

Ingate SIParator[®]/Firewall for Virtual Machines

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1 Ingate SIParator[®]/Firewall for Virtual Machines

Software version 4.10.1 and later of the Ingate SIParator/Firewall (and later) can be installed and run on virtual machines or supported hardware with x86 architecture. Selected customers/developers/testers can download the software from the Ingate web site and install it following this description. You need a license code from Ingate to be able to use the software.

Please note:

- You are assumed to be familiar with the Virtual Machine and Hypervisor you will use. Ingate cannot support or take responsibility for that part.
- With high number of simultaneous calls, the Ingate E-SBC application is routing intensive. Currently, we recommend Virtual Machine usage up to 400 simultaneous calls (with media through the SIParator). Capacity beyond that, needs to be evaluated with the particular hardware, Virtual Machine used and the Ethernet support used.
- The software should work on most Virtual Machines. It has mainly been tested with VMware ESXi 5.0.0 and KVM (qemu-kvm-0.12.1.2), but also successfully started on others, e.g. VirtualBox. VMware showed better/more stable routing performance than KVM at high loads. (Incompatibility will show itself during the installation, before any license is required.)
- The software can also run directly on x86 hardware *without any virtual machine* (supporting considerably higher number of calls), if the hardware is supported by the Ingate software. The supported Ethernet and hard disk interfaces are listed in the Appendix. Typically, x86 hardware using Intel's family of E1000 compatible Ethernet cards can run the SIParator/Firewall software. (Incompatibility will show itself during the installation, before any license is required.)
- Selecting the Ethernet card emulation for the virtual machine impacts the performance. Although E1000 compatible cards are supported, you get better performance with the direct virtual support; VMXnet3 for VMware and Virtio for KVM and some others. On a 2 GHz Quad Core hardware loaded with CPU intensive application running in other virtual machines, using VMware and VMXnet3, we have tested 400 simultaneous calls (20ms voice packets) without seeing any packet loss or MOS degradation. If you can afford to assign an Ethernet adapter exclusively for the virtual machine running the Ingate software (by selecting PCI pass through) you will approximately double the number of calls possible.
- The software can only be installed on one machine and only once. If you need to switch machine or reinstall, you must contact Ingate to get a new license code (and invalidate the previous).
- Your account and license information will be displayed on the About page in the Ingate GUI.

2 Getting Up and Running – In Short

These are the steps to get a software SIParator/Firewall up and running on a virtual machine. A detailed description of each step follows. The Ingate web referred to in this description is <http://www.ingate.com>.

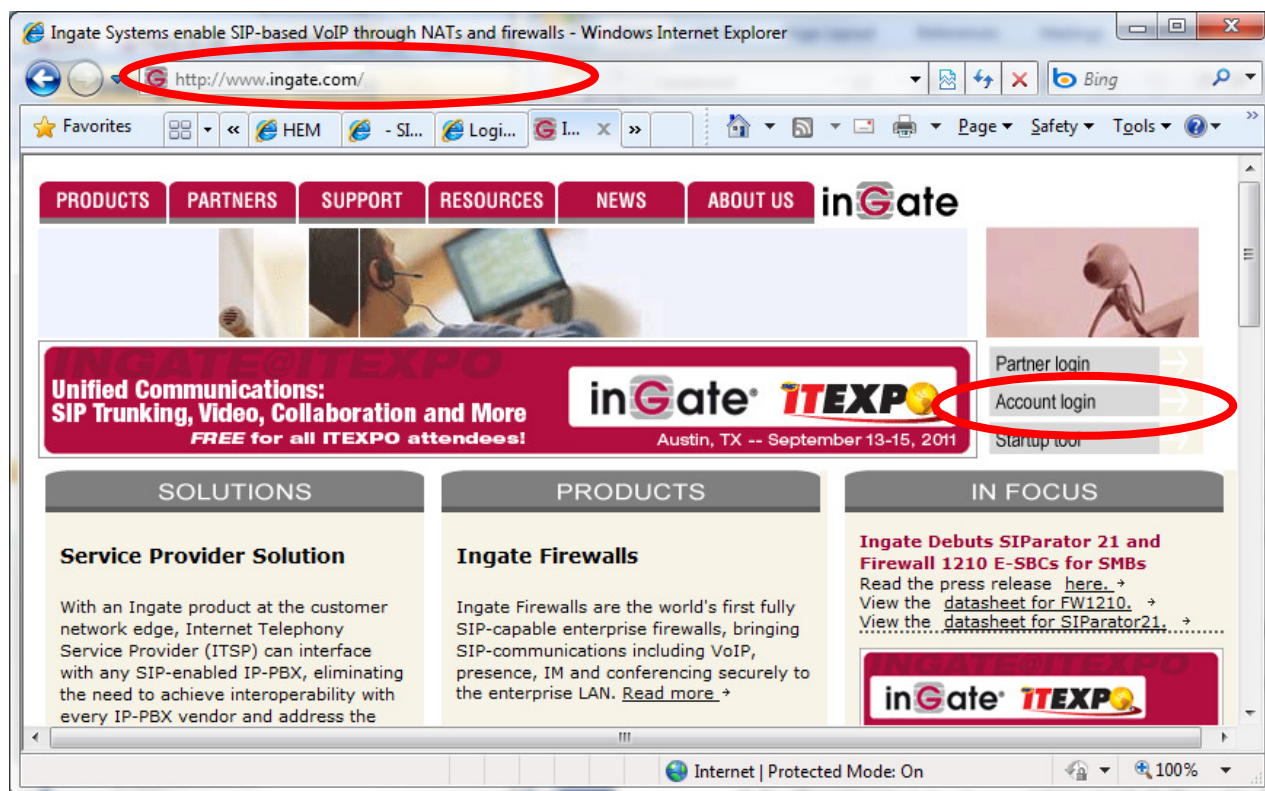
- 1) Create an account at the Ingate web, in case you don't already have one.
- 2) Get a License Code from Ingate.
- 3) Download an ISO file (CD image) with the SIParator/Firewall software and installation program from the Ingate web.
- 4) Create a virtual machine and define its Ethernet ports (you must be familiar with the virtual machine software, Ingate cannot support).
- 5) Start the virtual machine, booting from the ISO file.
- 6) An installation program will start up and install the SIParator/Firewall.
- 7) Surf into the web GUI of the SIParator/Firewall – Only the Administration>Upgrade page will be shown.
- 8) Register the SIParator/Firewall on the Ingate web under your account, using the serial number and other information displayed on the Administration>Upgrade page in the web GUI of the SIParator/Firewall.
- 9) Activate the License Code at the Ingate web and you will get a License Key file.
- 10) Apply the License Key file on the Administration>Upgrade page in the web GUI.

The machine will reboot and the Ingate SIParator/Firewall should thereafter be fully functional.

3 Installing the SIParator®/Firewall on a Virtual Machine

3.1 Create an Account at the Ingate Web

Create an account at the Ingate web site <http://www.ingate.com>. You will get confirmation via email.



3.2 Get a License Code from Ingate

Reading this document, you have probably already got a License Code from Ingate. Otherwise, contact sales to get the License code including the licenses you need. The License code has the form XXXX-XXXX-XXXX and is required to install the SIParator/Firewall software. It includes a base license allowing a maximum of 50, 150, 400 or 800 simultaneous calls and the other licenses you need.

If you are uncertain, whether your Virtual Machine (or x86 hardware without virtualization software) will run the Ingate SIParator/Firewall software, you can run the installation up until 3.7 below. Incompatibility will show itself during the installation, before any license is required.

3.3 Download an ISO file (CD image) with the SIParator®/Firewall software

The Download, Registration and Activation are located at an Ingate web site at <http://www.ingate.com>.

Click **Account login** and log in with your own credentials from 3.1. Click the Download the SIParator/Firewall Software link shown below.

The screenshot shows the Ingate Account Home Page in a Windows Internet Explorer browser. The address bar shows the URL <http://www.ingate.com/Show-account.php>. The page has a navigation bar with links: PRODUCTS, PARTNERS, SUPPORT, RESOURCES, NEWS, ABOUT US, and the InGate logo. The main content area is titled 'Account Home Page' and includes sections for 'Manage Account', 'Manage Ingate Appliances', 'View Documentation', 'SIParator/Firewall - For Use on Virtual Machines', and 'My Ingate Units'. A red circle highlights the 'SIParator/Firewall - For Use on Virtual Machines' section, which contains three links: 'Download the SIParator/Firewall Software (2 downloads made)', 'Register the SIParator/Firewall', and 'Activate licenses for a SIParator/Firewall'. A red box highlights the 'Download ISO file...' button, which is a button with a dotted border. Below this section is a table for 'My Ingate Units' with columns: Unit, Serial number, MAC address, Service expiry, Upgrade, Support, Warranty, Exchange, Comment, Edit, and Delete. The table is currently empty, with the text 'No registered Ingate units' displayed below it. A 'Logout' button is located at the bottom left of the page. The browser's status bar at the bottom shows 'Internet | Skyddat läge: På' and a zoom level of 100%.

Account Home Page

Manage Account

- [Change contact information or password](#)

Manage Ingate Appliances

- [Register a new unit](#)
- [Download upgrades](#)
- [Download IDS/IPS module](#)
- [Download IDS/IPS Rulepacks](#)
- [Activate licenses](#)

View Documentation

- [Product Manuals](#)
- [Other Documentation](#) (App notes, howtos)
- [Ingate Startup Tool](#)
- [Training videos](#)

SIParator/Firewall - For Use on Virtual Machines

- [Download the SIParator/Firewall Software \(2 downloads made\)](#)
- [Register the SIParator/Firewall](#)
- [Activate licenses for a SIParator/Firewall](#)

My Ingate Units

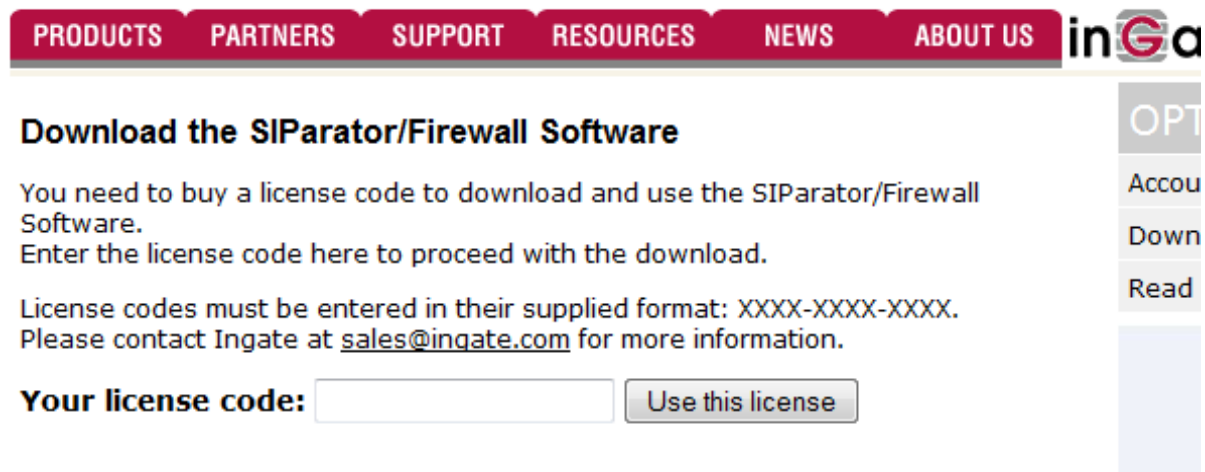
Unit	Serial number	MAC address	Service expiry	Upgrade	Support	Warranty	Exchange	Comment	Edit	Delete
No registered Ingate units										

[Logout](#)

SIParator/Firewall Software Download

[Download ISO file...](#)

The system will ask you to enter the Ingate license code you have received



The screenshot shows the InGate website's navigation bar with links: PRODUCTS, PARTNERS, SUPPORT, RESOURCES, NEWS, and ABOUT US. The main heading is "Download the SIParator/Firewall Software". The text instructs the user to buy a license code and enter it to proceed with the download. It specifies the license code format as XXXX-XXXX-XXXX and provides the contact email sales@ingate.com. At the bottom, there is a text input field for the license code and a "Use this license" button. On the right side, a vertical menu is partially visible with options: OPT, Accou, Down, and Read.

