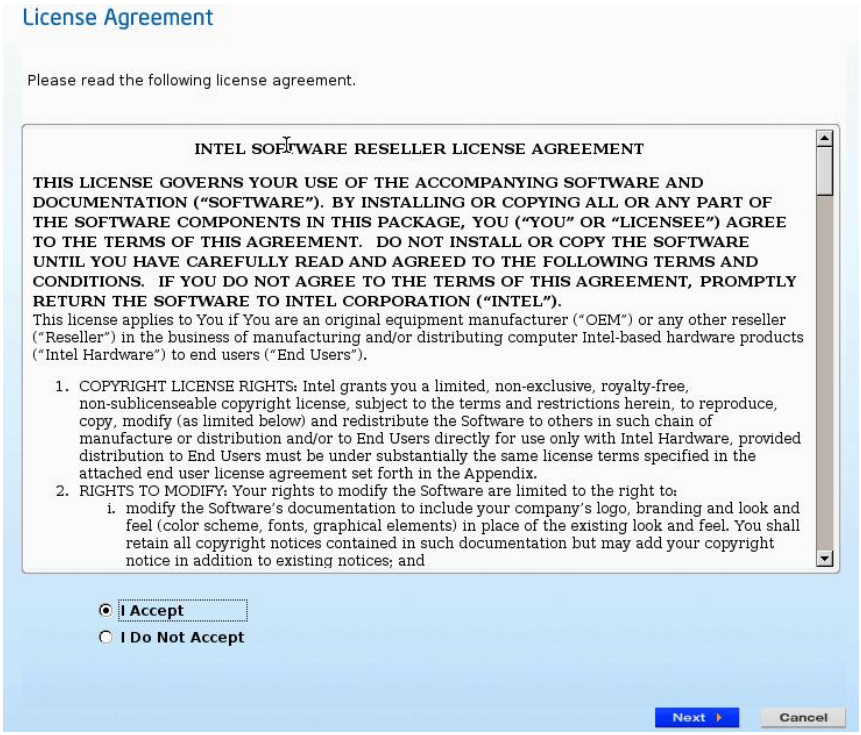
3.Using Intel® Deployment Assistant (IDA)

This section details how to operate the Intel® Deployment Assistant.

IDA is a bootable application that uses an IDA CD to boot Intel® Server system to operate functions such as update server system firmware, setup BIOS, Setup BMC and configure RAID logical volume and so on. IDA is designed for one or a series of Intel® Server systems. (If you use an IDA CD to boot from an unsupported server, IDA will generate an error message).

After IDA booting up, the first interface is the End User License Agreement. You can select **I Accept** to click **Next** button to agree this license, or click **Cancel** button to disagree this license and exit IDA application.

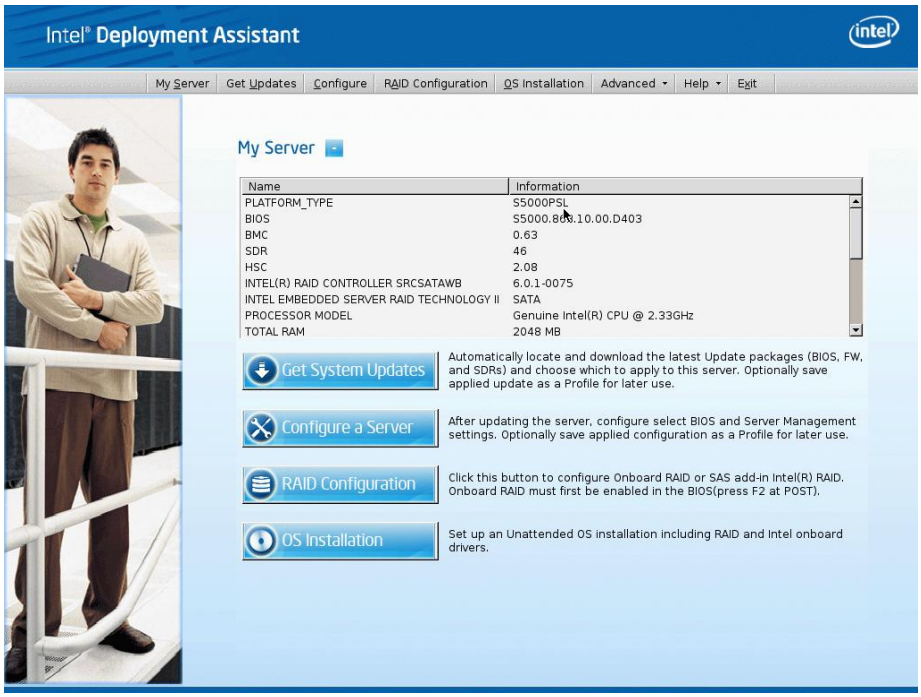
Figure 3-1: IDA End User License Agreement



3.1. My Server Page

IDA My Server page is the application homepage that contains main menu and buttons to help you navigate IDA functions.

Figure 3-2: IDA My Server Page



3.1.1. Main Menu

This section details the main menu tasks available as shown in Figure 2.3.

Figure 3-3: IDA Main Menu

The following table lists the main menu tabs and the corresponding tasks:

Table 2: IDA Main Menu Tabs

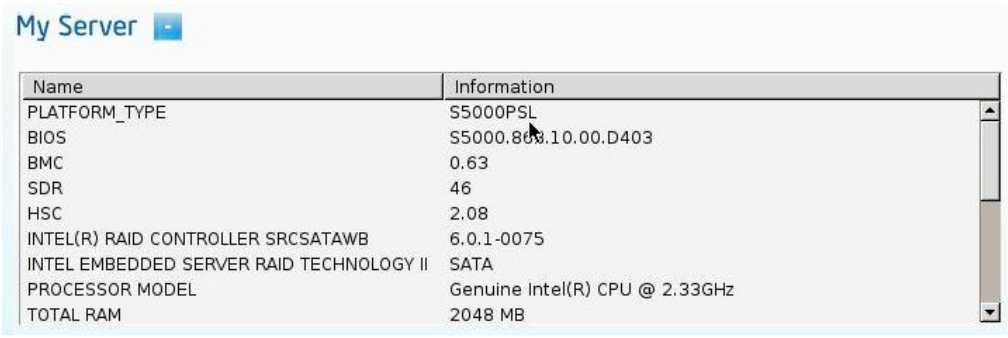
Menu Tab	Tasks
My Server (Shortcut: ALT+s)	Enters **IDA My Server** page
Get Updates (Shortcut: ALT+u)	Enters IDA Server System Firmware Update interface.
Configure (Shortcut: ALT+c)	Enters the interface to setup server system information, BIOS, and server management (BMC parameters).

Menu Tab	Tasks
RAID Configuration (Shortcut: ALT+a)	Menu **RAID Configuration** is used to setup RAID logical volume. If server system doesn't have RAID card, this menu is disabled.
OS Installation	Menu OS Installation is used to start OS unattended installation process.
Advanced	Menu **Advanced** contains following submenus: Load Profile - used to enter the interface for loading server system configuration settings or system update packages from a profile. IDA profile is a .ZIP filename extension and can be generate after set server system or update server system firmware. This feature is useful to copy settings or update the dame firmware between the same model servers. RAID Web Console 2. - is used to invoke integrated Linux* version RAID Web Console 2(RWC 2). RWC 2 is professional utility to configure Intel RAID controller. You can refer the RWC 2 online user guide for its details. If server system doesn't have supported RAID controller, this submenu is disabled.
Help	Shows a general IDA introduction and IDA version details.
Exit (Shortcut: ALT+X)	Exits IDA application.

3.1.2. My Server Information Box

The IDA Homepage> **My Server** information box detects and displays server system configuration information as displayed in Figure 2-4.

Figure 3-4: My Server information box



The information displayed as listed in following table depends on your server system hardware configuration. For example, some of the information listed in Table 4 may not be shown if server does not have the related devices.

You have the option to click + button to extend this box and click - to hide it.

Table 3: My Server Information box

Name	Information
Platfrom_Type	Intel® server system ID name
BIOS	BIOS version
BMC	BMC firmware version
SDR	SDR version
HSC	HSC backplane firmware version
Intel® RAID Controller XXXXX	Show Intel RAID controller firmware, here XXXX is RAID card name in system
Intel Embedded Server RAID Technology II	Intel onboard embedded RAID type, Show as SATA or SAS
Process Model	Server CPU frequency
Physical Processors	The number of physical CPU on server
Logical Processors	The number of logical CPU on server
Total RAM	Server memory capacity
Asset Tag	Show system asset name if it is set
System Manufacturer Name	Default value is Intel
System Product Name	Show as Intel® Server Board name
Chassis Product Name	Default value is Main Server Chassis
Network Adapters	Show the number of onboard network cards

3.1.3. Primary Function Buttons

There are four primary function buttons in IDA my server page as listed in following table. They are portals to IDA primary functional areas.

Button	Task
	Has the same function as the menu **Get Updates**, Click to enter the Update Server System Firmware interface.
	Has the same function as the menu **Configure**, Click it to enter Server System, BIOS and BMC Configuration interface.
	Has the same function as the menu **RAID Configuration**, Click to enter RAID Logical Volume Setup interface.
	Has same function as the menu **OS Installation**, Click it to enter OS Unattended Installation interface.

3.2. Get System Update

If your server has internet connection, IDA can automatically locate and download the latest Intel Server System update packages to upgrade server BIOS, BMC FW, SDR and HSC firmware. To do this, IDA uses the system update package that has been specifically developed for each platform.

You can either click the menu **Get Updates** or click the button **Get System Updates** to enter IDA Server Firmware Update interface. You can manually download this package from Intel server system page at http://support.intel.com.
The update package has a .ZIP file extension, and may contain the following components:

- System BIOS
- BMC Firmware
  Baseboard Management Controller (BMC) firmware or Integrated Baseboard Management Controller (iBMC) firmware, that depends on the server system,

- Sensor Data Records (SDRs)
- Hot-swap backplane controller (HSC) firmware update for non-expander types of HSC backplanes
- Intel Local Control Panel （LCP）firmware update

IDA can get system firmware update package from three resources:

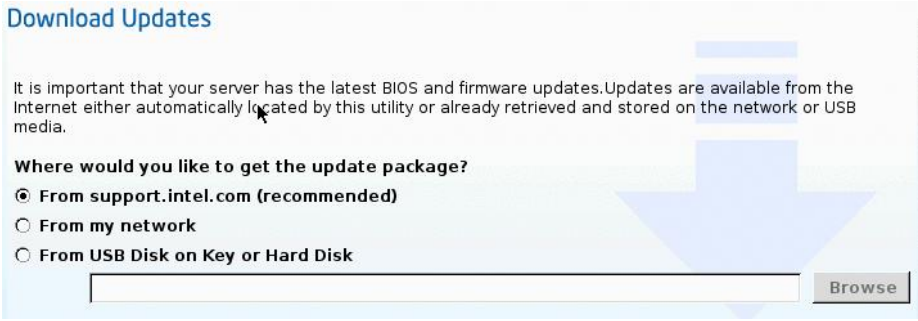
- support.intel.com - the Intel support website - to get the latest update package.
- **My Network** to browse to a network share containing the update package.
- USB media to browse a USB key for the update package.

3.2.1. Scenario 1: Updating Firmware When Server has Internet Connection

If your server has internet connection IDA helps you automatically locate and download the current Intel server system firmware package from Intel support web site. Following are the steps to operate this function on IDA.

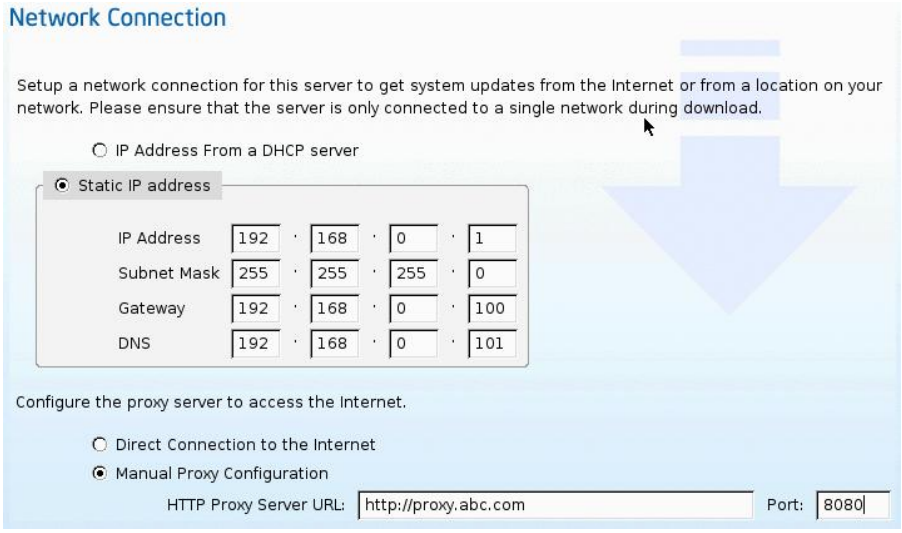
1. Make sure your server system is connected to the network internet connection.
2. Boot server with IDA, and accept IDA end user license.
3. Click IDA menu **Get Update** or button **Get System Updates** at My Server page.
4. Select " **From support.intel.com (recommended)**" at Download Updates page, and click **Next** button.

Figure 3-5: Update Firmware from support.intel.com



5. Setup your server network parameters to include IP address, subnet Mask, Gateway, DNS and proxy configuration at Network Connection page, and click **Next** button.
   Note: If you are not familiar with your network settings, please check with your IT administrator.

Figure 3-6: Network Setup for Download Firmware form Internet



6. NOTE: IDA can automatically detect all available system firmware update packages. The latest version is recommended.
7. Click **View Contents** button to check the firmware update package version details. Select your update package and click **Download** button...

Figure 3-7: Available Online SUP

8. After downloading system update package, IDA requests you to select the components in firmware package. Click **Release Notes** button to view system update package release notes that contains server firmware version details, known firmware issues and new features, and click **Apply** button to start selected firmware update.

