

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
31 August 2006 (31.08.2006)

PCT

(10) International Publication Number
WO 2006/089352 A1

(51) International Patent Classification:
G06F 17/30 (2006.01)

(21) International Application Number:
PCT/AU2006/000217

(22) International Filing Date:
21 February 2006 (21.02.2006)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
2005900825 22 February 2005 (22.02.2005) AU

(71) Applicant (for all designated States except US): **UNITED ELECTRICAL SOFTWARE P/L** [AU/AU]; 81-83 Archies Creek Road, Archies Creek, VIC 3995 (AU).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **POWELL, Nathan** [AU/AU]; 15 Morrisons Road, Nerrena, VIC 3953 (AU).

(74) Agent: **PULLEN, Kevin, M.**; Aardvark Patent & Trade Mark Services, P.O. Box 241, Landsborough, QLD 4550 (AU).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

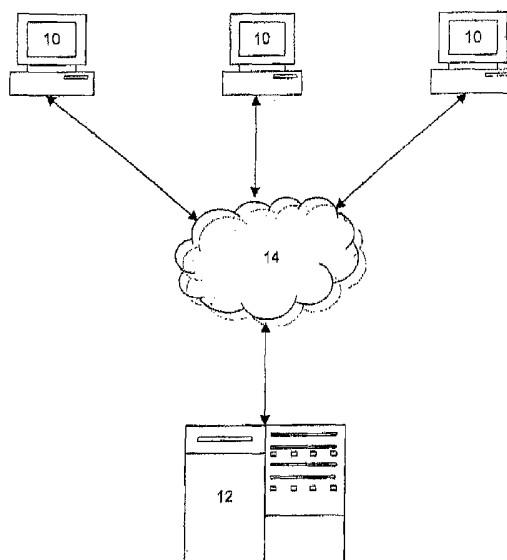
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHOD AND SYSTEM FOR MONITORING COMPUTER SYSTEMS



(57) Abstract: A method for tracking modifications to a hardware configuration of a computer system is disclosed, the method including the steps of (a) capturing a first snapshot of the hardware configuration of the computer system at a first point in time; (b) storing the first snapshot in a remote database; (c) capturing a second snapshot of the hardware configuration of the computer system at a second subsequent point in time; and (d) comparing the stored first snapshot and the second snapshot. Any difference between the first and second snapshots indicates that a change has been made to the hardware configuration of the computer system. This method can reduce warranty abuse or fraud by the users of the computer system and also reduce the likelihood of theft of the computer(s) and any attached peripheral equipment.

WO 2006/089352 A1

TITLE: METHOD AND SYSTEM FOR MONITORING COMPUTER SYSTEMS**Field of the Invention**

5 The present invention relates to methods and systems for monitoring computer systems and more particularly to monitoring modifications to hardware configurations of computer systems.

Background to the Invention

10 Many new computer products and peripherals are covered by a manufacturer's warranty. Manufacturer's warranties vary in terms of the extent of repair, replacement and refund options that are available for a particular product. Most manufacturers' warranties contain express limitations regarding computer equipment which has been modified since the purchase date.

15 Many computer equipment distributors or resellers offer extended warranties on newly purchased equipment which constitutes an upgrade on the basic manufacturer's warranty. Extended warranties may take effect either when the manufacturer's warranty expires, or operate during and after the term of the manufacturer's warranty. Some extended warranties can be obtained through third-party warranty vendors.

20 Warranty abuse or fraud is a major problem for warranty vendors. When system failures occur for a product under warranty, the customer usually sends the system back to the manufacturer or authorised service provider for warranty repair. The manufacturer or third party warranty provider then repairs the system, expending whatever parts and/or labour are required to rectify the problem. However, it is not uncommon for a customer to modify a system through installation of non-genuine, defective or used parts, before reporting the system as being faulty and returning
25 it to the manufacturer or third party warranty provider for repair under warranty.

A related issue is an increase in the theft of notebooks, desktop computers and peripheral computer equipment. The theft of such devices has become a significant problem for many businesses. Security measures such as password protection can be readily circumvented by making hardware modifications to the stolen computer.

5 Moreover, such security measures clearly fail to prevent or deter authorised users to whom the password is known from stealing computing equipment. Other security measures such as physical locks and other attachment devices can be forcibly removed and an authorised user with an appropriate key can merely use the key to unlock the attachment device and steal the computer.

10 The discussion of the background to the invention included herein is included to explain the context of the invention. This is not to be taken as an admission that any of the material referred to is published, known or part of the common general knowledge as at the priority date of the claims.

Summary of the Invention

15 According to an aspect of the present invention, there is provided a method for tracking modifications to a hardware configuration of a computer system, the method including the following steps:

- (a) capturing a first snapshot of the hardware configuration of the computer system at a first point in time;
- 20 (b) storing the first snapshot in a remote database;
- (c) capturing a second snapshot of the hardware configuration of the computer system at a second subsequent point in time;
- (d) comparing the stored first snapshot and the second snapshot;

wherein any difference between the first and second snapshots indicates that a change has been made to the hardware configuration of the computer system.

5 The tracking of modifications to the hardware configuration of a computer system is useful both for warranty providers and also for reporting theft of computer components.

Preferably, the method further includes the step of generating an alert to notify a nominated person that a modification has been made to the hardware configuration. Such an alert may be directed to a system administrator, warranty provider or other
10 nominated person.

In a preferred embodiment of the invention, the first point in time occurs when a program for performing the steps of the method for tracking modifications to a hardware configuration of a computer system is installed in the computer system and the second point in time occurs each time the computer system is turned on or
15 restarted subsequent to the program being installed on the computer system.

In one form of the invention, the hardware configuration includes one or more of the following:

- (a) disc drive type;
- (b) central processing unit (CPU) type;
- 20 (c) memory configuration;
- (d) peripheral devices.

Most preferably, the method further includes the following steps:

- (a) checking a status of the computer system each time a snapshot is captured; and
- (b) if the status of the computer system indicates that the system has
5 been stolen;
- (c) determining a network identifier associated with the computer system;
and
- (d) reporting the network identifier to the nominated person;

wherein the network identifier can be used to determine the physical location
10 of the computer system.

The network identifier may include one or more of the following:

- (a) an IP address; or
- (b) a MAC address.

In one embodiment, the method further includes the step of monitoring a
15 performance parameter of one or more hardware components.

Preferably, the performance parameter is measured and the measured
performance parameter is compared to a stored performance parameter included
in the first snapshot. Preferably, the performance parameter is measured each time
the system is started up.

Most preferably, a change in the performance parameter causes an alert to be generated to notify the nominated person that a potential problem exists with the hardware component.

5 According to another aspect of the present invention, there is provided a method of providing a warranty for a computer system, the method including the following steps:

- (a) providing software for tracking changes in one or more hardware configuration parameters in a computer system;
- (b) installing the software on the computer system;
- 10 (c) capturing a first snapshot of a hardware configuration of the computer system at a first point in time;
- (d) storing the first snapshot in a remote database;
- (e) capturing a second snapshot of the hardware configuration of the computer system at a second subsequent point in time;
- 15 (f) comparing the stored first snapshot and the second snapshot; and
- (g) generating an alert for transmission to a warranty provider if the comparison reveals any difference between the first and second snapshots;

20 wherein a difference between the first and second snapshots indicates that a change has been made to the hardware configuration of the computer system and causes the warranty provider to reassess validity of the warranty

According to yet another aspect of the present invention, there is provided a method of tracking a stolen computer system, including the following steps:

- 5 (a) providing software for tracking a network identifier associated with a computer system;
- (b) installing the software on the computer system;
- (c) reporting the computer system as being stolen;
- (d) monitoring a network identifier associated with the stolen system; and
- (e) reporting the network identifier to the nominated person;
- 10 wherein the network identifier can be used to determine the physical location of the computer system.

An advantage of the present invention is that manufacturer's and/or other warranty providers are enabled to monitor whether hardware modifications have been made to a computer system to alleviate the problem of fraudulent warranty claims.

- 15 Another advantage of the present invention is the ability to track a network identifier for a stolen computer system which can be used to determine a physical location of the stolen device.

Brief Description of the Drawings

- 20 The invention will hereinafter be described in greater detail with reference to the attached drawings, which show example embodiments of the invention. It is to be understood that the particularity of the drawings does not supersede the generality of the preceding description of the invention.

Figure 1 is a systematic view showing the system components used to perform the present invention according to an embodiment.

Figure 2A is a flow chart illustrating the steps of the method of the present invention according to an embodiment.

5 Figure 2B is a flowchart which is a continuation of the flow chart in Figure 2A.

Detailed Description

Referring firstly to Figure 1, there are shown the components used to perform the method according to one embodiment of the invention. The components include a plurality of computer systems 10 coupled to a remote server 12 via a TCP/IP
10 network 14 such as the Internet or some other analogous network.

Referring now to Figure 2A, a software program configured to perform the steps of the method must be installed on each of the computer systems to be monitored 16. The program is configured to capture a snapshot of the hardware configuration of the system and transmit the same to a remote server via a network for storing
15 and/or further processing. Installation of this software involves the inputting of requested user data for storage in a database on the remote server 18. The requested data includes a product key (or warranty identification number) which is provided on purchase of the software, a purchase date, an expiry date, and customer details including the name and email address of a person nominated by the
20 customer to receive alerts regarding any system modifications. This person may be a system administrator, computer system manufacturer, warranty provider, or other suitable person.

