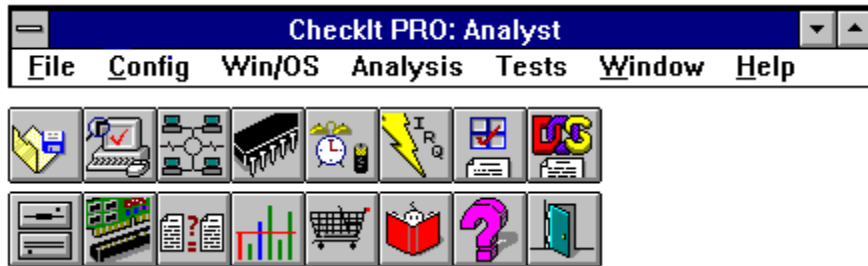


Contents:



Click on the desired menu option or toolbar icon for specific help.

Other topics:

[32-Bit Disk Access](#)

[CheckIt PRO: Analyst Menu Structure](#)

[CheckIt PRO: Analyst on a LAN](#)

[CKDATA and CKWDATA](#)

[Collecting Data on Multiple Machines](#)

[Collecting Data on OS/2 Machines](#)

[Collecting Data from DOS v.s. Windows](#)

[Direct Memory Access \(DMA\)](#)

[Exclusions](#)

[First Screen Choices](#)

[Finding Differences Between Machines](#)

[Installing Devices](#)

[Memory Timing Errors](#)

[Moving Applets to a Floppy](#)

[Naming Convention of COM Ports](#)

[Receiving Parity Errors](#)

[Running Applets from DOS](#)

[Testing Memory from DOS](#)

Collect Data

Selecting **Collect Data** from the File menu will **gather** up to the minute data **on** the **current system** on which CheckIt PRO: Analyst is loaded. CheckIt PRO: Analyst collects information on system configuration, DOS, Windows, OS/2, and system performance.

The information is saved in a CKD file (<filename>.CKD). You provide the name and description of that file in the dialog box. We strongly suggest that you use the description field, as the eight letter limitation for CKD files may cause confusion.

You do not need to collect data each time you run CheckIt PRO: Analyst. However, you will want to **collect** data on your system **when** you first **install** CheckIt PRO: Analyst, whenever you **make changes** to the system (add hardware, software, or change the configuration), or if you are **having difficulty** with your system.

See also:

[Save Data As](#)

[Load Data](#)

Load Data

With the **Load Data** command, you can **select** the CKD data file from **any machine** you want **to analyze**. You can load in the latest data file from your computer, an **older data** file from your computer, or a file from a totally **different computer**. When you select Load Data, you will see a dialog box to help you select the CKD file you want to load.

Note that when you load a **new CKD file**, any windows in CheckIt PRO: Analyst currently open are **not updated** with the new data at that time. You need to choose the function again for the new CKD file.

See also:

Collect Data

Save Data As

Menu Structure

When pertaining to functionality differences, the **CheckIt PRO: Analyst menu** can be separated into **three classes**. These distinctions are **based on** how **CKDATA** information from **multiple machines** is used, how **diagnostics** are performed, and the **program support** options.

See the special color-coded menu bar and descriptions below for the functionality differences:



File, Config, Win/OS, and Analysis menu options

The first **four menu options** function using information **from** the machine where CheckIt PRO: Analyst was **installed** (a.k.a. the physical machine), **or** with data collected **from other PCs** by loading a CKDATA file.

Tests menu option

The menu option entitled **Tests** performs diagnostics on the machine where CheckIt PRO: Analyst is **installed only**. If you wish to test other machines, use the CKMOVE utility to copy the **applets** to a floppy.

Window and Help menu options

Finally, the **Window** and **Help** options **correspond to the** CheckIt PRO: Analyst **software** itself, regardless of the machine or CKDATA file installed.

See also:

[File Menu](#)

[Config Menu](#)

[OS/Win Menu](#)

[Analysis Menu](#)

[Tests Menu](#)

[Window Menu](#)

[Help Menu](#)

Save Data As

The **Save Data As** command opens the dialog box shown below. This option allows you to **save a copy** of the currently loaded CKD file **under another name**. In addition, you can **change** the **description** of any CKD file using this command.

See also:

[Collect Data](#)

[Load Data](#)

[Report Viewer](#)

SysInfo Report

The **SysInfo Reports** command provides **comprehensive** reporting of system **information** in one location. The system information data is grouped into three reports: **Basic Information, Setup Information, and Detail System Information**. Within each report, you can **select** which **information** you want by checking the boxes. To include all the information, select the All Reports check box at the bottom of the screen. When you have finished making all of your selections, press the OK button to **proceed** to the CheckIt PRO: Analyst report viewer.

See also:

Collect Data

Load Data

Report Viewer

Test Journal

Each test creates a **Test Journal** which shows the results of **each step** of the test. Normally, tests complete and identify any failures. However, **if** system **problems prevent** a test from even **completing**, you can analyze the journal to identify which part of the **test** caused the more drastic failure.

CheckIt PRO: Analyst always names the Test Journal **files** with a **JNL extension** and stores them in the **REPORTS subdirectory**. When you run a test, the current .JNL (and .RPT) file for that test are deleted and new ones are created by the test program. After the test or tests is complete, the CheckIt PRO: Analyst Report Viewer will automatically open to view the report. If you wish to **save** a report for **later use**, use the **Save As** command and give the file a new name and/or extension.

See also:

Report Viewer

Test Results

When you run a **test** in CheckIt PRO: Analyst, a file containing the **results** of the test is created including which test steps **passed**, which **failed**, and which were **skipped** (and why).

CheckIt PRO: Analyst always names the Test Result **files** with a **RPT extension** and stores them in the **REPORTS subdirectory**. When you run a test, the current .RPT (and .JNL) file for that test are deleted and new ones are created by the test program. After the test or tests is complete, the CheckIt PRO: Analyst Report Viewer will automatically open to view the report. If you wish to **save** a report **for later use**, use the **Save As** command and give the file a new name and/or extension.

See also:

Report Viewer

Exit

Selecting **Exit** from the **File menu** or the Exit Icon shown above will **quit** CheckIt PRO: Analyst and **return** you to the state of the **Program Manager** in Windows that was open prior to opening the program.

File Menu

The **File menu** provides the commands to **collect system information** and save to a CKD file, or to **load** an existing **CKD file**. You can also **view, print** and **save system information** reports. This information can be studied from CheckIt PRO: Analyst Report Viewer. The command for **quitting** CheckIt PRO: Analyst is on this menu as well.

Click on the desired area of the File menu for specific help

File
Collect Data
Load Data
Save Data As
Sysinfo Reports
Exit

See also:

[Gathering Data on Multiple Machines](#)

[Gathering Data on OS/2 Machines](#)

Config Menu

The **Config menu** will provide you with system **setup information** about a specific machine. This information is **stored in** the machine's **CKD file**. From the details under the Config menu, you can become quite familiar with what your system has installed, and what can be added to enhance the machine. You can view, and save your **CMOS settings**, check what **hardware interrupts** are assigned to see which are assigned, free, and which indicate conflicts, and view the assigned and available **I/O addresses**.

Click on the desired area of the Config menu for specific help

Config
Hardware Network Info Memory
CMOS Data IRQ Usage Interrupt Vectors I/O Address Map BIOS Data Hard Drive Table Drive List

Hardware Configuration

With the **Hardware** command, you can view **in-depth details** on major **system components** for the system on which **data** was **collected**. When you first see the Hardware Detail window, you will see the window shown below. On the left of the window is a **list box** with various parts of the hardware configuration. **Select** the one you want **to view**. **Main System** is automatically selected when the Hardware Detail window first appears.

Network Information

The **Network Information Screen** displays all relevant information about the **current workstation** with respect to a **network** to which it **is attached**. The following information will be displayed:

Server

- **Current Server**--The **name** of the server to which this workstation is attached.
- **Network Type**--The **type** of network to which the workstation is attached.
- **Revision Date**--The revision **date of the network driver**.
- **Serial Number**--The serial number of **network server software**.

Workstation

- **User ID**--The **network login ID** of the current workstation.
- **Login Time**--The **time when** this work station was **logged** into the server for the **current session**.
- **Connection**--The connection **number** for this work station.
- **Node Address**--The **address** that the network has **assigned** to this workstation.
- **Shell Version**--The version of the shell **software** on the workstation that provides the **communications** link between DOS and NetWare (**Novell Specific**).
- **IPX/SPX Version**--The version of the **IPX/SPX** running on the workstation. This is the **inter-network packet exchange** installation to the particular network interface card on the work station (Novell Specific).
- **Network Card**--The **name** of the network card **installed** on the work station.
- **Configuration**--The configuration of the network interface card. This includes the hardware interrupt (**IRQ**) reported by the interface card, the base **I/O address**, and whether the card uses **DMA** or internal **RAM**.

Memory

The **Memory** function on the Config menu allows you to view information about the computer's memory usage. There are four options for viewing memory information, including **Base/Upper**, **Extended (XMS)**, **Expanded (EMS)**, and **Windows**.

The information shown in the Memory screens is how **memory** looked (DOS and Windows) **when the data was collected** - not as of now. Below are the four memory detail screens available. To switch between them, press the button labeled with the type of memory you wish to view.