Figure 3-8: Select Firmware Components

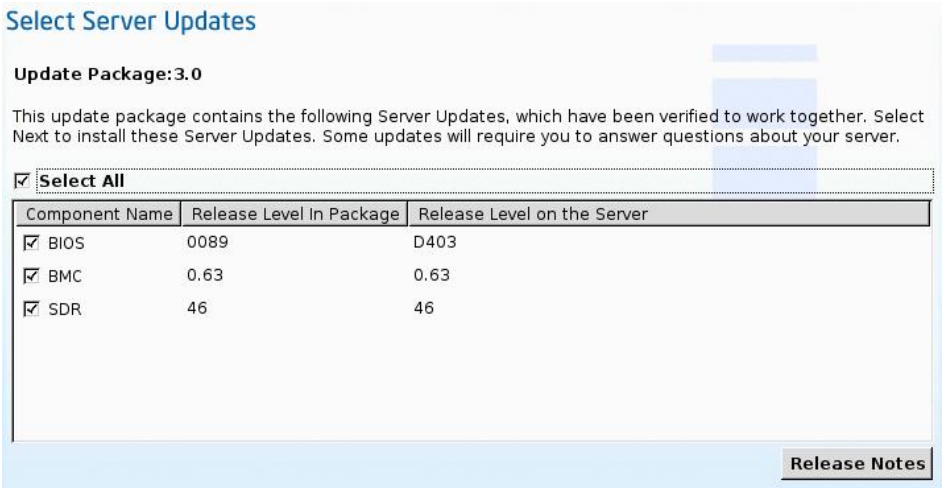
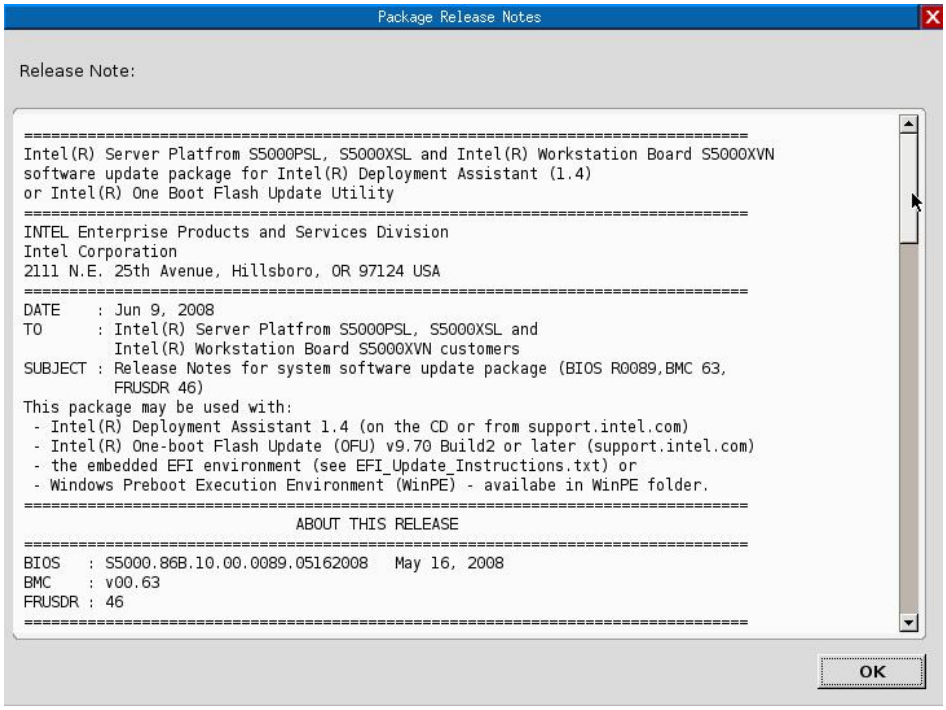


Figure 3-9: SUP Release Notes



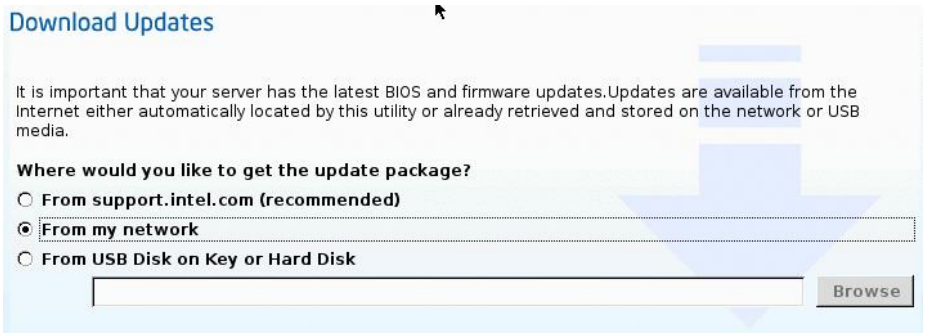
9. *During* firmware upgrade, you cannot power off or reboot server.
   After firmware upgrade process is complete, click **Reboot** button to reboot server.

3.2.2. Scenario 2: Update Firmware from My Network

If your server system cannot access internet, IDA can also download server system firmware update package from a Windows* file server. Following are the steps to update server firmware from local network:

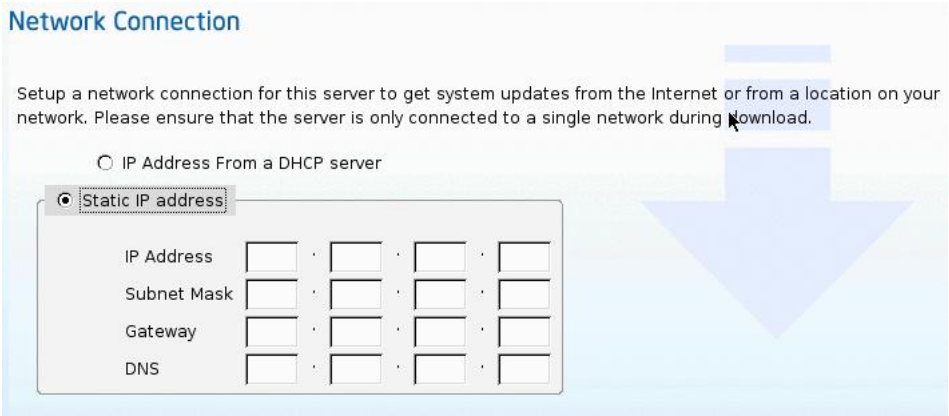
1. Download Intel server system update package from http://support.intel.com
2. Intel server system update package for IDA is a *.zip file, don't unzip it, copy it to a Windows* file server share folder.
3. Boot server with IDA, and accept IDA end user license
4. Click IDA menu **Get Update** or button **Get System Updates** at My Server page.
5. Select **From my network** at IDA to download Updates page, and click **Next** button.

Figure 3-10: Download SUP from my network



6. Configure network parameters at IDA Network Connection page. Make sure your server is connected with local network. Else, IDA will generate an error message. Click **Next** button to continue.

Figure 3-11: Network Setup for Download Firmware form LAN



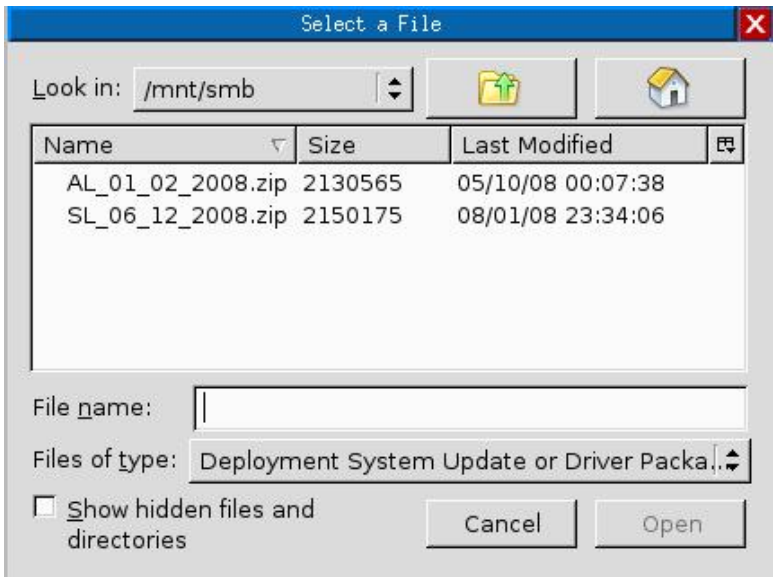
7. Enter the network user name and password that you use to login the network file server. The network location is the file server name and share folder where the update package is stored. Click **Connect** button and choose the SUP file in a popup window.

Figure 3-12: Login Window to a File Server

Note: For security reason, the file server administrator cannot be used. Use a normal account as login user.

8. IDA can display the share folder on file server on a popup window for you to select the update package.

Figure 3-13: Select a SUP File in File Server



9. IDA shows up the firmware components in package file, for you to select. Click **Release Notes** button to view system update package release notes that contains server firmware version details, known issues, and new features. Click **Apply** button to start selected firmware update
10. During firmware upgrade you cannot power off or reboot server. After firmware upgrade process is complete, click **Reboot** button to reboot server.

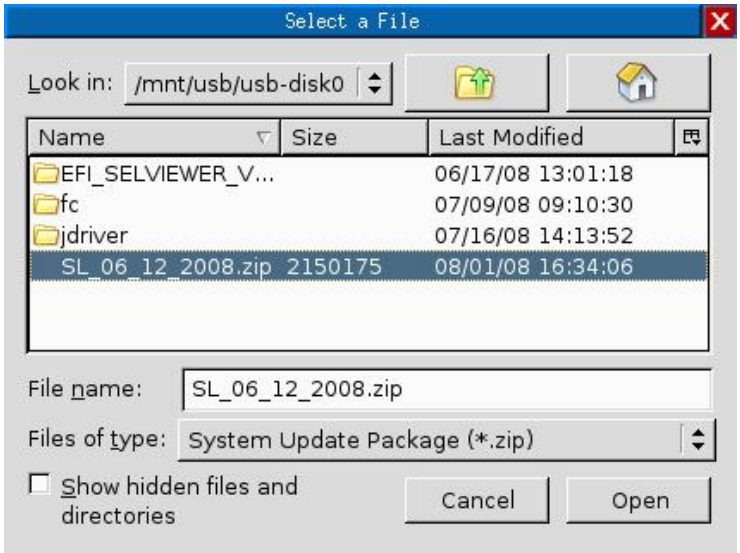
3.2.3. Scenario 3: Update Firmware from USB key

USB key is other kind of media that can store Intel server system firmware update package and recognized by IDA. Scenario 3 introduces how to update server firmware from a hot-plug USB key.

1. You need to download Intel server system update package from http://support.intel.com
2. Intel server system update package for IDA is a *.zip file, don't unzip it, copy it to USB key.
3. Boot server with IDA, and accept IDA end user license
4. Click IDA menu Get Update or button Get System Updates at My Server page.
5. Insert USB key to server USB port.
6. In the Download Updates page, select **From USB Disk on Key or Hard Disk** and click **Browse** button.

Figure 3-14: Download Update Package from USB key

Figure 3-15: Select SUP File in USB Key Folder



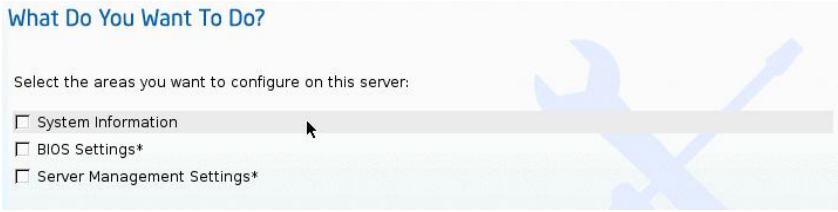
7. Select package file in the popup windows and click **Open** button

8. IDA shows up the firmware components in package file, and asks you to select. Click **Release Notes** button to view system update package release notes that contains server firmware version details, known issues and new features. Click **Apply** button to start selected firmware update
9. During firmware upgrade, you cannot power off or reboot server. After firmware upgrade process is complete, click **reboot** button to reboot server.

3.3. Configure a Server

The IDA **Configuration a Server** function area provides three options – System Information, BIOS Settings, and Server Management Settings. These options allow you to set system asset tag, configure key BIOS settings and configure server management parameters. To enter this function area from the IDA My Server>IDA main menu, click **Configure** tab or click the button **Configure a server**.

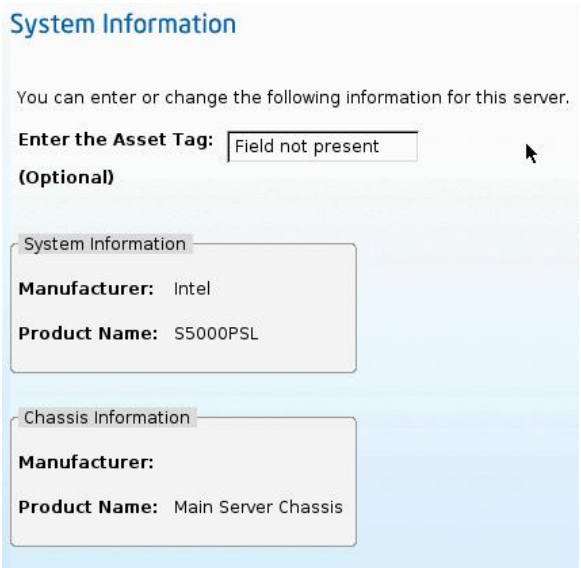
Figure 3-16: Configure a Server Function Area



3.3.1. System Information

This function area lets you set an asset tag for server system, and also check server system information and chassis information. After setting asset tag and applying, IDA will require a reboot.

