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# hp e-diagtools administrator's guide

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hp e-pc hp brio hp vectra hp kayak

## **hp workstations**

including: hp visualize hp kayak

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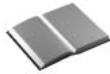
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## HP e-Diagtools Administrator's Guide



### Who Should Read This Book?

This manual is intended for MIS or IT personnel and it describes how to configure the HP e-Diagtools diagnostic solution to obtain optimal e-support and remote capabilities. It covers e-Diagtools versions 3.0 to 3.5x.



### Other e-Diagtools Documentation

Apart from this Administrator's Guide, the following documentation is also available:

- *HTML Quick Tour*  
Provides a useful online introduction and overview of e-Diagtools. It is available on the Diagtools web site **[www.hp.com/desktops/diagtools](http://www.hp.com/desktops/diagtools)**.
- *e-Diagtools User's Guide*  
Explains how to start and use e-Diagtools to diagnose your computer's hardware. It also explains how to set up and use the BIOS update feature and sending the support ticket. It is available on your HP computer's support web site (refer to page 4 for web addresses).
- *Virtual Call Assistant User's Guide*  
Explains how to install, configure and use the Virtual Call Assistant (VCA). The VCA is an e-Diagtools diagnostic aid that is capable of detecting and recognizing audio error signals from remote computers, which are especially useful when a remote computer cannot start (boot). It is available on your HP computer's support web site (refer to page 4 for web addresses).

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## More Information and HP Support Web Sites



For more information about e-Diagtools, refer to the e-Diagtools web site:

**[www.hp.com/desktops/diagtools](http://www.hp.com/desktops/diagtools)**

For more information about support for your HP computer, including e-Diagtools information, refer to the HP Support web sites:

HP Support	<a href="http://www.hp.com/go/support">www.hp.com/go/support</a>
HP Vectra Support	<a href="http://www.hp.com/go/vectrasupport">www.hp.com/go/vectrasupport</a>
HP Brio Support	<a href="http://www.hp.com/go/briosupport">www.hp.com/go/briosupport</a>
HP Kayak Support	<a href="http://www.hp.com/go/kayaksupport">www.hp.com/go/kayaksupport</a>
HP e-pc Support	<a href="http://www.hp.com/go/e-pcsupport">www.hp.com/go/e-pcsupport</a>
HP Workstation Support	<a href="http://www.hp.com/workstations/support">www.hp.com/workstations/support</a>
HP Notebook Support	<a href="http://www.hp.com/go/support">www.hp.com/go/support</a>

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this chapter applies to

hp business pcs ✓

hp workstations ✓

hp notebook pcs ✓

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## Introduction

This chapter introduces e-Diagtools, and describes the latest version of e-Diagtools, the media it comes on, and the various related software components.

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### Overview of this Manual

This manual is targeted at IT and MIS personnel having responsibility for system administration and end-user support. This manual describes:

- Setting up e-Diagtools  
Explains how to configure the HP e-Diagtools diagnostics solution in order to obtain optimal e-support capabilities
- HP Utility Partition parameters
- LAN Configuration Agent
- BIOS update mechanisms
- Creating and Sending Support Tickets Remotely  
Shows how to configure your remote computers to produce a Support Ticket and send it via SMTP-based e-mail to your own help-desk or your Authorized Support Provider.
- Integration with HP Tootools  
Describes the remote capabilities of e-Diagtools, with details on how to execute e-Diagtools on managed computer's from Tootools Device Manager. (The remote configuration of e-Diagtools Start-up and Internet options from Tootools Device Manager requires Device Manager 5.0 or higher on the Tootools server. In addition it requires Tootools Agent 5.0 or higher on the client computer.)

This manual covers e-Diagtools versions 3.0x to 3.5x

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### What is e-Diagtools?

The first step in solving a problem with a computer is *diagnosis*.

HP's e-Diagtools helps you diagnose hardware-related problems on an HP computer.

It is a series of tools designed to help you to:

- Distinguish between software and hardware problems
- Diagnose hardware-related problems
- Provide precise information to support providers so that they can solve any problem quickly and effectively.

For more information about e-Diagtools 3.5x, refer to the *e-Diagtools User's Guide*, available on your HP computer's support web site (refer to page 4 for web addresses).

e-Diagtools is not a repair tool.

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## What's New in e-Diagtools Version 3.5x?

Version 3.5x of e-Diagtools has these new features:

- Supports the latest HP computers
- Incorporates new, more efficient hardware diagnostics tests
- Has an improved user interface, especially for advanced tests
- Has a context sensitive help system
- Minimizes the number of reboots (restarts) required
- For HP Business PCs, provides a new activation from the HP logo screen (using <F8> key)
- Provides step-by-step troubleshooting recommendations if there is a test warning or error
- Issues a warning message in the basic tests if any main hardware components are missing.
- Provides more information in the support ticket, such as the history of the computer's configuration from the first time e-Diagtools was run up to the last time e-Diagtools was run
- Available in these languages: English, French, German, Italian, Spanish, Portuguese, Simplified Chinese and Japanese.  
*e-Diagtools for Windows* is additionally available in Traditional Chinese.



## Where to Find e-Diagtools – e-Diagtools Media

Version 3.5x of HP e-Diagtools is supplied on the following media:

- The Utility Partition pre-installed on your hard disk — on most new HP computers.
- The recovery CD supplied with your computer:
  - The *HP PC Image Engineer - Image Library and Diagnostics CD-ROM* for e-pc, Brio and Vectra PCs, as well as Kayak PC Workstations.
  - The *Recovery CD* for HP Notebook PCs.
- The *HP Diagtools CD-ROM* for Linux HP computer models.
- The generic *HP Diagtools CD-ROM* — this CD contains all e-Diagtools versions to cover a wide range of HP e-pc, Vectra, Kayak, Brio, Notebook and Visualize computers. This CD-ROM can be ordered from the Diagtools web site [www.hp.com/desktops/diagtools](http://www.hp.com/desktops/diagtools).

The generic HP Diagtools CD-ROM also contains:

- The *e-Diagtools Quick Tour*
- Self-paced training for e-Diagtools, Virtual Call Assistant, and HP Instant Support
- The *e-Diagtools User's Guide* for each version of e-Diagtools provided on the CD-ROM
- A utility to update the e-Diagtools Utility Partition (available on recent HP Diagtools CD-ROMs only).

### Which of these Media Should You Use?

e-Diagtools 3.5x is provided on several different media (described above). You should use the media that is most suited to you, taking into account the advantages and limitations of each.

However, here are some recommendations:

- In general, use the Utility Partition version of e-Diagtools. This provides the most complete feature set.  
For recent HP Business PCs, press **F8** when the startup HP logo appears, then select the option to run e-Diagtools.  
For all other computers, press **F10** when the “**Press <F10>...**” message appears during startup.
- For HP Notebook PCs, use e-Diagtools in conjunction with *e-Diagtools for Windows*. (For more information about *e-Diagtools for Windows*, refer to the *e-Diagtools User's Guide*, available on your HP support web site – refer to page 4 for web addresses).
- If the computer's Utility Partition is not intact, use the HP recovery CD-ROM provided with the computer.

- For HP computers provided with Linux, use only the HP e-Diagtools CD-ROM for Linux models.
- If you have a range of HP computers, such as HP Business PCs, HP Workstations, and HP Notebook PCs, use the generic *HP Diagtools CD-ROM*.

### Limitations of CD-ROM Versions

e-Diagtools Version 3.5x on CD-ROM has these limitations:

- BIOS updates are not possible. Use the Utility Partition version of e-Diagtools for this.

e-Diagtools Version 3.0x on CD-ROM has these limitations:

- BIOS updates are not possible.
- You cannot send support tickets.
- You need to set the computer's BIOS setup so that the Plug 'n Play field is set to no.
- There is no F11 facility to play back the audio error code (when you encounter an e-Diagtools error) to VCA-equipped support providers.

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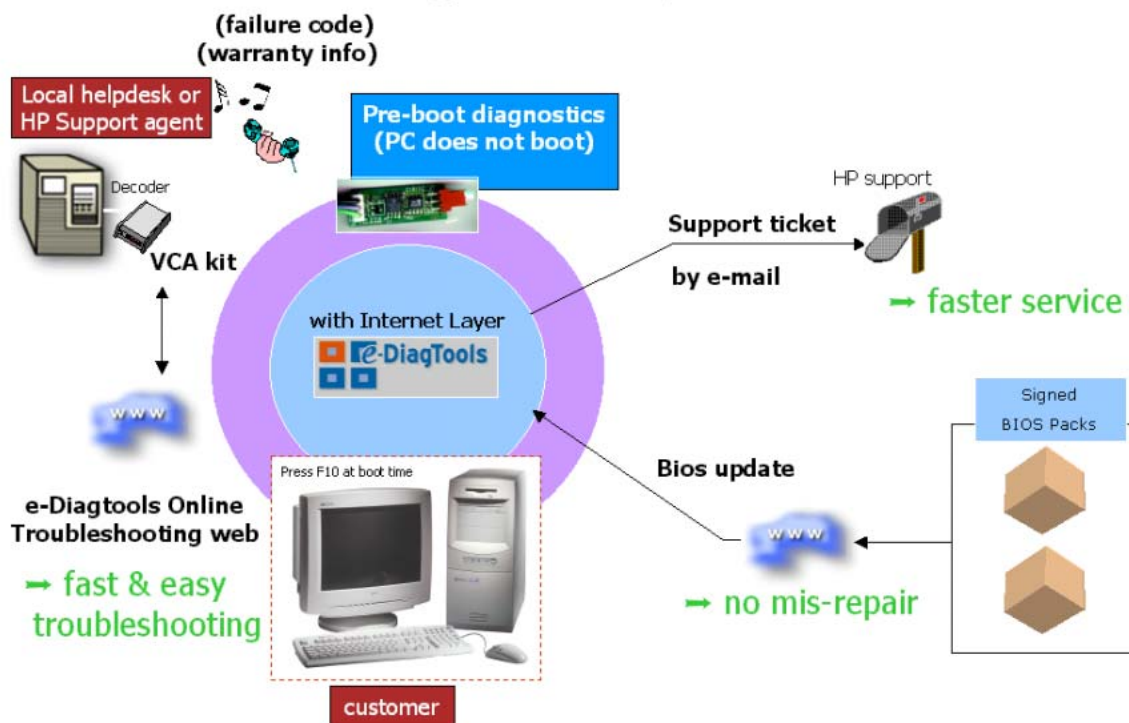
## e-Diagtools and HP Business PC Support Toolbox

The e-Diagtools solution is a large part of a complete set of support tools provided for HP Business PCs. This “Support Toolbox” provides a range of solutions to satisfy the diverse needs you may experience during the life of the PC:

