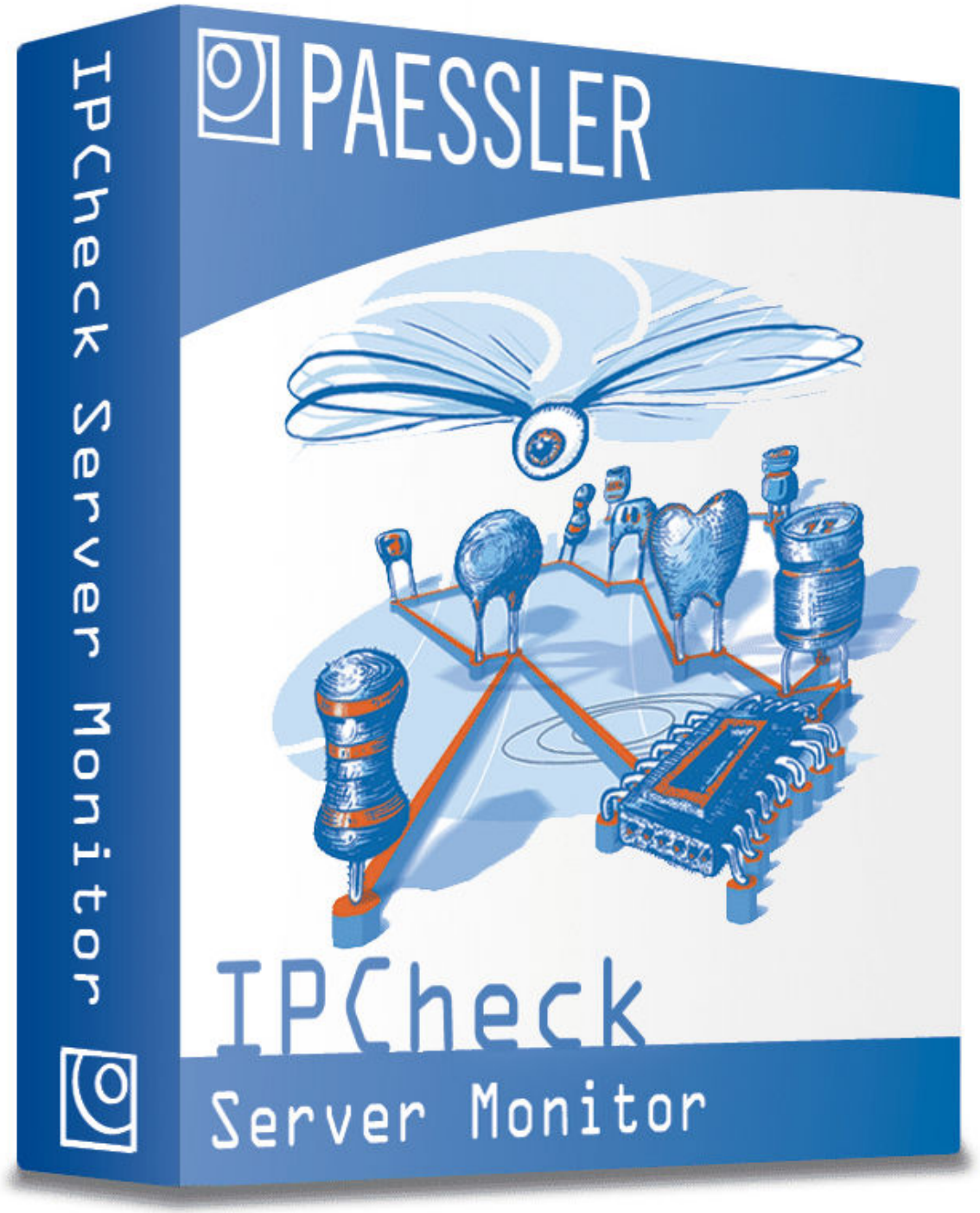


IPCheck Server Monitor

User Manual

Contents

Using IPCheck Server Monitor

Welcome to IPCheck Server Monitor

Welcome to IPCheck Server Monitor, the easy to use and cost effective software that monitors your networks, websites, and Internet servers for downtimes.

With a bird's eye view IPCheck Server Monitor observes your network, servers, or applications and will notify you as soon as it detects a problem. If you don't hear from IPCheck Server Monitor you know that your business is running smoothly.

This Windows-based software makes it easy and affordable to detect network and website failures early. IPCheck Server Monitor helps organizations monitor critical network resources and immediately detect system failures or performance problems to minimize downtimes and avoid economic impact.

Why should you monitor your websites and servers?

In today's business world, information technology has taken a central role. Businesses rely more and more on the Internet, their web sites, and email systems. A variety of servers and network equipment is necessary to ensure that data flows seamlessly between employees, offices, and customers. But, like all other technical devices, servers may fail from time to time – potentially causing trouble and loss of sales.

Monitoring your servers is the proactive approach to preventing disaster — because when the flow of data stops in today's business, so does the flow of money.

Whether web servers, mail servers, or ftp servers, IPCheck Server Monitor can help you keep a close eye on the equipment that is facilitating the flow of data within your business.

Overview of Features

Here are the main features of IPCheck Server Monitor:

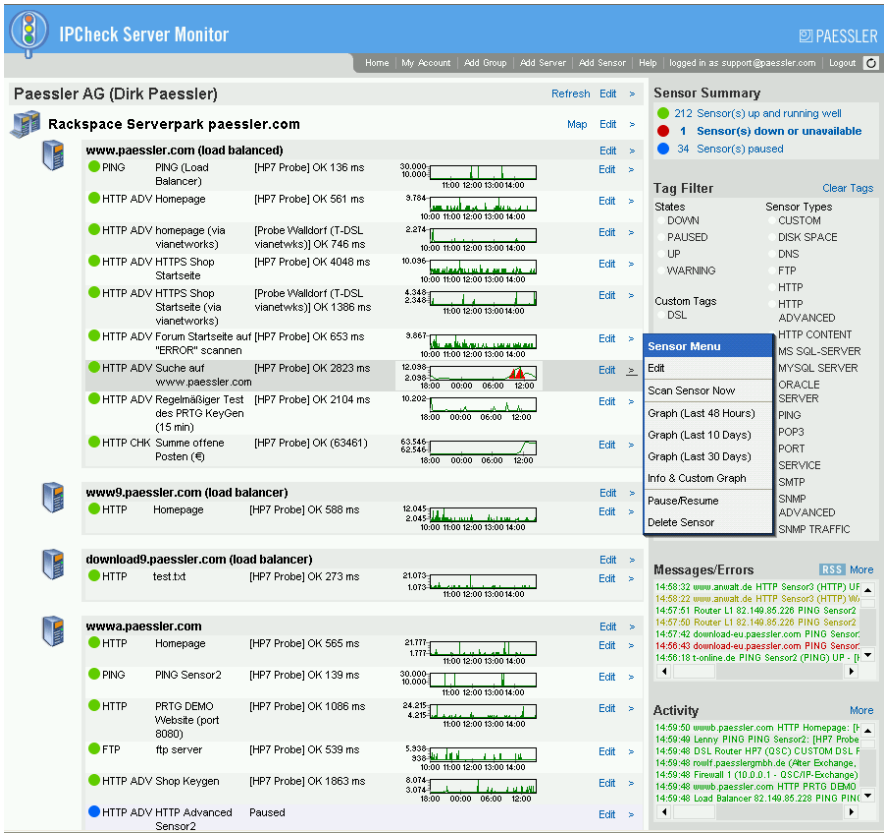
- Powered by Paessler's reliable IPCheck™ technology used by many Fortune 500 companies worldwide and constantly enhanced since 1997
- Easy installation and usage - You can get started in less than 5 minutes!
- Remote Management via web browser based interface or Windows client software
- Notifies users about outages by email, ICQ, or pager/SMS, and more
- Monitors many network services with its comprehensive sensor type selection
- Multiple location monitoring using secure Remote Probes

Your choice of interface – Web browser based, Windows based or PocketPC based

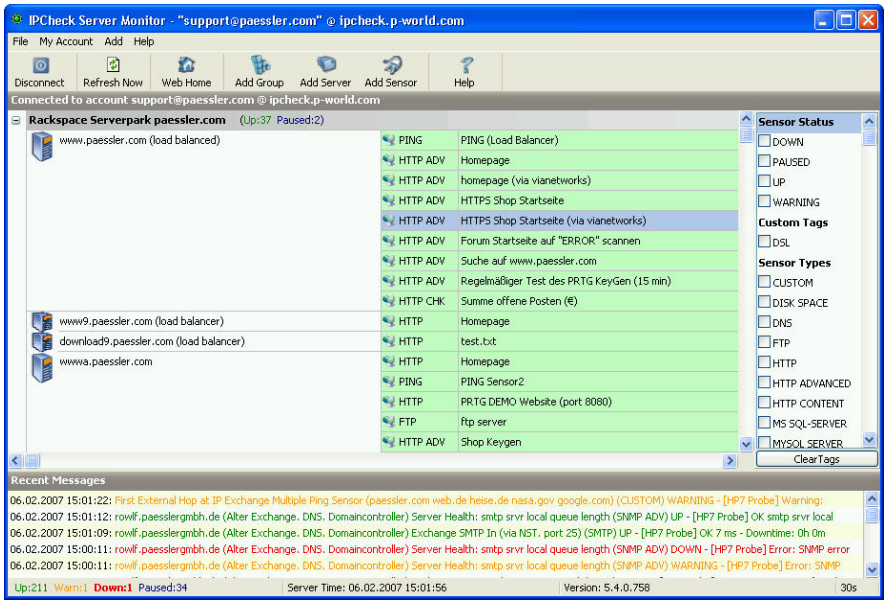
There are three intuitive and simple user interfaces:

- an interface that you can access using a web browser (IE6/Firefox)
- a client software that runs on Windows and
- a client software that runs on PocketPCs.

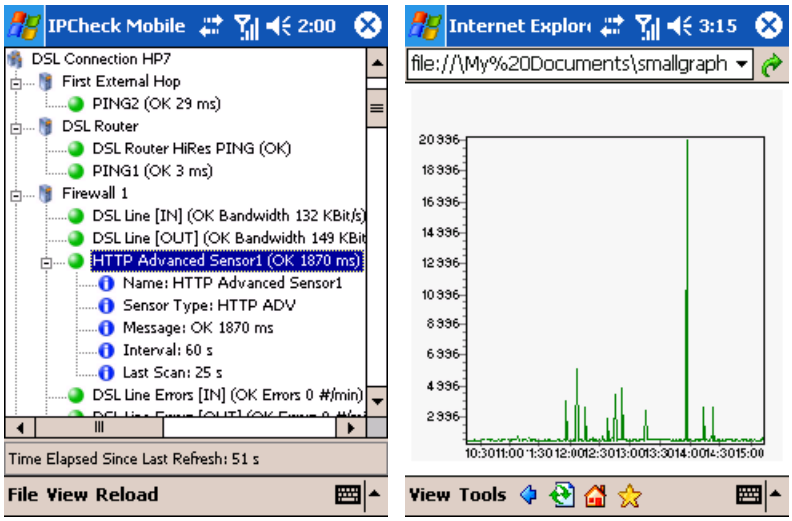
You can use the first two options to easily create groups of network resources (i.e., remote office #1, web farm, etc.), individual resources within the group (i.e., a server), and multiple sensors per resource (i.e., HTTP, Ping, and DNS).



The second option to access and edit the configuration is the Windows GUI, here shown with a list of servers and sensors.

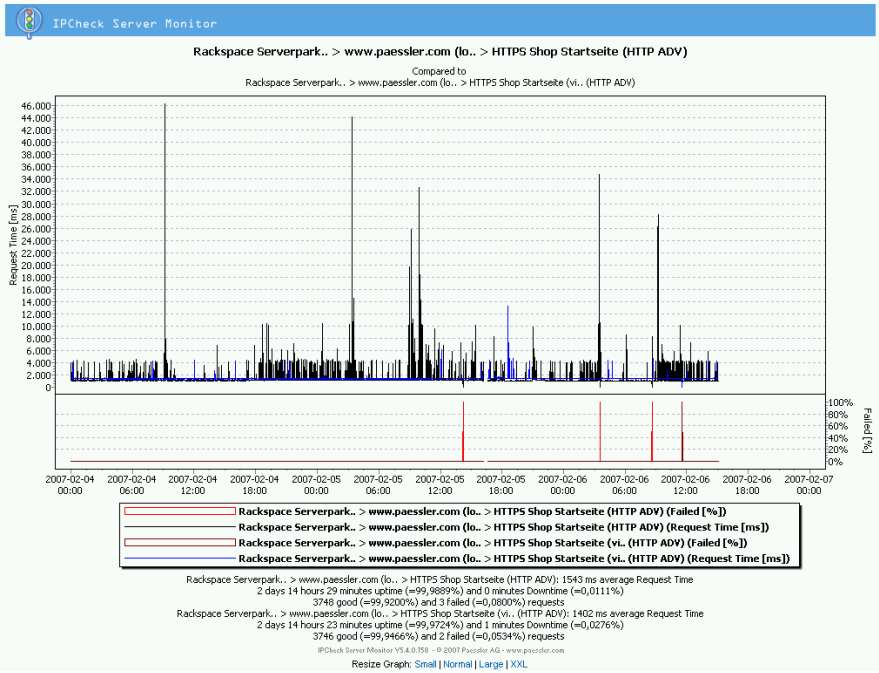


The PocketPC interface ("Mobile GUI") enables you to view the monitoring status on the go (but it is "read only", so you can't change sensor settings).



Reporting and Trend Analysis

IPCheck Server Monitor tracks a server's response times and records the results of all monitoring requests into its built-in database. The historic monitoring data can later be analyzed for uptime/downtime reports and trend analysis.



Sensor Alert Notification and Messaging

At the heart of this uptime monitor tool is the ability to notify the user(s) of sensor alerts. For example, if you are monitoring a server for HTTP and IPCheck Server Monitor is unable to connect with that server on HTTP, a notification will be emailed to the administrator, who can then take immediate action. Additionally, IPCheck Server Monitor Server can be configured to send messages via SMS/Pager, network broadcast, or ICQ, play a sound file, request a HTTP URL, or execute an external program or batch file. When using the Windows GUI you additionally have the option to be notified using popup windows, sounds, and even text-to-speech.

Built-in Webserver and SQL Database

The software installs with its own integrated webserver and SQL database (Firebird SQL Server). The close integration of webserver, database, and monitoring application provides seamless installation and management to the user. There are no software requirements to install IPCheck on a computer, it can be installed on all Windows NT/2000/XP/2003 operating systems, regardless of workstation or server edition.

Multi User Management

IPCheck Server Monitor is a credential-based system and can be run for just one single user or in multi user mode. Starting with the Multi User Edition the administrator can create multiple user accounts. Each user can create his own groups of servers and sensors. For example a single, centralized copy of IPCheck Server Monitor can be used by multiple departments, each having their own view of their sensors and reports.

Offering Monitoring Services with the ISP Edition

The ISP Edition adds advanced user management options for ISPs who want to offer customized monitoring services to their customers. The admin can choose the sensor and notification types that are available for new users by default and

can also edit these settings for each user individually. Also the minimum monitoring interval, maximum number of sensors and an expiry date can be set for each user.

Skinning of Web Interface and Emails

IPCheck Server Monitor provides the ability to edit the templates for the Web interface (e.g. to show your company logo or to fit the Web GUI into the Look&Feel of your Intranet) as well as email templates that are used to create the emails sent to the users for various activities, such as notifying the administrator of a new sensor, mailing a new password to a user, etc.

Features in Detail

IPCheck Server Monitor offers you a number of outstanding features:

Monitoring

- Reliable server uptime/downtime monitoring using Paessler's proven and constantly refined IPCheck™ technology which has been used by many companies - from SOHOs to Fortune 500 companies worldwide - since 1997
- Sensor types include PING, PORT, HTTP, HTTPS, HTTP Advanced, HTTP Transaction, DNS, SMTP, POP3, FTP, SNMP (Version 1, 2c and 3), WMI sensors, as well as various native Windows system sensors and native SQL sensors for MS SQL, MySQL and Oracle.
- User can create his own sensor types using scripting and programming languages
- Can monitor devices and servers located in the Internet, in Intranets and in VPN networks
- With the installation of optional "Remote Probes" multiple location monitoring can be achieved
- Automatic Network Discovery searches for servers/devices in your network and automatically creates sensors for the most common protocols
- Monitoring can be scheduled based on the time of day and the day of week

Notifications

- Notifications can be triggered by uptimes, downtimes, changed webpages, or slow responses
- Messages can be sent by email, network broadcast (net send), ICQ, via SMS and to pagers and the Windows event log
- An external program, batch file or HTTP URL can be triggered or a sound file can be played
- Notifications can be scheduled based on the time of day and the day of week

User Interface

- The IPCheck server can be locally and remotely managed through
  - a web browser based interface (without installing additional software on the client) and
  - a Windows client software (for all Windows versions)

    - Both interfaces can be used simultaneously
- Current monitoring status can be published (optionally, e.g. to show current network status in Intranets)
- Sensors can be grouped and filtered via a flexible tagging system, thereby simplifying the administration of long and complex sensor lists.

Reporting and Analysis

- Detailed up/downtime monitoring reports and graphs can be viewed online
- Calculates uptime/downtime percentages as well as downtimes
- Various reporting options enable the user to perform in-depth trend analysis
- Reports emails can be sent to user's mailbox (automatically daily, weekly, monthly, or on-demand)

System/Installation

- Fast and easy installation - Get started within 5 minutes after downloading
- Includes a stand alone web server for local and remote access to the monitoring data
- Web user interface can be skinned to fit into corporate network's look&feel
- Runs as an "NT service" on Windows NT/2000/XP/2003 for best reliability
- Includes free SQL server for fast, reliable data storage
- Offers optional export of monitoring data into CSVs or the Firebird SQL server for custom analysis
- "Administrator Control Panel" offers complete application configuration.
    - Edit templates for email messages
    - Modify sensor monitoring intervals
    - Set up local and remote probes
    - Administer the webserver and database

Available Sensor Types

Since each network device (or "server") typically has several parameters and services that should be monitored, you can set up various sensors to monitor each and every aspect of a server (e.g. CPU load, webserver responsiveness, SMTP responsiveness, PING time, etc.).

The sensors of this uptime monitor software not only check whether the server actually responds at all but also offer means of validating the replies from the server for validity.

Available sensor types include:

PING	Sends standard PING to the server/device
PORT	Checks whether the server accepts connection at the specified port number

HTTP	Simple HTTP/HTTPS request
HTTP Advanced	Advanced HTTP Sensor (features content check, proxy, and authentication settings).
HTTP Transaction	Checks several pages in sequence (e.g. shopping cart)
DNS	Checks DNS server
SMTP	Checks SMTP server with various protocol options
POP3	Checks POP3 server with various protocol options
FTP	Checks FTP server with various protocol options
SNMP	Reads SNMP (Version 1, 2c and 3) values of the device (supports custom OIDs, Paessler extensive OID library as well as SNMP Helper)
SNMP Traffic	Monitors bandwidth usage of servers, routers, switches etc. via SNMP (supports 64bit counters for SNMP V2c and 3)
FILE	Monitors a file on a local disk drive or a network share. It checks if the file exists, the file size is in a given range or if the file has been changed
NT Service Sensor	Any NT service on the local machine or a computer in the network can be monitored for downtimes. Can optionally restart the service upon failure
DISKSPACE	Monitors the free disk space of a local disk drive or a remote network share
Event Log	Monitors entries in the Windows event log
SQL	Native monitoring for MS SQL, Oracle SQL and MySQL servers
CUSTOM	Makes it easy to create your own custom sensors
WMI CPU Load	Monitors CPU loads of Windows systems using WMI
WMI Disk Space	Uses WMI to monitor the available disk space
WMI Service	Monitors a Windows service using WMI
WMI Memory	Enables monitoring of available memory through WMI
WMI Query	Runs custom WMI scripts to monitor any value that is accessible by WMI

Using the CUSTOM sensors of IPCheck Server Monitor a wealth of monitoring tasks can be performed that go far beyond the standard sensor set built into the software.

Available Licensing

There are a Freeware Edition, a Trial Edition, as well as several Commercial Editions available.

Freeware Edition

The Freeware Edition is a good solution to get started or for private use:

- May be used for free for personal and commercial use
- includes one user and up to 5 sensors
- Supports all available sensor types
- Shortest available monitoring interval is 15 minutes

This edition runs as default after installation when no license key is entered.

Trial Edition

The Trial Edition is a great way to evaluate the product for customers who are interested in purchasing commercial licenses. Free Trial License Keys are available on our website at http://www.paessler.com/ipcheck/trial:

- Offers all features of the Multi User License
- Supports all available sensor types, any monitoring interval and up to two users
- Temporary License key must be requested from Paessler's website
- Time limited for 30 days, reverts to Freeware after that

Commercial Editions

There are several different licenses of IPCheck Server Monitor available to suit the demands of smaller as well as larger customers and organizations. To learn more about pricing and feature matrix or to order licenses please visit:

http://www.paessler.com/order

Installation

Installing the software on your server

System Requirements

In short words: IPCheck runs under all Windows versions “NT and later”.

In a more detailed approach the system requirements for the installation and setup of IPCheck Server Monitor include:

- For the main server software:
  - Operating System Windows NT, 2000, XP, 2003 and Vista
  - On Windows NT 4 the latest Service Pack 6 is required
  - Note: Windows 95/98/ME are not supported for the server
- For web browser access:
  - Windows 98, ME, NT4, XP, 2000, 2003 or Vista with Internet Explorer (V6.0 or later) or Firefox 1.0
  - Or any other operating system that can run the web browser Firefox 1.0 or later
- For the Windows GUI:
  - Windows 98, ME, NT4, XP, 2000, 2003 or Vista
  - with Internet Explorer (V6.0 or later)
- System Memory of 192 MB RAM (256 MB or more recommended)
- Pentium 333 MHz (800 MHz or more recommended)
- About 50 MB of hard disk space for software installation
- Depending on monitoring traffic, up to several hundred MB of data storage (e.g. a sensor with 1 minute interval needs about 10 MB storage space per month)
- TCP/IP network
- Local Administrator privileges to perform the installation of the software

Other requirements

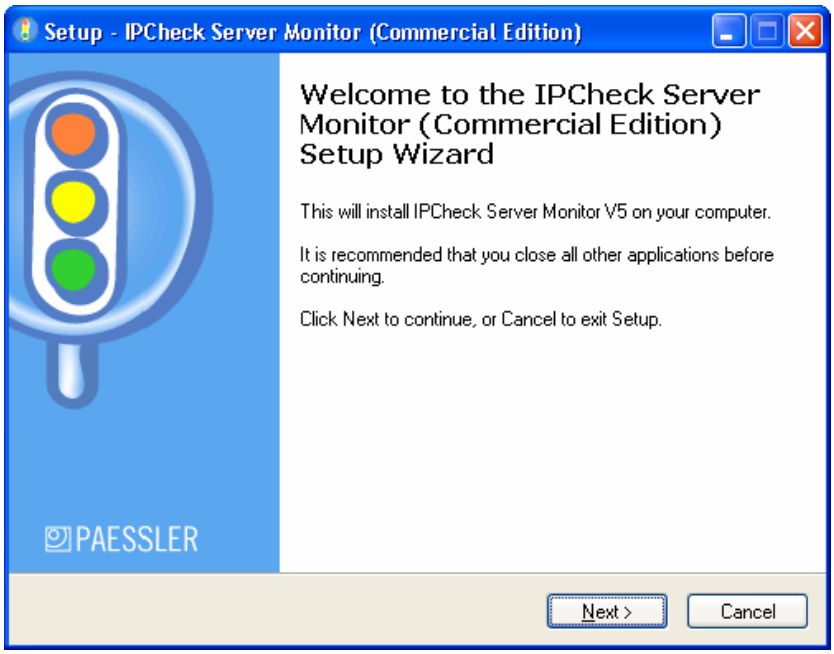
- SMTP mail server to send out email notifications (so called "relay server")

- An account at one of the supported SMS/pager services to send SMS/pager messages
- An ICQ account to send out ICQ notifications

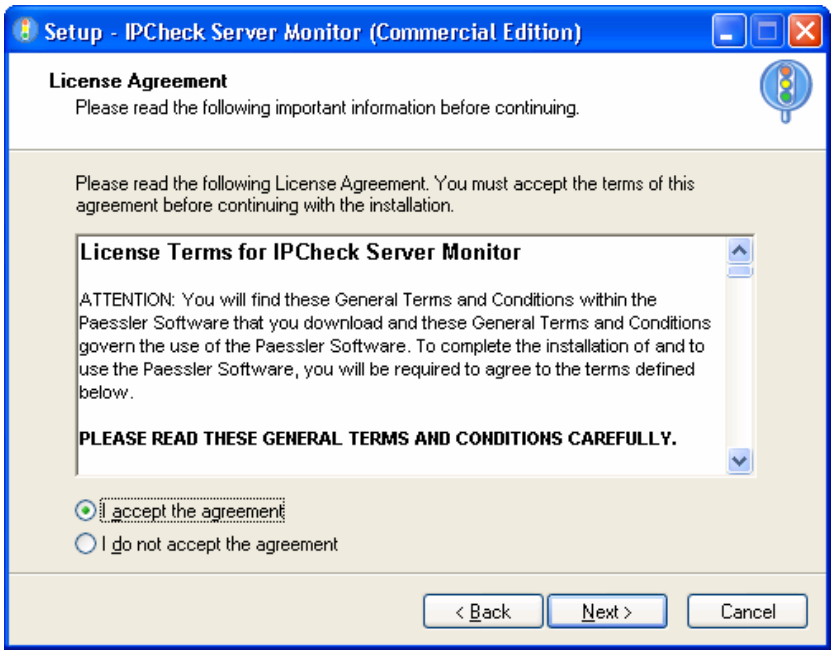
Installing IPCheck Server Monitor

Installing the IPCheck Server Monitor software is similar to other Windows-based applications. To install the application:

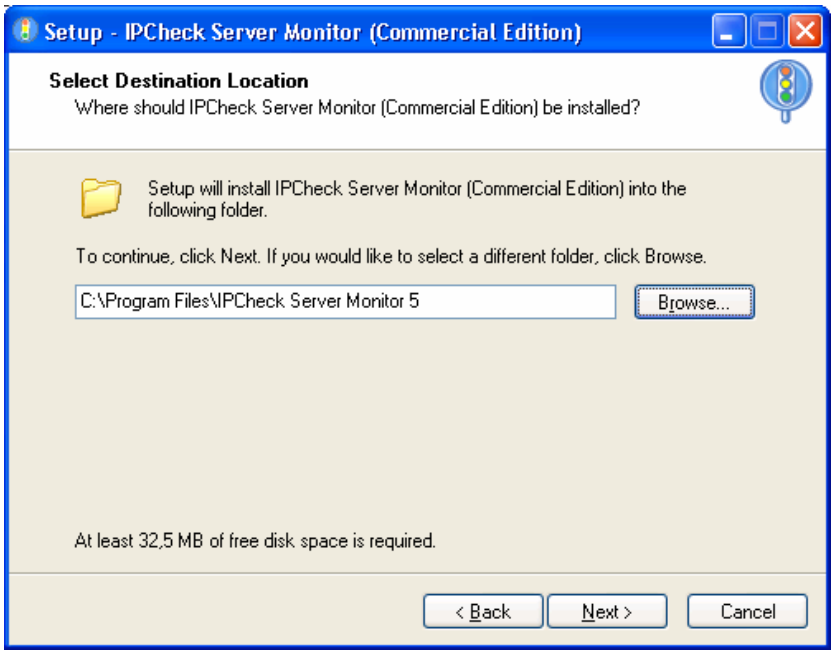
- Insert your IPCheck Server Monitor CD into your computer or open the installation setup routine from the ZIP file that you have downloaded.
- This opens the **Installation Wizard Welcome Screen.**



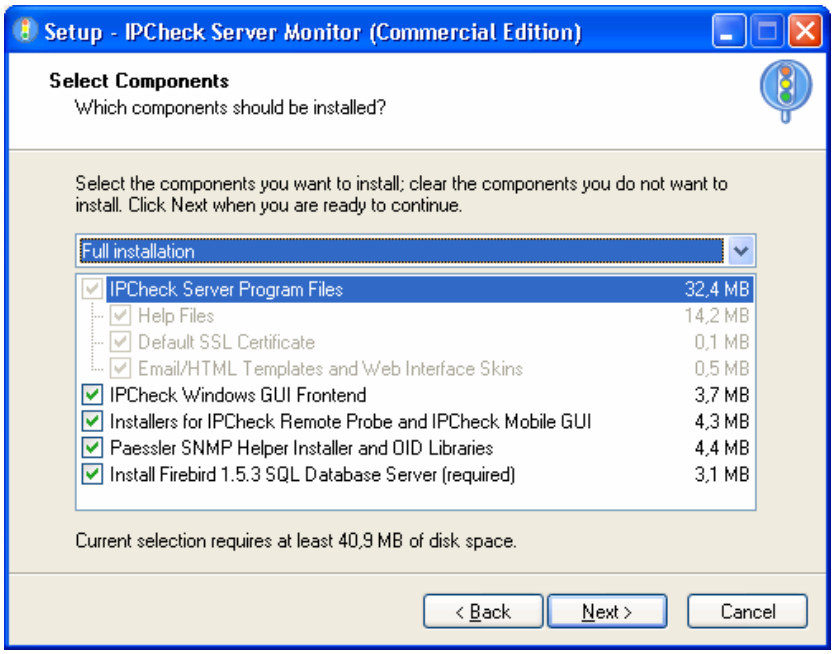
- The **IPCheck Server Monitor Information Window** provides additional information about this version of the IPCheck Server Monitor software. Select the **Next Button** when ready. This opens the **License Agreement Window.**



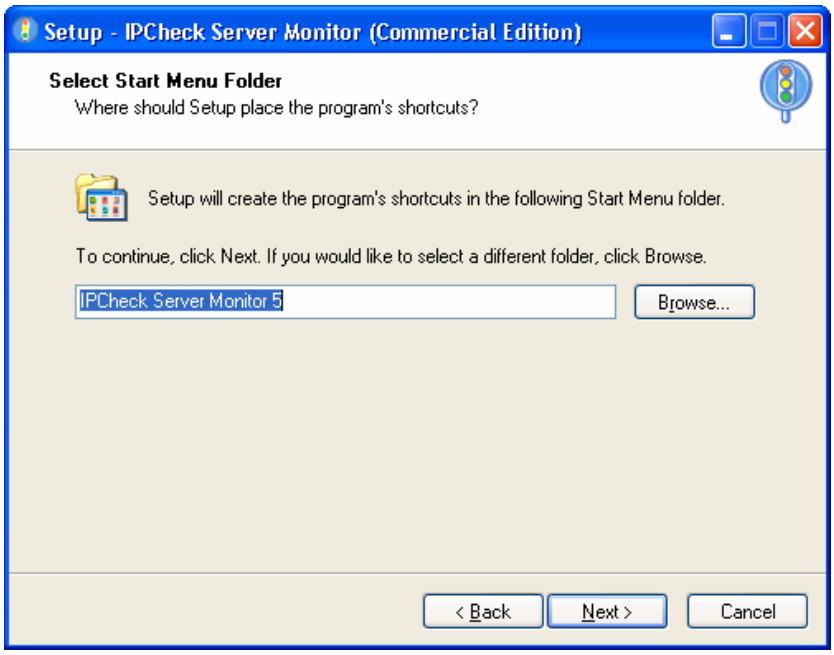
- The **License Agreement Window** allows you to select whether you accept the provided license agreement or not. When you have made a selection, click the **Next Button.** This will bring up the **Select Destination Window.**



- The **Select Destination Window** allows you to install IPCheck Server Monitor at the default location (C:\Program Files\IPCheck Server Monitor 5) or allows you to choose another location. When you have selected a destination, click the **Next Button.** This will bring up the **Select Components Window.**

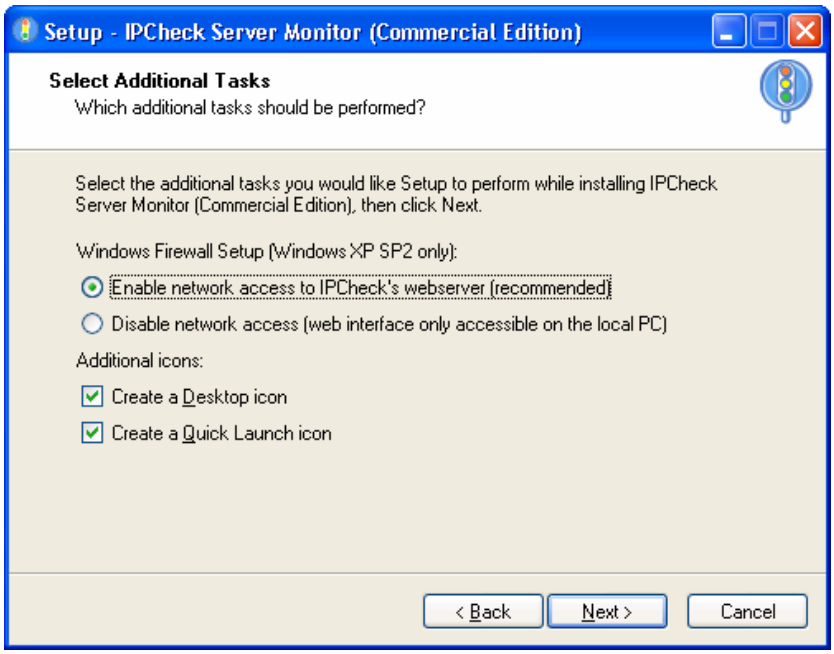


- The **Select Components Window** allows you to select whether additional modules will be installed or not. When you have made a selection, click the **Next Button.** This will bring up the the **Select Start Menu Folder Window.**

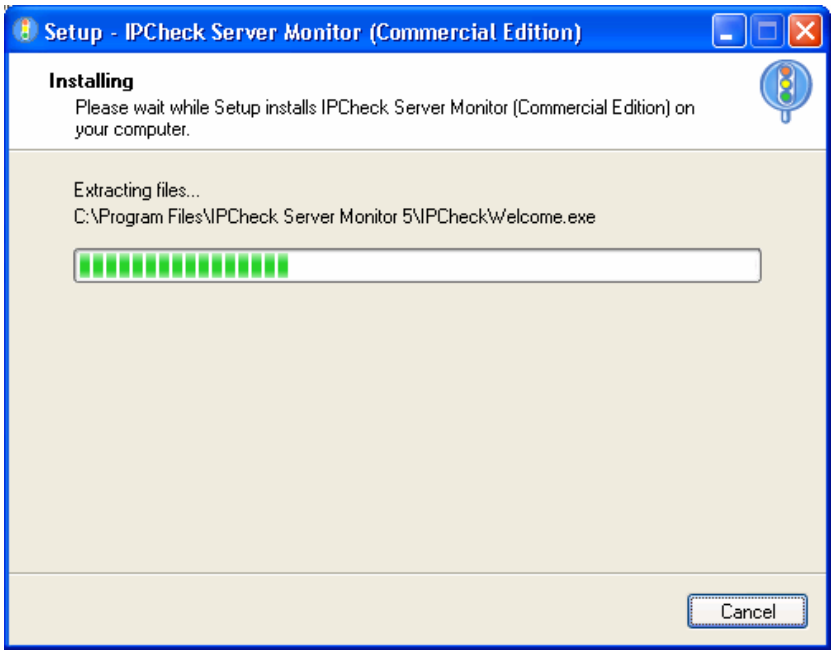


- The **Select Start Menu Folder Window** allows you to choose where IPCheck Server Monitor's program shortcuts will be placed. Once you have selected the location, click the **Next Button.** This opens the **Select Additional Tasks Window.**

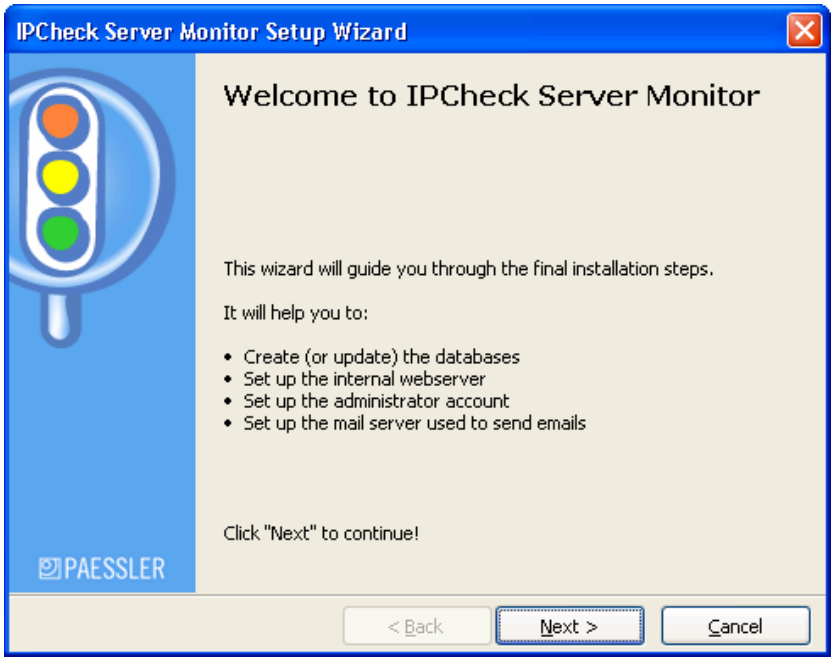
Note: Selecting a location other than the default location will not interfere with the program's operation.



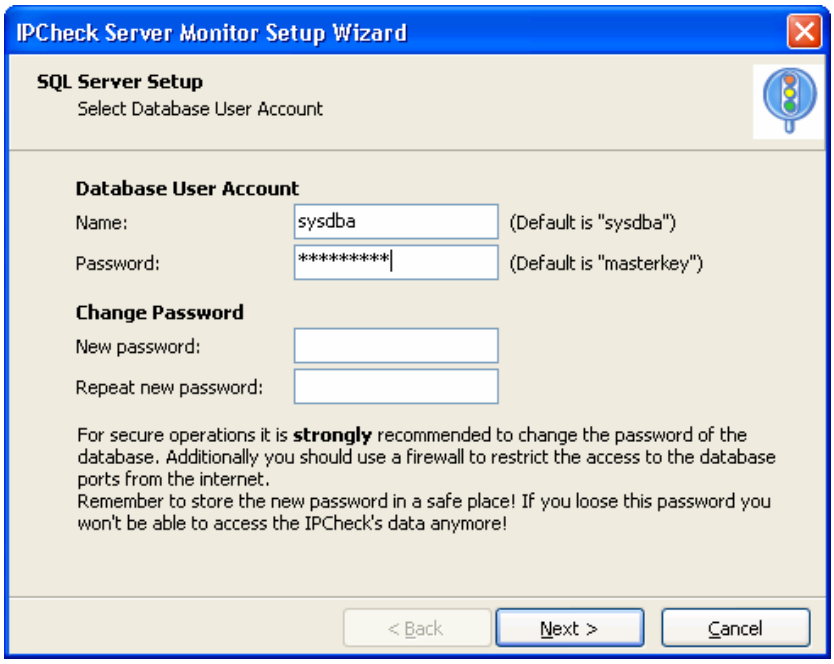
- The **Select Additional Tasks Window** allows you to create a Desktop icon and/or a Quick Launch icon. When you are finished click the **Next Button.** This opens the **Installation Window.**



- The **Installation Window** displays IPCheck Server Monitor's installation progress. When installation is completed, you will need to complete a basic setup wizard. This setup wizard begins with the **Welcome to IPCheck Server Monitor Window.**

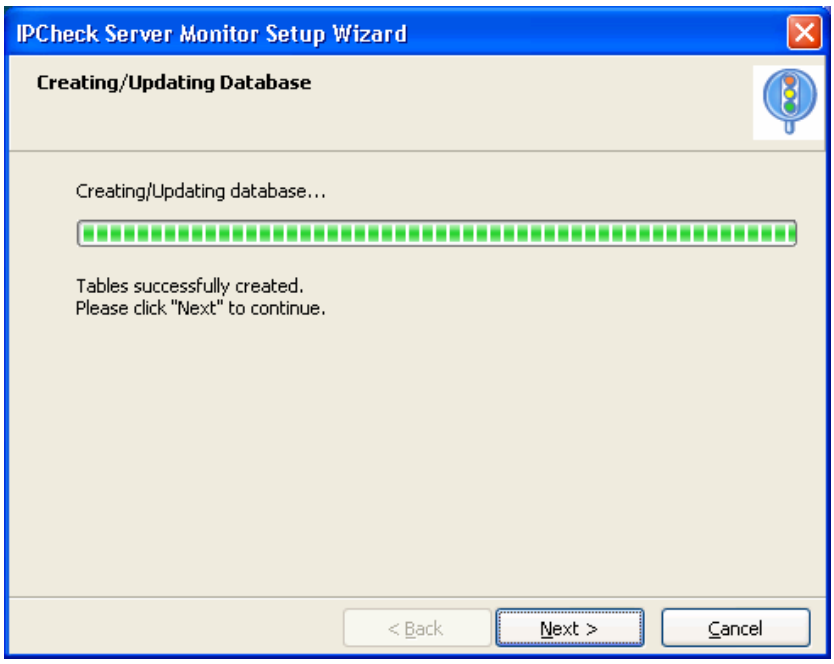


- The **IPCheck Server Monitor Window** helps to guide you through the final steps of the installation process. When you are ready click on the **Next Button.** This opens the **SQL Server Setup Window.**



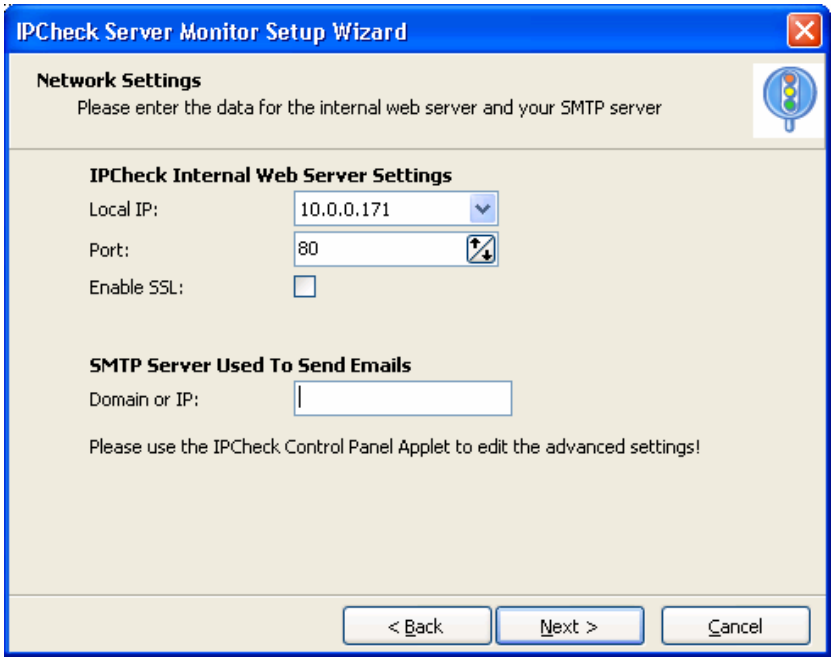
- The **SQL Server Setup Window** allows you to setup the Interbase user account.
  - **Name**—the username for the account. The default installation only has the user “sysdba”, so you must enter this account
  - **Password**—the password for the account. The default is “masterkey”.
  - **New Password**—if you want to change the password, enter the new password here.
  - **Repeat new password**—if you have typed in a new password, you must re-type it here.