Figure 3-17: System Information



3.3.2. BIOS Settings

This function area lets you configure server system BIOS settings, including:

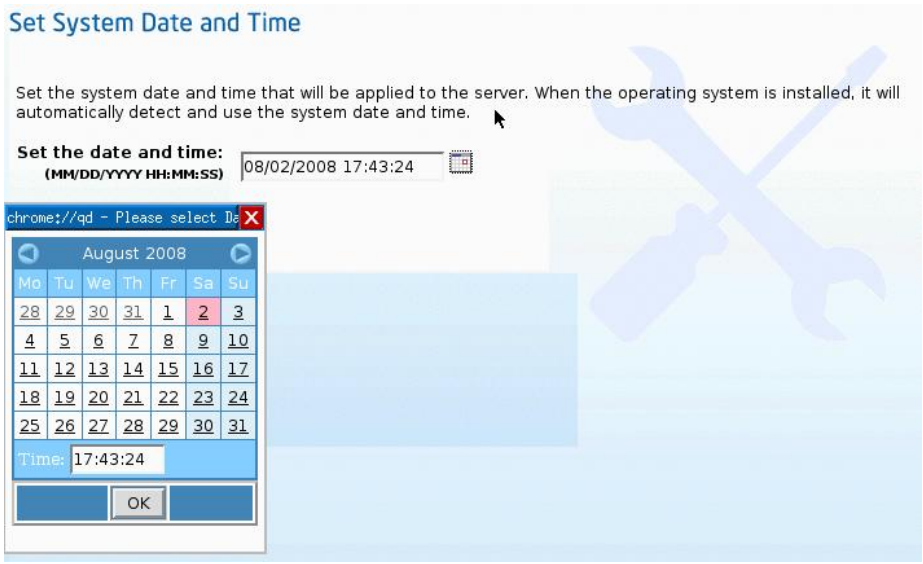
- BIOS Time and Date (This change will take effect later when you choose Apply.)
- Load Factory Default Settings for the BIOS
- Hyper Threading Technology
- Fan Mode and Altitude (These settings are not available on all platforms or configurations. They may not be displayed depending on your hardware, Thermal Throttling mode BIOS setting, and the type of memory installed in your system)
- Quiet Boot
- BIOS Administrator and User passwords
- Boot order

Note: Although IDA BIOS settings function provide an alternative to Intel server system BIOS configuration, some special BIOS settings still needs to be changed via standard BIOS setup interface (to enter it by pressing F2 during server POST)

3.3.2.1. Set System Date and Time

This option lets you update server system BIOS date and time. Your can either enter system date and time in the MM/DD/YYYY HH:MM:SS with format, or click icon  to select date and time at the popup window.

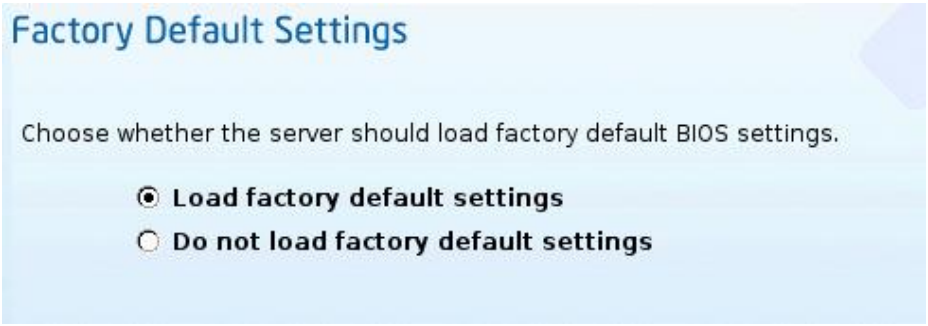
Figure 3-18: BIOS Setting – Set System Date and Time



3.3.2.2. Factory Default Settings

Loading factory default settings returns BIOS to its original configuration. This option lets you load factory default BIOS settings. If you select **Load factory default settings** and **Apply**, IDA asks you to confirm it. After this operation, your must reboot server system.
To bypass this section, select **Do not load factory default settings**.

Figure 3-19: BIOS setting – Factory Default Settings



3.3.2.3. Set Quiet Boot

This section lets you enable or disable the quiet boot feature on your server with the following options:

- Enable quiet boot
- Disable quite boot. (If disabled, server POST messages will be displayed while server is booting).

3.3.2.4. Set Pause on Post Error

If server generates an error during POST process, you can use this section to select whether the server should pause and wait for user interaction.
The options include:

- Pause if a POST error occurs
- Do not pause of an error occurs

3.3.2.5. Change BIOS Administrator Password and User Password

You can set BIOS administrator and user password at this section. You need to select option **Change BIOS Administrator Password** and **Change BIOS User Password** to enable corresponding **Enter new password** and **Confirm new password** boxes.

Note: Password length cannot longer than 7 characters

3.3.2.6. Set Fan Mode

Note: This option is only visible if server BIOS **Closed Loop** setting is disabled, or is not supported. **Closed Loop** setting only can be changed via standard BIOS setup interface (to enter it by pressing F2 during server POST)

The **Fan Mode** allows you to select which SDR Fan T-control profile will be active. In the Fan Mode settings, choose the **Acoustic** mode to reduce the fan noise by throttling memory. Choose the **Performance** mode to allow high speed fan operation. It may be noisier, but this configuration results in better processor performance.

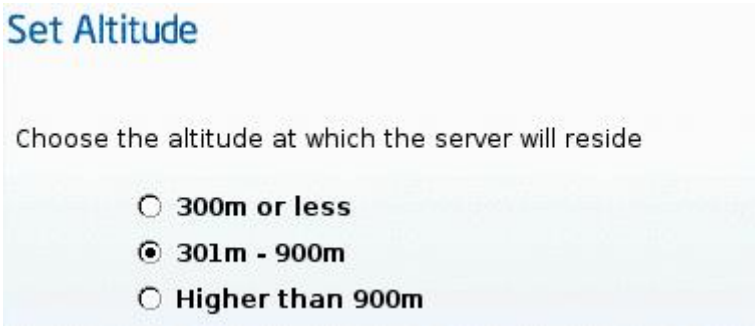
If the **Closed Loop** option is set, and server system has the correct type of memory to support this mode, then Acoustic mode is the default option.

Refer to relevant *Intel® Server System User Guide* for more information on BIOS options and supported memory.

3.3.2.7. Set Altitude

You can select an altitude scope according to the position where the server will be resided. This setting will impact server fan speed.

Figure 3-20: Set Altitude in BIOS Setting

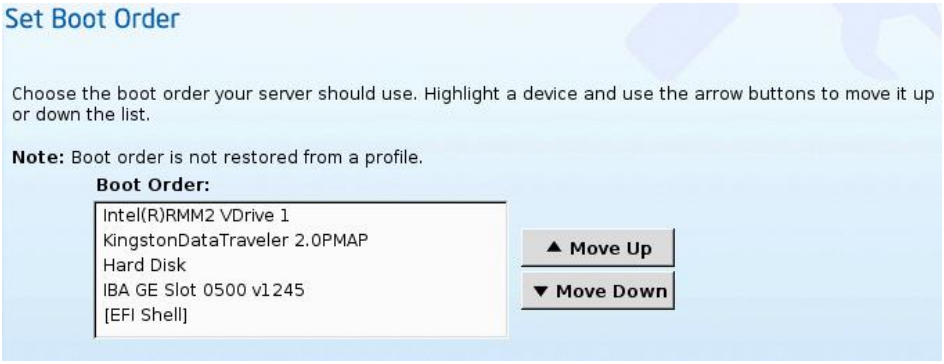


3.3.2.8. Set Boot Order

IDA can show a list of all bootable devices on the server system. You can highlight a device and click button **Move Up** or **Move Down** to arrange the server boot order.

The Boot Order will be saved on this server, but will not be saved or restored using the Intel® Deployment Assistant profile. The boot device names are determined by your System BIOS. For example, Network boot devices might be listed as "IBA GE Slot..." for the NIC PXE boot capability. Most Intel server boards will also have the list "EFI Shell" for the Extensible Firmware Interface shell that is included in the firmware.

Figure 3-21: Set Boot Order in BIOS Setting



After you set all available BIOS settings, IDA will ask you to apply it and reboot server.

3.3.3. Server Management Settings

This section allows you to configure BMC parameters that include:

- BMC LAN Channel (ESB2 BMC supports server onboard NIC1 and NIC2 as BMC LAN channel 1 and 2; iBMC only supports server onboard NIC1 as BMC LAN channel 1)
  - Enable / Disable LAN.
  - Set IP source as static or DHCP configuration)
  - Enable / Disable Serial over LAN.
  - Enable / Disable LAN Alerting (iBMC doesn't support this setting)
  - LAN alert destination IP addresses. (iBMC doesn't support this setting)
  - Platform event filter configuration. (iBMC doesn't support this setting)
  - Enable/disable ARP for LAN channel.(iBMC doesn't support this setting)
- Serial Channel.
- Set privilege access.
  - Enable / Disable a user.
  - Add or Edit the user name (except anonymous and other non changeable users)
  - Add or Edit the user password.

Server BMC parameters are related to the type of BMC. Consequently, IDA server management setting options have a minor difference on different server model.

The following table shows the BMC type of Intel servers

Table 4: BMC Type of Intel® Server System

Intel Server Model	ESB2 BMC	iBMC	N/A
Intel® Server Board S3000AH/PT			✓
Intel® Server System SR1530AH			✓
Intel® Server Board S3200SH		✓	
Intel® Server Board X38ML		✓	
Intel® Server System SR1520ML		✓	
Intel® Server Board S5000PAL/XAL	✓		
Intel® Server Board S5000PSL/XSL	✓		
Intel® Server Board S5000VCL	✓		
Intel® Server Board S5000VSA	✓		
Intel® Workstation Board S5000XVN	✓		
Intel® Server Board S5400SF/1560SF	✓		
Intel® Server System SR1500AL/1550AL/2500AL	✓		
Intel® Server System SR1530CL/HCL/HCLS	✓		
Intel® Server System SR1560SF	✓		
Intel® Server System SR2520SAF/SAX/SAXS	✓		
Intel® Server System S7000FC4UR	✓		

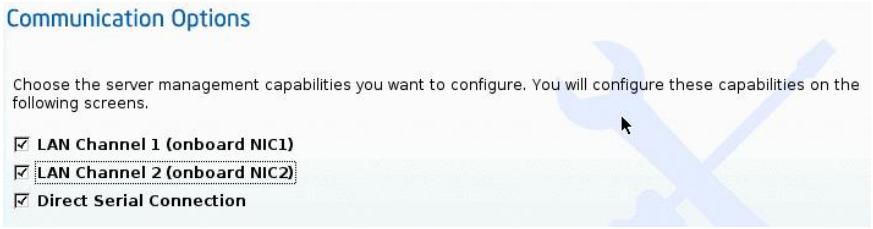
3.3.3.1. BMC Communication Options

When you enter IDA server management settings function area, you need to select which channel device needs to be configured at Communication Options page. Select the channel that you want to configure and click the **Next** button to enter the following screens:

To ESB2 BMC, IDA show options include:

- LAN Channel1 (onboard NIC1)
- LAN Channel2 (onboard NIC2)
- Direct Serial Connection

Figure 3-22: ESB2 BMC Communication Option

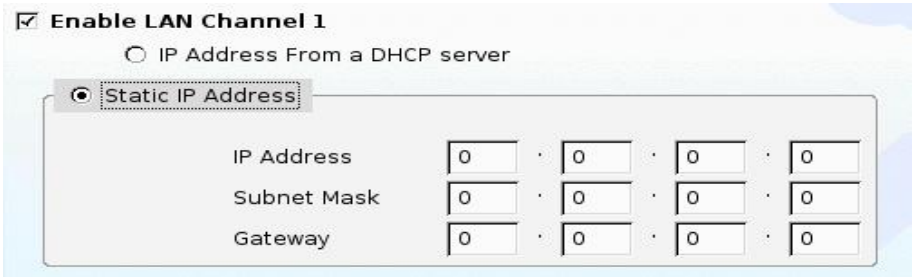


3.3.3.2. LAN Channel

ESB2 BMC LAN channel 1 and 2 have the same parameters. LAN channel 1 is used as an example here.

- Enable LAN Channel 1
  Select this option to enable BMC network communication via server onboard NIC 1. IP source can be set from a DHCP server or static IP address. If you select Static IP Address, IDA requests you to enter IP address, subnet mask and gateway.

Figure 3-23: Enable BMC LAN channel

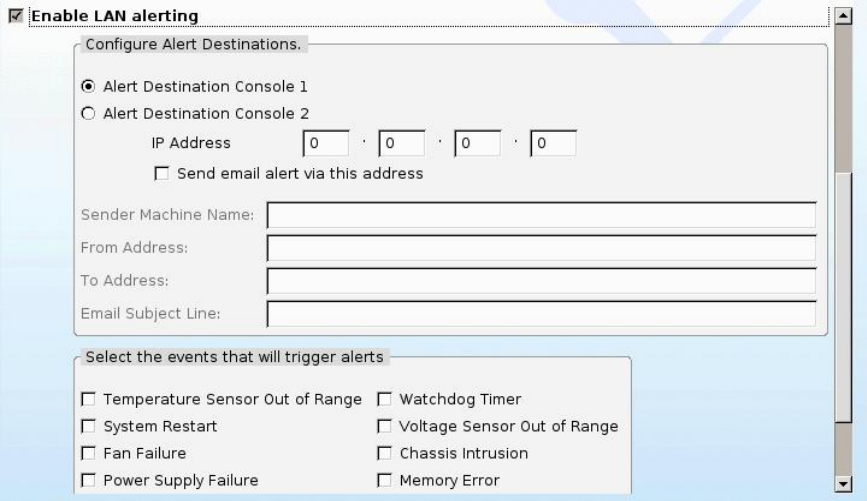


- Enable Serial Over LAN
  This option allows you enable BMC serial over LAN (SOL). Serial Over LAN provides a mechanism that enables the serial controller of a managed system to be redirected over an IPMI session over IP. This enables remote console applications to provide access to text-based interfaces for BIOS, utilities, operating systems, and applications while simultaneously providing access to IPMI platform management functions. You also need to enable Console Redirection in Intel server BIOS configuration.

- Enable BMC ARP
  For Ethernet, the Address Resolution Protocol (ARP) allows a host to find the physical address (MAC address) of a target host on the same network. This option allows BMC to respond the ARP Requests. The receivers can update their own ARP caches with BMC's answer.
  BMC has another type of ARP - Gratuitous ARP - which is an ARP Response where the BMC periodically sends out the physical address mapping of its own IP Address. BMC Gratuitous ARP is enabled by default.

- Enable LAN alerting
  When the server system has hardware issues, BMC can generate an alert to the administrator. The type of BMC alert includes SNMP alert message and BMC alert email. After you select this option, IDA will display an extended section as shown in figure 2-24.

Figure 3-24: BMC Alert



ESB2 BMC supports two Alert Destinations. Select **Alert Destination console 1** and enter the SNMP alert receiver IP address in **IP Address** box. Select **Alert Destination console 2** and enter other SNMP alert receiver IP address. IDA set SNMP trap community name as “public” by default. If you do not want to send SNMP alert but want to send an alert email, select the option **Send email alert via this address.** Enter SMTP server IP address in the **IP Address** box. Select **Send email alert via this address** to enable the about alert email settings. These email options include:

- Sender Machine Name
  Enter server name to send alert email to.

- From Address
  Enter email address.