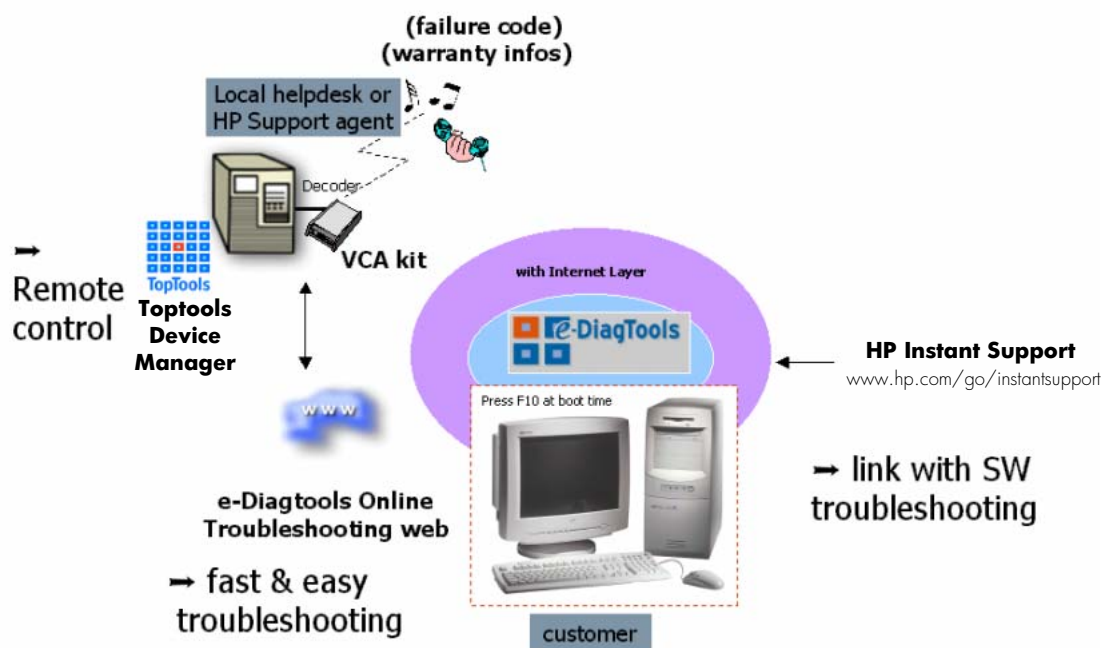
- **Pre-boot diagnostics**  
Enables troubleshooting when the screen is blank and the PC cannot start. This is described in the *e-Diagtools User's Guide*, available on your HP computer's support web site (refer to page 4 for web addresses).
- **HP e-Diagtools hardware diagnostics**  
Allows complete and effective diagnosis of the PC's hardware. Described in this manual and in the *e-Diagtools User's Guide*, available on your HP computer's support web site (refer to page 4 for web addresses).
- **Serviceability**  
Allows quick and easy repair of HP Business PCs, for example, replacing the hard drive of an e-pc.
- **HP Toptools**  
For remote management of HP Business PCs and other devices on the network. Toptools management of e-Diagtools is described in chapter 6, “Integration with HP Toptools”.  
For more information about Toptools, refer to the Toptools web site **[www.hp.com/go/toptools](http://www.hp.com/go/toptools)**.
- **HP Instant Support**  
For web-based automated diagnostics and solutions, as well as the troubleshooting knowledge base.  
For more information refer to the Instant Support web site **[www.hp.com/go/instant-support](http://www.hp.com/go/instant-support)**.
- **Recovery CDs.**  
Allow full recovery of the PC's operating system, drivers and utilities, and can also help create disk images for later deployment.
- **HP Virtual Call Assistant**  
The VCA is an e-Diagtools diagnostic aid that is capable of detecting and recognizing audio error signals from remote computers. Refer to chapter 7, “Virtual Call Assistant” for more information.

## Software Components in and around the e-Diagtools Solution

### e-Diagtools components



### Remote Tools



## 1 Introduction

### Software Components in and around the e-Diagtools Solution

This is a list of the software components which together comprise the e-Diagtools solution for remote BIOS updates and remote troubleshooting and diagnosis of your managed computers

Software Component	Detail
<b>e-Diagtools</b>	e-Diagtools, the diagnosis and troubleshooting software solution, is pre-loaded on most new HP Business PCs, HP Workstations, and HP Notebook PCs (in the HP Utility Partition). The latest version of e-Diagtools can be downloaded from your HP support web site. For more information, refer to the <i>e-Diagtools User's Guide</i> , also available on your HP support web site. HP support web site addresses are on page 4.
<b>e-Diagtools for Windows (for HP Notebook PCs only)</b>	<i>e-Diagtools for Windows</i> brings the Internet-related e-Diagtools features to HP Notebooks PCs. Upgrading the BIOS, sending the support ticket, and upgrading the diagnostic software can be done using the Notebook's modem or LAN connection. For more information, refer to the <i>e-Diagtools User's Guide</i> , available on your HP support web site (refer to page 4 for web addresses).
<b>e-Diagtools Pre-boot Diagnostics</b>	Pre-boot diagnostics helps you to troubleshoot problems when your HP Business PC or HP Workstation cannot start properly. It includes an audio error signal that can be played back to a support provider (equipped with the Virtual Call Assistant) for prompt, effective solutions. For more information, refer to the <i>e-Diagtools User's Guide</i> , available on your HP support web site (refer to page 4 for web addresses).
<b>BIOS Update and Sending Support Ticket</b>	Using your computer's Internet connection, you can download the latest BIOS from HP's server and install it on your computer. You can also email your support ticket to your support provider with ease. For HP Business PCs and HP Workstations, these features are available within e-Diagtools hardware diagnostics. For HP Notebooks PCs, these features are available using <i>e-Diagtools for Windows</i> . For more information about using these features, refer to the <i>e-Diagtools User's Guide</i> , available on your HP support web site (refer to page 4 for web addresses).
<b>LAN Configuration Agent</b>	This is a Windows-based utility that automatically records your computer's network parameters (every time Windows starts) and stores them in the Utility Partition. This network information is used when you update your BIOS or send a support ticket via e-Diagtools. HP Notebooks PCs use <i>e-Diagtools for Windows</i> to perform this task. For more information, refer to chapter 4, "Network Configuration for e-Diagtools". The LAN Configuration Agent is available from HP's support web site (refer to page 4 for web addresses).
<b>Virtual Call Assistant</b>	The Virtual Call Assistant (VCA) is hardware and software kit that automatically detects and decodes audio warning signals emitted by e-Diagtools Pre-Boot Diagnostics, BIOS EMU error codes, and e-Diagtools hardware diagnostic errors. The encoded signals from the remote computer indicate the nature of a failure state. For more information, refer to chapter 7, "Virtual Call Assistant" or refer to the <i>Virtual Call Assistant User's Guide</i> , available from HP's support web site (refer to page 4 for web addresses).
<b>Utility Partition Tools</b>	This is a set of tools for configuring or recreating the HP Utility Partition. For more information, refer to chapter 3, "The Utility Partition".



Software Component	Detail
<b>Toptools Device Manager</b>	The Toptools Device Manager for the remote operation of single or multiple managed PCs. For more information, refer to chapter 3, "The Utility Partition". The Toptools Device Manager is available from the HP Toptools web site, <a href="http://www.hp.com/go/toptools">www.hp.com/go/toptools</a> .
<b>Toptools Agent (Toptools for PCs)</b>	The Toptools Agent is provided on HP Business PCs and HP Omnibook Notebooks. It must be present for you to use Toptools Device Manager remotely to control the PC. For more information, refer to chapter 6, "Integration with HP Toptools". The Toptools Agent software is available from the HP Toptools web site.
<b>HP Instant Support</b>	This web-based tool provides automated diagnostics and solutions, software solutions, and the troubleshooting knowledge base. In some cases, it can remotely launch certain e-Diagtools diagnostic features for automated troubleshooting. For more information, refer to the web site <a href="http://www.hp.com/go/instant-support">www.hp.com/go/instant-support</a> .

The e-Diagtools functions may be accessed locally on each computer.

The Toptools Device Manager can interface with e-Diagtools on managed computers equipped with the Toptools Agent. The Toptools Device Manager can, if required, configure e-Diagtools parameters and run e-Diagtools diagnostics remotely. A Support Ticket containing the diagnostics results may be sent by e-mail to your Authorized Support Provider, or by LAN to the Toptools Server.

## 1 Introduction

Software Components in and around the e-Diagtools Solution

this chapter applies to

hp business pcs ✓

hp workstations ✓

hp notebook pcs ✓

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## Parameters and Settings

This section introduces the parameters you are most likely to use when working with the e-Diagtools solution on managed computers either locally or via the Toptools Device Manager. These parameters and settings control the behavior and the onscreen attributes of the different software tools that comprise the e-Diagtools solution and Toptools utilities.

A short description is given for each topic. Where necessary, there is also a page reference to a more detailed explanation in this Guide.

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## e-Diagtools Configuration

A number of parameters can be configured in e-Diagtools. The parameters listed can be configured locally, or alternatively they can be configured remotely using the HP Tootools Device Manager:

- The Network Parameters  
These are displayed whenever you update the BIOS or send a support ticket in e-Diagtools (HP Business PCs and HP Workstations only).
  - The Client Internet Protocol (IP) configuration
  - Customer and Support Provider e-mail addresses
  - Master Catalogue URLs.

For more information, refer to chapter 4, 'Network Configuration for e-Diagtools'.

- The e-Diagtools Startup Options
  - Startup activation message  
("Press F10 to enter the HP Utility Partition, or any other key to proceed")  
Available on some HP Business PCs only.
  - Startup menu options.

For more information about setting these options, refer to "Configuring the Utility Partition" on page 25.

To remotely configure e-Diagtools using Tootools, both e-Diagtools and the Tootools Agent must be installed on each remote computer, and Tootools Device Manager must be installed on the Tootools server.

### Utility Partition INI Files

All e-Diagtools configuration data is stored in two files. These are named **HiPaConf.INI** and **Network.INI**. These two files are located at the root of the Utility Partition.

The file **HiPaConf.INI** is described in "Utility Partition HiPaConf.INI File" on page 26.

The file **Network.INI** is described on page 33.

this chapter applies to

hp business pcs ✓

hp workstations ✓

hp notebook pcs ✓

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## The Utility Partition

This chapter describes the HP Utility Partition, its benefits, and the tools IT or MIS personnel can use to modify, restore and deploy it.

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## What is the Utility Partition?

All recent HP e-pc, Vectra, Kayak and Brio PC models are delivered with a special hard disk partition, called the HP Utility Partition, already pre-installed in addition to the standard partition(s) on the hard disk.

This “hidden” partition is not accessible to the PC’s operating system and is not listed by your file manager. It is completely transparent to the user in normal PC operation.