The data provided by the customer is encrypted and transmitted to the remote server, where it is stored in a database. As part of the registration process, the
25 system conducts a check to ensure that the product key is valid 20. If the product key is not valid, the registration process is terminated. If the product key is valid, the

registration process is completed and the user data is entered into and stored in the database. Once the user data has been entered into the database, an auto generated PDF file containing the warranty policy details, terms and conditions is forwarded to the nominated person's email address for future reference.

- 5 Once the software has been installed and registered, a first snapshot of the hardware configuration of the system is captured 24. The hardware configuration may include any one or more of the following: disc drive type; central processing unit (CPU) type; memory configuration; connected peripheral devices and the like. The snapshot includes a build sheet encompassing the system's hardware configuration.
- 10 The snapshot or build sheet is stored in the database as an XML file 26. An example of such a build sheet is shown in Appendix 1. The sample build sheet provides a number of examples of features which may be monitored in accordance with an embodiment of the invention.

- 15 The first snapshot will include data relating to hardware components and specifications which were installed in the system when it was built and/or when the software was installed. In the build sheet, original equipment may be annotated as "original equipment" for easy reference.

- Referring now to Figure 2B, a second or subsequent snapshot is captured automatically each time that the computer system is turned on or restarted 28. The
- 20 second snapshot captures the same data set as the first snapshot but at a subsequent point in time 30. This enables the snapshots to be compared such that any difference in the snapshot data is indicative of modifications made to the hardware configuration of the computer system in the intervening period.

- As with the first snapshot (or original build sheet) the second snapshot is encrypted
- 25 and transmitted to the remote server 32 for comparison to the first snapshot 34. Any variation in system configuration parameters between the first and second snapshots indicates that a modification has been made to the hardware configuration since the first snapshot was captured 36. The build sheet resulting from the second snapshot

is annotated with the terms "modified equipment" or similar to clearly indicate which system configuration parameters have been modified. The resulting build sheet can also be configured to indicate when a hardware modification was detected. In the event that the computer system is not connected to a network when modification of hardware configuration is detected, the modification(s) will be stored in an XML file to be transmitted to the server the next time that a network connection is detected. It is to be understood that the tracking of hardware configuration modifications is a transparent back end process.

When the comparison indicates that a modification has been made 38, an alert is generated for transmission to the nominated person, to notify the system administrator, warranty provider or other suitable person that a hardware modification has occurred in a system for which the nominated person is responsible 40.

There are two clear uses for the system hardware modification data. Firstly, a system administrator can be made aware that a hardware modification has occurred to enable appropriate action to be taken if required. For example, consider the scenario where the hardware modification is the result of a monitor having been disconnected from the computer system. The alert should prompt the system administrator to take appropriate steps to determine whether disconnection of the device was authorised and if not, and attempts to locate the missing device are unsuccessful, it can be concluded that device has been stolen. This enables system administrators to monitor theft of computer components which may not otherwise be obvious.

Alternatively, the occurrence of any hardware modifications can be reported to a warranty provider such that the warranty provider can determine whether the modification invalidates the terms of any warranty existing for the computer system. The database on the remote server may be provided by a warranty vendor, to enable the warranty vendor to keep track of any authorised or unauthorised hardware modifications.

In addition to the hardware modification facility, the system preferably includes a theft tracking facility. The role of the theft tracking facility is to monitor the status of each computer system and if the status is recorded as "stolen" to undertake to track a location identifier associated with the device. Each time the computer system is turned on or restarted, a check is made of the status of the system. For instance, if a system administrator advised the warranty provider that a particular system has been stolen, that system will be flagged as being stolen in the database and subsequent starting of that device will cause the theft tracking script to be activated. The theft tracking script may be an ASP script residing on the remote server. In addition, it should be understood that the script runs in the background such that a thief would not ordinarily be aware that the stolen computer is being tracked. The ASP theft tracker script according to an embodiment of the invention is attached as Appendix 2.

The theft tracking script captures a network identifier as soon as the stolen computer system is connected to the Internet. The network identifier is typically a network address which is given to a device when it is manufactured or assigned when the device is connected to a network. Such network addresses include Internet Protocol (IP) addresses or Media Access Protocol (MAC) addresses. An IP address can be used to trace the physical location of the device and will also have associated with it the name and address of the IP address owner.

The network identifier is forwarded to the nominated person to enable action to be taken to determine the physical address of the device, such as for example contacting an Internet Service provider for resolution of the IP address. An advantage of hosting the theft tracker script on the remote server is that any problems and/or issues with the script can be sorted out at the server end without requiring access to the client.

In addition to monitoring hardware configuration modifications, the monitoring system can further monitor performance parameters of one or more system hardware components. For instance, the first snapshot includes a fan speed in

revolutions per minute (rpm). The original fan speed is logged together with the snapshot data on the build sheet such that it can be compared with the fan speed at subsequent points in time. The system may be configured to generate an alert if there is a change in the fan speed. A tolerance level can be set by the warranty provider at say 20% or some other appropriate figure. In this case the alert would indicate that preventative maintenance is required before the fan fails.

It is to be understood that various additions, alterations and/or modifications may be made to the parts previously described without departing from the ambit of the invention.

10 Appendix 1

```

- <ORIGINAL_BUIDSHEET>
- <HEADER>
  <ID>PC888990</ID>
  <DATE>30/12/2004</ DATE>
15 </HEADER>
  -<DISKDRIVE_HARDWARE>
  -<WIN32_DISKDRIVE devicestatus="original equipment"
    guid="IDE\DISK\IC25N020ATCS04-0_CA20A71A\5&3923B928&0&0.0.0">
    <Availability>,</Availability>
20 <BytesPerSector>512</BytesPerSector>
    <Caption>IC25N020ATCS04-0</Caption>
    <Description>Disk drive</Description>
    <DeviceID>\\.\PHYSICALDRIVE0</DeviceID>
    <Index>0</Index>
25 <InstallDate/>
    <InterfaceType>IDE</InterfaceType>
    <Manufacturer>(Standard disk drives)</Manufacturer>
    <MediaLoaded>True</MediaLoaded>
    <MediaType>Fixed hard disk media</MediaType>

```

```

    <Model>b</Model>
    <Name>\\.\PHYSICALDRIVE0</Name>
    <Partitions>4</Partitions>
    <PNPDeviceID>IDE\DISK\IC25N020ATCS04-
5    0_CA20A71A15&3923B928&0&0.0.0</PNPDeviceID>
    <PowerManagementsupported />
    <SectorsPerTrack>63</SectorsPerTrack>
    <Size>20,003,880,960</Size>
    <Status>OK</Status>\
10    <StatusInfo />
    <TotalCylinders>2,432</TotalCylinders>
    <ConfigManagerErrorCode>Device is working
    properly.</ConfigManagerErrorCode>
    <\\WIN32_DISKDRIVE>
15    </DISKDRIVE_HARDWARE>
    - <FAN_HARDWARE>
    -<WIN32_FAN devicestatus="original equipment" guid="">
    <PowerManagementCapabilities>b</PowerManagementCapabilities>
    <\\WIN32_FAN>
20    </FAN_HARDWARE>
    -<CDROMDRIVE_HARDWARE>
    -<WIN32_CDROMDRIVE devicestatus="original equipment"
    guid="IDE\CDROMSAMSUNG_CD-ROM_SN124_N100_15&10429FC6&0&0.0.0">
    <Availability>,running/full power</Availability>
25    <BytesPerSector />
    <Caption>SAMSUNG CD-ROM SN-124</Caption>
    <Description>CD-ROM Drive</Description>
    <DeviceID>IDE\CDROMSAMSUNG_CD-ROM_SN-124N100_
    15&10429FC6&0&0.0.0</DeviceID>
30    <Index />
    <InstallDate />
    <InterfaceType />

```

```

    <Manufacturer>(Standard CD-ROM drives)</Manufacturer>
    <MediaLoaded> False</MediaLoaded>
    <MediaType>CD-ROM</MediaType>
    <Model />
5    <Name>SAMSUNG CD-ROM SN-124</Name>
    <Partitions />
    <PNPDeviceID>IDE\CDROMSAMSUNG_CD-ROM_SN-
      124_N100_15&10429FC6&0&0.0.0</PNPDeviceID>
    <PowerManagementSupported />
10   <SectorsPerTrack />
    <Size />
    <Status>OK</Status>
    <StatusInfo />
    <TotalCylinders />
15   <ConfigManagerErrorCode>Device is working
      properly.</ConfigManagerErrorCode>
    <PowerManagementCapabilities>Unknown</PowerManagementCapabilities>
    </WIN32_CDROMDRIVE>
    </CDROM DRIVE_HARDWARE>
20   - <FLOPPYDRIVE_HARDWARE>
    - <WIN32_FLOPPYDRIVE devicestatus="original equipment"
      guid= "FDC\GENERIC_FLOPPY_DRIVE\5&3371E7B8&0&0">
    <Availability>,running/full power</Availability>
    <Caption>Floppy disk drive</Caption>
25   <Description>b</Description>
    <DeviceID>FDC\GENERIC_FLOPPY_DRIVE\5&3371E7B8&0&0</DeviceID>
    <InstallDate />
    <Manufacturer>(Standard floppy disk drives)</Manufacturer>
    <Name>Floppy disk drive</Name>
30   <PNPDeviceID>FDC\GENERIC_äFLOPPY_DRIVE\5&3371E7B8&0&0</PNPDevi
      celD>
    <PowerManagementCapabilities>Unknown</PowerManagementCapabilities>