- To Address
  Enter email address with to receive BMC alert email.
  Note: This email address should be a real address in email system, or you will not receive email from BMC.

- Email Subject Line
  Enter words for email message alert Subject.

At the section **Select the events that will trigger alerts**, select events that you want BMC to generate alerts for.

3.3.3.3. Serial Channel

Select **Enable Serial Channel** to use the on-board serial channel for direct serial communications between the BMC and a management console connected to the serial console using a null modem cable.

Note: Serial modems are not supported.

You also need to select serial channel privilege either as User or Administrator.

3.3.3.4. Setup Users

The BMC user accounts settings include BMC user name, password and its access privilege. Each account has a single privilege level (User or Admin) across all communication channels and BMC features. Accounts with the User privilege level can only read BMC settings. User Accounts with Administrator privilege level have full control of the BMC. IDA can set up 4 accounts for ESB2 BMC, and default BMC account is Anonymous that user name is anonymous and can not be changed. You can update Anonymous account password and privilege.

Note: When management software access BMC with anonymous account, user name should be blank, not anonymous.

You can update the BMC account user name, password and privilege. To do this:

1. Select one of BMC account in IDA **Set Up Users** page and click the **Edit** button to enable or disable accounts, set the passwords, and set the user privilege level in popup window.

Figure 3-25: Set Up BMC Account

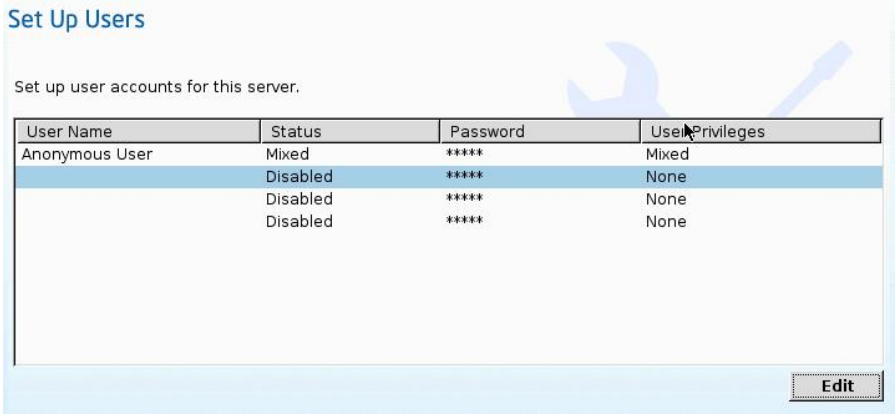


Figure 3-26: Edit BMC User Information

After completing all selected BMC settings, IDA will request you to apply it and reboot server system.

3.4. Save and Load Profile

IDA supports replicating the system firmware state includes BIOS, BMC, SDR, and HSC and the settings of BIOS and BMC between the same model servers. IDA can capture server settings or firmware state into a file, called a profile, to a USB device. This file can then be used in another session on a compatible server to update the system software and/or settings. IDA only allows you to save a profile after IDA completes system firmware update or BMC/BIOS configuration. The firmware update profile is a separate file from the configuration profile. Load Profile function can be enabled by clicking the menu option under IDA main menu **Advanced.** You can “clone” either the system updates or the configuration, but not both simultaneously. A reboot is required between steps.

3.4.1. Process of Save Profile

After updating server system firmware or configuring BMC/BIOS parameters, IDA will indicate you to save a profile. You can follow these steps:

1. Insert a USB key device
2. Select Save the profile to USB Disk option
3. Click **Browse** button to select the desired directory and enter a filename on the popup window.

4. Click **Next** button, IDA will save all data to USB key.
5. Reboot server system.

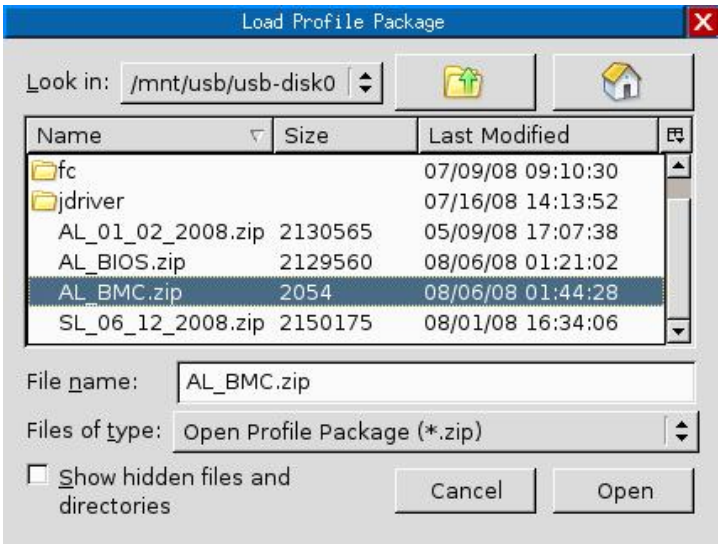
3.4.2. Process of Load Profile

You can enter Load Profile function area by clicking main menu **Advanced | Load Profile** at IDA My Server page.

Note: A profile can only be used on the same server or the same model server. IDA will reject to apply the profile that the server platform ID does not match with current server's ID

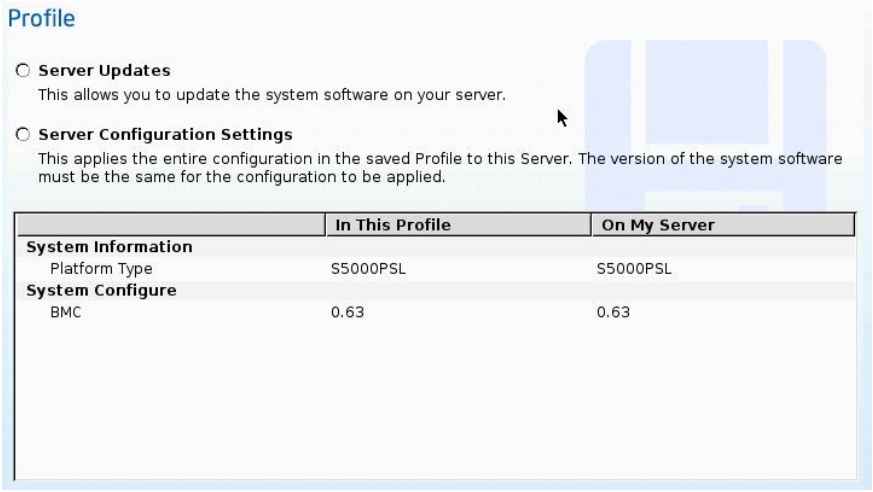
To open a profile do the following steps:
1. Insert the USB key device that contains profiles.
2. Click **Browse** button to select the desired directory and profile name (a .zip file in USB key) in popup window.

Figure 3-27: Select a Profile in USB Key



3. Click **Next** button to continue.
IDA will read profile information and check whether the profile and current server match. If they don't match, IDA will show red color characters on screen. This screen allows you to select either **Load Update Package** or **Load Configuration.** if the profile contains valid information, the button **Apply** is enabled.
4. Click button **Apply** to continue.

Figure 3-28: Load Profile



5. Click **Restart** button after IDA completes loading profile.

3.5. RAID Configuration

3.5.1. Supported RAID Devices

IDA provides simplified, common interface and easy to understand user interface for RAID configuration, IDA can support most RAID device on Intel server boards and systems that include:

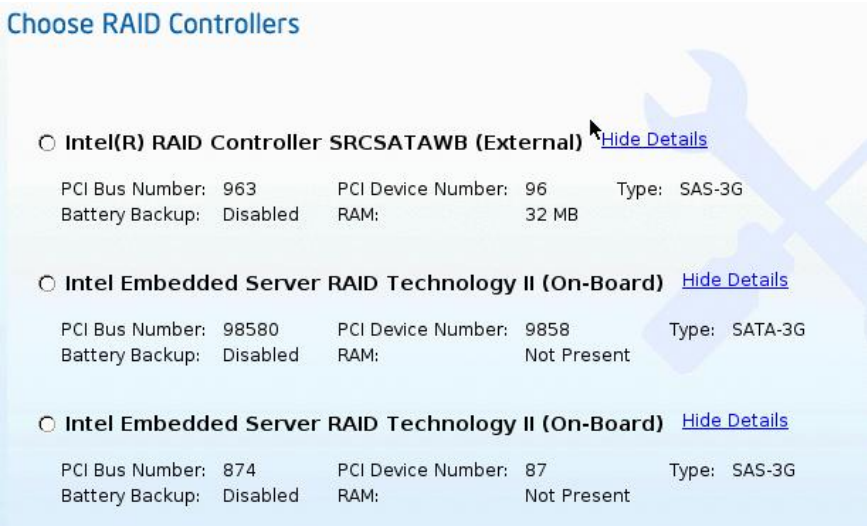
- Intel® ESB2 SATA, Embedded RAID level 0. 1. 5
- LSI 1064E SAS, Embedded RAID level 0, 1,5
- LSI 1068 and 1078 ROMB and add-in controller, Embedded RAID level 0. 1, Hardware RAID level 0. 1, 5
- 1078 FC SAS Riser, Hardware RAID 0, 1, 5, 6
- Intel® ICH7R, Embedded RAID level 0, 1
- Intel® ICH9R, Embedded RAID level 0, 1

For details on Intel RAID cards, please refer Intel Web site:
http://www.intel.com/products/server/raid/index.htm?iid=server_body+raid#s1=all&s2=all&s3=all

Note: Intel® Matrix RAID is not supported by IDA

In the My Server page you can enter IDA RAID configuration function area by clicking the main menu **RAID Configuration** or **RAID Configuration** button. If multiple RAID controllers are available in the server system, IDA will show a list of all available RAID card at Choose RAID Controllers page.

Figure 3-29: choose RAID Controllers



Choose the RAID controller that you want to set up for new RAID array.

Note: The IDA RAID configuration utility detects the physical drivers only once when you enter this function area.
Do not remove or add hard disk drivers while navigating within this function area.

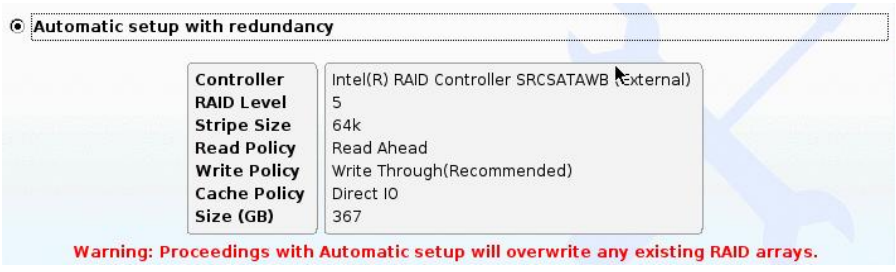
3.5.2. IDA RAID Configurations

IDA RAID configuration contains three configurations:

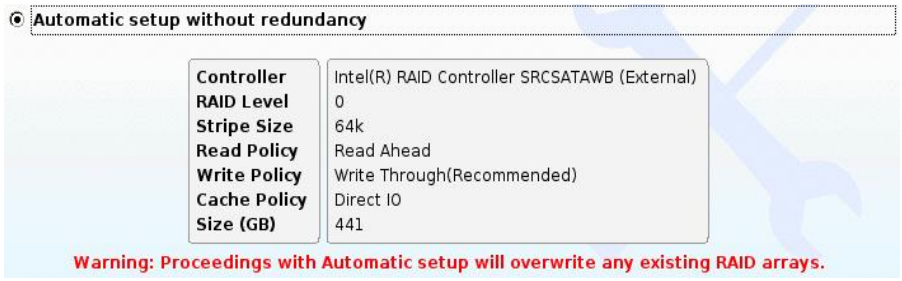
- **Automatic Setup with redundancy.**

  Requires at least 2 hardware drives. If your server system has 2 drives, IDA create RAID 1 for you. If more than 2, IDA will recommend to create RAID 5 (if controller doesn't support RAID 5, IDA will Create RAID1).

Figure 3-30: Automatic Setup RAID with Redundancy



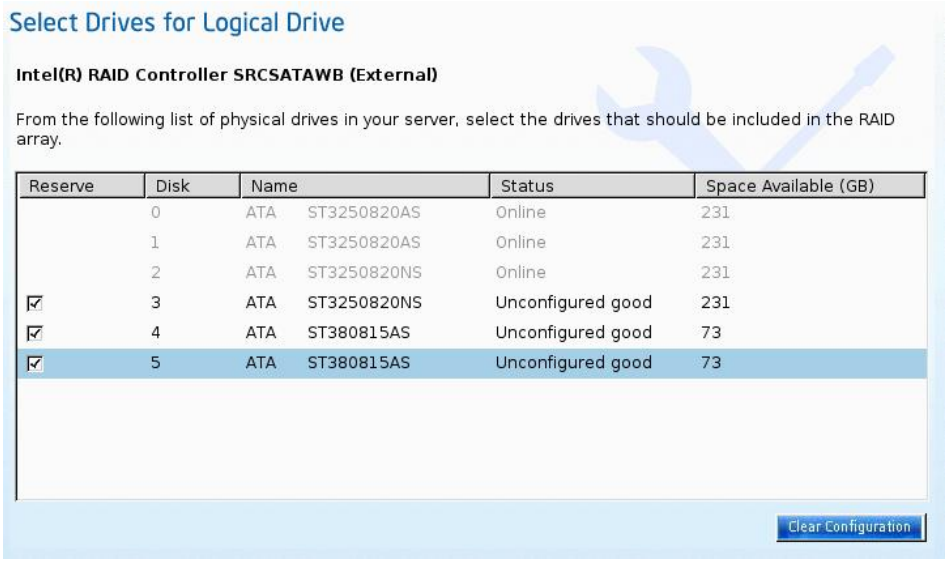
- **Automatic Setup without redundancy**.
  IDA will only use all drives to create a RAID 0 array.



Note: The common parameters except for total size will be the default values for the controller.

- **Custom configuration.**
  When you select option **Create customer or multiple RAID arrays**, IDA shows a window for you to select physical hard disks

Figure 3-31: Select Drivers for RAID Configuration



Clear the configuration to make all the disks status is **Unconfigured Good**.

Note: Only the disk which status is **Unconfigure Good** can be used for RAID configuration

To select drives for a new Logical array, do the following:

1. Select the unconfigured Good physical drives that you want to include in the RAID array.
2. Check the Status column to verify that the drive is Unconfigured Good
3. Choose **Create Arra**y.