The Utility Partition does not affect normal PC use, and occupies little disk space.

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## What is it for?

Currently, the Utility Partition contains either Diagtools, HP’s powerful hardware diagnostics solution, or the new version, e-Diagtools, which adds a number of networking functions to Diagtools.

A simple keypress to select a boot option will call the pre-loaded diagnostics solution. Because of its location on the hard disk, the diagnostics program is ready for use without delay and can function securely and rapidly.

Carrying out diagnostic actions from the Utility Partition avoids the need to locate a CD-ROM or floppy disks, or search the Internet, as the required files are all there on the Utility Partition ready to use. In a few minutes, e-Diagtools will test the hardware components of your computer hardware to help you determine if a problem is hardware-related and to localize it. Finally, e-Diagtools can communicate the results directly to your help desk or support provider.

HP intends that in the future, the partition will contain additional software utilities to further enhance desktop management.

The Utility Partition is a valuable addition to the arsenal of tools provided by Hewlett Packard to help improve your desktop management and maintenance.

## Benefits of the Utility Partition and Diagtools

- **Ever-present**  
You have an ever-present, powerful hardware diagnostics utility at your fingertips. No need to locate a CD-ROM or floppy disks, or search the Internet; it is all there, ready to use.
- **Easy to employ**  
Simply restart the PC and press the required function key to launch the diagnostics software. (In recent PCs, press **F8** and select diagnostics; for other PCs just press **F10**.)
- **Enables remote support**  
When you use Diagtools or e-Diagtools to diagnose the PC's hardware, it can produce a full report called a Support Ticket. This report can be sent to your support provider to help provide a speedy, effective solution to the problem.
- **Transparent**  
The Utility Partition is transparent to the user and therefore does not hinder or confuse the user when carrying out their normal tasks on the PC.
- **Unobtrusive**  
Approximately 15-22 MB of disk space are used for the Utility Partition – this is a negligible amount for the current generation of massive multi-gigabyte hard disks.
- **Easy to manage**  
System administrators can easily produce gold disks that safely include the Utility Partition, easily duplicating its benefits across the numerous HP PCs in the network.

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## Utility Partition Properties

The HP Utility Partition is a DOS partition located at the beginning of your HP PC's bootable hard disk (as shipped by HP).

The HP Utility Partition has these properties:

- FAT12 DOS partition
- Size: 15 to 22 MB
- Partition type value: 12h (12 hexadecimal) which means that the utility partition is detected as an "unknown partition type" by most common operating systems.

### Hidden Partition

The value type 12h means that during normal use of the PC, the Utility Partition is invisible. But when using some advanced program as the disk administrator in Windows NT4.0, you can see the Utility Partition.

Also, when using disk utilities such as Fdisk or PartitionMagic you can see and manipulate the HP Utility Partition.



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## Configuring the Utility Partition

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### NOTE

You cannot configure the utility partition startup options for the latest HP Business PCs. These PCs use a new activation method and the **F8 Configuration and Diagnostics** menu to launch e-Diagtools.)

---

## Tools to Configure the Utility Partition

### Utility Partition Manager

The Utility Partition Manager is a compact stand-alone utility distributed on the HP support web site (refer to page 4 for web addresses). It is for use on a single computer at a time.

You can use the Utility Partition Manager to configure the e-Diagtools startup activation message.

### HP Tootools

You can use HP Tootools to remotely configure the Utility Partition of multiple computers on a network. You can configure:

- The e-Diagtools startup activation message
- The e-Diagtools startup menu options.

For prerequisites and further information refer to chapter 6, Integration with HP Tootools.

### Startup Activation Message

Applies to some  
Business PCs

The e-Diagtools startup activation message (the activation prompt) is shown just after the BIOS has completed the power-on self-tests.

You can configure:

- Whether an activation message is displayed (Yes/No option). If set to 'No', marching dots (one per second) are shown instead of the message.
- The message delay. You can set any value from three to ten seconds.

## e-Diagtools Startup Menu Options

If a computer has e-Diagtools on the Utility Partition, you can set either a full or menu or a simplified start menu. The full menu has these options:

- **Help**
- **Update BIOS**
- **Update BIOS, clear settings**
- **Run e-Diagtools**
- **Send Support Ticket to support provider**
- **Exit**

The simplified menu omits the two BIOS related options, “**Update BIOS**” and “**Update BIOS, clear settings**”.

## Utility Partition HiPaConf.INI File

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### NOTE

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The parameters in the **HiPaConf.INI** file are used only if the computer uses an activation message for launching e-Diagtools, commonly using the **F10** function key. (The latest HP Business PCs do not use an activation message; instead they use the **F8 Configuration and Diagnostics** menu to launch e-Diagtools.)

You can manually configure several parameters in the **HiPaConf.INI** file. Some of these parameters cannot be set using the Utility Partition Manager.

The **HiPaConf.INI** file is located at the root of the Utility Partition. It is used to define:

- The text for the Utility Partition activation message
- The time-out value for the Utility Partition activation message
- The key to be used to enter the Utility Partition when the activation message is shown.

The default values in this file are:

**Message1**=Press <F10> to enter the HP Utility Partition  
**Message2**=or any other key to proceed  
**Timeout**=5  
**Key**=F10

These values are interpreted as follows:

At startup, the activation message of two lines (Message1 & Message2) is displayed for the established time period (Time-out). Press (Key) **F10** during this time to open a boot menu of e-Diagtools local options.

---

## Recovering the Utility Partition

Applies to some  
Business PCs

In some cases, you may want to restore the Utility Partition after it has become disabled. The Utility Partition becomes disabled when the hard disk's master boot record gets overwritten. This can happen when you install certain software or operating systems, such as Windows 98 or Windows 2000. In some cases, the utility partition can be accessed locally (to launch e-Diagtools), but not remotely.

To recover use of the Utility Partition in this case, use the Utility Partition Restoration Tool, available on the HP support web site (refer to page 4 for web addresses). The web site also contains instructions for use.

---

## Updating the Utility Partition

You are strongly advised to update e-Diagtools on the Utility Partition for the most up-to-date, effective diagnostic aid.

For HP Business PCs

You can download the latest version of the HP Utility Partition version of e-Diagtools from the support web site for your HP Business PC (refer to page 4 for web addresses).

If you have a recent *HP Diagtools CD-ROM*, you can also select the option to automatically detect the version of e-Diagtools you are using and update it.

For HP Notebook PCs

You can upgrade the HP Utility Partition version of e-Diagtools using *e-Diagtools for Windows*, described in the *e-Diagtools User's Guide*, available on your HP computer's support web site (refer to page 4 for web addresses).

---

## Recreating the Utility Partition

You can recreate the Utility Partition by using the recovery CD kit that was delivered with your HP business PC.

By using the HP Brio assist CD for HP Brio PCs, or the *HP Image Creation & Recovery CD-ROM* and *HP Image Library & Diagnostics CD-ROM* for other PCs, you can delete the entire contents of the hard disk and replace it with the preloaded contents as delivered by HP. At the same time, you can restore the Utility Partition.

Depending on your e-Diagtools version, you can also use a utility available from the HP support web site (refer to page 4 for web addresses) to create the Utility Partition on a blank formatted hard disk without restoring the HP preloaded software. This standalone utility program simply boots from floppy disk to create an empty Utility Partition on your blank hard disk.

### Gold Disks and the HP Utility Partition

Your deployment process may require the Utility Partition to be created as part of the automated process. In this case, please contact your HP representative for information.

We also recommend that you keep the HP Utility Partition intact when you create your gold disk. To do this, follow these basic guidelines:

- On the new HP PC, run your partition software (such as Fdisk) and remove the main operating system partition. Leave the HP Utility Partition intact.
- Using the remaining free disk area, create any new partition (or partitions) as required for your gold disk
- Create your gold disk in the newly created partition (or partitions) using your usual procedures.
- Once complete, you will have a gold disk with a fully integrated Utility Partition.

this chapter applies to

hp business pcs ✓

hp workstations ✓

hp notebook pcs ✗

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## Network Configuration for e-Diagtools

This chapter shows you how to configure the e-Diagtools network parameters. This will enable e-Diagtools to update the BIOS and send the support ticket to your support provider.

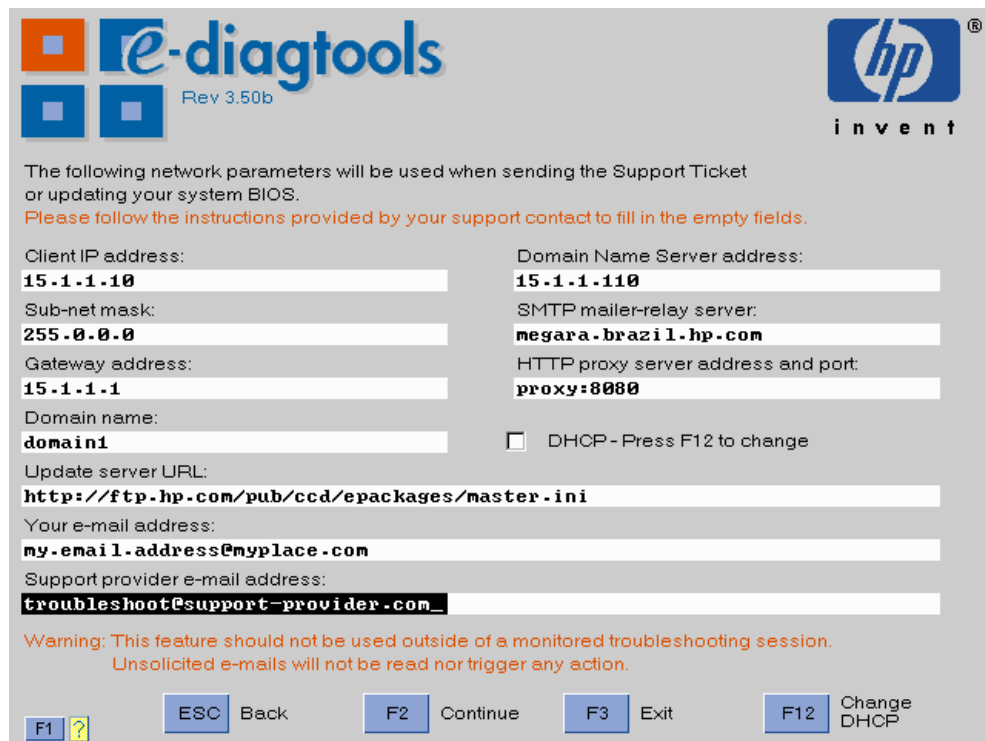
This chapter applies to HP Business PCs and HP Workstations only. For HP Notebook PCs, consult the information about *e-Diagtools for Windows* in the e-Diagtools User's Guide, available on the HP support web site (refer to page 4 for web addresses).