- When you are finished click the **Next Button**.
- This opens the **Creating/Updating Database Window.**

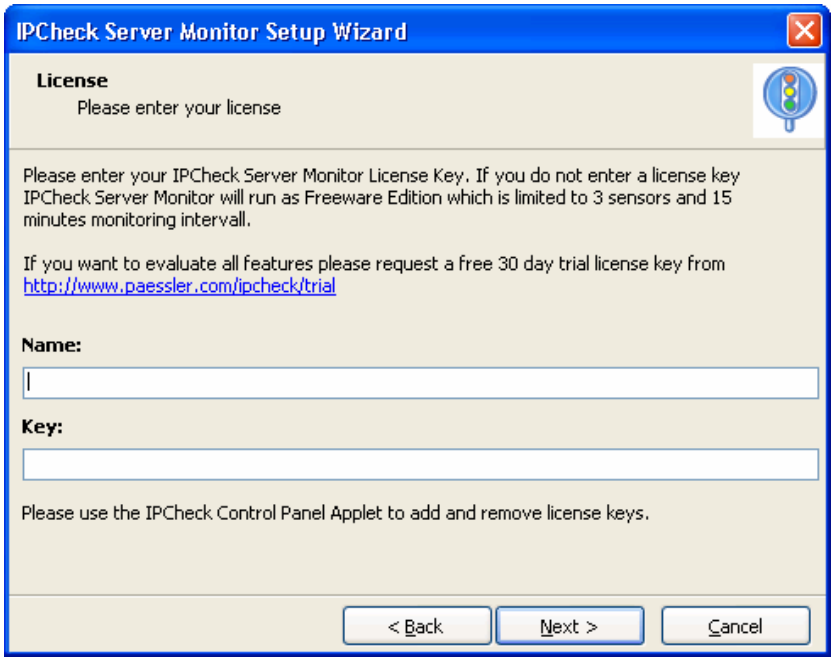


- The **Creating/Updating Database Window** illustrates the progress of the Interbase setup. When it is finished click the **Next Button.** This opens the **Webserver Admin Account Window.**

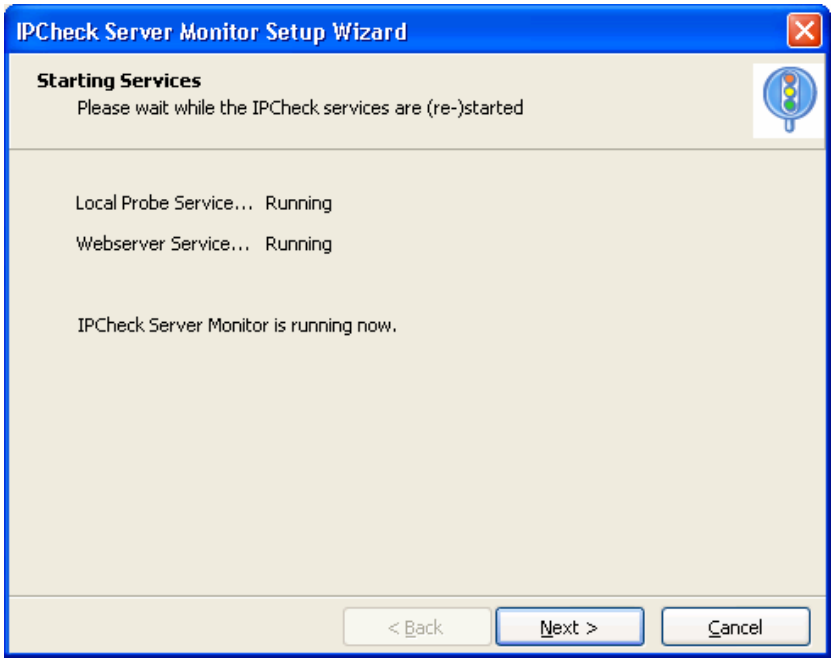
- The **Webserver Admin Account Window** allows you to create the administrative account for operation of IPCheck Server Monitor on your server.
  - **Email**—enter the email address of the administrator. This is the "username" that you will use to log in as the administrator
  - **Password**—enter the password for the administrator
- When you are finished click the Next Button. This opens the IPCheck Server Monitor Server Settings Window.



- The **IPCheck Server Monitor Server Settings Window** allows you to define the IP address on which the application will operate as well as specify port, SSL, and SMTP settings
  - **Local IP**—use the drop-down to select the IP Address of the server on which you are installing IPCheck Server Monitor.
  - **Port**—enter the port number through which the web interface of IPCheck Server Monitor will be available for web browsers. Usually this is port 80, but if you already run a web server on this machine you may need to choose another port like e.g. 81, 8080. Note: If the port you choose here is already used by another process at the time when IPCheck Server Monitor starts, another port in the range between 8080 and 8099 will automatically be selected!
  - **Enable SSL**—check this box to enable monitoring over a Secure Sockets Layer connection (Note: port 443 for this IP may not already be used by another software on the server!)
- **SMTP Server**
  - **Domain or IP**—enter the domain name or IP address of the SMTP server through which IPCheck Server Monitor will send out notification emails.
- When you are done click the **Next Button.** This opens the **License Window.**



- The **License Window** is where you must enter the license name and key provided to you when you purchased the software.
  - **Name**—the name exactly as it was given to you
  - **Key**—the unique key provided to you upon purchase.
- When you are finished click the **Next Button.**
- This opens the **Starting Services Window.**
- Notes:
  - If you want to use the Freeware Edition of IPCheck Server Monitor, leave the Name and Key fields blank.
  - If you want to test drive all features of IPCheck Server Monitor please request a trial license key from www.paessler.com/ipcheck/trial



- The **Starting Services Window** starts the two IPCheck Server Monitor services on your server. If there are no errors, click the **Next Button** when it has finished. This opens the **Introducing the Admin Control Panel Window.**

- The **Introducing the Admin Control Panel Window** gives you the opportunity of exploring IPCheck's settings in-depth (click "Open Control Panel Now). Click the Next Button when you are ready. This opens the **Congratulations Window.**

- The **Congratulations Window** provides a summary of the Setup Wizard you have just completed. When you are ready to finish the installation process, click the **Finish Button**.
- If there were no errors during installation, IPCheck Server Monitor is now installed and ready to run on your server.

- If you selected a desktop icon, the **IPCheck Server Monitor Server Monitor shortcut icon** will now be on your desktop. When you are ready to use IPCheck Server Monitor simply double click this icon

Uninstalling IPCheck Server Monitor

To uninstall IPCheck Server Monitor 5

- From your computer go to your **Control Panel.**
- Select the **Add/Remove Programs** option. This will open the **Add/Remove Programs Window**.
- Select the **IPCheck Server Monitor Server Monitor** program from the list of programs.
- Click the **Remove button** to uninstall the program.

Or select the Uninstall icon from the IPCheck Server Monitor group in the Start|Programs menu.

After the deinstallation has finished please also deinstall the SQL server software using the Add/Remove Software applet from the Control Panel. Also please check IPCheck's installation directory and delete all files (e.g. the database) that you do not want to preserve.

Choosing between Web Interface and Windows GUI

When accessing IPCheck Server Monitor you have the choice between the web interface (see “Using the Web Interface”) and the Windows GUI interface (see “Using the Windows GUI”).

The two most important differences are:

- The web interface has fewer interactive notification options but runs on any operating system which is able to run either Internet Explorer 6.0 or Firefox/Mozilla - without installing any client software
- The Windows GUI can be used on Windows systems and offers additional notification options. But it can not be used to change the settings in "My Account" (e.g. schedules and notifications)

Please note that both interfaces can be used simultaneously.

There are good reasons to use both of them, please have a look at the following table showing the differences:

	Web GUI Interface	**Windows GUI Interface**
Requirements		
Required software	Web browser (IE6, Firefox), any operating system	IPCheck Server Monitor's Windows GUI software (free download), Internet Explorer 6, Windows 98/ME/NT/XP/2000/2003
Required network connection	For both interfaces the client machine needs HTTP or HTTPS access to the IPCheck Server Monitor server	
Review Features		
Access the list of groups, servers, and sensors with current status and recent activity	Yes	Yes
Sort/filter sensors using tags	Yes	Yes
Automatic screen updates every	60s	Custom: 15s or more
Show monitoring status info as system tray icon	No	Yes
Can be minimized to the system tray	No	Yes
Can be started automatically when you log into Windows	No	Yes
Editing Features		
Create, edit, sort, and delete groups, servers, and sensors; scan sensors now, etc.	Yes	Yes
Pause/Unpause Sensors	Yes	Yes
Edit "My account"	Yes	No

Create, edit, and delete schedules and notifications	Yes	No
Notification Features		
Supports all server based notifications (email, ICQ, etc.)	Yes	Yes
Shows an optional POP UP window upon network status changes	No	Yes
Plays a sound if a sensor is DOWN	No	Yes
Shows an optional system tray "bubble" windows upon network status changes	No	Yes
Plays a configurable sound on any status change	No	Yes
Reads error messages aloud using the TextToSpeech engine (Win XP/2003 only)	No	Yes
Display Messages and Errors via an RSS feed	Yes	No

Using the Windows GUI

When accessing IPCheck Server Monitor you have the choice between the web interface (see “Using the Web Interface”) and the Windows GUI interface. The following sections explain the Windows GUI interface.

Installing the Windows GUI

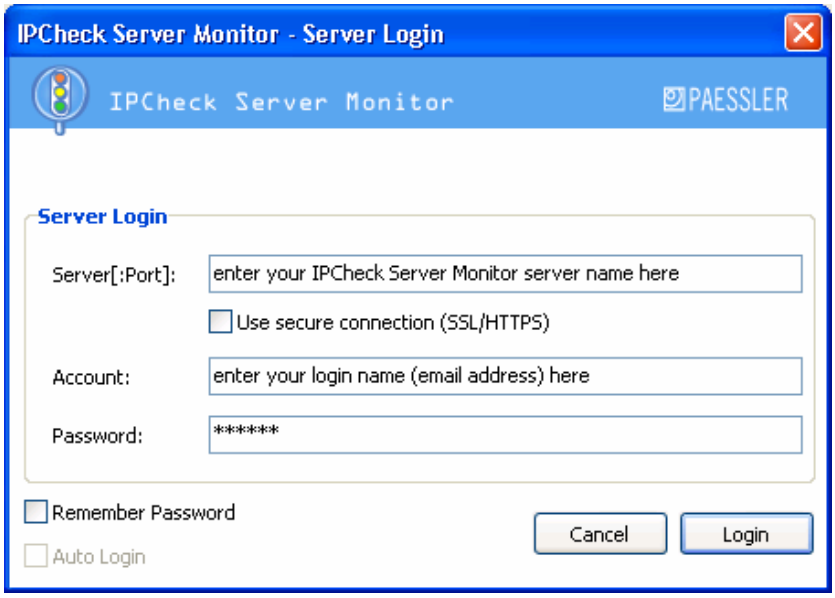
If you want to use the Windows GUI to access your IPCheck Server Monitor server you must first install the client software on your client machine.

To install the software download the **IPCheck Server Monitor Windows GUI** installer from the IPCheck Server Monitor website and run the installer. A standard Windows installation routine will help you install the software on your machine.

Starting the Windows GUI

Using the START menu select **All Programs | IPCheck Server Monitor | IPCheck Server Monitor Windows GUI** to start the program.

A dialog shows up where you have to enter your login data:



Please enter the **IP address** or the **DNS name** of the server where the server software of IPCheck Server Monitor is running on.

- Usually this is the IP Address or DNS name of the server on which IPCheck Server Monitor is installed, e.g. **192.168.2.2**.
- If you do not use the standard web port number 80, please add the portnumber, e.g. **192.168.2.2:8080**
- If you have enabled the use of SSL on the server (in the Control Panel) you can optionally select to use HTTPS encryption to connect to the server (recommended)

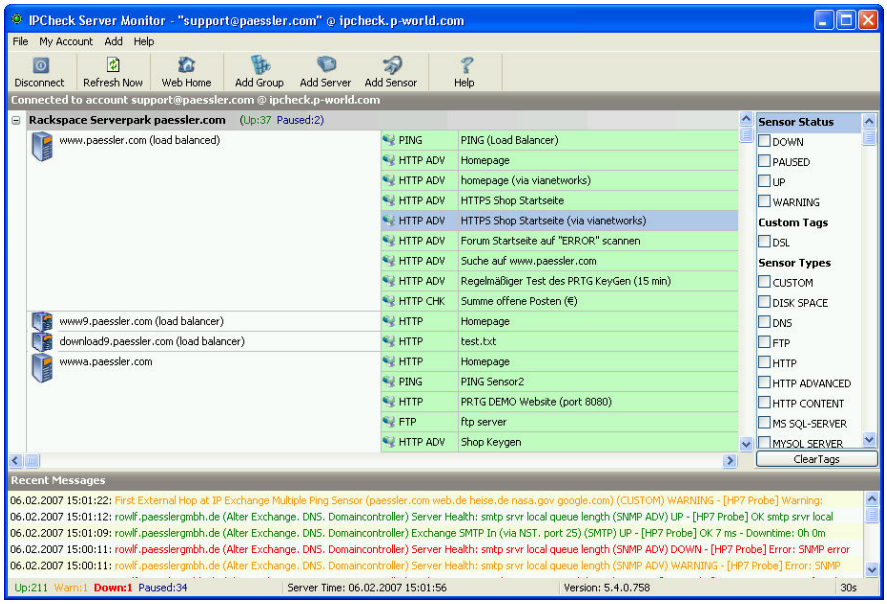
Then please enter your **account name** (your email address) and your **password**.

Check the **Remember Password** box if you want the Windows GUI to store your password in the registry for faster login the next time.

Check the **Auto Login** box if you want the Windows GUI to automatically log into the server the next time you start the program.

How the Windows GUI is organized

After logging into the server the Windows GUI will look like this:

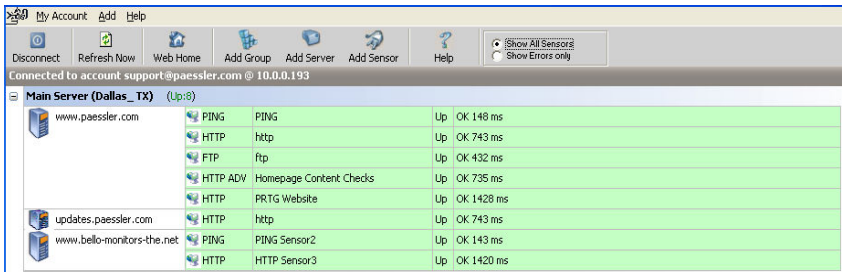


The Windows GUI is organized in five categories:

- Groups
- Servers
- Sensors
- Recent Messages
- Tags

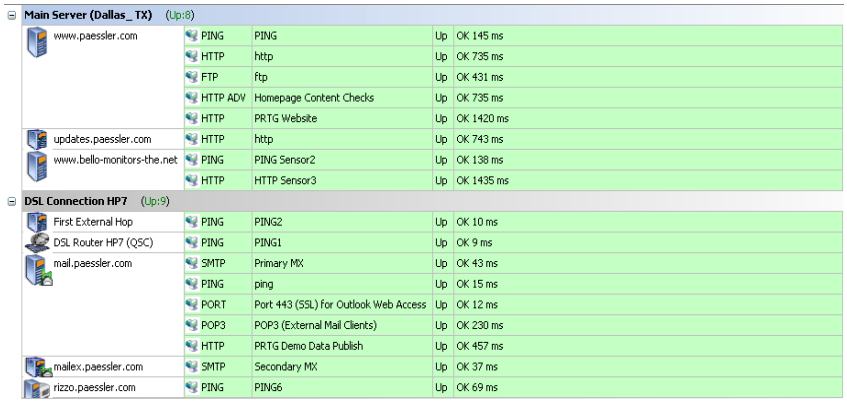
At the top of the window you can find a standard windows menu bar and a button toolbar for fast access of the most important functions.

Below the toolbar you can see the structured list of groups, servers, and sensors.



Working with Groups

It is a good idea to sort your network devices (i.e., servers, routers, switches, etc.) into some kind of hierarchical group (e.g. by location, by department, by importance, by project) to make the list of devices easier to administer. So a "group" is a collection of several "servers".



The beginning of a group is shown by horizontal bars in the list of servers and sensors. The numbers in parenthesis show the number of good, failed, or slow sensors (if applicable). You can click the minus button on the right  to fold up the servers of a group.

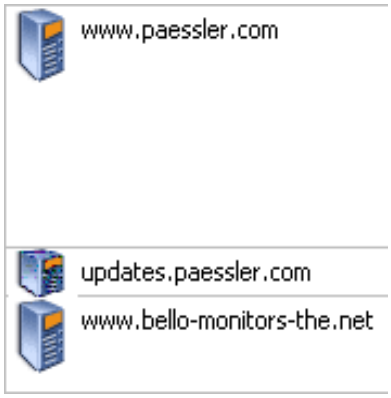
See “Managing Groups, Servers, and Sensors” for more information on adding and editing groups.

Working with Servers

To keep the user interface simple we call each network device that is to be monitored a "server", although it can of course also be a router, switch, printer, workstation, etc.

"Servers" always belong to a "group" and a server has a collection of "sensors".

Servers are shown in the first column of the list:



See “Managing Servers” for more information on adding and editing servers.

Working with Sensors

Since each network device (or "server") usually has several parameters or services that should be monitored you can set up various sensors to monitor each and every aspect of a server (e.g. CPU load, webserver responsiveness, SMTP responsiveness, PING time, etc.) So a "server" has several "sensors" by which you will monitor all aspects of the server.

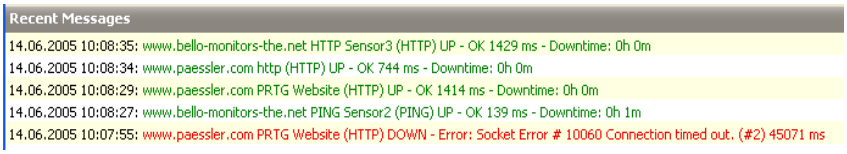
Each sensor is shown with a color depicting its current state, e.g. DOWN, UP, PAUSED, or OK.

PING	PING	Up	OK 149 ms
HTTP	http	Up	OK 733 ms
FTP	ftp	Up	OK 446 ms
HTTP ADV	Homepage Content Checks	Up	OK 735 ms
HTTP	PRTG Website	Up	OK 1423 ms

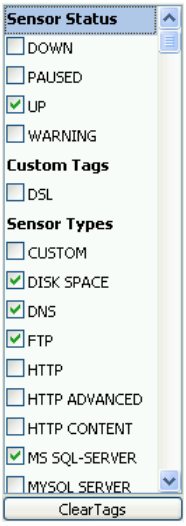
See “Managing Sensors” for more information on adding and editing sensors.

Recent Messages

In the **recent messages** box you will always see a list of events discovered by IPCheck Server Monitor, e.g. UP or DOWN messages.



Tags



The **Tag Filter** Section at the right side of the window is used to filter sensors for certain criteria. IPCheck features a method for assigning categories (tags) to sensors.

Usage is simple: Just check the boxes left to those tags that you want to be displayed, in any desired combination. IPCheck then filters the sensors for those tags, hiding those sensors that have neither of the chosen tags assigned. Tags

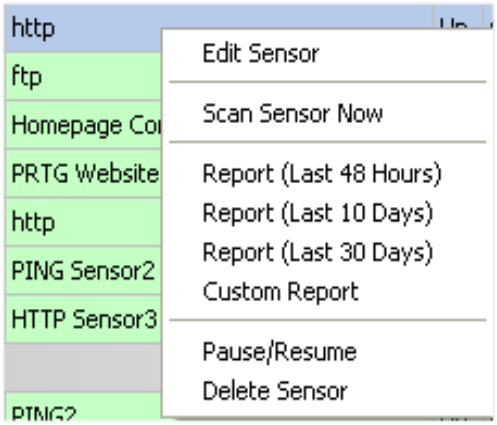
within one group are linked by OR, tags between the groups are linked by AND. (See "Working with Tags" for more information)

Clear Tags clears the selection of tags, thereby showing all sensors in the sensor list again.

Editing the Groups, Servers, and Sensors

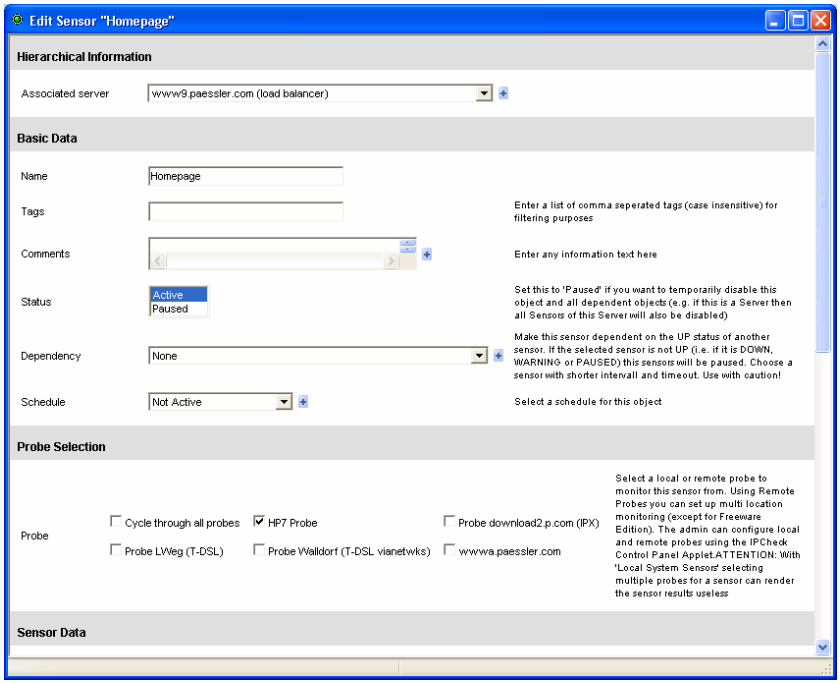
To select a group, a server, or sensor simply click on it with your left mouse button. To edit an item, double click it.

For more options right click the group's bar to access its context menu:



You can Edit, Pause, and Delete an item through this context menu.

Whenever you select Add, Edit, or Delete a dialog will pop up that shows the exact same editing functionality as you would find in the Web interface:

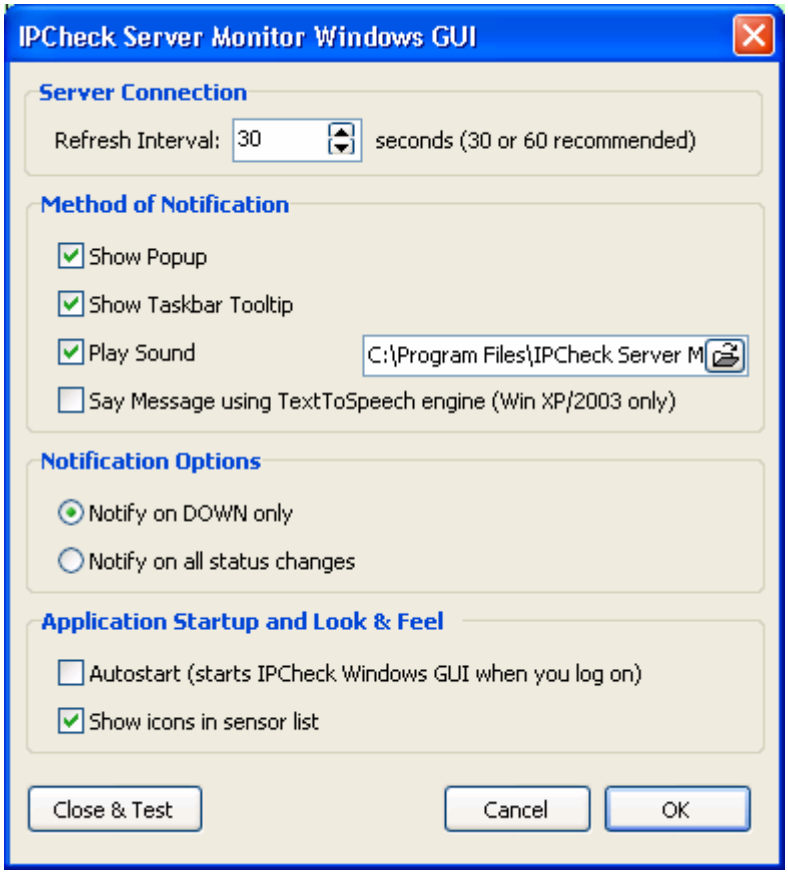


Please make the desired changes and click **OK** to return to the Windows GUI.

Note: If the Cancel or OK buttons do not work on your computer, please install the latest updates and fixes for Internet Explorer and turn on Javascript in the browser.

Windows GUI Options

Select **File|Options** from the menu to set the options for the Windows GUI:

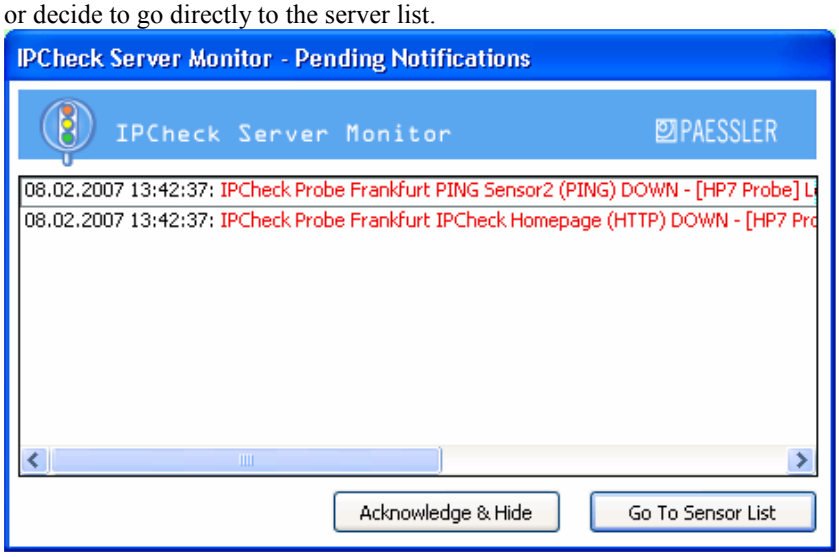


For the **Refresh Interval** choose a value that fits to the sensor intervals that you use. We recommend to use the same interval here as you do for most sensors (e.g. 60 seconds if most of your sensors work with a 60 second interval). Try to choose a longer period to minimize the bandwidth usage. Whenever a change in the network status is discovered by the server you have the choice between four means of notification by the Windows GUI (also the notifications by the server (e.g. via email or ICQ) still apply):

Popup Window Notification

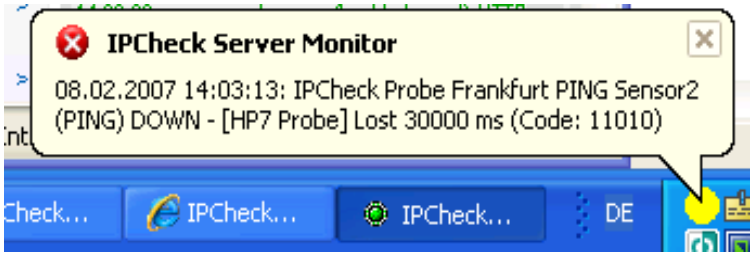
The option **Show PopUp** will show a pop up window on your desktop that will put itself in front of all other Windows until you either acknowledge the message

or decide to go directly to the server list.



Taskbar Tooltip Notification

The option **Show Taskbar Tooltip** will show a popup window on the bottom right of your screen for several seconds. It is a little less intrusive than the Popup Window option.



Click on the box to go to the list of sensors or click the "X" to hide the box.

Play Sound Notification

If you select **Play Sound** the WAV sound file that you have selected in the box on the right will be played whenever a change in the network status is discovered.

Say Message Notification

If you enable the Say Message option on Windows XP or Windows 2003 you can listen to the up/down notifications through your speaker. The TextToSpeech engine, which is built into XP/20003, is used to read the message aloud. The "Speech API English Text To Speech Engine" component is a device driver responsible for the conversion of text into speech. It is part of the default installation of Windows XP Pro and Windows Server 2003 (though for OEM versions of Windows XP other languages may also be installed on your computer). There is not much to configure about this engine, you can only select a language from a list of available languages, no additional configuration can be performed on languages.

To test the Text To Speech engine on your computer open the **Speech** icon from **Control Panel**, Select the Text To Speech tab, enter a Text, and click on **Preview.**

Notification Options

You can choose to be notified for DOWN events only or for all status changes.

Application Startup&Look&Feel

Choose **Autostart** to automatically start the IPCheck Server Monitor Windows GUI as soon as you log into your Windows Session – which is recommended.

The second option allows you to toggle the server icons in the sensor list.

Using the Web Interface

When accessing IPCheck Server Monitor you have the choice between the web interface and the Windows GUI interface (see "Using the Windows GUI"). The following sections explain the web interface.

Logging into your account using the Web GUI

Note: the web interface of IPCheck Server Monitor is optimized for the two most common web browsers, Internet Explorer (6.0 or later) and Firefox (1.0 or later) and may not work fully with other browsers or older versions.

To log into the web interface please complete the following steps:

- Please point your browser to the IP Address or DNS name of the server on which IPCheck Server Monitor is installed, e.g. http://192.168.2.2.
- If you do not use the standard web port number 80, please add the port number, e.g. http://192.168.2.2:8080
- Note: If you use the machine IPCheck is installed on you can also select the "IPCheck Server Monitor Web GUI" shortcut from the "IPCheck Server Monitor" group in your start menu
- If you have enabled the use of SSL on the server you can also use HTTPS encryption to connect to the server (recommended). To do this please enter "https" instead of "http", e.g. https://192.168.2.2:8080
- Enter your email address (username) and password in the **user login** box
- Click **Login**

You will now be taken to your personal homepage with the list of groups, servers, and sensors.

How the web interface is organized

The web interface is organized into four key categories:

- Groups
- Servers
- Sensors
- Notifications&Reports

Each one of these areas is created to help you navigate through IPCheck Server Monitor and will allow you to setup, configure, and monitor devices on your network.

Groups

It is a good idea to sort your network devices (i.e., servers, routers, switches, etc.) into some kind of hierarchical group (e.g. by location, by department, by importance, by project) to make the list of devices easier to administer. So a "group" is a collection of several "servers".

For more information about editing groups and adding servers to a group, see the “Managing Groups, Servers, and Sensors” section of the manual.

Servers

To keep the user interface simple we call each network device that is to be monitored a "server", although it can of course also be a router, switch, printer, workstation, etc. "Servers" always belong to a "group" and a server has a collection of "sensors".

For more information about editing servers and adding sensors to a server see the “Managing Sensors” section of the manual.

Sensors

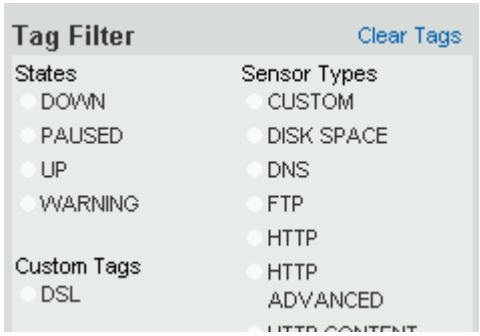
Since each network device (or "server") usually has several parameters or services that should be monitored you can set up various sensors to monitor each and every aspect of a server (e.g. CPU load, webserver responsiveness, SMTP responsiveness, PING time, etc.) So a "server" has several "sensors" by which you will monitor all aspects of the server.

For more information about sensor types see “Sensor Types in Detail”. For more information about editing sensors see the “Managing Sensors” section of the manual.

Summary, Tags, and Recent Messages

The Sensor **Summary** sectiongives you a brief summary of what is happening with the sensors you currently have configured and running.

The **Tag Filter** section is used to filter sensors for certain criteria. IPCheck features a method for assigning categories (tags) to sensors.



Usage is simple: Just check the boxes left to those tags that you want to be displayed, in any desired combination. IPCheck then filters the sensors for those tags, hiding those sensors that have neither of the chosen tags assigned. Tags within one group are linked by OR, tags between the groups are linked by AND. (See "Working with Tags" for more information)

Clear Tags clears the selection of tags, thereby showing all sensors in the sensor list again.The **Messages/Errors** and **Activities** sections are described in detail under "Reviewing Messages/Error" and " Reviewing the Complete Activity Data" later in this manual.

A notification is the way IPCheck Server Monitor alerts the administrator or an user when a sensor discovers a problem or if a problem is solved. A notification can be an email, a message on your mobile phone, or an ICQ message and it will be shown on your personal homepage after logging in. Notifications can be sent out immediately or only if the error is not solved within a specified time.

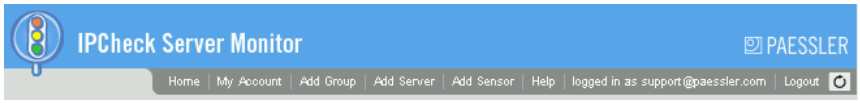
For more information on notifications see the “Managing Notifications, Latencies and Dependencies” section of the manual.

Additionally you can create monitoring reports that show the results of the monitoring requests historically down to each single monitoring requests, Reports list all of the findings through the monitoring of a group/server/sensor (i.e. as a data table or as a graphical view).

See the “Reporting and Graphing” section of the manual for additional information.

Main Toolbar

The menu toolbar can be found in the header of each webpage.



Here you can find the following links:

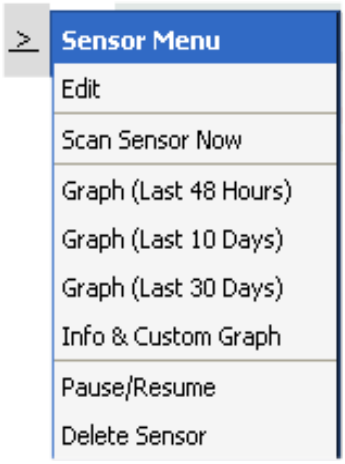
- **Home—**The **Home Link** will always take you back to your **Account Homepage** with the list of groups, servers**,** and sensors
- **My Account—**the **My Account Link** will take you to the **My Account Window** where you can
  - Edit your Account information
  - Change your account password
  - Set up and test notifications via email, SMS, and ICQ
  - (see “Managing "My Account"”).
- **Administration**—Only visible for the admin account this link takes you to the system administration page (See “Server and User Account Administration”)
- **Add Group—**the **Add Group Link** will take you to the **Group Data Window** which will allow you to add a new monitoring group (see “Managing Groups, Servers, and Sensors”).
- **Add Server—t**he **Add Server Link** will take you to the **Server Data Window** which will allow you to add a new server to a group (See “Adding and Editing Servers”).
- **Add Sensor—**the **Add Sensor Link** will take you to the **Sensor Selection Window** which will allow you to add a new sensor for a server (See “Adding Sensors”).

- **Help—**the **Help Link** will take you to the **Help Window** which offers comprehensive support information on using IPCheck Server Monitor.
- **Logout—**the **Logout Link** will log you out of your account information and take you back to the **Welcome Screen.** Note: Once you select the **Logout Button** you will have to sign in again to see your monitoring results. Monitoring will of course continue even when you are not logged in.

Pop-Up Menus

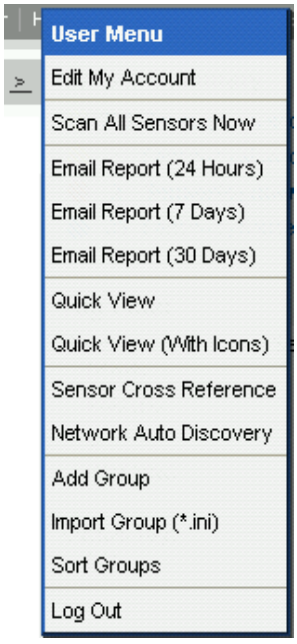
The interface is built around pop-up menus that provide access to the functionality.

These menus pop up when you place your mouse pointer over the ">" symbol next to your account name or your groups, servers, or sensors.



User Menu

The upper-most pop-up menu is the User Menu where you access functions that apply to your account or to all sensors.

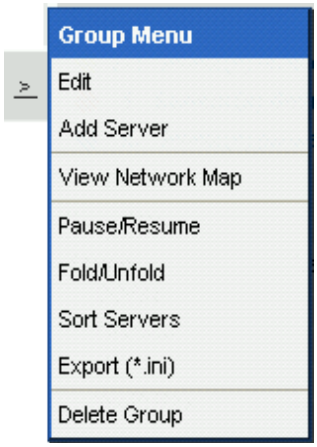


Here, one has the following options:

- **Edit My Account** – Automatically enters the account editing functionality (see “Managing "My Account"”).
- **Scan All Sensors Now** – Scans all configured sensors right now without waiting for their next interval to expire.
- **Email Reports** – Generates reports for the last 24 hours, last 7 days, or last 30 days and sends them to your account email address when finished (see “Reporting”).
- **Quick View** – Opens a new browser with the Quick View webpage for your account (see”Quick View”).
- **Quick View** (with Icons) – Opens a new browser with the Quick View webpage for your account (see”Quick View”). Additionally to the "Quick View" the Group/Server/Sensor hierarchy is depicted with Icons.
- **Sensor Cross Reference** – Shows a reference list with all latencies, notification settings and schedules/dependencies for your account
- **Network Auto Discovery** – Scan your network for devices to monitor (see ” Automatic Network Discovery”).
- **Add Group** – Enters the Add Group menu to create new groups(see “Managing Groups, Servers, and Sensors”).
- **Import Group** – Imports a saved group (*.ini) file (see “Exporting/Importing Groups”).
- **Sort Groups** – Enters the Sort Groups function (see “Sorting Groups ”).
- **Log Out** – Logs out of IPCheck Server Monitor.

Group Menu

Placing the mouse over the “>” link of a group shows the Group Menu.



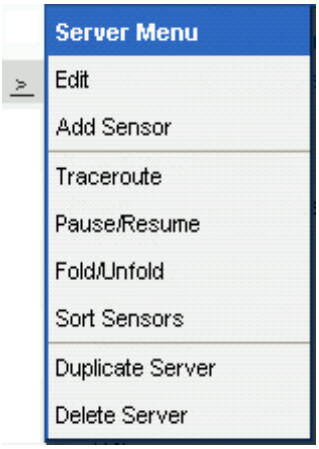
This menu allows for the following:

- **Edit** – Enters the group editing window (See “Adding and Editing Groups”).
- **Add Server** – Enters the Add Server menu (See “Adding and Editing Servers”).
- **View Network Map** – Shows a network map of this group if one is defined in the Windows GUI. Please see there.

- **Pause/Resume** – Pauses/Resumes group monitoring (See "Pausing/Resuming Monitoring for a Group ").
- **Fold/Unfold** – Folds/unfolds the group view (See "Folding/Unfolding").
- **Sort Servers** – Enters the Sort Servers function (See "Sorting Servers").
- **Export (*.ini)** – Exports the Group information as an *.ini file (which can be imported using the Import Groups function) (see "Exporting/Importing Groups ").
- **Delete Group** – Enters the Delete Group window (See "Deleting Groups").

Server Menu

Placing the mouse over the ">" link of a server brings up the Server Menu.

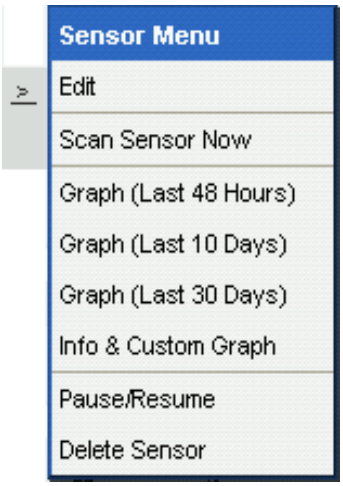


This menu allows for the following:

- **Edit** – Enters the server editing window (See "Adding and Editing Servers").
- **Add Sensor** – Enters the Add Sensor menu (See "Adding Sensors").
- **Traceroute** – Performs a traceroute of the server (See "Checking a Server's Trace Route").
- **Pause/Resume** – Pauses/Resumes monitoring for the sensors of this server (See "Pausing/Resuming Monitoring for a Sensor").
- Fold/Unfold – Folds/unfolds the server view for the sensors of this server (See "Folding/Unfolding").
- **Sort Sensors** – Enters the Sort Sensors function to change the order of the sensors of this server (See "Sorting Sensors").
- **Duplicate Server** – Generates a copy of the server with all its sensors but using another server name and address (See "Duplicating a Server").
- **Delete Server** – Enters the Delete Server window (See "Deleting Servers").

Sensor Menu

Placing the mouse over the ">" link of a sensor pops up the Sensor Menu.



This menu allows for the following:

- **Edit** – Enters the sensor editing window (see "Editing Sensors").
- **Scan Sensor Now** – Automatically scans the selected sensor without waiting for the sensor's monitoring interval to expire.
- **Graph (Last 48 Hours)** – Generates a graph report of the last 48 hours' activity (see "Reporting").
- **Graph (Last 10 Days)** – Generates a graph report of the last 10 days' activity (see "Reporting").
- **Graph (Last 30 Days)** – Generates a graph report of the last 30 days' activity (see "Reporting").
- **Info & Custom Graph** – Enters the Detailed Sensor Info window (see "Reporting")
- **Pause/Resume** – Pauses/Resumes monitoring the specific sensor (see "Pausing/Resuming Monitoring for a Sensor").
- Delete Sensor – Enters the Delete Sensor window (see "Deleting Sensors").

Page Refresh

By default – after login - the main page with the list of servers and sensors will refresh automatically every 60 seconds.

The **Refresh** link allows you to manually refresh the screen on demand. You will find the **Refresh Button** at the top of the IPCheck Server Monitor web interface screen.

Managing Groups, Servers, and Sensors

Managing Groups

It is a good idea to sort your network devices (i.e., servers, routers, switches, etc.) into some kind of hierarchical group (e.g. by location, by department, by importance, by project) to make the list of devices easier to administer. So a "group" is a collection of several "servers".

Adding and Editing Groups

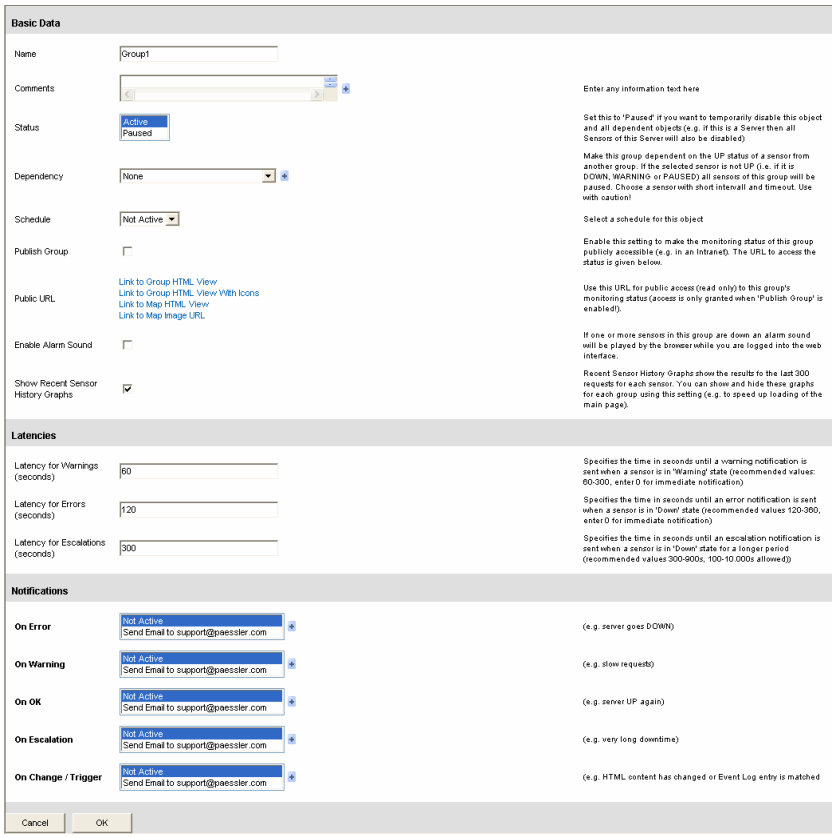
Adding and editing a group can be accomplished by completing the following steps: If you use the Web GUI:

- Please log into your account (see “Logging into your account using the Web GUI”)
- To add a new group select the **Add Group** option from the menu toolbar at the top of the page or click the Add New Group link from your account popup menu.
- To Edit a group click the  **Group icon** on the left or click **Edit** on the right of the group that you would like to edit.