The following table lists the status conditions and their explanation:

Table 5: Disk Status Condition and Explanation

Status Condition	Explanation
Online	The drive is already used in another array
Hotspare	the drive will be used to repair any array in the system that had a drive failure if the failed drive is equal to, or smaller than, the hot spare drive
Unconfigured Good	Drive is unused/available
Ready	Drive is online and operating correctly
Offline	Drive is offline or absent. No actions can be performed on the drive until it is back online
Unconfigured Bad	Drive is not operational and need to be replaced. Note: Disks with a status of "Unconfigured bad" cannot be used for RAID configurations
Foreign	Drive is part of an array created on a different controller or created within one enclosure and moved to another on the same controller. It can be used to create a new array after clearing configuration. You can choose RAID level, LD size, Stripe Size, Read Policy, Write Policy and IO Policy settings, and can allow optional single GLOBAL Hot Spare in page shown in Figure 3-32: Define RAID Array Attributes

Figure 3-32: Define RAID Array Attributes

The following table lists the options available and their explanation:

Table 6: RAID Array Attributes and Explanation

Options	Explanation
RAID level	RAID 0 (Data Striping), 1 (Disk Mirroring), 5 (Data Striping with Striped Parity), 6 (Distributed Parity and Disk Striping), 1E (a hybrid of RAID 10 that is available on some platforms)
Stripe size	Size of the data stripe across all disks. Each physical disk has a smaller strip of data. The sum of all the strips equals the stripe size
Read policy	No Read Ahead, Read Ahead, Adaptive. Read Ahead will read additional consecutive stripes. Adaptive will turn on Read Ahead for sequential reads and turn it off for random reads.
Write policy	Write Through or Write Back. With Write Through, I/O completion for write operations is signaled when the data is written to the disk. With Write Back, I/O completion is signaled when the data is transferred to cache.
Cache policy	Direct I/O or Cached I/O. Choose Direct I/O for uncached read and write operations. Choose Cached I/O to cache all write operations and check the cache first for read operations
Size	Logical drive size. The maximum value depends on the RAID level selected.

3.5.3. Advanced RAID Configuration

IDA still integrates Intel RAID Web Console 2 (RWC2), the Java* based graphical application that provides full functions for the Intel® RAID configuration. Those functions contain RAID configuration, monitoring and maintenance. To compare with IDA standard RIAD configuration, RWC2 operation is quiet complex. For details please refer the *RWC 2 User Guide*

You can enter RWC 2 interface by clicking main menu **Advanced | RAID Web Console 2**.

3.6. Unattended OS Installation

3.6.1. Overview

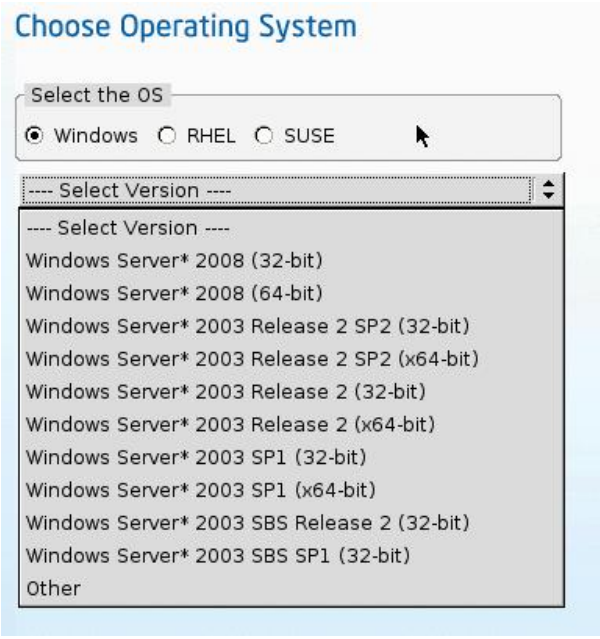
IDA unattended OS installation function provides you additional convenience to install Microsoft Windows*, SuSE* Linux* and RedHat* Linux* OS families. IDA has integrated Intel server device drivers including most of Intel RAID drivers. IDA can seamlessly install OS on supported RAID logical arrays without additional load driver steps or devices such as USB floppy. The current IDA version supports Windows* Longhorn and Vista*.

1. To enter the IDA unattended OS installation function area,
- click IDA main menu **OS Installation**
  or
- click **OS Installation** at IDA My Server page.

All IDA supported OS are organized into three groups—Windows*, RHEL*, and SUSE* -- that correspond to Windows server* family, RedHat* Linux* OS and SuSE* Linux* OS.

2. To choose the OS that you want to install, click the group name and click button **Select Version**

Figure 3-33: Choose OS



3.6.2. Supported OS

- Windows* server family
  - Windows* Server 2008 (32-bit)
  - Windows* Server 2008 (64-bit)
  - Windows* Server 2003 Release 2 SP2 (32-bit)
  - Windows* Server 2003 Release 2 SP2 (64-bit)
  - Windows* Server 2003 Release 2 (32-bit)
  - Windows* Server 2003 Release 2 (64-bit)
  - Windows* Server 2003 SP1 (32-bit)
  - Windows* Server 2003 SP1 (64-bit)
  - Windows* Server 2003 SBS Release 2 (32-bit)
  - Windows* Server 2003 SBS SP1(32-bit)

Note: All Windows* Server 2003 editions at here contain corresponding Enterprise and Standard version

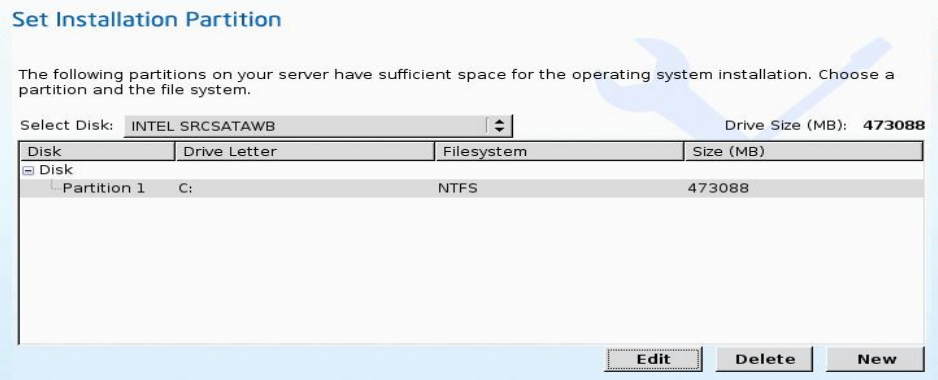
- RedHat Linux*
  - Red Hat* Enterprise Linux* 4.0 Update 2 (32-bit)
  - Red Hat* Enterprise Linux* 4.0 Update 2 (x86-bit)
  - Red Hat* Enterprise Linux* 4.0 Update 3 (32-bit)
  - Red Hat* Enterprise Linux* 4.0 Update 3 (x86-bit)
  - Red Hat* Enterprise Linux* 4.0 Update 4 (32-bit)
  - Red Hat* Enterprise Linux* 4.0 Update 4 (x86-bit)
  - Red Hat* Enterprise Linux* 4.0 Update 5 (32-bit)
  - Red Hat* Enterprise Linux* 4.0 Update 5 (x86-bit)
  - Red Hat* Enterprise Linux* 5.0 (32-bit)
  - Red Hat* Enterprise Linux* 5.0 (x86-bit)
  - Red Hat* Enterprise Linux* 5.0 Update 1 (32-bit)
  - Red Hat* Enterprise Linux* 5.0 Update 1 (x86-bit)
- SuSE Linux*
  - SUSE* Linux* Enterprise Server 9 SP2 (32-bit)
  - SUSE* Linux* Enterprise Server 9 SP2 (x86-bit)
  - SUSE* Linux* Enterprise Server 9 SP3 (32-bit)
  - SUSE* Linux* Enterprise Server 9 SP3 (x86-bit)
  - SUSE* Linux* Enterprise Server 10 (32-bit)
  - SUSE* Linux* Enterprise Server 10 (x86-bit)
  - SUSE* Linux* Enterprise Server 10 SP1 (32-bit)
  - SUSE* Linux* Enterprise Server 10 SP1 (x86-bit)

3.6.3. Installing OS Unattended

Windows* Server Series

1. At Choose Operation System page, select server to install from Windows Server 2003* series.
2. At Set Installation Partition page, create Partition.

Figure 3-34: Set Partition for Windows Installation



If server system has more disk controller such as SATA, SAS or RAID controller, you can click  at Select Disk to choose active disk. IDA will switch to corresponding disk that is under the selected disk controller.

- To create new parathion on disk free space, click **New.**
- To remove a partition Button **Delete.**
- To change partition size click **Edit**.

Partition file system can only be formatted as NTFS by IDA for Windows installation for following:

- Region and Location
  - Windows 2003 server series
    IDA requests you to select Time Zone, Windows Language and additional language
  - Windows 2008
    IDA only requests you to select Time Zone.

- Personalization
  Enter server owner name and organization.

- License Information
  Enter Windows server production key.

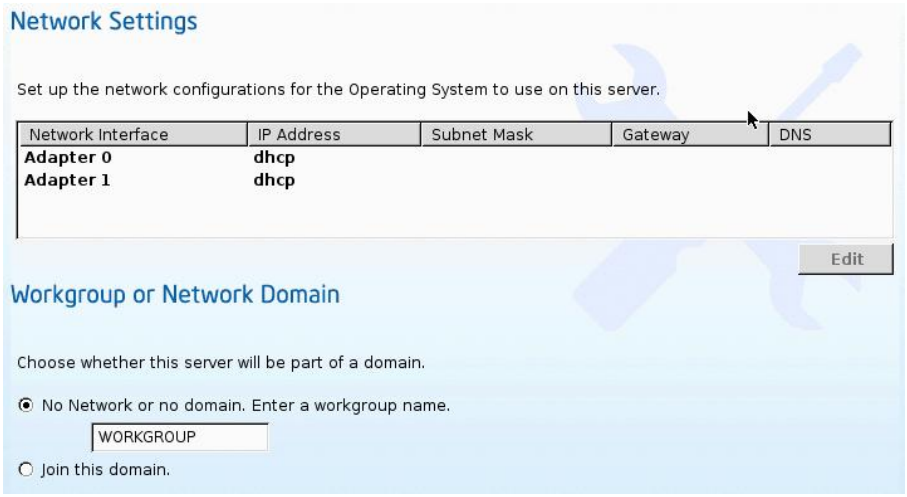
- Name and password

- Windows* 2003 server series
  You need to set server computer name and administrator password
- Windows 2008*
  You just need to set server computer name. Because administrator password will be reset when Windows 2008* installation completed, IDA doesn't request Windows* administrator password.

- Network Settings

Enter the network configuration settings for the onboard network adapters that will be detected by the Operating System during installation.

Figure 3-35: Network Setting For Windows Installation



Note: These settings will not affect the network settings for the BMC. Intel recommends that you set different IP addresses for the Operating System and BMC.
The "network interface" column lists each network adapter detected by the Intel Deployment Assistant. Your Operating System may have a different name after you install the Operating System.

- Get Updated Drivers

This section allows you to select the source that IDA can download serve drivers packages. Those drivers will be automatically installed to OS by IDA.

Choose one of the following options:

From support.intel.com
To get the latest drivers from the Intel support website, select this option. Please check that the server is only connected to one network during the download.
You can get the last Intel server drivers but you need to consider that will spend a long time if internet speed is low.

From Intel Deployment Assistant CD

Directly use the driver packages that store in IDA CD. Although IDA CD may not contain the last driver packages, but this option is the fast. IDA selects this option as default choice.

From my network

IDA can download a driver package stored on a network share folder. You need to manually download the latest drivers from http://support.intel.com website and copy to your network share.

From USB Disk on Key or Hard Drive

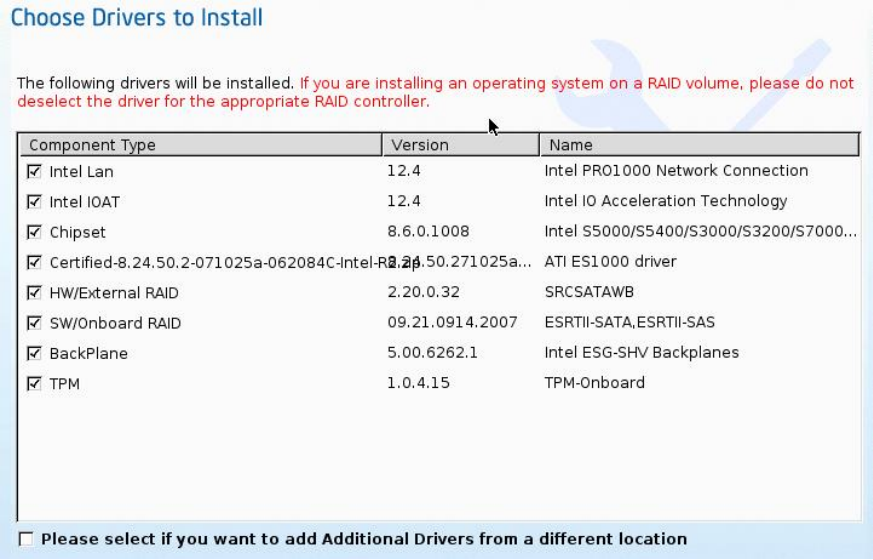
IDA can get the drivers stored on a USB key or USB hard disk drive. You need to manually download the latest drivers from http://support.intel.com website and copy to USB key.

- Choose Drivers to Install

IDA shows all available drivers downloaded from the driver source.
Uncheck the drivers that you don't want to install. But if you want to install an OS on a RAID volume, you can deselect the driver for the appropriate RAID controller.

The path to the selected drivers will be stored and will then be used to download and install the drivers during the Operating System installation.

Figure 3-36: Choose Drivers for Windows Installation



IDA can load third party drivers by selecting the option – **Please select if**

you want to add Additional Drivers from a different location.

- Insert OS CD
  - Windows 2003* server series
    Insert Windows 2003* OS CD and click **Next** button for IDA to apply all settings. After completing this process, IDA asks to reboot server system. You need to leave the OS CD in the CD-ROM, and system will automatically complete all OS install steps after this reboot.

  - Windows 2008*
    Insert Windows 2008 OS DVD and a USB key with at least 10M free space, which IDA can store server driver temporary. Click **Next** button for IDA to apply all settings. After IDA completes this process, click **Restart** button to reboot server.