## Network Parameters

This Network Parameters section applies to HP Business PCs and HP Workstations. For HP Notebook PCs, refer to the e-Diagtools for Windows information in the *e-Diagtools User's Guide* (available on the HP support web site – refer to page 4 for web addresses).

The client computer network parameters are stored on the HP Utility Partition. These parameters identify the computer and are required to send the Support Ticket by e-Mail to the Support Provider or update the BIOS.

Example of a Network Parameters screen from e-Diagtools 3.50b



**e-diagtools**  
Rev 3.50b

**hp**  
invent

The following network parameters will be used when sending the Support Ticket or updating your system BIOS.  
Please follow the instructions provided by your support contact to fill in the empty fields.

Client IP address:	15.1.1.10	Domain Name Server address:	15.1.1.110
Sub-net mask:	255.0.0.0	SMTP mailer-relay server:	megara.brazil.hp.com
Gateway address:	15.1.1.1	HTTP proxy server address and port:	proxy:8080
Domain name:	domain1	<input type="checkbox"/> DHCP - Press F12 to change	
Update server URL:	http://ftp.hp.com/pub/ccd/epackages/master.ini		
Your e-mail address:	my.email.address@myplace.com		
Support provider e-mail address:	troubleshoot@support-provider.com		

Warning: This feature should not be used outside of a monitored troubleshooting session.  
Unsolicited e-mails will not be read nor trigger any action.

F1 ?    ESC Back    F2 Continue    F3 Exit    F12 Change DHCP

Three methods are available for setting or updating the client computer network parameters:

- Locally and manually in the e-Diagtools network parameters screen.  
This method is useful when the prerequisites for using the LAN Configuration Agent are not met, or when running e-Diagtools 3.5x from CD-ROM.
- Locally and automatically, using the LAN Configuration Agent.  
By default, this is done automatically on each computer that has e-Diagtools and the LAN Configuration Agent correctly installed. However, the e-mail addresses must still be entered manually (in the e-Diagtools network parameters screen) before you can send a support ticket.
- Remotely, using Tootools Device Manager to force an update of the LAN Configuration Agent (see page 47).

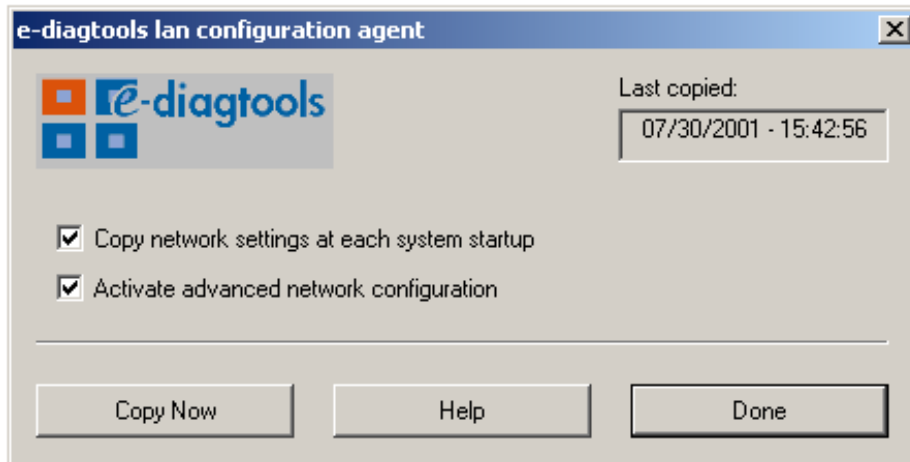
### What is the LAN Configuration Agent?

The *LAN Configuration Agent* is part of the e-Diagtools solution. It is a software application pre-loaded on HP computers able to make use of e-Diagtools. You can also download it from the HP support web site (refer to page 4 for web addresses). When active, the LAN Configuration Agent runs each time Windows starts. It gathers the IP configuration of the client computer and stores this in the configuration file **Network.INI** on the Utility Partition. This permits e-Diagtools to make use of the same IP configuration used under Windows.

#### LAN Configuration Agent, Local Interface

The Agent is provided with a Windows-based user interface for ease of operation. To access the LAN Configuration Agent interface locally, select:

**Start > Programs > HP e-Diagtools > e-Diagtools LAN Configuration Agent**



- The first checkbox allows you to select whether or not the network settings are copied at every startup.

When this checkbox is selected (default value), the network settings detected by the Agent are copied to the Utility Partition IP configuration file **Network.INI** at each Windows startup.

If the checkbox is not selected, the LAN Configuration Agent does *not* copy new data to the Utility Partition file. This means that settings already stored in the file are not overwritten and remain valid.

---

#### NOTE

When you are using HP Tootools to remotely configure the e-Diagtools network configuration, the Agent must **not** be set to **Copy Network Settings** at each system startup.

- The second checkbox allows you to choose whether or not the **F5 - Advanced Config** button is enabled in the Network Parameters screen. This allows users to set or modify the basic network parameters when sending the support ticket or updating the BIOS.
- The Copy Now button immediately detects and copies the computer's current network settings.



---

## E-mail Addresses for Sending Support Ticket

Before sending the Support Ticket by e-mail you must set two e-mail addresses:

- Your own (end-user's) e-mail address
- The Support Provider's e-mail address, to which the Support Ticket will be sent.

These addresses may be set manually by entering the information in the address fields of the Network Parameters page of e-Diagtools, or set using the Tootools Device Manager Master Catalog Address

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### NOTE

Do not send the support ticket to your support provider without prior agreement with them.

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## Master Catalog Address for BIOS Updates

The Master Catalogue web server address is used by e-Diagtools when updating the BIOS. For more information refer to page 39.

---

## Network.INI

The file **Network.INI** has no default settings. The values defined in this file are provided by the LAN Configuration Agent (the Windows-based e-Diagtools utility) or the HP Tootools Device Manager. The values in this configuration file are displayed (and can be modified) in the e-Diagtools Network Parameters screen (this screen is shown on page 29).

In cases where DHCP is used for the e-Diagtools networking facilities, most values in the **Network.INI** file are ignored. Only the web proxy and SMTP mail relay addresses will be used.

This is one of the two INI files stored in the root directory of the Utility Partition (**HiPaConf.INI** and **Network.INI**).

---

## Limitations

- The e-Diagtools network features (BIOS update and sending the support ticket) are not available when using a modem.
- You cannot update the BIOS with e-Diagtools version 3.5x on CD-ROM.
- You can neither update the BIOS nor send the support ticket with e-Diagtools version 3.0x and 3.1x on CD-ROM.
- The automatic proxy server configuration is not supported.
- e-Diagtools is not able to detect that a proxy server should be bypassed when accessing local addresses. This means that if there is a proxy server e-Diagtools will always use it, which may cause the connection to fail. In this case, you have to manually clear the proxy server parameter every time you use the e-Diagtools network features.

this chapter applies to

hp business pcs ✓

hp workstations ✓

hp notebook pcs ✓

---

## BIOS Update Mechanisms

---

## The BIOS Update Feature

Flashing an updated BIOS or re-flashing the current BIOS may cure problems with the motherboard in a number of cases. Flashing or re-flashing can:

- Install the latest or best version of a BIOS for higher performance, augmented functionality and/or improved stability
- Reset the BIOS configuration data to restore default values (if you select the option to update the BIOS and clear the settings).

*A BIOS update utility is included in e-Diagtools to simplify this task.* This software will automatically check for BIOS updates on HP's web site, download and install the updates.

For HP Business PCs and HP Workstations, the BIOS update utility is available from the e-Diagtools hardware diagnostics main menu (when it starts).

For HP Notebook PCs, the BIOS update utility is available from *e-Diagtools for Windows*. For more information refer to the *e-Diagtools User's Guide*, available on your HP support web site (refer to page 4 for web addresses).

The BIOS update feature is not available when running e-Diagtools from a CD-ROM.

---

#### NOTE

The BIOS update utility is able to pass through web proxies used at customers' sites, as this parameter is set either by the LAN Configuration Agent (refer to page 29) or by the Tootools Device Manager (refer to "2. Configure e-Diagtools Settings" on page 43).

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## How the BIOS Update Works

When one of the Boot Menu options **Update BIOS** or **Update BIOS, clearing settings** is selected, e-Diagtools starts the BIOS update program.

The update program connects to the update server either by Internet or Intranet, and checks for BIOS updates:

- 1 The web update client program connects to the Master Catalog web site specified in the configuration parameters. (By default, this is the HP BIOS server web site.)
- 2 The master catalog supplies the web update client versions which are available on the web update server, plus a map showing which product-specific catalog must be used with each computer model.
- 3 The web update client copies the master catalog to a local location, and compares its own client version with the latest web update client available on the web site. The web update client will then update itself if necessary.
- 4 The web update client then obtains the ID and the Product String of the computer. These together define the client computer model. The version number of the currently installed BIOS is also determined. These three values are obtained from the BIOS. The web update client uses the client computer model to establish which specific catalog within the master catalog is used for this platform.
- 5 The specific catalog lists the correct packages for this computer platform which are available for download. It also lists the conditions under which each package is applicable to the platform.

---

### NOTE

In e-Diagtools, only BIOS packages are available.

- 6 The web update client retrieves the specific catalog for its client computer and then parses it to determine if an update BIOS package is available. If an updated package is present, it is downloaded and the contents of the BIOS package are installed.

---

### Security

#### Disabling BIOS Updates

If you want to prevent managed computers from using this feature, these two BIOS-related menu options can be disabled using the Tiptools Device Manager. Moreover, on HP computers with the hardware monitoring BIOS features, the Update BIOS options will only execute on successful entry of the BIOS administrator password by the user.

#### BIOS Packages, Signed ZIP Format

The BIOS packages for e-Diagtools are in the form of signed ZIP files. When the web update client downloads the updated BIOS package, it unzips the package and verifies the signature.

If the signature is not authenticated, the BIOS of the client computer is not updated.

If the signature is authenticated, then the BIOS is updated. The BIOS configuration information is reset if this BIOS option was selected from the boot menu.

The system must be restarted once the BIOS update is complete; e-Diagtools will prompt you for a keypress to initiate the system reboot.

---

## Master Catalogue Web Location

By default, the Master Catalogue web sites used by e-Diagtools when updating the BIOS are as follows:

- For HP Business PCs and Workstations:  
`http://ftp.hp.com/pub/ccd/epackages/master.ini`
- For HP Notebook PCs:  
`http://ftp.hp.com/pub/mobile_computing/software/edtpackages/master.ini`

The address of the Master Catalogue web site is stored in the **Network.INI** file located in the root directory of the Utility Partition.