Base Memory

The **Base Memory** screen shows the full **1MB** of **DOS Memory** in both graphic and text form. It is **divided into** two primary areas: **base memory and upper memory**. As you progress along the graphic representation of the DOS memory area from Base to Upper memory, a **"Summary" list** of the full DOS memory region is presented as well as the "Notes" list box with **specific information** about the area to which you are pointing.

Extended (XMS) Memory

The **Extended Memory** or XMS menu option shows XMS memory usage. **Extended memory is** simply the **physical memory** above 1MB while **XMS** is the **logical allocation** of that memory according to the **eXtended Memory Standard**. Because this function really **measures XMS usage** rather than raw extended memory, it **works** only **when** HIMEM.SYS or an equivalent **driver** for XMS **is installed**.

Expanded (EMS) Memory

Like XMS memory, **EMS-managed memory** doesn't have physical addresses. Instead, its address space **is allocated** logically, using handles that point to addresses that can change as necessary. The bar at the top of the Expanded Memory (EMS) Memory Map screen represents this logical space.

Windows Memory

This screen will show you how **memory** is being used by **Windows**. The blue bar at the top of the screen compares how much **physical** memory your machine has to the size of the 386 Enhanced Mode **swap file**. You will also be able to tell if your swap file is permanent or temporary, the amount of **system resources** being **used**, and amount of memory **available** after the resources are used.

TSR List

The **TSR List** screen displays all **Terminate and Stay Resident** programs and drivers **loaded** into memory **when** the system data was **collected**. This screen allows you to see **where** and **what** TSRs are loaded, **and how** much memory is used. The list box is separated into the **Base** Memory and the **Upper** Memory areas, and when appropriate, **free areas** are **noted**, so upper memory can be used rather than valuable base memory.

The following information is displayed in the list box:

- **Memory Location**--The **starting** and **ending** memory **locations** for the driver or TSR indicated.
- **Size**--The size in **memory allocated** to the driver or TSR indicated.
- **Description**--A **description** of the TSR or device driver indicated. The **environment space** for various TSRs or drivers are also displayed.

See also:

Memory

CMOS Data

The **CMOS Data** function allows you to **view** and **save CMOS** information. Keep in mind that the CMOS file you see is **extracted from** the CKD file for the PC you are analyzing. **To save** the **CMOS** file outside of the CKD file (to restore a system's CMOS) **use** the **Save As** button. **To restore** a system's CMOS, save the data shown in the CMOS Data window, and **use** the CheckIt PRO applet **CKCMOS**.

IRQ Analysis

The **IRQ Analysis** window displays the sixteen **IRQs** (eight on an XT class PC) and their availability on a **PC**. Many of these will already be marked "**In-use**" by the basic hardware and software components of the PC. Available **IRQs** will be marked **FREE** and are available for assignment to new devices. The "**CONFLICT!**" message points out that two or more devices have been assigned the same **IRQ**.

For **some** kinds of hardware (e.g., network cards and tape drives), CheckIt PRO: Analyst can **only determine** if an interrupt is in use **when** the appropriate device **driver** is **installed** and activated. Therefore, the **IRQ Analysis** data may be incomplete if the appropriate drivers are not installed.

The following labels are used in the **IRQ Analysis** window:

- **IRQ**--The **IRQ number**.
- **Standard**--The **normal use** of this interrupt. This information provides a comparison to standard usage and need not match this computer's use of the interrupt.
- **Status**--The status of the interrupt, **In-Use**, **N/A**, **FREE**, **Available**, or **Conflict!**
- **Actual Hardware**--The **hardware** device **assigned** to the interrupt.
- **Device with no IRQ**--Shows any devices found **without** an **IRQ** assigned to it.
- **Device with unknown IRQ**--Due to circumstances beyond what CheckIt PRO: Analyst can control, some devices may be unable to be linked to an **IRQ**.

A note about the [CASCADE]

If the machine on which you collected data is an **AT or later** class PC, **IRQ 2** will display **[CASCADE]**. All PCs use either one or two Intel 8259A interrupt controller chips to detect and process **IRQs**. Each 8259A is capable of handling eight separate interrupt signals. In order to get two 8259As to work in one system, the second interrupt controller (known as the slave) is connected to the first (known as the master) via one of the normal **IRQ** lines. This **IRQ** line is known as the "Cascade" interrupt. Whenever the slave 8259 receives an interrupt, it tells the **master** 8259 using the cascade interrupt, which then forwards it to the processor. **IRQ 2** is used for this purpose in **AT** and higher class machines.

Plugging **loopback plugs** into the serial and parallel ports will **prevent** possible **system lockup** when the interrupts of those ports are checked.

See also:

[Loopback Plugs](#)

Interrupt Vectors

The **Interrupt Vectors** function allows you to view **information** about the PC's 256 **hardware and software interrupts**. This function is useful for examining **how** interrupts are being **used**. Such information can be helpful when **tracking down** software **conflicts**, particularly those caused by TSRs and other resident programs.

The **Interrupt Vectors** window lists interrupts in order **by number**. The labels in the Interrupt Vector display are described below.

- **Int**--Interrupt **number (hex)**.
- **Usual Function**--The **normal use** for each interrupt. Notice that several interrupts have very specific purposes, while others are either marked "reserved" or are used by several common applications.

Note that the Usual Function field describes the common use for each interrupt, not how it is currently being used.

- **Address**--The **address** to which the **vector** is **currently pointing**. The values shown are the hexadecimal segment and offset respectively.
- **Points To**--The **location** to which **each vector** is **pointing**. In many cases, the vector will be pointing to an operating system component like the system ROM, DOS kernel, or COMMAND.COM.

Sometimes the vector will be pointing to a TSR or device driver.

I/O Address Map

The **I/O Address Map** displays port address assignments for each I/O port and the device associated with that port. Input and output ports (I/O Ports) are used by the processor to control many parts of the computer. Each port is identified by a 16-bit port number. This port number is used by the processor to identify each port.

Unknown areas are grouped together since multiple 8-byte unknown increments (the lowest granularity of the I/O addresses) may be contiguous. Thus, large portions of the I/O address map will be occupied by these 8-byte increments. The information below is listed in this screen:

- **Start**--The beginning byte in hexadecimal of the I/O address.
- **End**--The ending byte in hexadecimal of the I/O address.
- **Size**--The size of the I/O address area occupied by this port in bytes (this is the number of I/O ports used by this device).
- **Used By**--The description of the device using these I/O port numbers.

Note that if "<unknown>" is indicated, there may be multiple devices using the port numbers specified.

As mentioned above, increments of 8 bytes are the smallest allowable to set an I/O address. It is possible to query an I/O address to see if there may be a device attached, and many devices have methods of identifying themselves through port addresses.

Input and output ports (I/O ports) are used by the processor to control many parts of the computer. There are special control chips for many of the hardware devices such as the keyboard, the serial ports, the system timers, etc. These chips are communicated with by way of I/O ports. Each port is identified by a 16-bit port number.

Certain hardware devices allow the user to set switches to determine the I/O port. Network cards, for example, can be set to a particular I/O address. It is important to be able to determine which addresses are available to avoid conflicts.

Device Drivers

The **Device Drivers** command displays **information** about all device drivers available to DOS. Information displayed for each driver includes **address, size, name,** and **technical characteristics**. This information is useful for **verifying** proper installation and for checking **compatibility**.

The DOS Device Drivers screen uses the following labels:

- **Seg:Off**--This is the **driver's address** in memory. The values displayed are the hexadecimal segment and offset, respectively.
- **Attr**--This is the driver's **hexadecimal attribute**. Meaningful information gleaned from this value is displayed under Description/ Characteristics.
- **Size**--Amount of **memory used** by the driver (if any).
- **Name**--This field lists the **name of each driver**, such as COM1 or B:
- **Description/Characteristics**--The first line provides a more **descriptive** name for each driver (wherever possible). The second line lists important **characteristics** for each driver.

BIOS Data

The **BIOS Data** function displays the values stored in the BIOS Data Area. The system uses this area of memory to track the states of system elements, such as the keyboard, video, disk drives, and serial and parallel ports. This information is useful as an easy reference of port address values and/or installed hardware and memory sizes.

Hard Drive Table

The **Hard Drive Table** command displays **information** from the hard drive table stored **in** the **CMOS** memory of the computer. This table **defines** standard hard drive **configurations** that can be installed in, or connected to, the machine. This information is useful **when** you're **adding** a new **hard** drive, since you will normally need to match the new drive to one of these standard types.

Note that some of the **newer BIOSs** also allow you to add "**user-defined**" configurations for hard drives that don't match, or come **close to** matching, the **standard** types. As drives get **bigger**, more and more of them fall into this category. Since the hard drive table is stored in CMOS memory, this function works **only** on machines that use **CMOS**. If you are using a CKD file from a machine that does not have CMOS, then this option will not be available.

When you select the Hard Drive Table command, the following information is available:

- **Type**--The numbers displayed in this field represent **standard configurations**.
- **Size**--Physical **storage capacity** of the drive **in megabytes**.
- **Physical Descriptions**--Number of **cylinders, heads, and sectors** on the drive.
- **Write Precomp**--Specifies the **cylinder number** at which the **densities** must be **increased** when **writing** to the disk.
- **Park Zone**--The **safe area** (cylinder) for head to position itself at **rest**.
- **Step Rate**--The **rate** at which the **head moves** from cylinder to cylinder.
- **Control Byte**--The **control byte specified** for this drive type.

On newer drives, such as IDE, SCSI, and ESDI, the control parameters Write Precomp, Park Zone, Step Rate and Control Byte are irrelevant due to the manufacturing differences of the drives.