Figure 3-37: Screen Indication of Install Windows 2008 Server

During server POST, press <**F2**> key to enter server BIOS configuration interface. If your server has more than one hard disk device, edit the [**Hard Disk Order**] in BIOS menu [**Boot Options**] to move the disk that are installed Windows 2008 server by IDA as the first **Hard Disk #1**. Return back to BIOS [**Boot Option**] page, set **Boot Option #1** to the DVD-ROM that has Windows 2008 server DVD, set disk that are installed Windows 2008 server as **Boot Option #2**. Press <**F10**> to save BIOS setting and leave.

Server will boot from Windows 2008* DVD. Observe the Windows 2008 start to install automatically. Don't remove USB key on this server during this process.

Linux* Server Series

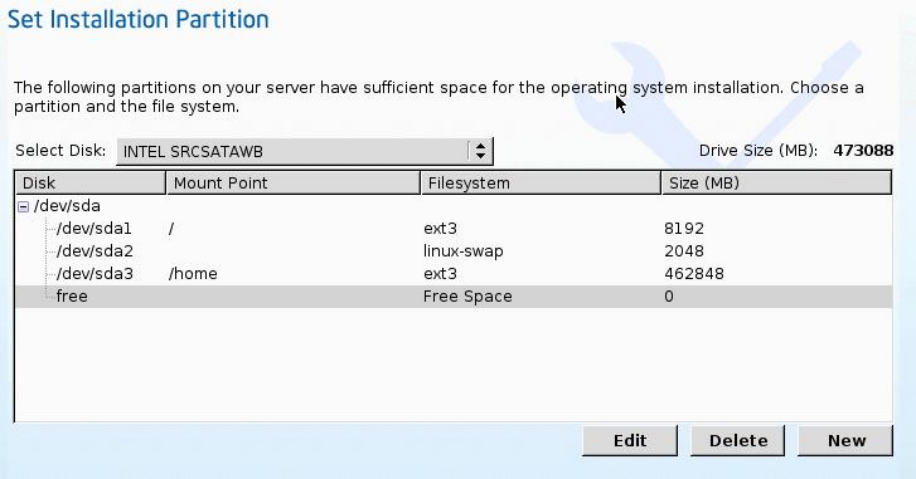
- Select one of Linux* server from Red Hat* or SuSE* series that you want to install at IDA Choose Operation System page
- Create Partition at Set Instillation Partition page.
  If server system has more disk controller such as SATA, SAS or RAID

controller, you can click  at **Select Disk** to choose active disk controller. IDA will switch to corresponding disk that is under the selected disk controller and display a recommended default partition.

Button **New** is used to create new parathion on disk free space. Button **Delete** is for removing a partition and button **Edit** is used to change partition size.

Partition Root and Swap are necessary. If use misses them, IDA will generate an alert message. IDA gives you a suggested partition solution, accept it if you are not familiar with Linux* partition.

Figure 3-38: Set Partition for Linux* installation



- Basic configuration

  Edit below items at Basic Configuration page.

  - Root Password
  - Default language
  - Keyboard
  - Time Zone
  - Additional Languages

Figure 3-39: Basic Configuration for Linux* Installation

- Package Selection
  Select all Linux* packages that you want to install on server.
- Network Settings
  Enter the network configuration settings for the onboard network adapters that will be detected by the Operating System during installation.

  Note: These settings will not affect the network settings for the BMC. Intel recommends that you set different IP addresses for the Operating System and BMC.
  The "network interface" column lists each network adapter detected by the Intel Deployment Assistant. Your Operating System may have a different name after you install the Operating System.

- Get Updated Drivers

  This section allows you to select the source that IDA can download serve drivers packages. Those drivers will be automatically installed to OS by IDA.

  Choose one of the following options:

  From support.intel.com
  To get the latest drivers from the Intel support website by select this option. Please check that the server is only connected to one network during the download.
  You can get the last Intel server drivers but you need to consider that will spend a long time if internet speed is low.

From Intel Deployment Assistant CD

Directly use the driver packages that store in IDA CD. Although IDA CD probably didn't contain the last driver packages, this option is the fastest. IDA selects this option as default choice.

From my network

IDA can download a driver package stored on a network share folder. You need to manually download the latest drivers from http://support.intel.com website and copy it to your network share.

From USB Disk on Key or Hard Drive

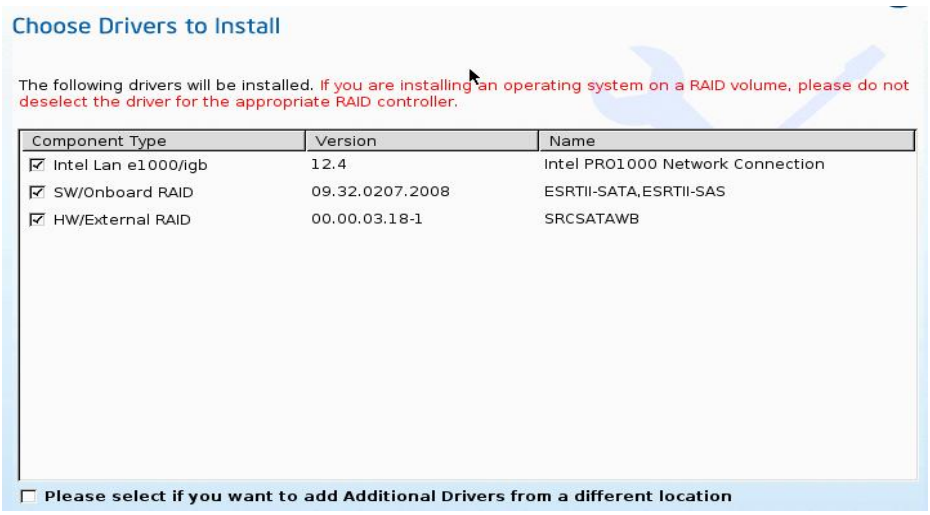
IDA can get the drivers stored on a USB key or USB hard disk drive. You need to manually download the latest drivers from http://support.intel.com website and copy to USB key.

- Choose Drivers to Install

IDA shows all available drivers that downloaded form the driver source. Uncheck the drivers that you don't want to install. But if you want to install an OS on a RAID volume, you can deselect the driver for the appropriate RAID controller.

The path to the selected drivers will be stored and will then be used to download and install the drivers during the Operating System installation.

Figure 3-40: Choose Drivers for Linux* Installation



- Insert OS CD

You need to insert Linux* Server OS CD 1 and click **Next** button, IDA will start to apply all settings. After completed this process, IDA will inform you

to reboot server system. You should leave the OS CD in the CD-ROM, system will automatically complete all OS install steps after this reboot.

3.6.4. Package Third Party Driver

3.6.4.1. Overview

IDA unattended OS installation allows you to load third party device drivers if your server has hardware device which driver didn't contain IDA driver list.
Any customer's driver to be slipstreamed into an OS using the Intel Deployment Assistant must be packaged in the format described as below:

- All driver files for the hardware component should be packaged into a single zip file.
- The zip package can not contain zip files inside. It can contain tar.gz and .img files.
- The zip file should contain a properly formatted osd.xml file in the root of the zip file

3.6.4.2. osd.xml

The file osd.xml is an xml file providing information required for slipstream installation.

- Driver zip file name.
- Hardware device category name and device name,
- Location of the inf file of the drivers included in the package,
- A tag for any installation script included for Linux*

The basic xml file structure is shown below and can be used as a template. Replace all sections shown as () with specific information for this pack.

<?xml version="1.0" encoding="utf-8"?>
<osi-meta>
<jdp pid=?platform IDs, separated by comma)?>
<jdrivers os_type=?OSs supported by the pack)?>
<osi_driver name="(hardware)" devname=(device name) inf_loc="(inf location)" ver="(driver version)"/>
</jdrivers>
</jdp>
</osi-meta>

Note: Do NOT include any spaces between commas when listing multiple options.

(platform IDs), use a Comma to separate list.
For example:
S5000PAL,S5000XAL,S5000PSL,S5000XSL,S5000XVN,SC5400RA,
S5000VSA,S5000VCL,S3000AHX, S3000AHV, S3000AH

Note: Please refer Intel® Server TPS for your platform ID name

(OSs supported by the pack), use a Comma to separate list.
For example:
w2k,wsbs,w2k3,w2k3x64,wxp,wxpx64
rhel4x86,rhel4x64,rhel4u2x64,rhel4u2x86,rhel4u3x64,rhel4u3x86,rhel5x86,rhel5x64,
sles9x86,sles9x64,sles9sp1x86,sles9sp1x64,sles9sp2x86,sles9sp2x64,sles9sp3x86,sles9sp3x64,sles10x86,sles10x64

(hardware)
For example:
BackPlane, Intel PRO1000 Network Connection, chipset, HW/External RAID, RAID SAS,

(device name)
For example:
Intel® Lan e1000, SRCSAS144E,SRCSAS18E,SROMBSAS18E

(inf location)
Replace with relative path to the info file.
Each different location should be specified using a separate xml node with os_type attribute value. For Linux*, the inf location can be an empty string or an img file name. Sample ".\."

(release script Only used for Linux* driver package).
put bash scripts to untar and compile the source or empty script for a precompile .img file.

Steps to create osd.xml file and ZIP driver pack.

- Copy the above template or a real osd.xml from a driver pack to a file
- Replace the () sections if using the template.
- Save the file as osd.xml
- Extract the driver files to a folder
- Put the newly created osd.xml in the folder
- Zip the folder into a single file.

3.6.4.3. Sample osd.xml Files

- Sample 1 windows osd.xml

```
<?xml version="1.0" encoding="utf-8"?>
<osi-meta>
      <jdp pid="S5000PAL,S5000XAL,S5000PSL,S5000XVN" >
      <jdrivers os_type=w2k,w2k3,wsbs,wxp?
      <osi_driver name="RAID SAS" devname=
      "Intel SRCSAS144E/SRCSAS18E" inf_loc=".\." ver="1.18.0.32"/>
       </jdrivers>
       </jdp>
</osi-meta>
```

- Sample 2 Linux osd.xml - package contains source and script

```
<?xml version="1.0" encoding="utf-8"?>
<osi-meta>
 <jdp
  pid="S5000PAL,S5000XAL,S5000PSL,SC5400RA,S5000XSL,S5000XVN,S
  5000VSA,S5000VCL,S3000AHX,S3000AHV,S3000AH">
 <jdrivers
os_type="rhel4u2x86,rhel4u2x64,rhel4u3x86,rhel4u3x64,sles9sp2x86,sle
s9sp2x64,sles9sp3x86,sles9sp3x64">
<osi_driver name="Intel PRO1000 Network Connection" devname="Intel
Lan e1000" inf_loc=""  ver="12"/>
 </jdrivers>
 </jdp>

 <script><![CDATA[#!/bin/sh
 # script to install Intel e1000 LAN driver
 MAIN_DRIVER_FILE=intel-lan_linux_v11.1.tar.gz
 DVER=7.2.7
 SUB_DRIVER_FILE=e1000-$DVER.tar.gz
 if [ ! -f $MAIN_DRIVER_FILE ];then
      echo "Main Driver not found!"
      exit
 fi

 tar zxvf $MAIN_DRIVER_FILE|| {
```

```
        echo "Unable to extract main driver !"
        exit
    }

    cd drivers/
    if [ ! -f $SUB_DRIVER_FILE ];then
        echo "Sub Driver not found!"
        exit
    fi
    tar zxvf $SUB_DRIVER_FILE|| {
        echo "Unable to extract sub driver !"
        exit
    }

    tar zxvf e1000-$DVER.tar.gz
    rmmod e1000
    cd e1000-$DVER
    cd src/
    make && make install && depmod
    modprobe e1000

    cd ../../../
    RH_NW_SETUP=rhel_nwsetup.sh
    SL_NW_SETUP=sles_nwsetup.sh

    if [ -f /etc/redhat-release ];then
        chmod +x $RH_NW_SETUP
        ./rhel_nwsetup.sh
    fi
    if [ -f /etc/SuSE-release ];then
        chmod +x $SL_NW_SETUP
        ./sles_nwsetup.sh
    fi

    cd /]]></script>
    </osi-meta>
```

- Sample 3 Linux osd.xml with .img

```
    <osi-meta>
        <jdp
pid="S5000XSL,S5000PSL,S5000PAL,S5000XAL,S5000VSA,SC5400RA,S5000
XVN,X5000VCL,S3000AH,S3000AHV,S3000AHX">
        <jdrivers os_type="rhel4u2x86,rhel4u3x86,rhel4u2x64,rhel4u3x64">
```

```
            <osi_driver name="HW/External RAID" devname="SRCSAS18E
SAS-3G,SRCSAS144E SAS-3G,SROMBSAS18E SAS-3G"
                    inf_loc="ir3_sas-v00.00.03.03-1-rhel40-all.img"
                    ver="00.00.03.03-1"/>
        </jdrivers>
    </jdp>

    <script><![CDATA[#!/bin/sh
    echo no script for DuDs
    ]]></script>
    </osi-meta>
```

3.7.OS-HTML

OSHTML is a set of HTML pages contains links to download drivers, utilities and latest IDA ISO image. The HTML pages are located in CD and can automatically run when the CD is put in a machine running Windows/Linux* operating systems. This HTML pages gets executed in a default browser which could be an internet explorer or Mozilla Firefox* browser.

You can get below information when OS-html automatically loads by browser

- Home page
  Introduce the Intel server system hardware features

- Drivers and Utilities
  In this page, you can download server hardware drivers and utilities that organized in different OS sub-page. For example, you click Microsoft Windows* to enter a sub-page that contains all available drivers and utilities in IDA CD.

- Documents
  You can find current Intel server system and devices user guide or spec documents at this page.

- Customer Support
  This page contains Intel Server system technical support information

- Update
  At this page, you can download new IDA version. IDA has ability to detect the newer IDA version on Intel support web site. This page has a tab “Upgrade to new version”. Clicking on it causes IDA to query http://support.intel.com for new updates. IDA reports whether there is an

available version of IDA that is newer than the current ones. If there is a new IDA image available, you can select to download it.

4. Re-branding IDA

4.1. Introduction

IDA allows Intel Server OEM customer to update all IDA Intel logo with customer's version, replace IDA bootsplash picture, change the pictures of IDA title bar, menu bar and left pane, change the styles of front and button, update IDA help files, update drivers and system and update packages description files. This chapter introduces the detailed process of how to re-brand IDA.