### Local Web/FTP Server

Your network configuration may include a firewall which prevents the reception of BIOS updates from the HP server. In this case you may want to install a local Web/FTP server inside the firewall. The easiest method of creating a local server is to download the file structure of the HP server commencing with the Master Catalog location (**master.ini**) and the entire directory sub-tree structure beneath it, together with the BIOS subdirectories for each platform and the BIOS packages they contain. Copy the specific catalogs, e.g. vl400.ini, evecetra.ini, etc. Check the contents, in particular the fields **packagename**, **fieldlocation** and **version**. Copy the sub-directories and contents to your local server inside the firewall, to exactly recreate the server file structure.

To verify your installation, use the client computer, open the web browser on the client computer and check that you can access all the files mentioned above using the IP address of the server for the URL.

## 5 BIOS Update Mechanisms

Master Catalogue Web Location



this chapter applies to

hp business pcs ✓

hp workstations ✓

hp notebook pcs ✓

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## Integration with HP Tootools

This chapter describes how to remotely configure and run e-Diagtools on client computers in the network using HP Tootools.

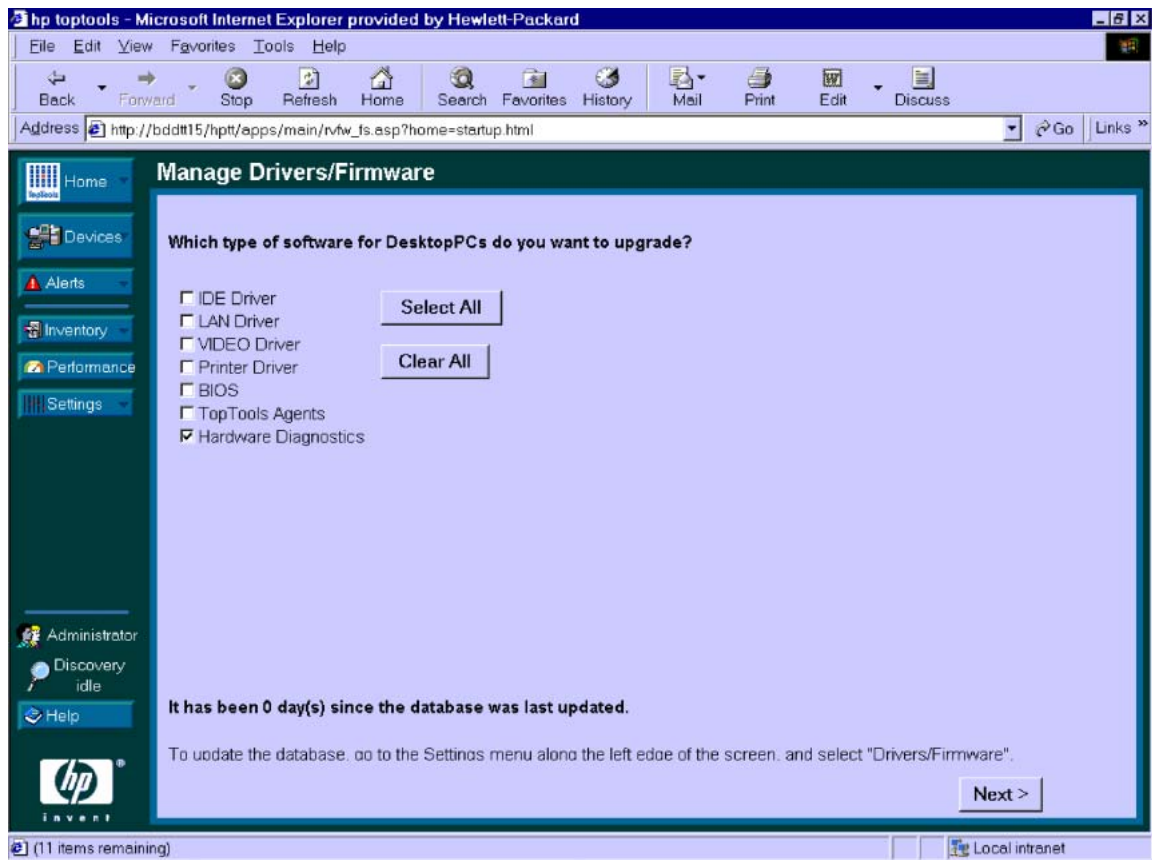
## Tootools Control of e-Diagtools on Multiple Computers

Several 'through-actions' to run e-Diagtools functions on managed computers are included in the Tootools Device Manager. These will configure or execute e-Diagtools functions on all the managed computers targeted.

### 1. Update/Hardware Diagnostics

Tootools Device Manager can automatically detect the currently installed version of e-Diagtools on a managed computer, and is capable of distributing a new version of e-Diagtools whenever such an update becomes available.

From the Device Manager, select **Manage Drivers / Firmware**, then check the **Hardware Diagnostics** box.



This option can be used to update e-Diagtools on all targeted computers. The target computers must have the Tootools Agent and e-Diagtools (in the Utility Partition) installed.

The e-Diagtools packages used for these updates by Tootools will be downloaded from HP's FTP server using the Tootools RMDB (Revision Management Database) mechanism.

## 2. Configure e-Diagtools Settings

The e-Diagtools network parameters and the e-Diagtools startup options can be set from Tootools Device Manager for all targeted computers. The remote configuration of these options requires Device Manager 5.0 or higher on the Tootools server, plus Tootools Agent 5.0 or higher on the client computers.

The Tootools Device Manager can be used to disable the LAN Configuration Agent on a managed computer and manually enter the IP configuration information.

This allows you to configure a managed computer to use a different IP configuration for e-Diagtools from that used under Windows.

Additionally, the Tootools Device Manager can configure the e-Diagtools computer to use Dynamic Host Configuration Protocol (DHCP) to find its IP configuration information. In this case the Device Manager must still be used to enter the web-proxy details and SMTP mail relay address.

To remotely configure e-Diagtools Internet and Startup options, use the Device Manager action: **e-Diagtools > Configure Settings**

Note that the options available in **Configure Settings** are very similar to the options provided for single managed computers in the **e-Diagtools** tab on the Parameters page. For the full options, go to the **e-Diagtools** tab on the Parameters Page.

## 3. Remote Execution of e-Diagtools

To run e-Diagtools remotely on managed computers from the Tootools Device Manager, select the Device Manager function:

### **e-Diagtools > Launch e-Diagtools**

The “**Launch e-Diagtools**” button is enabled only when the user is the Administrator or the Operator. In all other cases this button is disabled.

---

#### **NOTE**

The above functions are available via the Tootools Device Manager on the Tootools server. In addition, a subset of these functions is also available locally via the Tootools Agent installed on each of the managed computers.

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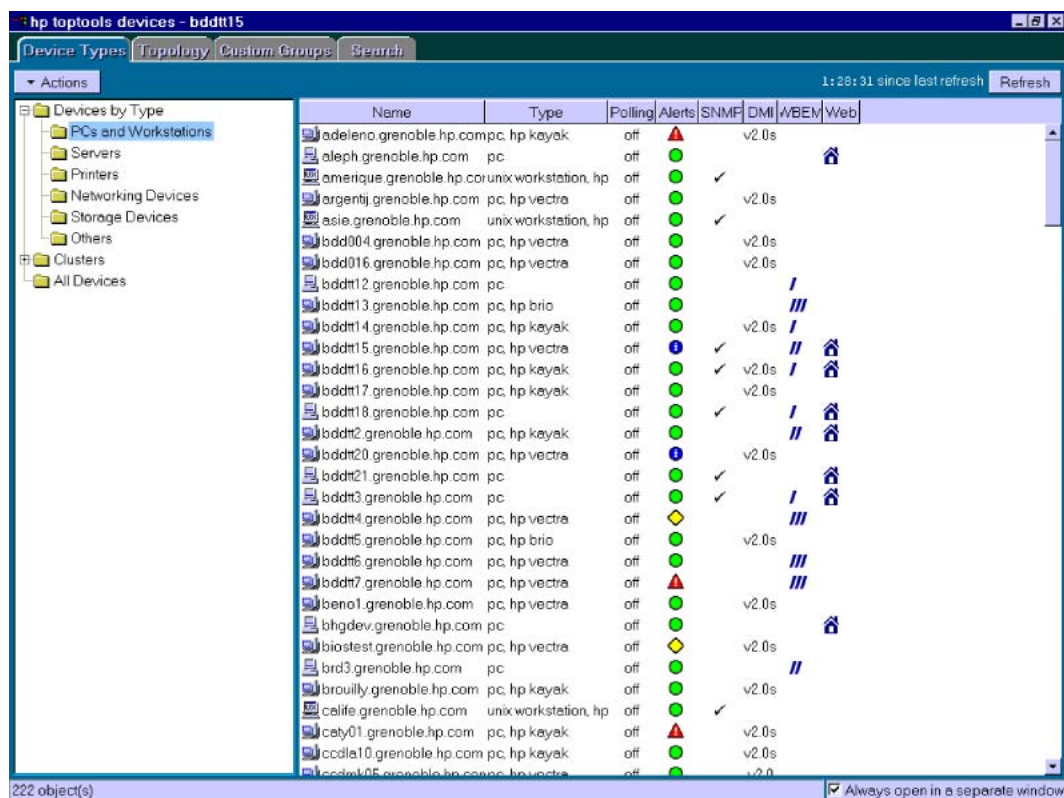
## Tootools Properties Page for e-Diagtools (Targeting One Computer at a Time)

A Properties page in Tootools Device Manager is dedicated to e-Diagtools actions that target a single managed computer. In most system configurations, the Properties page will be the most useful choice for carrying out e-Diagtools actions targeting single computers.

To run e-Diagtools functions or to set e-Diagtools parameters remotely on a single managed computer from Tootools Device Manager:

- 1 Open **Devices > Device Types**.
- 2 Select the folder **Devices by Type** in the directory tree on the left of the screen.
- 3 Click on the folder **PCs and Workstations** to open a list of all managed computers.

This list details the Name and Type of each network computer, together with other individual computer parameters (see figure below). The **Refresh** button at the top right of the Device Types window can be used to update the display of information on networked computers.