```

```

    <PowerManagementSupported />
    <Status>OK</Status>
    <StatusInfo />
    <ConfigManagerErrorCode>Device is working
5    properly.</ConfigManagerErrorCode>
    </WIN 32_FLOPPYDRIVE>
    </FLOPPYDRIVE_HARDWARE>
    - <KEYBOARD_HARDWARE>
    <WIN32_KEYBOARD devicestatus="original equipment"
10    guid="ACPI\PNP0303\0">
    <Availability>,</Availability>
    <Caption>Enhanced (101- or 102-key)</Caption>
    <Description>Standard 101/102-Key or Microsoft Natural PS/2
    Keyboard</Description>
15    <DeviceID>ACPI\PNP0303\0</DeviceID>
    <InstallDate />
    <Name>Enhanced (101- or 102-key</Name>
    <PNPDeviceID>ACPI\PNP0303\0</PNPDeviceID>
    <PowerManagementCapabilities>Unknown</PowerManagementCapabilities>
20    <PowerManagementSupported>False</PowerManagementSupported>
    <Status>OK</Status>
    <StatusInfo />
    <ConfigManagerErrorCode>Device is working
    properly.</ConfigManagerErrorCode>
25    </WIN32_KEYBOARD>
    </KEYBOARD_HARDWARE>
    - <BASEBOARD_HARDWARE>
    - <WIN32_BASEBOARD devicestatus="original equipment" guid="">
    <Caption>Base Board</Caption>
30    <Description>Base Board</Description>
    <HotSwappable />
    <InstallDate />

```

```

    <Manufacturer>KAPOK</Manufacturer>
    <Model />
    <Name>Base Board</Name>
    <OtherIdentifyingInfo />
5    <PartNumber />
    <PoweredOn>True</PoweredOn>
    <Replaceable />
    <SerialNumber>12345678</SerialNumber>
    <Status />
10    <Tag>Base Board</Tag>
    <Version>None</Version>
    <ConfigManagerErrorCode>Device is working
properly.</ConfigManagerErrorCode>
    <PowerManagementCapabilities>Unknown</PowerManagementCapabilities>
15    </WIN32_BASEBOARD>
    </BASEBOARD_HARDWARE>
    - <PROCESSOR_HARDWARE>
    - <WIN32_PROCESSOR devicestatus="original equipment" guid="x86 Family 6
Model 11 Stepping 1">
20    <AddressWidth>32</AddressWidth>
    <Availability>,running/full power</Availability>
    <Caption>x86 Family 6 Model 11 Stepping 1</Caption>
    <CpuStatus>1</Cpu Status>
    <CurrentClockSpeed>1096</CurrentClockSpeed>
25    <CurrentVoltage>29</CurrentVoltage>
    <DataWidth>32</DataWidth>
    <Description>x86 Family 6 Model 11 Stepping 1</Description>
    <DeviceID>CPU0</DeviceID>
    <ExtClock>66</ExtClock>
30    <Family>2</Family>
    <InstallDate />
    <L2CacheSize>256</L2CacheSize>

```

```

    <L2CacheSpeed>1096</L2CacheSpeed>
    <Level>6</Level>
    <LoadPercentage>1</LoadPercentage>
    <Manufacturer>GenuineIntel</Manufacturer>
5    <MaxClockSpeed>1096</MaxClockSpeed>
    <Name>Intel(R) Celeron(TM) CPU 1100MHz</Name>
    <OtherFamilyDescription />
    <PNPDeviceID />
    <PowerManagementCapabilities>Unknown</PowerManagementCapabilities>
10    <PowerManagementSupported>False</PowerManagementSupported>
    <ProcessorId>000000000383F9FF</ProcessorId>
    <ProcessorType>3</ProcessorType>
    <Revision>2817</Revision>
    <Role>CPU</Role>
15    <SocketDesignation>uPGA2</SocketDesignation>
    <Status>OK</Status>
    <StatusInfo>3</StatusInfo>
    <Stepping>1</Stepping>
    <Uniqueld />
20    <UpgradeMethod>6</UpgradeMethod>
    <Version>Model 11, Stepping 1</Version>
    <VoltageCaps>4</VoltageCaps>
    </WIN32_PROCESSOR>
    </PROCESSOR_HARDWARE>
25    - <MEMORYDEVICE_HARDWARE>
    - <WIN32_MEMORYDEVICE devicestatus="original equipment" guid="">
    <ConfigManagerErrorCode>Unknown</ConfigManagerErrorCode>
    </WIN32_MEMORYDEVICE>
    </MEMORYDEVICE_HARDWARE>
30    - <PHYSICALMEMORY_HARDWARE>
    - <WIN32_PHYSICALMEMORY devicestatus="original equipment" guid="">
    <BankLabel>Banks 0/1</BankLabel>

```

```

    <Capacity>1,069,547,520</Capacity>
    <Caption>Physical Memory</Caption>
    <DataWidth>64</DataWidth>
    <Description>Physical Memory</Description>
5    <DeviceLocator>DRAM Slot 0</DeviceLocator>
    <FormFactor>DIMM</FormFactor>
    <HotSwappable />
    <InstallDate />
    <InterleavePosition>DIMM</InterleavePosition>
10    <Manufacturer />
    <MemoryType>DRAM</MemoryType>
    <Model />
    <Name>Physical Memory</Name>
    <OtherIdentifyingInfo />
15    <PartNumber />
    <PositionInRow />
    <PoweredOn />
    <Replaceable />
    <SerialNumber />
20    <Speed />
    <Status />
    <Tag>b</Tag>
    <TypeDetail>EDO</TypeDetail>
    <Version />
25    <ConfigManagerErrorCode>Device is working
    properly.</ConfigManagerErrorCode>
    </WIN32_PHYSICALMEMORY>
    - <WIN32_PHYSICALMEMORY devicestatus="original equipment" guid="">
    <BankLabel>U39/U40</BankLabel>
30    <Capacity>2,097,152</Capacity>
    <Caption>Physical Memory</Caption>
    <DataWidth>64</DataWidth>

```

```

    <Description>Physical Memory</Description>
    <DeviceLocator>Video Memory</DeviceLocator> <
    FormFactor>TSOP</Form Factor>
    <HotSwappable />
5    <InstallDate />
    <InterleavePosition>TSOP</InterleavePosition>
    <Manufacturer />
    <MemoryType>VRAM</MemoryType>
    <Model />
10    <Name>Physical Memory</Name>
    <OtherIdentifyingInfo />
    <PartNumber />
    <PositionInRow />
    <PoweredOn />
15    <Replaceable />
    <SerialNumber />
    <Speed />
    <Status />
    <Tag>Physical Memory 3</Tag>
20    <TypeDetail>Unknown</TypeDetail>
    <Version />
    <ConfigManagerErrorCode>Device is working
    properly.</ConfigManagerErrorCode>
    </WIN 32_PHYSICALMEMORY>
25    - <WIN32_PHYSICALMEMORY devicestatus="original equipment" guid="">
    <BankLabel>U5/U6</BankLabel>
    <Capacity>262,144</Capacity>
    <Caption>Physical Memory</Caption>
    <DataWidth>64</DataWidth>
30    <Description>Physical Memory</Description>
    <DeviceLocator>Cache SRAM</DeviceLocator>
    < FormFactor>TSOP</ FormFactor>

```

```

    <HotSwappable />
    <InstallDate />
    <InterleavePosition>TSOP</InterleavePosition>
    <Manufacturer />
5    <MemoryType>SRAM </MemoryType>
    <Model />
    <Name>Physical Memory</Name>
    <OtherIdentifyingInfo />
    <PartNumber />
10   <PositionInRow />
    <PoweredOn />
    <Replaceable />
    <SerialNumber />
    <Speed />
15   <Status />
    <Tag>Physical Memory 4</Tag>
    <TypeDetail>Unknown</TypeDetail>
    <Version />
    <ConfigManagerErrorCode>Device is working
20   properly.</ConfigManagerErrorCode>
    <WIN 32_PHYSICALMEMORY>
    - <WIN32_PHYSICALMEMORY devicestatus="original equipment" guid="">
    <BankLabel>U43</BankLabel>
    < Capacity >2,097,152</Capacity >
25   <Caption>Physical Memory</Caption>
    <DataWidth>16</DataWidth>
    <Description>Physical Memory</Description>
    <DeviceLocator>Flash BIOS U43</DeviceLocator>
    <FormFactor>TSOP</FormFactor>
30   <HotSwappable />
    <InstallDate />
    <InterleavePosition>TSOP</InterleavePosition>