Win/OS Menu

With the commands on the **Win/OS** menu (Windows/Operating System), you have easy access to all the **information** about the **platforms** on which your computer can operate. In addition, you can **modify** the information in the **system files** these platforms require.

Click on the desired area of the Win/OS menu for specific help

Win/OS
System File Editor
DOS - Summary Device Drivers ISR Listing Environment Variables
Windows - Summary Device Capabilities
OS/2 - Summary

Windows Summary

When you choose the **Windows Summary** command from the Win/OS menu, a list box will appear showing the **status** of Windows information for the **current machine** being viewed. If Windows is not loaded on the machine, the CKD file will make this selection unavailable.

Windows Summary Components

The Windows Summary information is separated into the following categories:

- **Version**--Information about the **version of** the Windows **program file**, its **location** on the hard drive, and other specifications.
- **Setup**--Information about the **location** of the Windows files, the **operating system** used, and the various **drivers** for input and output devices.
- **Keyboard**--Information about the type of **keyboard installed**.
- **Display**--Information about the **video system**, and its **capabilities**.
- **Mouse**--Information about the **mouse**, its **driver**, and **settings**.
- **Memory**--Information about the **mode** memory is being run under (e.g. Enhanced, 386).
- **Devices**--Information about the **devices installed** with the **driver loaded**.
- **Fonts**--Information about the **fonts** that are **installed** and which are being used as **default**.

Report Viewer

The **Report Viewer** is used to **analyze** the **results** of a test run in CheckIt PRO: Analyst, or when selecting the **SysInfo Reports** command. When you run a test in CheckIt PRO: Analyst, two files are created, one containing the results of the test and the other showing a journal of the testing process. When you select SysInfo Reports, another file is created with detailed system information.

Report and Journal Files

CheckIt PRO: Analyst always names the **Test Results** and **Test Journal** files with a filename describing the test, and extensions **RPT** and **JNL** respectively (e.g. CKHD.RPT is a report for the hard drive test, CKFD.JNL is a journal for the floppy drive test). The **SysInfo Report** command creates **three files** based on the sections of information available: **CKBASIC.RPT**, **CKSETUP.RPT**, and **CKDETAIL.RPT**. These files are automatically placed in the **REPORTS** subdirectory.

When you run a test, the **current** .RPT and .JNL files for that test are **deleted** and new ones are created by the test program. If you wish to **save** a report, you must either **use** the **Save As** command in the Report Viewer **or copy** the file using the Windows File Manager.

Viewing Files with the Report Viewer

The **Report Viewer** allows you to **view**, **print**, and **save** the test results and journals generated by the tests in CheckIt PRO: Analyst. Whether you are viewing reports or journals, the report viewer functions the same. When you use the report viewer, the **most recent report** or **journal** is **shown**.

Report Viewer Menu Options

The **File menu** on the report viewer provides the following commands:

- **Open**--Presents a standard Windows open dialog box allowing you to find and **select** a **file to open**. The default is either *.RPT or *.JNL, depending on if you originally selected Test Results or Test Journals. You can overwrite these defaults and find any file. However, the report viewer will **not accept** any file **greater than 30K**.
- **Save As**--Allows you to save a **copy** of the report or journal being viewed.
- **Print**--Prints the report.
- **Print Setup**--With this command you can **choose** to print only a portion of the report, select multiple copies, and specify other **printer options**.
- **Close**--Closes the Test Viewer window.

The **Edit menu** on the Report Viewer provides the following commands:

- **Copy**--Copies the selected **text to the clipboard**. You can then place this text in another file, such as a report you are writing.
- **Find**--Initiates the **find** for the **target text** found in the Search For box on the report viewer window. This command has the **same** function as the **Find button** on the report viewer window.

See also:

SysInfo Report

Test Results

Test Journal

Device Capabilities

The **Device Capabilities** command displays information on all the devices **loaded** into Windows when the data was collected. This includes the **display** and all the **printers** for which **drivers** were loaded.

The list box at the left of the window lists all the **devices** for which **drivers** have been **loaded**. Select the device you wish to view and the information box on the right lists the following information on the device:

General Information

The details in the **General Information** section provide the numeric **availability** for devices including:

- **Dimensions**
- Colors
- Fonts
- Pixels
- DPI (Dots Per Inch)
- Palletes
- Resolution

Other Information

Listed in the **Other Information** category are the **Driver Version** and **Technology** coded information, and support/ability for **Clipping Capabilities** (CLIPCAPS or CP) and **Raster Capabilities** (RASTERCAPS or RP). The following are explanations for the CP_ and RC_ details:

- **CP_RECTANGLE**--Whether or not the device can **clip** to a **rectangle**.
- **RC_BITBLT**--Whether or not the device is able to **transfer bitmaps**.
- **RC_BANDING**--Whether or not the device requires **banding support**.
- **RC_SCALING**--Whether or not the device requires **scaling support**.
- **RC_BITMAP64**--Whether or not the device can handle **bitmaps larger than 64K**.
- **RC_GDI20_OUTPUT**--Whether or not the device can support **Windows version 2.0** features.
- **RC_DI_BITMAP**--Whether or not the device supports **DIB** to memory.
- **RC_PALETTE**--Whether or not the device supports a **palette**.
- **RC_DIBTODEV**--Whether or not the device supports **bitmap conversion**.
- **RC_BIGFONT**--Whether or not the device supports **fonts larger than 64K**.
- **RC_STRETCHBLT**--Whether or not the device supports the **StretchBlt** function.
- **RC_FLOODFILL**--Whether or not the device supports the **FloodFill** function.
- **RC_STRETCHDIB**--Whether or not the device supports the **StretchDIBits** function.

System File Editor

The **System File Editor** allows you to **modify system** files used by DOS, Windows, and OS/2. It is important to keep in mind that you will be **viewing** and **editing** the files that are extracted **from** the **CKD** file of the machine you are **currently analyzing**. When you make changes and save a system file in CheckIt PRO: Analyst, that file is **stored in** the **DATA** sub-directory.

To choose the system file you wish to edit, click on one of the buttons shown below that has that filename on it. Note that like the Report Viewer, the **System File Editor** only **handles** files **30 kilobytes** or smaller. The **Close** button will **quit** the System File Editor. If you have made changes to a file, you will be prompted to **save or lose** those **changes before leaving** the editor.

The three Menu Options for the System File Editor are listed below:

File Menu

- **New File**--This button clears the screen so you can **start** a new file **from scratch**.
- **Open**--Presents a standard open file dialog box so you can **open any file** of your choosing.
- **Save**--Allows you to **save** the **edited file** over the old file. Make sure you always save a copy of your old system files, using Save As, for recovery in case the new file doesn't work as intended.
- **Save As**--Allows you to **save** the current file **under any filename** you specify.
- **Print**--Brings up a standard print dialog box, allowing you to **print** the file.
- **Page Setup**--Allows you to **specify** the printer to which you want to print the file and set **printing options**.
- **Close**--Returns you **to** the **main window** of CheckIt PRO: Analyst.

Edit Menu

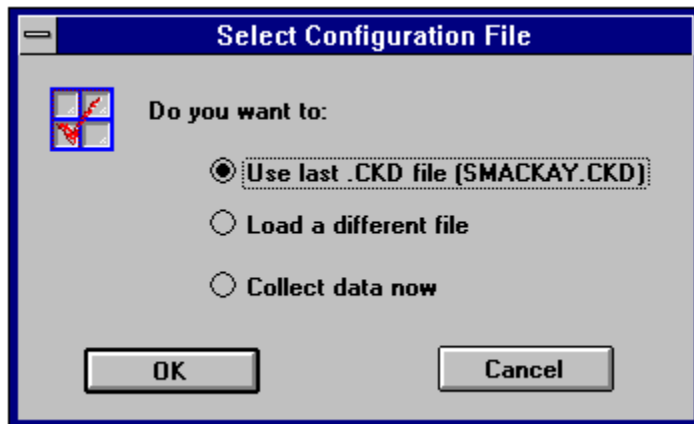
- **Undo**--Reverts back to **previous** editing **step**.
- **Cut**--This **removes** highlighted block, storing **information** in the Windows Clipboard.
- **Copy**--Copies highlighted block to the Windows Clipboard
- **Paste**--Copies text from the Windows Clipboard **to** the **System File Editor**.
- **Delete**--Removes highlighted block, but **does not store** the information to the Windows Clipboard.

Sections Menu

- **Sections**--INI files are conveniently arranged in sections. These **sections** are defined by a section name in **square brackets** on a line by itself. Choosing the Sections button will bring up a list box of all the sections. Choosing a particular section from this list box will automatically bring you to that section in the Edit list box. This menu item has no function for non-INI files.

First Screen Choices

When CheckIt PRO: Analyst first **loads**, you will see the screen below. You must choose from one of the **three options**, depending on which CKD file you wish to **load**, or if you want to collect data now.



DOS summary

When you choose the **DOS Summary** command from the Win/OS menu, a list box will appear showing the **status** of DOS information for the **current machine** being viewed.