File names in IDA are case dependent. For consistency, all file names will use only non-capitalized letters, including the file extension. If you change the capitalization, the files will not be found by the utility. The "dash" in file names is always an underscore.

Re-branding should only be performed on the files mentioned in this document as explained in this document. Additional information will be available at a future date.

All files can be edited with a simple text editor and should not be edited with Microsoft Word* or any other tool that adds formatting characters or line breaks.

Almost all branding is contained in graphic files which are "called" from the file \ui\rebrand\qd-oem.css. All graphics are located in \ui\images\(subfolder).
In most cases, there are two different methods to change the displayed image. In either case, **all** images must be the same size (height x width in pixels) as the file they replace.

Method 1: Use 'your' image with 'your' filename, and change the filename of the graphic called in the CSS file.

The syntax of calling a graphic in the CSS is always:

```
(
list-style-image: url("folder/yourfile.gif");
)
```

where items in bold are constant.

Method 2: Keep the graphic's filename the same, but change the image content. (Take yourfile.gif and rename it intel_logo.gif. Then overwrite the existing intel_logo.gif with 'your' file.)

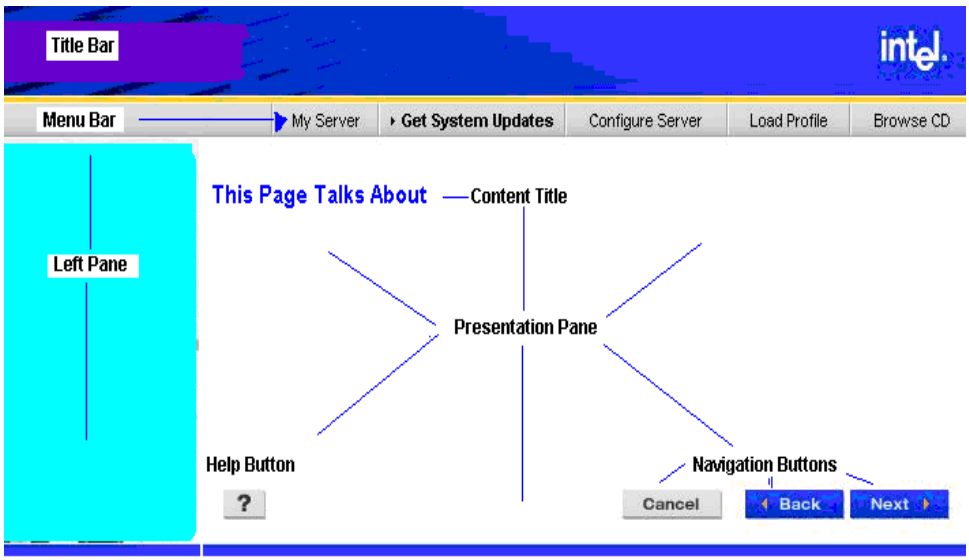
This will be explained in more detail later in this document.

4.2.Common Screen Elements

Every screen shares a common look and feel. The screen is divided into the following major areas:

- Title Bar
- Menu Bar
- Left Pane
- Presentation Pane which contains the Content Title, Content Area, and Navigation Buttons

Figure 3-1: Common Screen Elements



The Title Bar, Menu Bar, Left Panel, Screen Title, and Buttons are ALL made entirely from graphic files. Any text in this area is part of an image. Actual text on the Presentation Pane is not available to change in this version.

4.2.1. The Title Bar

The Title Bar appears on **every** screen. Any changes to the graphics here will change **all** pages.

4.2.2. The Menu Bar

The Menu Bar appears on most of the screens after the introductory screen (for example, after the license and loading screens) and provides buttons to the minor navigation areas: My Server, Get System Updates, Configure Server, Load Profile, and Browse CD. There is no Intel branding in the Menu Bar**.**

4.2.3. The Left Pane

The Left Pane appears on all pages but the content varies. The left pane may contain an image of a person or may include a left “breadcrumb” navigation list. There is no Intel branding in the Left Panel**.** To change any picture would change the appearance of that graphic on all screens that use that graphic.

4.2.4. The Presentation Pane

The Presentation Pane appears on every page (after the initial splash screen) and contains a Content Title unique to the specific screen, the Navigation Buttons, and the “Content” which is text describing the current task. All User interaction (other than choosing a navigation link from the Menu Bar) occurs in this panel. Some Intel branded text may occur in the GUI and the Help content. Changing of this text is not supported in this release.

4.2.5. The Content Title

The Content Title is unique to each screen and each one is a graphic file. To change a title, replace the matching graphic found in the \ui\images\js_headers folder.

4.2.6. The Help and Navigation Buttons

All Help and Navigation Buttons are graphic files (text is part of the image), but these buttons do not contain any Intel branding. Changing the actual image used for a button will change the image of that button on every screen upon which it appears.

4.3.Unique Screens

4.3.1. Initial Splash Screen

After booting up, the first graphical image that is displayed is the “splash screen.” This image is located at \ui\images\juntura_splash.jpg. The should be JPEG, 1024x768 pixels and color space YCbCr mode with 2x2, 1x1, 1x1 sub-sampling.

Figure 4-1: Splash Screen

To change the splash screen, replace the juntura_splash.jpg file with a customized version (use the same file name), then rebuild the ISO image from Linux* using the provided script.
Rebuilding the ISO image without using the script will not rebuild the initrd.gz which actually loads the image. *(see:* Recreating ISO Image

).

4.3.2. License Screen

The Intel license is required, but additional OEM licensing may be appended to the Intel license file as a supplement (this is not recommended).

4.3.3. “Loading” Screens

The Loading Screens show the progress bar used while copying, downloading, or updating files. These screens are not branded and changes are not supported.

4.4. Rebranding Common Elements

4.4.1. Method 1

Most of the rebrandable graphic files are “called” from the cascading style sheet (CSS) file located at \ui\rebrand\qd-oem.css except the Unique Screen like Splash Screen. So to change an image using Method 1, you must change the name of the graphic file called in the qd-oem.css file.

Recap of Method 1: Use your image named with a filename of your choice and change the filename listed in the file “qd-oem.css”. The new filename graphic must match the pixel dimension of the graphic file it is replacing. You do not need to match the file location as long as you provide the complete path in the URL.

Example of implementing a change with Method 1:

1. Start with your logo file named “logo.jpg” (matching the pixel size of the file from Intel “images/js_topnav/intel_logo2.gif”.)
2. Place logo.jpg in the”images” directory.
3. Change the file qd_oem.css from:

```
#img_intel_logo
(
    list-style-image: url("images/js_topnav/intel_logo2.gif");
}
```

to read

```
#img_intel_logo
(
    list-style-image: url("images/logo.jpg");
}
```

Important Note: There are some branding changes that cannot use Method 1 because the graphic filename is specifically called by software code to which you do not have access. This will be noted in the following sections, when necessary.

4.4.2. Method 2

The alternative method, which can be used in all cases, requires that you use the same graphic filename that Intel used and simply replace the image content.

Recap of Method 2: Keep the graphic’s filename as set by Intel but change the image content. Your content is named to the Intel filename and placed in the

Intel location. You must match the filename, the file format (.gif, .jpg), and the pixel dimensions of Intel's original file. But you do not need to edit the CSS file.

Example of Method 2:

1. Start with your logo file named "logo.gif" (matching the pixel size of the file from Intel "images/js_topnav/intel_logo2.gif")
2. Rename logo.gif as intel_logo2.giff
3. Place your intel_logo2.gif into the folder /images/js_topnav/ (overwriting Intel's file of the same name)

The following tables will list:

- The graphic filename and it's directory location
- The qd-oem.css section for Method 1
- The Intel provided image of that filename with pixel size requirements

For Method 1, change the URL of the graphic filename. This is always in the following format and only change the sections in bold.

```
list-style-image: url("images/directory/filename.format");
```

With Method 2, do NOT edit the qd-oem.css file. Simply name your graphic file the same as listed and place the renamed file in the listed directory.

4.4.3. Display Screen

The display screen is a text window that shows text prior to the appearance of the splash screen. To change the display screen modify the display.cfg file at boot\isolinux to contain the desired text. For the S5000 family of server boards, do not remove the text related to RAM.

4.4.4. The Title Bar

To the Title Bar main section, any change will apply to ALL pages.

Table 7: Title Bar

Filename/Location	CSS Section	Intel Image
images/js_topnav/ topheader2.jpg (also topheader.jpg)	#img_topheader	 97x58
images/js_topnav/ my_topheader_bk.jpg	#my_topheader_bk	
images/js_topnav/ intel_logo2.gif	#img_intel_logo	 85x70 for intel_logo2
images/js_topnav/ intel_logo.gif images/js_lftnav/ intel_logo.gif	97x58 pixels	

4.4.5. Other Common Frame Graphics

Table 8: Color Bar Graphics

Filename/Location	CSS Section	Intel Image
images/js_topnav/ yellow_band.gif	#img_yellow_band (yellow line)	750x5
images/js_topnav/ footer.gif	#footer	750x8
Cannot change	White Space	1x1

4.4.6. The Menu Bar

To change the navigation choices, the images would need to be changed but the file names MUST remain the same. Changing these menu text graphics is not supported in this release. These files are located in \ui\images\js_topnav and are each graphic has both a non bolded and also a bolded (selected state) image. The plain state is named “topnav_(text).gif”. The bolded state naming convention is “topnav_(text)_on.gif”.

Table 9: Menu Bar

Filename/Location	CSS Section	Intel Image
Images\js_topnav\ topnav_horizontal_bg.gif	Not changeable	Gray Background 10x20
images\js_topnav\ topnav_v_divider.gif	Not changeable	Vertical divider 2x21
images\js_topnav\ topnav_black_arrow.gif	Not changeable	Black >> arrow 7x7
images\js_topnav\ topnav_black_arrow_ back.gif (left)	Not changeable	Black << arrow 7x7

4.4.7. The Left Pane

The files are stored in \ui\images\js_lftsd_photos in .jpg format. Images that include top navigation colors are 200x621 pixels and images without top navigation are 174x139 pixels.

Table 10: Left Pane

Filename/Location	CSS Section	Intel Image Size
Images/js_lftsd_photos/lftside_ photo_man.jpg	#img_photo_manwithservers	200X621
Images/js_lftsd_photos/lftside_ photo_woman.jpg	#img_photo_noTopNav_womanserve r	200X621

4.4.8. Content Titles

Changes to the Content Title are not supported in this release. The text is all in graphic files stored in \ui\images\js_headers using the naming convention hdr_(description).gif and the filenames must NOT be changed. Each image is 440x25 pixels.

4.4.9. Help and Navigation Buttons

Buttons are graphics (including any text) and are stored in \ui\images\js_buttons\. All buttons except icons are 18 pixels high but the width varies by amount of text.

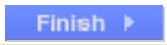
Button Naming Conventions:

Bottom navigation button files	btn_(color)_(description)_(state).gif.
Main Menu Icon based buttons	btn_Icon_(text).gif (36 pixels high)
Plain arrow buttons	btn_(arrow type)_(color).gif

Most buttons exist in 3 styles – normal, down, and inactive.

- inactv (not available for you to choose = inactive),
- dwn (a darker blue indicating you have clicked this button) and (normal state, not selected but available).

Table 11: Save Buttons

btn_blue_finish_inactv.gif		Inactive (not available)
btn_blue_finish_dwn.gif		Down (user clicked)
btn_blue_finish.gif		Normal state

4.4.10. Watermark Graphics

The three watermark (semi-transparent) images showing navigation use the same style images as the 3 Main Menu icons. They are kept in \ui\images\js_bkgrnd_icons and are 280x280 pixels.

4.5.Changing Font Styles and Sizes

Font properties and background color of the main Presentation Pane may be changed by editing the qd-oem.css file.

Table 12: Font Settings

Qd-oem.css Location	Settings	Value
vbox#vbox_main	background-color:	White;
vbox#content_box	font-family:	Arial;
	font-weight:	Normal;
	font-size:	12px;
	background-color:	White;
	max-width:	59em;

4.6.Rebranding Help Files

To rebrand the help files, you need to update each file in /ui/help folder. On Linux* systems, you can use the Sed command to replace all the files with the desired company name.

For example, Sed –i “s,Intel ,companyname ,g” *

4.7.Customizing Update Packages

System Software Update Packages must be packed in a .zip format and can be placed at any known web path location that must be listed in the jmaster.xml file. All packages must be enumerated (described) in a file named jmaster.xml which follows a very strict format and syntax. The location of the jmaster.xml file is called out in the qd_oem.dtd file.

4.7.1. The Update Package

The actual Update Package contains system software files for one particular model server board at a certain point in time. There is no changeable branding in the package. (Branding may occur within files that go into an Update Package but their customization is not covered in this document.)

Contents of the Update Package

Update packages must have the below listed system configuration files compressed into a .zip format. There is no required naming format for the Update Packages other than the .zip file extension. It is suggested that the files be named to easily distinguish their version, board model, and date. Files that may be placed in the update package include:

Location of the Update Packages

Update packages may be placed in any location which can be described via a URL address. This address is listed in the **jmaster.xml** file per package so each package may be stored in a separate location if desired.

4.7.2. The Update Packages Description File: jmaster.xml

The single file that describes all available Update Packages is named jmaster.xml. You do not need to change the file on the Deployment Assistant media, only on the update website that is set up for the Update Packages. The location of this file is “called” from the utility which learns the location of this file from the qd_oem.dtd file located on the Deployment Assistant media at \ui\rebrand\.

Only one jmaster.xml file should be used and may refer to multiple Update Packages at one or multiple web based addresses where the packages are stored.

Web Location of the jmaster.xml File

The web address of the jmaster.xml file is specified in the qd_oem.dtd file.

(This is not necessarily the address of the Update Packages themselves.) This is currently the only definition in the qd_oem.dtd file.

```
<!--Web location of the Sup Server-->
   <!ENTITY remoteSupServer "http:///(IP#)/ofu/jmaster.xml">
```

The URL can be either the IP address or the “name” (text address) of a webhost (For example, www.intel.com) plus any subdirectory structure to navigate to the jmaster.xml file.

File Structure of the jmaster.xml Content

The .xml file must follow very strict structure and syntax.