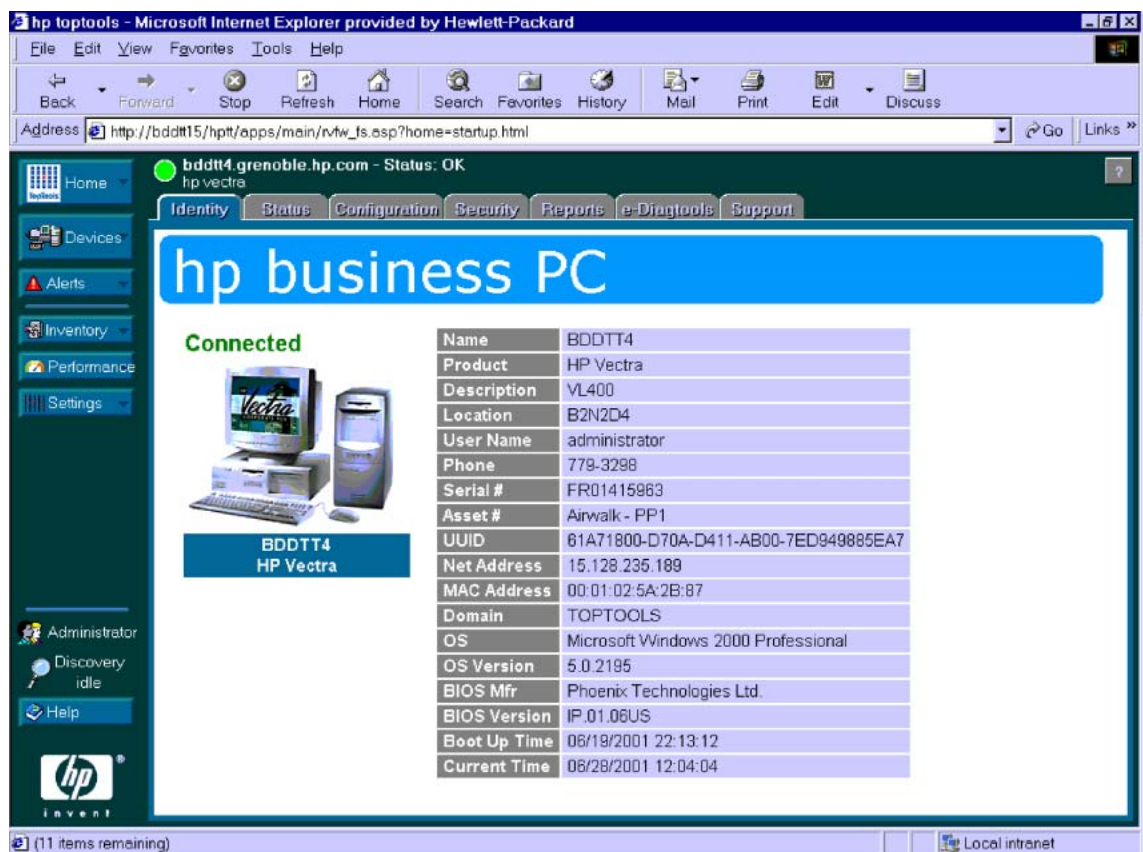


- 4 Double-click on an individual computer in the listing to open the Properties page for this machine.

The Parameters Page contains the Tabs:

- **Identity**
- **Status**
- **Configuration**
- **Security**
- **Reports**
- **e-Diagtools**
- **Support**

The **Identity** window details the individual specifications, OS software, and network address of the selected machine:

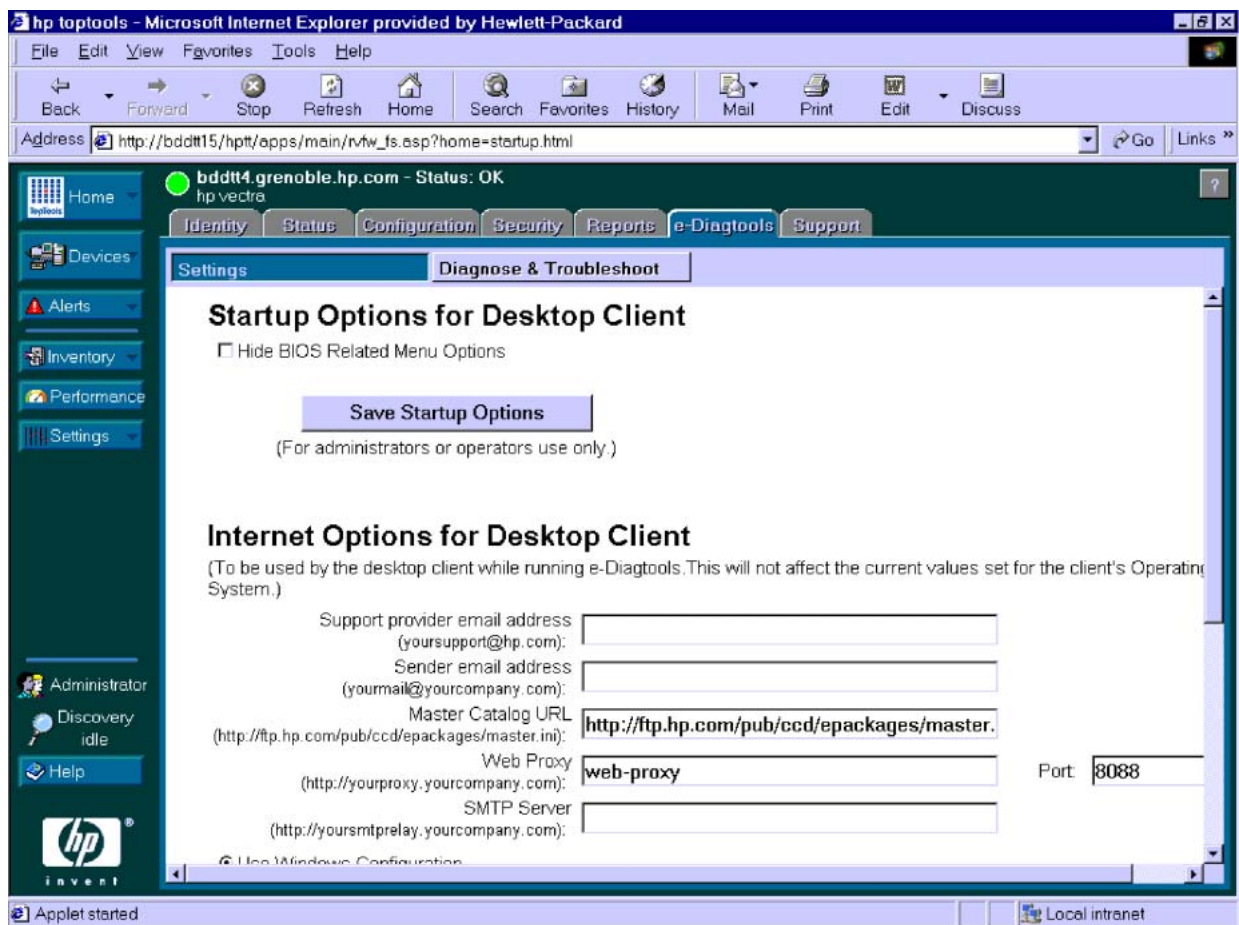


Select **e-Diagtools** to open the page of remote e-Diagtools functions for the selected computer as shown on page 46. Two tabs are available in the e-Diagtools window for a single targeted computer:

- **Settings**
- **Diagnose and Troubleshoot.**

### Settings: e-Diagtools Startup and Internet Settings (when available)

- On remote HP Business computers that use the F10 startup message, you can configure the e-Diagtools startup options. The configuration options are as follows:
  - Display the “Press F10 to enter the Utility Partition” message
  - Silent Startup (no message, display marching dots)
  - Hide BIOS Related Menu Options (show Simplified or Full menu)
  - “Wait ... seconds” (countdown configuration, set in the range 3 to 10 seconds)
- The **Settings** tab also provides remote single-PC configuration of e-Diagtools Internet options in the **Internet Options** area. Enter the following data for the managed computer:
  - Support Ticket destination (Support Provider e-mail address)
  - Sender e-mail address
  - Master Catalog web page address
  - Web Proxy address
  - SMTP Server address



## Synchronize Parameters with Windows LAN Configuration

Applies to:

- HP Business PCs and
- HP Workstations

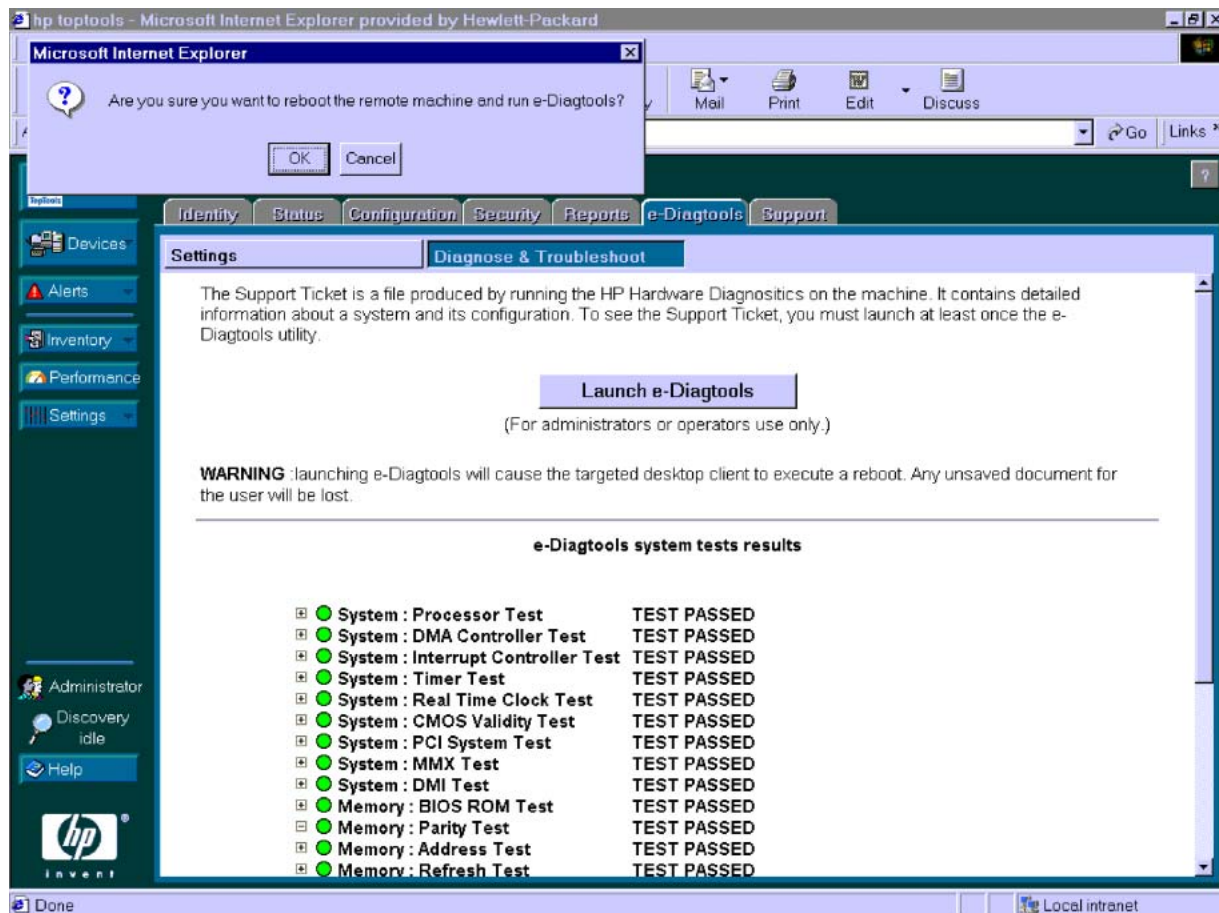
When the LAN Configuration Agent is active on an e-Diagtools computer, the LAN configuration parameters used by e-Diagtools will be synchronized with those used by Windows each time the operating system is started. The LAN configuration agent will store the LAN configuration parameters in the **HiPaConf .INI** configuration file in the Utility Partition root directory.