DOS Summary Components

The DOS Summary information is separated into the following categories:

- **DOS Version**--Numerical value, version of DOS.
- **Comspec**--Location of **COMMAND.COM**.
- **Boot Drive**--Drive DOS boots from.
- **Manufacturer**--Company which **published** DOS.
- **DOS loaded in**--Memory **area** where DOS is loaded.
- **Last Drive**--The **assigned** last drive DOS will **access**.
- **Available Handles**--List of memory handles available.
- **Files**--Set number for FILES= in CONFIG.SYS.
- **Buffers**--Set number for **BUFFERS**= in CONFIG.SYS.
- **Share**--Whether or not SHARE.EXE is currently **loaded**.
- **Print**--Whether or not PRINT **TSR** is loaded.
- **Memory Manager**--Names memory managers **if loaded**.
- **Disk Compression**--Names disk compression utility **if loaded**

DOS Drive List

The **Drive List** function displays usage information for disk drives **installed** in, or **connected** to, your computer. This information shows you what drives DOS recognizes, what **capacity** they have, and their current **usage**.

Drive List Components

The following information is available on the Drive List:

- **DOS Name**--The logical DOS drive **name assigned** to the drive such as A:, B:, C: etc.
- **Type**--The physical **type of drive**, such as floppy, hard, network CD-ROM, or redirected/assigned.
- **Size**--Physical storage **capacity** of the logical drive indicated (in megabytes).
- **Free**--Amount of physical storage space currently **available** (in megabytes).
- **% Free**--Overall **percentage** of physical storage space currently **available** for the drive.
- **Compression**--Identified **compression utility** used such as Double Space or Stacker.

Environment Variables

The **Environment Variables** screen shows you the set of strings in DOS that manipulate how your computer is **customized**. These are the same strings you will see if you type the SET command from **DOS**.

DOS automatically **allocates** an area in memory of **between 160 bytes and 512 bytes** (depending on the version of DOS) for environment space. This space is used for a number of things which are defined in the CONFIG.SYS or AUTOEXEC.BAT files and placed into memory **during the boot process**. Listed below are examples of what the environment space will do for your PC:

- It holds a string showing the place on the disk where COMMAND.COM is stored (using COMSPEC).
- It sets what the DOS prompt looks like if different from the default (using PROMPT).
- It can hold a string defining an alternate for COMMAND.COM (using SHELL -- which also can be used to increase the environment size).
- It holds a string showing the current path (using PATH).
- It can hold strings which are very rapidly accessible to application programs.
- It can hold a string telling DOS and Windows where to store temporary files (using TEMP).

Tests Menu

The **Tests Menu** provides a core set of **diagnostic** tests for your PC. Using the Tests menu, you can choose to run the **entire set** of tests at once **or** choose the **specific test** you want to run. Each test generates a **report** and a **journal** that may be saved for later report consolidation and comparison. Unlike the information and analysis functions, these tests **run immediately** (and only) on the PC running CheckIt PRO: Analyst.

Click on the desired area of the Test menu for specific help

Tests
Test Everything
System Board Serial Port Parallel Port
Hard Disk Floppy Disk
Memory
Test Results Test Journals

See also:

[Test Results](#)

[Test Journal](#)

[Report viewer](#)

Test Everything

The **Test Everything** command automates the selection of **tests** from the menu. Each test is started **automatically**, in the order the tests are on the menu, which is the order shown below:

- System Board Test
- Serial Port Test
- Parallel Port Test
- Hard Disk Test
- Floppy Disk Tests
- Memory Tests

One report and **one journal** are created when you run **Test Everything**. All the information from all the tests is placed in the report and journal files; one test **does not write over** the results of the next as in the case when the tests are run separately.

Because **Test Everything** includes the **Memory** test which **exits Windows** to run, there will be a message box **warning** you that CheckIt PRO: Analyst will quit Windows to test. You will have the opportunity to cancel or continue. If you continue, Windows **will not re-open** any other programs already open before you started the test.

Results from the Test Everything function are automatically written to two files: **TEVERY.RPT** is the report file and **TEVERY.JNL** is the journal file. These files are stored in the **REPORT** sub-directory.

To **interrupt** the test sequence after it starts, press **<ESC>**. This will stop the tests.

See also:

[System Board Testing](#)

[Serial Port Testing](#)

[Parallel Port Testing](#)

[Hard Drive Testing](#)

[Floppy Drive Testing](#)

[Memory Testing](#)

[Testing Memory from DOS](#)

[Testing Memory from DOS](#)

[Test Results](#)

[Test Journal](#)

[Report viewer](#)

System Board Testing

The **System Board Test** checks the **primary** internal **components** of your computer in the manor listed below. The tests start as soon as you select the System Board Test. To **stop** the test at any time, press **<ESC>**.

System Information

Values in this area show the types of **processor**, **coprocessor**, and **real-time clock** CheckIt PRO: Analyst has identified, as well as the types and number of **DMA** and **IRQ controllers**.

Central Processor Test

This test checks several key **functions** of your machine's **CPU**:

- **General Function**--Checks the general, math, and logic **instructions** of your CPU. A failure here indicates a major failure in your PC's **main processor**.
- **Interrupt Bug**--Identifies CPUs that allow **interrupts** to occur at **incorrect times**. This problem is found mainly in older 8088 and 8086 CPUs.
- **Multiply Bug**--Identifies a problem with **32-bit multiplication** on early 80386 processors.
- **Protected Mode**--Checks the ability to **function** in protected mode.

Numerical Coprocessor Test

These tests verify that your math **coprocessor** is **functioning correctly**. If there isn't a coprocessor installed, this test will be skipped automatically.

- **Arithmetic**--This test asks your math coprocessor to perform a number of simple **floating point calculations**. Then it compares the actual results with the expected results. If the numbers don't match, an error is reported.
- **Logarithmic**--This step uses the **trigonometric functions** available on the math coprocessor by asking it to **compute** a number of **tangents**.
- **Comparison**--This step verifies that the coprocessor's **floating point comparison** operations are working properly.

Real-Time Clock Test

The real-time clock test checks whether your machine's **battery** backed-up **clock** is properly set and keeping **accurate time**. If your system has a CMOS clock, the **alarm** function will **also** be **tested**.

- **Date Compare**--Compares the date on the **real-time clock** to the date on the **DOS clock**.
- **Time Compare**--Compares the time on the **real-time clock** to that on the **DOS clock**.
- **Alarm Function**--Tests a **non-audible** alarm on the CMOS clock hardware.
- **Elapsed Times**--Compares the amount of **time elapsed** on both the **CMOS and CPU clock** to see if they are keeping time at the same rate.

DMA Controller Test

The **DMA Controller** Test checks to see that **communication** between your CPU and the DMA (Direct Memory Access) controller is working **properly**. The DMA controller is responsible for **transferring data** between various devices and your PC's memory **without interfacing** directly with the **CPU**.

Interrupt Controller Test

This test verifies whether your PC's **interrupt controller** is operating properly. This controller is responsible for "interrupting" your CPU when certain **events** happen, such as when a **key** is **pressed** or a **character** is **received** over a serial port. Normally, when an interrupt occurs, your **PC** momentarily **stops** what it was doing, runs a device driver to handle the event that generated the interrupt, and then returns to its previous task.

Results from the System Board Test are automatically written to two files: **CKSYS.RPT** is the report file and **CKSYS.JNL** is the journal file. These files are stored in the **REPORT** sub-directory.

To **interrupt** the test after it starts, press **<ESC>**. This will stop the test.

See also:

[Test Results](#)
[Test Journal](#)
[Report viewer](#)

Memory Testing

The **Memory Test** allows you to thoroughly test the **system** and **video memory** installed in your PC. The memory test will use **multiple test patterns** and techniques to find chip problems, test for **address line problems** and distinguish **parity errors** by row (not just by bank). Through a number of techniques it will discover and isolate most types of memory **problems** that your PC may have **including**:

- Bad bits
- Bad parity
- Bad address lines
- Improper installation
- Bad timing

Types of Memory Tests

CheckIt PRO: Analyst will test all types of memory it finds including the following:

Base Memory--All base memory **up to** the **640k** plateau is tested including memory currently being used by DOS or any other device drivers or TSRs loaded.

Upper Memory--This is the memory range **from 641k to 1Mb**, and is tested not unlike the base memory area.

Extended Memory--All **physical memory** found **beyond 1Mb**.

Expanded Memory--All **managed** expanded **memory beyond 1Mb** (taken from extended memory), which will uncover any problems with either the **actual** memory **or** the memory **manager**.

Adapter Memory--This is the **RAM** area for your **video display** (resident memory on the video adapter).

Together, these tests provide an **extremely comprehensive** suite of memory tests that can detect nearly all types of memory problems including **parity** and **addressing errors**. Results of the Memory Test are automatically written to two files: **CKMEM.RPT** is the report file and **CKMEM.JNL** is the journal file. These files are stored in the **REPORT** sub-directory.

To **interrupt** the test after it starts, press **<ESC>**. This will stop the test.

Memory Test Problems

If your machine does not run the **Memory Tests** all the way through, you may want to try using the **CKMEM.EXE** applet from **DOS**, using a "Clean Boot" with no memory managers. To test in this manner, type the following:

```
CKMEM /T:A /O:REPORT.RPT,A /O:JOURNAL.JNL,A /N:"User Note"
```

For more help on using the CKMEM applet, type:

```
CKMEM /?
```

See also:

[Test Results](#)

[Test Journal](#)

[Report viewer](#)

[Memory](#)

Serial Port Testing

The **Serial Port** Test option checks up to **four COM ports** on your PC. Each register of the 8250 serial controller chip is tested and data transmission is tested at **different baud rates** (up to 115K). This test is helpful if you use a **modem, serial mouse, serial printer, or data transfer** product (i.e. LapLink). The serial port test will check for port **integrity, general operation, and baud rate generation**.