```

20

```

    <Manufacturer />
    <MemoryType>EEPROM</MemoryType>
    <Model />
    <Name>Physical Memory</Name>
5    <OtherIdentifyingInfo />
    <PartNumber />
    <PositionInRow />
    <PoweredOn />
    <Replaceable />
10   <SerialNumber />
    <Speed />
    <Status />
    <Tag>Physical Memory 5</Tag>
    <TypeDetail>Unknown</TypeDetail>
15   <Version />
    <ConfigManagerErrorCode>Device is working
    properly.</ConfigManagerErrorCode>
    </WIN32_PHYSICALMEMORY>
    </PHYSICALMEMORY_HARDWARE>
20   - <POINTINGDEVICE_HARDWARE>
    - <W1N32_POINTINGDEVICE devicestatus="original equipment"
    guid="ACPI\PNPOF13\4&15D87081&0">
    <Availability>,</Availability>
    <Caption>PS/2 Compatible Mouse</Caption>
25   <Description>PS/2 Compatible Mouse</Description>
    <DeviceID>ACPI\PNP0F13\4&15D87081&0</DeviceID>
    <DeviceInterface>PS/2</DeviceInterface>
    <Handedness>Right Handed Operation</Handedness>
    <HardwareType>PS/2 Compatible Mouse</HardwareType>
30   <InstallDate />
    <Manufacturer>Microsoft</Manufacturer>
    <Name>PS/2 Compatible Mouse</Name>

```

```

    <PNPDeviceID>ACPI\PNP0F13\4&15D87081&0</PNPDeviceID>
    <PointingType>Unknown</PointingType>
    <PowerManagementCapabilities>Unknown</PowerManagementCapabilities>
    <PowerManagementSupported>False</PowerManagementSupported>
5    <Status>OK</Status>
    <StatusInfo />
    <ConfigManagerErrorCode>Device is working
    properly.</ConfigManagerErrorCode>
    </WIN32_POINTINGDEVICE>
10    </POINTINGDEVICE_HARDWARE>
    - <NETWORKADAPTER_HARDWARE>
    -<WIN32_NETWORKADAPTER devicestatus="original equipment"
    guid="PCI\VEN_1039&DEV_0900&SUBSYS_22021558&REV_82\3&13C0B0
    C5&0&09">
15    <AdapterType>Ethernet 802.3</AdapterType>
    <Availability>,running/full power</Availability>
    <Caption>[00000001] SiS 900 PCI Fast Ethernet Adapter</Caption>
    <Description>SiS 900 PCI Fast Ethernet Adapter</Description>
    <DeviceID>1</DeviceID>
20    <Index>1</Index>
    <InstallDate />
    <MACAddress>00:90:FS:10:18:CF</MACAddress>
    <Manufacturer>SiS</Manufacturer>
    <Name>SiS 900 PCI Fast Ethernet Adapter</Name>
25    <PN PDeviceID>PCI\VEN_1039&DEV_0900&SUBSYS_22021558&REV_82\3
    &13C0B0C5&0&09</PN PDeviceID>
    <PowerManagementSupported>False</PowerManagementSupported>
    <Speed />
    <Status />
30    <StatusInfo />
    <ConfigManagerErrorCode>Device is working
    properly.</ConfigManagerErrorCode>

```

```

</WIN32_NETWORKADAPTER>
- <WIN32_NETWORKADAPTER devicestatus="original equipment"
  guid="[00000002] RAS Async Adapter">
  <Availability>,running/full power</Availability>
5  <Caption>[00000002] RAS Async Adapter</Caption>
  <Description>RAS Async Adapter</Description>
  <DeviceID>2</DeviceID>
  <Index>2</Index>
  <InstallDate />
10 <MACAddress />
  <Manufacturer />
  <Name>RAS Async Adapter</Name>
  <PNPDeviceID />
  <PowerManagementSupported>False</PowerManagementSupported>
15 <Speed />
  <Status />
  <StatusInfo />
  <ConfigManagerErrorCode>running/full power</ConfigManagerErrorCode>
  </WIN32_NETWORKADAPTER>
20 - <WIN32_NETWORKADAPTER devicestatus="original equipment"
  guid="ROOT\MS_PSCHEM\{00000000-0000-0000-0000-000000000000}">
  <Availability>,running/full power</Availability>
  <Caption>[00000003] Packet Scheduler Miniport</Caption>
  <Description>Packet Scheduler Miniport</Description>
25 <DeviceID>3</DeviceID>
  <Index>3</Index>
  <InstallDate />
  <MACAddress />
  <Manufacturer>Microsoft</Manufacturer>
30 <Name>Packet Scheduler Miniport</Name>
  <PNPDeviceID>ROOT\MS_PSCHEM\{00000000-0000-0000-0000-000000000000}</PNPDeviceID>
  <PowerManagementSupported>False</PowerManagementSupported>

```

```

    <Speed />
    <Status />
    <StatusInfo />
    <ConfigManagerErrorCode>Device is working
5    properly.</ConfigManagerErrorCode>
    </WIN32_NETWORKADAPTER>
    - <WIN32_NETWORKADAPTER devicestatus="original equipment"
      guid ="ROOT\MS_L2TPMINIPOINT\0000" >
    <Availability>,running/full power</Availability>
10    <Caption>[00000004] WAN Miniport (L2TP)</Caption>
    <Description>WAN Miniport (L2TP)</Description>
    <DeviceID>4</DeviceID>
    <Index>4</Index>
    <InstallDate />
15    <MACAddress />
    < Manufacturer>Microsoft</Manufacturer>
    <Name>WAN Miniport (L2TP)</Name>
    <PNPDeviceID>ROOT\MS_L2TPMINIPOINT\0000</PNPDeviceID>
    <PowerManagementSupported>False</PowerManagementSupported>
20    <Speed />
    <Status />
    <StatusInfo />
    <ConfigManagerErrorCode>Device is working
    properly.</ConfigManagerErrorCode>
25    </WIN32_NETWORKADAPTER>
    - <WIN32_NETWORKADAPTER devicestatus="original equipment"
      guid ="ROOT\MS_PPTPMINIPOINT\0000">
    <Availability>,running/full power</Availability>
    <Caption>[00000005] WAN Miniport (PPTP)</Caption>
30    <Description>WAN Miniport (PPTP)</Description>
    < DeviceID >5</DeviceID >
    <Index>b</Index>

```

```

    <InstallDate />
    <MACAddress>50:50:54:50:30:30</MACAddress>
    <Manufacturer>Microsoft</Manufacturer>
    <Name>WAN Miniport (PPTP)</Name>
5    <PNPDeviceID>ROOT\MS_PPTP\MINIPORT\0000</PNPDeviceID>
    <PowerManagementSupported>False</PowerManagementSupported>
    <Speed />
    <Status />
    <StatusInfo />
10    <ConfigManagerErrorCode>Device is working
    properly.</ConfigManagerErrorCode>
    </WIN32_NETWORKADAPTER>
    - <WIN32_NETWORKADAPTER devicestatus="original equipment"
    guid="ROOT\MS_PPPOE\MINIPORT\0000">
15    <Availability>,running/full power</Availability>
    <Caption>[00000006] WAN Miniport (PPPOE)</Caption>
    <Description>WAN Miniport (PPPOE)</Description>
    <DeviceID>6</DeviceID>
    <Index>6</Index>
20    <InstallDate />
    <MACAddress>33:50:6F:45:30:30</MACAddress>
    <Manufacturer>Microsoft</Manufacturer>
    <Name>WAN Miniport (PPPOE)</Name>
    <PNPDeviceID>ROOT\MS_PPPOE\MINIPORT\0000</PNPDeviceID>
25    <PowerManagementSupported>False</PowerManagementSupported>
    <Speed />
    <Status />
    <StatusInfo />
    <ConfigManagerErrorCode>Device is working
30    properly.</ConfigManagerErrorCode>
    </WIN32_NETWORKADAPTER>
    - <WIN32_NETWORKADAPTER devicestatus="original equipment"

```

```

    guid="ROOT\MS_PTMINIPORT\0000">
    <Availability>,running/full power</Availability>
    <Caption>[00000007] Direct Parallel</Caption>
    <Description>Direct Parallel</Description>
5    <DeviceID>7</DeviceID>
    <Index>7</Index>
    <InstallDate />
    <MACAddress />
    <Manufacturer>Microsoft</Manufacturer>
10    <Name>Direct Parallel</Name>
    <PNPDeviceID>ROOT\MS_PTMINIPORT\0000</PNPDeviceID>
    <PowerManagementSupported>False</PowerManagementSupported>
    <Speed />
    <Status />
15    <StatusTnfo />
    <ConfigManagerErrorCode>Device is working
    properly.</ConfigManagerErrorCode>
    <WIN32_NETWORKADAPTER>
    - <WIN32_NETWORKADAPTER devicestatus="original equipment"
20    guid ="ROOT\MS_NDISWANIP\0000">
    <Availability>,running/full power</Availability>
    <Caption>[00000008] WAN Miniport (IP)</Caption>
    <Description>WAN Miniport (IP)</Description>
    <DeviceID>8</DeviceID>
25    <Index>8</Index>
    <InstallDate />
    <MACAddress />
    <Manufacturer>Microsoft</Manufacturer>
    <Name>WAN Miniport (IP)</Name>
30    <PNPDeviceID>ROOT\MS_NDISWANIP\0000</PNPDeviceID>
    <PowerManagementSupported>False</PowerManagementSupported>
    <Speed />