If you use the Windows GUI:

- Please start the Windows GUI (see “Starting the Windows GUI”)
- To add a new group choose the **Add|Group** item from the main menu
- To edit a group double click the group’s name

This opens the Group Data Window.



- **Name**—enter the name of the group
- **Comments**—enter a description of the group
- **Status**—use the drop-down menu to set the group to
  - Active
  - Paused (this pauses the monitoring for all servers and sensors of this group)
- **Dependency**—You can pause all sensors of this group if a sensor of another group is not UP. Choose the dependency sensor from the dropdown list. Do not choose a sensor from the current group and avoid circular dependencies. Use with caution. See “Managing Dependencies”.
- **Schedule** – allows you to select a schedule defined under **My Account** (See “Managing Schedules”). From the drop-down menu you can select from the defined schedules.
- **Publish Group** – Check this if you want to make the group visible to other people without having to enter a password. This will activate the public URL. After checking/unchecking this checkbox, please press OK. This feature can be useful to provide uptime information about your network to the employees via a link from the Intranet.
- **Public URL** – This is the URL activated by the **Publish Group** option. This URL can be accessed by anyone and provides concise, read-only information regarding the group’s status. This option is only accessible if the **Publish Group** checkbox is marked and the group is active. This URL changes every time that the **Publish Group** checkbox is activated / deactivated for security reasons. When no changes take place, the URL remains the same.

- **Enable Alarm Sound** – If you enable this checkbox your web browser will play an alarm sound once every 60 seconds whenever a sensor of this group is down.
- **Show Recent Sensor History Graphs** – Recent Sensor History Graphs show the results for the last 300 requests for each sensor in the list of servers and sensors. This is a great way to discover problems! You can show and hide these graphs for each group using this setting (e.g. to speed up loading of the main page)
- **Latencies** - "Latencies" are used to defer notifications after warnings or errors have occurred. You can set latencies on group, server and sensor level. The latencies for warnings, errors and escalations can be set individually. See "Managing Notifications, Latencies and Dependencies" for more information.
- **Notifications** - "Notifications" are used to send alarms when warnings or errors occur. You can set notifications for groups, servers and sensors. See "Managing Notifications, Latencies and Dependencies" for more information.

When finished, select the **OK** Button to save your group.

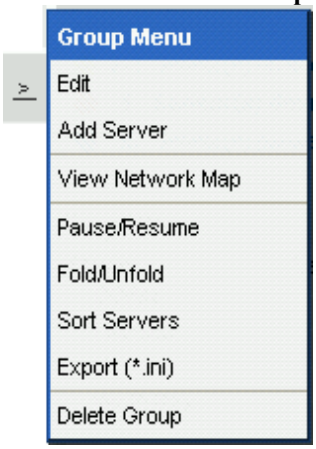
Deleting Groups

Deleting a group can be accomplished by completing the following steps:

CAUTION: This will also delete all servers and all sensors within this group!

If you use the Web GUI:

- Please log into your account (see "Logging into your account using the Web GUI")
- Move the mouse over the ">" link of the group you want to delete and select the **Delete Group** function from the pop-up menu



If you use the Windows GUI:

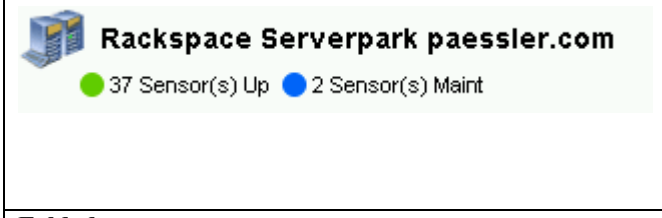
- Please start the Windows GUI (see "Starting the Windows GUI")
- Right click the group you want to delete and choose **Delete** from the popup menu

This opens the **Delete Object Window**.

Select the **OK Button** to delete the group or select the **Cancel Button** to return to your account homepage.

Folding/Unfolding

The Fold and Unfold button from the pop-up menu allows you to change the way IPCheck Server Monitor displays the servers and sensors underneath the group. This can be useful to minimize the length of the list when a large number of servers and sensors are being monitored

	
Folded	**Unfolded**

Sorting Groups

To change the order of the groups:

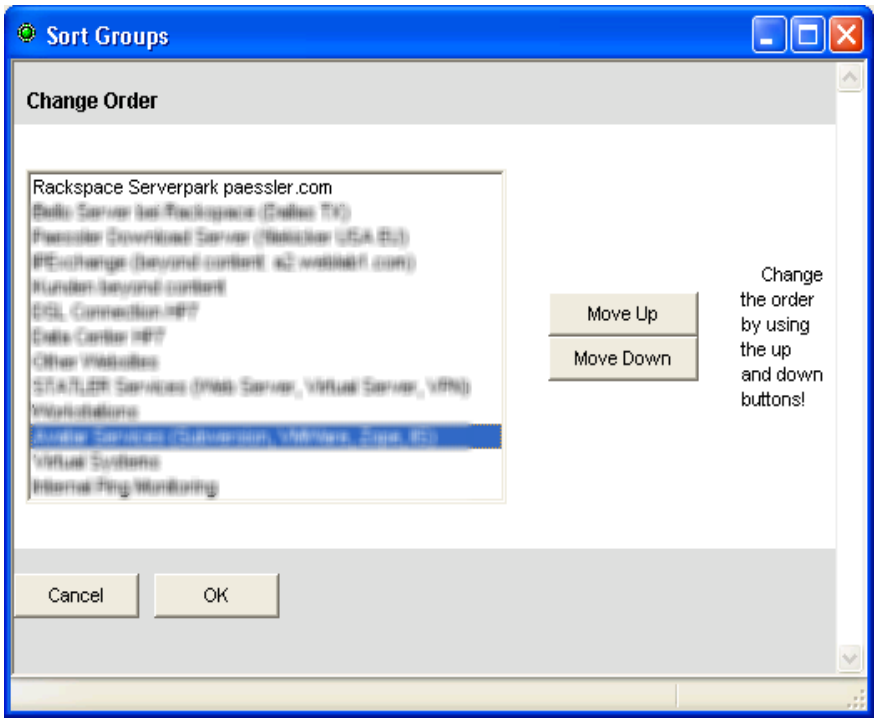
If you use the Web GUI:

- Please log into your account (see "Logging into your account using the Web GUI")
- Move the mouse over the ">" link of your account (at the top of the server list) and select the **Sort Groups** item from the pop-up menu.

If you use the Windows GUI:

- Please start the Windows GUI (see "Starting the Windows GUI")
- Choose **My Account|Sort Groups** from the main menu

This will show the Sort dialog:



To change the order, select an item and use the **Move Up** and **Move Down** buttons to move it.

Pausing/Resuming Monitoring for a Group

To start or stop the monitoring of all servers and sensors of a group (e.g. when some network maintenance is scheduled):

If you use the Web GUI:

- Please log into your account (see "Logging into your account using the Web GUI")
- To pause/resume monitoring move the mouse over the ">" link of the group and select the Pause/Resume button from the pop-up menu.

If you use the Windows GUI:

- Please start the Windows GUI (see "Starting the Windows GUI")
- Right click the group and choose **Pause/Resume** from the popup menu

Exporting/Importing Groups

You can export and import the server/sensor settings of a group. This can be helpful to move these settings from one IPCheck Server Monitor account to another or to make bulk changes to all your sensors.

The file format is a plain INI file which can be edited using any standard text editor.

To export a group, choose the "Export Group" link from the group's popup menu. Your browser will then download the INI file with the settings.

To import the group choose "Import Group" from the account popup menu and point the browser to the file on your local disk.

Note: This feature should only be used by experienced users!

Managing Servers

To keep the user interface simple we call each network device that is to be monitored a "server", although it can of course also be a router, switch, printer, workstation, etc. "Servers" always belong to a "group" and a server has a collection of "sensors".

Adding and Editing Servers

To add or edit a server

If you use the Web GUI:

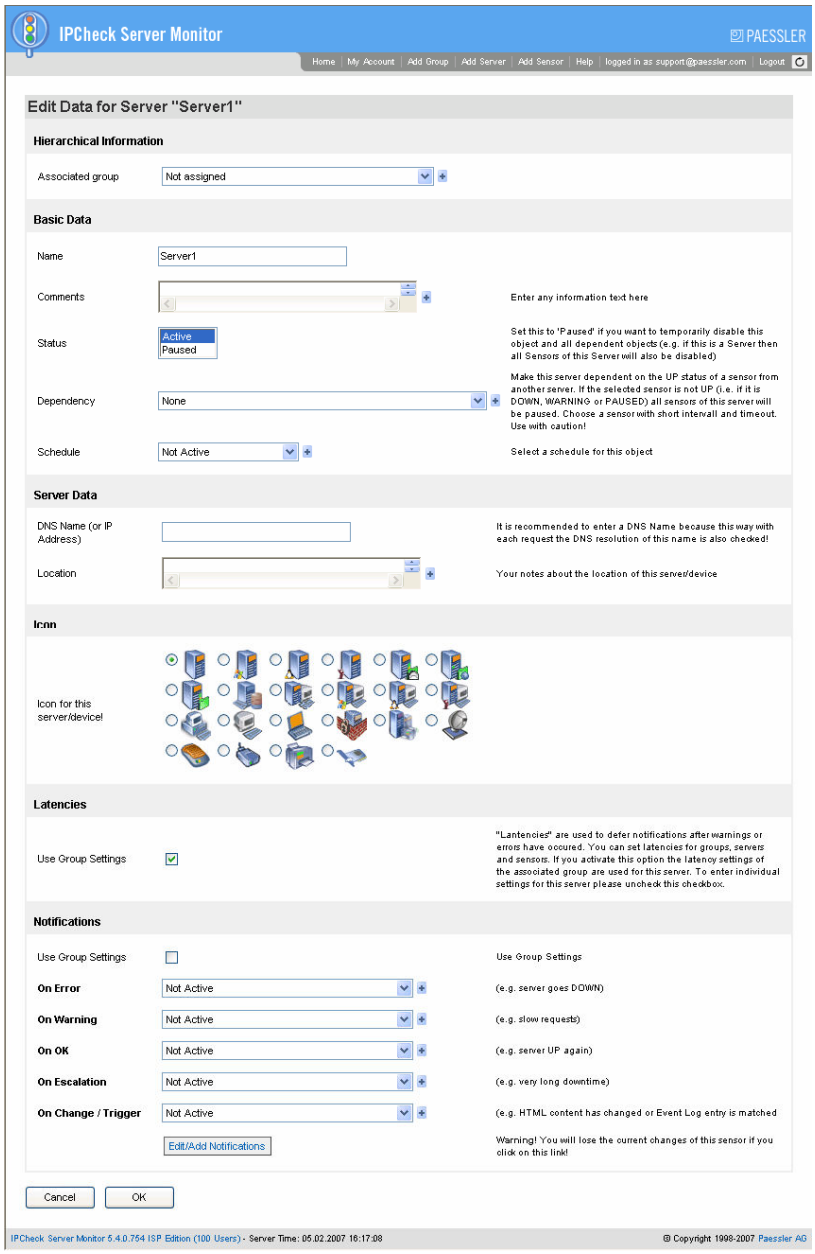
- Please log into your account (see “Logging into your account using the Web GUI”)
- To add a new server: From the **Account Homepage**
  - Select the 

 link at the top of the page or
  - Move the mouse over the “>” link of the group you want to add the server to and select the **Add Server** function from the pop-up menu
- To edit a server From the **Account Homepage**
  - Select **Edit** for the server you want to edit
  - Or click the  **Server icon** of the server you want to edit

If you use the Windows GUI:

- Please start the Windows GUI (see “Starting the Windows GUI”)
- To add a new server
  - Choose **Add|New Server** from the main menu or
  - Right click the group for the new server and choose **Add Server** from the popup menu
- To edit a server double click the server’s name

This opens the Server Data Window.



- **Associated Group**—use the drop-down menu to select a group to which to add this server
- **Name**—the name of the server
- **Comments**—a description of the server
- **Status**—use the drop-down menu to select the status of the server
  - Active
  - Paused (sensors will not be monitored)
- **Dependency**—You can pause all sensors of this server if a sensor of another server is not UP. Choose the dependency sensor from the dropdown list. Do not choose a sensor of the current server and avoid circular dependencies. Use with caution. See “Managing Dependencies”.
- **Schedule** – allows you to select a schedule defined under **My Account** (See “Managing Schedules”). From the drop-down menu you can select from the defined schedules.

- **Server Data**
  - **DNS Name (or IP Address)**—enter the DNS name or IP Address of the server to be monitored (it is recommended to enter a DNS name, this way with each check the correct DNS resolution of this name will also be checked automatically)
  - **Location**—enter a descriptive name of the server location
- **Icon**—select an icon to represent the server
- **Latencies** - "Latencies" are used to defer notifications after warnings or errors have occurred. You can set latencies on group, server and sensor level. The latencies for warnings, errors and escalations can be set individually. Choose “Use Group Settings” if you want this server to use the latency settings of the associated group or choose the latencies for this server individually. See “Managing Notifications, Latencies and Dependencies” for more information.
- **Notifications** - "Notifications" are used to send alarms when warnings or errors occur. You can set notifications for groups, servers and sensors. Choose “Use Group Settings” if you want this server to use the notifications of the associated group or choose the notifications for this server individually. See “Managing Notifications, Latencies and Dependencies” for more information.

When you have filled out all of the appropriate information click the **OK Button** to save your server.

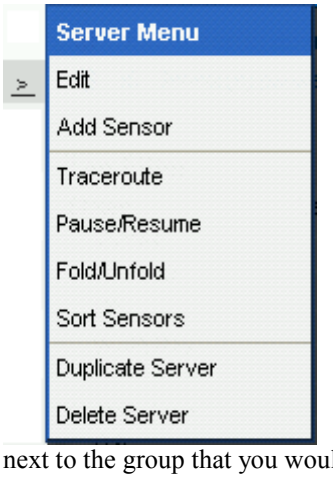
Deleting Servers

To delete a server

CAUTION: This will also delete all sensors configured for this server!

If you use the Web GUI:

- Please log into your account (see “Logging into your account using the Web GUI”)
- Move the mouse over the “>” link of the server you want to delete and select the **Delete Server** function from the pop-up menu



next to the group that you would like to delete.

If you use the Windows GUI:

- Please start the Windows GUI (see “Starting the Windows GUI”)
- Right click the server you want to delete and choose **Delete** from the popup menu

This opens the **Delete Object Window**.

Click the **OK Button** to confirm the server deletion

Click the **Cancel Button** if you decide not to delete the server and return to the account homepage

Duplicating a Server

To build a list of several servers that have very similar monitoring settings you can use the duplicate server feature.

First you set up one server with all sensors, then you duplicate it for each similar server. During duplication the original server's name is replaced with the other servers' names.

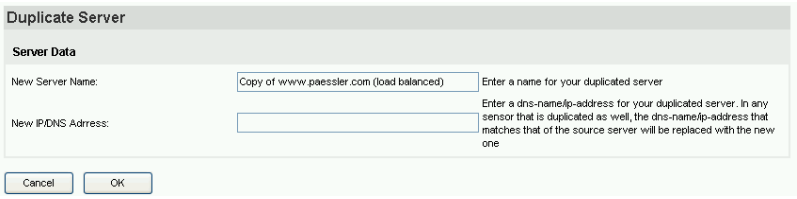
If you use the Web GUI:

- Please log into your account (see "Logging into your account using the Web GUI")
- Move the mouse over the ">" link of the server and select the **Duplicate Server** item from the pop-up menu.

If you use the Windows GUI:

- Please start the Windows GUI (see "Starting the Windows GUI")
- Right click the server and choose **Duplicate Server** from the popup menu

This will show the duplicate server dialog:



Please enter the name and IP Address of the new server, then click **OK**!

Folding/Unfolding

The Folding/Unfolding action for servers works exactly the same as for Groups. For more information about how to Fold/Unfold groups, see "Folding/Unfolding".

Checking a Server's Trace Route

To check the trace route between the IPCheck Server Monitor server and a server that you are monitoring:

If you use the Web GUI:

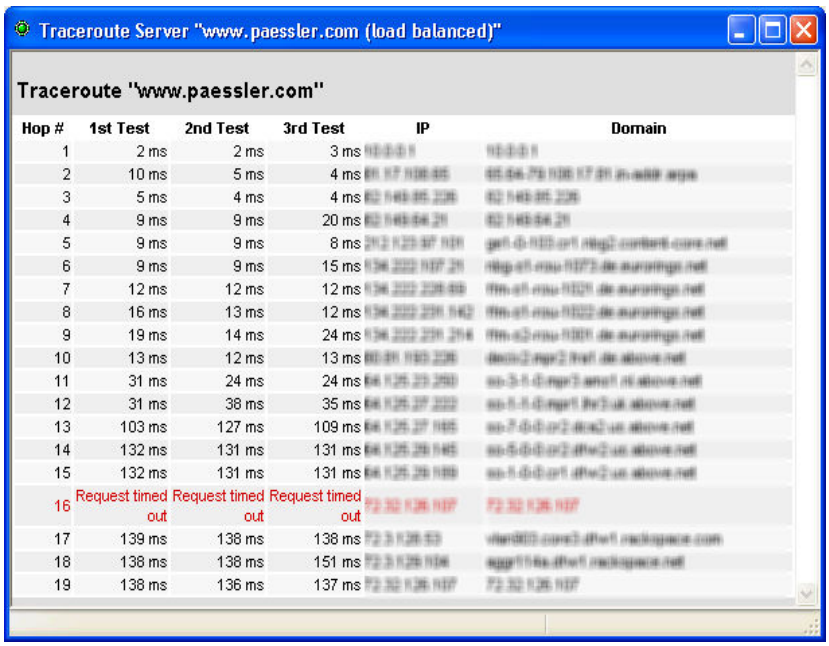
- Please log into your account (see "Logging into your account using the Web GUI")

- Move the mouse over the “>” link of the server and select the **Traceroute** item from the pop-up menu.

If you use the Windows GUI:

- Please start the Windows GUI (see “Starting the Windows GUI”)
- Right click the server and choose **Traceroute** from the popup menu

This will show the Traceroute dialog (this can take up to several minutes!):



Sorting Servers

To change the order of the servers of a group:

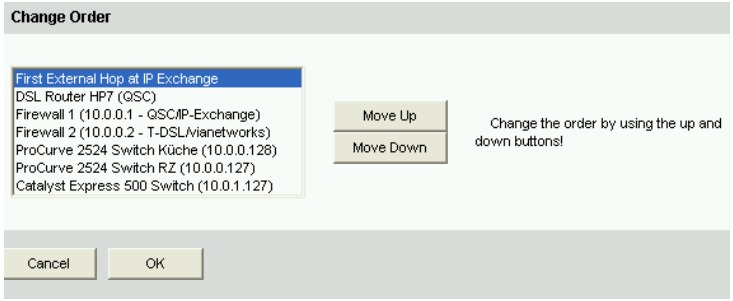
If you use the Web GUI:

- Please log into your account (see “Logging into your account using the Web GUI”)
- Move the mouse over the “>” link of the group and select the **Sort Servers** item from the pop-up menu.

If you use the Windows GUI:

- Please start the Windows GUI (see “Starting the Windows GUI”)
- Right click the group and choose **Sort Servers** from the popup menu

This will show the Sort dialog:



To change the order, select an item and use the **Move Up** and **Move Down** buttons to move it.

Pausing/Resuming Monitoring for a Server

To start or stop the monitoring of a server:

If you use the Web GUI:

- Please log into your account (see “Logging into your account using the Web GUI”)
- To pause/resume monitoring move the mouse over the “>” link of the server and select the Pause/Resume button from the pop-up menu.

If you use the Windows GUI:

- Please start the Windows GUI (see “Starting the Windows GUI”)
- Right click the server and choose **Pause/Resume** from the popup menu

Managing Sensors

Since each network device (or "server") usually has several parameters or services that should be monitored you can set up various sensors to monitor each and every aspect of a server (e.g. web server responsiveness, SMTP responsiveness, PING time, etc.). So a "server" has several "sensors" by which you will monitor all aspects of the server.

See the “Sensor Types in Detail” section for more information on the various sensor types.

Adding Sensors

To add a sensor:

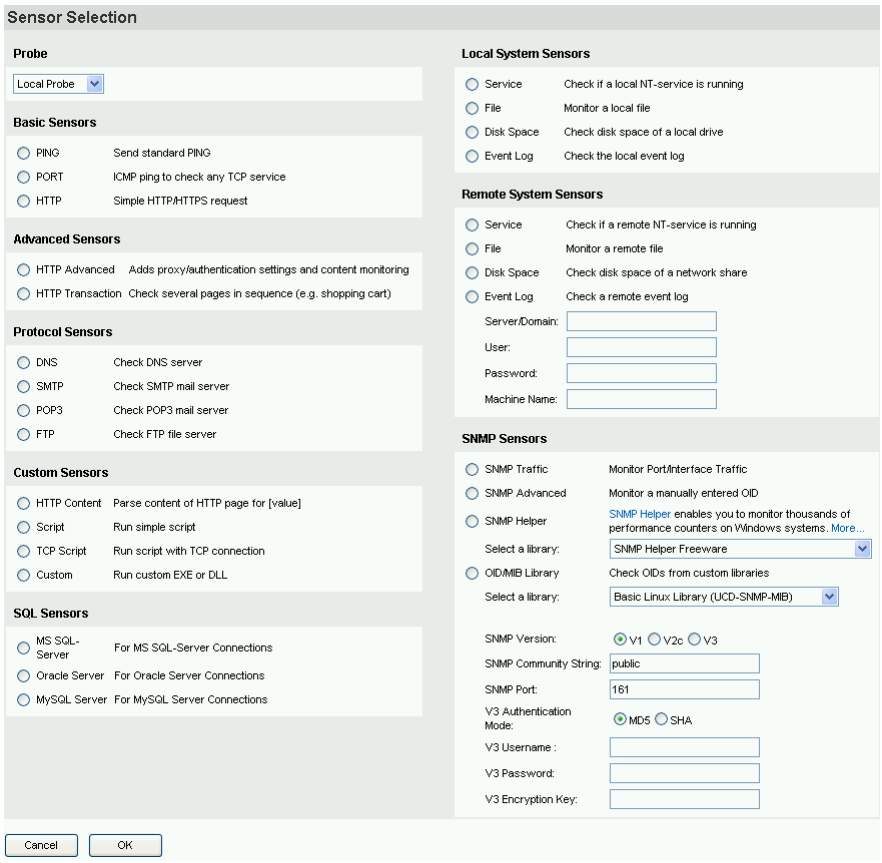
If you use the Web GUI:

- Please log into your account (see “Logging into your account using the Web GUI”)
- From the Account Homepage
  - Select the Add Sensor link at the top of the page.
  - Move the mouse over the “>” link of the server you want to add the sensor to and select the **Add Sensor** function from the pop-up menu

If you use the Windows GUI:

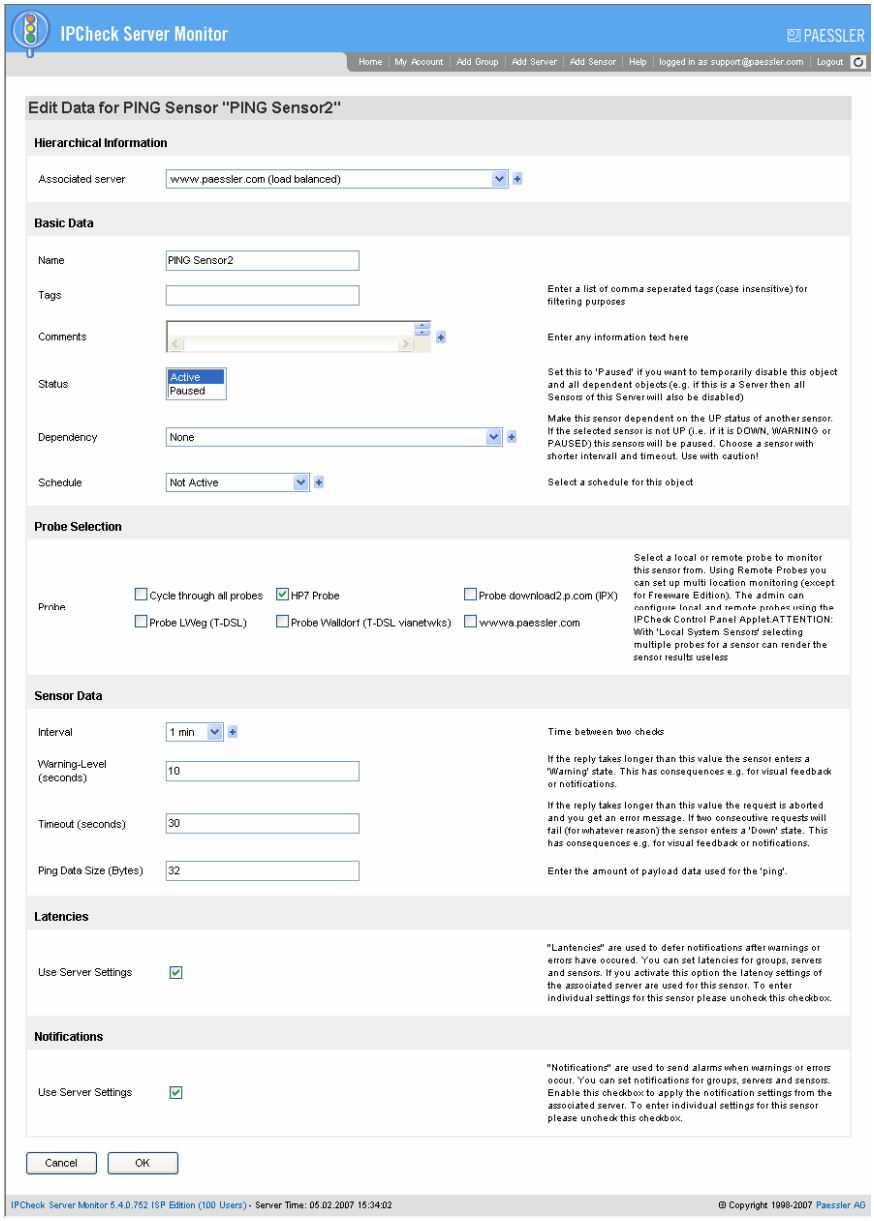
- Please start the Windows GUI (see “Starting the Windows GUI”)
- To add a new sensor
  - Choose Add|New Sensor from the main menu or
  - Right click the server for the new sensor and choose **Add Sensor** from the popup menu

This opens the Sensor Selection Window.



- The first step in adding a sensor is to select the type of sensor you would like to use by clicking the appropriate radio button.
- If there are more than one probe configured on the IPCheck server you can also select which probe should be used to create the sensor.
- See the "Sensor Types in Detail" section for more information on the individual sensor types.
- Once you have made your selection click on the **OK Button** to continue adding the sensor. This opens the **Sensor Details Window**.

Note: The options of the sensor details differ depending on the sensor type. See the "Sensor Types in Detail" section for more information on the individual sensor options.



The following properties are shown for all sensor types:

- **Associated Server**—use the drop-down menu to select a server to which to attach this sensor
- **Name**—enter a descriptive name for the sensor
- **Comments**—enter a description for the sensor (i.e., what it does or when it will check)
- **Status**—use the drop-down to set the status of the sensor. Options include
  - Active
  - Paused (disables monitoring for this sensor)
- **Dependency**—You can pause this sensor if a sensor of another server is not UP. Choose the dependency sensor from the dropdown list. Do not choose the current sensor itself and avoid circular dependencies. Use with caution. See “Managing Dependencies”.

- **Schedule** – allows you to select a schedule defined under **My Account** (See “Managing Schedules”). From the drop-down menu you can select from the defined schedules.
- **Interval**—use the drop-down to select an available interval.
- **Warning level**—specify a time (in seconds) when the response time of the sensor should generate a warning notification. If you have the **On Warning Notification** set to active, this will determine when the notification is sent.
- **Timeout**—specify a time (in seconds) when the sensor should stop trying to accomplish its objective and send a failure notification
- **Latencies** - "Latencies" are used to defer notifications after warnings or errors have occurred. You can set latencies on group, server and sensor level. The latencies for warnings, errors and escalations can be set individually. Choose “Use Group Settings” if you want this server to use the latency settings of the associated group or choose the latencies for this server individually. See “Managing Notifications, Latencies and Dependencies” for more information.
- **Notifications -** "Notifications" are used to send alarms when warnings or errors occur. You can set notifications for groups, servers and sensors. Choose “Use Group Settings” if you want this server to use the notifications of the associated group or choose the notifications for this server individually. See “Managing Notifications, Latencies and Dependencies” for more information.

Click the **OK Button** when finished adding the sensor.

Editing Sensors

Editing a sensor can be accomplished by completing the following steps:

To start or stop the monitoring of a group or server:

If you use the Web GUI:

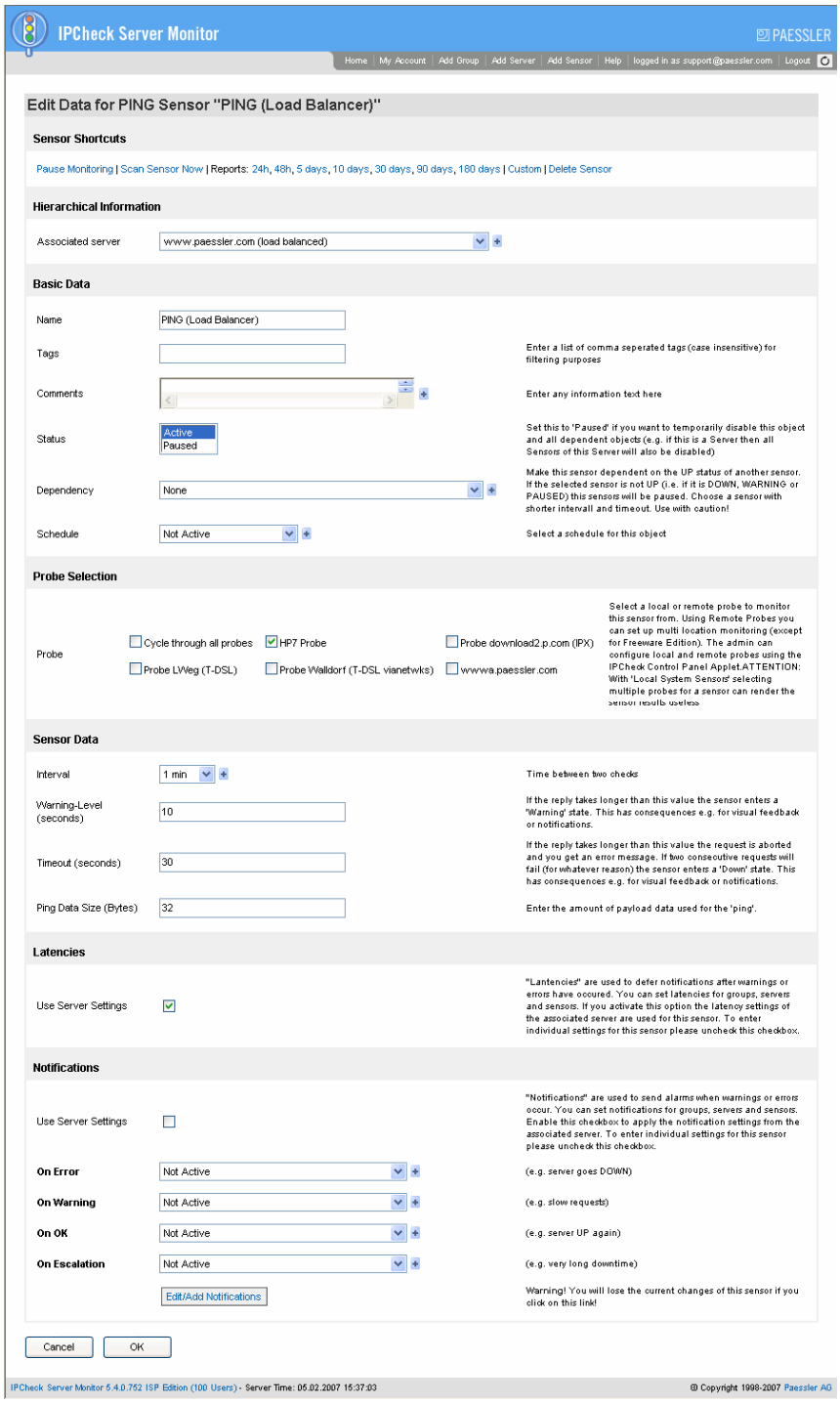
- Please log into your account (see “Logging into your account using the Web GUI”)
- From the **Account Homepage** select **Edit** for the server you want to edit

If you use the Windows GUI:

- Please start the Windows GUI (see “Starting the Windows GUI”)
- Double click the sensors’s name

This opens the Sensor Data Window

Note: The options of the sensor details differ depending on the sensor type. See the “Sensor Types in Detail” section for more information on the individual sensor options.



The following properties are shown for all sensor types:

- **Associated Server**—use the drop-down menu to select a server to which to attach this sensor
- **Name**—enter a descriptive name for the sensor
- **Comments**—enter a description for the sensor (i.e., what it does or when it will check)
- **Status**—use the drop-down to set the status of the sensor. Options include
  - Active
  - Paused (disables monitoring for this sensor)

- **Dependency**—You can pause this sensor if a sensor of another server is not UP. Choose the dependency sensor from the dropdown list. Do not choose the current sensor itself and avoid circular dependencies. Use with caution. See “Managing Dependencies”.
- **Schedule** – allows you to select a schedule defined under **My Account** (See “Managing Schedules”). From the drop-down menu you can select from the defined schedules.
- Probe – If the admin has set up more than one remote probe you can select one or more probes from the list to monitor a server or service from various locations (see “Multi Location Monitoring Using Remote Probes”).
- **Interval**—use the drop-down to select an available interval.
- **Warning level**—specify a time (in seconds) when the response time of the sensor should generate a warning notification. If you have the **On Warning Notification** set to active, this will determine when the notification is sent.
- **Timeout**—specify a time (in seconds) when the sensor should stop trying to accomplish its objective and send a failure notification
- **Latencies -** "Latencies" are used to defer notifications after warnings or errors have occurred. You can set latencies on group, server and sensor level. The latencies for warnings, errors and escalations can be set individually. Choose “Use Group Settings” if you want this server to use the latency settings of the associated group or choose the latencies for this server individually. See “Managing Notifications, Latencies and Dependencies” for more information.
- **Notifications -** "Notifications" are used to send alarms when warnings or errors occur. You can set notifications for groups, servers and sensors. Choose “Use Group Settings” if you want this server to use the notifications of the associated group or choose the notifications for this server individually. See “Managing Notifications, Latencies and Dependencies” for more information.

Click the **OK Button** when finished adding the sensor.

Reviewing a Sensor’s Status

To review the status and recent history for a sensor:

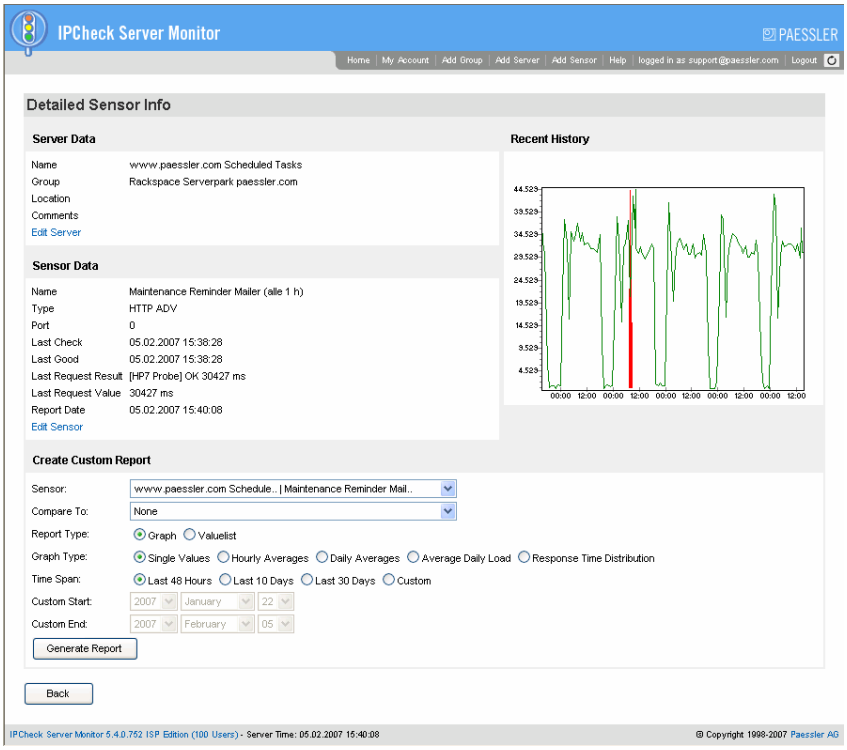
If you use the Web GUI:

- Please log into your account (see “Logging into your account using the Web GUI”)
- From the **Account Homepage** select click the **Minigraph** of the sensor for which you would like to create a report or
- Move the mouse over the “>” link of the sensor and select the **Info&Custom Graph** link.

If you use the Windows GUI:

- Please start the Windows GUI (see “Starting the Windows GUI”)
- Right click the sensor **Custom Report**

This will open the **Detailed Sensor Info Window:**



- **Server name, Server group, Server Location, Server Comments:** As entered during configuration
- **Sensor name, Sensor type**: As entered during configuration
- **Last Check**: The date and time of the last request sent to this sensor
- **Last Good**: The date and time of the last successful request sent to this sensor
- **Last Request Result**: The result of the last request sent to this sensor
- **Last Request time**: The request time of the last request sent to this sensor
- **Report Date**: The date and time this report was created on
- **Sensor History**: This Graph shows the results of the last 300 requests to this sensor

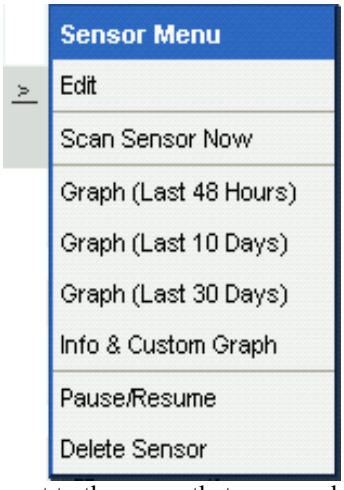
At the bottom of this page you can create a custom report for this sensor (see "Creating Reports and Graphs")

Deleting Sensors

Deleting a sensor can be accomplished by completing the following steps:

If you use the Web GUI:

- Please log into your account (see "Logging into your account using the Web GUI")
- Move the mouse over the ">" link of the server you want to delete and select the **Delete Sensor** function from the pop-up menu

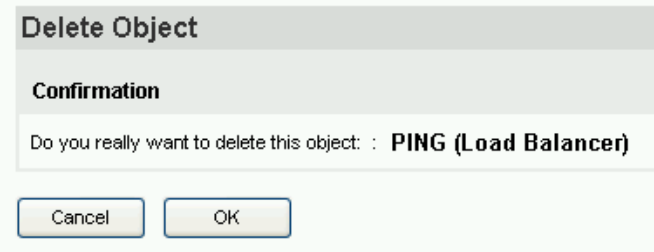


next to the group that you would like to delete.

If you use the Windows GUI:

- Please start the Windows GUI (see "Starting the Windows GUI")
- Right click the sensor you want to delete and choose **Delete** from the popup menu

This opens the **Delete Object Window**.



Click the **OK Button** to delete the sensor

Click the **Cancel Button** if you do not want to delete the sensor. This will then take you back to the **Account Homepage.**

Sorting Sensors

To change the order of the sensors of a server:

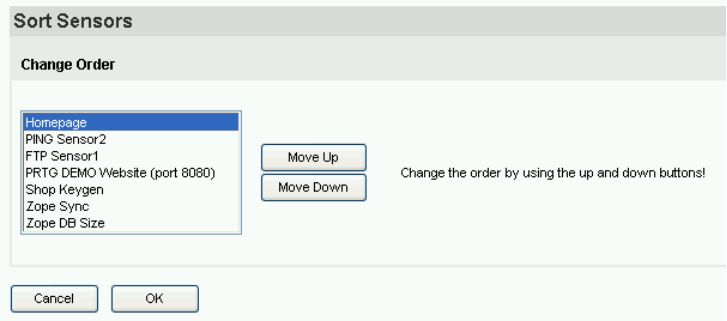
If you use the Web GUI:

- Please log into your account (see "Logging into your account using the Web GUI")
- Move the mouse over the ">" link of the server and select the **Sort Sensors** item from the pop-up menu.

If you use the Windows GUI:

- Please start the Windows GUI (see "Starting the Windows GUI")
- Right click the server and choose **Sort Sensors** from the popup menu

This will show the Sort dialog:



To change the order, select an item and use the **Move Up** and **Move Down** buttons to move it.

Pausing/Resuming Monitoring for a Sensor

To start or stop monitoring of a sensor:

If you use the Web GUI:

- Please log into your account (see "Logging into your account using the Web GUI")
- To pause/resume monitoring move the mouse over the ">" link of the sensor and select the Pause/Resume button from the pop-up menu.

If you use the Windows GUI:

- Please start the Windows GUI (see "Starting the Windows GUI")
- Right click the sensor and choose **Pause/Resume** from the popup menu

Working with Tags

In order to filter sensors for certain criteria, IPCheck features a method for assigning categories to sensors.

A tag is a keyword or descriptive term associated with a sensor as means of classification. Tags will especially help you if you have a large number of sensors.

After sorting sensors into groups the method of tagging is a second way to categorize your sensors. For example you can group the sensors in your sensorlist by device ("Switch 1", "Switch 2" and "Switch 3").

Tags are created by the user (you can enter any number of tags for one or more sensors) and automatically created by IPCheck (e.g. the tag "OK" for a sensor that works fine or "Error" for a sensor that shows an error),

E.g. you can associate the tag "mywebsites" to all sensors that monitor your websites. Now you can click on "mywebsites" in the taglist and IPCheck will only show the sensors which are associated with this tag.

Tagging allows for multiple "browseable paths" through the items which can quickly and easily be altered with minimal effort and planning.

Tags come in three different flavors:

- State tags: These built-in tags are assigned automatically by IPCheck depending on the state of the sensor. There are the

following state tags: UP, DOWN, WARNING, PAUSED. You are not able to edit this list of tags.

- Type tags: These built-in tags are assigned automatically by IPCheck depending on the sensor types that you actually use. Type tags correspond to the actual used set of sensors types. You are not able to edit this list of tags.
- Custom tags: For each sensor you may define one or more tags (a comma separated list of tag words) which will automatically show up in the interface.

Usage is simple: Just check the boxes left to those tags that you want to be displayed, in any desired combination. IPCheck then filters the sensors for those tags, hiding those sensors that have neither of the chosen tags assigned. Tag selections within one group are linked by OR, selections between groups are linked by AND.

Example: if you check "UP" in the State group and "PING" and "HTTP" in the Type group, IPCheck shows all sensors that are UP and are either PING or HTTP sensors. Sensors that are down or are neither Ping nor Http sensors are hidden from the list of sensors.

Note: changing custom tags in the Edit Sensor windows might not immediately be reflected properly in the taglist, a manual refresh may be necessary after editing.