Enter the license code and click the “Use this license” button.

Once the End User License Agreement has been accepted you will get access to the ISO file (around 30 MByte) software and installation program.

Each download will have its own unique serial number.

3.4 Create a Virtual Machine and Define its Ethernet Ports

We assume you are familiar with the Hypervisor and Virtual Machine you will use.

You will not need much hard disk space – 1 GB is sufficient for non-persistent logging. If you need persistent logging to hard disk, select minimum 6 GB.

Base (RAM) memory of 256 MB (often default) is sufficient.

Select Linux 2.6 as the operating system (NOT 64 bit).

Set up the network Ethernet ports required for your SIParator/Firewall application. E1000 compatible cards are supported, but you get better performance with the direct virtual support; VMXnet3 for VMware and Virtio for KVM and some other. If you can assign Ethernet ports for use with the Ingate software only, selecting PCI pass through will double the routing performance.

You must create at least two Ethernet ports (network adapters) for the Ingate software. Since you cannot create more Ethernet ports after the finalized installation, we advice to enable some extra Ethernet ports (e.g. 3 or 4 ports).

Note that you will only get access to the SIParator/Firewall web GUI through the first Ethernet port defined (most often called Adapter 1)!

3.5 Start the Virtual Machine, Booting from the ISO file

In the hypervisor, point out the downloaded ISO file as a CD boot device for the newly created virtual machine. Start that virtual machine!

If you are not able to boot directly from the ISO file, e.g. when installing directly on a supported hardware with x86 architecture (instead of on a virtual machine), you can instead write the ISO file to a CD-ROM or USB-device and make that bootable, see Appendix B for more information.

3.6 The Installation Program will Install the SIParator®/Firewall Software

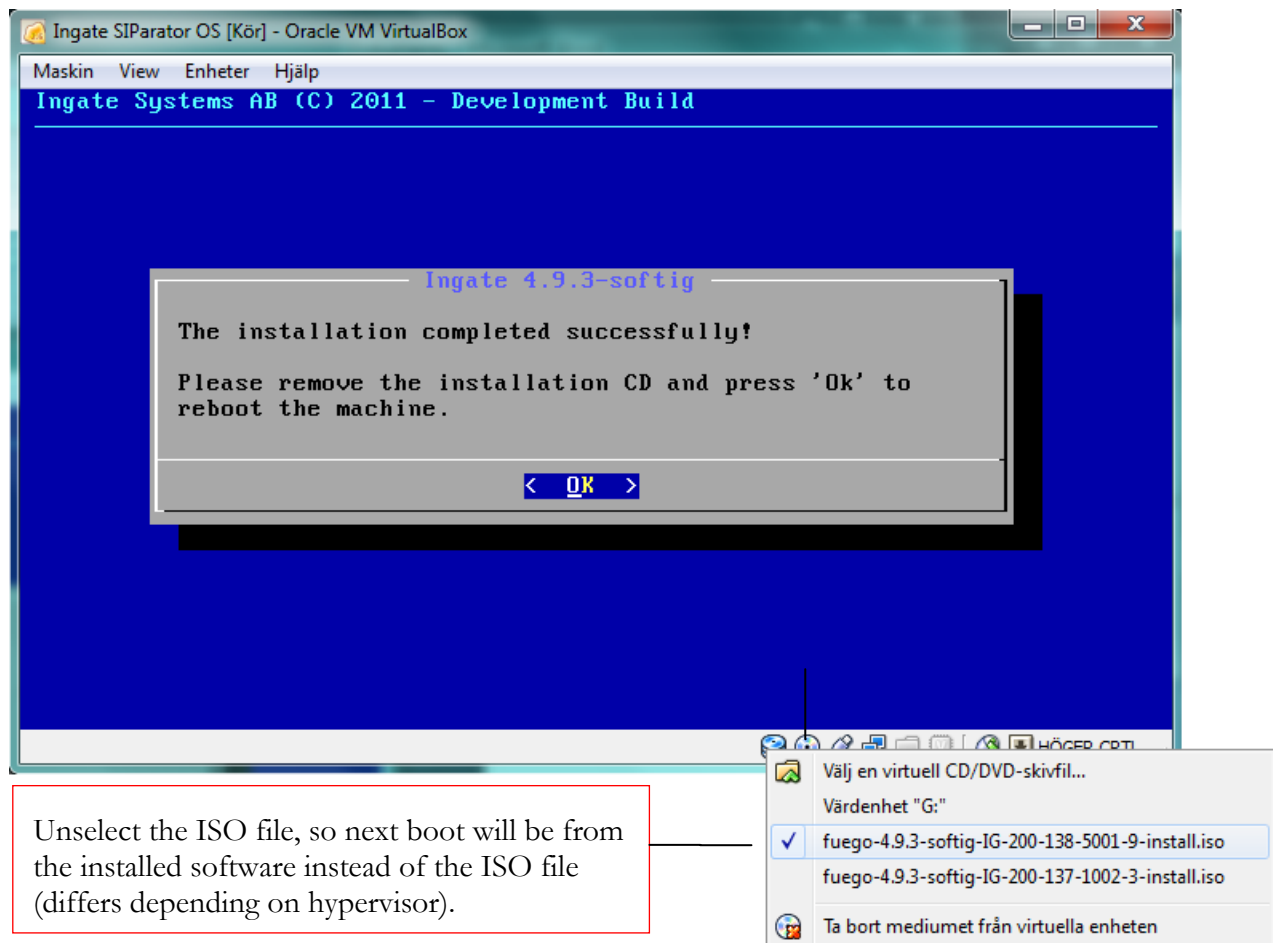
The installation will automatically start after booting up the virtual machine. It will guide you and install the Ingate SIParator/Firewall software.

Use the arrow and tab keys in the installation program (the mouse will not work).

Please note:

You can switch between SIParator and Firewall mode also after the installation. The SIParator only handles SIP (VoIP) traffic, while the Firewall also handles data traffic. Select the SIParator if an existing (non SIP aware) firewall is used for the LAN.

Write down the IP address and admin password you assign to the SIParator/Firewall– You will need that later!



3.7 Surf to the Web GUI of the SIParator®/Firewall

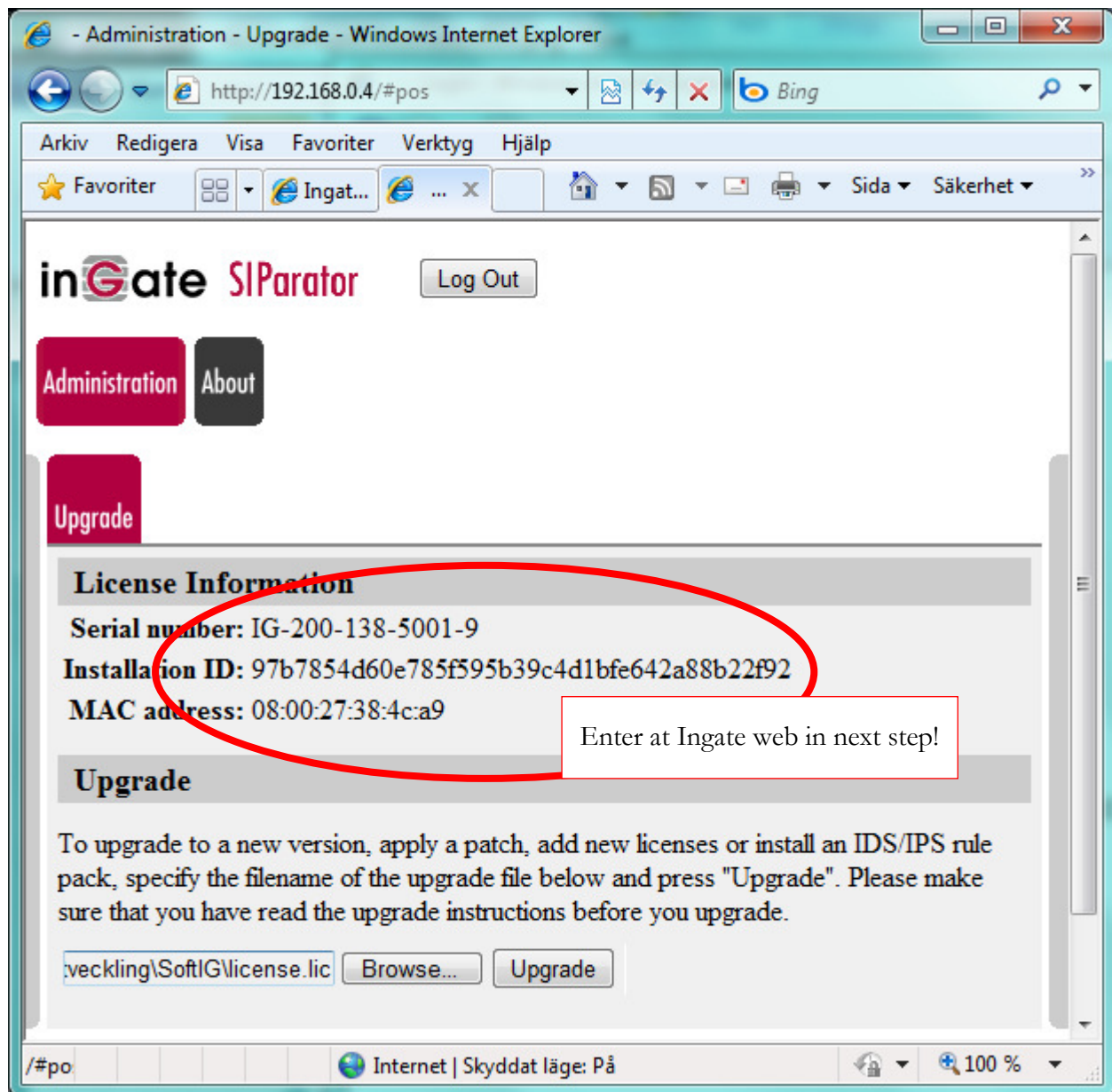
You will see a command window with text during and after the reboot. Do nothing! – Just leave the command window open.

Using a web browser, type in the IP address you assigned to the SIParator/Firewall and you will reach its web GUI. **Login with “admin” and the password you gave during installation.**

In the SIParator/Firewall, only the Administration>Upgrade page is available (until you apply the license as described below).

There you see the Serial Number, Installation ID and MAC address needed in the next step.

(Also, later in step 3.10, you will enter the License Key file at the bottom of this page to finalize the installation.)



3.8 Register the SIParator®/Firewall at the Ingate Web

On the **Account Home Page** (<http://www.ingate.com/Show-account.php>), select the link Register the SIParator/Firewall (see picture under 3.3 above).

Here you enter the Serial Number, Installation ID and MAC address that were displayed on the Administration>Upgrade page in the SIParator/Firewall web GUI.

After pressing Register, this SIParator/Firewall will appear at the bottom of the **Account Home Page**.

3.9 Activate the License Code

At the **Account Home Page**, select Activate licenses for a SIParator/Firewall!