```

```

    <Status />
    <StatusInfo />
    <ConfigManagerErrorCode>Device is working
properly./ConfigManagerErrorCode>
5    </WIN32_NETWORKADAPTER>
    - <WIN32_NETWORKADAPTER devicestatus="original equipment"
guid="ROOT\MS_PSCHEM\{00000000-0000-0000-0000-000000000000}">
    <Availability>,running/full power</Availability>
    <Caption>[000000009] Packet Scheduler Miniport</Caption>
10    <Description>Packet Scheduler Miniport</Description>
    <DeviceID>9</DeviceID>
    <Index>9</Index>
    <InstallDate />
    <MACAddress>42: B0: 20:52:41:63 </MACAddress>
15    <Manufacturer>Microsoft</Manufacturer>
    <Name>Packet Scheduler Miniport</Name>
    <PNPDeviceID>ROOT\MS_PSCHEM\{00000000-0000-0000-0000-000000000000}</PNPDeviceID>
    <PowerManagementSupported>False</PowerManagementSupported>
    <Speed />
20    <Status />
    <StatusInfo />
    <ConfigManagerErrorCode>Device is working
properly.</ConfigManagerErrorCode>
    </WIN32_NETWORKADAPTER>
25    - <WIN32_NETWORKADAPTER devicestatus="original equipment"
guid="{00000000-0000-0000-0000-000000000000}">
    <Availability>,running/full power</Availability>
    <Caption>[000000010] NETGEAR MA101 USB Adapter</Caption>
    <Description>NETGEAR MA101 USB Adapter</Description>
30    <DeviceID>10</DeviceID>
    <Index>10</Index>
    <InstallDate />

```

```

    <MACAddress />
    <Manufacturer />
    <Name>NETGEAR MA101 USB Adapter</Name>
    <PNPDeviceID />
5    <PowerManagementSupported>False</PowerManagementSupported>
    <Speed />
    <Status />
    <StatusInfo />
    <ConfigManagerErrorCode>running/full power</ConfigManagerErrorCode>
10    <WIN32_NETWORKADAPTER>
    - <WIN32_NETWORKADAPTER devicestatus="original equipment"
    guid="ROOT\MS_PSCHEM\{00000000-0000-0000-0000-000000000000}">
    <Availability>,running/full power</Availability>
    <Caption>[00000011] Packet Scheduler Miniport</Caption>
15    <Description>Packet Scheduler Miniport</Description>
    <DeviceID>11</DeviceID>
    <Index>11</Index>
    <InstallDate />
    <MACAddress>00:90:F5:10:18:CF</MACAddress>
20    <Manufacturer>Microsoft</Manufacturer>
    <Name>Packet Scheduler Miniport</Name>
    <PNPDeviceID>ROOT\MS_PSCHEM\{00000000-0000-0000-0000-000000000000}</PNPDeviceID>
    <PowerManagementSupported>False</PowerManagementSupported>
    <Speed />
25    <Status />
    <StatusInfo />
    <ConfigManagerErrorCode>Device is working
    properly.</ConfigManagerErrorCode>
    <WIN32_NETWORKADAPTER>
30    - <WIN32_NETWORKADAPTER devicestatus="original equipment"
    guid="{00000012} Microsoft TV/Video Connection">
    <Availability>,running/full power</Availability>

```

```

    <Caption>[00000012] Microsoft TV/Video Connection</Caption>
    <Description>Microsoft TV/Video Connection</Description>
    <DeviceID>12</DeviceID>
    <Index>12</Index>
5    <InstallDate />
    <MACAddress />
    <Manufacturer />
    <Name>Microsoft TV/Video Connection</Name>
    <PNPDeviceID />
10   <PowerManagementSupported>False</PowerManagementSupported>
    <Speed />
    <Status />
    <StatusInfo />
    <ConfigManagerErrorCode>running/full power</ConfigManagerErrorCode>
15   </WIN32_NETWORKADAPTER>
    - <WIN32_NETWORKADAPTER devicestatus="original equipment"
      guid="[00000013] SMC EZ Connect USB/Ethernet Series Converter">
    <Availability>,running/full power</Availability>
    <Caption>[00000013] SMC EZ Connect USB/Ethernet Series
20   Converter</Caption>
    <Description>SMC EZ Connect USB/Ethernet Series Converter</Description>
    <DeviceID>13</DeviceID>
    <Index>13</Index>
    <InstallDate />
25   <MACAddress />
    <Manufacturer />
    <Name>SMC EZ Connect USB/Ethernet Series Converter</Name>
    <PNPDeviceID />
    <PowerManagementSupported>False</PowerManagementSupported>
30   <Speed />
    <Status />
    <StatusInfo />

```

```

    <ConfigManagerErrorCode>running/full power</ConfigManagerErrorCode>
  </WIN32_NETWORKADAPTER>
  - <WIN32_NETWORKADAPTER devicestatus="original equipment"
    guid="ROOT\MS_PSCHEM\{00000000-0000-0000-0000-000000000000}">
5    <Availability>,running/full power</Availability>
    <Caption>[00000014] Packet Scheduler Miniport</Caption>
    <Description>Packet Scheduler Miniport</Description>
    <DeviceID>14</DeviceID>
    <Index>14</Index>
10    <InstallDate />
    <MACAddress />
    <Manufacturer>Microsoft</Manufacturer>
    <Name>Packet Scheduler Miniport</Name>
    <PNPDeviceID>ROOT\MS_PSCHEM\{00000000-0000-0000-0000-000000000000}</PNPDeviceID>
15    <PowerManagementSupported>False</PowerManagementSupported>
    <Speed />
    <Status />
    <StatusInfo />
    <ConfigManagerErrorCode>Device is working
20    properly.</ConfigManagerErrorCode>
  </WIN32_NETWORKADAPTER>
  - <WIN32_NETWORKADAPTER devicestatus="original equipment"
    guid="USB\VID_0707&PID_0200\{00000000-0000-0000-0000-000000000000}">
    <Availability>,running/full power</Availability>
25    <Caption>[00000015] SMC EZ Connect USB/Ethernet Series
      Converter</Caption>
    <Description>SMC EZ Connect USB/Ethernet Series Converter</Description>
    <DeviceID>15</DeviceID>
    <Index>15</Index>
30    <InstallDate />
    <MACAddress>00:04:E2:08:8E:06</MACAddress>
    <Manufacturer>SMC</Manufacturer>

```

```

<Name>SMC EZ Connect USB/Ethernet Series Converter</Name>
<PNPDeviceID>USB\VID_0707&PID_0200\0001</PNPDeviceID>
<PowerManagementSupported>False</PowerManagementSupported>
<Speed />
5  <Status />
    <StatusInfo />
    <ConfigManagerErrorCode>Device is working
properly.</ConfigMa nagerErrorCode>
</WIN32_NETWORKADAPTER>
10 - <WIN32_NETWORKADAPTER devicestatus="original equipment"
    guid="ROOT\MS_PSCHEM\0004">
    <Availability>,running/full power</Availability>
    <Caption>[00000016] Packet Scheduler Miniport</Caption>
    <Description>Packet Scheduler Miniport</Description>
15  <DeviceID>16</DeviceID>
    <Index>16</Index>
    <InstallDate />
    <MACAddress>00:04:E2:08:8E:06</MACAddress>
    <Manufacturer>Microsoft</Manufacturer>
20  <Name>Packet Scheduler Miniport</Name>
    <PNPDeviceID>ROOT\MS_PSCHEM\0004</PNPDeviceID>
    <PowerManagementSupported>False</PowerManagementSupported>
    <Speed />
    <Status />
25  <StatusInfo />
    <ConfigManagerErrorCode>Device is working
properly.</Config Ma nagerErrorCode>
    </WIN32_NETWORKADAPTER>
    - <W1N32_NETWORKADAPTER devicestatus="original equipment"
30  guid="[00000017] SMC EZ Connect USB/Ethernet Series Converter">
    <Availability>,running/full power</Availability>
    <Caption>[00000017] SMC EZ Connect USB/Ethernet Series

```

```

Converter</Caption>
<Description>SMC EZ Connect USB/Ethernet Series Converter</Description>
<DeviceID>17</DeviceID>
<Index>17</Index>
5  <InstallDate />
    <MACAddress />
    <Manufacturer />
    <Name>SMC EZ Connect USB/Ethernet Series Converter</Name>
    <PNPDeviceID />
10  <PowerManagementSupported>False</PowerManagementSupported>
    <Speed />
    <Status />
    <StatusInfo />
    <ConfigManagerErrorCode>running/full power</ConfigManagerErrorCode>
15  </WIN32_NETWORKADAPTER>
    - <WIN32_NETWORKADAPTER devicestatus="original equipment"
      guid="ROOT\MS_PSCHEM\{00005">
        <Availability>,running/full power</Availability>
        <Caption>[00000018] Packet Scheduler Miniport</Caption>
20  <Description>Packet Scheduler Miniport</Description>
    <DeviceID>18</DeviceID>
    <Index>18</Index>
    <InstallDate />
    <MACAddress />
25  <Manufacturer>Microsoft</Manufacturer>
    <Name>Packet Scheduler Miniport</Name>
    <PNPDeviceID>ROOT\MS_PSCHEM\{00005</PNPDeviceID>
    <PowerManagementSupported>False</PowerManagementSupported>
    <Speed />
30  <Status />
    <StatusInfo />
    <ConfigManagerErrorCode>Device is working