Managing "My Account"

Accessing Your Account

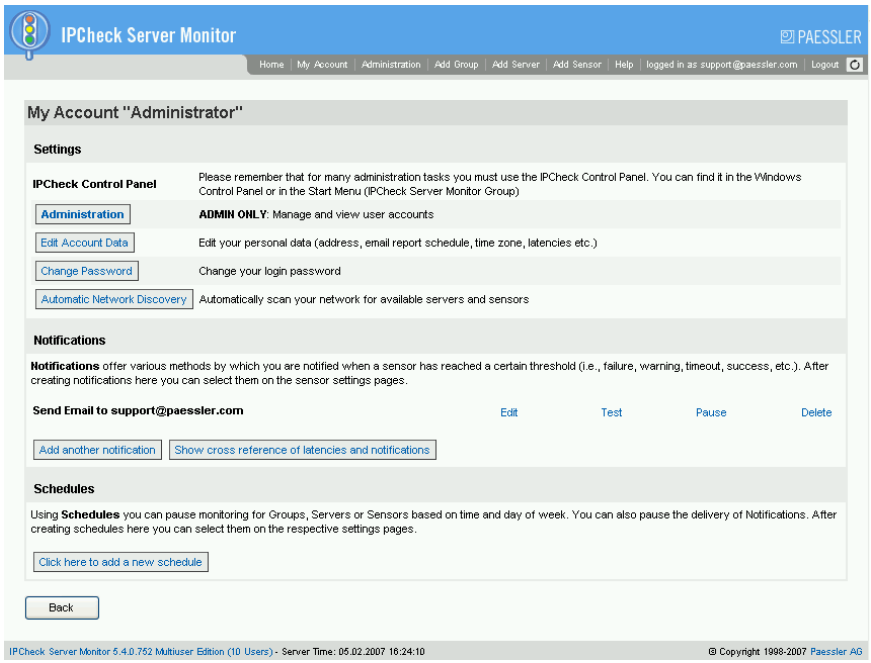
If you use the Web GUI:

- Please log into your account (see “Logging into your account using the Web GUI”)
- Click the My Account Link from the menu toolbar at the top of the page

If you use the Windows GUI:

- Please start the Windows GUI (see “Starting the Windows GUI”)
- Choose the **Edit|My Account** item from the main menu

This will open the **My Account Window**.



Here you can

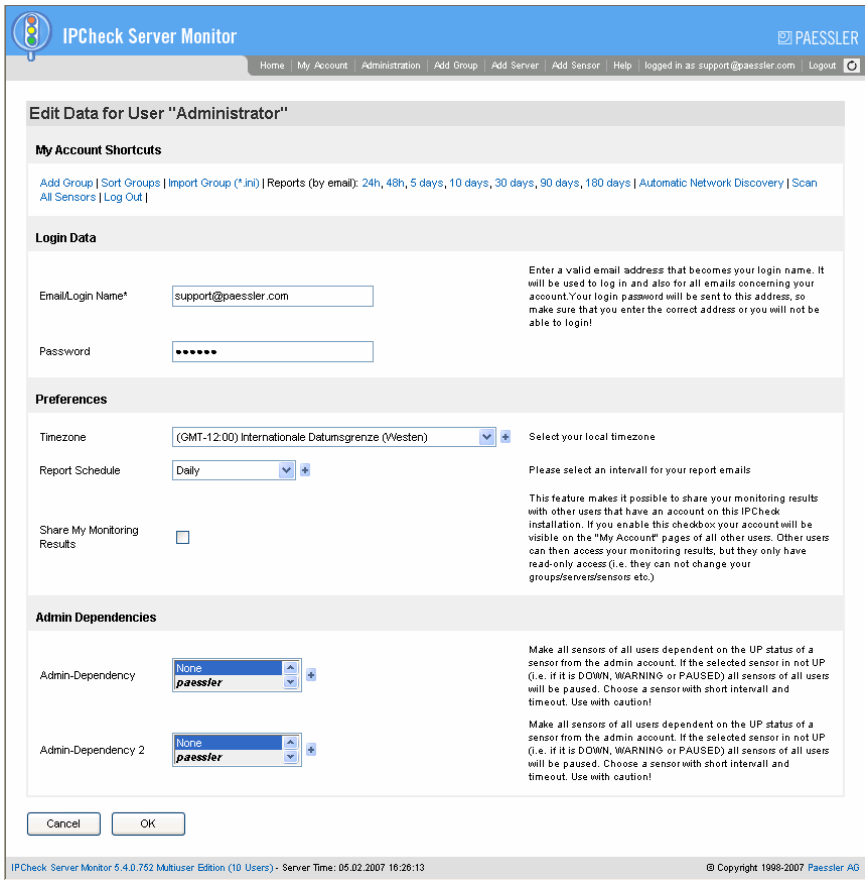
- Edit your account settings (email, address, latencies etc.) (See “Editing Account Information”)
- Change your password (See “Changing your login password”)

- Access the Administration page (See “Server and User Account Administration”)
- Delete your account (See “Deleting your Account”)
- Manage your Notifications (see “Managing Notifications, Latencies and Dependencies”) and Schedules (See “Managing Schedules”).

Editing Account Information

To edit your account data please choose **Edit Account** from your “My Account” page (See “Accessing Your Account”).

This will show the User Data window:



- The settings are:**Email/Login name**—this is your login name for IPCheck Server Monitor. This can only be changed by the admin.
- **Password**—the password associated with the email/login name.
- **Contact Address:** For all user accounts except the main admin account you can enter/edit the following contact data:
  - **First Name**—the account holder’s first name
  - **Last Name**—the account holder’s last name
  - **Company**—the account holder’s company
  - **Street**—the account holder’s street address
  - **Zip**—the account holder’s zip code
  - **City**—the account holder’s city

- **Country**—the account holder's country
- **State**—the account holder's state
- **Phone**—the account holder's phone
- **Fax**—the account holder's fax

- **Timezone**—the account holder's time zone
- **Report Schedule**—use the drop-down menu to select a frequency of report generation which will be sent to your email account periodically
- **Share my Monitoring Results** - This feature makes it possible to share your monitoring results with other users that have an account on this IPCheck installation. If you enable this checkbox your account will be visible on the "My Account" pages of all other users. Other users can then access your monitoring results, but they only have read-only access (i.e. they can not change your groups/servers/sensors etc.)

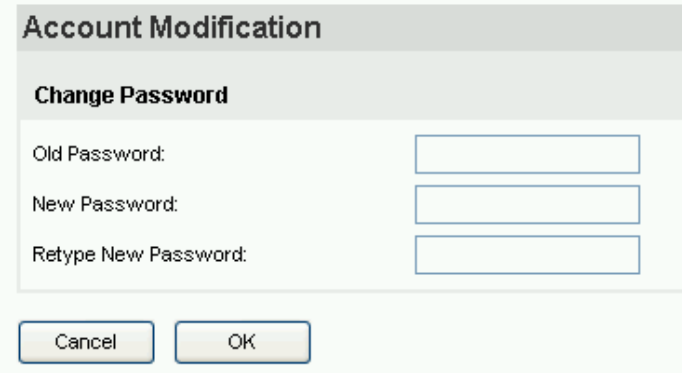
If the current account is the Admin account you will also see the Admin Dependencies section (see "Managing Dependencies").

Click the **OK Button** when finished

Changing your login password

To change your login password please choose **Change Password** from your "My Account" page (See "Accessing Your Account").

This will open the **Password Change Window.**



- **Old password**—enter old password
- **New password**—enter the new password
- **Retype new password**—re-enter the new password for verification purposes

When finished click the **OK Button**. Afterwards you must re-login with your new password!

Deleting your Account

If you do not want to continue using IPCheck Server Monitor, you can close your account by choosing "Delete My Account" from your "My Account" page (See "Accessing Your Account").

Quick View

As an alternative to the default graphical sensor list there is a “mini HTML” version which is e.g. suitable for mobile devices.

To find out your URL choose “Quick View” from your “My Account” page (See “Accessing Your Account”).

Note: If you want to offer public read-only access to your monitoring data check out the Publish Group option on the group settings page.

Managing Notifications, Latencies and Dependencies

Definitions: Notifications, Latencies and Dependencies

Whenever IPCheck Server Monitor discoveres a slow or failing sensor “**notifications**” are used to send out alarms. Each user can define an unlimited number of notifications on the “My Account” page.

IPCheck Server Monitor supports the following types of communication channels: Email, Pager, SMS messaging, ICQ notification, Execute Program (EXE file/batch file), Network Broadcast (NET SEND), Play a soundfile, HTTP Request, Local logging, Windows event log entries. And there are additional options if you use the Windows GUI (see “Windows GUI Options”)

“**Latencies**” are used to defer a notifications for a specified time, e.g. to give a server or service the chance to recover from failure.

Using “**dependencies**” you can pause the monitoring of sensors or the sending of notifications based on the status of another sensor to avoid false alarms and incorrect recording of downtimes.

Situations that can trigger Notifications

IPCheck Server Monitor distinguishes between 3 status types for a sensor:

- OK (Green) means up and running
- WARNING (Yellow) means one request has failed or the request time was above the warning threshold
- DOWN (Red) means at least 2 requests have failed or were above the timeout threshold

There are five situations that can trigger a notification:

- On Error: This notification is triggered if a server goes down and is not available anymore (e.g. the sensor cannot connect to a service and runs into timeouts). The associated color is red.
- On Warning: Slow requests or user defined thresholds can trigger a warning notification. In this case a sensor is shown in yellow color
- On OK: If a sensor’s status changes from Error/DOWN or Warning to the UP status this notification is triggered (e.g. to let you know that a server is UP again)
- On Escalation: If a sensor has a DOWN state for a longer time you can trigger this additional notification. Most users let IPCheck Server Monitor send out the first ERROR notification to a smaller team and then – if the problem is not solved e.g. in 5 minutes – a larger distribution list is notified using the escalation notification.

- On Change: Some sensors are able to monitor a service or file for changes in the content (e.g. the HTTP Advanced sensor can discover changes in a webpage). If such a change is discovered IPCheck will trigger a change notification

To avoid receiving too many notifications for only very short failures or delays you can set so-called latencies. When latencies are set (a value in seconds) a notification is only sent if the failure state takes longer than the latency.

For example one configuration could look like this:

- Configure the latency for DOWN to 60 seconds
- Configure the latency for Escalations to 300 seconds
- Configure one notification just to send emails and ICQ message
- Select this notification for UP and DOWN
- Configure a second notification to additionally send an SMS/pager notification
- Select this notification for ESCALATION

Now if a sensor goes down you will be notified via email and ICQ about 1 minute after a sensor goes down. If after 5 minutes the sensor is still down you will additionally receive a SMS/Pager notification, e.g. in case you are away from your email client

How Notifications and Latencies work together

Here is what happens if a sensor fails:

- Initial Event: For the first time a request of a sensor is slow or fails
  - Now the sensor will be shown with the slow state (yellow color)
  - If the “latency for warnings” is zero a warning notification will be triggered immediately
  - If the “latency for warnings” is not zero and if consecutive requests are also slow a warning notification will be triggered as soon as the “latency for warnings” has expired.
- A second sensor request is sent out immediately by IPCheck Server Monitor automatically
- If the second request is fine, nothing happens
- If the second request is “down”
  - the sensor will be shown with the DOWN state (red color)
  - If the “latency for errors” is zero an error notification will be triggered immediately
  - If the “latency for errors” is not zero and if consecutive requests also fail an error notification will be triggered as soon as the “latency for errors” has expired.
  - If consecutive requests still fail an error notification will be triggered as soon as the “latency for Escalations” has expired.
- If sometime later a request runs through without problems
  - the sensor will be shown with the UP state (green color)

- An OK notification will be triggered immediately

And there are more aspects that influence this behaviour:

- If you have selected a dependency for a sensor then the sensor is not scanned as long a the dependency sensor is not in an UP state
- If you have selected a dependency for a notification then the notification is not triggered and sent out as long a the dependency sensor is not in an UP state
- If you have selected a schedule for a sensor then the sensor is only scanned in the time intervals defined by the schedule.
- If you have selected a schedule for a notification then the notification is only triggered during the time intervals defined by the schedule.

Selecting Notifications and Latencies for Groups, Servers and Sensors

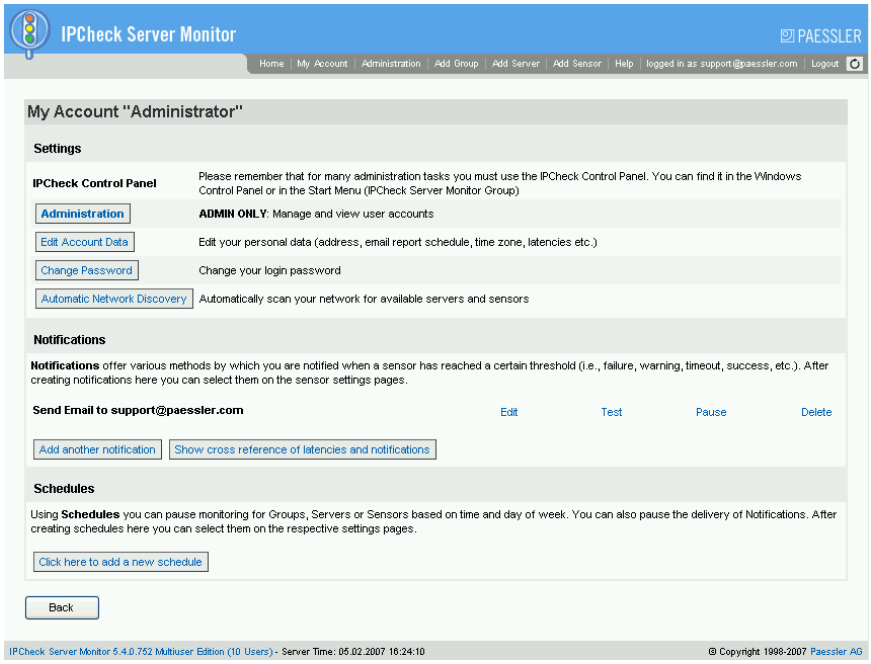
Notifications as well as latencies can be selected for groups, servers and sensors. For servers and sensors you can choose to use the parent object's settings.

This way you can change the notification and latency settings for several servers and/or sensors by simply changing the group's settings. To use this inheritance simply check the "User Group Settings" or "User Server Settings" checkbox of a server or sensor.

Deselect this checkbox to select individual notifications for a server (or sensor).

Adding and Editing Notifications

To edit your notifications please access your "My Account" page (See "Accessing Your Account").

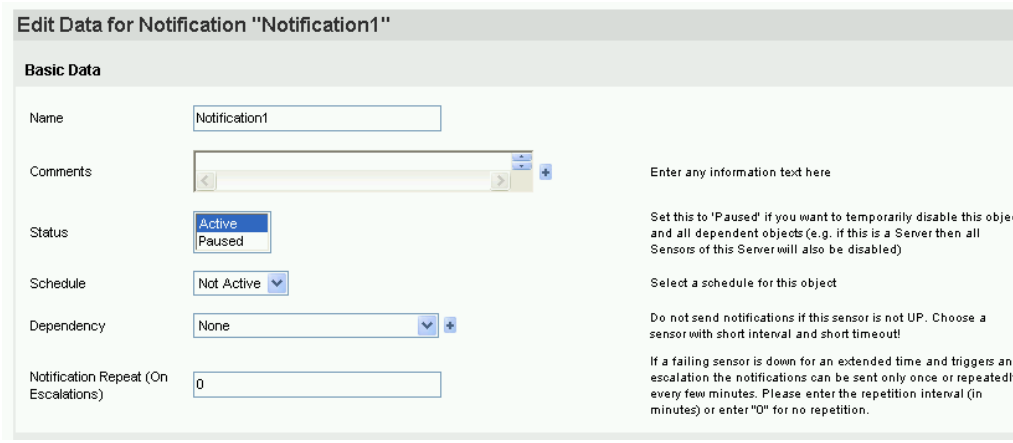


Under the Notifications heading you will see a list of your notifications.

- To add a new notification, click the **Add another notification** option.

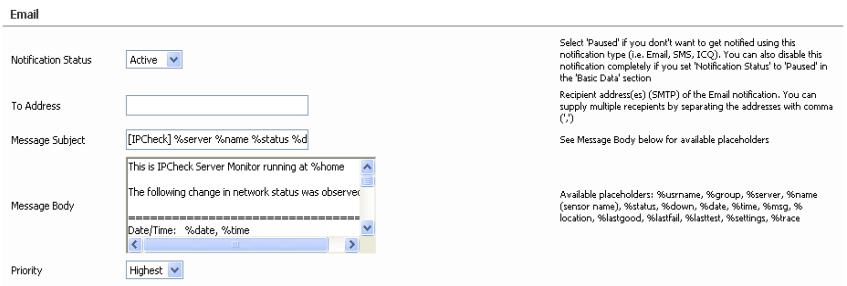
- To edit a notification select the **Edit** Link next to the notification that you would like to change.

This will open the Notification Data Window.



The settings are:

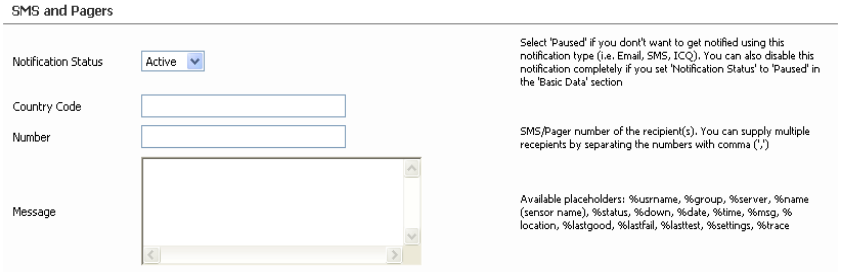
- **Basic Data**
  - **Name**—enter a name for the notification
  - **Comments**—enter a description for the notification
  - **Status—**use the drop-down menu to select the state of the notification. Options include **Active** and **Paused**
  - **Schedule** – allows you to select a schedule defined under **My Account** (See "Managing Schedules"). From the drop-down menu you can select from the defined schedules.
  - **Dependency**—use the drop-down menu to select a sensor to depend on. If this sensor is down no notifications will be sent (e.g. it does not make sense to send a notification if a server somewhere in the Internet cannot be reached simply because your DSL line is down). (See "Managing Dependencies").



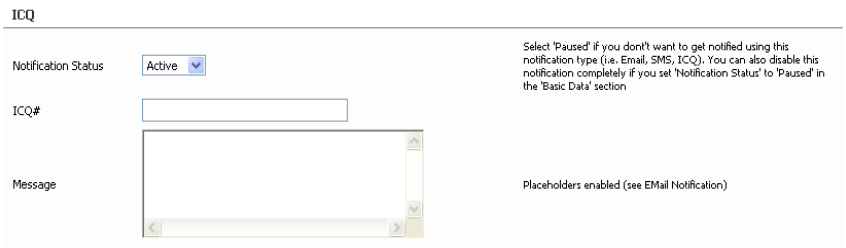
- **E-Mail**
  - **Note:** E-Mail notifications are only available if an SMTP server is set in the Admin Control Panel by the system administrator (see"Using the Control Panel").
  - **Notification Status—**use the drop-down menu to select the state of the email notification (**Active** or **Paused)**
  - **To Address—**Enter the email address where the notification will be sent. To send the email to multiple addresses simply enter all addresses separated by a comma ","
  - **Message Subject** and **Message Body—**Enter the subject and the message body of the notification. This message can include basic text as well as IPCheck Server Monitor Custom Message

Tags. These tags allow you to include detailed environmental information. For more information, see “Notification Message Tags”.

- **Priority—**Use the drop-down to select the priority of this message. Options include: **Highest, High, Normal, Low, Lowest.**

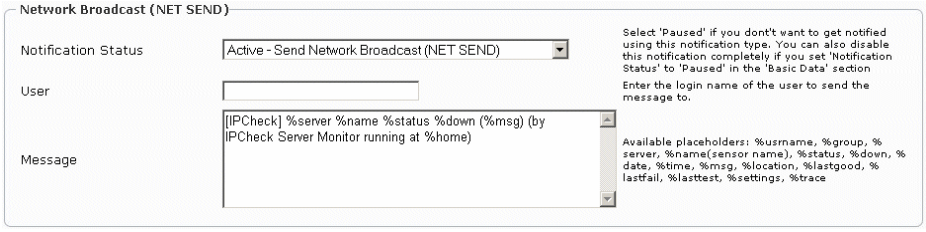


- **SMS/Pager**
  - **Note:** SMS/Pager notifications are only available if an SMS server is set in the Admin Control Panel by the system administrator (see””).
  - **Notification Status—**use the drop-down menu to select the state of the email notification. Options include **Active** and **Paused**
  - **Country Code—**enter the country Code of the mobile phone/pager number (e.g. "1" for USA, "33" for UK, "49" for Germany etc.)
  - **Number—**enter the mobile phone/pager number (without a leading "0")
  - **Message—**Enter the message text of the notification. This message can include basic text as well as IPCheck Server Monitor Custom Message Tags. These tags allow you to include detailed environmental information. For more information, see “Notification Message Tags”.



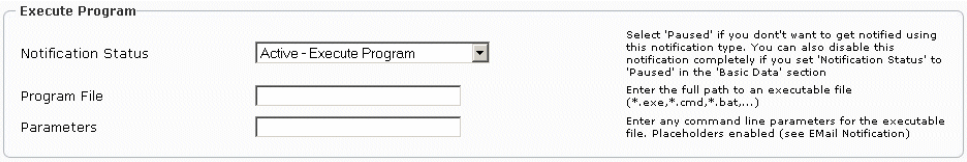
- **ICQ**
  - **Note:** ICQ notifications are only available if an ICQ account is set in the Admin Control Panel by the system administrator (see”Using the Control Panel”).
  - **Notification Status**—use the drop-down to specify the status of the ICQ notification. Options include: **Active (ICQ notification is on)** and **Paused (ICQ notification is turned off).**
  - **ICQ#—**Enter the ICQ number to send the message to
  - **Message—**Enter the message text of the notification. This message can include basic text as well as IPCheck Server Monitor Custom Message Tags. These tags allow you to

include detailed environmental information. For more information, see “Notification Message Tags”.

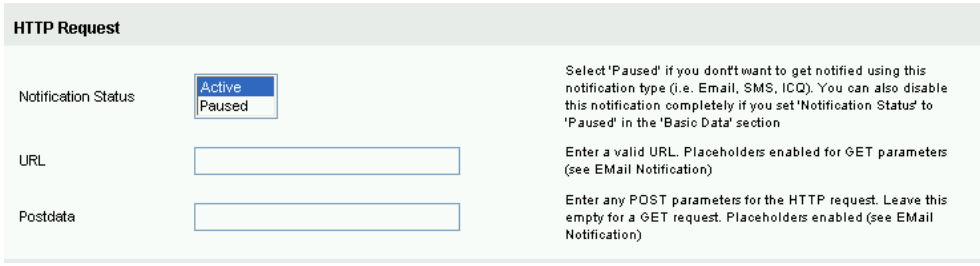


- **Network Broadcast (NET SEND)**
  - Use this notification to send a message across your LAN using the Windows Messenger Service
  - **User—**Enter the login name of the user to send the message to or enter the Active Directory domain name to send to all users of the domain, or enter * to send to all users.
  - **Message—**Enter the message text of the notification. This message can include basic text as well as IPCheck Server Monitor Custom Message Tags. These tags allow you to include detailed environmental information. For more information, see the **Notification Message Tags Section**.

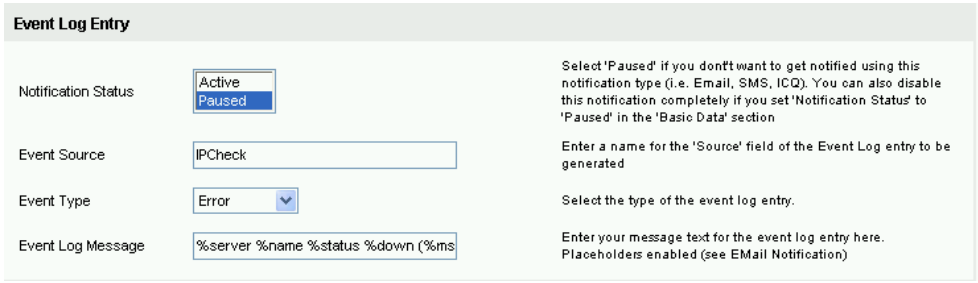
- **Play Sound**
  - **Sound File—**Select a sound that is to be played when this notification is executed. Items shown are all '.wav' files from the 'wav' subdirectory in your IPCheck installation directory. If you place new WAV files into this directory you must restart the IPCheck web server service to show them here.



- **Execute Program**
  - **Program File—**Enter the full path to the executable file (EXE, CMD, BAT, etc.) on the machine running the IPCheck service, for example c:\adirectory\afile.exe
  - **Parameters—**Enter the text you want to hand over to the executable as command line parameters. This message can include basic text as well as IPCheck Server Monitor Custom Message Tags. These tags allow you to include detailed environmental information. For more information, see the **Notification Message Tags Section**.



- **HTTP Request**
  - **URL**—Please enter the URL which should be requested (e.g. http://myloggingserver?event=%server_%name_%status)
  - **POSTDATA**—Only enter data here if you want to perform a POST request (placeholders enabled)



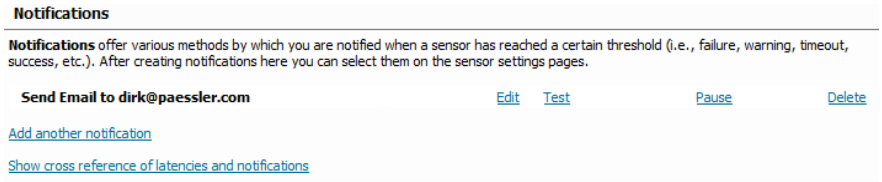
- **Event Log**
  - **Event Source**: Please enter the name that will be generated as "Source" in the Event Log entry.
  - **Event Type**: Select the type of the Event Log entry: Error, Warning, Information.
  - **Event Log Message**: Enter the message that will be shown in the Event Log entry. You may use IPCheck's message tags (see "Notification Message Tags").
  - Note: Event Log Entry Notification is disabled by default.

Once you have entered all of the appropriate information click the **OK Button** to save the notification.

Deleting Notifications

To manage your notifications please access your “My Account” page (See “Accessing Your Account”).

Under the Notifications heading you will see a list of your notifications.



- Click the **Delete** link of the notification you want to delete

This will open the **Delete Object Window.**

- Click the **OK Button** to delete the notification
- Click the **Cancel Button** if you decide not to delete the notification. This will return you to the **My Account Window**.

Note: You cannot undelete a notification.

Pausing/Resuming Notifications

To edit your notifications please access your "My Account" page (See "Accessing Your Account"). Under the **Notifications** heading you will see a list of your notifications.

Click the **Pause/Resume** link of a notification in the list to enable or disable an existing notification.

Testing Notifications

To test a notification please access your "My Account" page (See "Accessing Your Account"). Under the **Notifications** heading you will see a list of your notifications.

Click the **Test** link of a notification and you should receive the notification's message in a few seconds.

Cross Reference of Notifications and Latencies

Right below the list of notifications on your My Account page there is a link **Show Notification Cross Reference**. Click this link to see a table with all sensors from top to bottom and their configured probes, intervals, latencies, notifications, schedule and dependencies from left to right. This is very useful when setting up alarm handling for many sensors.

Notification Message Tags

IPCheck Server Monitor supports a number of placeholders that you can use to add environmental property data to your notification messages. These tags include:

- %home: The URL of the web interface of IPCheck Server Monitor
- %date, %time: Date and time
- %usrname: Current username
- %group: Current group of servers
- %server: Current server
- %name: Current sensor
- %status: Current status of the sensor

- %down: For UP messages this contains the downtime (e.g. "downtime=3h2m")
- %msg: Current result message of the sensor
- %location: Location of the current server
- %lastgood: Date and time of last good request
- %lastfail: Date and time of last failed request
- %lasttest: Date and time of last request
- %settings: Settings of this sensor
- %trace: Adds a traceroute to the server's IP address (Note: Since the creation of the trace route data can take up to several minutes the email will be delayed with this setting)

These tags are placed in the **Message Sections** of the **Notification Details Window** when setting up or editing a notification.

Managing Dependencies

Using “dependencies” you can pause the monitoring of sensors or the sending of notifications based on the status of another sensor to avoid false alarms and incorrect recording of downtimes.

If you – for example – monitor servers over a leased line then it makes no sense to send monitoring requests to the servers if the leased line is down since IPCheck can’t even reach the servers. The idea is to monitor the availability of the leased line and then pause monitoring of the servers if the leased line is not available at all.

In our example you would set up a short-intervalled PING sensor to monitor the first hop behind the leased line. Then select this sensor as dependency for the sensors that monitor servers behind the leased line.

This way you will not be notified of server downtimes if actually the leased line goes down, also no downtime will be recorded for the servers’ sensors.

Dependency Concept

Dependencies can be selected for groups, servers and sensors (to pause monitoring) as well as for notifications (to mute notification messages).

Choosing dependencies should be done with great caution as it can completely knock out your monitoring if not used correctly!

Here are some tips:

- Sensors used a dependency should be very simple sensors (e.g. PINGs) with short intervalls (much shorter than the dependent sensors) and with short timeouts.
- To monitor the availability of leased lines monitoring the first hop behind the line is a good idea. Use the “tracert” command to find out the IP of this first hop.
- Make sure you set reliable notifications for the sensors that you will use as dependency so you will be notified about the fact that IPCheck can’t monitor your other sensors!
- You must make sure that you do not configure loops into your dependencies by making two groups/servers/sensors dependent on each other, then both sensors will never be “unpaused”.

- Dependencies can be cascaded

Dependency Example

For example: IPCheck Server Monitor is running on a server that is connected to the Internet via a DSL line. It monitors three sensors on a webserver in a commercial hosting center across this DSL line.

It is recommended to set up a PING sensor for a hop en route to the server (e.g. the first after the DSL line) with an interval of 15 seconds and a timeout of 5 seconds. This will be your dependency sensor.

Now you can set up e.g. the three sensors for the remote server (e.g. SMTP, POP3 and HTTP) with 60 seconds interval and the PING sensor created above as the dependency.

As soon as the PING sensor goes into WARNING or DOWN state, the monitoring for the webserver will be paused and will later be resumed when the PING sensor returns to UP status.

This is only a sample, for your configuration other concepts can be useful. You can use any type of sensor as the dependency sensor!

Using Tracert to Find Out Hop IP Addresses

To find out the IP adresses of hops between the machine running IPCheck and a server you want to monitor run the "tracert (yourservername)" command on the machine running IPCheck:

```
C:\ >tracert www.paessler.com
Trace route to www.paessler.com [72.3.142.92]  with max. 30 hops:
  1    <1 ms    <1 ms    <1 ms  10.0.0.1
  2     2 ms     1 ms     1 ms  hp7.paessler.com [81.17.107.145]
  3     7 ms     8 ms     8 ms  82.149.64.153
  4     9 ms     8 ms     8 ms  212.123.97.101
  5     9 ms     8 ms     8 ms  [134.222.107.21]
  6    12 ms    11 ms    12 ms  [134.222.228.69]
  7    13 ms    12 ms    20 ms  [134.222.227.134]
  8    12 ms    11 ms    11 ms  [80.81.192.125]
  9    26 ms    26 ms    26 ms  151.164.41.96
(…)
```

Choose one of the hops to monitor. Often it is a good idea to talk to your provider which IP address is a good choice.

Group, Server and Sensor Dependencies

For groups, servers and sensors you can choose a dependency by selecting an item from the "dependency" dropdown. For groups all associated servers and for servers all associated sensors will inherit this dependency.

If a dependency is selected the sensor (or all sensors of the group or the server) will enter a PAUSED status (blue) as soon as the dependency sensor is not UP (green) and will not be monitored until the dependency sensor returns to the UP status.

This means that monitoring will be paused if the dependency sensor is in DOWN, WARNING or PAUSED state! This also the case if the dependency sensor is paused due to a schedule.

Notification Dependencies

For each notification you can select a sensor for the notification to depend on. If this sensor is down, no messages for this notification will be sent.

Admin Dependencies

In the Admin's settings in the webinterface (click **My Account** and **My Settings**) you can select two sensors. If either one of the two sensors is not UP (PAUSED, WARNING or DOWN) all monitoring if the IPCheck installation will be paused completely.

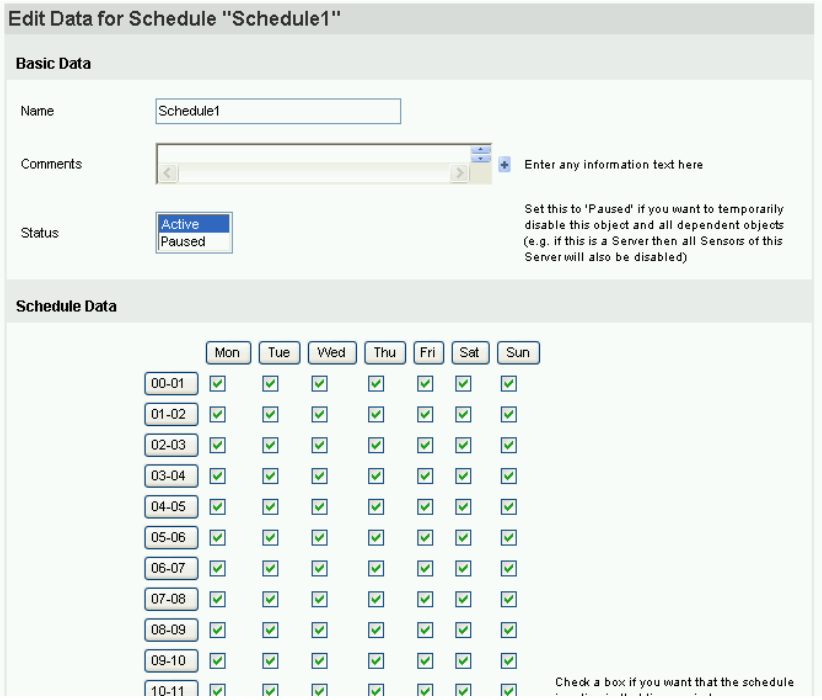
Managing Schedules

Using so-called schedules you can enable and disable monitoring (for groups, servers, sensors) or the delivery of notifications based on the time of day and/or the day of the week.

This can be used, for e.g. to pause monitoring during the night or to avoid receiving notifications, for example, on the weekend.

Editing Schedules

To edit your schedules please access your "My Account" page (See "Accessing Your Account"). Under the **Schedules** heading you will see a list of your schedules. Clicking on the **Add another schedule** link opens the schedule dialog to create a new schedule, or click the **Edit** link to edit an existing schedule.



Here, the specific days and times to be monitored (or notified) can be selected. A schedule can be appointed to a group, a server, sensors, and notifications.

To edit the schedule you can select the individual checkboxes or click directly on the buttons to revert the selection.

If a schedule is activated for a notification, this will show up by marking the notification as "paused" during off times. Although notifications will not be sent at these times, the logged information is available as soon as the scheduled status changes to active again.

Pausing/Resuming Schedules

To edit your schedules please access your “My Account” page (See “Accessing Your Account”). Under the **Schedules** heading you will see a list of your schedules.

Click the **Pause/Resume** link of a schedule in the list to enable or disable an existing schedule.

Deleting Schedules

To delete a schedule please access your “My Account” page (See “Accessing Your Account”). Under the **Schedules** heading you will see a list of your schedules.

Click the **Delete** link of a schedule in the list to delete it.

Sensor Types in Detail

Information that applies to all sensors

IPCheck Server Monitor offers a wide range of sensor types to monitor many different aspects of a network device. When creating and editing sensors there are special parameters for each sensor type and there are also some parameters that are available for all sensors.

The following parameters are common to all sensors:

- **Associated Server**—use the drop-down menu to select a server to which to attach this sensor
- **Name**—enter a descriptive name for the sensor
- **Comments**—enter a description for the sensor (i.e., what it does or when it will check)
- **Status**—use the drop-down menu to set the status of the sensor (Active or Paused)
- **Dependency**—You can pause this sensor if a sensor of another server is not UP. Choose the dependency sensor from the dropdown list. Do not choose the current sensor itself and avoid circular dependencies. Use with caution. See “Managing Dependencies”.
- **Schedule** – allows you to select a schedule defined under **My Account** (See “Managing Schedules”). From the drop-down menu you can select from the defined schedules.
- **Probe –** If the admin has set up more than one remote probe you can select one or more probes from the list to monitor a server or service from various locations (see “Multi Location Monitoring Using Remote Probes”).
- **Interval**—use the drop-down menu to select an available interval.
- **Latencies** - "Latencies" are used to defer notifications after warnings or errors have occurred. You can set latencies on group, server and sensor level. The latencies for warnings, errors and escalations can be set individually. Choose “Use Group Settings” if you want this server to use the latency settings of the associated group or choose the latencies for this server individually. See “Managing Notifications, Latencies and Dependencies” for more information.
- **Notifications -** "Notifications" are used to send alarms when warnings or errors occur. You can set notifications for groups,

servers and sensors. Choose “Use Group Settings” if you want this server to use the notifications of the associated group or choose the notifications for this server individually. See “Managing Notifications, Latencies and Dependencies” for more information.

Most sensors also have one or more of the following common parameters:

- **Timeout**—specify a time (in seconds) when the sensor should stop trying to accomplish its objective and send a failure notification
- **Warning level**—specify a time (in seconds) when the response time of the sensor should generate a warning notification. If you have the **On Warning Notification** set to active, this will determine when the notification is sent.

Please check the following sections for details on the technology of the various sensor types and for details on the individual parameters.

Basic Sensors

The basic sensors are the fundamental monitoring tools. They are sufficient to get a good overview of a network.

PING Sensor

Sending a PING to a server is the most basic and oldest network diagnostic tool. The name comes from the sound that an underwater sonar makes.

To test the availability of a PING sensor IPCheck Server Monitor sends an ICMP packet to the ECHO REPLY port of a server and waits for a result. Only if the returned packet still has the same data content the sensor's result is ok.

What it means when the PING sensor is up

When this sensor shows an UP state for a server then you know that the connection to a server is available, the server is running and is able to accept and send network packets. But this does not mean that services running on this server are running ok. PINGs are just a very basic diagnostic tool to check network availability.

What it means when the PING sensor is down

There are numerous reasons for a PING sensor to fail, the most common one is that the sent packet either did not reach the server or the returning packet was not delivered back to the machine running IPCheck Server Monitor. This can be caused by connection problems (line or router failures), routing problems, or simply because a firewall between the server and the monitoring machine has rejected the packet because PINGs are not allowed by the firewall's rules.

Note: When monitoring a remote server a small amount of lost PINGs (1-2%) should usually not be considered harmful.

PORT Sensor

The PORT sensor simply tries to connect to a server on a specific port number. If the server accepts the request to open the port IPCheck Server Monitor closes the port and regards this sensor as UP. Parameters include:

- **PORT**—the port number of the service you want to monitor (see below)

Using PORT sensors it is possible to check the basic availability of any TCP service by trying to connect to its port.

Since the PORT sensor does not check whether the server reacts according to any protocols defined for a service it is recommended to use protocol based sensors whenever possible (e.g. by using the various other sensors included with IPCheck Server Monitor or by creating your own using the CUSTOM sensors). There are several services that still accept requests even though they do not send back correct information when they fail.

Some ports have numbers that are preassigned to them by the IANA for specific services (e.g. port 80 is usually used for HTTP traffic in the World Wide Web), and these are known as well-known ports (specified in RFC 1700).

Here is a list of well-known ports:

- 7 ECHO (used for PING)
- 20 FTP -- Data
- 21 FTP -- Control
- 22 SSH Remote Login Protocol
- 23 Telnet
- 25 Simple Mail Transfer Protocol (SMTP)
- 37 Time
- 42 Host Name Server (Nameserv)
- 43 WhoIs
- 53 Domain Name System (DNS)
- 69 Trivial File Transfer Protocol (TFTP)
- 70 Gopher Services
- 79 Finger
- 80 HTTP
- 103 X.400 Standard
- 108 SNA Gateway Access Server
- 109 POP2
- 110 POP3
- 115 Simple File Transfer Protocol (SFTP)
- 118 SQL Services
- 119 Newsgroup (NNTP)
- 137 NetBIOS Name Service
- 139 NetBIOS Datagram Service
- 143 Interim Mail Access Protocol (IMAP)
- 150 NetBIOS Session Service
- 156 SQL Server
- 161 SNMP
- 179 Border Gateway Protocol (BGP)
- 194 Internet Relay Chat (IRC)
- 197 Directory Location Service (DLS)
- 389 Lightweight Directory Access Protocol (LDAP)

- 396 Novell Netware over IP
- 443 HTTPS
- 444 Simple Network Paging Protocol (SNPP)
- 445 Microsoft-DS
- 458 Apple QuickTime
- 546 DHCP Client
- 547 DHCP Server
- 1080 Socks

For more information on port numbers please check RFC 1700:
http://www.ietf.org/rfc/rfc1700.txt?number=1700

What it means when the PORT sensor is up

When monitoring a service using the PORT sensor an UP status only says that the service is reachable and that it accepts connection attempts. In most cases this also means that the service is running correctly. But it is also possible that the service does not send back any correct information. So try to use protocol based sensors whenever possible.

What it means when the PORT sensor is down

When monitoring a service using the PORT sensor a DOWN status means that the service is not working at all or can not be reached because of network connectivity problems.

HTTP Sensor

The HTTP protocol (Hypertext Transfer Protocol) is most commonly used for the World Wide Web. Web browsers request webpages, graphics, etc. from webservers using this protocol. Parameters include:

- **URL**—the URL address of the webpage to monitor (including the leading http://)
- **Mode**—the HTTP request mode to use (GET, POST, HEAD)
- **POSTDATA**—the data part when using the POST method

For simple web pages simply enter the URL (with http:// at the beginning) and keep the default mode selection of GET.

If you want to monitor a URL for a POST form you must select the POST method and enter the POSTDATA.

The HEAD method only requests the HTTP header from the server without the actual webpage. Although this saves bandwidth because less data is transferred it is not recommended because the measured request time is not the one experienced by your users and you might not be notified for slow results or timeouts.

Note 1: If your network requires a proxy to be used for HTTP requests or the URL requires authentication you must use the HTTP Advanced Sensor.

Note 2: You can set the useragent string by setting the following registry key (you may need to create a new string value “useragent”):

```
Localmachine\Software\Paessler\IPCheck\useragent
```

Bandwidth Issues

Important: Keep in mind that the HTTP sensor can create substantial bandwidth load because it is one of the sensors that transfers many bytes per requests (sometimes 1000 times more that a simple ping). So choosing a URL that only gives a small HTML page in return is recommended if you have to pay for the bandwidth (either for your connection or for your webserver). This is of course not a major problem in most LANs and Intranets, but bandwidth usage should always be monitored.

Remember: Requesting a 25kb web page with an interval of one minute creates a traffic of 36 MB per day or more than one Gigabyte per month!

Website Traffic/Logfile Analysis Issues

Also keep in mind that the monitoring requests will show up in your webserver log analysis (one month of monitoring with one minute interval will create 43.200 requests). You should filter out the requests from IPCheck Server Monitor when analyzing log files. Filtering can be done based on the IP address of the server running IPCheck Server Monitor, on the browser agent:

```
Mozilla/5.0 (compatible; IPCheck Server Monitor 5
(www.paessler.com); Windows)
```

or the one you set yourself in the registry or by using a special URL on the server for monitoring and filtering out the requests for this URL.

What it means when the HTTP sensor is up

The UP status of an HTTP sensor means that the webserver delivers an HTTP result that is correct according to the HTTP protocol and that the URL is available. This means that the webserver software is up and running, but you do not know whether the results are correct, e.g. the webpage can contain error messages. So you don't know whether the CGI scripts, etc. work correctly or whether, e.g. the database of the webserver is ok. It is recommended to also check the content of a webpage by using the HTTP Advanced Sensor instead of the simple HTTP sensor for added reliability.

What it means when the HTTP sensor is down

There are numerous reasons for an HTTP sensor to fail. Besides normal connectivity problems the most common problems are internal server errors (error code 50x) and problems caused by an incorrect URL (error code 404, page not found).

Advanced Sensors

Using the advanced sensors a webserver/website can be monitored very closely.

HTTP Advanced Sensor

This sensor is an extended version of the HTTP sensor (see above) and should be the preferred sensor for website monitoring.

It adds content checking, authentication, and proxy settings or can even notify the user when a webpage is changed. Using this sensor a website/webpage can be monitored for many more aspects than by only using the basic HTTP sensor.

For example it is a good idea to monitor the content of a webpage for error messages that could show up on a webpage in case the database or script engine has problems (e.g. enter "error" in the **Response may not include** field).