In addition, the page **e-Diagtools Properties** includes the option **Use Windows Configuration** to re-synchronize the LAN configuration. This allows the e-Diagtools configuration to be updated before the next system reboot, to ensure that the next system reboot will start e-Diagtools correctly. This eliminates the need to reboot once to synchronize the LAN configuration and then reboot again to use e-Diagtools with the updated configuration.



## Diagnose and Troubleshoot

The **Diagnose and Troubleshoot** tab of the **e-Diagtools Properties** page presents different options if the target machine is either ON or OFF.



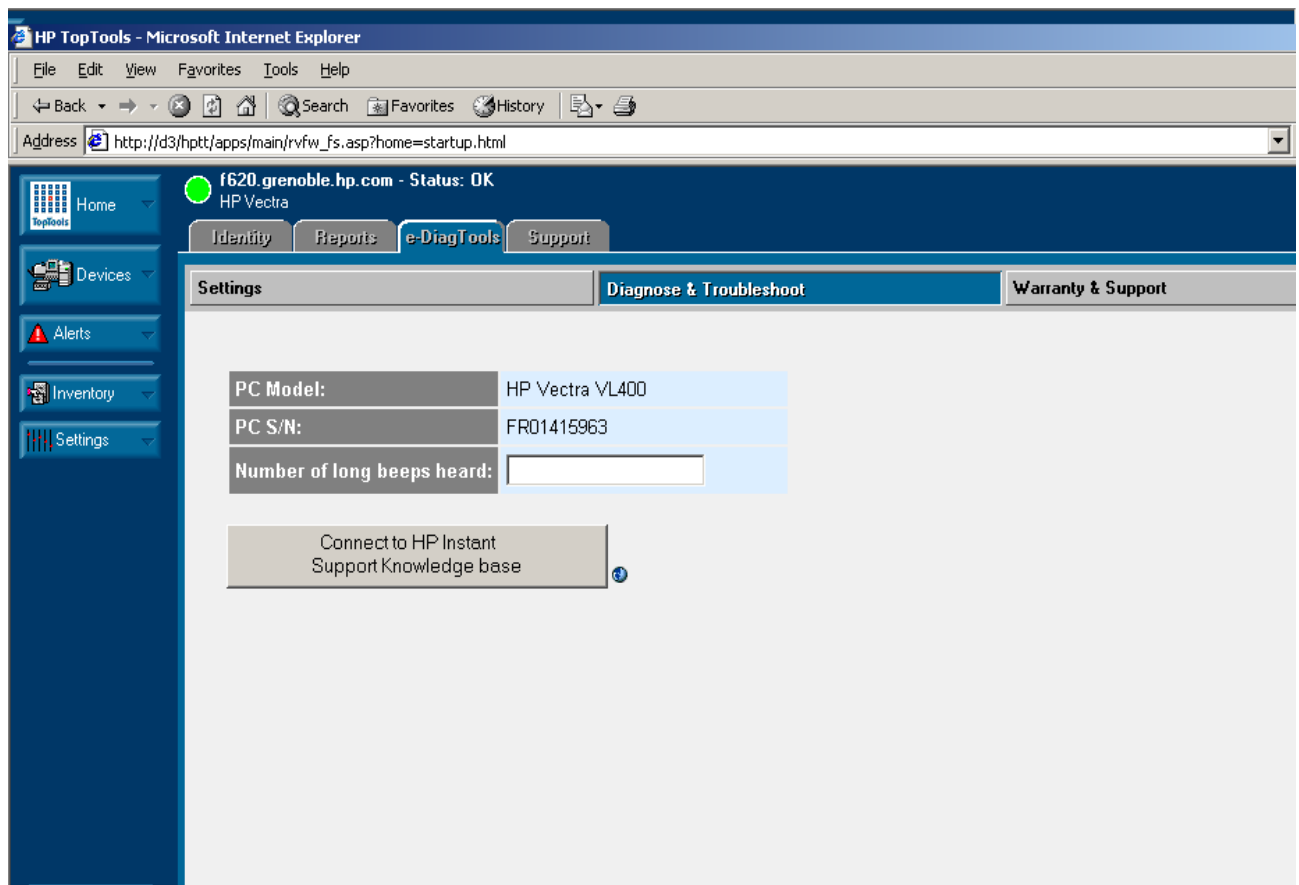
### Remote Machine ON:

- **Launch e-Diagtools:** this command enables the Administrator to remotely execute e-Diagtools on this computer. Clicking this button will force the target computer to reboot, execute e-Diagtools, and when complete will restart Windows. This button is only enabled when the user is the Administrator or the Operator; for all other users it is disabled.
- **e-Diagtools system tests results:** Tootools Device Manager is able to retrieve the e-Diagtools Support Ticket from a targeted computer and display a summary in its **Properties Page** for e-Diagtools. Tootools also includes a brief explanation of the Support Ticket information.



### Remote Machine OFF

- **VCA compatibility:** if there is a preboot diagnostics, BIOS EMU or e-Diagtools error on a target computer, and the Virtual Call Assistant software is configured to connect to the Tootools Device Manager, the results are displayed in the **e-Diagtools Properties Page** under the tab **Diagnose and Troubleshoot**. For details on the use of the Virtual Call Assistant, refer to the *e-Diagtools Virtual Call Assistant User's Guide*, available on the HP support web site (refer to page 4 for web addresses).
- **Connect to HP Instant support:** this command connects you directly to the web troubleshooting e-support tool.



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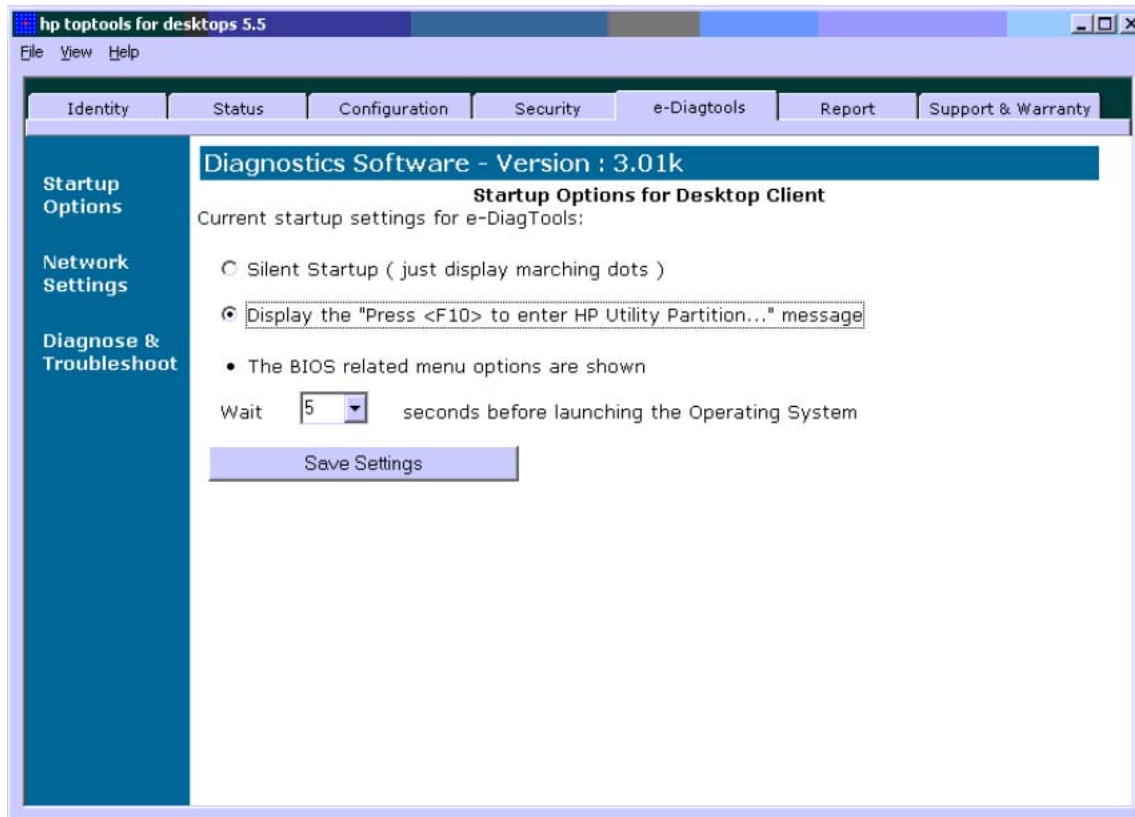
## The e-Diagtools Tab in the Tootools Agent

The Tootools Agent installed on each managed computer offers a subset of the features available in the Tootools Device Manager:

### 1. Startup Options (when available)

From **Startup Options** you can configure e-Diagtools startup options for HP Business computers that use the F10 startup message:

- Display the screen message “**Press F10 to enter the Utility Partition**”.
- Silent Startup option, displays marching dots only, without the activation message.
- Wait the set number of seconds before launching the operating system. The **Countdown** value is in seconds, in the range 3-10.



## 2. Network Settings

From **Network Settings** you can view and configure all the network parameters necessary so that user's can update the BIOS or email a support ticket using e-Diagtools.