This test can be run either **with or without** a **loopback** connector (you must run the test from the command line with the appropriate switches to use a loopback plug). Although CheckIt PRO: Analyst can still conduct a reasonable test without a loopback plug, the test is **best** when **using the plugs** because data is actually sent and received by the port when an external loopback is used.

If there is **not** a loopback plug **connected**, CheckIt PRO: Analyst uses the **internal diagnostic** mode of the UART chip to send and receive characters. While this is an **acceptable confidence test**, it doesn't test the functionality of the port under real conditions.

Results from the Serial Port Test are automatically written to two files: **CKCOM.RPT** is the report file and **CKCOM.JNL** is the journal file. These files are stored in the **REPORT** sub-directory.

To **interrupt** the test after it starts, press **<ESC>**. This will stop the test.

See also:

[Test Results](#)

[Test Journal](#)

[Report viewer](#)

[Loopback Plugs](#)

Parallel Port Testing

The **Parallel Port Test** option **checks** up to three **LPT** ports on your PC. The test checks the internal registers of the **UART chip** and the entire character set through the parallel port.

This test can be run either **with or without** a **loopback** connector (you must run the test from the command line with the appropriate switches to use a loopback plug). Although CheckIt PRO: Analyst can still conduct a reasonable test without a loopback plug, the test is **best** when **using** a **plug** because data is actually sent and received by the port when an external loopback is used.

If there is **not** a loopback plug **connected**, CheckIt PRO: Analyst uses the **internal diagnostic** mode of the UART chip to send and receive characters. While this is an **acceptable confidence test**, it doesn't test the functionality of the port under real conditions.

Results from the Parallel Port Test are automatically written to two files: **CKLPT.RPT** is the report file and **CKLPT.JNL** is the journal file. These files are stored in the **REPORT** sub-directory.

To **interrupt** the test after it starts, press **<ESC>**. This will stop the test.

See also:

[Test Results](#)

[Test Journal](#)

[Report viewer](#)

[Loopback plugs](#)

[Report viewer](#)

Hard Drive Testing

The **Hard Drive Test** is non-destructive and **won't destroy** any **data** on your hard disk. Unlike some hard disk diagnostics, CheckIt PRO: Analyst tests the **entire disk** at the **physical level**, showing problems even on **unused areas** or **non-DOS partitions**.

Test Types

When you select the Hard Disk Test from the Tests menu, the first **two** installed hard drives will be selected for testing. The following tests will be run on the drives:

- **Controller Test** --Checks the **physical interface** from your computer to your hard disk.
- **Linear Read**--Verifies each track in order from **outermost to innermost** sector, ensuring that the data on your hard disk can be read successfully.
- **Butterfly Read**--This test also reads each cylinder; however, it moves the
- read/write head **back and forth** from the outermost cylinder, to the innermost cylinder, stressing the seek mechanism to its utmost

Results from the Hard Drive Test are automatically written to two files: **CKHARD.RPT** is the report file and **CKHARD.JNL** is the journal file. These files are stored in the **REPORT** sub-directory.

To **interrupt** the test after it starts, press **<ESC>**. This will stop the test.

See also:

[Test Results](#)

[Test Journal](#)

[Report viewer](#)

Floppy Drive Testing

The Floppy Disk Tests checks the mechanical operation of your floppy drives, as well as the media on individual floppy disks. The tests are non-destructive, and no data will be lost.

Test Types

When you select the Floppy Disk Test from the Tests menu, the following tests will be run on up to two floppy drives:

- **Media Surface Test**--The media surface test will check a specific floppy disk for **bad tracks**.
- **Linear Read**--Verifies each track in order from **outermost to innermost** sector, ensuring that the data on your floppy disk can be read successfully.
- **Random Read**--This test reads each cylinder much like the linear read test above, except it reads the cylinders **randomly**, much as it would in **general operation**.

Results from the Floppy Drive Test are automatically written to two files: **CKFD.RPT** is the report file and **CKFD.JNL** is the journal file. These files are stored in the **REPORT sub-directory**.

To **interrupt** the test after it starts, press **<ESC>**. This will stop the test.

See also:

[Test Results](#)

[Test Journal](#)

[Report viewer](#)

Memory Timing Errors

You may experience **memory timing errors** when you run the **Memory Test** if the nano-second **access rates** of your memory modules (e.g. SIMMS) **do not match** each other or the motherboard configuration. This rate will usually be **written** somewhere on the chips. In the description "**1 x 9 x 70**", the chip is a one megabyte by nine chip by **70 nano-second** module.

The **cause** of this problem relates to the fact that the CPU uses **RAM** (Random Access Memory). If data is sent to and from memory modules with different access times, it will become **corrupted** due to the **inconsistency** of the **speed** at which it is sent and received.

Analysis Menu

The commands on the **Analysis Menu** go **beyond** presenting factual **information**; they use the system and performance information to help you draw **conclusions** and make **decisions** about a system. With these commands, you can **evaluate** the **performance** of a system, **find** the **differences** between two hardware and software configurations, make **software** up-grade **decisions** using complete system information, and **resolve conflicts** before installing new hardware.

Click on the desired area of the Analysis menu for specific help

Analysis
Rate Performance
Config Differences Win/OS Differences
Setup Advisor Software Shopper

Rate Performances

The **Rate Performance** command allows you to **compare** the **performance** of essential **system components** with up to ten other systems or with the data from same system at other times. You can **print** a report of the **performance values**, and you can **save** the results for use in **later** comparisons. Benchmark information is saved in files with an extension of **PRF** and are automatically stored in the PRF directory, which was created at installation time.

Performance is **measured** by CheckIt PRO: Analyst in three major areas: performance of the **system**, the **hard drives**, and the **video system**. These are the main components you can use to test the **performance** of a computer and judge its **suitability** for various **tasks**.

The Performance Window

The Performance Window contains the following elements:

- **Component List**--This allows you to **choose** the system **components** for which you wish to view **benchmark information**.
- **Test Type**--This allows you to choose from two or three performance benchmarks run on the selected system components.
- **Current System**--This is the **description** of the currently **loaded CKD** file. The rank (a number from 1 to 11 with 1 being best), indicates how the system compares to the other systems.
- **Performance Bar Graph**--This graph shows the **performance data** (of the selected type) from the currently loaded CKD file and up to ten selected performance files. The value for the currently loaded CKD file is graphed first in red and the other systems are graphed in green (with one of the "other" systems in blue).

Changing Performance Files

To remove a file from the **Selected Systems** list, either double-click on the file name or select the file name and then select the left-pointing arrow. To move a file into the Selected Systems list, select the **number** in the list where you want that system to be (the number and any text should have be highlighted), then double-click on the file name in the left list that you want in the Selected Systems list. You also can select the **file name** and use the **right-facing** arrow key. If there is a file in the Selected System number already, the two files **exchange** lists.

Win/OS Differences

Using the **Win/OS Differences** command, you can **compare** the **software** setup on two **different systems**, or setup data for the **same** computer at **different times** to isolate changes. The software setup for DOS, Windows and OS/2 environments are examined for differences in:

- Operating system version
- Device drivers loaded
- TSRs loaded
- Displays supported
- Setup definitions.

The **Win/OS Differences** window lists the two configurations and **highlights** the differences in red. **"Current"** is the description from the CKD file currently loaded by CheckIt PRO: Analyst. **"Compare"** contains the description of the **comparison** file you just selected.

Win/OS Differences Screen Components

The Config Differences screen has the following components:

System Description--The area at the top of the list **displays** the CKD file **descriptions** and the number of **differences** found for the software setup values checked.

Compressed Version--Shows **only** the **differences**. All the headings are still displayed, but no software setup information is listed under a heading if there are no differences in that area.

Expanded Version--Shows all the **compared** software setup **values** of both systems, with the differences highlighted in red.

Select--Allows you to select a **new CKD** file for comparison.

Report--Choosing the Report button **generates** a **report** containing the software setup differences for the two files. The report is in a file called OSDIFF.RPT in the REPORTS directory.

See also:

[Report Viewer](#)

[CKD Files](#)

Config Differences

Using the **Config Differences** command, you can **compare** system configuration data from **two** different **systems**, or compare data for the **same** computer at **different times** to **isolate changes**. The system configurations are examined for differences in:

- Hardware components
- Network ID
- Memory usage
- Setup definitions (CMOS, BIOS or IRQ assignments)
- Performance values.

The **Config Differences** window lists the two configurations and **highlights** the differences in red. "**Current**" is the description from the CKD file currently loaded by CheckIt PRO: Analyst. "**Compare**" contains the description of the **comparison** file you just selected.

Config Differences Screen Components

The Config Differences screen has the following components:

System Description--The area at the top of the list **displays** the CKD file **descriptions** and the number of **differences** found for the configuration values checked.

Compressed Version--Shows **only** the **differences**. All the headings are still displayed, but no configuration information is listed under a heading if there are no differences in that area.

Expanded Version--Shows all the **compared** configuration **values** of both systems, with the differences highlighted in red.

Select--Allows you to select a **new CKD** file for comparison.

Report--Choosing the Report button **generates** a **report** containing the configuration differences for the two files. The report is in a file called CONDIFF.RPT in the REPORTS directory.