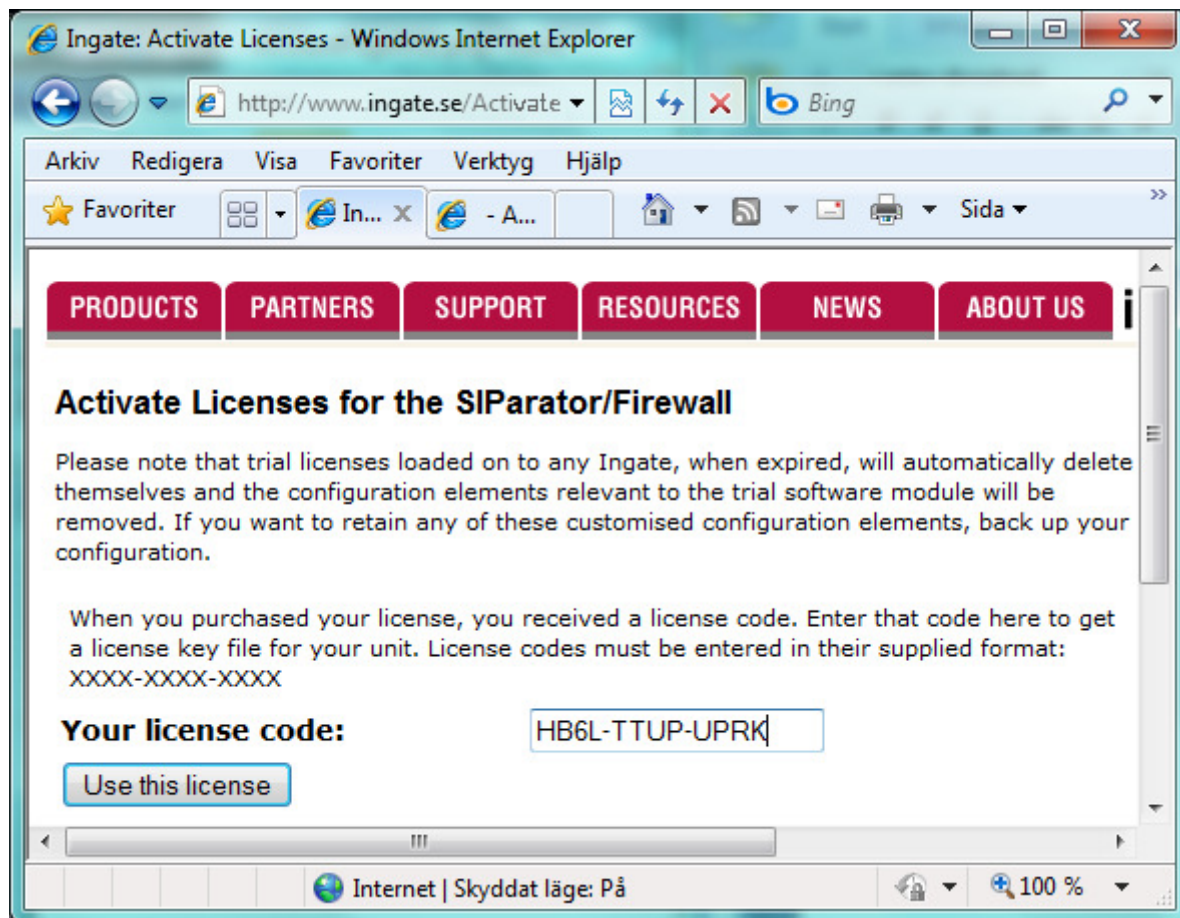
SIParator/Firewall - For Use on Virtual Machines

- [Download the SIParator/Firewall Software](#) (2 downloads made)
- [Register the SIParator/Firewall](#)
- [Activate licenses for a SIParator/Firewall](#)

My Ingate Units

Unit	Serial number	MAC address	Service expiry dates				Comment	Edit	Delete
			Upgrade	Support	Warranty	Exchange			
1	IG-200-138-5001-9	08:00:27:38:4c:a9	2012-12-23	None	2012-12-23	None	SIParator running in VirtualBox on Karl's Laptop	Edit	Delete

Enter the License Code XXXX-XXXX-XXXX you have got from Ingate, mentioned in step 3.2.



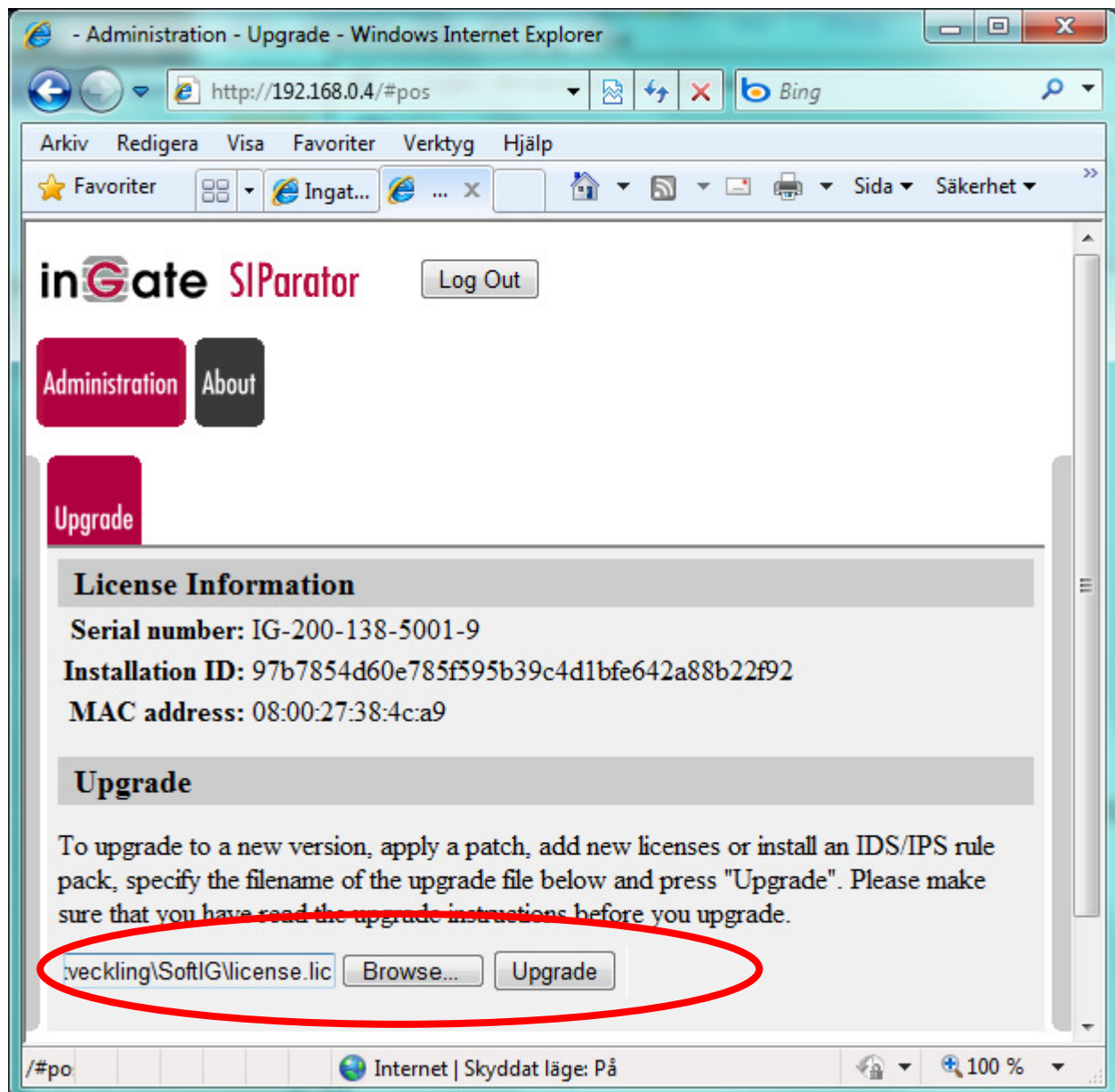
The licenses contained in the code will be displayed and connected to this particular installation.

Please check that everything is OK and this really is the installation you want! (Further licenses can later be applied, but once you connect the licenses to this installation, it cannot be reversed and the licenses cannot be used in another installation.)

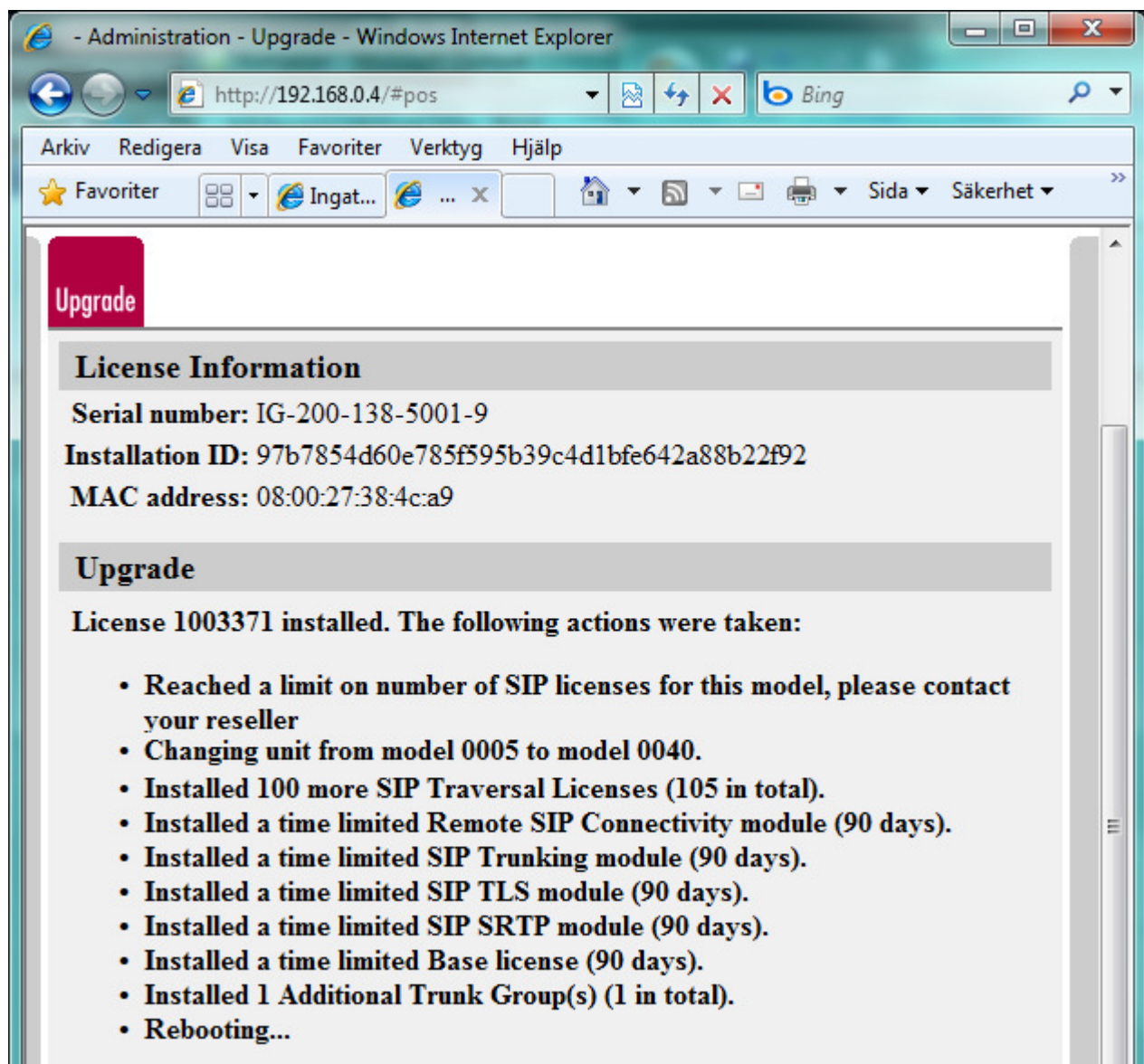
After confirming using the license with the serial number for this installation, a License Key file will be downloaded. Save it on your hard disk.