Another good idea for scripted webpages is to monitor that the "</html>" tag is always a part of the result. Many script languages stop processing a scripted webpage upon errors and thus this HTML code is not delivered to the client. Or put a special code in your footers (e.g. "<!—PAGEEND-->") and monitor for this string to make sure the webpages are delivered completely. There are many more options of course…

All additional parameters of this sensor are optional (see the HTTP sensor for the other parameters):

- **Response must include**—If the resulting HTML does not contain this string, this is considered an error and can trigger a notification.
- **Response may not include**—If this string is found in the resulting HTML, this is considered an error and can trigger a notification.
- **Monitor content change**—Check this option if you want to monitor any content changes (checksum based). This can be combined with an 'On Change' notification to notify the user when the resulting webpage changes.
- **Limit download (kb)**—Enter a maximum amount of data transferred per request. Attention: The content check option is maybe inaccurate when you use a download limit
- **User**—Enter a login name here if the monitored URL is protected with basic authentication
- **Password**—Enter a password here if the monitored URL is protected with basic authentication
- **Proxy**—If your network requires a proxy to be used for HTTP requests (Note: it is recommended NOT to use proxies for monitoring because when a request fails IPCheck Server Monitor does not know whether the proxy failed or the monitored server)
  - **Name**—IP-address or DNS name of the proxy server
  - **Port**—the port of the proxy server
  - **User**—optional username needed to access the proxy
  - **Password**—optional password needed to access the proxy
- **On Change**—Select a notification that should be triggered when the HTTP result of the URL changes (enable **monitor content change** above!)

Note 2: You can set the useragent string by setting the following registry key (you may need to create a new string value “useragent”):

`Localmachine\Software\Paessler\IPCheck\useragent`

What it means when the HTTP Advanced Sensor is up

With a good configuration the HTTP advanced sensor is a very reliable uptime sensor. If your website has a shopping cart or other multi URL processes only the HTTP transaction sensor will give more reliability.

What it means when the HTTP Advanced Sensor is down

When this sensor shows a DOWN status depending on the configuration there are many possible reasons. The best way to find out the specific problem is to look at the result string shown by IPCheck Server Monitor.

HTTP Transaction Sensor

This sensor is a complement to the basic HTTP sensor and the HTTP advanced sensor. It can monitor a sequence of up to 10 URLs for availability and turn around time.

The most common use for a transaction sensor is to monitor the shopping process on a webpage, i.e. visiting the homepage, selecting a product, putting it into the shopping cart, and checking out. For this process you should define a maximum time for each request and for the whole sequence to complete.

Please see the two other HTTP sensors for the common parameters and other information. Parameters include:

- **Timeout**—If the complete transaction (i.e. completing all URLs you enter below) takes longer than this value the request is aborted and you get an error message. If two consecutive requests will fail (for whatever reason) the sensor enters a 'Down' state.
- **Warning-Level**—If the complete transaction (i.e. completing all URLs you enter below) takes longer than this value the sensor enters a 'Warning' state.
- **Single URL Timeout**—If the reply of a single transaction step (i.e. one URL) takes longer than this value the request is aborted and you get an error message.
- **Use Cookies**—Enable this option if cookies received from the server should be resent for subsequent requests.
- **Transaction URL #1 to #10**—Enter the URLs of the sequence you want to monitor

Note 2: You can set the useragent string by setting the following registry key (you may need to create a new string value “useragent”):

```
Localmachine\Software\Paessler\IPCheck\useragent
```

What it means when the HTTP Transaction Sensor is up

Rest easy, your e-commerce website is in good shape.

What it means when the HTTP Transaction Sensor is down

Reasons for this sensor to fail are connectivity issues, failed single requests, or timeouts for a single request or the complete sequence.

Protocol Sensors

These sensors, that each monitors a specific Internet protocol, are used to ensure the availability of DNS servers, mail servers, and FTP servers.

DNS Sensor

The DNS (Domain Name System or Service) is an Internet service that translates domain names (which are easier for humans to remember) into IP addresses (which computer use to address each other). Every time you use a domain name, therefore, a DNS service must translate the name into the corresponding IP address. For example, the domain name www.paessler.com might translate to 62.146.51.168.

The DNS sensor sends a request to resolve a specific domain name to an IP address to the server it is associated with. This is useful e.g. to ensure that a

company's web server address can be resolved by the outside world or to check a DNS server in a LAN for availability.

Note: The Server associated with this sensor has to be a DNS server and not the domain name of the server you want to monitor.

If you only enter the domain name IPCheck Server Monitor will only check whether the name is resolved to an IP address at all (which simply means that the DNS server works correctly and the domain name is valid). If you also enter an IP address the resolved IP address will be compared to this and the sensor will show an error when the two addresses are different. Parameters include:

- **Domain**—enter the domain name to look up (e.g. www.yourcompany.com)
- **IP**—optionally enter an IP address to compare the result with

What it means when the DNS Sensor is up

When the DNS sensor shows an UP state then the DNS server is working and it is giving back an IP address to a domain name.

What it means when the DNS Sensor is down

There are four possible reasons for this sensor to fail: The DNS server cannot be reached, it did not react according to the protocol, the domain name was invalid and could not be resolved, or the optional IP address is different from the IP resolved by the server.

SMTP Sensor

SMTP (Short for Simple Mail Transfer Protocol) is the basic protocol for sending e-mail messages between mail servers over the Internet. Whenever you send or receive an e-mail it is transferred using this protocol.

The SMTP sensor of IPCheck Server Monitor supports monitoring on three levels:

- HELO: The SMTP server is contacted and a few bytes of communication are transferred according to the protocol definition and then cancels the connection. This ensures that the server is accepting requests and answers according to the protocol.
- RCPT: Additionally IPCheck Server Monitor tries to begin delivering an email to a given email address and then cancels the connection. This checks whether the email server actually accepts mails to this address at all.
- DATA: Additionally IPCheck Server Monitor sends a complete email to a given email address and finishes the communication. This most thoroughly checks if the mail server accepts and processes the email but on the other hand the recipient will get an email with each check (!), so this should only be used for debugging purposes.

Parameters include:

- **PORT**—the port number of the mail service you want to monitor (usually port 25)
- **Monitoring Level**—The level of monitoring (see above)
- **Helo Ident**—For some mail servers the HELO ident must be the valid principal host domain name for the client host (i.e. the machine running IPCheck Server Monitor)

- **From**—Sender ('From:' part) of the mail
- **To**—Recipient(s) ('To:' part) of the mail
- **Topic**—'Subject:' part of the mail
- **Content**—Body of the mail

What it means when the SMTP Sensor is up

Depending on the monitoring level you chose an UP state means that the mail server is accepting connections and is accepting mails for a specific address (see above)

What it means when the SMTP Sensor sensor is down

Apart from connectivity problems a DOWN state of this sensor means that it does not comply to the SMTP protocol, does not accept an email for the given address, or refuses to accept the email. See the monitoring result string for details.

POP3 Sensor

The POP3 protocol (Post Office Protocol version 3) is used to retrieve e-mail from a mail server. Most e-mail applications use the POP protocol.

The POP3 sensor supports monitoring on four levels:

- Connect: Just connect and send QUIT (checks whether server is running and accepting connections attempts)
- USER: Send USER with the provided login (checks whether server reacts according to protocol)
- PASS: Send PASS with the password for the user (checks whether the given user can actually log in)
- STAT: Send a STAT command (checks whether user can retrieve number of waiting emails)

Parameters include:

- **PORT**—the port number of the POP3 service you want to monitor (usually port 110)
- **Monitoring Level**—The level of monitoring (see above)
- **User**—the username of the account to monitor
- **Password**—the password for this user

What it means when the POP3 Sensor is up

Depending on the monitoring level an UP state can have different meanings (see above).

What it means when the POP3 Sensor is down

Apart from connectivity problems a DOWN state of this sensor means that it does not comply to the POP3 protocol, does not accept the login of the given user, or the user is not able to request the number of available mails. See the monitoring result string for details.

FTP Sensor

FTP (Short for File Transfer Protocol) is used on the Internet for exchanging files (e.g. to upload content to a webpage or to download files from a server).

Like most other protocol sensors, the FTP sensor offers several monitoring levels:

- Connect: Just connect and send QUIT (checks whether the server is running and accepting requests at all)
- USER: Send USER with the provided login (checks whether server reacts according to protocol)
- PASS: Send PASS with the password for the user (checks whether a user can actually log in)

Parameters include:

- **PORT**—the port number of the mail service you want to monitor (usually port 21)
- **Monitoring Level**—The level of monitoring (see above)
- **User**—the username to log in with
- **Password**—the password for this user

What it means when the FTP Sensor is up

Depending on the monitoring level an UP state can have different meanings (see above).

What it means when the FTP Sensor is down

Apart from connectivity problems a DOWN state of this sensor means that it does not comply with the FTP protocol or does not accept the login of the given user. See the monitoring result string for details.

Custom Sensors

Using the custom sensors of IPCheck Server Monitor a lot of monitoring tasks can be performed that go far beyond the standard sensor set.

With these highly customizable sensor types the user is able to create a very specific monitoring – he can even create his very own sensors using VB Script or any programming language.

Sample projects for Custom Sensors can be found in the IPCheck Server Monitor installation directory and are available in the Knowledge Base on the Paessler Website at www.paessler.com/support.

HTTP Content Sensor

This sensor requests a HTTP URL and parses the result for a value enclosed in brackets "[value]".

The most common use is to monitor some value inside a webserver for validity. For example if you have a script or CGI running on the web server that simply publishes the free disk space of the server's hard disk or the current processor usage you can actually monitor this value. Of course many other usage concepts are possible.

Parameters include:

- **Script URL**—the URL of the webpage to request

- **Minimum**—the minimum valid value. If the value is below this minimum the sensor will enter an error state.
- **Low**—the low warning value. If the value is below this value the sensor will enter a warning state.
- **High**—the high warning value. If the value is above this value the sensor will enter a warning state.
- **Maximum**—the maximum valid value. If the value is above this maximum the sensor will enter an error state.

Script Sensor

Using the script sensor it is possible to develop custom sensors using VBScript. The script files must be stored on the server that runs IPCheck Server Monitor.

Please see the chapter "Technical Details for Script and TCP Script Custom Sensors" on how to create your own sensors.

Parameters include:

- **Scriptfile**—select one of the scripts stored on the server
- **Data1, Data2, Data3**—The values you enter here can be accessed inside the script
- **Indicator String**—Enter an "Indicator" string here (e.g. "Bandwidth", "Temperature" etc.) - for display purposes only
- **Unit String**—Enter a "Unit" string here (e.g. "ms", "Kbyte" etc.) - for display purposes only

TCP Script Sensor

Just like the normal script sensor, with the TCP script sensor you can develop custom sensors using VBScript. The additional feature of the TCP script sensor is that this sensor can execute a script with data communication with a server via a TCP connection.

The script files must be stored on the server that runs IPCheck Server Monitor.

Please see the chapter "Technical Details for Script and TCP Script Custom Sensors" on how to create your own sensors.

Parameters include:

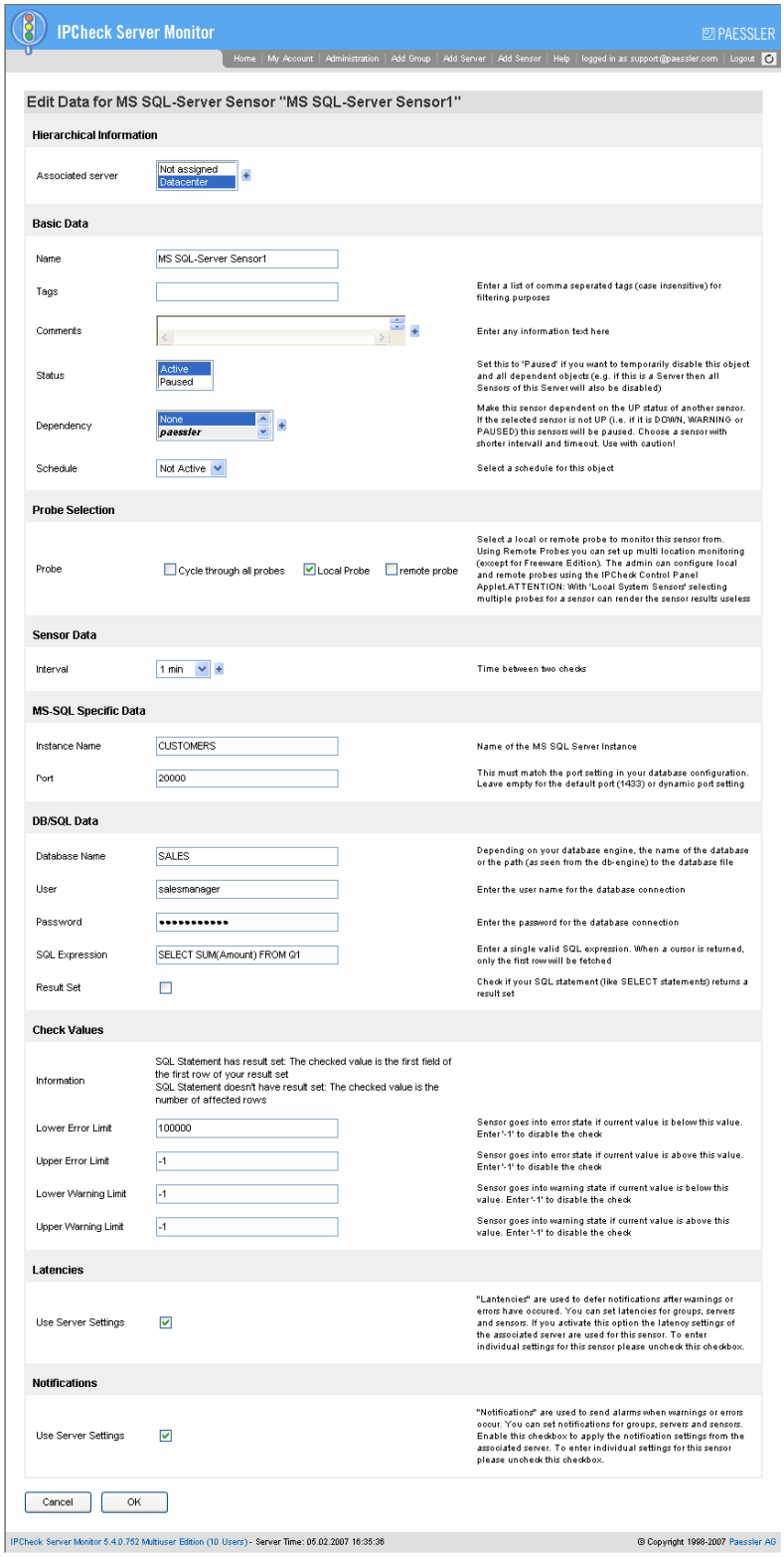
- **Port**—the port of the TCP connection
- **Scriptfile**—select one of the scripts stored on the server
- **Data1, Data2, Data3**—The values you enter here can be accessed inside the script
- **Indicator String**—Enter an "Indicator" string here (e.g. "Bandwidth", "Temperature" etc.) - for display purposes only
- **Unit String**—Enter a "Unit" string here (e.g. "ms", "Kbyte" etc.) - for display purposes only

Custom Sensor

The custom sensor actually executes a DLL or command line EXE to obtain a monitoring value. This EXE/DLL can be developed with all programming languages.

SQL Server Sensors

Using the SQL Server sensors you can natively monitor the most used SQL servers: MySQL, Microsoft SQL, and Oracle SQL. Basically, the sensors monitor whether the database server process accepts and processes requests. Additionally you can run a custom SQL command and check the return values.

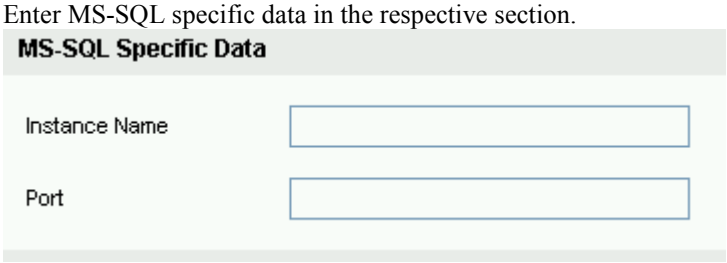


The following fields are particular to these sensors:

- **Database Name** – in this field, the name of the database or the path of the database can be entered in order to access the database information.
- **User and Password** – provide the username and password to login to the database.
- **SQL Expression** – provide an expression with which to fetch data. When a cursor is returned, only the first row will be fetched.
- **Result Set** – check this checkbox if your SQL expression returns a result set. Then the value of the first column of the first row of the result set is used as value of the monitoring request (e.g. will be compared to the limits). Otherwise the "number of affected rows" is regarded to be the value of a monitoring request.

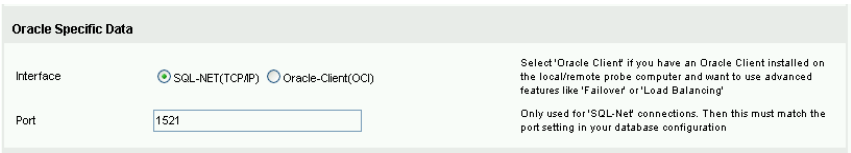
The sensors support the following server versions:

- **MS-SQL:** SQL Server 2005, SQL Server 2000, SQL Server 7 and MSDE (requires OLE DB installed on the machine running the IPCheck Server and/or Remote Probe that accesses the server). Enter MS-SQL specific data in the respective section.



  - Instance Name – This holds the name of the instance if you want to connect to a 'named instance', otherwise it remains empty.
    Note: Sometimes you see connection strings like SQLSERVER\SQLINSTANCE in database clients. The first part is the server name that was configured in the general server settings. The second part is the instance name mentioned here. Do NEVER enter the string in this form in the instance field of the sensor setup page, only the second part (and without the backslash)
  - Port – If your SQL Server runs the instance at a different static port than 1433 you can enter the port number in this field. If your SQL Server uses the default value of 1433 or is configured for dynamic port setting then leave this field empty.

- **Oracle:** Oracle 10g, 9i, 8i and Oracle 7 (requires default TCP Port Setting 1521). Enter Qracle Specific Data in the respective section.



  - Interface– Oracle offers 2 possibilities for connection to the server, either via direct TCP/IP communication (SQL-NET) or via the Oracle Client Interface (OCI). Select the one you want to use for this sensor.
  - Port – With SQL-NET you have to supply the TCP/IP Port for the connection in this Field. Usually the default value of 1521 is correct. With an OCI connection the setting of the port property is ignored.

- **MySQL:** MySQL server 5.0, 4.1, 4.0 and 3.23.

WMI Sensors

WMI stands for “Windows Management Instrumentation” and is the latest technology from Microsoft for monitoring and management of Windows based systems. WMI allows to read out data for many Windows’ configuration parameters as well as current system status values. Access can take place locally or remotely via a network connection. WMI is based on COM and DCOM and is integrated in Windows 2000, XP, 2003, and Vista. Add-ons are available for Windows 9x and NT4.

WMI Sensor Types

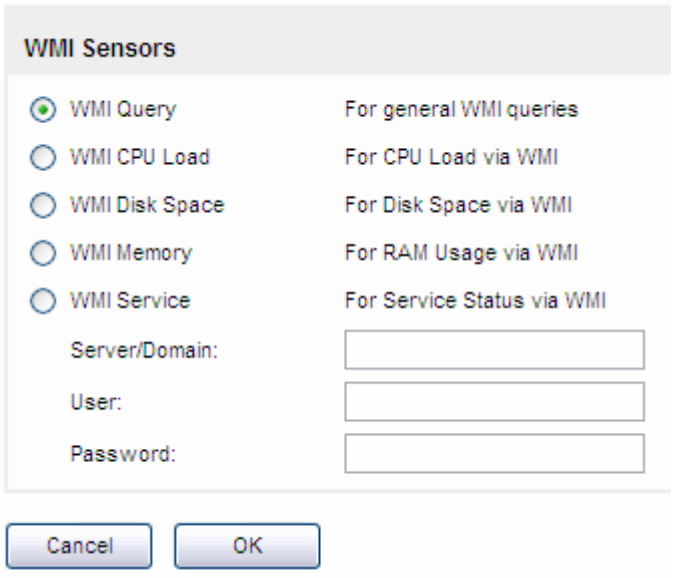
There are five different WMI sensor types in IPCheck Server Monitor:

- WMI CPU Load: This sensor type is used to monitor the percentage of CPU loads.
- WMI Disk Space: This sensor type is used to monitor the free disk space on hard disk partitions.
- WMI Memory: This sensor type is used to monitor the amount of available RAM.
- WMI Service: This sensor type is used to monitor the status of any particular Windows service.
- WMI Query: This sensor type is used to monitor any user defined WMI query. The user can define his own WMI scripts and run them in order to get monitoring results.

All types are explained in detail in the following sections.

Creating a New WMI Sensor

Select the type of WMI sensor by marking the respective radio button. If you want to monitor WMI sensors on a remote system (i.e. not on the machine running the IPCheck probe service) you must supply the authentication data in the respective fields at the bottom of the WMI sensor section.



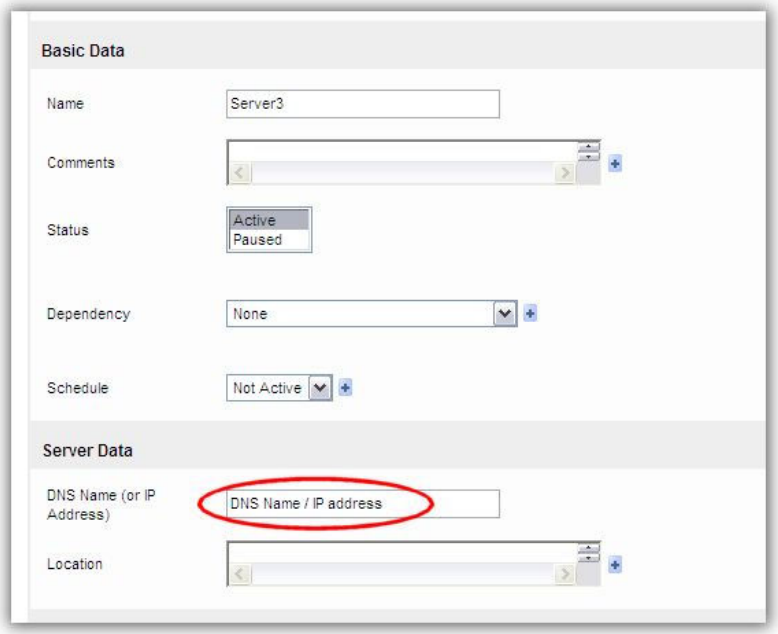
Basic Authentication Settings for all WMI Sensors

In order to be able to monitor remote machines the WMI sensor needs an Active Directory account or a system account on the monitored PC to get access to the WMI interface.

The Login Data fields are used to provide authentication information in order to connect properly to the machine to be monitored. Generally, when monitoring local sensors (i.e. on the machine running the selected IPCheck probe) this information is not required.

Hint: If you do not enter authentication data IPCheck will use the account that the "ipcheckprobe" service runs under. By default this is the "local system" account which enables IPCheck's probe to access the WMI interface of the machine it runs on. It may be a good idea to configure the account for the probe service to an administrator account of your domain, then IPCheck would be able to monitor all Windows systems of your domain using WMI without the need to enter authentication data in the web interface.

Note: If you want to access a remote machine, the sensor's parent server configuration must reflect the target machine's name in the DNS / IP address entry!



If the machine in case is part of a different domain, please also provide the domain name in the respective field when adding the sensor.

WMI CPU Load Sensors

When creating a new WMI CPU Load sensor the program will automatically scan for available processors either on the local machine or on a defined remote machine. Select the cpu total or a specific processor id and it will return the CPU load as a percentage.

WMI Disk Space Sensors

When creating a new WMI Disk Space sensor the program will automatically scan for available hard disk partitions either on the local machine or on a defined remote machine. Select the desired partition and it will return the free disk space of the respective partition in megabytes.

WMI Memory Sensor

The sensor will connect to the Random Access Memory WMI counter of the specified machine and will return the amount of free memory in megabytes. Beyond the authentication data fields, this sensor does not need any further configuration.

WMI Service Sensor

When creating a new WMI Service sensor the program will automatically scan for available services and display them in a drop-down list after a successful scan. Select the desired service and it will return the status of the service. Furthermore, if the "Restart Service" option is checked, the program will try to restart the service if the same should stop for whatever reason.

WMI Query Sensors

Beyond the standard sensor settings, the WMI Query sensor includes the following options:

WMI Query – This required field is to be used to define the valid expression for the desired WMI query. Bear in mind that only a single return value can be monitored; as such, selecting multiple fields in the provided expression will only yield results for the first expression used (i.e. If the result contains more than one row of data, only the first one is used).

Custom Indicator String – This field is for display purposes only and can contain any alphanumeric entry allowing the user to discern what sort of query is being monitored. Some examples could be "Bandwidth", "Temperature", etc.

Custom Unit String – This field is for display purposes only and is provided to define a unit entry for the query in case. Some examples could be "ms", "Kbyte", etc.

Further Information on WMI Counters

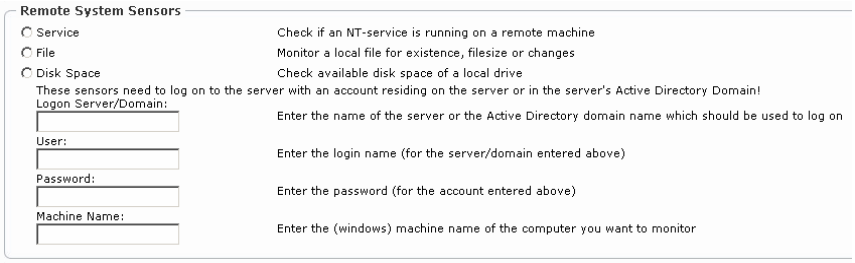
The following link provides further information as regards WMI in general:

http://msdn2.microsoft.com/en-us/library/ms811533.aspx

System Sensors (Local or Remote)

The System Sensors allow monitoring of several Windows specific system parameters:

- Service Sensor: Monitors if an "NT service" is running on a Windows system (Windows NT/2000/XP/2003)
- File Sensor: Monitors a file for existence, file size, or changes
- Disk Space Sensor: Checks available disk space of a disk drive



Local System Sensors are monitoring the system parameters mentioned above on the machine running IPCheck Server Monitor (or the machine running the selected Remote Probe respectively). Local System Sensors are using the local SYSTEM account.

Remote System Sensors are monitoring the same system parameters but on remote machines. You must supply an Active Directory Domain name, a user account, and a password so IPCheck Server Monitor can log into the remote machine to actually access the readings.

While the Local System Sensors use the local SYSTEM account, the following additional fields are required for all Remote System Sensors:

- Logon/Server Domain – Enter the name of the server or the Active Directory domain name, which should be used to log on
- User – enter the login name (for the server / domain entered above)
- Password – enter the password (for the account entered above)

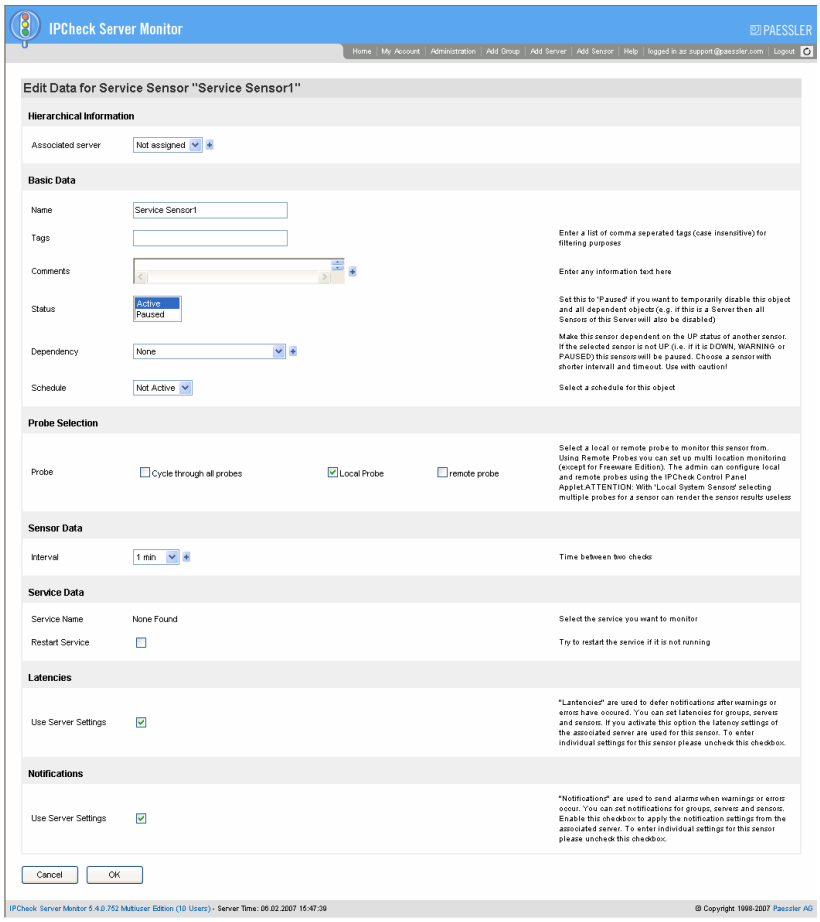
An additional field is only required when setting up a Remote Service Sensor:

- Machine Name – enter the Windows machine name of the computer you want to monitor

Service Sensor (Local or Remote)

The service sensor is used to monitor the availability of so called “Windows Services” (on Windows NT/2000/XP/2003 only). Services are processes that must be running all the time, e.g. web servers, mail servers, SQL servers, etc. They are executed “behind the scenes” even if no user is logged into the machine.

The service sensor goes into error state as soon as a service is not running any more (e.g. it is aborted, stops due to an error, etc.) which can trigger notifications. It can additionally be configured to try to restart the service upon failure.

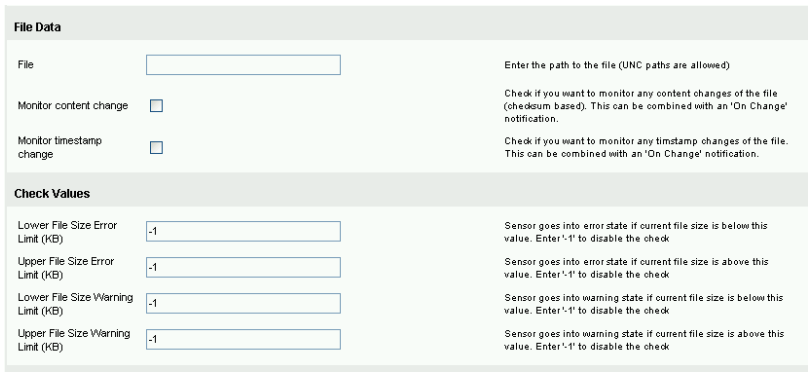


The following fields are particular to this sensor:

- Service Name – This drop-down list shows all services currently installed on the monitored Windows machine. Select the service you would like to monitor. Note: A service must already be installed to be listed here.
- Try to Restart – If IPCheck discovers that the service is not running it tries to restart the service using the Windows API. Note: For remote sensors the account you have entered for this sensor must have the rights to start services (see system policy settings).

File Sensor (Local or Remote)

The file sensor checks if a file exists or not, plus it can scan the file for changes made to the specified file.



The following fields are particular to this sensor:

- File – enter the path to the file (UNC paths are allowed), e.g. c:\test.txt or \\server\share\test.txt
- Monitor Content Change – check this box if you want to monitor any content changes of the file (checksum based). This can be combined with an 'On Change' notification to trigger an email whenever the file is changed.
- Monitor Timestamp Change – check if you want to monitor any timestamp changes of the file. This can be combined with an 'On Change' notification to trigger an email whenever the file is changed.

IPCheck Server Monitor will go into an error state if the file does not exist or is removed or deleted while being monitored. The Change fields can be used to monitor 'On Change' notification information in the manner that they record if the content of a file or its timestamp are changed.

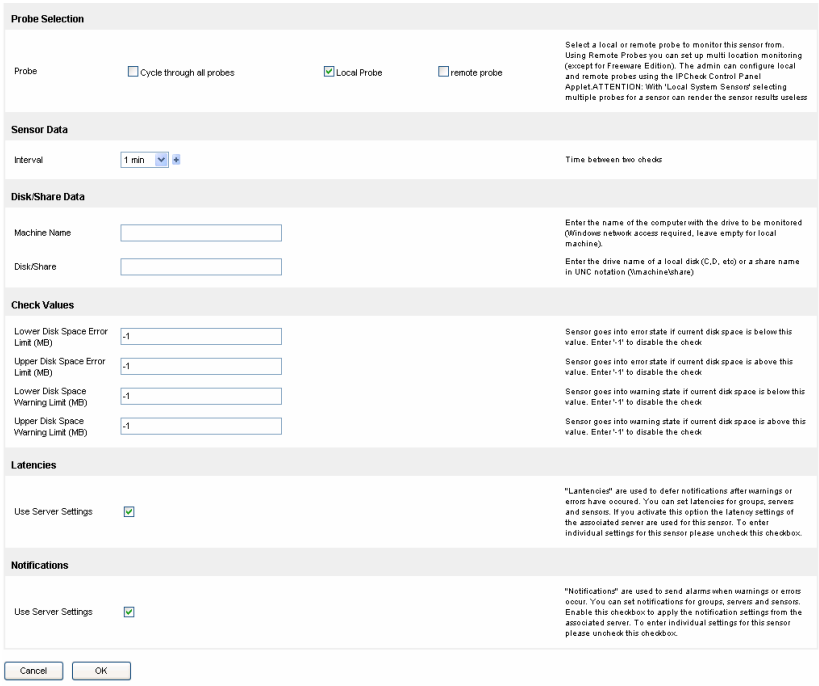
Furthermore, the following additional checks can be applied:

- Lower File Size Error Limit (KB) – Sensor goes into an error state if the current file size is below this value. Enter '-1' to disable the check
- Upper File Size Error Limit (KB) – Sensor goes into an error state if the current file size is above this value. Enter '-1' to disable the check
- Lower File Size Warning Limit (KB) – Sensor goes into a warning state if the current file size is below this value. Enter '-1' to disable the check
- Upper File Size Warning Limit (KB) – Sensor goes into a warning state if the current file size is above this value. Enter '-1' to disable the check

Note: These values are in Kilobytes (KB).

Disk Space Sensor (Local or Remote)

The Disk Space sensor can monitor the disk space on either a local drive or network shares.



The following field is particular to this sensor:

- Disk / Share – enter the drive name of a local disk (C, D, etc.) or a shared name in UNC notation (\\machine\share)

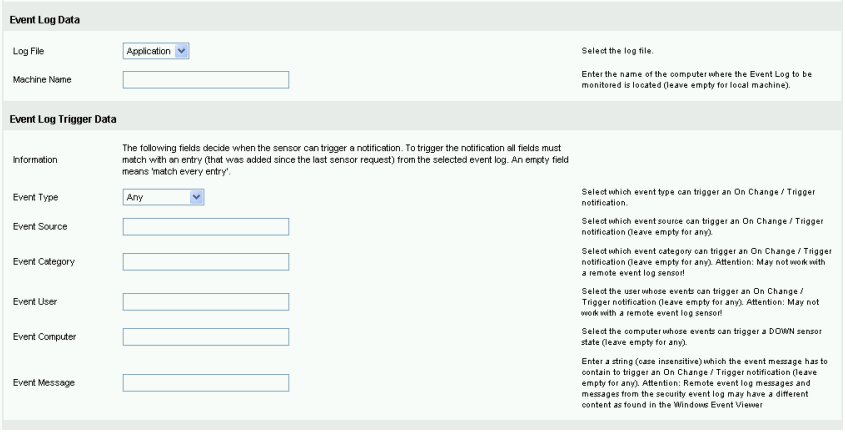
IPCheck Server Monitor will go into an error state if the drive does not exist or is removed while being monitored.

Furthermore, the following checks can be applied:

- Lower Disk Space Error Limit (MB) – Sensor will go into an error state if the current disk space is below this value. Enter '-1' to disable the check
- Upper Disk Space Error Limit (MB) – Sensor will go into an error state if the current disk space is above this value. Enter '-1' to disable the check
- Lower Disk Space Warning Limit (MB) – Sensor goes into a warning state if the current disk space is below this value. Enter '-1' to disable the check
- Upper Disk Space Warning Limit (MB) – Sensor goes into a warning state if the current disk space is above this value. Enter '-1' to disable the check

Note: These values are in Megabytes (MB).

Event Log Sensor (Local or Remote)



The system sensor "Event Log" monitors the Windows event log on any accessible computer in the network.

The following fields are particular to this type of sensor and decide when the sensor can trigger a notification. To trigger the notification all fields must match with an entry (that was added since the last sensor request) from the selected event log. An empty field means 'match every entry'. These fields reflect the corresponding values in the event log.

- Log File: Choose one of the following: Application, System, Security.
- Machine Name: Enter the name of the computer where the Event Log to be monitored is located (leave empty for local machine).
- Event Type: Select which event type can trigger an On Change / Trigger notification.Choose one of the following: Any, Error, Warning, Information, Audit Success, Audit Failure.
- Event Source: Select which program can trigger an On Change / Trigger notification (leave empty for any).
- Event Category: Select which event category can trigger an On Change / Trigger notification (leave empty for any). Attention: May not work with a remote event log sensor!
- Event User: Select the user whose events can trigger an On Change / Trigger notification (leave empty for any). Attention: May not work with a remote event log sensor!
- Event Computer: Select the computer whose events can trigger a DOWN sensor state (leave empty for any).
- Event Message: Enter a string (case insensitive) which the event message has to contain to trigger an On Change / Trigger notification (leave empty for any). Attention: Remote event log messages and messages from the security event log may have a different content as found in the Windows Event Viewer.

Please note:

- Only those events are monitored that are added since the start of the sensor request. Older event log entries do not trigger notifications.
- Only "On change" notifications are triggered.
- Only one notification is triggered for events between two scans of the sensor, even if there was more than one event. This notification is triggered for the first event after the scan prior to the actual scan.

There is currently no way of triggering one notification for each event.

SNMP Sensors

The SNMP protocol (short for Simple Network Management Protocol) is used by many network devices to manipulate or request information. The most common use of SNMP is monitoring of bandwidth usages.

SNMP Version 1, 2c and 3

IPCheck Server Monitor supports three versions of the SNMP protocol:

- **SNMP Version 1:** The oldest and most basic version of SNMP
  - Pros: Supported by most devices that are SNMP compatible; simple to set up
  - Cons: Limited security as it only uses a simple password ("community string") and data is sent in clear text (unencrypted); should only be used inside LANs behind firewalls, not in WANs; only supports 32bit counters which is not enough for bandwidth monitoring with high loads of some gigabits/second
- **SNMP Version 2c:** Adds 64 bit counters
  - Pros: Supports 64 bit counters to monitor bandwidth usage in networks with gigabits/second loads
  - Cons: Limited security (same situation as with SNMP V1)
- **SNMP Version 3:** Adds authentication and encryption
  - Pros: Offers user accounts and authentication for multiple users and optional encryption of the data packets, which makes it much more secure; plus all advantages of Version 2c
  - Cons: none

It is important to know that if you select an SNMP version which is not supported by the server or device that you want to monitor you will receive an error message. Unfortunately most of the time these error messages are not explicitly telling you about the incorrect SNMP version (they say only something like "cannot connect" or similar). The same situation exists if community string, usernames and passwords are incorrect.

What is an "SNMP Community String"?

The "SNMP Community string" is like a user id or password that allows access to a router's or other device's statistics. IPCheck Server Monitor sends the community string along with all SNMP requests. If the community string is correct, the device responds with the requested information. If the community string is incorrect, the device simply discards the request and does not respond.

Note: SNMP Community strings are used only by devices which support SNMPv1 and SNMPv2c protocol. SNMPv3 uses username/password authentication, along with an encryption key.

By convention, most SNMPv1-v2c equipment ships from the factory with a read-only community string set to "public". It is standard practice for network

managers to change all the community strings to customized values in the device setup.

SNMP Sensor Types

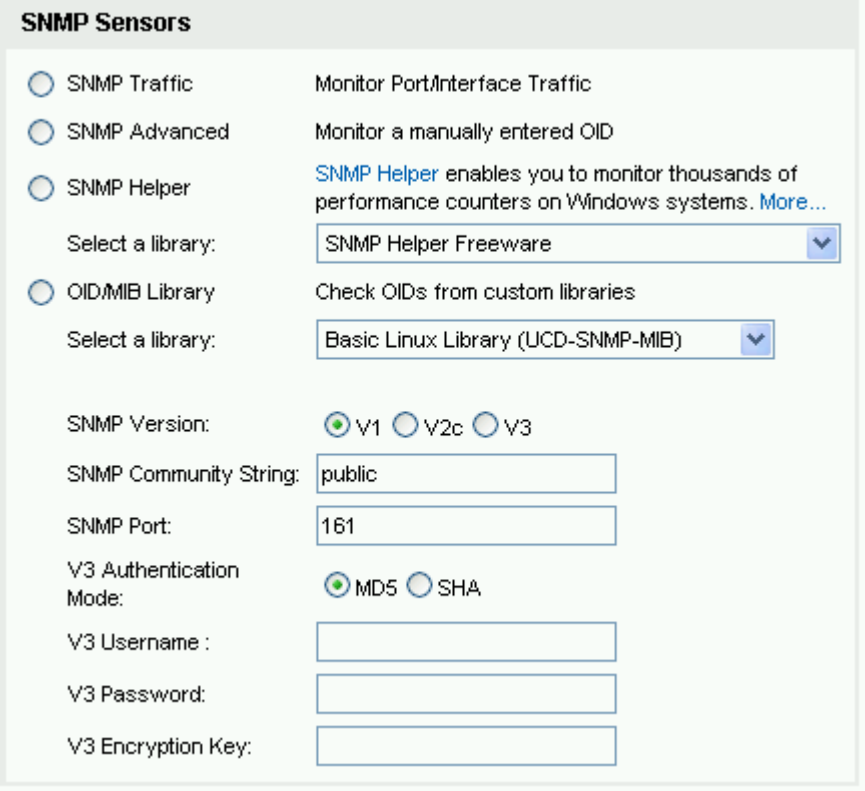
There are four different SNMP sensor types in IPCheck Server Monitor:

- **SNMP Traffic** sensors: Used to monitor the bandwidth/total traffic going in and out of a device through one port (e.g. network card, switch port, etc.) .This is the most common usage of SNMP (works via the "MIB-2 standard").
- **SNMP Advanced** sensors: Used to monitor specific OID values (you must supply the OID value manually)
- **SNMP Helper** sensors: Paessler SNMP Helper is a system-level software program that runs on a Windows 2000, XP, or 2003 computer system that allows a system running IPCheck Server Monitor to collect performance information remotely for several thousand Windows Performance Counters, using the SNMP protocol. See the section "Paessler SNMP Helper" for more details.
- **OID/MIB Library** sensors: PRTG comes with several preconfigured libraries (so called "OIDLIBs") for various device types that helps you to monitor CPU loads, disk usage, or temperatures. Additionally you can convert most MIB files from device vendors into OIDLIBs using Paessler's MIB Import Tool to create many more sensors. See the section "Importing MIBs using Paessler MIB Importer and Converter" for more details.

All types are explained in detail in the following sections.

Creating a New SNMP Sensor

When creating SNMP sensors you must already enter some additional data on the **Create New Sensor** page:



First select between **SNMP Traffic**, **Advanced**, **SNMP Helper** or **OIB Library** (see previous section for details).

Then select the highest **SNMP Version** which is supported by the server or device.

For SNMP Version 1 and SNMP Version 2c please enter the SNMP Community String. In most cases this value is "public", check with the admin of the device you want to monitor if this value was changed for that device.

For SNMP Version 3 please also enter Authenication mode, username, password and encryption key.

The standard value for the **SNMP Port** is 161, but if you use other values please enter your value here, too.