See also:

[Report Viewer](#)

[CKD Files](#)

Setup Advisor

The **Setup Advisor** allows you to compare the setup **recommendations** for add-on devices and adapter cards to a system's actual configuration. The setup items that are evaluated include:

- IRQ Usage
- DMA Channels
- I/O Port Locations
- RAM Address space
- ROM Address space

Setup Advisor Components

Setup Advisor window contains the following elements:

- **Product List**--This list includes those **delivered** with CheckIt PRO: Analyst and those you have **added** yourself. All of the products are displayed, regardless of their origin, in **alphabetic** order by the **name** assigned.
- **Hardware Product Names**--A name has been **assigned** to each hardware product displayed. To the right of the title is the **type** of adapter card, and displayed below is the name of the **Manufacturer**. To the right of the Manufacturer name is the name of the file (with an ADV extension) containing the **product information**.
- **Setup Requirements Information**--This area contains a series of numeric entry fields that describe the **primary** and **alternate** assignment **requirements** of the product.

Hardware Product Information

For each hardware device, the following information can be indicated:

- **IRQ Assignment**--You can enter **up to four** IRQ assignments. Most products however will only have one or two suggested. The **range** here should be **0-7** for XT class machines, and **0-15** for AT class or above machines.
- **DMA Channel**--If the device you are installing requires one or more DMA channels, you can enter the **suggested assignments** here. Because it is not possible to test for the actual use of DMA channels, a **standard list** is used to compare and suggestions are made for checking assignments.
- **I/O Port Address**--Enter suggested **I/O Port Addresses** in **Hex format**. The **typical** range of I/O Port Addresses is **000h to 3FFh**.
- **Memory Addresses**--Enter suggested Memory Addresses in **Hex format** also. Up to four memory addresses can be specified.

Setup Advisor Buttons

The buttons on the bottom of the window give you access to the **functions** that use and maintain the hardware setup information:

- **Close**--Closes the Setup Advisor window.
- **New**--Clears the Setup Advisor window of setup requirement information. This allows you to start with a **clean screen** when **you enter** specifications yourself for a hardware product.
- **Save As**--You can **supplement** the Setup Advisor library by **adding** hardware Products of interest to you or adding information about new hardware products.
- **Analyze**--Generates an analysis **indicating** how the currently loaded system configuration **matches** the **required setup** for a hardware product and recommends specific setup assignments or identifies potential problems.

Setup Advisor Analysis

Once a hardware product has been selected or a setup entered, use the **Analyze button** to generate an analysis of how the system configuration meets its needs. The analysis window displays Setup Advisor's **summary** of the requirements expressed by the main setup screen, the **availability** information for each resource, and a **recommended** assignment or assignment **problem** description.

If a recommendation is made, you will be able to see the **recommended** resources (IRQ number, I/O Port Location, or Memory Address) **listed** immediately above as both "Requested" and "Available". If a **problem** is cited, the conflicting device may also be **noted**, and you will see that the requested resource is not listed among those currently available. You may want to refer to the detailed windows for each area to get more **information**, and either move another device or call the manufacturer for additional **alternates**.

Software Shopper

The **Software Shopper** allows you to compare the **equipment capabilities** of the current **CKD** file to the requirements of various software products. CheckIt PRO: Analyst comes with a **library** of over 1,000 **pre-defined** software product **requirements**, and you can **enter** your own **specifications** as well. Equipment capabilities **checked** by the Software Shopper are:

- Processor
- Memory
- Disk space
- Installation media
- Operating system
- Optional devices)

Software Shopper Buttons

The buttons found on the bottom of the window are as described below:

- **Close**--Closes the Software Shopper window and **returns** you to the **main window** of CheckIt PRO: Analyst.
- **New**--Clears the Software Shopper window so you can **enter** specifications for **another** software package.
- **Save As**--CheckIt PRO: Analyst comes with a **library** of software product information. You can **supplement** this library, adding software products of interest to you or adding information about new software releases.
- **Analyze**--Generates an **analysis** indicating where the system **configuration** matches the needs of the software product and where there are **problems** or potential problems.
- **Vendor**--Brings up the Vendor window, which shows information about the **publisher** and the suggested retail **price**.

Software Shopper Information

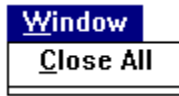
For each software package, the following information can be indicated:

- **Software Title**--The **name** of the software package.
- **Processor**--The processor needed to run the software.
- **Math Coprocessor**--A math coprocessor may be **required** or **optional**.
- **Operating System**--The choices are MS-DOS, Windows and OS/2.
- **Video**--Whether or not **video graphics** are required.
- **Memory Required**--This is the **minimum** amount of **memory** (in Kbytes) required to run the software.
- **EMS Required**--Whether or not the software requires EMS memory.
- **Disk Space**--This is the **minimum** amount of **disk space** required for the software package.
- **Install Media**--This identifies the types of **media** the software in which the software is delivered.
- **Network**--This identifies the type of **network** (if any) **required** by the software.
- **Other**--This section contains components that a software package might require such as mouse, joystick, sound card, CD-ROM, modem and Fax card.
- **Category**--The **type** of software.
- **Sug Retail Price**--The suggested retail price of the software package.
- **Release Date**--The **real** or **projected** release date of the software.
- **Company**--The **publisher** of the software package.
- **Phone Number**--The phone number of the **publisher**.
- **Support Number**--Use this number if you have the product and require **assistance** or support.

The **results** from the Software Shopper can be **viewed** from the **Report Viewer**, which allows you to view, save, and print the report. The Software Shopper **report** contains the software **product information**, the **purchase information**, and the **analysis**.

Window Menu

The **Window Menu** is a dynamic list of all the **windows** that have been opened in the **current session**.



When **several windows** have been opened, their names will be **listed** under the Window Menu heading. To go to a specific window, **select** it as you would any other menu **option**. Use the **Close All** option when you **no longer** desire the windows to be **open**.

This standard Windows list box contains **all** of the saved **system configurations** to which you can compare your system.

Help Menu

The **Help Menu** includes the **Index** of Help Topics, the **Technical Reference** Library, and the **About** screen.

Click on the desired area of the Help menu for specific help

H elp
Help <u>I</u> ndex
<u>R</u> eference Library
<u>A</u> bout

Help Index

If you choose the **Help Index** option from the Help Menu, or press the icon from the toolbar shown above, the Contents screen of this help file will open. To go to this point now, press the Contents button on the menu bar at the top of this window. For **assistance** on **using** the **help** file, choose the **Help** option, again at the **top** of this window.

This standard Windows list box displays all of the system configurations you have loaded in the Rate Performances screen.

Reference Library

The **Reference Library** is a useful **collection** of **PC, DOS** and **Windows** reference **material**. It is indexed by subject and will allow you to look up a great deal of information you would otherwise be forced to locate in various books. The Library was written in a **Windows help file format**. Like this help file, topics in the reference library can be found by **contents** or by searching for a specific **keyword**.

About

Selecting the **About** menu option will display information about **CheckIt PRO: Analyst**, including: **Version** number, **copyright** and **licensee** details, **serial number**, the Windows **operating mode**, and the amount of **free memory** available to Windows.

Loopback Plugs

CheckIt PRO: Analyst provides the option to use three different loopback plugs when testing **serial** and **parallel** ports from the command line. You must specify that you are using the plugs, with the /T:l option. (For more help, type /? after the test name). The parallel loopback plug can also be used during the view IRQ procedure for more **accurate** results. Look in the **Reference Library** for **diagrams** of the loopback plugs if you wish to **build** them, or contact TouchStone to buy them.

A **peripheral** is classified as any **external device** attached to and controlled by a computer's CPU (Central Processing Unit).

Real Mode is a type of PC operation where a program is given a **specific storage area in memory**, and direct access to peripheral devices. This mode can cause **problems** when **more than one program** is loaded into memory **at one time**. Programs loaded simultaneously in this mode can crash the system as they will try to share the same memory area. Using **protected mode** instead will **solve** this **problem**.

To solve the problems of Real Mode, where programs loaded simultaneously try to share the same memory area, **Protected Mode** was created, which **prevents** such **interference**. Programs can be successfully loaded simultaneously in Protected Mode, which **allows** for **multi-tasking**.

An **Interrupt ReQuest** is an assigned value which **controls** instructions for **hardware** and **software**. Each device must have its own IRQ, or a conflict will occur. The CPU uses these IRQs to determine which devices are calling with input or output. CheckIt PRO: Windows will display all devices and their IRQs.

Described in hexadecimal format, **I/O** (Input/Output) assignments describe the channels in **memory** by which devices and the CPU communicate. Each device will have its own unique **I/O address**.

In MS DOS versions 5.0 and 6.0, you can load DOS into the High Memory Area (HMA) to allow more room in base memory for other programs. The line DOS=HIGH,UMB should be added in your CONFIG.SYS file.

Terminate, Stay Resident programs are loaded in to **memory**, and then are not visible until a specific keyboard combination (a.k.a. **hotkey**) is pressed. You can use the CheckIt PRO: Windows TSR map to see which TSR programs you have loaded, where they reside, and how much memory they are taking up. Common TSR programs are: DOSKEY, popup calculators, and E-Mail packages.

The **Buffers=** command in the CONFIG.SYS file **specifies** how many disk buffers are available when a PC boots. The buffer stores **information** from disk **in memory**, making access to information **faster**. Too many buffers set can slow your system by using too much memory, and too few buffers set can cause conflicts with certain programs.

The **LASTDRIVE=** command is located in the CONFIG.SYS file, and **dictates** the **total** number of **drives** that can be activated.