3.10 Apply the License Key File to the SIParator®/Firewall

On the Administration>Upgrade page in the web GUI of the Firewall/SIParator, apply the License Key file you just got downloaded from the Ingate web.



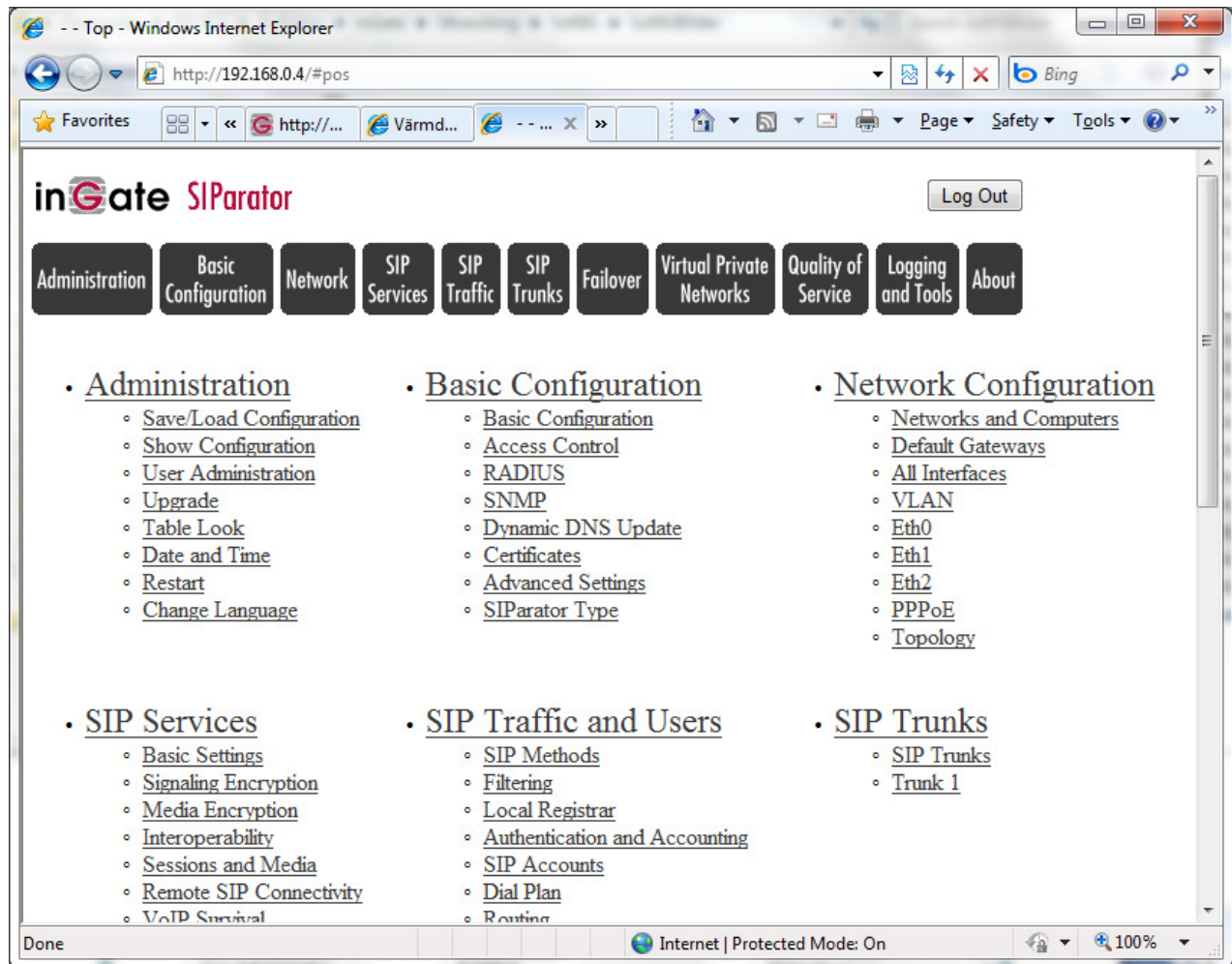
The licenses will be installed and the SIParator/Firewall will be rebooted.



4 Ready and Go

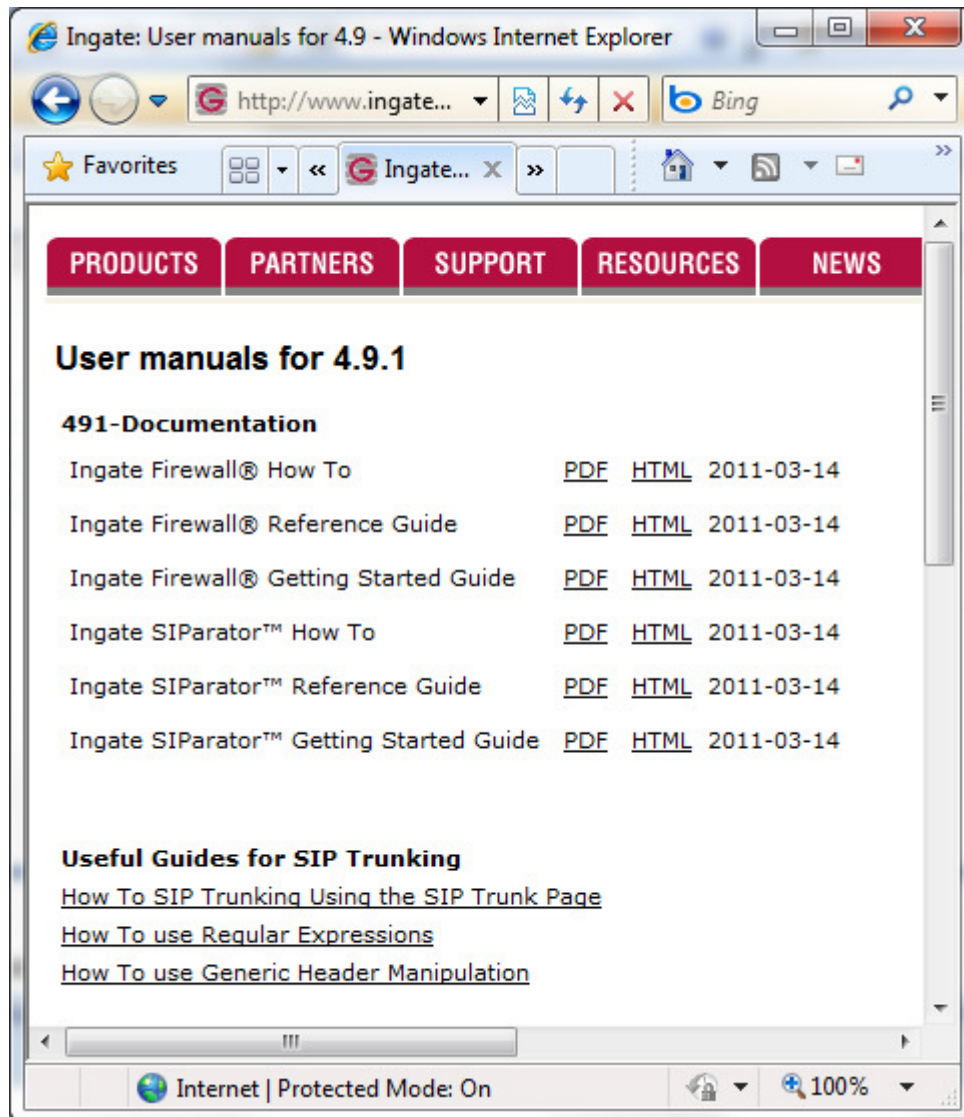
4.1 Ready to Configure

After the reboot, the Ingate SIParator/Firewall shall be fully functional and ready to configure for your application. Logging into the web GUI of the Ingate SIParator/Firewall at the IP address you assigned to the SIParator/Firewall, shall now show all features.

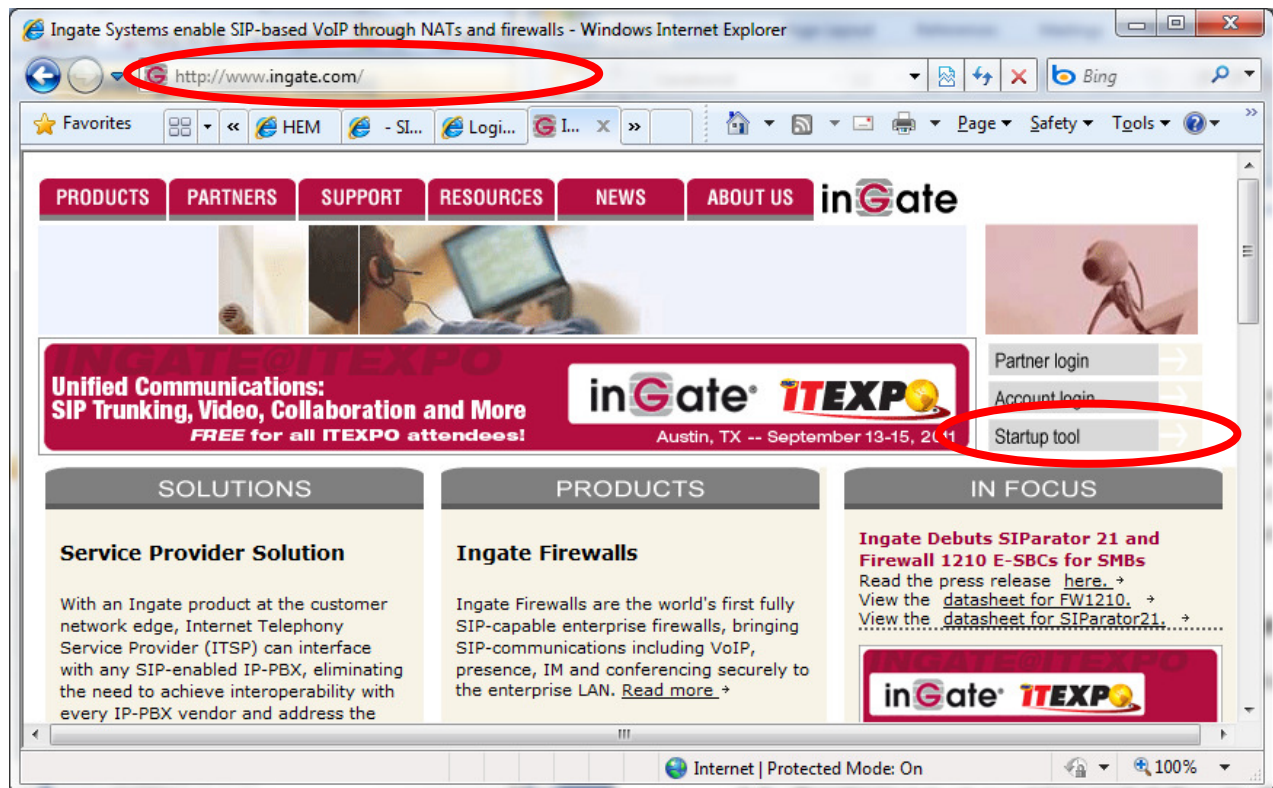


4.2 Setup and Configuration

If your application is SIP Trunking, we recommend you to use the SIP Trunking page introduced in version 4.9.x . Select [Product Manuals](#) on the **Account Home Page**, then select 4.9.x to get to the page below and download [How To SIP Trunking Using the SIP Trunk Page](#).