Common Settings for all SNMP Sensor Types

The following settings are available for all SNMP based sensors:

- **Community String**—the SNMP public access string (usually "public"), used for SNMP V1 and V2c
- **SNMP Port**—the UDP port used for SNMP by your device (usually "161")
- **Connection Info**—the status info which is read directly from the device (read only!).
- **Lower valid limit**—enter the minimum valid value (if the measured value is below this limit the sensor will enter an error state). Enter –1 to disable the check.
- **Upper valid limit**—enter the maximum valid value (if the measured value is above this limit the sensor will enter an error state). Enter –1 to disable the check.

- **Low**—enter the lower warning value (if the measured value is below this limit the sensor will enter a warning state). Enter –1 to disable the check.
- **High**—enter the high warning value (if the measured value is above this limit the sensor will enter a warning state). Enter –1 to disable the check.

SNMP Traffic Sensor

Using the so called "Internet MIB" this sensor monitors the traffic on one port of the server (or router). When you create a new SNMP traffic sensor actually two new sensors will be created, one for the data flowing into the device and one for the data going out of the device.

Parameters include:

- **Interface/Port**—select the port or interface to monitor
- **Traffic direction**—select whether to monitor outgoing or incoming traffic
- **Monitored Value**—select what value to monitor: Bandwidth (kbit/s), Unicast Packets/s, Non-Unicast-Packets/s, Errors/min

SNMP Advanced Sensor

With the SNMP advanced sensor you can monitor any OID value of an SNMP enabled device. OIDs are the indices of the values that are available on a device.

The following parameters are specific to this sensor:

- **Custom OID**—enter the desired OID (e.g. "1.2.3.4.6.3.4")
- **Custom Indicator**—Enter an 'Indicator' string here (Bandwidth, Temperature etc.) for displaying purposes
- **Custom Units**—Enter a 'Unit' string here (ms, Kbyte, etc.) for displaying purposes
- **Custom Value Type**—Select 'Gauge' if you want to see absolute Values (i.e. Temperature) or 'Delta' for difference divided by time period (i.e. Bandwidth)

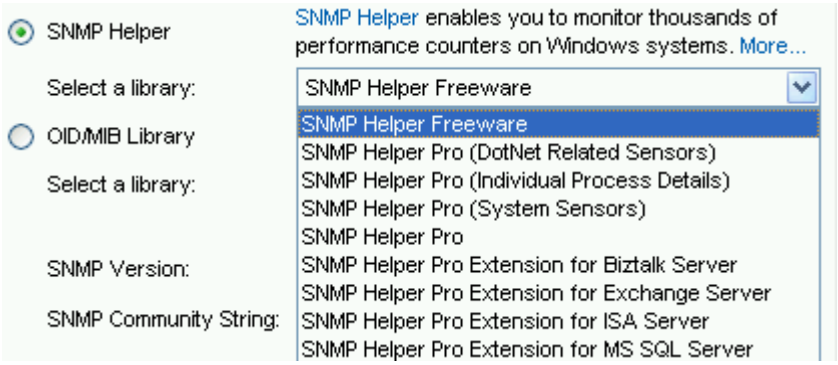
SNMP Helper Sensor

Paessler SNMP Helper enables IPCheck Server Monitor to collect in-depth performance information from Windows servers and workstations. Up to several thousands parameters and performance counters of a PC can be monitored with just a few mouse clicks.

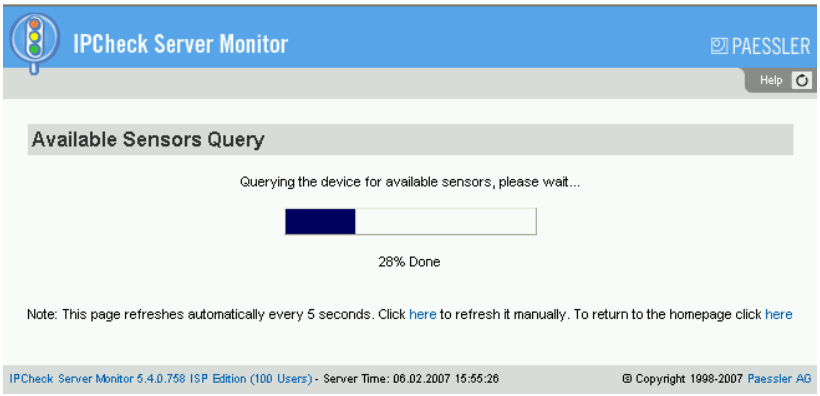
Important: The SNMP Helper software –Freeware as well as commercial editions – must be installed on the Windows system that you want to monitor – not the machine that runs IPCheck Server Monitor.

See the section “Paessler SNMP Helper” for more details.

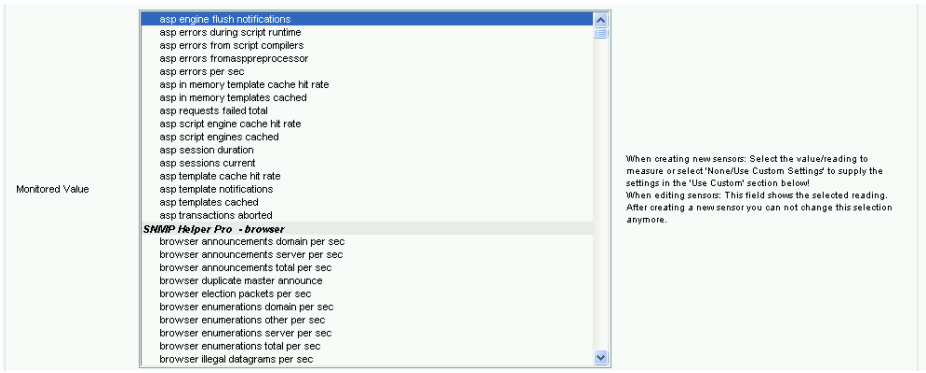
The sensors are divided into several sections, when creating a new sensor you must choose one: from the list:



As soon as you click OK IPCheck Server Monitor will begin to scan the server for available sensors, which can take up to a few minutes:



After the scan you can choose the value that you want to monitor from the extensive list of available values which is shown in a hierarchical list:



Choose a value, set the other settings as desired and click ok to create this new sensor.

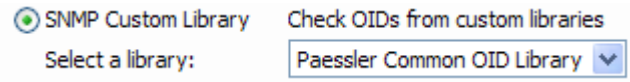
OID/MIB Library Sensors

Vendors of SNMP enabled hardware and software will usually deliver so-called MIB files which contain a list of the available values that can be accessed via SNMP. These files are usually very complex and often incompatible because the standard for their format has changed very often.

Instead of MIB files IPCheck Server Monitor uses OIDLIB files which are based on MIB files but have been pre-processed by Paessler's MIB Converter software (if you want to import your own MIB files please see "Importing MIBs using Paessler MIB Importer and Converter").

For your convenience IPCheck Server Monitor already includes a constantly growing selection of OIDLIB files for various devices.

To create a sensor based on an OIDLIB you must choose the desired OIDLIB from the dropdown on the **Create Sensor** page.



IPCheck Server Monitor will then scan the device and will show a list of sensors that are available on the device for you too choose from.

Technical Details for EXE and DLL Custom Sensors

The EXE file or DLL file must be placed in the "custom" subfolder of the installation folder of IPCheck Server Monitor (usually **c:\program files\ipcheck server monitor 5\custom**).

Note: If you place a new EXE/DLL file into the custom directory you must restart the IPCheck Server Monitor web server service.

Sample projects for Custom Sensors can be found in the IPCheck Server Monitor installation directory and are available in the Knowledge Base on the Paessler Website at www.paessler.com/support.

EXE Sensors

Every time the sensor is run, the selected EXE file is executed. The string entered in the **parameter** field of the sensor's settings is placed in the command line. The EXE file must send the results to the Standard OUT. The data must be in the following format:

```
value:message
```

Value has to be a 32bit integer and will be used as the resulting value for this sensor (e.g. bytes, milliseconds, etc.), **message** can be any string and will be stored in the database.

The exit code of the EXE has to be one of the following values:

- 0 ok
- 1 warning
- 2 system error (e.g. a network/socket error)
- 3 protocol error (e.g. web server returns a 404)
- 4 content error (e.g. a webpage does not contains a required word)

If the EXE does not return control to the IPCheck Server Monitor process it is killed as soon as the **timeout** value set for this sensor is reached.

You can test the EXE file you want to use for the sensor very easily on the command line (cmd.exe). Simply start the EXE file and pipe the results into a file, e.g.:

```
sensorexe parameter > result.txt
```

The results are then written into the file result.txt and you can check the results with notepad or any other text editor.

DLL sensors

Every time the sensor is to be checked the selected DLL file is called. The DLL must export one function:

```
function perform(para,msg:pchar):integer; stdcall;
```

para and **msg** are zero terminated strings. The allocated buffer for **msg** is 255 bytes, the DLL must make sure that fewer bytes are returned. Msg must be in the following format:

```
value:message
```

Value has to be an 32 bit integer and will be used as the resulting value for this sensor (e.g. bytes, milliseconds, etc.), **message** can be any string and will be stored in the database.

The integer return value of the **perform** function has to be one of the following values:

- 0 ok
- 1 warning
- 2 system error (e.g. a socket error)
- 3 protocol error (e.g. html returns a 404)
- 4 content error (e.g. a webpage contains not a required word)

Warning: If the function call in the DLL does not return control it can block the system. Make sure to handle your own timeouts and build in a reliable error management. For this reason EXE sensors are recommended.

Technical Details for Script and TCP Script Custom Sensors

The script must have the extension ".ITC" and must be placed in the "scripts" subfolder of the installation folder of IPCheck Server Monitor (usually **c:\program files\ipcheck server monitor 5\custom**).

Note: If you place a new ITC file into the custom directory you must restart the IPCheck Server Monitor web server service.

Sample projects for Custom Sensors can be found in the IPCheck Server Monitor installation directory and are available in the Knowledge Base on the Paessler Website at www.paessler.com/support.

Script Basics

Both custom script sensors use VBScript syntax.

The result of the sensor must be written into the object **sensor** which is already defined.

The object **sensor** has several properties:

- **sensor.status**: Current status of the sensor (values: **srOK**, **srWarning, srError**)
- **sensor.result_value**: Value of the sensor. If you don't set this value ipcheck uses the execution time of the script (Note: was sensor.resultvalue before V5.3)
- **sensor.errorstring**: Message of the sensor
- **sensor.errortype**: Detailed error info (values: **etNone** (no error), **etException** (unexpected error occurred), **etProtocol** (error on protocol level), **etContent** (error in the content, e.g. a required word missing). This value is only necessary If **status** is **srError**

There are three custom parameters that can be specified for this sensor by the user in the web interface. They can be accessed in the script by using the constants **data1**, **data2** and **data3**.

For the TCPScript sensor two functions are defined: readln and writeln. The script sensor establishes a TCP connection on the selected port to the server. The script can then read data from the port using the readln function and write data using writeln to send data to the server.

Supported Script Grammar

<program>:[(<globaldecl>)][({<subroutine>|<function>})] <main>
<main>:[(<statement>[:])]
<subroutine>:sub <label> <inputargs>{ <forward>|(<statement>[:]) end sub}
<function>:function <label> <inputargs>{ <forward>|(<statement>[:]) end function}
<inputargs>:["(" {<byref>|<byval>}[(, {<byref>|<byval>})] ")"]
<forward>:forward
<byref>:byref <id>
<byval>:[byval] <id>
<vardecl>:dim <id>[(, <id>)]
<globaldecl>:{public|private|dim} <id>[(, <id>)]
<statement>:{<vardecl>|<globaldecl>|<if>|<for>|<do_loop>|<whileend>|<assign>|<try>|<call>|<case>|<exit>|<with>}
<call>:<id><arg_list><indexing><call_code>[.<call>]
<call_code>:
<data_val>:<id><arg_list><indexing><data_val_code>[.<data_val>]
<data_val_code>:
<data_ref>:<id><arg_list><indexing><data_ref_code>[.<data_ref>]
<data_ref_code>:
<arg_list>:["(" [<expression> [(, <expression>)]]")"]
<indexing>:[("[" <expression> [(, <expression>)]"]")]
<assign>R:["set "] <data_ref> = <expression>
<push_output>:
<for>:<for_control>[step <step>][(<statement>[:])] next
<for_control>:for <id> = <expression> to <expression>
<step>:[{-|+}](#)[.(#)][e[{-|+}](#)]
<do_loop>:do {<test_loop>|<loop_test>}
<test_loop>:<test_loop_expr>[(<statement>[:])] loop
<test_loop_expr>:{<while>|<until>} <expression>
<loop_test>:[(<statement>[:])] loop <loop_test_expr>
<loop_test_expr>:{<while>|<until>} <expression>
<while>:while
<until>:until
<whileend>:while <whileend_expr>[(<statement>[:])] end while
<whileend_expr>:<expression>
<if>:if <expression> <then> [<else>] end if
<then>:then(<statement>[:])
<else>:else(<statement>[:])
<expression>:{[<unary>]{<data_val>|"(" <expression> ")"}|<hex>|<real>|<string>|<vector>}[(<operator> {[<Unary>]{<data_val>|"(" <expression> ")"}|<hex>|<real>|<string>|<vector>})]
<operator>:{^|*|/|and~|+|-|or~|"<>"|">="|"<="|"="|">"|"<"|"&"|div~|mod~|xor~|shl~|shr~|is~}
<unary>:{not~ |-|+}
<label>:<id>
<id>:{@|_}[({@|#|_})]
<real>:[{-|+}](#)[<frac>][<exp>]
<hex>:"0x"({#|a|b|c|d|e|f})
<frac>:.(#)
<exp>:e[{-|+}](#)

<string>:$
<vector>:"[" [<expression> [(, <expression>)]]"]"
<try>:try <try_statements> {<finally>|<except>} <try_upshot> end[:]
<finally>:finally
<except>:except
<try_statements>:[(<statement>[:])]
<try_upshot>:[(<statement>[:])]
<case>:select case <case_expr> <case_branch> end select
<case_expr>:<expression>
<case_branch>:[{case else(<statement>[:])|case <case_test>[(, <case_test>)]
<case_match>[<case_branch>]}]
<case_test>:<expression>
<case_match>:[(<statement>[:])]
<exit>:exit {<exit_sub>|<exit_function>|<exit_do>|<exit_for>}
<exit_sub>:sub
<exit_function>:function
<exit_do>:do
<exit_for>:for
<with>:with <with_obj>[(<statement>[:])] end with
<with_obj>:<data_val>

Script String Functions

Copy(S; Index, Count: Integer): string

Copy returns a substring containing Count characters or elements starting at S[Index].

```
s=Copy("testtext",1,4)
```

Delete(var S: string; Index, Count:Integer)

Delete removes a substring of Count characters from string S starting with S[Index].

```
a="testtexttext"
Delete(a,4,4)
```

Insert(Source: string; var S: string; Index: Integer)

Insert merges Source into S at the position S[index].

```
a="testtexttext"
Insert("text",a,5)
```

Pos(Substr: string; S: string): Integer

Pos searches for a substring, Substr, in a string, S. Substr and S are string-type expressions. Pos searches for Substr within S and returns an integer value that is the index of the first character of Substr within S. Pos is case-sensitive. If Substr is not found, Pos returns zero.

```
a=pos("sub","textsubtest")
```

Length(a:string):integer

Length returns the number of characters actually used in the string or the number of elements in the array.

```
a=length("teststring")
```

UpperCase(s:string) :string

UpperCase returns a copy of the string S, with the same text but with all 7-bit ASCII characters between 'a' and 'z' converted to uppercase. To convert 8-bit international characters, use AnsiUpperCase instead.

```
a=UpperCase("Test")
```

LowerCase(s:string):string

LowerCase returns a string with the same text as the string passed in S, but with all letters converted to lowercase. The conversion affects only 7-bit ASCII characters between 'A' and 'Z'. To convert 8-bit international characters, use AnsiLowerCase.

```
a=LowerCase("Test")
```

CompareStr(s1,s2:string):integer

CompareStr compares S1 to S2, with case-sensitivity. The return value is less than 0 if S1 is less than S2, 0 if S1 equals S2, or greater than 0 if S1 is greater than S2. The compare operation is based on the 8-bit ordinal value of each character and is not affected by the current locale.

```
b=CompareStr("Test","test")
```

CompareText(s1,s2:string):integer

CompareText compares S1 and S2 and returns 0 if they are equal. If S1 is greater than S2, CompareText returns an integer greater than 0. If S1 is less than S2, CompareText returns an integer less than 0. CompareText is not case sensitive and is not affected by the current locale.

```
b=CompareText("Test","test")
```

AnsiUpperCase(s:string):string

AnsiUpperCase returns a string that is a copy of S, converted to upper case. The conversion uses the current locale. This function supports multi-byte character sets (MBCS).

```
a=AnsiUpperCase("Test")
```

AnsiLowerCase(s:string):string

AnsiLowerCase returns a string that is a copy of the given string converted to lower case. The conversion uses the current locale. This function supports multi-byte character sets (MBCS).

```
a=AnsiLowerCase("Test")
```

AnsiCompareStr(s1,s2:string):integer

AnsiCompareStr compares S1 to S2, with case sensitivity. The compare operation is controlled by the current locale. The return value is less than 0 if S1 is less than S2, 0 if S1 equals S2, or greater than 0 if S1 is greater than S2.

Note: Most locales consider lowercase characters to be less than the corresponding uppercase characters. This is in contrast to ASCII order, in which lowercase characters are greater than uppercase characters. Thus, setting S1 to 'a' and S2 to 'A' causees AnsiCompareStr to return a value less than zero, while CompareStr, with the same arguments, returns a value greater than zero.

```
b=AnsiCompareStr("Test","test")
```

AnsiCompareText(s1,s2:string):integer

AnsiCompareText compares S1 to S2, without case sensitivity. The compare operation is controlled by the current locale. AnsiCompareText returns a value less than 0 if S1 < S2, a value greater than 0 if S1 > S2, and returns 0 if S1 = S2.

```
b=AnsiCompareText("Test","test")
```

Trim(s:string):string

Trim removes leading and trailing spaces and control characters from the given string S.

```
a=Trim("  Test  ")
```

TrimLeft(s:string):string

TrimLeft returns a copy of the string S with leading spaces and control characters removed.

```
a=TrimLeft("  Test  ")
```

TrimRight(s:string):string

TrimRight returns a copy of the string S with trailing spaces and control characters removed.

```
a=TrimLeft("  Test  ")
```

IntToStr(a:integer):string

IntToStr converts an integer into a string containing the decimal representation of that number.

```
b=IntToStr(12)
```

IntToHex(value:integer;digits:integer):string

IntToHex converts a number into a string containing the number's hexadecimal (base 16) representation. Value is the number to convert. Digits indicates the minimum number of hexadecimal digits to return.

```
a=IntToHex(12,4)
```

StrToInt(s:string):integer

StrToInt converts the string S, which represents an integer-type number in either decimal or hexadecimal notation, into a number.

```
a=StrToInt("12")
```

StrToIntDef(s:string;default:integer):integer

StrToIntDef converts the string S, which represents an integer-type number in either decimal or hexadecimal notation, into a number. If S does not represent a valid number, StrToIntDef returns Default.

```
a=StrToIntDef("12",1)
```

FloatToStr(a:float):string

FloatToStr converts the floating-point value given by Value to its string representation. The conversion uses general number format with 15 significant digits.

```
s=floattostr(1.234)
```

Script Date/Time Functions

The script language uses the following definition for date and time values: The integral part of a value is the number of days that have passed since 12/30/1899. The fractional part of a value is fraction of a 24 hour day that has elapsed.

Following are some examples of TDateTime values and their corresponding dates and times:

0 12/30/1899 12:00 am

2.75 1/1/1900 6:00 pm

-1.25 12/29/1899 6:00 am

35065 1/1/1996 12:00 am

To find the fractional number of days between two dates, simply subtract the two values, unless one of the TDateTime values is negative. Similarly, to increment a date and time value by a certain fractional number of days, add the fractional number to the date and time value.

EncodeDate(Year, Month, Day: Word): DateTime

Returns a TDateTime value from the values specified as the Year, Month, and Day parameters. The year must be between 1 and 9999. Valid Month values are 1 through 12. Valid Day values are 1 through 28, 29, 30, or 31, depending on the Month value. For example, the possible Day values for month 2 (February) are 1 through 28 or 1 through 29, depending on whether or not the Year value specifies a leap year.

```
d=EncodeDate(2005,6,5)
```

EncodeTime(Hour, Min, Sec, MSec: Word): DateTime

Encodes the given hour, minute, second, and millisecond into a DateTime value. Valid Hour values are 0 through 23. Valid Min and Sec values are 0 through 59. Valid MSec values are 0 through 999. The resulting value is a number between 0 and 1 (inclusive) that indicates the fractional part of a day given by the specified time or (if 1.0) midnight on the following day. The value 0 corresponds to midnight, 0.5 corresponds to noon, 0.75 corresponds to 6:00 pm, and so on.

```
d=EncodeTime(19,5,4,200)
```

DecodeDate(Date: DateTime; var Year, Month, Day: integer)

Breaks the value specified as the Date parameter into Year, Month, and Day values.

```
y=0
m=0
d=0
DecodeDate(35065,y,m,d)
```

DecodeTime(Time: DateTime; var Hour, Min, Sec, MSec: Word)

DecodeTime breaks the object specified as the Time parameter into hours, minutes, seconds, and milliseconds.

```
h=0
m=0
s=0
ms=0
DecodeTime(1.978,h,m,s,ms)
```

DayOfWeek(Date: TDateTime): Integer

Returns the day of the week of the specified date as an integer between 1 and 7, where Sunday is the first day of the week and Saturday is the seventh.

```
a=DayOfWeek(35065)
```

Date:DateTime

Use Date to obtain the current local date as a TDateTime value. The time portion of the value is 0 (midnight).

```
d=date
```

Now:DateTime

Returns the current date and time, corresponding to the sum of the value returned by the global Date and Time functions. Now is accurate only to the nearest second.

```
t=now
```

DateToStr(Date: TDateTime): string

Use DateToStr to obtain a string representation of a date value that can be used for display purposes.

```
DateToStr(35065.3455)
```

TimeToStr(Date: TDateTime): string

Use TimeToStr to obtain a string representation of a time value that can be used for display purposes.

```
TimeToStr(2445.3455)
```

DateTimeToStr(Date: TDateTime): string

Use DateTimeToStr to obtain a string representation of a date and time value that can be used for display purposes.

```
DateTimeToStr(35065.3455)
```

Script Arithmetic Functions

Round(a:float):integer

Round function rounds a real-type value to an integer-type value.

```
a=Round(12.5)
```

Trunc(a:float):integer

the Trunc function truncates a real-type value to an integer-type value.

```
a=Trunc(12.5)
```

Dec(a:integer or float)

Dec subtracts one from a variable.

```
Dec(a)
```

Inc(a:integer or float)

Inc adds one to the variable.

```
Inc(a)
```

Random

Random returns a random number within the range 0 <= X < 1.

```
A=random(10)
```

Other Script Functions

snmpget

Sends an SNMP request to the IP of the associated server and returns a string

```
result=snmpget("public","1.3.6.1.2.1.1.3.0")
'check for errors (always begins with the word "ERROR")
if pos("ERROR",result)=1 then
  sensor.errorstring=result
  sensor.errortype=etprotocol
else
  mynumber=strtoint(result)
```

Beep

Beep generates a message beep

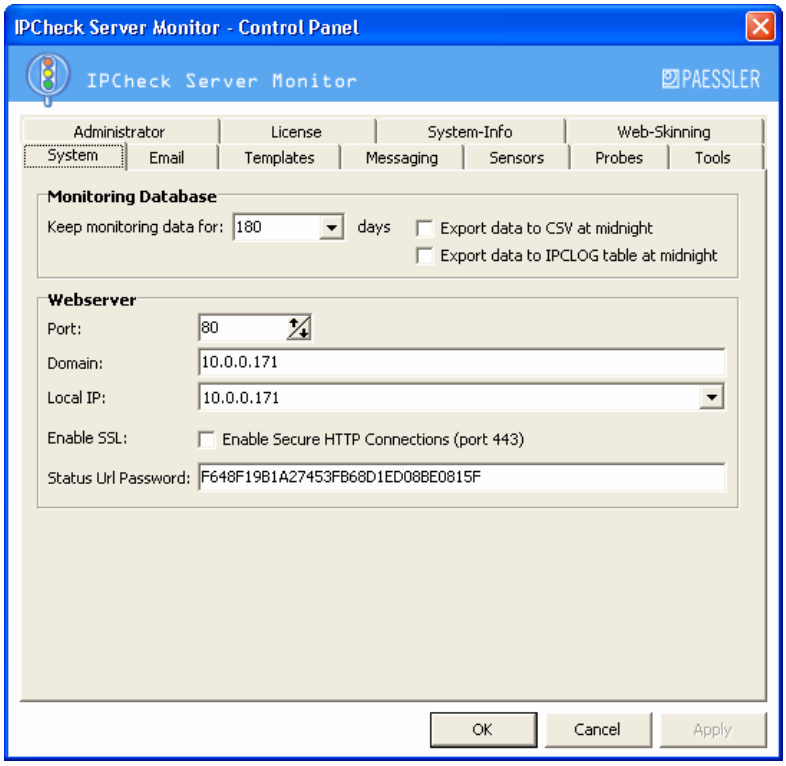
```
Beep
```

Using the Control Panel

The Administration Control Panel provides complete control over your locally-installed IPCheck Server Monitor application.

To open the Administration Control Panel

- Select the IPCheck Admin control panel option from your IPCheck Server Monitor Group in the Start Menu.
- Or choose the IPCheck Server Monitor Icon from the Windows Control Panel

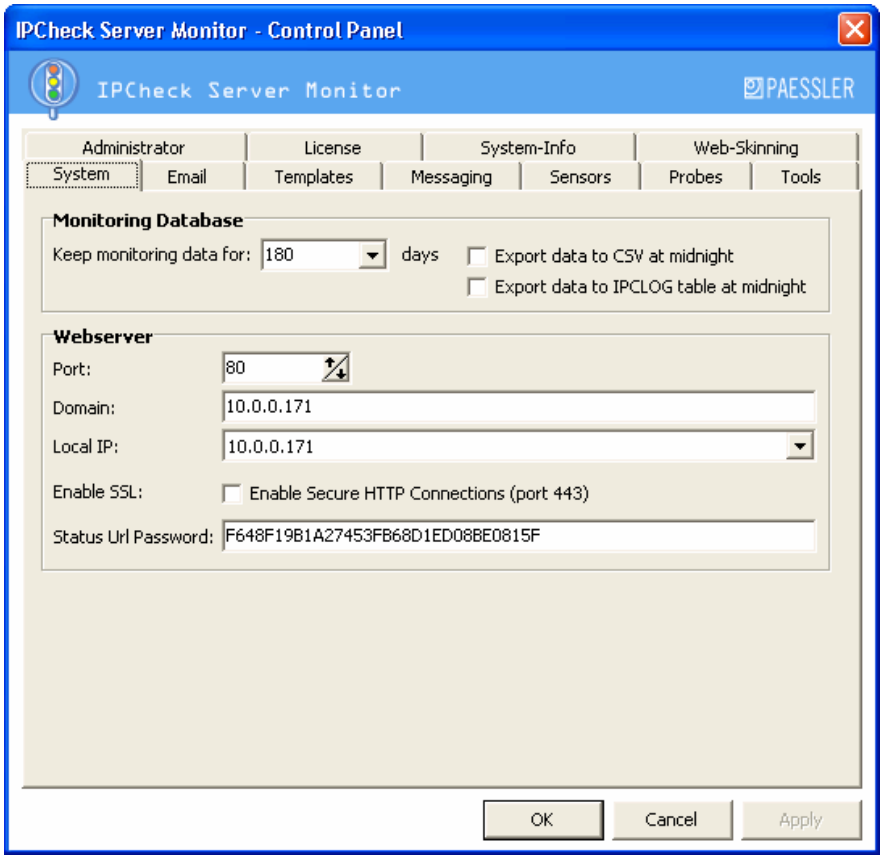


The IPCheck Server Monitor control panel provides access to a number of key application configuration features including:

- System
- Email
- Templates
- Messaging
- Sensors
- Tools

- Administrator
- License.

Control Panel System Tab

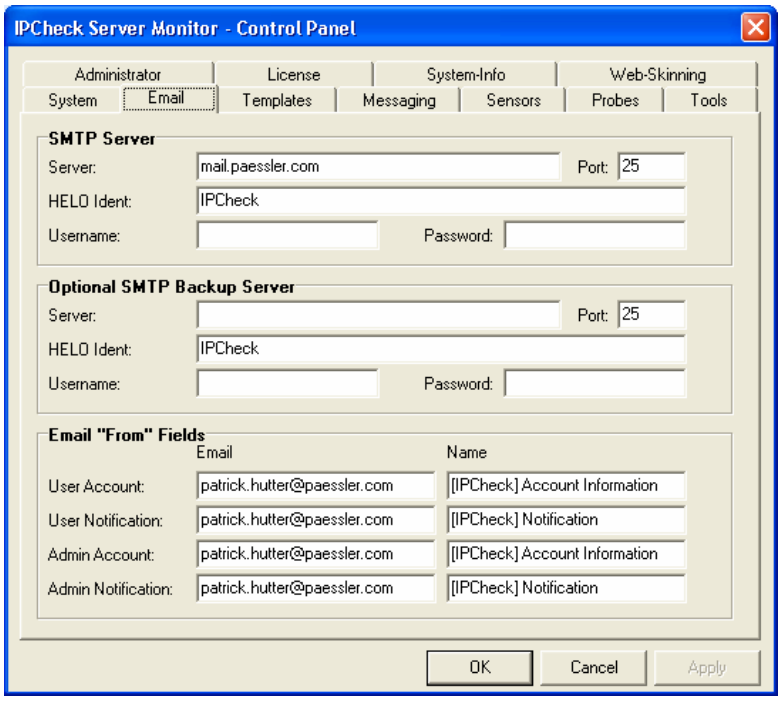


The **System Window** defines a number of application-level parameters including

- Monitoring Database
  - **Keep monitoring data for**—enter the number of days the historic monitoring data should be kept in the database before it is discarded. This will be the length of time for which you can run reports
  - **Export Data to CSV at midnight** – check this field if you would like to export the monitoring data from IPCheck's internal database format to standard CSV files (e.g. to analyze the monitoring data with other analysis tools). This process will be executed shortly after midnight, every day and exports all available monitoring data to CSV files into the database folders (subfolders of the IPCheck Server Monitor installation folder).
  - **Export Data to IPCLOG table at midnight**- if you enable this checkbox IPCheck will export the monitoring results into the ipclog table in the firebird SQL database at midnight
  - **Note**: For both exports you will find further documentation of the data formats in the Paessler Knowledgebase at www.paessler.com/support
- **Webserver**

- **Port**—enter the port number through which the web interface of IPCheck Server Monitor will be available for web browsers. Usually this is port 80, but if you already run a web server on this machine you may need to choose another port like e.g. 81, 8080. Note: If the port you choose here is already used by another process at the time when IPCheck Server Monitor starts, another port in the range between 8080 and 8099 will automatically be selected!
- **Note**: If you also run IIS5 or IIS6 on a machine with multiple IPs you may need to apply special configuration to the IIS so you can user IPCheck on port 80, see the Paessler Knowledgebase at www.paessler.com/support
- **Domain**—enter the domain name or the IP address through which this server is reachable. This address will be used in emails and notifications to provide clickable links into the web interface.
- **Local IP**—use the drop-down to select the IP Address of the server on which you are installing IPCheck Server Monitor.
- **Enable SSL**—check this box to enable monitoring over a Secure Sockets Layer connection (Note: port 443 may not already be used on the server for the selected IP!)
- **Status URL Password**— Enter a string of you choice that secures the system status webpage (see "Reviewing IPCheck's System Status")

Control Panel Email Tab



The **Email Window** defines how IPCheck Server Monitor sends and receives emails

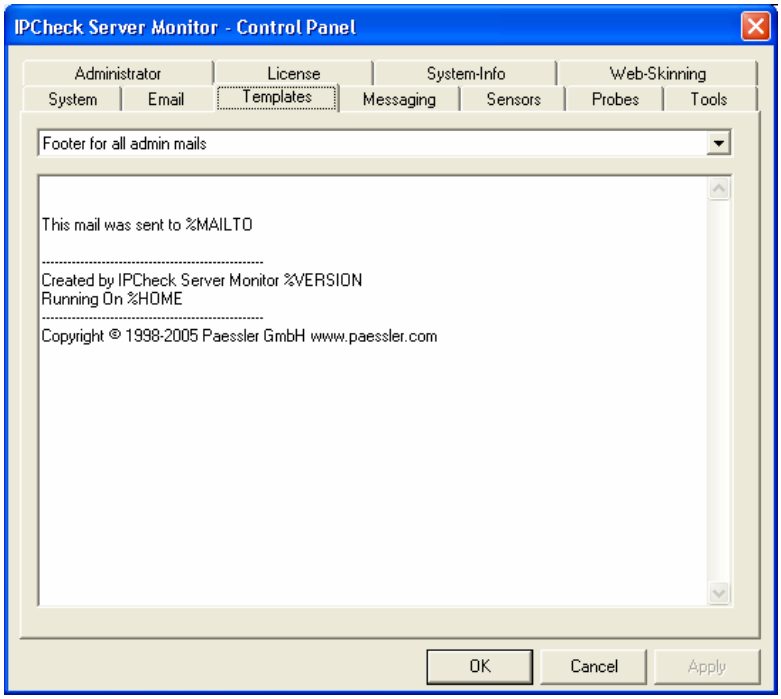
- SMTP Server
  - **Server**—the domain name or IP Address of the SMTP server through which IPCheck Server Monitor sends email. This mail

server must be configured as an SMTP relay that accepts mails from IPCheck Server Monitor and forwards the mails to the recipients.

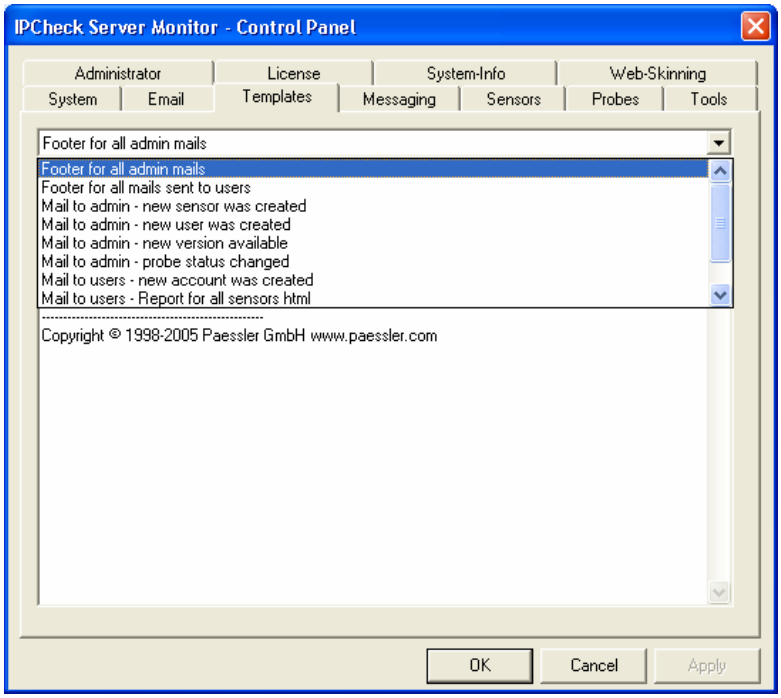
- **HELO Ident**—the string IPCheck Server Monitor sends to the mailserver for identification. Changes are only necessary for special mailservers, using the default should be fine.
- **Username**—if the mailserver needs user authentication to accept emails enter the username of a valid account on the SMTP server
- **Password**—if the mailserver needs user authentication to accept emails enter the password of the account above
- **Optional SMTP Backup Server**—enter this information if you want to provide a second SMTP in case the first SMTP server becomes unavailable

- **E-Mail "From" Fields**—Enter the email addresses and clear text names IPCheck Server Monitor should use as "FROM" addresses when sending emails
  - **User Account**—for emails sent to users regarding their accounts
  - **User Notification**—for notification emails sent to users
  - **Admin Account**—for emails sent to the admin
  - **Admin Notification**—for notification emails sent to the admin

Control Panel Templates Tab



- The **Templates Window** allows you to change the content and the footers of all emails sent out by IPCheck Server Monitor.
- Use the dropdown field to choose a template and edit the content in the lower edit field. In most cases using the defaults should be fine.



You can use the following placeholders in the templates (note: not all placeholders are available in all templates):

- %USRNAME—The user name of the current user account
- %DATE—The current date and time
- %ACCOUNT—The email address (=account name) of the current user account
- %PASS—The password of the current user account (use with caution!)
- %ADMMAIL—The email address of the administrator responsible for this installation of IPCheck Server Monitor
- %KIND—The type of the newly created sensor(ping, http, etc.)
- %HOME—The URL of the homepage of the web interface
- %VERSION—Version number of the IPCheck Server software currently installed

You can also access the address information of the current user with the following placeholders:

- %ADDRCOMPANY
- %ADDRSTREET
- %ADDRZIP
- %ADDRCITY
- %ADDRCOUNTRY
- %ADDRSTATE
- %ADDRPHONE
- %ADDRFAX
- %ADDRVATID

Note: There is a special format for the daily/weekly/monthly report mail (templates "Mail to users – Report for all sensors text" and "Mail to users –

Report for all sensors HTML"). You can change the text of the mail template as you wish but you have to make sure that the number and sequence of the brackets [] is not changed!

Here is a sample template:

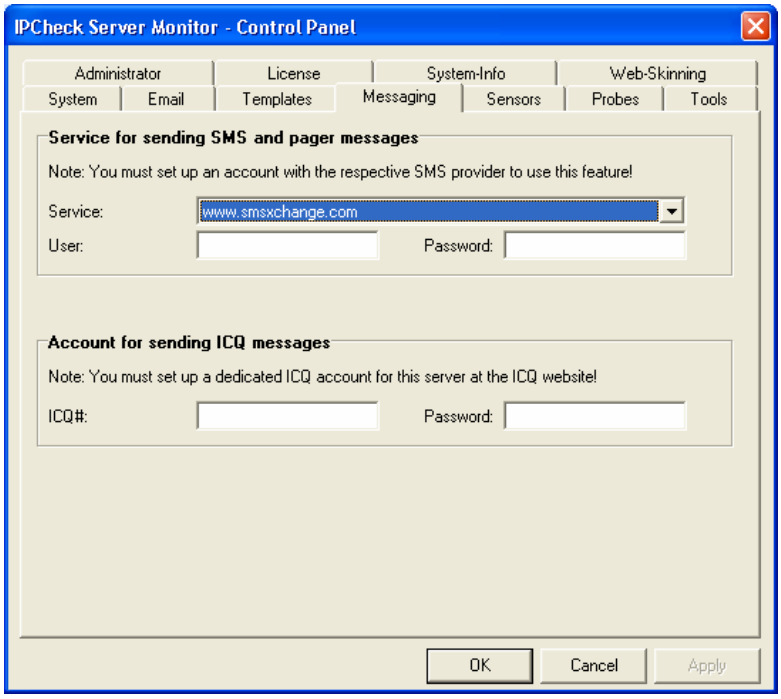
```
Report from %RSTART to %REND
[
************************************************************
 Group: %GROUP
************************************************************
][
   ------------------------------------------------------------
   Server: %SERVER
   ------------------------------------------------------------
][
   Sensor: %SENSOR, %KIND

      Good Requests:    %GOOD (=%GPCT)
      Uptime:           %UTIME
      Failed Requests:  %FAIL (=%FPCT)
      Downtime:         %DTIME
      Average:          %AVG
]
```

The placeholders are:

- %RSTART: The date&time of the beginning of this report
- %REND: The date&time of the ending of this report
- %GROUP: The name of the current group of servers
- %SERVER: The name of the current server
- %SENSOR: The name of the current sensor
- %KIND: The sensor type of the current sensor
- %GOOD, %GPCT: The number and the percentage of good requests
- %FAIL,%FPCT: The number and the percentage of failed requests
- %UTIME: Uptime
- %DTIME: Downtime
- %AVG: The average value of this sensor (usually the average request time)

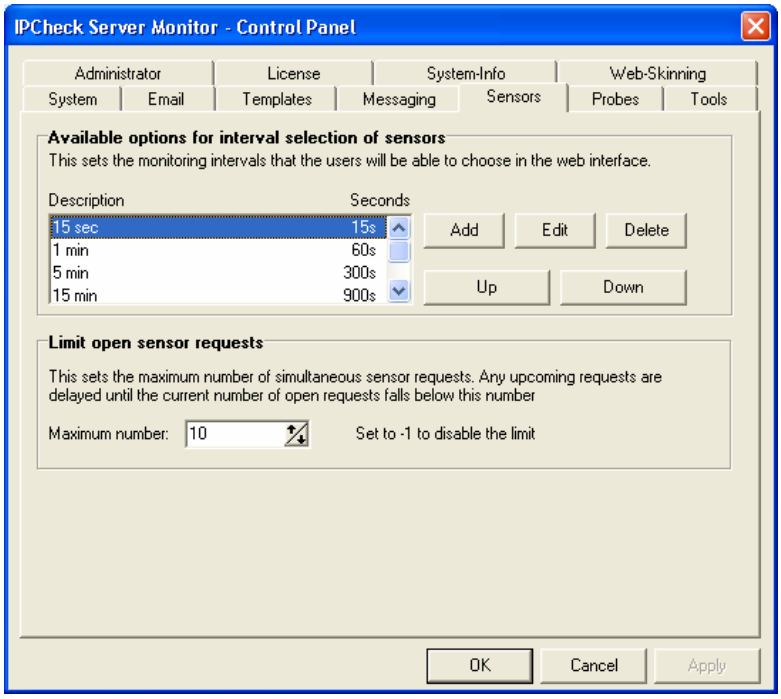
Control Panel Messaging Tab



The **Messaging Window** allows you to change the methods SMS and ICQ messages are sent with. Important: You need to set up an account with both service providers in order to use these two options!

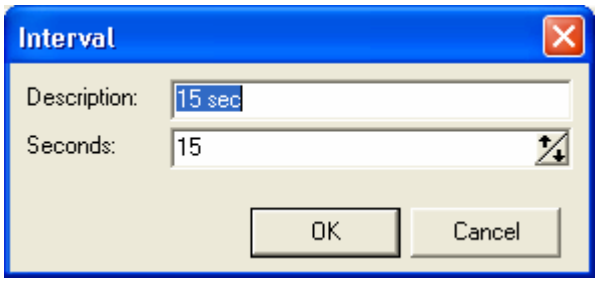
- Service for sending SMS and pager messages
  - **Service**—use the drop-down menu to select the SMS service (in the current version only the service of www.smsexchange.com, www.bulksms.co.uk, and www.smsdriver.com are supported, more service options will be implemented later). Choose "custom" to enter your own URL that will be called to send a SMS (use the placeholders shown in the URL). If the URL returns "200 OK" then IPCheck will regard the message as sent.
  - **User**—enter the username for your account with this service
  - **Password**—enter the corresponding password
- Account for sending ICQ messages
  - **ICQ#**—enter the ICQ number IPCheck Server Monitor should use (Note: **This is NOT your personal ICQ number!** You must create a separate ICQ account for IPCheck Server Monitor in order to send ICQ messages to your personal account!)
  - **Password**—enter the corresponding password for the ICQ account

Control Panel Sensors Tab



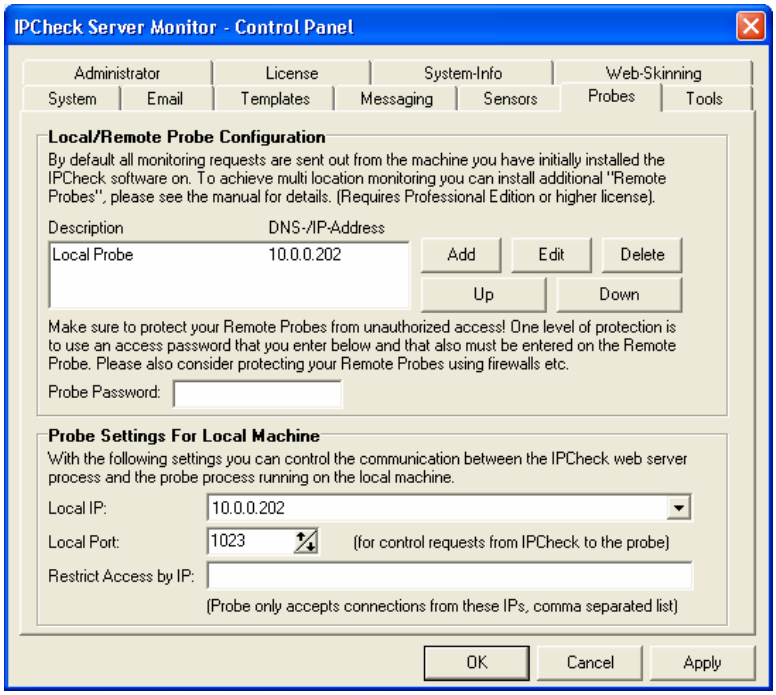
The **Sensors Window** allows you to set various options regarding the sensors.