The **DEVICE=** command is located in the CONFIG.SYS file, and is a device driver loading command. For example, **DEVICE=MOUSE** loads the **device driver** needed for the system to use a mouse. Each device will have its own specific device driver.

If you select the **Collect Data Now** option, CheckIt PRO: Analyst will take one to two minutes to gather **system information** and **performance details**. This information will be written to a CKD file, which is then stored in the **DATA directory**, which was created during installation.

CheckIt PRO: Analyst on a LAN

According to the product **license**, CheckIt PRO: Analyst may be installed on a **network** drive, but it is the responsibility of the licensee to ensure that only **one** person **at a time** can use the program. To view data from multiple workstation, run the CKDATA program on each machine. Then, to study each node, load the corresponding CKD file for that machine. The information for that node can be printed out or saved for later use, inventory control, or troubleshooting.

Finding differences between machines

You can use CheckIt PRO: Analyst to **find differences** between **two machines**, or the same machine at **different times** using the Config Differences from the Analysis menu. A few reasons you would want to use this function are as follows:

- **Checking "identical" machines**--Take just a few seconds to ensure these machines are actually both hardware and set-up identical.
- **Taking inventory**--See how a machine has lost or gained components over a period of time, and how the setup has changed.
- **Sending out for repairs**--View differences made when the machine is returned. Was the configuration modified?
- **Troubleshooting**--The user says he didn't change anything and now the machine wont work. Has anything really been modified?
- **Maximizing performance**--As you make changes and run benchmarks, you can use the Config Differences command to track hardware and set-up modifications to find the optimal configuration.

See also:

[Config Differences](#)

[Rate Performances](#)

Collecting data on multiple machines

The CheckIt PRO: Analyst program is **licensed** to be loaded on **one machine** only, but you can **collect data** from an **unlimited number** of machines using the CKDATA program. Using CKDATA creates a CKD file, which can then be brought **back** to the machine where CheckIt PRO: Analyst is installed. By using CKDATA, you now have access to system information and performance data for as many machines as you like, all from **one disk**. To load CKD files from other machines, use the Load Data command under the File Menu.

See also:

CKD Files

Collecting Data on OS/2 Machines

Load data

The CKDATA Program

Collecting data on OS/2 machines

To gather data on **OS/2 machines**, use the CKDATA program from the **DOS Full Screen** command. It is important that you use the "Full Screen" version for proper results. The other option under OS/2 is to use the **Windows Full Screen** option. Both of these options will collect the data and create a CKD file from a DOS box.

See also:

Collect data

Collecting data on multiple machines

Load data

Installing devices

Before you install a new device to your PC, there is a set of **information** that you need to know to **avoid a conflict** in configuration including IRQ, I/O Port Address, ROM Address, DMA Channel and Memory Address. The Setup Advisor will help you make the right decisions about how to set up a **new device** so that it works right the first time. You can even check to see if the **recommended setup** will work without conflicts, and if not, the Setup Advisor recommends **alternate setup assignments**.

See also:
Setup Advisor

Testing Memory from DOS

To test **memory** in the most efficient manner, CheckIt PRO: Analyst **quits** Windows when it runs the Memory Test. Because the current Windows session will end, you will be given a **warning**, and the opportunity to cancel or continue. If you continue, any **other** programs that were open in the session will **not** be **restarted** when Windows resumes. If problems still occur when running the Memory Test from the CheckIt PRO: Analyst program, try running the CKMEM applet from DOS.

See also:

Running the Applets from DOS

Memory Testing

Moving applets to a floppy

The **tests** in CheckIt PRO: Analyst are actually individual applets (mini-applications). This allows you to **move** these **tests** to a separate floppy, network drive, or other location for remote testing. Copying these applets is made easy through the use of the **CKMOVE.BAT program**. This batch file will move the applets you specify to another path or disk, including any support files needed by any given test.

Using multiple copies of applets would **violate** the Standard License Agreement. Only the CKDATA program can be copied freely for multiple users. Therefore, a **Multiple License Extension** is **available** if copying the applets is necessary. Contact TouchStone directly for details.

Naming Convention of COM Ports

IBM PCs and compatibles have four **standard** base addresses for **serial ports**. These **assignments** are as follows:

- 3F8H -- (Port 1)
- 2F8H -- (Port 2)
- 3E8H -- (Port 3)
- 2E8H -- (Port 4)

The **BIOS assigns** port indexes in the **order** in which it finds the **serial ports** on the machine. It searches for the ports by base address, proceeding in the order indicated above. DOS assigns **COM 1** to the **first** port it finds, **COM 2** to the **second** and so on. If you have a machine with two COM ports, one at 3F8H and IRQ 4 and the other at 3E8H and IRQ 4, then DOS would call them COM 1 and COM 2. The address 3F8H would be COM 1 and 3E8H would be COM 2.

CheckIt PRO : Analyst shows the **COM names** assigned by **DOS**. Communication software commonly do not use the COM names assigned by DOS. Therefore, CheckIt PRO: Analyst and a communications package may call the same port by different names. The **most important** information is the actual **base address** and **IRQ**.

Windows addresses the COM ports in the same manner as DOS, but the Windows **COMM.DRV** may be confused when a COM address is skipped over. It expects certain COM ports to be addressed in the order shown above. To compensate for a missing COM address, you can add a **NULL** port to the **SYSTEM.INI** file. For example, to skip over the second port address, you would add the following lines to the [386Enh] section of your SYSTEM.INI file:

COM2IRQ=-1 (This disables the false COM 2 appearing in the BIOS data area)
COM3Base=03F8 (This sets the correct COM 3 address)
COM3IRQ=4 (This sets the correct COM 3 IRQ)

Files with an extension of **PRF** are performance **files** used in the **Rate Performance** option. CheckIt PRO: Analyst **ships** with a **group** of PRF files, and as you create more, they will join them in the **PRF** sub-directory.

32-Bit Disk Access

What Is 32-Bit Access Mode

32-Bit Access works as a **device driver** that communicates with the hard drive controller. This function looks for specific hardware interrupts (13H), and handles them directly, thus **replacing** the disk **BIOS**.

During installation, the Windows **Setup** program **determines** if your hard disk controller can **use** 32-Bit Access (although we have seen on some systems determination is incorrect). If your machine has the ability to use 32-Bit Access, a check box in the **Virtual Memory** dialog window will be available. Using 32-Bit Access **increases** the hard drive **access time**, and allows for **more** (and quicker) instances of the **MS-DOS Prompt**.

The Need to Disable 32-Bit Access

Due to the manner in which 32-Bit Access **takes** control of the hard drive **controller**, you must **run** CheckIt PRO: Analyst **without** using this option. 32-Bit Access does **not allow** any program to **write** back to the **hard disk** when in a **DOS box**. CheckIt PRO: Analyst collects some system information and runs all tests from a DOS box. 32-Bit Access does not allow CKDATA or the test applets to write to the **report** or **journal** files in this DOS BOX. If your system is set up to run 32-Bit Disk Access, you must **disable** this **function**.

Viewing multiple performance ratings

Receiving Parity Errors

If you are receiving **parity errors** when running the **Memory Test**, it may be due to the fact that your memory does not have a **parity chip**. All **true IBM compatibles** will have this chip, but **some clones do not**. CheckIt PRO: Analyst tests the functionality of the parity chip. In the case where there is no parity chip, an automatic failure will result.

To verify whether you have the parity chip, you can count the number of chips on the memory module in your system. Modules with **nine chips do** have the parity chip, those with only **eight do not**. This same rule goes for modules that contain three and two chips respectively.

Press this button to **copy** a performance file **from** the **Unselected** list box **to** the **Selected** list box.

OS/2 summary

The **OS/2 Summary** command gives an **overview** of the OS/2 **setup**, based on information from the CONFIG.SYS as well as other information gathered directly from OS/2. If OS/2 was **not installed** on the computer when the data was collected, the OS/2 Summary **command** will be **grayed**.

OS/2 Summary Components

The **fields** specified on the **OS/2** screen are listed and explained below:

- **Version**--OS/2 version **number**
- **Autostart**--Parameters identify the **workplace shell** functions to be included. Possible functions are Programs, Tasklist, Folders and Connections. Leaving out a function disables this function.
- **Buffers**--The **maximum** number of **buffers allocated** for buffering disk requests.
- **Shell**--The various shells **installed**
- **ComSpec**--For versions earlier than 2.0, this identifies the **location** of the OS/2 command processor.
- **OS/2 Shell**--Identifies the **location** of the OS/2 command processor (version 2.0 and later).
- **ProtShell**--Identifies the **location** of the presentation manager shell that was loaded.
- **DOS**--This indicates whether or not the **DOS kernel** is loaded in high (above 640K) memory.
- **DelDir**--This both enables the **Undelete** command and identifies the directories where OS/2 will store deleted files. More than one directory may be identified.
- **DEVINFO**--This identifies the **video** support routine loaded. Possible parameters are: CGA, EGA, VGA and XGA (IBM 8514).
- **DiskCache**--This is the **size** of the disk cache.
- **Path**--The different **path statements** defined for use by OS/2.
- **Executable**--The directory list used in **locating** executable files.
- **Library**--The directory list used in answering request for **dynamic link library** (DLL) files.
- **Data**--The directory list used in **answering requests** for data files. This is similar to the APPEND command in DOS.
- **IFS (File System)**--This identifies the **Installable File Systems** (IFS) that are loaded. The most common one is the OS/2 High Performance File System (HPFS).
- **Keys**--This ON/OFF flag indicates whether or not command line **editing** is available at the OS/2 prompt.
- **MaxWait**--This is the number of seconds to **wait before increasing** the **priority** of standard waiting thresholds.
- **Memory Manager**--This indicates the **status** of the memory manager.
- **PROTECT**--Enables **protected mode** memory access to API calls. If "PROTECT" does not appear, this access is disabled.
- **Printer Buffer Size**--This indicated, for each LPT (1, 2,3), the number of **bytes** of memory used as a data buffer.
- **Protect Only**--This indicates whether or not the system will only run in **protected mode**. In protected mode, OS/2 will not run any DOS or Windows programs.
- **Swap Path**--This indicates the location of the **SWAPPER.DAT** file, which is used for swapping memory to disk.
- **Threads**--This indicates the **maximum number** of threads available.
- **BASEDEV**--Listed are the **base device drivers** loaded at startup. These basic interfaces include printer and disk drivers.
- **DEVICE**--Listed are all the **device drivers** to be loaded when OS/2 is started.