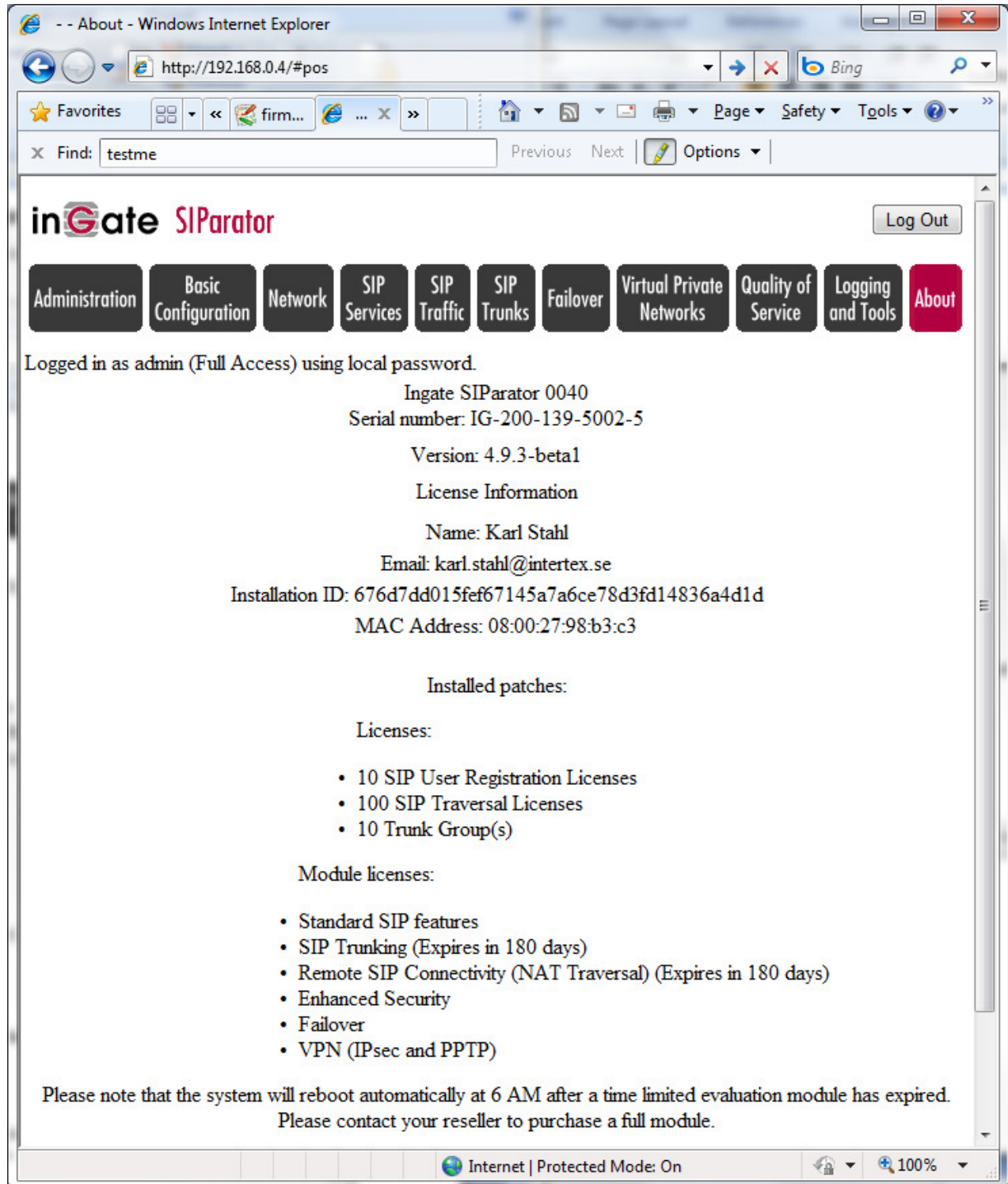


To ease configuration of the Ingate SIParator/Firewall, you can download and use the Ingate Startup Tool at www.ingate.com. A new version, the SUT TG (Startup Tool Trunk Groups), is under development and support the SIP Trunking page. Both versions can be used.



4.3 Your Account Information and Licenses are Displayed

On the About page in the SIParator/Firewall you will see your account information and the licenses installed.



5 Appendix A: Ingate SIParator®/Firewall Supported Hardware on x86 Computers

NETWORK ADAPTERS	ETHERNET SUPPORT
Vendor	Device
3Com Corporation	3CSOHO100B-TX 910-A01 [tulip]
Abocom Systems Inc	ADMtek Centaur-C rev 17 [D-Link DFE-680TX] CardBus
Abocom Systems Inc	21x4x DEC-Tulip compatible 10/100 Ethernet
Abocom Systems Inc	21x4x DEC-Tulip compatible 10/100 Ethernet
Abocom Systems Inc	RTL8139 [FE2000VX] CardBus Fast Ethernet Attached Port Adapter
Accton Technology Corporation	EN-1216 Ethernet Adapter
Accton Technology Corporation	EN-1217 Ethernet Adapter
Accton Technology Corporation	21x4x DEC-Tulip compatible Fast Ethernet
Accton Technology Corporation	SMC2-1211TX
Addtron Technology Co, Inc.	RTL8139 Ethernet
ADMtek	21x4x DEC-Tulip compatible 10/100 Ethernet
ADMtek	NC100 Network Everywhere Fast Ethernet 10/100
ADMtek	21x4x DEC-Tulip compatible 10/100 Ethernet
ADMtek	21x4x DEC-Tulip compatible 10/100 Ethernet
Advanced Micro Devices [AMD]	AMD-760 MP [IGD4-2P] System Controller
Advanced Micro Devices [AMD]	AMD-8131 PCI-X Bridge
Advanced Micro Devices [AMD]	79c970 [PCnet32 LANCE]
Advanced Micro Devices [AMD]	79c978 [HomePNA]
Allied Telesyn International	21x4x DEC-Tulip compatible 10/100 Ethernet
Allied Telesyn International	RTL81xx Fast Ethernet
Allied Telesyn International	RTL81xx Fast Ethernet
Altima (nee Broadcom)	AC1000 Gigabit Ethernet
Altima (nee Broadcom)	AC1001 Gigabit Ethernet
Altima (nee Broadcom)	AC9100 Gigabit Ethernet
Altima (nee Broadcom)	AC1003 Gigabit Ethernet
Apple Computer Inc.	UniNorth 1.5 PCI
Apple Computer Inc.	Tigon3 Gigabit Ethernet NIC (BCM5701)
Asix Electronics Corporation	AX88141 Fast Ethernet Controller
Broadcom Corporation	NetXtreme BCM5752 Gigabit Ethernet PCI Express
Broadcom Corporation	NetXtreme BCM5752M Gigabit Ethernet PCI Express
Broadcom Corporation	NetXtreme BCM5700 Gigabit Ethernet
Broadcom Corporation	NetXtreme BCM5701 Gigabit Ethernet
Broadcom Corporation	NetXtreme BCM5702 Gigabit Ethernet
Broadcom Corporation	NetXtreme BCM5703 Gigabit Ethernet
Broadcom Corporation	NetXtreme BCM5704 Gigabit Ethernet
Broadcom Corporation	NetXtreme BCM5704S_2 Gigabit Ethernet
Broadcom Corporation	NetXtreme BCM5702FE Gigabit Ethernet
Broadcom Corporation	NetXtreme BCM5705 Gigabit Ethernet
Broadcom Corporation	NetXtreme BCM5705_2 Gigabit Ethernet
Broadcom Corporation	NetXtreme BCM5721 Gigabit Ethernet PCI Express
Broadcom Corporation	NetXtreme BCM5722 Gigabit Ethernet PCI Express

Broadcom Corporation	NetXtreme BCM5723 Gigabit Ethernet PCIe
Broadcom Corporation	NetXtreme BCM5705M Gigabit Ethernet
Broadcom Corporation	NetXtreme BCM5705M_2 Gigabit Ethernet
Broadcom Corporation	NetXtreme BCM5714 Gigabit Ethernet
Broadcom Corporation	NetXtreme 5714S Gigabit Ethernet
Broadcom Corporation	NetXtreme BCM5780 Gigabit Ethernet
Broadcom Corporation	NetXtreme BCM5780S Gigabit Ethernet
Broadcom Corporation	570x 10/100 Integrated Controller
Broadcom Corporation	NetXtreme BCM5754M Gigabit Ethernet PCI Express
Broadcom Corporation	NetXtreme BCM5755M Gigabit Ethernet PCI Express
Broadcom Corporation	NetXtreme BCM5756ME Gigabit Ethernet PCI Express
Broadcom Corporation	NetXtreme BCM5751 Gigabit Ethernet PCI Express
Broadcom Corporation	NetXtreme BCM5715 Gigabit Ethernet
Broadcom Corporation	NetXtreme BCM5715S Gigabit Ethernet
Broadcom Corporation	NetXtreme BCM5754 Gigabit Ethernet PCI Express
Broadcom Corporation	NetXtreme BCM5755 Gigabit Ethernet PCI Express
Broadcom Corporation	NetXtreme BCM5751M Gigabit Ethernet PCI Express
Broadcom Corporation	NetXtreme BCM5751F Fast Ethernet PCI Express
Broadcom Corporation	NetLink BCM5787F Fast Ethernet PCI Express
Broadcom Corporation	NetXtreme BCM5761e Gigabit Ethernet PCIe
Broadcom Corporation	NetXtreme BCM5761 Gigabit Ethernet PCIe
Broadcom Corporation	NetXtreme BCM5764M Gigabit Ethernet PCIe
Broadcom Corporation	NetLink BCM5787M Gigabit Ethernet PCI Express
Broadcom Corporation	NetXtreme BCM5782 Gigabit Ethernet
Broadcom Corporation	NetLink BCM5784M Gigabit Ethernet PCIe
Broadcom Corporation	NetLink BCM5786 Gigabit Ethernet PCI Express
Broadcom Corporation	NetLink BCM5787 Gigabit Ethernet PCI Express
Broadcom Corporation	NetXtreme BCM5788 Gigabit Ethernet
Broadcom Corporation	NetLink BCM5789 Gigabit Ethernet PCI Express
Broadcom Corporation	NetXtreme BCM5702X Gigabit Ethernet
Broadcom Corporation	NetXtreme BCM5703X Gigabit Ethernet
Broadcom Corporation	NetXtreme BCM5704S Gigabit Ethernet
Broadcom Corporation	NetXtreme BCM5702A3 Gigabit Ethernet
Broadcom Corporation	NetXtreme BCM5703 Gigabit Ethernet
Broadcom Corporation	NetLink BCM5781 Gigabit Ethernet PCI Express
Broadcom Corporation	NetXtreme BCM5753 Gigabit Ethernet PCI Express
Broadcom Corporation	NetXtreme BCM5753M Gigabit Ethernet PCI Express
Broadcom Corporation	NetXtreme BCM5753F Fast Ethernet PCI Express
Broadcom Corporation	NetXtreme BCM5901 100Base-TX
Broadcom Corporation	NetXtreme BCM5901 100Base-TX
Broadcom Corporation	NetLink BCM5906 Fast Ethernet PCI Express
Broadcom Corporation	NetLink BCM5906M Fast Ethernet PCI Express
Broadcom Corporation	NetXtreme II BCM5709 Gigabit Ethernet
Broadcom Corporation	NetXtreme II BCM5709S Gigabit Ethernet
Broadcom Corporation	NetXtreme II BCM5706 Gigabit Ethernet
Broadcom Corporation	NetXtreme II BCM5706 Gigabit Ethernet
Broadcom Corporation	NetXtreme II BCM5706 Gigabit Ethernet
Broadcom Corporation	NetXtreme II BCM5708 Gigabit Ethernet