The header section of jmaster.xml should not be changed.

```
<?xml version="1.0" encoding="UTF-8"?>
<ofu-meta xmlns:xsi=http://www.w3.org/2001/XMLSchema-instance
xsi:noNamespaceSchemaLocation="jmaster.xsd">
```

Packages should be grouped by exact platforms. The first information to provide is the Platform IDentification (pid).

```
<platform pid="SE7520BD22">
```

Each package needs to have its file location, filename, date, and overall version

plus repeat of platform type provided.

```
<sup loc="http://support.intel.com/SE7520BD22/Dec.zip" date="dec-2005.zip"
sup_date="Dec-2005" sup_ver="1.0" platform_type="SE7520BD22">
```

Each package must then provide the content information per component listing element name (bios, bmc, frusdr, hsc, lcp), version, filename, and date.

```
<sup_element name="bios" ver="SE7520BD22.86B.P.07.20.0066.03"
file="sbd2a066.rom" date="07-MAR-2005"/>
<sup_element name="bmc" ver="0.42" file="7520BD42.hex" date="07-MAR-2005"/>
<sup_element name="frusdr" ver="6.6.2" file="SBD2BMCM.SDR, SBD2m_VM.SDR"
date="21-Feb-2005"/>
```

After each package listing, close the package information.

```
</sup>
```

You can then add additional packages for the same board (exact model).

```
<sup loc="http://.....
   … … ..
</sup>
```

At the end of a list of packages for the first model of board, close the platform type.

```
</platform>
```

You may then add additional board types by starting with the PID.

```
<platform pid="SE7520BD23">
```

When finished, close the file.

```
</ofu-meta>
```

In the future, it may be possible to have more than one jmaster.xml but at this time only one file and one file URL address is supported in the qd_oem.dtd file.

4.8.Customizing Software Features

The Customizing software feature allows an OEM to remove/hide specific features available in the Intel Deployment Assistant Utility. To change the options that appear in the User Interface, unpack the .ISO and edit the customize.ini file located in the ui/rebrand directory of the CD. Then create a new ISO using the provided rebranding script.

Each feature in the UI is identified by a string with a value set to 1. The feature can be removed from the UI by setting the value of the corresponding feature string to 0. Additionally, the list of supported Operating Systems can be limited. No new Operating Systems can be added to the list, but those already present can be removed from the list by setting their value to 0.

The general procedure to remove a feature is as follows:

1. Extract the ISO to a folder.
2. Locate the customize.ini file in the ui/rebrand directory.
3. Identify the feature to remove.
4. Edit customize.ini by altering the value from 1 to 0 for the feature to be removed.
5. Create the ISO using the rebranding script.

Note: Removing the feature string line will not remove the feature. The string must remain and have. It's value set to 0.

4.8.1. Default customize.ini Contents

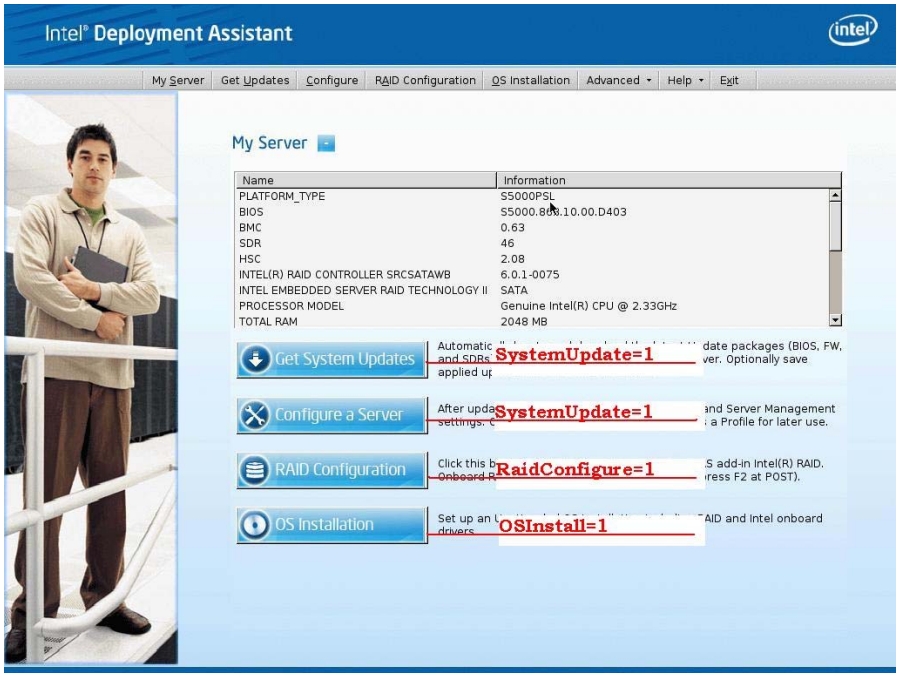
# **Feature Configuration options**
SystemUpdate=1
SystemConfigure=1
SystemInformation=1
BIOSConfigure=1
BMCConfigure=1
OSInstall=1
RaidConfigure=1
UnattendedOS=1
LoadProfile=1

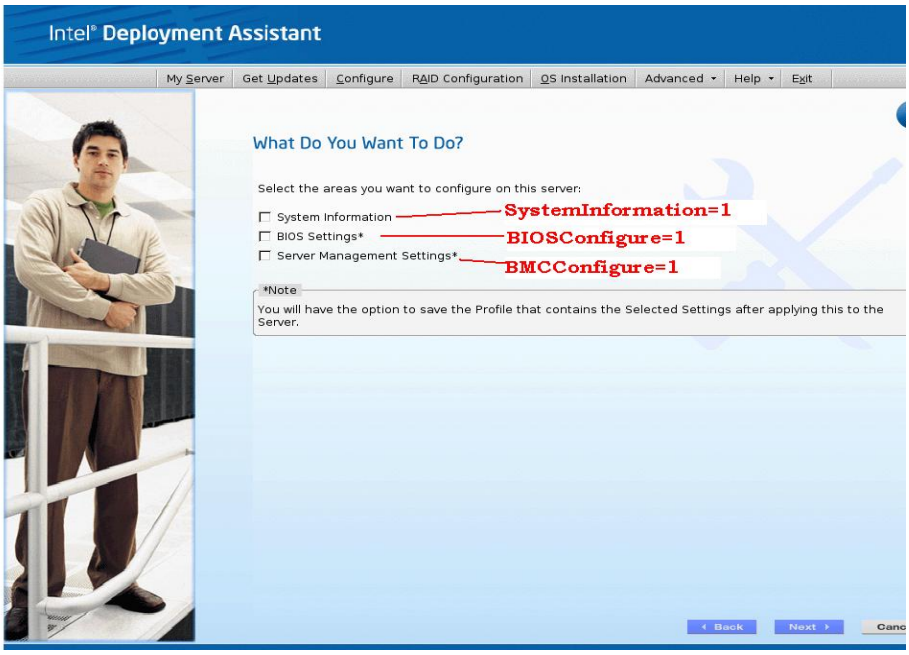
OS list Configuration options
"Windows Server* 2008 (32-bit)" [w2k8] = 1
"Windows Server* 2008 (64-bit)" [w2k8x64] = 1
"Windows Server* 2003 Release 2 (32-bit)" [w2k3] = 1
"Windows Server* 2003 Release 2 (x64-bit)" [w2k3x64] = 1
"Windows Server* 2003 Release 2 SP2 (32-bit)" [w2k3] = 1

"Windows Server* 2003 Release 2 SP2 (x64-bit)" [w2k3x64] = 1
"Windows Server* 2003 SP1 (32-bit)" [w2k3] = 1
"Windows Server* 2003 SP1 (x64-bit)" [w2k3x64] = 1
"Windows Server* 2003 SBS SP1 (32-bit)" [wsbs] = 1
"Windows Server* 2003 SBS SP1 (x64-bit)" [w2k3x64] = 1
"Windows Server* 2003 SBS Release 2 (32-bit)" [w2k3] = 1
"Windows Server* 2003 SBS Release 2 (x64-bit)" [w2k3x64] = 1
"Windows Vista* (32-bit)" [wvisx86] = 1
"Windows Vista* (x64-bit)" [wvisx64] = 1
"Windows* XP (32-bit)" [wxp] = 1
"Windows* XP (x64-bit)" [wxpx64] = 1
"Windows* XP SP2 (32-bit)" [wxp] = 1
"Windows* XP SP2 (x64-bit)" [wxpx64] = 1
"Red Hat* Enterprise Linux* 4.0 Update 2 (32-bit)" [rhel4u2x86] = 1
"Red Hat* Enterprise Linux* 4.0 Update 2 (x86-64)" [rhel4u2x64] = 1
"Red Hat* Enterprise Linux* 4.0 Update 3 (32-bit)" [rhel4u3x86] = 1
"Red Hat* Enterprise Linux* 4.0 Update 3 (x86-64)" [rhel4u3x64] = 1
"Red Hat* Enterprise Linux* 4.0 Update 4 (32-bit)" [rhel4u4x86] = 1
"Red Hat* Enterprise Linux* 4.0 Update 4 (x86-64)" [rhel4u4x64] = 1
"Red Hat* Enterprise Linux* 4.0 Update 5 (32-bit)" [rhel4u5x86] = 1
"Red Hat* Enterprise Linux* 4.0 Update 5 (x86-64)" [rhel4u5x64] = 1
"Red Hat* Enterprise Linux* 5.0 (32-bit)" [rhel5x86] = 1
"Red Hat* Enterprise Linux* 5.0 (x86-64)" [rhel5x64] = 1
"Red Hat* Enterprise Linux* 5.0 Update 1 (32-bit)" [rhel5u1x86] = 1
"Red Hat* Enterprise Linux* 5.0 Update 1 (x86-64)" [rhel5u1x64] = 1
"SUSE* Linux* Enterprise Server 9 SP2 (32-bit)" [sles9sp2x86] = 1
"SUSE* Linux* Enterprise Server 9 SP2 (x86-64)" [sles9sp2x64] = 1
"SUSE* Linux* Enterprise Server 9 SP3 (32-bit)" [sles9sp3x86] = 1
"SUSE* Linux* Enterprise Server 9 SP3 (x86-64)" [sles9sp3x64] = 1
"SUSE* Linux* Enterprise Server 10 (32-bit)" [sles10x86] = 1
"SUSE* Linux* Enterprise Server 10 (x86-64)" [sles10x64] = 1
"SUSE* Linux* Enterprise Server 10 SP1 (32-bit)" [sles10sp1x86] = 1
"SUSE* Linux* Enterprise Server 10 SP1 (x86-64)" [sles10sp1x64] = 1

4.9.Customizable UI Screens

Figure 9-1: Screen Shot that Shows Associated Feature String with the GUI Buttons





Example

In this example, the OEM wants to remove the following features: System Information, BIOS Settings, Server Management settings under Configure Server. To remove these features, the customize.ini should be modified as follows:

Feature Configuration options:

SystemUpdate=1

SystemConfigure=1

SystemInformation=0

BIOSConfigure=0

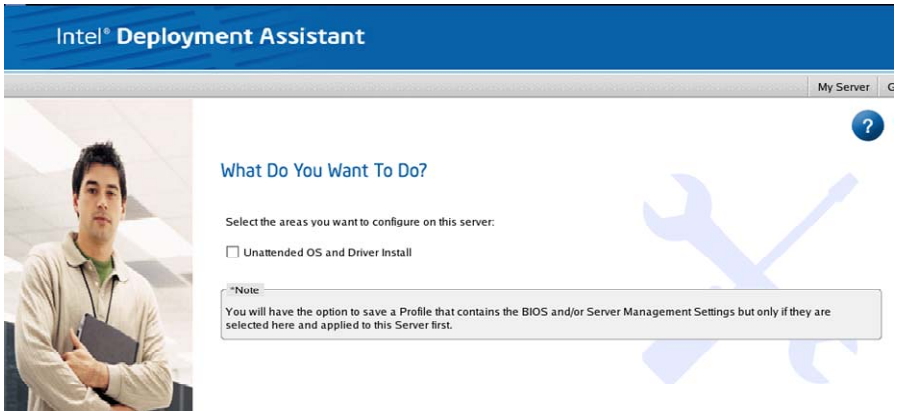
BMCConfigure=0

OSInstall=1

RaidConfigure=1

LoadProfile=1

Figure 9-2: UI Screen after Customization



4.10. Recreating ISO Image

The following sequence of steps needs to be followed to re-create the OEM-branded version of the Intel® Deployment Assistant CD ISO file. You must use the provided script from a Linux* system if you are changing the main splash screen. The script of iso_creator.sh can be found at IDA2.5 CD root folder. We recommend use run below commands and script iso-creator.sh at SuSE Linux* server 9 SP3.

Step-by-step instructions (for Linux* OS only):

Make sure you have appropriate permissions.
Mount the ISO so that it can be modified

1. mkdir /home/oem

// create a folder, name is oem

2. mount –o loop ida.iso /home/oem

// suppose you had copyed IDA CD ISO image to your current folder and mount it to folder oem. If you got IDA physical CD, then you can use command like: mount /dev/cdrom /home/oem

3. mkdir /home/oem_new

4. cp –r /home/oem/ /home/oem_new/
//copy all files in IDA CD to the folder oem_new

5. cp ./ iso_creator.sh /home/oem_new
//Copy the iso_creator.sh to /home/oem_new/

6. Modify the files as described about for the component you wish to re-brand

7. Run the “iso_creator.sh” script in the directory above where the CD contents where extracted.
./iso_creator oem_assistant.iso /home/oem_new

The iso_creator.sh requires mkisofs (version: **mkisofs-2.01.1-5**) to be installed. The script requires two arguments: the name of the ISO to be created and the folder to create the ISO from.

If successful, the newly created ISO image (oem_assistant.iso) can be found in the current directory (that is, /home/oem_new).

Appendix A: IDA 2.5 Errata

Issue ID: 1

Description:
IDA fails to install Windows* 2008 on a server system if IDA boot server from a SATA DVD-ROM and SATA RAID is enabled at the same time.
Workaround:
Disable SATA RAID or use IDA to boot server from a USB DVD-ROM.

Issue ID: 2

Description:
When use IDA to unattended install Red Hat* Enterprise Linux* server 5, the setup process may stop at the driver selection page.
Workaround:
You need to select driver manually.

Issue ID: 3

Description:
When use IDA to unattended install Windows* family OS, password can't contain punctuation. IDA may improperly transfer those specially characters to blanks, this will cause user fail to login Windows* family OS with original password.
Workaround:
If original password contains punctuation, login Windows* family OS with new password which specially characters need to be replaced with blanks