```

```

properly./ConfigManagerErrorCode>
</WIN32_NETWORKADAPTER>
- <WIN32_NETWORKADAPTER devicestatus="original equipment"
guid="[00000019] SMC EZ Connect USB/Ethernet Series Converter">
5  <Availability>,running/full power</Availability>
    <Caption>[00000019] SMC EZ Connect USB/Ethernet Series
    Converter</Caption>
    <Description>SMC EZ Connect USB/Ethernet Series Converter</Description>
    <DeviceID>19</DeviceID>
10  <Index>19</Index>
    <InstallDate />
    <MACAddress />
    <Manufacturer />
    <Name>SMC EZ Connect USB/Ethernet Series Converter</Name>
15  <PNPDeviceID />
    <PowerManagementSupported>False</PowerManagementSupported>
    <Speed />
    <Status />
    <StatusInfo />
20  <ConfigManagerErrorCode>running/full power</ConfigManagerErrorCode>
    </WIN 32_NETWORKADAPTER>
    - <WIN32_NETWORKADAPTER devicestatus="original equipment"
      guid="ROOT\MS_PSCHEM\0006">
        <Availability>,running/full power</Availability>
25  <Caption>[00000020] Packet Scheduler Miniport</Caption>
        <Description>Packet Scheduler Miniport</Description>
        <DeviceID>20</DeviceID>
        <Index>20</Index>
        <InstallDate />
30  <MACAddress />
        <Manufacturer>Microsoft</Manufacturer>
        <Name>Packet Scheduler Miniport</Name>

```

```

    <PNPDeviceID>ROOT\MS_PSCHEM\MP\0006</PNPDeviceID>
    <PowerManagementSupported>False</PowerManagementSupported>
    <Speed />
    <Status />
5    <StatusInfo />
    <ConfigManagerErrorCode>Device is working
properly.</ConfigManagerErrorCode>
    </WIN32_NETWORKADAPTER>
    - <WIN32_NETWORKADAPTER devicestatus="original equipment"
10    guid="[00000021] SMC EZ Connect USB/Ethernet Series Converter">
    <Availability>,running/full power</Availability>
    <Caption>[00000021] SMC EZ Connect USB/Ethernet Series
Converter</Caption>
    <Description>SMC EZ Connect USB/Ethernet Series Converter</Description>
15    <DeviceID>21</DeviceID>
    <Index>21</Index>
    <InstallDate />
    <MACAddress />
    <Manufacturer />
20    <Name>SMC EZ Connect USB/Ethernet Series Converter</Name>
    <PNPDeviceID />
    <PowerManagementSupported>False</PowerManagementSupported>
    <Speed />
    <Status />
25    <StatusInfo />
    <ConfigManagerErrorCode>running/full power</ConfigManagerErrorCode>
    </WIN32_NETWORKADAPTER>
    - <WIN32_NETWORKADAPTER devicestatus="original equipment"
    guid="ROOT\MS_PSCHEM\MP\0007">
30    <Availability>,running/full power</Availability>
    <Caption>[00000022] Packet Scheduler Miniport</Caption>
    <Description>Packet Scheduler Miniport</Description>

```

```

    <DeviceID>22</DeviceID>
    <Index>22</Index>
    <InstallDate />
    <MACAddress />
5    <Manufacturer>Microsoft</Manufacturer>
    <Name>Packet Scheduler Miniport</Name>
    <PNPDeviceID>ROOT\MS_PSCHEM\{00000000-0000-0000-0000-00000000}</PNPDeviceID>
    <PowerManagementSupported>False</PowerManagementSupported>
    <Speed />
10    <Status />
    <StatusInfo />
    <ConfigManagerErrorCode>Device is working
properly.</ConfigManagerErrorCode>
    </WIN32_NETWORKADAPTER>
15    </NETWORKADAPTER_HARDWARE>
    - <VIDEOCONTROLLER_HARDWARE>
    - <WIN32_VIDEOCONTROLLER devicestatus="original equipment"
guid="PCI\VEN_1039&DEV_6300&SUBSYS_22021558&REV_3114&DA4DF0
&0&0010">
20    <Availability>running/full power</Availability>
    <Caption>SIS 300/305/630/540/730</Caption>
    <Description>SIS 300/305/630/540/730</Description>
    <DeviceID>VideoController1</DeviceID>
    <InstallDate />
25    <Name>SIS 300/305/630/540/730</Name>
    <PNPDeviceID>PCI\VEN_1039&DEV_6300&SUBSYS_22021558&REV_3114
&DA4DF0&0&0010</PNPDeviceID>
    <PowerManagementCapabilities>Unknown</PowerManagementCapabilities>
    <PowerManagementSupported />
30    <Status>OK</Status>
    <StatusInfo />
    <ConfigManagerErrorCode>Device is working

```

```

properly.</ConfigManagerErrorCode>
</WIN32_VIDEOCONTROLLER>
</VIDEOCONTROLLER_HARDWARE>
- <DESKTOPMONITOR_HARDWARE>
5  - <WIN32_DESKTOPMONITOR devicestatus="original equipment"
    quid="DISPLAY\DEFAULT_MONITOR\5&CC3080B&0&10000001&01&00">
    <Availability>,running/full power</Availability>
    <Caption>Default Monitor</Caption>
    <Description>Default Monitor</Description>
10  <DeviceID>DesktopMonitor1</DeviceID>
    <InstallDate />
    <Name>Default Monitor</Name>
    <PNPDeviceID>DISPLAY\DEFAULT_MONITOR\5&CC3080B&0&10000001&0
    1&00</PNPDeviceID>
15  <PowerManagementCapabilities>Unknown</PowerManagementCapabilities>
    <PowerManagementSupported />
    <Status>OK</Status>
    <Statusinfo />
    <ConfigManagerErrorCode>Device is working
20  properly.</ConfigManagerErrorCode>
    </WIN32_DESKTOPMONITOR>
    </DESKTOPMONITOR_HARDWARE>
    - <POTSMODEM_HARDWARE>
    - <WIN32_POTSMODEM devicestatus="original equipment"
25  quid="PCI\VEN_1039&DEV_7013&SUBSYS_22021558&REV_A0\3&13C0B0
    C5&0&0E">
    <Availability>,</Availability>
    <Caption>HAMR5600 Modem</Caption>
    <ConfigManagerErrorCode>Device is working
30  properly.</ConfigManagerErrorCode>
    <Description>HAMR5600 Modem</Description>
    <DeviceID>PCI\VEN_1039&DEV_7013&SU BSYS_22021558&REV_A0\3&13

```

```

COB0C5&0&0E</DeviceID>
<Index>0</Index>
<InstallDate />
<Model >HAMR5600 Modem</Model>
5  <Name>HAMR5600 Modem</Name>
<PNPDeviceID>PCI\VEN_1039&DEV_7013&SUBSYS_22021558&REV_A0\3
    &13COB0CS&0&0E</PNPDeviceID>
<PowerManagementCapabilities>Unknown</PowerManagementCapabilities>
<PowerManagementSupported>False</PowerManagementSupported>
10 <Status>OK</Status>
    <StatusInfo>3</StatusInfo>
    </WIN32_POTSMODEM>
    </POTS MODEM_HARDWARE>
    </ORIGINAL_BUILDSHEET>

```

15 Appendix 2

```

<%@LANGUAGE="VBSCRIPT" CODEPAGE="1252"%>
<%


---


'GUARDIAN ANTI-THEFT (©) 2004 United Electrical Software Pty Ltd
'Author: Nathan Powell
20 'Version: 1.01 Revision: A
'Script Purpose: Log MAC / IP address of STOLEN PC Into Guardian Database


---



```

```

    cst = "Provider=Microsoft.Jet.OLEDB.4.0;Data Source="
    cst = cst & Server.MapPath("../Data/Guardian.mdb")
    set conn = CreateObject("ADODB.Connection")
25    conn.mode = 3 ' adModeReadWrite
    conn.open cst

```

```
Dim RSPID_MMColParam
```

37

```
RSPID_MMColParam = "1"

If (REQUEST.QueryString("pid") <> "") Then
    RSPID_MMColParam = REQUEST.QueryString("pid")
else
5    RSPID_MMColParam = REQUEST.form("pid")
End If

Dim RSPID
Dim RSPID_numRows

Set RSPID = Server.CreateObject("ADODB.Recordset")
10    RSPID.ActiveConnection = conn
    RSPID.Source = "SELECT * FROM Antitheft_IPTracker"
    RSPID.CursorType = 2
    RSPID.CursorLocation = 2
    RSPID.LockType = 2
15    RSPID.Open()

    RSPID_numRows = 0

%>
<html>
<head>
20 <title>Guardian Anti-Theft Tracking Script</title>
<%
    dim strDate
    dim strTime

' Set the date / time of the client activity.
25    strDate=date
    strTime=time
```