Broadcom Corporation	NetXtreme II BCM5706S Gigabit Ethernet
Broadcom Corporation	NetXtreme II BCM5706S Gigabit Ethernet
Broadcom Corporation	NetXtreme II BCM5708S Gigabit Ethernet
Compaq Computer Corporation	HNE-300 (RealTek RTL8139c) [iPaq Networking]
Compex	RL100TX Fast Ethernet
Conexant Systems, Inc.	HCF 56k Modem
D-Link System Inc	DFE-680TXD CardBus PC Card
D-Link System Inc	DRP-32TXD Cardbus PC Card
D-Link System Inc	RTL8139 Ethernet
D-Link System Inc	DFE-690TXD CardBus PC Card
Davicom Semiconductor, Inc.	21x4x DEC-Tulip compatible 10/100 Ethernet
Davicom Semiconductor, Inc.	21x4x DEC-Tulip compatible 10/100 Ethernet
DELTA Electronics, Inc	RTL81xx RealTek Ethernet
Digital Equipment Corporation	DECchip 21140 [FasterNet]
Digital Equipment Corporation	DECchip 21142/43
Edimax Computer Co.	RTL81xx Fast Ethernet
Hawking Technologies	PN672TX 10/100 Ethernet
Intel Corporation	82566DM-2 Gigabit Network Connection
Intel Corporation	82562V-2 10/100 Network Connection
Intel Corporation	82562G-2 10/100 Network Connection
Intel Corporation	82562GT-2 10/100 Network Connection
Intel Corporation	82566DC-2 Gigabit Network Connection
Intel Corporation	82542 Gigabit Ethernet Controller (Fiber)
Intel Corporation	82543GC Gigabit Ethernet Controller (Fiber)
Intel Corporation	82543GC Gigabit Ethernet Controller (Copper)
Intel Corporation	82544EI Gigabit Ethernet Controller (Copper)
Intel Corporation	82544EI Gigabit Ethernet Controller (Fiber)
Intel Corporation	82544GC Gigabit Ethernet Controller (Copper)
Intel Corporation	82544GC Gigabit Ethernet Controller (LOM)
Intel Corporation	82540EM Gigabit Ethernet Controller
Intel Corporation	82545EM Gigabit Ethernet Controller (Copper)
Intel Corporation	82546EB Gigabit Ethernet Controller (Copper)
Intel Corporation	82545EM Gigabit Ethernet Controller (Fiber)
Intel Corporation	82546EB Gigabit Ethernet Controller (Fiber)
Intel Corporation	82541EI Gigabit Ethernet Controller
Intel Corporation	82541ER Gigabit Ethernet Controller
Intel Corporation	82540EM Gigabit Ethernet Controller (LOM)
Intel Corporation	82540EP Gigabit Ethernet Controller (Mobile)
Intel Corporation	82540EP Gigabit Ethernet Controller
Intel Corporation	82541EI Gigabit Ethernet Controller
Intel Corporation	82547EI Gigabit Ethernet Controller
Intel Corporation	82547EI Gigabit Ethernet Controller (Mobile)
Intel Corporation	82546EB Gigabit Ethernet Controller
Intel Corporation	82540EP Gigabit Ethernet Controller (Mobile)
Intel Corporation	82545GM Gigabit Ethernet Controller
Intel Corporation	82545GM Gigabit Ethernet Controller
Intel Corporation	82545GM Gigabit Ethernet Controller
Intel Corporation	82566MM Gigabit Network Connection

Intel Corporation	82566DM Gigabit Network Connection
Intel Corporation	82566DC Gigabit Network Connection
Intel Corporation	82562V 10/100 Network Connection
Intel Corporation	82566MC Gigabit Network Connection
Intel Corporation	82571EB Gigabit Ethernet Controller
Intel Corporation	82571EB Gigabit Ethernet Controller
Intel Corporation	82571EB Gigabit Ethernet Controller
Intel Corporation	82547GI Gigabit Ethernet Controller
Intel Corporation	82541GI Gigabit Ethernet Controller
Intel Corporation	82541GI Gigabit Ethernet Controller
Intel Corporation	82541ER Gigabit Ethernet Controller
Intel Corporation	82546GB Gigabit Ethernet Controller
Intel Corporation	82546GB Gigabit Ethernet Controller
Intel Corporation	82546GB Gigabit Ethernet Controller
Intel Corporation	82541PI Gigabit Ethernet Controller
Intel Corporation	82572EI Gigabit Ethernet Controller (Copper)
Intel Corporation	82572EI Gigabit Ethernet Controller (Fiber)
Intel Corporation	82572EI Gigabit Ethernet Controller
Intel Corporation	82546GB Gigabit Ethernet Controller
Intel Corporation	82573V Gigabit Ethernet Controller (Copper)
Intel Corporation	82573E Gigabit Ethernet Controller (Copper)
Intel Corporation	80003ES2LAN Gigabit Ethernet Controller (Copper)
Intel Corporation	80003ES2LAN Gigabit Ethernet Controller (Serdes)
Intel Corporation	82546GB Gigabit Ethernet Controller (Copper)
Intel Corporation	82573L Gigabit Ethernet Controller
Intel Corporation	82571EB Gigabit Ethernet Controller
Intel Corporation	82571EB Gigabit Ethernet Controller (Fiber)
Intel Corporation	82546GB Gigabit Ethernet Controller (Copper)
Intel Corporation	82572EI Gigabit Ethernet Controller (Copper)
Intel Corporation	80003ES2LAN Gigabit Ethernet Controller (Copper)
Intel Corporation	80003ES2LAN Gigabit Ethernet Controller (Serdes)
Intel Corporation	82571EB Gigabit Ethernet Controller (Copper)
Intel Corporation	82562GT 10/100 Network Connection
Intel Corporation	82562G 10/100 Network Connection
Intel Corporation	82571PT Gigabit PT Quad Port Server ExpressModule
Intel Corporation	82571EB Dual Port Gigabit Mezzanine Adapter
Intel Corporation	82571EB Quad Port Gigabit Mezzanine Adapter
Intel Corporation	82559 Ethernet Controller
Intel Corporation	82559 InBusiness 10/100
Intel Corporation	82801CAM (ICH3) PRO/100 VE (LOM) Ethernet Controller
Intel Corporation	82801CAM (ICH3) PRO/100 VE Ethernet Controller
Intel Corporation	82801CAM (ICH3) PRO/100 VM (LOM) Ethernet Controller
Intel Corporation	82801CAM (ICH3) PRO/100 VM Ethernet Controller
Intel Corporation	82801CAM (ICH3) PRO/100 VM (KM) Ethernet Controller
Intel Corporation	82801DB PRO/100 VE (LOM) Ethernet Controller
Intel Corporation	82801DB PRO/100 VE (CNR) Ethernet Controller
Intel Corporation	82801DB PRO/100 VM (LOM) Ethernet Controller
Intel Corporation	82801DB PRO/100 VM (CNR) Ethernet Controller

Intel Corporation	82801DB PRO/100 VE (MOB) Ethernet Controller
Intel Corporation	82801DB PRO/100 VM (MOB) Ethernet Controller
Intel Corporation	82562EZ 10/100 Ethernet Controller
Intel Corporation	82801EB/ER (ICH5/ICH5R) integrated LAN Controller
Intel Corporation	PRO/100 VM Network Connection
Intel Corporation	PRO/100 VM Network Connection
Intel Corporation	PRO/100 VE Network Connection
Intel Corporation	PRO/100 VM Network Connection
Intel Corporation	PRO/100 VE Network Connection
Intel Corporation	PRO/100 VE Network Connection
Intel Corporation	82551QM Ethernet Controller
Intel Corporation	82562ET/EZ/GT/GZ - PRO/100 VE (LOM) Ethernet Controller
Intel Corporation	82562ET/EZ/GT/GZ - PRO/100 VE Ethernet Controller
Intel Corporation	82562 EM/EX/GX - PRO/100 VM (LOM) Ethernet Controller
Intel Corporation	82562 EM/EX/GX - PRO/100 VM Ethernet Controller
Intel Corporation	82562ET/EZ/GT/GZ - PRO/100 VE (LOM) Ethernet Controller Mobile
Intel Corporation	82562EM/EX/GX - PRO/100 VM (LOM) Ethernet Controller Mobile
Intel Corporation	82562G - PRO/100 VE (LOM) Ethernet Controller
Intel Corporation	82562G - PRO/100 VE Ethernet Controller Mobile
Intel Corporation	PRO/100 VM Network Connection
Intel Corporation	PRO/100 VE Network Connection
Intel Corporation	PRO/100 VM Network Connection
Intel Corporation	PRO/100 VE Network Connection
Intel Corporation	PRO/100 VE Network Connection
Intel Corporation	8255xER/82551IT Fast Ethernet Controller
Intel Corporation	82557/8/9/0/1 Ethernet Pro 100
Intel Corporation	82801BA/BAM/CA/CAM Ethernet Controller
Intel Corporation	82801E Ethernet Controller 0
Intel Corporation	82801E Ethernet Controller 1
Intel Corporation	N10/ICH 7 Family LAN Controller
Intel Corporation	21145 Fast Ethernet
Intel Corporation	82424TX/ZX [Saturn] CPU to PCI bridge
Intel Corporation	82575EB Gigabit Network Connection
Intel Corporation	82575EB Gigabit Backplane Connection
Intel Corporation	82575GB Gigabit Network Connection
LevelOne	FPC-0106TX misprogrammed [RTL81xx]
Linksys	21x4x DEC-Tulip compatible 10/100 Ethernet
Linksys	21x4x DEC-Tulip compatible 10/100 Ethernet
Lite-On Communications Inc	LNE100TX
Lite-On Communications Inc	LNE100TX [Linksys EtherFast 10/100]
Macronix, Inc. [MXIC]	MX98713
Macronix, Inc. [MXIC]	MX987x5
Microsoft Corporation	MN-130 (ADMtek Centaur-P based)
National Semiconductor Corporation	DP83820 10/100/1000 Ethernet Controller
Northern Telecom	10/100BaseTX [RTL81xx]
Peppercon AG	ROL/F-100 Fast Ethernet Adapter with ROL
Planex Communications, Inc	FNW-3602-TX CardBus Fast Ethernet
Planex Communications, Inc	FNW-3603-TX CardBus Fast Ethernet

Planex Communications, Inc	RTL81xx RealTek Ethernet
Realtek Semiconductor Co., Ltd.	RTL-8129
Realtek Semiconductor Co., Ltd.	RT8139 (B/C) Cardbus Fast Ethernet Adapter
Realtek Semiconductor Co., Ltd.	RTL-8139/8139C/8139C+
Silicon Integrated Systems [SiS]	85C496
SpeedStream	1012 PCMCIA 10/100 Ethernet Card [RTL81xx]
STMicroelectronics	21x4x DEC-Tulip compatible 10/100 Ethernet
STMicroelectronics	21x4x DEC-Tulip compatible 10/100 Ethernet
SysKonnect	SK-9Dxx Gigabit Ethernet Adapter
SysKonnect	SK-9Mxx Gigabit Ethernet Adapter
TDK Semiconductor Corp.	RTL81xx Fast Ethernet
Trident Microsystems	4DWave DX
VIA Technologies, Inc.	VT8385 [K8T800 AGP] Host Bridge
VIA Technologies, Inc.	VT86C100A [Rhine]
VIA Technologies, Inc.	VT6105M [Rhine-III]
VIA Technologies, Inc.	VT6102 [Rhine-II]
VIA Technologies, Inc.	VT6105/VT6106S [Rhine-III]