- **Available options for interval selection of sensors**—this allows you to add, edit, or delete the IPCheck Server Monitor the time intervals that are available for users in the web interface when creating and editing sensors. Usually this option will only be edited in a multi user environment of IPCheck Server Monitor.
  - **Add/Edit**—click this button to add a new interval. This will open the **Interval Window**.



  - **Description**—a description of the interval
  - **Seconds**—use the up/down arrows to set how long the interval should be or enter a number directly
- **Limit open sensor requests**—Using this setting you can limit the number of sensor requests that have been sent out and not answered yet. Sometimes (e.g. if you are running your monitoring over a slow internet connection) limiting this number can enhance monitoring reliability. Fewer requests are sent out simultaneously to reduce network load. But at the same time the sensors will be monitored at longer intervals because fewer requests are sent out at once.

Control Panel Probes Tab

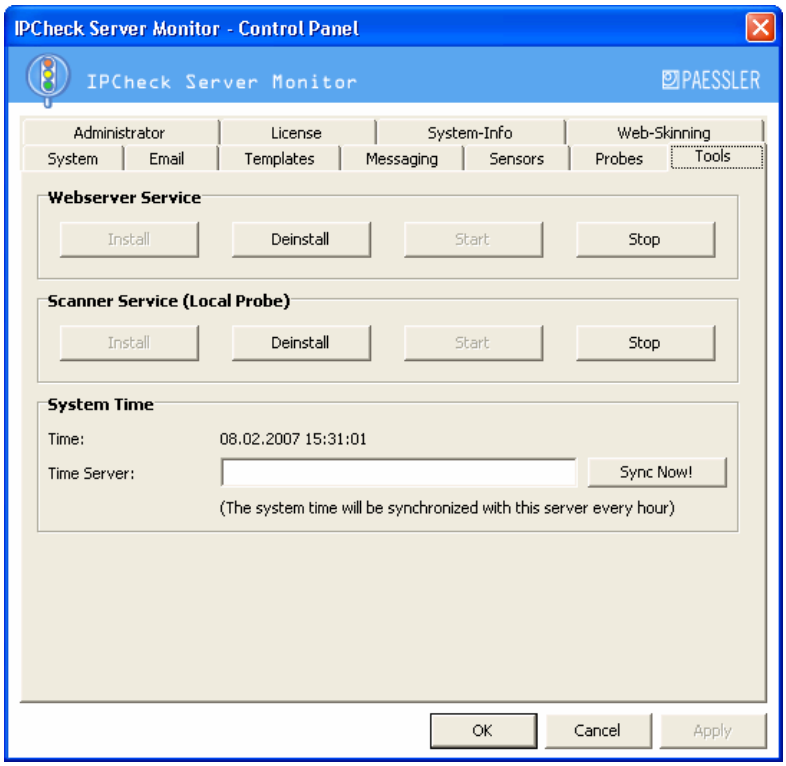


Using Local and Remote probes you can set up a multi location monitoring using IPCheck Server Monitor. See the "Multi Location Monitoring Using Remote Probes" section later in the manual for details.

Note: This feature is not available in the Freeware Edition!

- **Local/Remote Probe Configuration**—Using the Add/Edit/Delete buttons you can edit the list of available probes that the user can select in the web interface.
- **Probe Password**—Make sure to protect your remote probe by using a password which must be entered here and on the remote probe machine
- **Probe Settings For Local Machine**—Using these settings you can change the settings for the Local Probe and the communication between the webserver service and probe service.
    - **Local IP**—This is the IP address that the local probe uses to send out the monitoring requests
    - **Port**—This is the TCP/IP port number that will be used by the webserver service to contact the probe service.
- Note 1: Make sure that these ports are enabled if you run a personal firewall on this machine.

Control Panel Tools Tab



IPCheck Server Monitor utilizes a built-in webserver and scanner service that is installed in the Windows System upon application setup (aka "NT service"). The **Tools Tab** provides you the ability to start, stop, install, and deinstall these services.

To Stop a service

- Click the **Stop Button**. This will halt the service.

To Start a service

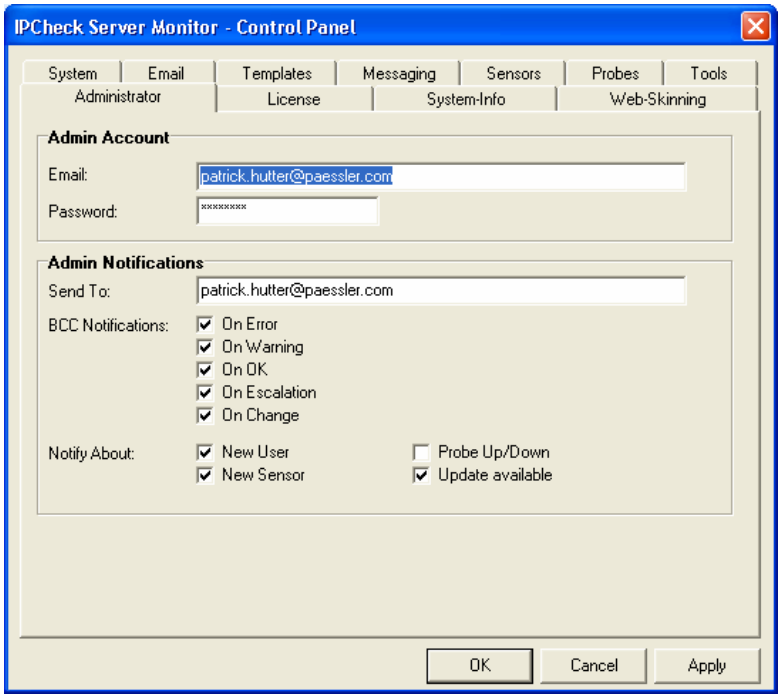
- Click the **Start Button**. This will start the service

To Install/Deinstall a service (for experienced admins only)

- Note: This does not deinstall the IPCheck Server Monitor software from this machine. Use Control Panel's "Software" applet do deinstall IPCheck Server Monitor
- Click the **Deinstall Button**. This will deinstall the service
- Click the **Install Button**. This will install the service
- Note: if you deinstall a service IPCheck Server Monitor will not work anymore and will not be started automatically when the system is rebooted.

To keep the system clock up to date you can enter a NTP time server in the **time server** field. IPCheck Server Monitor will synchronize the time of the local machine to this server roughly every 60 minutes.

Control Panel Administrator Tab

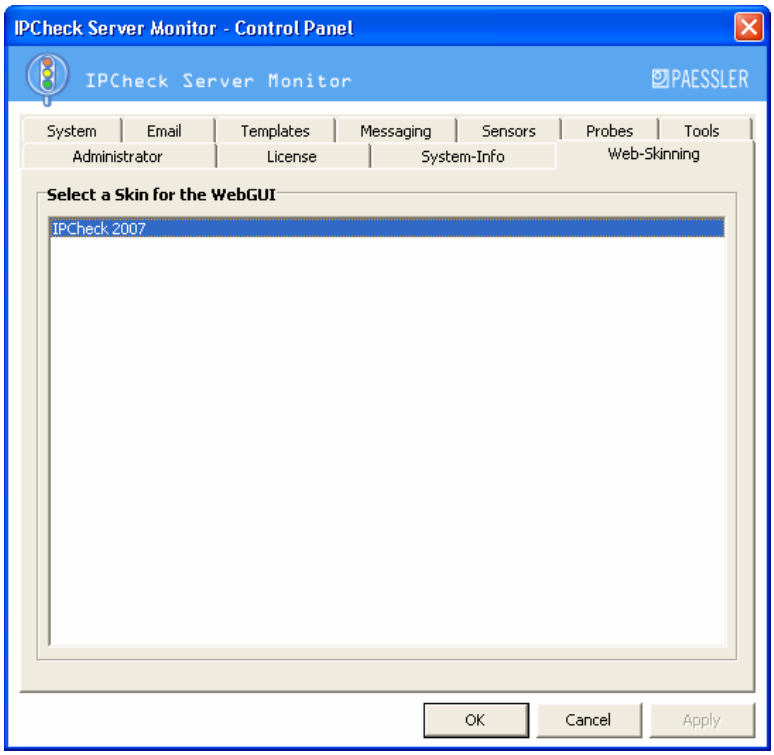


The **Administrator Window** controls the administrative credentials and how that administrator will be notified in the case of recorded errors.

- Admin Account
  - **Email**—enter the email address of the administrator. This is the username of the first user account. Use this account name to log into the web interface for the first time. Note: Only this account can access IPCheck Server Monitor's administrative features in the web interface.
  - **Password**—enter the password for the administrator.
- Admin Notifications
  - **Send To**—enter the email address to which notifications will be sent
  - **BCC Notifications**—you can check which notifications will be sent to the email address
  - **On Error**—Sends an email to the admin for each error notification sent to users
  - **On Warning**—Sends an email to the admin for each warning notification sent to users
  - **On OK**—Sends an email to the admin for each OK notification sent to users
  - **On Escalation**—Sends an email to the admin for each escalation notification sent to users
  - **On Change**—Sends an email to the admin for each change a user makes to his account
- **Notify About**—specify when notifications will be sent
  - **New User**—Sends an email to the admin for each new user that is created

- **New Sensor**—Sends an email to the admin for each new sensor that is created
- **Probe Up/Down**—Sends an email to the admin whenever the connection to a probe is lost or is recovered.
- **Update available**—Sends an email to the admin when a newer version of IPCheck Server Monitor is available

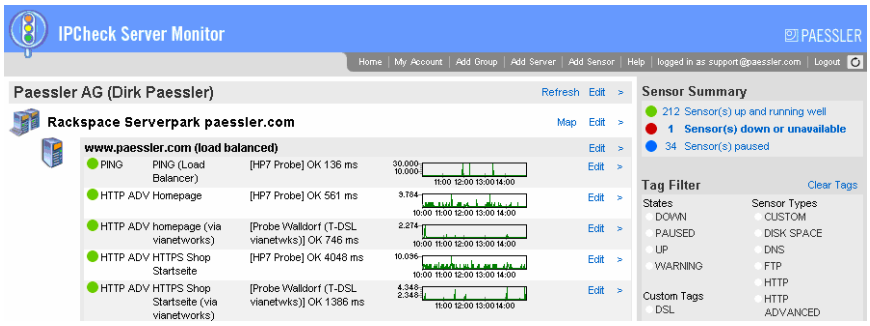
Control Panel Skinning Tab



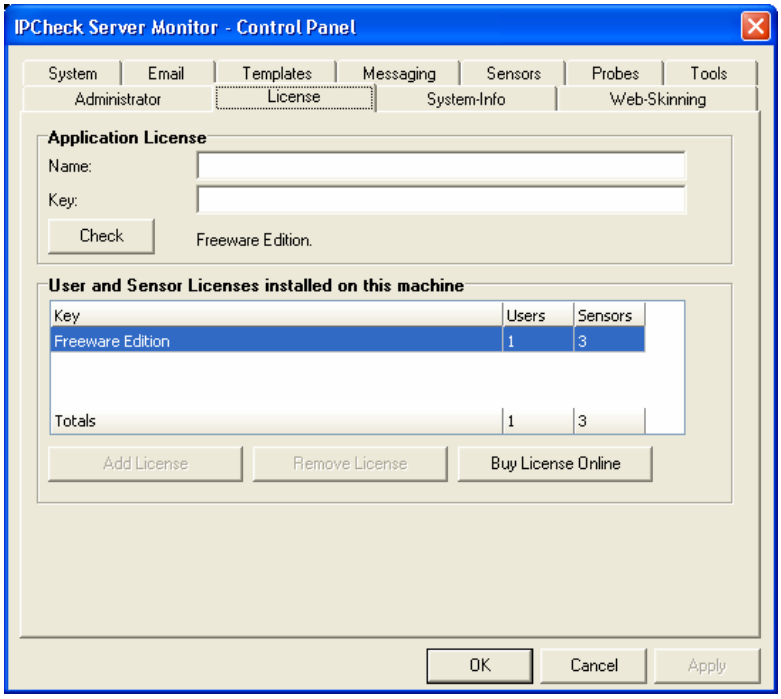
In the skinning section you can select a skin to use for IPCheck Server Monitor. If you have created your own skin it will also appear in the provided list.

IPCheck Server Monitor comes with one default skin:

IPCheck 2007:

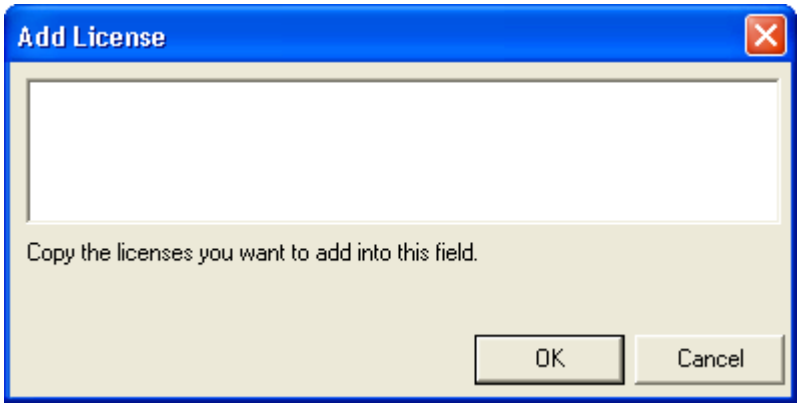


Control Panel License Tab



The **Licenses Window** allows you to control the licenses of IPCheck Server Monitor that are installed on the local machine. These licenses determine the number of users you can utilize and the number of sensors you can monitor.

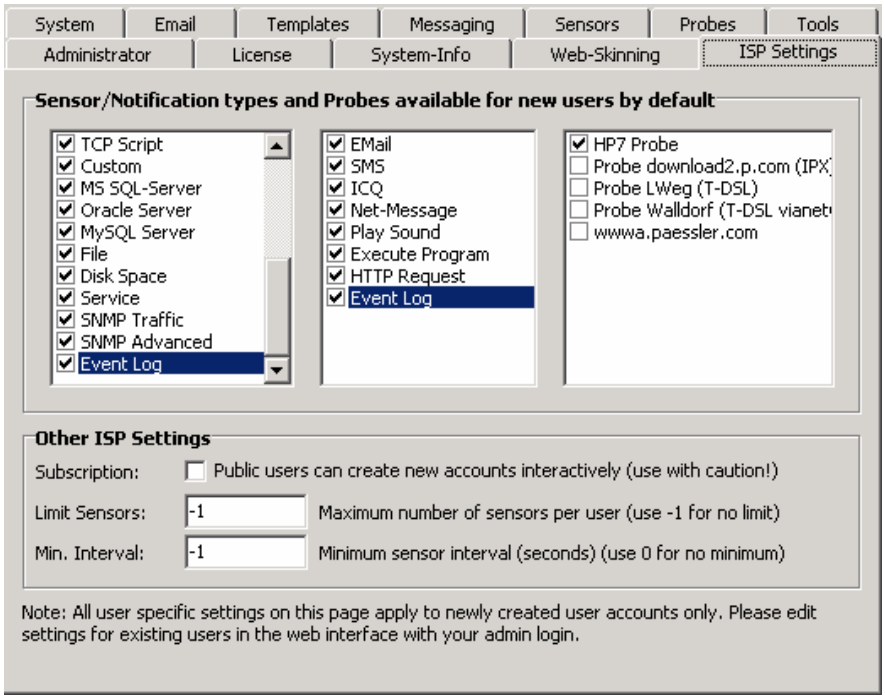
- Application
  - **Name**—enter the name as provided to you upon purchase
  - **Key**—enter the key provided to you upon purchase
  - **Check**—click the Check Button to validate the name and key
- **User and Sensor Licenses**—this provides information on installed keys, users, and sensors
- **Add License**—click this button to add a license for additional users and sensors. This will bring up a window to enter the key. Please enter the information you received upon purchase to add more sensors and/or more users to the local installation.



- **Remove License**—to remove a license, select it from the list and click the **Remove Button**.
- **Buy License Online**—click this button to purchase additional licenses from the Paessler website.

Control Panel ISP Settings Tab

The ISP Settings Tab allows you change ISP related settings (ISP Edition only).



Here you can choose the sensor and notification types that are available to new users by default. Later the admin can change these settings in the web interface for each user.

In the **Other ISP Settings** section you can set the following settings:

- Subscription: If you enable this checkbox unauthenticated visitors to the IPCheck web interface can create new user accounts by clicking on add account. Use this setting with caution!
- Limit Sensors: The default number of sensors available to new users.
- Minimum Interval: The default minimum interval that is available for new users

Later the admin can change the last two settings in the web interface for each user.

Server and User Account Administration

Web Based Administration vs. the Admin Control Panel

There are two points of administration for IPCheck Server Monitor:

- Admin Control Panel: This is a Windows program used to set various, often technical aspects of your IPCheck Server Monitor installation. E.g. the web server's IP and port address, the SMTP server and many other aspects are edited here. See the "Using the Control Panel" section for details.
- Web Based Administration: Using the web based administration you mainly can manage the user accounts (not available in the Freeware Edition).

It is important to understand these two entry points for administration!

Web Based Administration

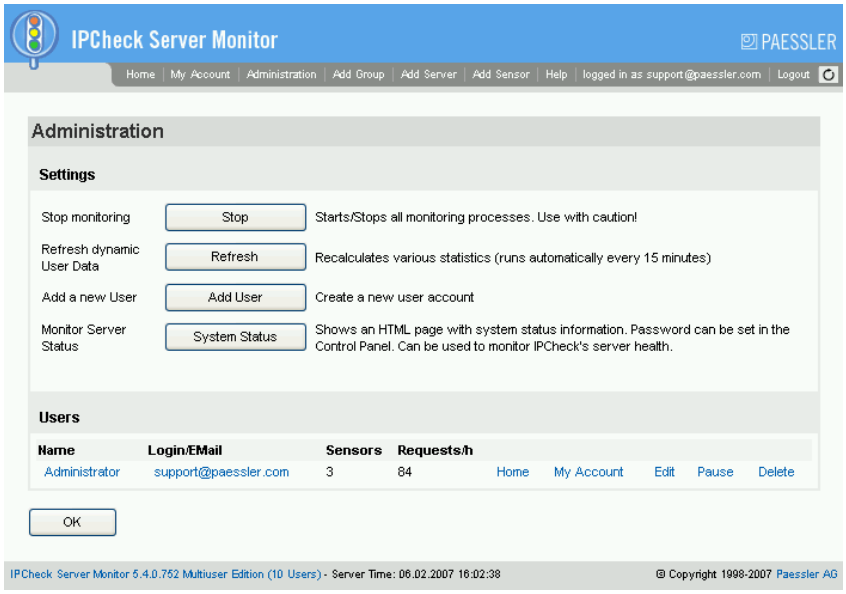
Through the web-based administration you can:

- Start and stop monitoring
- Add new users
- View and edit existing users
- Delete users
- Monitor the system status

Note: The multi user features are not available in the Freeware Edition.

To access the administrative features of the web-based interface

- Please log into your account (see "Logging into your account using the Web GUI") using the admin account
- After verifying your credentials, click the **Administration** link from the menu toolbar.



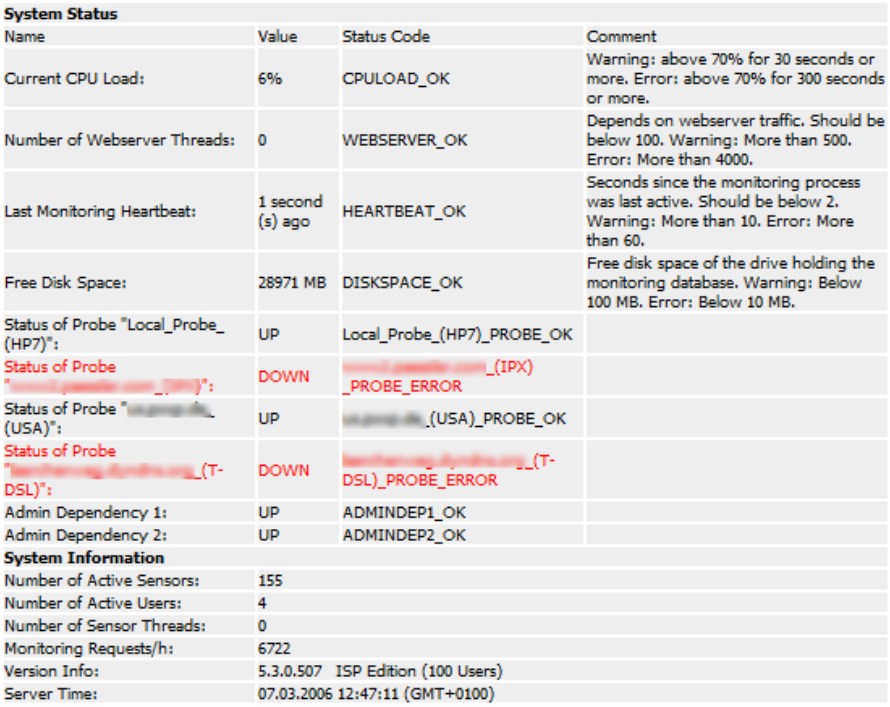
- To start and stop the monitoring of all sensors click the **Start/Stop Button.**
- To refresh the dynamic user data (e.g. number of sensors of each user in the table below) click on **Refresh**.
- To add a new user to the system, click the **Add User** Link. This opens the **User Data Window.** Enter all of the necessary information in this window and select the **OK Button** when finished.
- To review the system status click the **System Status** link

Below these buttons you will see a list of user account active on your system.

If you are logged in with the admin account you will see an **Administration** link in the top toolbar which brings you to the user account administration page.

Reviewing IPCheck's System Status

To review the system's status log in with an admin account, click on the top menu's **Administration** link, then click **System Status**:



System Status

Name	Value	Status Code	Comment
Current CPU Load:	6%	CPULOAD_OK	Warning: above 70% for 30 seconds or more. Error: above 70% for 300 seconds or more.
Number of Webserver Threads:	0	WEBSERVER_OK	Depends on webserver traffic. Should be below 100. Warning: More than 500. Error: More than 4000.
Last Monitoring Heartbeat:	1 second (s) ago	HEARTBEAT_OK	Seconds since the monitoring process was last active. Should be below 2. Warning: More than 10. Error: More than 60.
Free Disk Space:	28971 MB	DISKSPACE_OK	Free disk space of the drive holding the monitoring database. Warning: Below 100 MB. Error: Below 10 MB.
Status of Probe "Local_Probe_(HP7)":	UP	Local_Probe_(HP7)_PROBE_OK	
Status of Probe "[redacted]":	DOWN	[redacted]_(IPX)_PROBE_ERROR	
Status of Probe "[redacted]_(USA)":	UP	[redacted]_(USA)_PROBE_OK	
Status of Probe "[redacted]_(T-DSL)":	DOWN	[redacted]_(T-DSL)_PROBE_ERROR	
Admin Dependency 1:	UP	ADMINDEP1_OK	
Admin Dependency 2:	UP	ADMINDEP2_OK	
System Information			
Number of Active Sensors:	155		
Number of Active Users:	4		
Number of Sensor Threads:	0		
Monitoring Requests/h:	6722		
Version Info:	5.3.0.507 ISP Edition (100 Users)		
Server Time:	07.03.2006 12:47:11 (GMT+0100)		

This status page gives you detailed information about the internal conditions of IPCheck Server Monitor and the server's system.

If there are serious problems you will see error messages in red.

Note: The password used in the URL can be set in the Control Panel, see "Control Panel System Tab".

Monitoring one IPCheck instance with another instance of IPCheck

The system status URL can be used to easily monitor an instance from a copy of IPCheck Server Monitor running on another system. This way you can be notified if an IPCheck system fails.

Simply create an Advanced HTTP sensor, enter the URL of your System Status page (e.g. http://ipcheckserver/status?pass=815686003E9D4BDB8D8520B34545627C) and put the word "**_ERROR**" (without the quotes) into the **Response may not include** field.

As long as IPCheck runs fine the sensor will show an UP status, as soon as IPCheck discovered a problem internally, it outputs an "XXX_ERROR" string on the status page. This is caught by the sensor which will change to the DOWN state.

You can even create several of these sensors monitoring the following strings:

- CPULOAD_ERROR
- WEBSERVER_ERROR
- HEARTBEAT_ERROR
- DISKSPACE_ERROR
- PROBE_ERROR
- ADMINDEP1_ERROR
- ADMINDEP2_ERROR

Most measurement points also can have a warning state that you may want to monitor for. You can put the word "**_WARNING**" (without the quotes) into the **Response may not include** field and you will be notified whenever a warning shows up – or you can monitor the following specific strings:

- CPULOAD_WARNING
- WEBSERVER_WARNING
- HEARTBEAT_WARNING
- DISKSPACE_WARNING
- PROBE_WARNING
- ADMINDEP1_WARNING
- ADMINDEP2_WARNING

Finally you can also monitor the other way round by scanning for "**_OK**" in the HTML of the page – or you can monitor the following specific strings:

- CPULOAD_OK
- WEBSERVER_OK
- HEARTBEAT_OK
- DISKSPACE_OK
- PROBE_OK
- ADMINDEP1_OK
- ADMINDEP2_OK

Working with Multiple Users

IPCheck Server Monitor supports more than one user account (except for the freeware edition). Each user can set up his own groups, servers, and sensors and can review his results independently from the other users.

This section explains how to create and edit user accounts. There also is a section describing the specific settings available in the ISP Edition.

Multi User Features

The admin can create, edit and delete user accounts and can also review each users sensors and settings.

Each user can make his monitoring results available to other users as read only pages (not in the ISP edition). There is a checkbox for this on the user's "My Account" page.

Additional Features of the ISP Edition

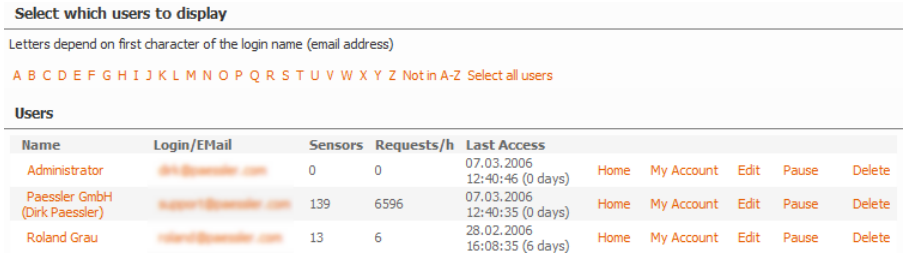
With the ISP edition you have more control over the types of sensors and notifications a user can use as well as the number and the intervals of sensors.

The admin can choose the sensor and notification types that are available to new users by default and can also edit these settings for each user individually. Also the minimum monitoring interval as well as an expiry date can be set for each user.

Editing User Accounts

To edit user accounts:

- Please log into your account (see “Logging into your account using the Web GUI”)
- After verifying your credentials, click the **Administration** link from the menu toolbar.



You will see a list of the user accounts. If many user accounts are available please click one of the alphabetic links (or click **Select all users**) to see user accounts.

For each user account you will see the number of sensors, requests per hours and the last access date and time. You can click on the links on the right to

- Review and edit a user’s groups, servers, and sensors by clicking the user’s **Home** link.
- Review and edit a user’s account settings (e.g. notifications and schedules) by clicking the **My Account** link.
- Review and edit a user’s details (username, available sensors, etc.) by clicking the **Edit** Link**.**
- Enable/disable the account login as well as the monitoring for a user by clicking the **Pause/Resume** Link. Note: If a user is paused by the admin his login is disabled as well.
- Delete a user by clicking the **Delete** Link.

Note: All of the users will be displayed under the **Users Heading** including the Administrator.

Adding New Users

To add new users

- Please log into your account (see “Logging into your account using the Web GUI”)
- After verifying your credentials, click the **Administration** link from the menu toolbar.
- Click the **Add User** Link.

This opens the User Data Window. Now you can enter the new user’s data:

- **Email/Login name**—this is the user’s login name for IPCheck Server Monitor. IPCheck will send the user’s password to this address.
- **Password**- The user’s password can be set here
- **First Name**—the account holder’s first name
- **Last Name**—the account holder’s last name

- **Company**—the account holder's company
- **Street**—the account holder's street address
- **Zip**—the account holder's zip code
- **City**—the account holder's city
- **Country**—the account holder's country
- **State**—the account holder's state
- **Phone**—the account holder's phone
- **Fax**—the account holder's fax
- **Timezone**—the account holder's timezone
- **Report Schedule**—use the drop-down menu to select a frequency of report generation
- **Latency for warnings**—specify a time (in seconds) after a sensor has reached its warning threshold when the warning notification will be sent
- **Latency for errors**—specify a time (in seconds) after a sensor has reached its error status when the warning notification will be sent
- **Latency for escalations**—specify a time (in seconds) after a sensor has reached its escalation threshold when the warning notification will be sent
- **Maximum number of sensors**—You can limit the maximum number of sensors a user may use by entering the number here. "-1" means no limit.
- Click the **OK Button** when finished

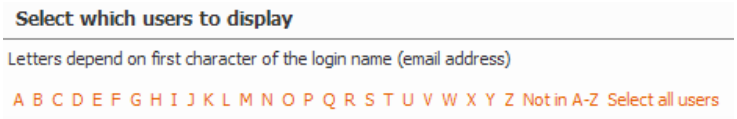
The new user will receive an email with his password and can log into the site right away.

Editing User Settings (ISP Edition only)

In the ISP edition you can set a number of settings on a "per-user" basis.

To edit a user's settings:

- Please log into your account (see "Logging into your account using the Web GUI")
- After verifying your credentials, click the **Administration** link from the menu toolbar.
- Select the first character of the user account's email address



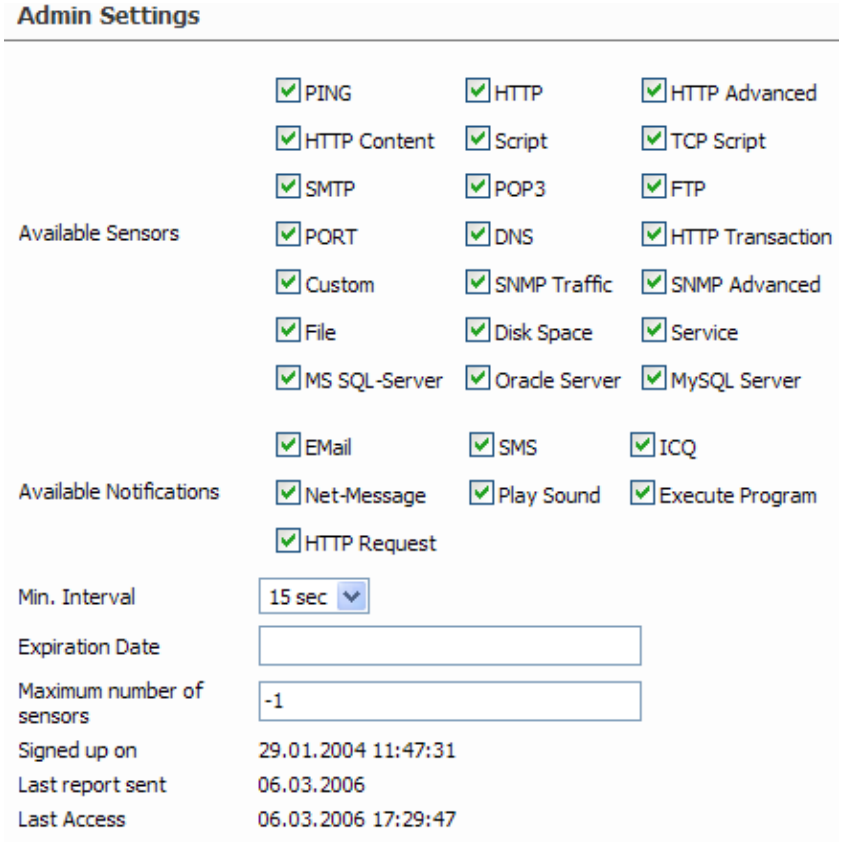
- Review and edit a user's details (username, available sensors, etc.) by clicking the **Edit** Link from the list of users**.**

You will then be able to set the following settings for this user:

- You can enable and disable the sensor types that are available for this user
- You can enable and disable the notification types that are available for this user

- You can set the minimum interval that this user is allowed to use
- You can set an expiry date for this user (the account will be automatically disabled after this date)
- You can select the maximum number of active sensors for this user

You will also see the time and date when the user has logged in for the last time and when the last HTTP request was made using this account.



Editing ISP Settings (ISP Edition only)

Please see “Control Panel ISP Settings Tab” in the Control Panel section for details.

Reporting and Graphing

Creating Reports and Graphs

You can create graphs and reports of historical monitoring data for each sensor and even compare two sensors. To get started:

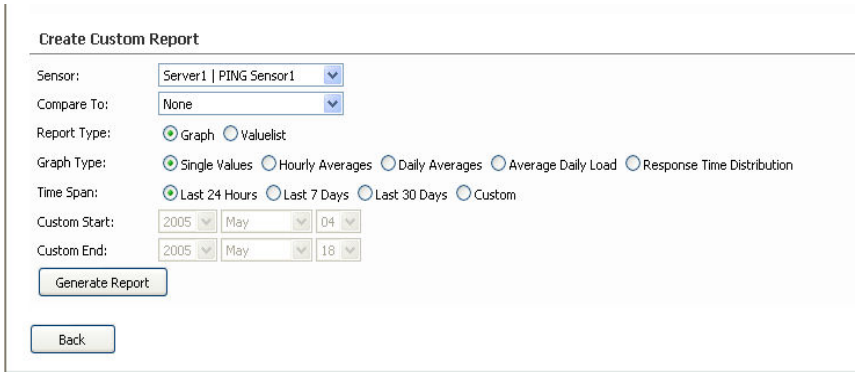
If you use the Web GUI:

- Please log into your account (see “Logging into your account using the Web GUI”)
- From the **Account Homepage** select click the **Minigraph** of the sensor for which you would like to create a report or
- Move the mouse over the “>” link of the sensor you want a report for and select one of the **Graph** Links or the **Info&Custom Graph** link.

If you use the Windows GUI:

- Please start the Windows GUI (see “Starting the Windows GUI”)
- Right click the sensor you want a report for and select one of the graph links or **Custom Report**.

This will either show the report directly or bring you to the Custom Report window.



To generate a customized report, you can specify the following information:

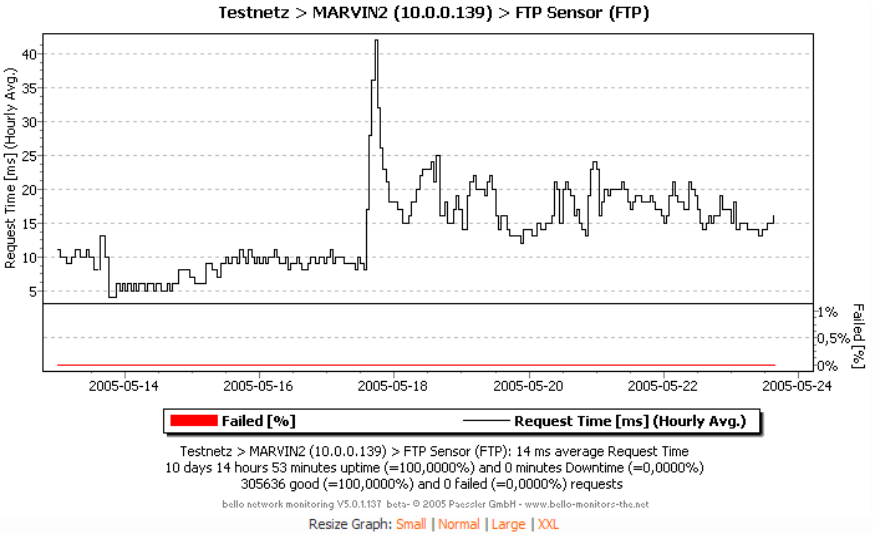
- **Sensor—**use the drop-down menu to select the sensor for which you would like a report generated.
- **Compare—**IPCheck Server Monitor allows you to generate reports that compare different data. Only supported by reports of type ‘Graph’! To create a comparison report
  - Use the drop-down menu to select a group, server, or sensor

- If you don't want to generate comparison data, select the **None Option**.

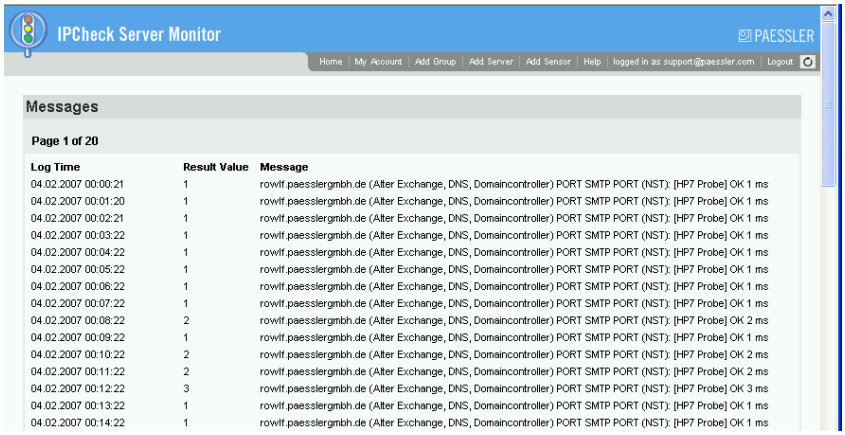
- **Type—**select the type of report you would like generated: **Graph** or **Value list**
- **Graph Type**: Select the type of graph you want to have created (If you select 'Value list' above you always get 'Single Values')
  - **Single Values**: Draws a graph for all individual results (recommended for time spans up to 2 days)
  - **Hourly Averages**: Draws a graph with the hourly averages of the monitoring results (recommended for time spans of up to 14 days)
  - **Daily Averages**: Draws a graph with the daily averages of the monitoring results (recommended for time spans of more than 14 days)
  - **Average Daily Load**: Draws a graph with the average daily load curve (the 24 average values for each hour of the day) calculated for the given time.
  - **Response Time Distribution**: Shows the daily distribution of the request latency.
- **Time Span—**Choose a predefined timespan or choose custom and enter the desired dates below.
- **Start—**select the start date for the report (for custom time span).
- **End—**select the end date for the report.

When finished click the Generate Report Button. This will open the Report for Sensor Window.

If you selected the Graph option from the type section you will see a graph with the Request times along with the selected dates. To resize the graph click one of the corresponding links below the graph.



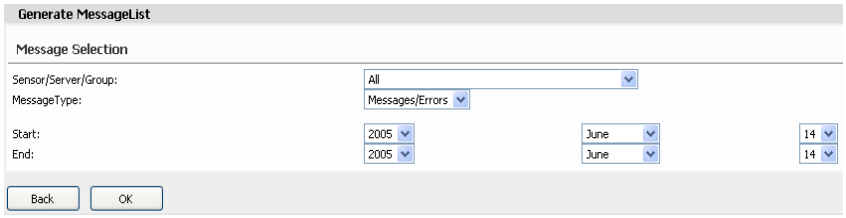
If you selected the Value list option from the type section you will see a list starting with the Log Time, Result Value, and the Message that was given.



Reviewing Messages/Errors

You can access the error data through the web interface, On your personal homepage you can always see a list of the latest errors, UP and DOWN messages:

The **Messages/Errors Section** displays messages from all of the sensors. The RSS Button adds an RSS feed to an RSS Reader (if one is installed). Click the **More Button** to generate a more comprehensive message list. This will open the **Generate Message List Window.**

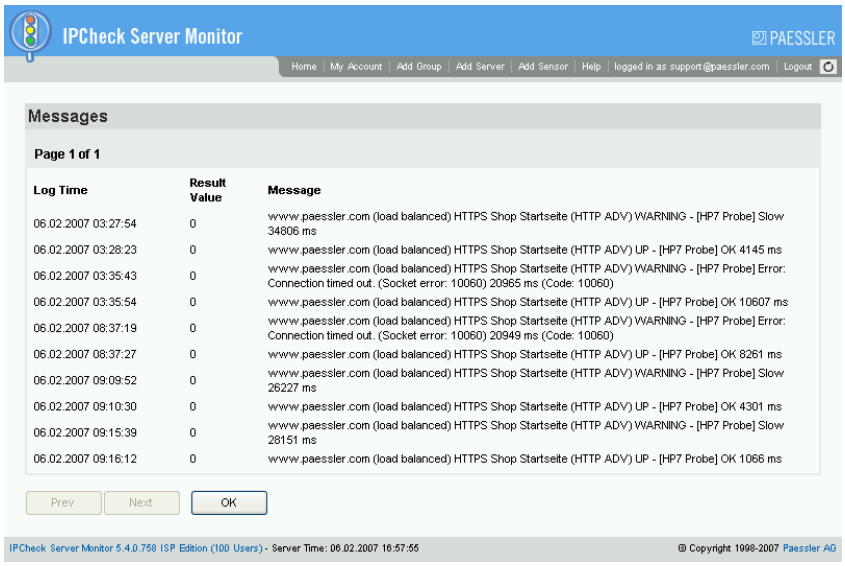


The **Generate Message List Window** allows you to create a list of all messages that have been logged for a specific reporting period.

- **Sensor/Server/Group**—use the drop-down to select a specific element you have configured or select the **All** option to return messages for all elements
- **Message Type**—use the drop-down menu to select what types of messages to generate in the list. Options include
  - Messages/Errors (system errors/messages like 'Notification triggered')
  - Failed Requests (only bad requests that return with an error)
  - All (including good requests. Can produce lengthy lists!)
- **Start**—use the year, month, and day drop-down menus to specify the start date of the message list you are going to generate. No messages **prior** to this date will be included.

- **End**—use the year, month, and day drop-down menus to specify the end date of the message list you are going to generate. No messages **after** this date will be included.
- Click the **OK Button** when finished.

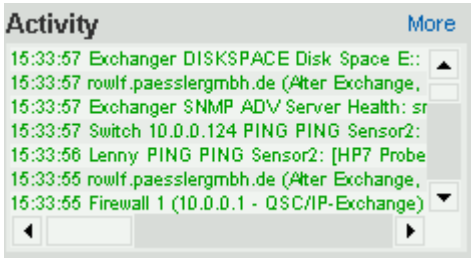
You will now get a list of the filtered messages, use **Prev** and **Next** to navigate in the list.



When you are finished reviewing the messages in this window select the **OK Button.** This will then take you back to the **Account Homepage.**

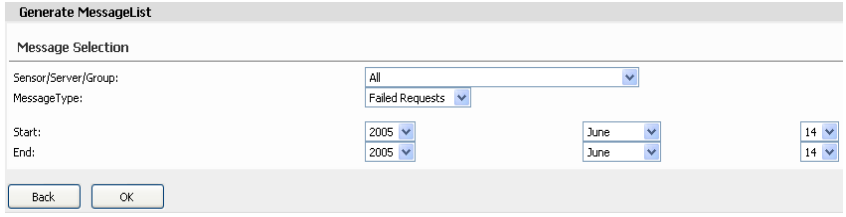
Reviewing the Complete Activity Data

You can access the complete activity data which include all successful and all failing requests. On your personal homepage you can always see a list of the latest activity:



The **Activity Section** displays all of the current messages for the servers being monitored in IPCheck Server Monitor.