38

```

if RSPID_MMColParam <> "" then
    ' Track our Client by requesting server variables from the Web Server
    RSPID.Addnew
    RSPID("Date")=strDate
    5    RSPID("Time")=strTime
    RSPID("CLIENT_PID") = request.form ("pid")
    RSPID("REMOTE_IP")=request.ServerVariables("REMOTE_ADDR")
    RSPID("REMOTE_MAC") = request.form ("remote_mac")
    RSPID("DENIED_REQUEST")=request.form("denied_request")
    10    RSPID("DENIED_REASON") =request.form("denied_reason")
    RSPID.UPDATE

    ' By setting a third command 'DEACTIVATE'.
    ' We can remotely deactivate the stolen software here if required.
    ' This command is currently UNUSED but can be implemented at any time.

15    IF RSPID.EOF<>TRUE THEN
        REGSTATUS="LOGGED"
    ELSE
        REGSTATUS="ERROR"
    END IF

20    %>
    <meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1">
    </head>

    <body>
    <%
25    response.write("?REGSTATUS="& REGSTATUS &"")
    %>
    </body>
    </html>
    <%

```

39

RSPID.Close()

conn.close()

Set RSPID = Nothing

set conn=nothing

5 %>

Claims

1. A method for tracking modifications to a hardware configuration of a computer system for tracking changes in one or more hardware configuration parameters in a computer system, the method including the following steps:
 - 5 (A) capturing a first snapshot of the hardware configuration of the computer system at a first point in time;
 - (B) storing the first snapshot in a remote database;
 - (C) capturing a second snapshot of the hardware configuration of the computer system at a second subsequent point in time;
 - 10 (D) comparing the stored first snapshot and the second snapshot;

wherein any difference between the first and second snapshots indicates that a change has been made to the hardware configuration of the computer system.
- 15 2. A method according to claim 1, further including the step of generating an alert to notify a nominated person that a modification has been made to the hardware configuration.
- 20 3. A method according to claim 1 or 2, wherein the first point in time occurs when a program which performs the steps of the method is installed in the computer system and the second point in time occurs each time the computer system is turned on or restarted subsequent to the program being installed on the computer system.
4. A method according to any one of the preceding claims, wherein the hardware configuration includes one or more of the following:

- (A) disc drive type;
- (B) central processing unit (CPU) type;
- (C) memory configuration;
- (D) peripheral devices.

5 5. A method of any one of the preceding claims, the method further includes the following steps:

- (A) checking a status of the computer system each time a snapshot is captured; and
- 10 (B) if the status of the computer system indicates that the system has been stolen;
- (C) monitoring a network identifier associated with the computer system; and
- (D) reporting the network identifier to the nominated person;

15 wherein the network identifier can be used to determine the physical location of the computer system.

6. A method according to claim 5, wherein the network identifier includes one or more of the following:

- (A) an IP address; or
- (B) a MAC address.

7. A method according to any one of the preceding claims, further including the step of monitoring a performance parameter of one or more hardware components.
- 5 8. A method according to claim 7, further including the step of measuring a performance parameter and comparing the performance parameter to a stored performance parameter included in the first snapshot.
9. A method according to claim 8, wherein a change in the performance parameter causes an alert to be generated to notify the nominated person that a potential problem exists with the hardware component.
- 10 10. A method of providing a warranty for a computer system, the method including the following steps:
 - (A) providing software for tracking changes in one or more hardware configuration parameters in a computer system;
 - (B) installing the software on the computer system;
 - 15 (C) capturing a first snapshot of a hardware configuration of the computer system at a first point in time;
 - (D) storing the first snapshot in a remote database;
 - (E) capturing a second snapshot of the hardware configuration of the computer system at a second subsequent point in time;
 - 20 (F) comparing the stored first snapshot and the second snapshot; and

- (G) generating an alert for transmission to a warranty provider if the comparison reveals any difference between the first and second snapshots;

5 wherein a difference between the first and second snapshots indicates that a change has been made to the hardware configuration of the computer system and causes the warranty provider to reassess validity of the warranty.

11. A method of tracking a stolen computer system, including the following steps:

- (A) providing software for tracking a network identifier associated with a computer system;
- 10 (B) installing the software on the computer system;
- (C) reporting the computer system as being stolen;
- (D) monitoring a network identifier associated with the stolen computer system; and
- 15 (F) reporting the network identifier to the nominated person;

wherein the network identifier can be used to determine the physical location of the computer system.