PATA/SATA/IDE/SCSI
HARD DISK SUPPORT

Vendor	Device
Advanced Micro Devices [AMD]	CS5536 [Geode companion] IDE
Advanced Micro Devices [AMD]	AMD-755 [Cobra] IDE
Advanced Micro Devices [AMD]	AMD-756 [Viper] IDE
Advanced Micro Devices [AMD]	AMD-766 [ViperPlus] IDE
Advanced Micro Devices [AMD]	AMD-768 [Opus] IDE
Advanced Micro Devices [AMD]	AMD-8111 IDE
Advanced Micro Devices [AMD]	CS5536 [Geode companion] IDE
Advanced Micro Devices [AMD]	AMD-755 [Cobra] IDE
Advanced Micro Devices [AMD]	AMD-756 [Viper] IDE
Advanced Micro Devices [AMD]	AMD-766 [ViperPlus] IDE
Advanced Micro Devices [AMD]	AMD-768 [Opus] IDE
Advanced Micro Devices [AMD]	AMD-8111 IDE
ALi Corporation	M5228 ALi ATA/RAID Controller
ALi Corporation	M5229 IDE
ALi Corporation	ULi M5288 SATA
Apple Computer Inc.	UniNorth 2 ATA/100
Apple Computer Inc.	UniNorth/Intrepid ATA/100
Apple Computer Inc.	K2 ATA/100
Apple Computer Inc.	Shasta IDE
Apple Computer Inc.	Intrepid2 ATA/100
Artop Electronic Corp	ATP850UF
Artop Electronic Corp	ATP860 NO-BIOS
Artop Electronic Corp	ATP860
Artop Electronic Corp	ATP865 NO-ROM
Artop Electronic Corp	ATP865
ATI Technologies Inc	Dual Channel Bus Master PCI IDE Controller
ATI Technologies Inc	IXP SB400 IDE Controller
ATI Technologies Inc	SB600 IDE
ATI Technologies Inc	SB7x0/SB8x0/SB9x0 IDE Controller
ATI Technologies Inc	AGP Bridge [IGP 320M]
ATI Technologies Inc	SB600 Non-Raid-5 SATA
ATI Technologies Inc	SB7x0/SB8x0/SB9x0 SATA Controller [IDE mode]
ATI Technologies Inc	SB7x0/SB8x0/SB9x0 SATA Controller [AHCI mode]
ATI Technologies Inc	SB7x0/SB8x0/SB9x0 SATA Controller [Non-RAID5 mode]
ATI Technologies Inc	SB7x0/SB8x0/SB9x0 SATA Controller [RAID5 mode]
ATI Technologies Inc	SB7x0/SB8x0/SB9x0 SATA Controller [AHCI mode]
ATI Technologies Inc	SB8x0/SB9x0 SATA Controller [Storage mode]
Broadcom	OSB4 IDE Controller
Broadcom	CSB5 IDE Controller
Broadcom	CSB6 RAID/IDE Controller
Broadcom	BCM5785 [HT1000] IDE
Broadcom	CSB6 IDE Controller
Compaq Computer Corporation	Triflex Dual EIDE Controller

Conaqa Microsystems	82c693
Cyrix Corporation	5510 [Grappa]
Cyrix Corporation	5520 [Cognac]
Cyrix Corporation	5530 IDE [Kahlua]
Efar Microsystems	SLC90E66 [Victory66] IDE
HighPoint Technologies, Inc.	HPT343/345/346/363
HighPoint Technologies, Inc.	HPT366/368/370/370A/372/372N
HighPoint Technologies, Inc.	HPT372A/372N
HighPoint Technologies, Inc.	HPT302/302N
HighPoint Technologies, Inc.	HPT371/371N
HighPoint Technologies, Inc.	HPT374
HighPoint Technologies, Inc.	HPT372N
Hint Corp	VXPro II IDE
Integrated Technology Express, Inc.	ITE 8211F Single Channel UDMA 133
Integrated Technology Express, Inc.	IT/ITE8212 Dual channel ATA RAID controller
Integrated Technology Express, Inc.	IT8213 IDE Controller
Intel Corporation	82371FB PIIX ISA [Triton I]
Intel Corporation	82371FB PIIX IDE [Triton I]
Intel Corporation	430MX - 82371MX Mobile PCI I/O IDE Xcelerator (MPIIX)
Intel Corporation	82801AA IDE Controller
Intel Corporation	82801AB IDE Controller
Intel Corporation	82801BAM IDE U100 Controller
Intel Corporation	82801BA IDE U100 Controller
Intel Corporation	82801E IDE U100 Controller
Intel Corporation	82801CAM IDE U100 Controller
Intel Corporation	82801CA Ultra ATA Storage Controller
Intel Corporation	82801DBL (ICH4-L) IDE Controller
Intel Corporation	82801DBM (ICH4-M) IDE Controller
Intel Corporation	82801DB (ICH4) IDE Controller
Intel Corporation	82801EB (ICH5) SATA Controller
Intel Corporation	82801EB/ER (ICH5/ICH5R) IDE Controller
Intel Corporation	6300ESB PATA Storage Controller
Intel Corporation	82801FB/FBM/FR/FW/FRW (ICH6 Family) IDE Controller
Intel Corporation	631xESB/632xESB IDE Controller
Intel Corporation	82801G (ICH7 Family) IDE Controller
Intel Corporation	82801HBM/HEM (ICH8M/ICH8M-E) IDE Controller
Intel Corporation	82371SB PIIX3 IDE [Natoma/Triton II]
Intel Corporation	82371AB/EB/MB PIIX4 IDE
Intel Corporation	82440MX EIDE Controller
Intel Corporation	82372FB PIIX5 IDE
Intel Corporation	450NX - 82451NX Memory & I/O Controller
Intel Corporation	82371FB PIIX ISA [Triton I]
Intel Corporation	82371FB PIIX IDE [Triton I]
Intel Corporation	430MX - 82371MX Mobile PCI I/O IDE Xcelerator (MPIIX)
Intel Corporation	82801AA IDE Controller
Intel Corporation	82801AB IDE Controller
Intel Corporation	82801BAM IDE U100 Controller
Intel Corporation	82801BA IDE U100 Controller

Intel Corporation	82801E IDE U100 Controller
Intel Corporation	82801CAM IDE U100 Controller
Intel Corporation	82801CA Ultra ATA Storage Controller
Intel Corporation	82801DBL (ICH4-L) IDE Controller
Intel Corporation	82801DBM (ICH4-M) IDE Controller
Intel Corporation	82801DB (ICH4) IDE Controller
Intel Corporation	82801EB (ICH5) SATA Controller
Intel Corporation	82801EB/ER (ICH5/ICH5R) IDE Controller
Intel Corporation	6300ESB PATA Storage Controller
Intel Corporation	82801FB/FBM/FR/FW/FRW (ICH6 Family) IDE Controller
Intel Corporation	631xESB/632xESB IDE Controller
Intel Corporation	82801G (ICH7 Family) IDE Controller
Intel Corporation	82801HBM/HEM (ICH8M/ICH8M-E) IDE Controller
Intel Corporation	82371SB PIIX3 IDE [Natoma/Triton II]
Intel Corporation	82371AB/EB/MB PIIX4 IDE
Intel Corporation	82440MX EIDE Controller
Intel Corporation	82372FB PIIX5 IDE
Intel Corporation	450NX - 82451NX Memory & I/O Controller
Intel Corporation	82801FR/FRW (ICH6R/ICH6RW) SATA Controller
Intel Corporation	82801FBM (ICH6M) SATA Controller
Intel Corporation	631xESB/632xESB SATA AHCI Controller
Intel Corporation	631xESB/632xESB SATA RAID Controller
Intel Corporation	631xESB/632xESB SATA RAID Controller
Intel Corporation	N10/ICH7 Family SATA AHCI Controller
Intel Corporation	82801GR/GH (ICH7 Family) SATA RAID Controller
Intel Corporation	82801GBM/GHM (ICH7 Family) SATA AHCI Controller
Intel Corporation	82801GHM (ICH7-M DH) SATA RAID Controller
Intel Corporation	82801HR/HO/HH (ICH8R/DO/DH) 6 port SATA AHCI Controller
Intel Corporation	82801 SATA RAID Controller
Intel Corporation	82801HB (ICH8) 4 port SATA AHCI Controller
Intel Corporation	82801HBM/HEM (ICH8M/ICH8M-E) SATA AHCI Controller
Intel Corporation	Mobile 82801 SATA RAID Controller
Intel Corporation	82801IR/IO/IH (ICH9R/DO/DH) 6 port SATA AHCI Controller
Intel Corporation	82801IB (ICH9) 4 port SATA AHCI Controller
Intel Corporation	82801IR/IO (ICH9R/DO) SATA RAID Controller
Intel Corporation	ICH9M/M-E SATA AHCI Controller
Intel Corporation	ICH9M-E SATA RAID Controller
Intel Corporation	EP80579 S-ATA Reserved
Intel Corporation	EP80579 S-ATA Reserved
Intel Corporation	82801AA IDE Controller
Intel Corporation	82801AB IDE Controller
Intel Corporation	82801BAM IDE U100 Controller
Intel Corporation	82801BA IDE U100 Controller
Intel Corporation	82801E IDE U100 Controller
Intel Corporation	82801CAM IDE U100 Controller
Intel Corporation	82801CA Ultra ATA Storage Controller
Intel Corporation	82801DBM (ICH4-M) IDE Controller
Intel Corporation	82801DB (ICH4) IDE Controller

Intel Corporation	82801EB (ICH5) SATA Controller
Intel Corporation	82801EB/ER (ICH5/ICH5R) IDE Controller
Intel Corporation	82801ER (ICH5R) SATA Controller
Intel Corporation	6300ESB PATA Storage Controller
Intel Corporation	6300ESB SATA Storage Controller
Intel Corporation	6300ESB SATA RAID Controller
Intel Corporation	82801FB/FW (ICH6/ICH6W) SATA Controller
Intel Corporation	82801FR/FRW (ICH6R/ICH6RW) SATA Controller
Intel Corporation	82801FBM (ICH6M) SATA Controller
Intel Corporation	82801FB/FBM/FR/FW/FRW (ICH6 Family) IDE Controller
Intel Corporation	631xESB/632xESB/3100 Chipset SATA IDE Controller
Intel Corporation	631xESB/632xESB IDE Controller
Intel Corporation	N10/ICH7 Family SATA IDE Controller
Intel Corporation	82801GBM/GHM (ICH7 Family) SATA IDE Controller
Intel Corporation	82801G (ICH7 Family) IDE Controller
Intel Corporation	82801H (ICH8 Family) 4 port SATA IDE Controller
Intel Corporation	82801H (ICH8 Family) 2 port SATA IDE Controller
Intel Corporation	82801HBM/HEM (ICH8M/ICH8M-E) SATA IDE Controller
Intel Corporation	82801HBM/HEM (ICH8M/ICH8M-E) SATA IDE Controller
Intel Corporation	82801HBM/HEM (ICH8M/ICH8M-E) IDE Controller
Intel Corporation	82801IR/IO/IH (ICH9R/DO/DH) 4 port SATA IDE Controller
Intel Corporation	82801IB (ICH9) 2 port SATA IDE Controller
Intel Corporation	82801I (ICH9 Family) 2 port SATA IDE Controller
Intel Corporation	ICH9M/M-E 2 port SATA IDE Controller
Intel Corporation	ICH9M/M-E 2 port SATA IDE Controller
Intel Corporation	ICH9M SATA IDE Controller
Intel Corporation	EP80579 S-ATA IDE
Intel Corporation	82371SB PIIX3 IDE [Natoma/Triton II]
Intel Corporation	82371AB/EB/MB PIIX4 IDE
Intel Corporation	82371AB/EB/MB PIIX4 IDE
Intel Corporation	82440MX EIDE Controller
Intel Corporation	82372FB PIIX5 IDE
Intel Corporation	450NX - 82451NX Memory & I/O Controller
JMicron Technology Corp.	Mass storage controller
JMicron Technology Corp.	JMB361 AHCI/IDE
JMicron Technology Corp.	JMB362/JMB363 Serial ATA Controller
JMicron Technology Corp.	JMB365 AHCI/IDE
JMicron Technology Corp.	JMB366 AHCI/IDE
JMicron Technology Corp.	JMB368 IDE controller
JMicron Technology Corp.	Mass storage controller
LSI Logic / Symbios Logic	SAS1064 PCI-X Fusion-MPT SAS
LSI Logic / Symbios Logic	SAS1068 PCI-X Fusion-MPT SAS
LSI Logic / Symbios Logic	SAS1064ET PCI-Express Fusion-MPT SAS
LSI Logic / Symbios Logic	SAS1068E PCI-Express Fusion-MPT SAS
LSI Logic / Symbios Logic	SAS1078 PCI-Express Fusion-MPT SAS
Marvell Technology Group Ltd.	88SE6145 SATA II PCI-E controller
Mass storage controller	SATA controller
Micron	PC Tech RZ1000