Press this button to remove a performance file from the Selected list box.

Running applets from DOS

The **tests** in CheckIt PRO: Analyst may be run **from** the command line in **DOS**. Each test is its own applet with a file name starting with "CK", and continuing to describe the test (e.g. CKMEM.EXE is the memory test). For **help** on a specific applet name, type the filename followed by **/?**.

An **applet** is a **mini-application**. All the CheckIt PRO: Analyst **tests** are applets, and so is **CKDATA**.

If you select this option, CheckIt PRO: Analyst will **display details** from the **last session**, using the previously loaded CKD file.

If you select this option, a list of available CKD files will be presented. Choose the CKD file for the machine you wish to analyze.

The CKDATA Program

The **CKDATA** program **collects** system configuration and performance data and stores it in a file with the extension CKD. Use CKDATA to collect information on PCs **other** than the one where CheckIt PRO: Analyst was installed.

The **CKDATA** applet is completely **compatible** with **Windows**, **DOS**, and **OS/2** systems. While it runs as a DOS program on all of these platforms, it is aware of what type of system is being used and makes special notes about it in the CKD file.

The **OK** button carries out the command you have chosen.

The **Cancel** button closes the current dialog box and cancels the command you have chosen.

Pressing the **Help** button will open the help file specific to the current dialog box. For more complex dialog boxes, there will be several help windows. Use the help system browse buttons to see complete help for any given dialog box.

The **Read Only** option is controlled by a standard Windows check box, which means you can select or clear the option. In this case, if you elect to open a CKD file with the Read Only option checked, no changes to the file will be made.

CKD Files

CheckIt PRO: Analyst **collects** system **configuration** and **performance data** and stores it in a file with the **extension "CKD"**. In the manual and this help system, these files are referred to as **CKD files**. In addition to collecting data from your own PC, you can also collect data about **other systems** using the **CKDATA applet** provided with CheckIt PRO: Analyst. Running CKDATA on a machine where CheckIt PRO: Analyst is not installed will carry out the **same function as** selecting the **Collect Data** command under the File Menu.

See also:

Collect Data

The CKDATA Program

Collecting Data on OS/2 Machines

Pressing the **Close** button will exit you out of the **current window**.

Pressing the **New** button will **clear** the entries and allow you to **start over** with a new selection.

Pressing the **Save As** button will **save** your newly edited or created data to a **filename** you specify.

Press **Continue** if you wish to proceed **after** reading the **warning** in the message box.

Collecting data from DOS v.s. Windows

Because CheckIt PRO: Analyst allows you to **collect** data from **multiple machines**, and from **various platforms**, data collected from the same machine at almost the same time may **vary**. For example, when you collect data from a machine from DOS (Windows is not loaded) using CKDATA, you will not collect any Windows information. Also, your machine will receive a higher System Performance rating. When you collect data from the CheckIt PRO: Analyst menu, or by using CKWDATA, you will collect Windows information and System Performance ratings will not be as high.

To keep matters from becoming too confusing, use the **Description** field when collecting data or creating PRF files to denote whether or not Windows was loaded. You will see that all the example CKD and **PRF** files included in CheckIt PRO: Analyst have either **DOS** or **WIN** in their filename and description.

See also:

CKD Files

CKDATA & CKWDATA

The CKDATA Program

CKDATA & CKWDATA

CheckIt PRO: Analyst allows you to **collect** data on **multiple machines** on multiple **platforms** by using the CKDATA and CKWDATA programs.

CKDATA

To collect data on a machine that **only** has **DOS**, use the CKDATA program. You can either run CKDATA **from** a **floppy**, or copy it to a **local drive**. Keep in mind however, that the CKD **file** generated by CKDATA will be **written** to the location from **where** CKDATA was **executed**. For help on CKDATA, type:

CKDATA /?

To make exclusions when collecting data, use the following syntax:

CKDATA /X:xxx,xxx,xxx

where "xxx" is an element you wish to exclude in your data collection.

CKWDATA

If you want to collect data on a machine that has **Windows loaded**, you can choose between CKDATA and CKWDATA. You may even want to **run both** to see how the configuration and performance **varies**. To run CKWDATA on the machine where CheckIt PRO: Analyst was installed, simply double-click on the CKWDATA icon, which was created during setup. If you want to run **CKWDATA** on another machine that has windows loaded, select the **File menu**, **Run** command on the Program or File Manager and type in:

A:CKWDATA.EXE

To make exclusions when collection data with CKWDATA, click on the Exclusions button and enter the appropriate exclusions in the fields provided.

See also:

[Collecting Data on Multiple Machines](#)

[Exclusions](#)

Exclusions

It is **uncommon** but possible for CheckIt PRO: Analyst to have hardware **incompatibility** problems when collecting data due to the millions of different combinations of hardware and software that can be run together. If this unlikely hanging occurs during data collections, you can **exclude** the device that is not responding correctly to CheckIt PRO: Analyst's **inquiries**.

The **component** that causes CheckIt PRO: Analyst to hang will be listed in the data collection box. To bypass this device, use the appropriate **exclusion** from the list below:

DOS Exclusion

BEN Exclude gathering benchmark data
FIL Exclude gathering files data
HD Don't check for hard drive information
FD Don't check for floppy drive information
VDO Don't check for super-VGA chipset or video memory
IRQ Don't check IRQ assignments
COM Don't check serial ports
LPT Don't check parallel ports
SND Don't check for sound cards
EMS Don't check for expanded memory
BUS Don't identify the bus architecture
NPU Don't check for a math coprocessor
IOP Don't check the I/O ports
BIOS Don't check the I/O ports directly, use BIOS

Windows Exclusion:

DEV Don't collect Device Capabilities information
FIL Don't collect WIN.INI and SYSTEM.INI
GEN Don't collect general Windows information

Exclusions when collecting from DOS (CKDATA)

When using the CKDATA file to gather data from DOS, you can use the following syntax to add the exclusions and collection limitations:

CKDATA filename /X:xxx,xxx,xxx,xxx,xxx /N:"Description"

The **"/X:"** is a command switch that allows you to add the exclusions to the CKDATA command. Replace **"xxx"** with as many exclusions as you like, being sure to place a comma in-between each exclusion.

Exclusions when collecting from Windows (CKWDATA)

When using the CKWDATA file to gather data, click on the EXCLUDE button and enter the exclusions before running the program.

Exclusions when collecting inside CheckIt PRO: Analyst

When using the Collect Data command from the CheckIt PRO: Analyst File menu, you will not be prompted for exclusions. The exclusions are set in the CKANLYST.INI file, under the **[EXCLUSIONS]** section, as shown in the example below:

[Exclude]
DOS=HD, IRQ, LPT
Win=DEV, FIL

Choose this option if you wish to **collect data now**.

Direct Memory Access (DMA)

By using Direct Memory Access, or **DMA**, components on your computer can transfer information **without** passing it through the **CPU**. Avoiding the need to send data through the CPU **saves** a considerable amount of **time**. DMA is used mainly for transferring data to and from hard disks, but is often utilized by backup programs to improve speed by directly transferring data from the hard disk to floppies. This process is controlled by the DMA controller chip. PC and XT class machines have one DMA controller chip, and AT and later class machines have two.

DMA Availability

Unlike detecting IRQs assignments on a PC, channels used by DMA are not available. Devices only occupy a DMA channel while **in use**, whereas IRQs are assigned more permanently (although they can be changed manual). Common DMA channel assignments for PC and AT type machines are shown below:

PC and XT compatible machines:

DMA0 Used by system (not available on bus)
DMA1 *
DMA2 Floppy disk controller
DMA3 Hard disk controller

AT compatible machines:

DMA0 Used by system (16 bit)
DMA1 * (8 bit)
DMA2 Floppy disk controller (8 bit)
DMA3 * (8 bit)
DMA4 [CASCADE] - Slave DMA controller input into master
DMA5 * (16 bit)
DMA6 * (16 bit)
DMA7 * (16 bit)

* = No standard DMA assignment; you can assign these DMA channels to devices not listed that can be configured for DMA.

Testing the DMA Controllers

In the **System Board Test**, CheckIt PRO: Analyst checks to see that communication between your CPU and the DMA controller is functioning properly. If there is a failure, either your DMA controller, or the CPU is not working correctly. The System Board Test will automatically check both. Each **channel** and **register** is checked, and the refresh function is tested. Problems with the refresh cycle can cause what might otherwise appear to be memory errors.