Click the **More Button** to generate a more comprehensive message list. This will open the **Generate Message List Window.**

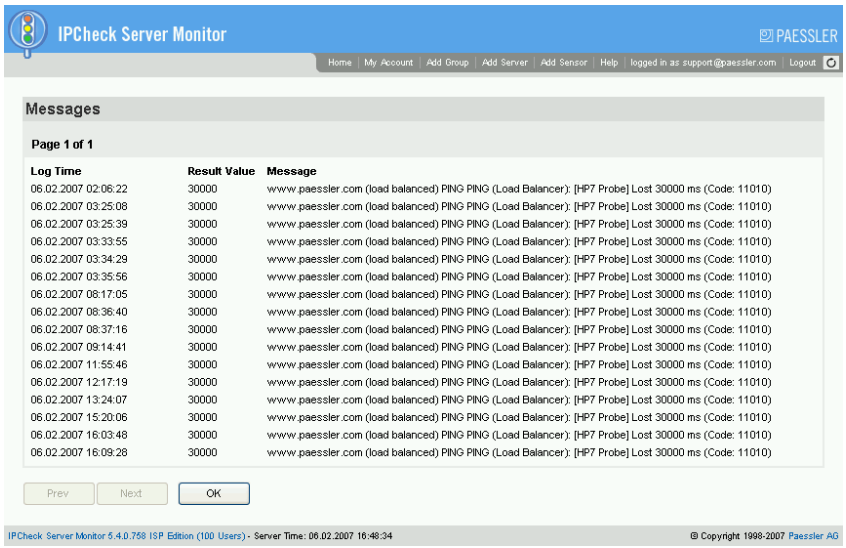


The **Generate Message List Window** allows you to create a list of all messages that have been logged for a specific reporting period.

- **Sensor/Server/Group**—use the drop-down to select a specific element you have configured or select the **All** option to return messages for all elements
- **Message Type**—use the drop-down menu to select what types of messages to generate in the list. Options include
  - Messages/Errors (system errors/messages like ‘Notification triggered’)
  - Failed Requests (only bad requests that return with an error)
  - All (including good requests. Can produce lengthy lists!)
- **Start**—use the year, month, and day drop-down menus to specify the start date of the message list you are going to generate. No messages **prior** to this date will be included.
- **End**—use the year, month, and day drop-down menus to specify the end date of the message list you are going to generate. No messages **after** this date will be included.
- Click the **OK Button** when finished.

You will now get a list of the filtered messages, use **Prev** and **Next** to navigate in the list.

The Generate Message List Window accessed from ‘Activities’ or ‘Messages/Errors’ is the same with one minor difference: The default value for ‘Message Type’ is different



When you are finished reviewing the messages in this window select the **OK Button.** This will then take you back to the **Account Homepage.**

Working with Email Reports

Depending on your report schedule setting (see “Managing "My Account"”) you will receive a report by email every day, week or month.

Additionally you can request a report at anytime using the **Account** pop-up menu.

Email reports contain a list of all servers and sensors with their monitoring statistics:

Monitoring Report

Here is the monitoring report for your account name [redacted]:

Report from 21.05.2005 00:00:00 to 22.05.2005 00:00:00

Sensor Type	Sensor Name	Good Requests		Uptime	Failed Requests		Downtime	Average	
Group: Group1									
www.paessler.com									
HTTP	HTTPSensor1	23	92,000%	23h 44m	2	8,000%	0h 15m	864 ms	Request Time
mail.paessler.com									
SMTP	SMTP Sensor1	24	100,000%	1d 0h 0m	0	0,000%	0h 0m	29 ms	Request Time
HTTP	mail.paessler.com	0	0,000%	0h 0m	0	0,000%	0h 0m	0 ms	Request Time

- Good Requests: The number of successful requests this sensor was able to complete during the report's time span. The percent value shows the percentage of good requests compared to the total number of requests.
- Failed Requests: The number of unsuccessful requests for this sensor during the report's time span. The percent value shows the percentage of failed requests compared to the total number of requests.
- Uptime: The time span that the monitoring system was able to complete successful requests to the sensor. Only times between two successful requests are counted as UP. (Please note: Downtime plus uptime can be shorter than the report time span).
- Downtime: In this time span the sensor was not able to complete successful requests. Times between two failed requests and times between one good and one failed requests are counted as DOWN.
- Average: The average value of all successful requests for this sensor during the report's time span (in milliseconds for most sensors).

Tips&Tricks

Visit the Paessler Knowledgebase

Please visit the Paessler Knowledgebase regularly at www.paessler.com/support for up-to-date information and technical articles about IPCheck Server Monitor.

Automatic Network Discovery

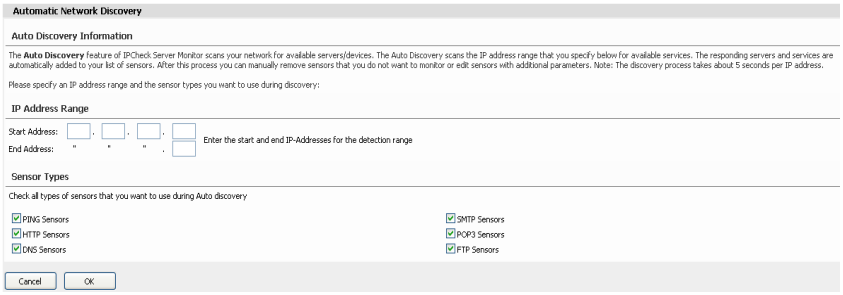
By selecting the **Automatic Network Discovery** option from the user menu (or by clicking the corresponding link on the main page) you can scan your network for servers and devices that IPCheck Server Monitor will be able to monitor for you.

Using this feature a basic monitoring for your network can be set up in a matter of minutes, regardless of the number of servers running.

Note: The Network Discovery only searches for a selection of simple sensor types and uses only the basic settings for these sensors to make the discovery easy to set up. After the discovery process has finished you should revise and eventually update the settings for all sensors!

Note: Be aware that the automatic network discovery is actually a scan of your network. Make sure you are legally authorized and technically allowed to run a network scan on the selected addresses.

Clicking the **Automatic Network Discovery** link will show the following form:



In the **IP Address Range**, enter the IP address of the first and last node that should be scanned. Note: Do not set .0 or .255 as starting or ending range, as these address values are reserved and will produce an error.

Then, select the types of sensors you would like to start scanning for. Click OK when finished.

This starts the scanning process. It takes about 5-15 seconds per IP address.

During the scanning process IPCheck will first generate all the selected sensors for the given address range. Then all sensors are executed once. If a sensor fails upon this first test it is removed from the list.

As soon as the scan is finished you will get the list of devices and services found during the IP Address Range scan.

Working with Network Maps

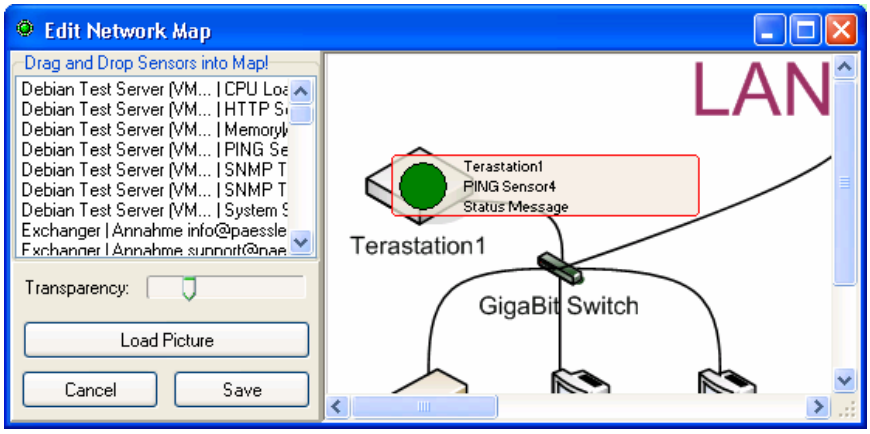
For each group of servers you can set up a graphical network map. Basically this is a custom bitmap which you upload onto the IPCheck webserver and to which the webserver adds small status icons. These icons show the states of the sensors using the colors green, yellow, blue or red as well as the server name, sensor name and the last status message.

For example if you upload a graphical map of your network (e.g. created using Visio) as your image you can place the icons for the sensors next to the servers' icons on the map to show an easy-to-understand overview of your network's status.

Creating a Network Map

Note: To create or edit a new network map for a group you must use the Windows GUI.

After launching the Windows GUI click the desired group with the right mouse button and choose "Edit Network Map" from a group's context menu.



Click on **Load Picture** to load the background image you want to use.

Then drag-and-drop the desired sensor(s) from the list on the left into the image and position them as desired using the mouse.

To delete a status icon click it once with the mouse (it will show a red border), then hit the DEL key on your keyboard.

When you are satisfied with your settings click on **Save** to upload the settings to the server.

Viewing Network Maps

After setting up a network map using the Windows GUI there are several ways to view the network map with updated sensor status:

- **WebGUI** – After logging into your account simply click on the **Map** link next to a group's name
- **WindowsGUI** – Right click a group entry and choose **View Network Map** from the popup menu.
- **Published Groups** – If you have enabled the **Publish Group** setting of a group you can find links to the group's HTML status, the network map webpage as well as the network map image in the group's settings page. These URLs do not require a login so you can use these URLs e.g. to include monitoring information into Intranets, Extranets, etc.

Paessler SNMP Helper

Paessler SNMP Helper enables IPCheck Server Monitor (or its sister product PRTG Traffic Grapher) to collect in-depth performance information from Windows servers and workstations. Up to several thousands parameters and performance counters of a PC can be monitored with just a few mouse clicks.

SNMP Helper License Options

There are three different flavors available:

- Freeware Edition: Supports monitoring of memory, disks, network, and processors and comes free with the downloads of PRTG Traffic Grapher and IPCheck Server Monitor
- Pro Edition: Adds more than 2000 performance counters for servers and workstations running Windows 2000, XP or 2003
- Pro Extensions: Are available for in-depth monitoring of MS Exchange Server, MS ISA Server, MS SQL Server and MS Biztalk Server

Fully Integrated Into Paessler's Monitoring Products

Simply install SNMP Helper on Windows 2000, XP or 2003 systems and you can monitor numerous performance counters using PRTG Traffic Grapher and IPCheck Server Monitor - simply by adding new sensors. Both our monitoring products have built-in support for the additional counters. Within a few minutes you will be able to monitor values like "disk writes/s", "DHCP Server Requests/s", "Exchange Server: Messages/s", "SQL Server: Requests/s", and many more.

In our knowledge base at www.paessler.com/support we have compiled a list of recommended performance counters that you can monitor using SNMP Helper.

SNMP Helper Freeware Edition

The Freeware Edition supports about 80 performance counters and is part of PRTG Traffic Grapher and IPCheck Server Monitor. You must install SNMP Helper on the machine(s) you want to monitor. After installation of PRTG or IPCheck you will find the SNMP Helper Freeware setup files in a subfolder. Run this setup on all the systems you want to monitor. Afterwards you can monitor the additional system parameters by simply adding new sensors.

SNMP Helper Pro Edition and its Extensions

The Pro Edition of SNMP Helper offers the ability to monitor more than 2000 counters for Windows 2000, XP, and 2003. With the optional SNMP Helper Extensions you can additionally monitor the following Microsoft Server applications:

- MS Exchange Server: more than 1726 performance counters
- MS SQL Server: more than 511 performance counters
- MS Biztalk Server: 32 performance counters
- MS ISA Server: 149 performance counters

Detailed lists of supported counters are available at www.paessler.com/snmphelper.

To use SNMP Helper Pro you must either purchase a license or you must request a Free 30 Day Trial License. Either way you will receive a license key and the installation files via email. Please install the software on the server that you want to monitor and enter the license key that comes with it. Afterwards you can monitor the additional system parameters by simply adding new sensors to IPCheck and PRTG.

Installing Paessler SNMP Helper

Paessler SNMP Helper is a small library that makes it much easier to access system parameters of Windows machines using SNMP. If the SNMP Helper is installed PRTG Traffic Grapher will be able to read various system parameters from this machine.

SNMP Helper can be used on Windows XP, 2000 and 2003.

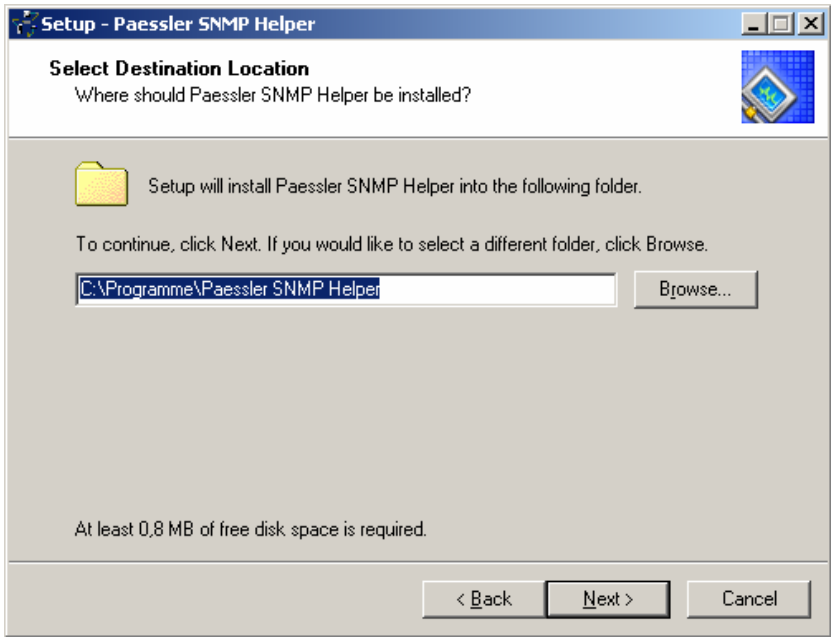
You only need to install SNMP Helper on a computer if you want to monitor it! You must install SNMP Helper on each Windows computer you want to monitor using the additional sensors.

First make sure to install the Windows SNMP component using the **Add/Remove Software** control from your **Windows Control Panel**.

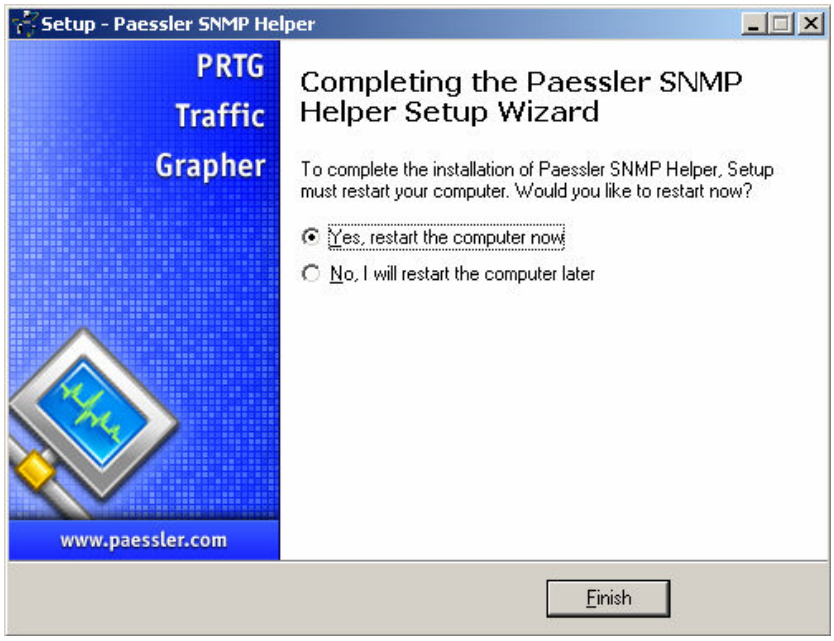
In order to install Paessler SNMP Helper, launch the **Paessler SNMP Helper Setup.exe** file located within your PRTG Traffic Grapher installation directory after you have installed PRTG Traffic Grapher.

This will launch the Paessler SNMP Helper Setup Wizard.

Once you have read the information found in the welcome screen click Next to continue installation.



From the Select Destination Location window use the Browse button to select a directory in which to install the Paessler SNMP Helper. You can also enter the destination location directly in the provided box. Once you have chosen your destination location, click on Next to continue.



Once Paessler SNMP Helper is installed, the program will prompt you that it needs to restart the machine in order to complete the installation process. If you are ready to restart your machine, select this option from the provided menu. Otherwise, select to restart your computer later.

Note: Keep in mind – in order for the Paessler SNMP Helper to work properly, your system has to be restarted. If you opt to restart the machine later you will need to do so before the Paessler SNMP Helper can be fully put into operation.

Importing MIBs using Paessler MIB Importer and Converter

In order to import MIB files from third parties (usually the vendor of a device) into PRTG you must convert the files into OIDLIB files.

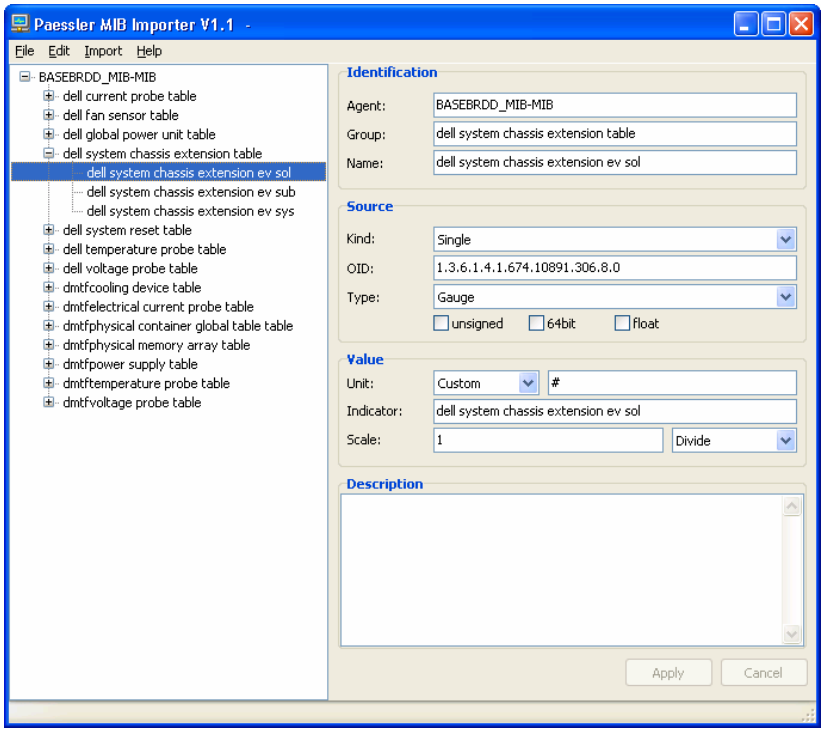
The MIB Importer and Converter Tool is available free of charge on the Paessler website at www.paessler.com.

How to import an MIB File

Instructions:

- Download and install Paessler MIB Importer
- Copy your vendor specific MIB file(s) into the /**mib** subfolder of your installation folder
- Start the program from the Start menu **Start|Programs|Paessler MIB Importer**
- Use the **Import** menu item to load and convert the MIB file
- Please understand that your import may fail and some edits may be necessary for the MIB import to go through.
- After a successful import please review the values
- It is very likely that you have to edit the list and/or the strings.

- Finally use **File|Save For...** to save the new .oidlib file and - if necessary - copy it into the **/snmplibs** subfolder of your PRTG or IPCheck installation.
- Restart PRTG or IPCheck and create new SNMP sensors using the new oidlib file



Planning large Installations of IPCheck Server Monitor

When planning large installations of IPCheck Server Monitor 5, there are several parameters to take into account that influence the maximum number of Users/Servers/Sensors that can be monitored using one single installation.

Memory Usage

Per user you must supply about 5 KB of RAM. Per sensor you must supply about 5 KB of RAM without the recent history graphs and about 10k with recent history graphs enabled.

Sample calculation: 1000 users with 5 sensors each: 1000x5kb plus 5x1000x10kb => 55 MB RAM

Note: To keep system performance up, this memory should be physically accessible to avoid slow page file swapping!

CPU Load

A monitoring load of 30 requests/s (about 2.000 requests per minute, which means monitoring 2000 sensors with 60 sec interval) creates a CPU load of about 20% on a 2 GHz Intel machine. With an aggressive configuration we would recommend not to cross 40-50% CPU load (e.g. to save CPU cycles for the web server) which gives us about 5.000 requests per minute, preferably using a multi processor machine.

Sample Calculation: 1000 users with 5 sensors each with an interval of 1 minute: 5x1000 = 5.000 requests per minute

BTW: By simply allowing the users a minimum interval of e.g. 5 minutes this load can be lowered to 1.000 requests per minute, etc.

Network Load

Per monitoring request about 200 bytes of internal communication plus the traffic for the sensor (from a few bytes for a PING up to several kb for an HTTP request) is transferred. Using an average of e.g. 1 kb per sensor request a monitoring of 5.000 requests per minute creates a bandwidth load of about 100-150 kb/s.

Plus, the traffic of the web server, which is tiny compared to this.

Multi Location Monitoring Using Remote Probes

By default all monitoring requests are sent out from the machine you have initially installed the IPCheck software on (called "Local Probe").

To achieve multi location monitoring you can install additional "Remote Probes" on other machines that can reside in your local LAN, in your DMZ, or anywhere in the world, as long as they are reachable via the net. This way you can monitor your network devices from different perspectives.

To create a "Remote Probe" you must install the "IPCheck Probe Service" on the desired machine. Then you must set up a few parameters on the remote machine and the machine your main IPCheck installation runs on. If you use custom sensors make sure to also copy the necessary script files to the remote probe machine!

Note: This feature is not available in the Freeware Edition!

Setting up a Remote Probe

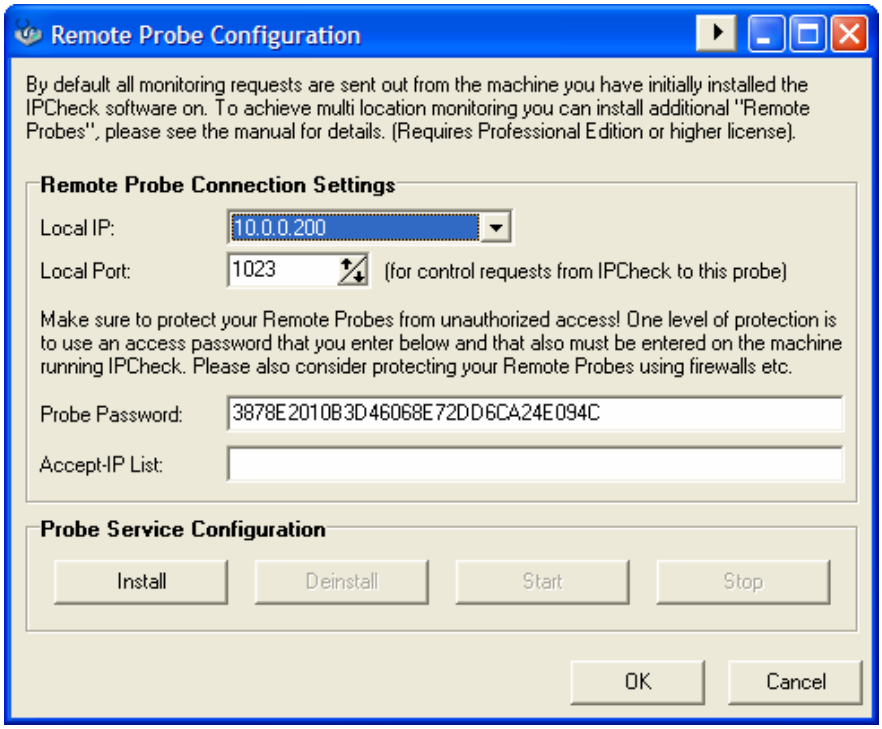
Please download the file "IPCheck Server Monitor – Remote Probe Setup.exe" from the Paessler website (www.paessler.com) or find the file in the **Remote Probe Setup** subfolder of your IPCheck Server Monitor installation folder.

Make sure that the version numbers of both the probe service and your main IPCheck installation are the same.

Run the setup routine and in the end you will get the Probe Service configuration dialog.

Configuring a Remote Probe

Please start the remote probe configurator from the Start menu.



- **Local IP**-If the machine has more than one IP address please choose one from the list. This will be the IP address that you have to enter in the Admin Control Panel of your main IPCheck installation for this remote probe.
- **Local Port** -Please choose the ports you want to use. Using the defaults should be fine in most cases.
- **Probe Password**-Make sure to protect your probe using a password. This must be the same password as you are entering in your main IPCheck installation as well as all other probes!
- **Install/Deinstall/Start/Stop**-Use these buttons to control the behavior of the service.
- **Restrict Ips: xx**

Click OK when you are ready.

Firewall Issues

The main IPCheck server service communicates with the remote probe(s) using one TCP/IP connections using the port number that you enter in the configuration. You must make sure that these IP packets are being transported by your network (e.g. enable NAT mapping for NAT networks).

Configuring Remote Probes in the Admin Control Panel

After installing and configuring the remote probe service on your remote machines you must enter the IP addresses of the new probes in the Admin Control Panel of your main IPCheck installation. See the "Multi Location Monitoring Using Remote Probes" section above.

Now the users can choose the local and the remote probes from a drop down for each sensor.

Publishing Current Monitoring Status

If you are monitoring your network using IPCheck Server Monitor it is a good idea to make the current network status available to the other employees, etc. in your company.

Using the "Publish Group" feature of IPCheck Server Monitor you can publish the current monitoring status of your network in your Intranet or any other website.

But there are also even more sophisticated options, please read on.

Simple Solution: Publishing a Group of Servers

To make a group's status publicly available

- Open the IPCheck Server Monitor web interface
- Log into your account
- For the group you want to publish click on the **Edit Group** icon
- Enable **Publish Group**
- Note the **Public URL** (this is the URL where the group's data can be accessed publicly - we need the URL later)
- Click **OK**

Paste the public URL into a browser and test it.

Advanced Options: Including Monitoring Information In Your Intranet or Website

There are five options:

- Using network map images in your own website: Simply copy the URL of a networkmap and use the image in your HTML.
- Using Recent Monitoring Data images (“minigraphs”) in your own website: Simply copy the URL of a MiniGraph and use the image in your HTML. Using the URL’s parameters you can change the background color and size of the image
- Linking to the public URL from your Intranet or Website: This way the visitor can access the information, but only one group at a time and without your website's look and feel
- Showing the public URLs in IFRAMEs on a page of your website or Intranet: This gives you the possibility to have the monitoring data on a webpage in your look and feel and you can even show the status of several groups on one web page
- Using a PHP script to access the monitoring results and publishing them in your own website

Please visit the Paessler Knowledgebase at www.paessler.com/support for more articles and technical details about these approaches.

Changing the Look&Feel of IPCheck Server Monitor

If you want to change the colors, images, and logos of the web interface of IPCheck Server Monitor there are several items you can edit

- Web GUI Skin: A “skin” contains the colors, images, etc. of the Web GUI. Here you can edit the CSS files, the images, and the templates for the HTML <table> tags used to create the final webpages
- Web Templates: These “templates” are used to build the HTML framework of the web GUI’s pages, e.g. the content of the headers and footers is specified here

Note: If you install new versions of the IPCheck software make sure to make backup copies of your edited files, they may be overwritten by the installer!

Editing Web Skins

IPCheck Server supports switching between several skins. Two skins are already included after the initial installation. You can choose between the installed skins in the Ipcheck Control Panel.

If you want to editing you own skins:

- Choose an existing skin to begin with
- Copy the skin’s folder in the “webskins” subfolder of your IPCheck installation folder
- Edit the files in this new folder
- Open the Control Panel and select your new skin
- Restart IPCheck’s webserver service to apply your changes

When editing the skin it is recommended to restrict your edits to the following files, to reduce the risk of breaking functionality:

- /css/ipcheck.css
- /container*.htm
- all image files

Note: To edit the HTML files please do not use an HTML editor that actively changes the HTML code (e.g. FrontPage), because very often the code for the placeholders are changed and IPCheck Server Monitor will not work with these files. We recommend to use Windows Notepad or any other plain text editor. Also, always make a backup copy of the original files before changing them!

To use your own Logo or server/sensor icons you have to replace the files in the images and images/icons subfolders of your web skin folder. Make sure that all images have the same size (pixel width/height) as the original files to avoid a broken layout.

Editing Web Templates

Webtemplates are used to create pages or parts of pages. Please be very cautions with changes to these templates, especially when editing the placeholders (looking like <#placeholder>), otherwise you may break IPCheck’s functionality.

Here is a list of the most important template files:

- ipchome.htm: Website homepage
- outbase.htm: Main page with groups/servers/sensors
- header.htm: the starting HTML page
- logo.htm: the top navigation and logos

- footer.htm: the final HTML code of all pages

Setting Up SMS and Pager Notifications

If you want to get notified about server and network outages on your cell phone or pager you must set up an account at a SMS gateway service or provide a custom URL that send one message.

The SMS gateway services allow you to send SMS and pager messages from IPCheck Server Monitor which already include the APIs of various SMS services.

This service is not free and you must set up an account, supply your credit card details, and purchase a pre paid amount of messages you can send (credits). Pricing depends on the country you send the messages to - check out their price list and world wide coverage information.

Note: You do not need the dedicated server some services offer! Setting up a simple account and purchasing a reasonable number of credits is fine!

Here is what you need to do:

- Create an account at one of the services: www.bulksms.co.uk or www.smsdriver.com (Note: we do not recommend www.smsxchange.com anymore)
- Note: Please see the IPCheck Control Panel if your version of IPCheck already supports other services, too
- Some of these services will send your password to your cell phone

After you have confirmed your account with one of the services:

- open the IPCheck Server Monitor Admin Control Panel (Start|Programs|IPCheck Server Monitor|IPCheck Admin Control Panel)
- Select the **Messaging** tab
- Choose the desired service, enter your user ID and password
- Click **Apply** to restart the IPCheck services

To test the delivery of the messages

- Log into the web interface of your IPCheck Server Monitor installation
- Click on **My Account**
- Below **Notifications** select an existing notification or create a new one
- Scroll to **SMS and Pagers** and enter the country code and number of your cell phone or pager
- Click **OK** to accept these settings
- Click the **Test this notification** link of the notification you just edited

You should now receive the message in a matter of a few seconds.

Installing a custom SSL key

IPCheck Server Monitor comes with a default SSL certificate so you can securely use the web interface through HTTPS. But when a browser connects to this server it will always show a message that the certificate is not correct (although the transmission is already secure).

If you want this dialog to disappear you must create, order, and install a full certificate as follows.

Install Open SSL

- (if you don't have access to a machine with one, most Linux distributions should have it)
- You can get a windows installer here: http://www.shininglightpro.com/products/Win32OpenSSL.html
- Or check the list at the official website: http://www.openssl.org/related/binaries.html
- If you have to use a different operating systems check http://www.opensll.org for details

Create your CSR (Certificate Signing Request)

- 1. Open a command line window
- Start->Run->"cmd"
- 2. Change to the folder the openssl.exe is located
- e.g. cd c:\ssl\src\apps (depending on your ssl installation)
- 3. Execute the following line:

```
openssl req -new -nodes -keyout ipcheck.key -out
server.csr -config openssl.cnf
```

- Answer the questions! What to enter depends on the registration company you want to use.
- For e.g. InstantSSL check this url for more details: http://www.instantssl.com/ssl-certificate-support/csr_generation/ssl-certificate-openssl.html
- This will create two files: The file ipcheck.key contains a private key. Do not disclose this file to anyone! The server.csr is your certificate request file.

Request your certificate

- Go to your certificate company and order the certificate.
- Provide the **server.csr** file you have created above when asked for it.

You should receive 2-3 files from the certification company

- Rename the server certificate file to ipcheck.crt
- Put all other files (root certificates from the issuer) into one text file and name it root.pem

Copy the files into the cert folder

- Copy the following files into the /cert subfolder of your IPCheck installation replacing the existing demo certificates:
  - ipcheck.crt (the certificate of your server)

- root.pem (the root certificates of the issuer)
- ipcheck.key (pivate key of your server)

Now restart the IPCheck Server Monitor service.

Appendix

Support

Please visit http://www.paessler.com/support for support options.

Copyright

For the latest version always check http://www.paessler.com/ipcheck

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Consulting and Custom Software

Paessler offers consulting and the development of custom software. Please inquire via email to sales@paessler.com.

General License Terms and Conditions

ATTENTION: You will find these General Terms and Conditions within the Paessler Software that you download and these General Terms and Conditions govern the use of the Paessler Software. To complete the installation of and to use the Paessler Software, you will be required to agree to the terms defined below.

PLEASE READ THESE GENERAL TERMS AND CONDITIONS CAREFULLY.

§ 1 TERRITORY

These General Terms and Conditions govern the use and maintenance of the Paessler Software for customers who use the software outside the Federal Republic of Germany. The use of the Paessler Software in the territory of the Federal Republic of Germany is governd by the "Allgemeinen Lizenzbedingungen der Paessler AG".

§ 2 DEFINITIONS

Site: Defined and/or restricted area (e.g. campus, premises) of which the diameter does not exceed 6,21 miles (10 kilometers), and which is used exclusively by the customer;

Customer: Contract partner who licensed the Paessler Software;

User: Person working with the software.

§ 3 PRE-CONDITION

PAESSLER AG IS WILLING TO LICENSE THE PAESSLER SOFTWARE TO THE CUSTOMER ONLY ON THE CONDITION THAT THE CUSTOMER ACCEPTS ALL OF THE TERMS CONTAINED IN THIS AGREEMENT.

§ 4 ASSIGNMENT

BY DOWNLOADING OR INSTALLING THIS SOFTWARE, THE CUSTOMER ACCEPTS THE TERMS OF THESE GENERAL TERMS AND CONDITIONS AND INDICATES THE ACCEPTANCE THEROF BY SELECTING THE "ACCEPT" BUTTON AT THE BOTTOM OF THESE GENERAL TERMS AND CONDITIONS. IF THE CUSTOMER IS NOT WILLING TO BE BOUND BY ALL THE TERMS, THE CUSTOMER SELECTS THE "DECLINE" BUTTON AT THE BOTTOM OF THE AGREEMENT AND THE DOWNLOAD OR INSTALL PROCESS WILL BE INTERRUPTED.

§ 5 LICENCES

Paessler grants to the customer a non-exclusive license to use the Paessler Software in object code form as described in these General Terms and Conditions.

1. “Commercial-Edition”

The “Commercial-Edition-Software” is designed for the exclusive use by the customer. For the grant of license a fee has to be paid.

The „Commercial-Edition“-License is non-transferable. Any attempt to share or transfer a licence without the consent of Paessler shall be a violation of this license agreement and international copyright laws, and will result in the forfeit of all benefits and rights as a user.

A. Single- and Multi-user license

The customer purchases a certain number of licences according to the confirmation of order. The customer is only allowed to install and use the maximum number of purchased licences simultaneously. This means the customer may only use the modules contained within the software for which the customer has paid a license fee and for which the customer has received a product authorization key from Paessler.

If the number of licenses allowed to be use simultaneously is exceeded, Paessler has to be informed and the exceeded number of installations have to be prevented through suitable means.

If the exceeded number of installations can not be prevented by organizational oder technical means, the customer is obliged to purchase the relevant number of licences.

B. Site- License

Paessler grants the customer the right and license to install and use the software on multiple computers for one or more users.

This license, however, is restricted to the use within one location (site). In the case of the software being used in other locations than those agreed upon, the customer is obliged to pay the license fee due for the location-license as a compensation.

C.Verification

The customer grants Paessler or its independent accountants the right to examine the customer´s books, records, and accounts during the customer's normal business hours to verify compliance with the above provisions.

2. “Trial-Edition”

"Trial Edition" means a free-of-charge-version of the software to be used only to review, demonstrate, and evaluate the software. The Trial-Edition may have limited features, and /or will cease operating after a pre-determined amount of time, due to an internal mechanism within the Trial-Edition.

No maintenance is available for the Trial-Edition.

The software may be installed on multiple computers for private and commercial use.

The software may be transferred to third parties (e.g. on homepages or ftp-servers) as long as the program remains unchanged and is offered free of charge. A chargeable transfer of the “Trial-Edition” (chargeable download, CD in Magazins) requires previous written permission by Paessler.

§ 6 RESTRICTIONS

Software under these General Terms and Conditions is confidential and copyrighted. The title to the software and all associated intellectual property rights are retained by Paessler.

The customer may not modify, decompile, or reverse engineer said software.

The customer may make archival copies of the software.

§ 7 MAINTENANCE

Object of the Maintenance Agreement is the maintenance of the “Commercial-Edition-Software” according to the confirmation of order.

1. Scope of Maintenance

The customer is granted the opportunity of downloading the current version of the purchased Commercial-Edition-Software and requesting a license-key anew for the duration of the Maintenance Agreement.

The customer will receive support for the duration of the Maintenance Agreement.

2. Duration

The Maintenance Agreement has a duration of 12 months and may be prolonged.

3. Beginning

The Maintenance Agreement starts with the sending of the affirmation of contract. The affirmation includes the download-link and the licence-key of the software.

4. Prolongation

Prolongation may only take place until the end of the duration of the Maintenance Agreement.

§ 8 PRICE

All levies, dues, taxes, duties, and other charges shall be borne by the customer.

§ 9 PAYMENT

The payment to be made by the customer is in any event due at the time delivery of the software is effected. The due time for payment arises without any further precondition.

The payment to be made by the customer is to be transferred as stated on the invoice to the banking account of Paessler without deduction and free of expenses and costs for Paessler.

In the event of delay in payment the customer will pay to Paessler - without prejudice to compensation for further losses — the costs of judicial and extra judicial means and proceedings as well as interest at the rate of 5 % over the base interest rate of the European Central Bank.

§ 10 LIMITATIONS FOR CUSTOMERS IN THE UNITED STATES AND UNITED STATES TERRITORY

1. LIMITED WARRANTY

Paessler warrants that for a period of ninety (90) days from the date of download the software files will be free of defects as regards the product under normal use. Except for the foregoing, software is provided "AS IS". The customer´s exclusive remedy and Paessler's entire liability under this limited warranty will be at Paessler's option to replace software media or refund the fee paid for the software. Any implied warranties on the software are limited to 90 days.

2. DISCLAIMER OF WARRANTY

UNLESS SPECIFIED IN THESE GENERAL TERMS AND CONDITIONS, ALL EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS AND WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT ARE DISCLAIMED, EXCEPT TO THE EXTENT ALLOWED BY APPLICABLE LAW.

3. LIMITATION OF LIABILITY

IN NO EVENT WILL Paessler BE LIABLE FOR ANY LOST OF REVENUE, PROFIT OR DATA, OR FOR SPECIAL, INDIRECT, CONSEQUENTIAL, INCIDENTAL OR PUNITIVE DAMAGES, HOWEVER CAUSED REGARDLESS OF THE THEORY OF LIABILITY, ARISING OUT OF OR RELATED TO THE USE OF OR INABILITY TO USE SOFTWARE, EVEN IF Paessler HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, EXCEPT TO THE EXTENT ALLOWED BY APPLICABLE LAW.

In no event shall Paessler's liability to the customer, whether in contract, tort (including negligence), or otherwise, exceed the price paid by the customer. The foregoing limitations shall apply even if the above-stated warranty fails its essential purpose.

If the Terms above are not applicable to the customer the following Limitations apply.

§ 11 INTERNATIONAL LIMITATIONS

1. Conformity of the Software

The software does not conform with these General Terms and Conditions if at the time the risk passes it is clearly different to the specifications, or in the absence of specifications, the software is not fit for the usual purpose.

Paessler is particularly not liable for the software being fit for a particular purpose to which the customer intends to put it or for the software´s compliance with the legal requirements existing outside the Federal Republic of Germany.

2. Examination and Notice of Lack of Conformity

The customer must examine the software as required by law.

The customer shall give notice of any lack of conformity to Paessler as required by law, in any event directly and in writing and by the quickest possible means by which delivery is guaranteed (e.g. by telefax).

3. Consequence of Delivering non-conforming Software

Following due notice of lack of conformity, the customer can rely on the remedies provided for by the UN Sales Convention in regard to the terms laid down in these General Terms and Conditions. In the event of notice not having been properly given, the customer may only rely on the remedies if Paessler has fraudulently concealed the lack of conformity.

The customer is entitled to demand delivery of substitute software or repair or reduction of the purchase price as set forth in and in accordance with the terms of the UN Sales Convention.

Irrespective of the customer's remedies, Paessler is entitled to repair non-conforming software or to supply substitute software.

4. Third Party Claims and Product Liability

A. Third Party Claims

Without prejudice of further legal requirements, third parties' rights or claims founded on industrial or other intellectual property only found a defect in title to the extent that the industrial and intellectual property is registered and made public in the Federal Republic of Germany.

The customer's claims for defects in title including those founded on industrial or intellectual property will be time-barred according to the same rules as the claims for delivery of non-conforming software.

Third parties not involved in the conclusion of contract based on these General Terms and Conditions in particular those purchasing from the customer, are not entitled to rely on any remedy provided for in this General Terms and Conditions or to raise claims against Paessler, founded on delivery of non-conforming software or defect in title.

B. Product Liability

Without prejudice to Paessler's continuing legal rights and waving any defense of limitation the customer will indemnify Paessler without limit against any and all claims of third parties which are brought against Paessler on the ground of product liability, to the extent that the claim is based on circumstances which are caused after risk passed by the customer.

5. Damages

A. Obligation to Pay Damages

Paessler is only obliged to pay damages pursuant to these General Terms and Conditions if it deliberately or in circumstances amounting to gross negligence breaches obligations owed to the customer. This limitation does not apply if Paessler commits a fundamental breach of its obligations.

Without prejudice to its continuing legal rights, Paessler is not liable for a failure to perform any of its obligations if the failure is due to impediments which occur, e.g. as a consequence of natural or political events, acts of state, industrial disputes, sabotage, accidents, or similar circumstances and which can not be controlled by Paessler through reasonable means.

The customer is required in the first instance to rely on other remedies and can only claim damages in the event of a continuing deficiency.

B. Amount of Damages

In the event of contractual or extra contractual liability Paessler will compensate the loss of the customer to the extent that it was foreseeable to Paessler at the time of the formation of the General Terms and Conditions.

§ 12 MISCELLANEOUS

1.Set off, Suspending Performance

Legal Rights of the customer to set-off against claims of Paessler for payment are excluded, except where the corresponding claim of the customer has either been finally judicially determined or recognized by Paessler in writing.

2. Place of Performance

The place of performance and payment for all obligations arising from the legal relationship between Paessler and the customer is Fürth (Germany).

3. Applicable Law

The legal relationship with the customer is governed by the United Nations Convention of 11 April 1980 on General Terms and Conditions for the International Sale of Goods (UN Sales Convention) in the English version.

Outside the application of the UN Sales Convention, the contractual and non-contractual legal relationship between the parties is governed by the non-uniform German law, namely by the BGB/HGB (German civil and commercial code).

4. Jurisdiction

The parties submit for all contractual and extra-contractual disputes arising from these General Terms and Conditions to the local and international exclusive jurisdiction of the courts having jurisdiction for Fürth (Germany).

5. Communication

All communications, declarations, notices, etc. are to be drawn up exclusively in the German or English language. Communications by means of e-mail or fax need to fulfill the requirement of being in writing.

6. Severability

If provisions of these General Terms and Conditions should be or become partly or wholy void, the remaining conditions continue to apply.

Acknowledgements

Created using Indy Internet Direct - http://www.indyproject.org/.

This product includes cryptographic software written by Eric Young (eay@cryptsoft.com).

Uses the net-SNMP library, see “netsnmp-license.txt”