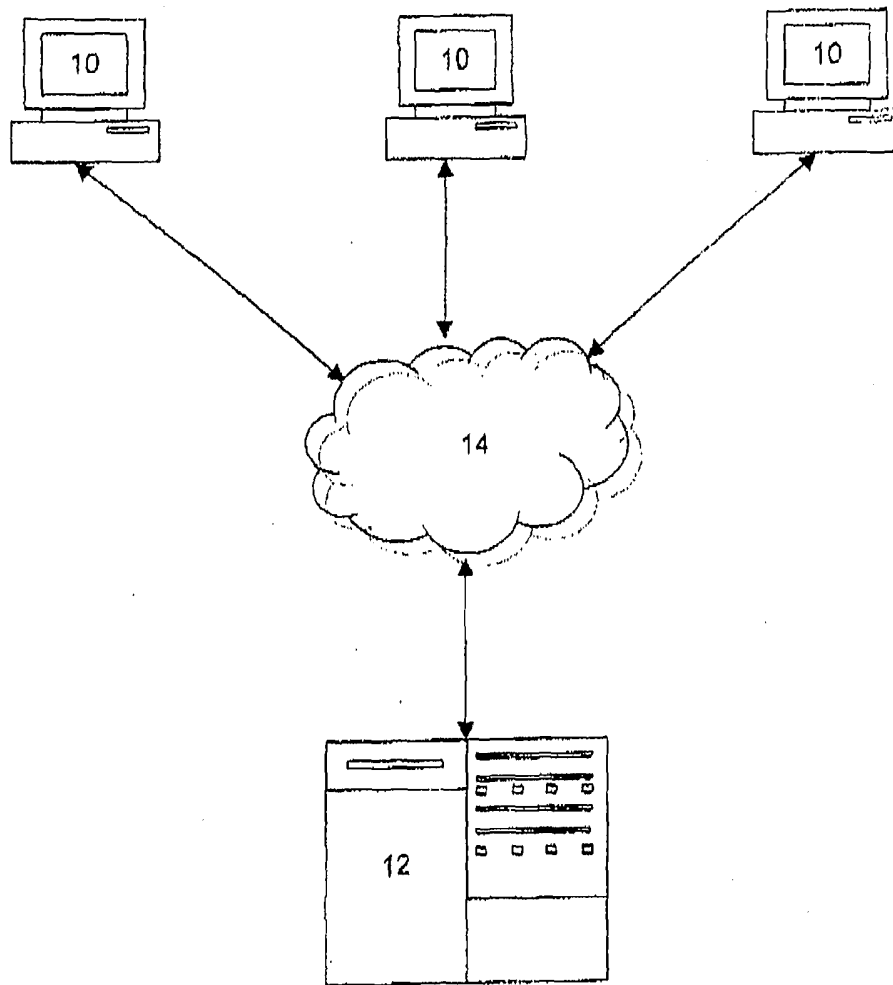


Figure 1

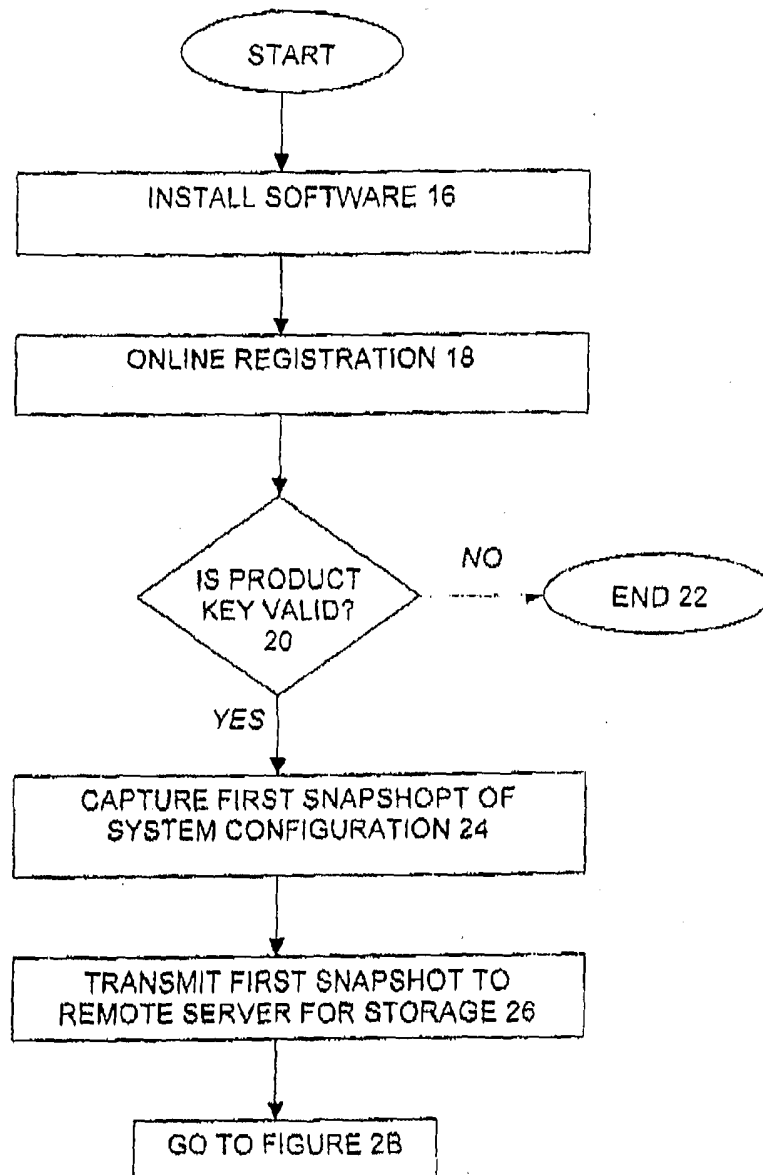


Figure 2A

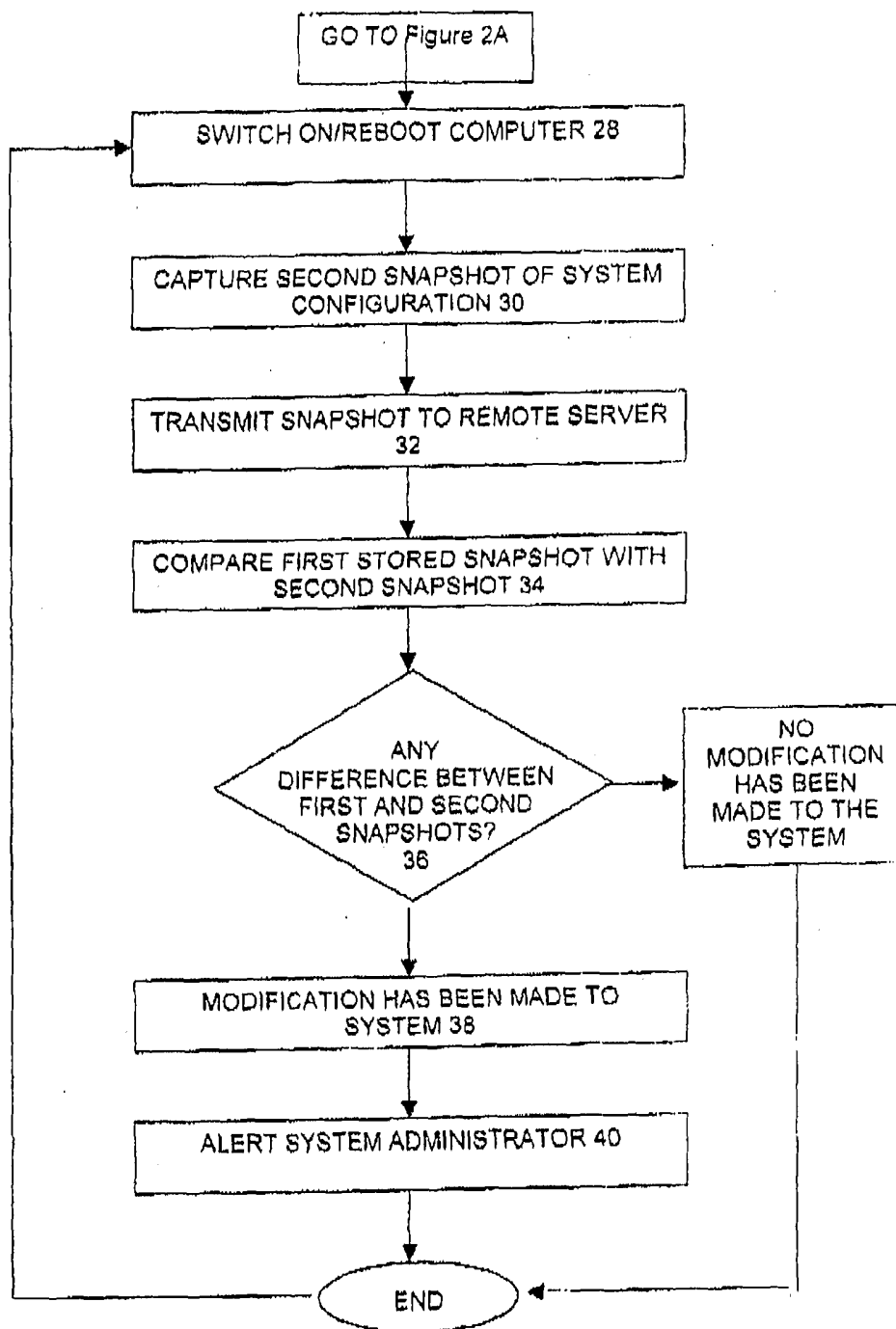


Figure 2B

INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU2006/000217

A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl.

G06F 17/30 (2006.01)

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO (esp@cenet), USPTO: hardware, configur*, track*, monitor, snapshot, signature, fingerprint, licens*, warranty, stolen

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 1006447 A2 (GENERAL ELECTRIC COMPANY US) 07 June 2000 [Abstract; Paragraphs [0001] – [0021], [0024] – [0025], [0029] – [0032]; Claim 1]	1 – 10
X	US 6804699 B1 (Henrie) 12 October 2004 [Abstract; Column 1, line 62 – column 2, line 62; Column 9, lines 13 – 32; Section “Identifying and Locating Lost or Stolen Personal Digital Assistant Devices Viava Landline- or Wireless-connected Web Server”]	11
X	WO 1998/006213 A (HALSTEAD) 12 February 1998 [Abstract; Page 1, lines 5 – 8; Page 2, line 19 – page 4, line 8]	11



Further documents are listed in the continuation of Box C



See patent family annex

* "A"	Special categories of cited documents: document defining the general state of the art which is not considered to be of particular relevance	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E"	earlier application or patent but published on or after the international filing date	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O"	document referring to an oral disclosure, use, exhibition or other means	"&"	document member of the same patent family
"P"	document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search

17 May 2006

Date of mailing of the international search report

29 MAY 2006

Name and mailing address of the ISA/AU

AUSTRALIAN PATENT OFFICE
PO BOX 200, WODEN ACT 2606, AUSTRALIA
E-mail address: pct@ipaustalia.gov.au
Facsimile No. (02) 6285 3929

Authorized officer

Mr. R. Allen

Telephone No. (02) 6283 2134

INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU2006/000217

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
PX	US 2006/0026604 A1 (Tan et al.) 02 February 2006 [Abstract; Paragraphs [0003]; [0005]; [0010]; [0018]; [0020]; [0022]; [0024]; [0027]; Claim 1]	1 – 10
PX	US 2005/0114234 A1 (Thomas et al.) 26 May 2005 [Whole document, in particular: Abstract; Paragraphs [0017]; [0018]; [0020], [0034]; [0051]; [0053]; [0054], [0095]; [0189]]	1 – 10
PX	US 6883120 B1 (Banga) 19 April 2005 [Abstract; Column 1, line 44 – column 2, line 34; Column 7, lines 44 – 64; Claims 8, 10, 18 & 20]	1 – 10
PX	US 2005/0144139 A1 (Zhuge et al.) 30 June 2005 [Whole document, in particular: Abstract; Paragraphs [0004] – [0022]; [0031]; [0038] – [0040]]	1 – 10
A	CA 2354248 A (INTERNATIONAL BUSINESS MACHINES CORPORATION, US) 02 February 2002 [Abstract; Pages 3 & 4]	1 – 10
A	US 5289372 A (Guthrie et al.) 22 February 1994 [Whole document, in particular, Abstract; Column 3, lines 50 – 66; Claims 1 & 7]	1 – 10

INTERNATIONAL SEARCH REPORT

International application No.
PCT/AU2006/000217**Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)**

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a)

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

The international application does not comply with the requirements of unity of invention because it does not relate to one invention or to a group of inventions so linked as to form a single general inventive concept.

See Supplemental Box - Continuation of Box No.: III

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☒ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.

Supplemental Box

(To be used when the space in any of Boxes I to VIII is not sufficient)

Continuation of Box No: III**Observations where unity of invention is lacking (Continuation of item 3 of first sheet)**

The International Searching Authority has found that there are different inventions as follows:

1. Claims 1 to 10 are directed to a method for tracking modifications to hardware configuration of a computer wherein time dependent parametric changes in hardware configuration are observed. It is considered that capturing and storing a first snapshot of a hardware configuration at a first time, and comparing said first snapshot with a second snapshot of the computer configuration at a second time comprises a first "special technical feature" of the proposed invention.
2. Claims 11 are directed to a method of tracking stolen computers. It is considered that providing software for tracking a network identifier associated with a computer system, reporting said computer system stolen and monitoring a network identifier associated with said stolen computer system comprises a second "special technical feature" of the proposed invention.

Since the abovementioned groups of claims do not share any of the technical features identified, a "technical relationship" between the inventions, as defined in PCT rule 13.2 does not exist. Accordingly the international application does not relate to one invention or to a single inventive concept, **a priori**.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/AU2006/000217

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report		Patent Family Member			
EP	1006447	JP	2000172764	KR	2000047721
US	6804699	US	6233536		
WO	9806213	AU	38066/97	CA	2212431
		US	5896497	EP	0920770
US	2006026604	CN	1728036	EP	1622061
US	2005114234	JP	2006048648		
US	6883120				
US	2005144139				
CA	2354248	CN	1336588	EP	1178324
		US	6542844	GB	2368421
US	5289372				
Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001.					
END OF ANNEX					