The screenshot shows the HP Tootools for desktops 5.5 application window. The 'e-Diagtools' tab is selected, and the 'Network Settings' section is active. The left sidebar contains 'Startup Options', 'Network Settings', and 'Diagnose & Troubleshoot'. The main area is titled 'Diagnostics Software Network Options' and contains the following fields and options:

- Support Provider email :
- Sender email :
- Master Catalog URL :
- Web Proxy : Port :  :
- SMTP Server :
- ☒ Use Windows Configuration
- ☐ Use DHCP (Dynamic Host Configuration Protocol)
- ☐ Use static values
  - IP Address :
  - IP Subnet Mask :
  - IP Gateway :
  - DNS :
  - Domain Name :

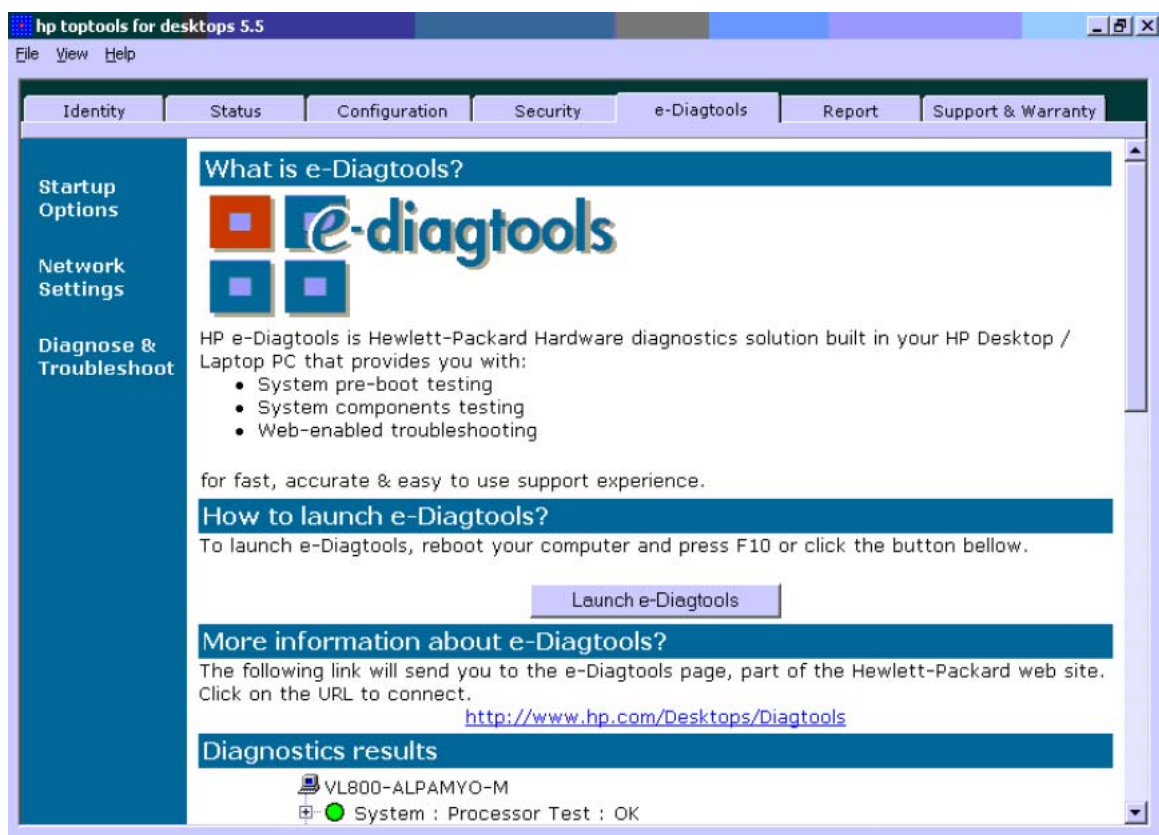
A 'Save Internet Options' button is located at the bottom right of the form.

### 3. Diagnose and Troubleshoot

From **Diagnose and Troubleshoot** the Tootools Agent displays:

- Information about e-Diagtools
- The steps to launch e-Diagtools
- The address of the e-Diagtools web site
- The last diagnostic results (the support ticket).

You can also launch e-Diagtools directly from this page. The computer will reboot and automatically run e-Diagtools.



this chapter applies to

hp business pcs ✓

hp workstations ✓

hp notebook pcs ✓

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## Virtual Call Assistant

---

## What is the Virtual Call Assistant?

The Virtual Call Assistant (VCA) is designed to provide a valuable diagnostic aid for Help Desks and Support Providers. It consists of decoder hardware (DynaMetric Plus) and software.

Once installed on a Support or Help Desk computer, it can automatically detect and recognize audio error signals emitted by Pre-Boot Diagnostics, BIOS EMU errors, and some e-Diagtools errors. The encoded signals from the remote computer indicate the nature of a failure state and also contain information about the computer itself, such as its serial number. Using the information extracted by the VCA, support personnel can provide more effective, timely solutions to reduce downtime and improve service.

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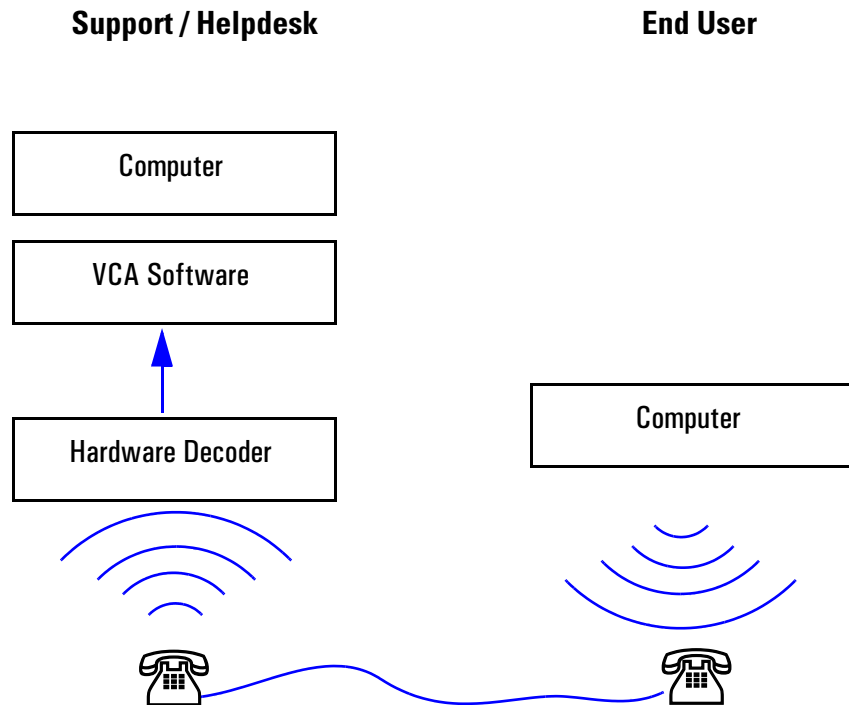
## How it Works

On the helpdesk side, you need a computer with:

- A hardware decoder, the Dynametric Plus
- The VCA software.

On the user side, the computer could encounter several types of error that produce an audio error signal that can be decoded by the VCA:

- Pre-boot errors (or “beep” errors)  
These occur before the computer’s Power-On Self-Test (POST). Most new HP Business PCs and some HP Workstations have pre-boot diagnostics.
- BIOS EMU errors  
These occur during the computer’s POST. The computer displays an error message on the screen. For many of these errors, some HP computers can also emit the modulated audio signal that corresponds to the displayed error. To emit the audio error signal, press **<Enter>** then **<F11>**. Most new HP Business PCs and some HP Workstations have this feature.
- e-Diagtools errors  
For some e-Diagtools errors encountered during hardware diagnostic testing, you can press **<F11>** to emit the audio error code. Most HP computers support this feature.



When the end user calls to report the problem, they emit the audio signal into the telephone handset. The audio signal is transmitted by telephone from the buzzer on the computer's system board to the helpdesk computer.

On the receiving end, the audio signal is picked up by a DynaMetric decoder fitted to the telephone receiver, which is connected to the microphone input of the computer's sound card.

The Virtual Call Assistant at the helpdesk or support site records the modulated signal emitted by the computer buzzer, then analyzes this audio signal to decode:

- The model of computer
- The computer serial number
- The type of failure detected.

---

## How to Use the VCA

The Virtual Call Assistant is intended to be installed and used by helpdesk personnel supporting HP Business PCs, HP Workstations and HP Notebooks PCs.

Typically, the user of the remote computer will call the helpdesk to report a computer malfunction or to report the presence of a warning signal from the computer. During this initial call, the buzzer signal can be recorded by the helpdesk computer and quickly analyzed by the VCA software.

The VCA provides immediate and accurate diagnostic information available at the helpdesk/support location, often eliminating the need for the support personnel to visit the remote site unprepared, or to rely on an uncertain verbal report.

---

## VCA Availability

For information about ordering the DynaMetric decoder, or to download the VCA software, connect to the HP Diagtools home page at:

**[www.hp.com/desktops/diagtools](http://www.hp.com/desktops/diagtools)**.

For more detailed information about using the VCA, refer to the *Virtual Call Assistant User's Guide*, available on the your computer's HP support web site (refer to page 4 for web addresses).



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# Glossary

<b>advanced system tests</b>	Together with the basic system tests, the advanced system tests comprise the complete suite of hardware diagnostic tests in e-Diagtools. The advanced system tests are available after the basic tests.	<b>hp notebook pcs</b>	Family of HP computers consisting of HP Pavillion Notebook PCs and HP Omnibook PCs.
<b>basic system tests</b>	Together with the advanced system tests, the basic system tests comprise the complete suite of hardware diagnostic tests in e-Diagtools. The complete set of basic system tests are done automatically after the hardware detection phase.	<b>hp workstations</b>	Family of HP computers consisting of many workstation models, including HP Visualize Workstations and HP Kayak Workstations.
<b>DHCP</b>	Dynamic Host Configuration Protocol. This is a network configuration protocol. Instead of configuring your computer with a fixed IP address in the network, DHCP allows the host computer (the server) to dynamically configure your computer as needed so it can function in the network.	<b>LAN configuration agent</b>	A Windows-based utility that automatically gathers networking information and stores it in the Utility Partition. This helps simplify setting up your computer to use the e-support features of e-Diagtools.
<b>e-diagtools for Windows</b>	This is part of the e-Diagtools family of tools. It runs under Windows and is used exclusively for HP Notebook PCs.	<b>pre-boot diagnostics</b>	A processor that diagnoses the computer's hardware prior to starting the operating system. It typically reports any errors using a series of audio signals. It is available on HP Business PCs and HP Workstations.
<b>e-features</b>	The ability of e-Diagtools to email support tickets and update the BIOS using your computer's networking and Internet facilities.	<b>support ticket</b>	This is the text file that contains a complete record of the test results and computer's configuration. It can be viewed, saved onto floppy disk or, more typically, emailed or faxed to your support provider.
<b>EMU</b>	Error Message Utility. This is a utility that the computer's BIOS uses to display BIOS error messages on the screen.	<b>toptools</b>	An HP-provided tool that manages network resources, such as HP Business PCs, HP Notebooks PCs, and HP Workstations.
<b>hp business pcs</b>	Family of HP computers consisting of HP e-pcs, HP Brio PCs, and HP Vectra PCs.	<b>virtual call assistant</b>	A software utility that can automatically detect and analyze audio signals emitted by a remote computer for troubleshooting purposes. Support provider's may have the Virtual Call Assistant to aid them with support.

**utility partition** This is a small, hidden hard disk partition provided on most HP computers. It is used to store and run e-Diagtools. It is also used to store any e-Diagtools work files and BIOS updates downloaded by e-Diagtools. *e-Diagtools LAN Configuration Agent* and *e-Diagtools for Windows* are not in the utility partition.

**utility partition manager** A standalone software utility used to configure certain parameters for the utility partition.





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