Micron	PC Tech RZ1001
Micron	Samurai_IDE
National Semiconductor Corporation	87415/87560 IDE
National Semiconductor Corporation	CS5535 IDE
National Semiconductor Corporation	SCx200, SC1100 IDE controller
National Semiconductor Corporation	87410 IDE
Netcell Corporation	Revolution Storage Processing Card
nVidia Corporation	MCP04 IDE
nVidia Corporation	CK804 IDE
nVidia Corporation	nForce2 IDE
nVidia Corporation	MCP2A IDE
nVidia Corporation	nForce2 Serial ATA Controller
nVidia Corporation	nForce3 IDE
nVidia Corporation	nForce3 Serial ATA Controller
nVidia Corporation	CK8S Parallel ATA Controller (v2.5)
nVidia Corporation	nForce3 Serial ATA Controller 2
nVidia Corporation	nForce IDE
nVidia Corporation	MCP51 IDE
nVidia Corporation	MCP55 IDE
nVidia Corporation	MCP61 IDE
nVidia Corporation	MCP65 IDE
nVidia Corporation	MCP67 IDE Controller
nVidia Corporation	MCP73 IDE
nVidia Corporation	MCP78S [GeForce 8200] IDE
nVidia Corporation	MCP04 IDE
nVidia Corporation	CK804 IDE
nVidia Corporation	nForce2 IDE
nVidia Corporation	MCP2A IDE
nVidia Corporation	nForce2 Serial ATA Controller
nVidia Corporation	nForce3 IDE
nVidia Corporation	nForce3 Serial ATA Controller
nVidia Corporation	CK8S Parallel ATA Controller (v2.5)
nVidia Corporation	nForce3 Serial ATA Controller 2
nVidia Corporation	nForce IDE
nVidia Corporation	MCP51 IDE
nVidia Corporation	MCP55 IDE
nVidia Corporation	MCP61 IDE
nVidia Corporation	MCP65 IDE
nVidia Corporation	MCP67 IDE Controller
nVidia Corporation	MCP73 IDE
nVidia Corporation	MCP78S [GeForce 8200] IDE
nVidia Corporation	MCP65 AHCI Controller
nVidia Corporation	MCP65 AHCI Controller
nVidia Corporation	MCP65 AHCI Controller
nVidia Corporation	MCP65 AHCI Controller
nVidia Corporation	MCP65 SATA Controller
nVidia Corporation	MCP65 SATA Controller
nVidia Corporation	MCP65 SATA Controller

nVidia Corporation	MCP65 SATA Controller
nVidia Corporation	MCP67 AHCI Controller
nVidia Corporation	MCP67 AHCI Controller
nVidia Corporation	MCP67 SATA Controller
nVidia Corporation	MCP73 IDE
nVidia Corporation	GeForce 7100/nForce 630i SATA
nVidia Corporation	MCP73 SATA RAID Controller
nVidia Corporation	MCP79 SATA Controller
nVidia Corporation	MCP79 SATA Controller
nVidia Corporation	MCP79 SATA Controller
nVidia Corporation	MCP79 SATA Controller
nVidia Corporation	MCP79 AHCI Controller
nVidia Corporation	MCP79 AHCI Controller
nVidia Corporation	MCP79 AHCI Controller
nVidia Corporation	MCP79 AHCI Controller
nVidia Corporation	MCP79 RAID Controller
nVidia Corporation	MCP79 RAID Controller
nVidia Corporation	MCP79 RAID Controller
nVidia Corporation	MCP79 RAID Controller
nVidia Corporation	MCP78S [GeForce 8200] SATA Controller (non-AHCI mode)
nVidia Corporation	MCP78S [GeForce 8200] AHCI Controller
nVidia Corporation	MCP78S [GeForce 8200] SATA Controller (RAID mode)
OPTi Inc.	82C558 [Viper-M ISA+IDE]
OPTi Inc.	82C621 [Viper-M/N+]
OPTi Inc.	82C825 [Firebridge 2]
Promise Technology, Inc.	PDC20265 (FastTrak100 Lite/Ultra100)
Promise Technology, Inc.	PDC20267 (FastTrak100/Ultra100)
Promise Technology, Inc.	PDC20262 (FastTrak66/Ultra66)
Promise Technology, Inc.	PDC20268 (Ultra100 TX2)
Promise Technology, Inc.	PDC20276 (MBFastTrak133 Lite)
Promise Technology, Inc.	PDC20270 (FastTrak100 LP/TX2/TX4)
Promise Technology, Inc.	PDC20271 (FastTrak TX2000)
Promise Technology, Inc.	PDC20277 (SBFastTrak133 Lite)
Silicon Image, Inc.	Adaptec AAR-1210SA SATA HostRAID Controller
Silicon Image, Inc.	PCI0643
Silicon Image, Inc.	PCI0646
Silicon Image, Inc.	PCI0648
Silicon Image, Inc.	Sil 0649 Ultra ATA/100 PCI to ATA Host Controller
Silicon Image, Inc.	PCI0680 Ultra ATA-133 Host Controller
Silicon Image, Inc.	Sil 3112 [SATALink/SATARaid] Serial ATA Controller
Silicon Integrated Systems [SiS]	SATA Controller / IDE mode
Silicon Integrated Systems [SiS]	5513 [IDE]
Silicon Integrated Systems [SiS]	SATA Controller / IDE mode
Silicon Integrated Systems [SiS]	5513 [IDE]
Silicon Integrated Systems [SiS]	AHCI Controller (0106)
Silicon Integrated Systems [SiS]	AHCI Controller / RAID mode
Silicon Integrated Systems [SiS]	AHCI IDE Controller (0106)
Symphony Labs	SL82c105

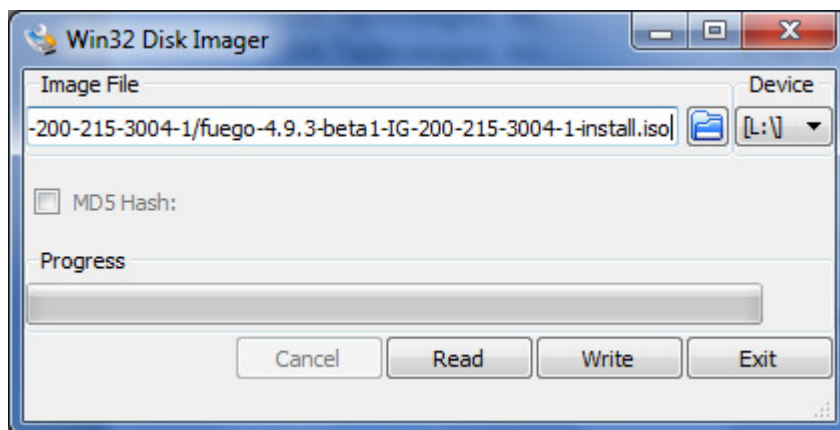
Tekram Technology Co.,Ltd.	DC290
Toshiba America	TC86C001 [goku-s] IDE
Toshiba America	Celleb platform IDE interface
Toshiba America Info Systems	Extended IDE Controller
Toshiba America Info Systems	EX-IDE Type-B
United Microelectronics [UMC]	UM8673F
United Microelectronics [UMC]	UM8886BF
United Microelectronics [UMC]	UM8886A
VIA Technologies, Inc.	VT82C576MV
VIA Technologies, Inc.	VT82C586A/B/VT82C686/A/B/VT823x/A/C PIPC Bus Master IDE
VIA Technologies, Inc.	VT82C576M/VT82C586
VIA Technologies, Inc.	VIA VT6420 SATA RAID Controller
VIA Technologies, Inc.	VT6410 ATA133 RAID controller
VIA Technologies, Inc.	VX800 Serial ATA and EIDE Controller
VIA Technologies, Inc.	VT82C586A/B/VT82C686/A/B/VT823x/A/C PIPC Bus Master IDE
VIA Technologies, Inc.	VT82C576M/VT82C586
VIA Technologies, Inc.	VT6410 ATA133 RAID controller
VIA Technologies, Inc.	VX800 Serial ATA and EIDE Controller
VIA Technologies, Inc.	VT8251 AHCI/SATA 4-Port Controller
VIA Technologies, Inc.	SATA RAID Controller
Workbit Corporation	NinjaPATA-32 Delkin Cardbus UDMA
Workbit Corporation	NinjaPATA-32 Delkin Cardbus UDMA

6 Appendix B: How to Write Ingate ISO file to USB Drives or CD-ROM Devices.

If you are not able to boot directly from the ISO file that you have received, e.g. when install directly on supported PC hardware (instead of on a virtual machine as VMware for example), you can make a bootable CD-ROM or USB-Drive and instead start the installation from that media. Below are some tested examples on how to make a bootable USB- or CD-ROM device, the examples are for Windows but if you only have Linux, you can also use the DD command to make a bootable USB device.

Making a Bootable USB Device using Image-Writer for Windows

1. Download and unpack the latest version of Image-writer from the following link <https://launchpad.net/win32-image-writer>.
2. Insert your USB Device and verify what drive letter it has. Also check that you don't have any important data left on the device.
3. Run the Image-writer executable and browse for the ISO file that you have received from Ingate. In the window for selecting a disk image, you need to change the file type to “*.*”, since Image-writer only lists *.img files as default and not ISO files. Choose save when done.
4. Under “device”, you need to select the drive letter that you noted in step 2. It's important that you choose the correct drive letter, otherwise you might lose data.
5. Press the write button and confirm the shown warning. When done, you should have a bootable USB device and you can continue the Ingate installation.



Making a Bootable CD-ROM Using Imgburn.

1. Download and install Imgburn from the following link: <http://www.imgburn.com/index.php?act=download>
2. Start Imgburn and choose option “write image file to disc”.
3. Under the source section, browse and select the ISO file that you have received from Ingate Systems.
4. Under the destination section choose your CD-writer device and verify that you have a writable CD in the CD-writer device.
5. Press the write button. When done, you should have a bootable CD-ROM and can continue with the Ingate installation.

