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Remote Configuration Monitoring of Autonomous Information Processing Machine on LAN.

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Abstract
Remote Information Configuration is advanced software for capturing automatically the configuration of Computers available in the LAN. The software will collect all the configuration of computers in the network and store the information in the Data Base. The configuration such as the Processor, Memory such as RAM and Hard Disk, System Software and Application software installed will be captured from remote and stored in the Data Base with the timestamp. Any change in the configuration will be captured on time to time basis and updated; this will bring in a change management control of the components. Provision for manual recording of owner of the computer asset and location details will be provided for Asset Management. This module will also include the process of allotment of asset, removal of asset, re-allotment of asset, new asset request management, asset procurement planning.

Keywords — LAN, IP address, MAC address, *psInfo, psexec Sigar, JAR file*

I. INTRODUCTION

The Remote Information Configuration is software which provides standard information that a network administrator can use to monitor, analyze Local Area Network (LAN) [1]. In order to secure network infrastructure affecting from risk, both network administrator or system administrators should have agreement between them for managing LAN network. Main aim of this project is to provide solution for controlling entire network from any one of the computers in LAN location, which helps us to monitoring other computers on LAN and to provide the maximum details about the computer to the administrator on their screen without knowing from users of that computer [2]. The characteristics of the network are determined by which systems are alive and reachable, what operating system used, configuration of memory details and application software installed on of those systems in LAN.

II. EXTRACTING IP ADDRESS, MAC ADDRESS AND HOST NAME

First and main thing is to set up a LAN environment where 30 or more computers are interconnected each other. The important task is to find out IP address of each computer which are active in network. All computers IP address are to be in same domain and starts with same address. Computer is connected to local area network; it will have internal IP address which marks its location on local network. Network administrator can use any computer in LAN to fetch all IP address of each computer. In this project there is no server computer.

When an administrator check for IP address, each computer should be reachable from the administrator computer within time. If particular IP address is found thereby we will get MAC address, host name of particular computer. Address resolution protocol which converts IP address to MAC address. Java execute command prompt commands thereby "arp" command will give permanent address that is MAC address. Otherwise IP address is not found then administrator cannot extract MAC address, host name of computer.

III. EXTRACTING MANUFACTURE, PROCESSOR AND MEMORY DETAILS

After collecting IP address of each computer. Administrator check IP address is reachable from that particular computer then we use remote connecting tool to connect with computer. I use PSTool to get remote computer command prompt and to execute any process remotely [2]. Need to check psexec service run internally on remote computer on LAN. For running psexec service each computer in LAN should need admin share. If computer is having administrator share without knowledge of user's of remote computer, administrator get all details including command prompt of that computer remotely.

PS info is a command in PStool suite which collects all the application software installed in remote machines. Psinfo relies on remote registry access to obtain its data. PsInfo must have access to the HKLM\System portion of the remote Registry. Psinfo –s which lists all the software installed [2].

By using PSTool we can't store data into database. So we use JAR file and coded to get details of operating system, manufacturer, all minute information about memory and placed in remote computer desktop. Administrator will run JAR file remotely using psexec command in program to get information in his computer and stored in database [2].

IV. PERFORMANCE OF CPU

For using intelligence in this data collection, System Information gatherer (SIGAR) is a cross platform API for collecting all essential details of CPU. It has many classes to collect information about system memory, CPU details, cache memory, etc. Use JAR file to get all CPU vendor, cache memory details and placed in remote computer desktop. This JAR file main class add jar file known hyperic sigar API so that this package will invoke cpuinfo class call method of CPU vendor and cache memory. Administrator will run JAR file remotely and get information in his computer and stored in database [2]. It use artificial intelligence multilayer perceptron algorithm to evaluate the performance of CPU vendors [3].

V. RESULTS

ipaddress	domainname	macaddress
172.16.1.7	DOTNET	00-1b-2f-50-74-a4
172.16.1.8	admin	ce-7d-e4-9c-d4-14
172.16.1.15	ENGWEB	00-1e-90-75-ac-99
172.16.1.16	ENGHR	00-1e-90-74-39-26
172.16.1.31	TALLY	00-1e-90-72-a0-d6
172.16.1.32	THINSERVER	00-50-8d-bd-4b-ab
172.16.1.128	TECH-910A47FD	6c-f3-73-b2-61-bc
172.16.1.141	DBIT	00-1f-d0-21-bb-38
172.16.1.160	counselling	00-1e-90-75-a7-b1
172.16.1.166	NAS	00-1c-c0-08-79-75
172.16.1.179	TC	00-1e-90-75-a0-1f
172.16.1.252	ENGDOC	00-17-61-81-20-7c
172.16.2.1	council	44-0f-3d-88-a3-79
172.16.2.3	EXAM	00-80-48-b6-32-c1
172.16.2.4	ODTESTDB	00-60-6e-50-16-30
172.16.2.6	SYSADM	90-f6-52-77-d4-a6
172.16.2.11	ITIL	ce-7d-e4-9c-d4-14
172.16.2.15	BIS	00-1e-90-75-ac-99
172.16.2.16	ADM	00-1e-90-74-39-26
172.16.2.31	TALLY	00-1e-90-72-a0-d6
172.16.2.32	THINSERVER	00-50-8d-bd-4b-ab
172.16.2.100	00E04D03F27F	00-e0-4d-03-f2-7f
172.16.2.101	HAL-900A47FD	00-1e-90-74-3e-58
172.16.2.102	A0000004ADC2	a0-00-00-04-ad-c2
172.16.2.104	00E04D08E308	00-e0-4d-08-e3-08
172.16.2.110	P192168001110	00-e0-4d-09-01-6c
172.16.2.116	ORACLE9	00-1e-90-75-a5-8b
172.16.2.126	IFSIMGI	a0-00-00-04-9c-d3
172.16.2.127	A0000004A951	a0-00-00-04-a9-51

Figure.1. Collecting IPaddress,Host name,MAC address

```
C:\sec>psexec \\172.16.0.121 ipconfig

PsExec v1.98 - Execute processes remotely
Copyright (C) 2001-2010 Mark Russinovich
Sysinternals - www.sysinternals.com


Windows IP Configuration

Wireless LAN adapter Wireless Network Connection:

   Media State . . . . . . . . . . . : Media disconnected
   Connection-specific DNS Suffix  . :

Ethernet adapter Local Area Connection:

   Connection-specific DNS Suffix  . :
   IPv4 Address. . . . . . . . . . . : 172.16.0.121
   Subnet Mask . . . . . . . . . . . : 255.255.255.0
   Default Gateway . . . . . . . . . : 172.16.0.1

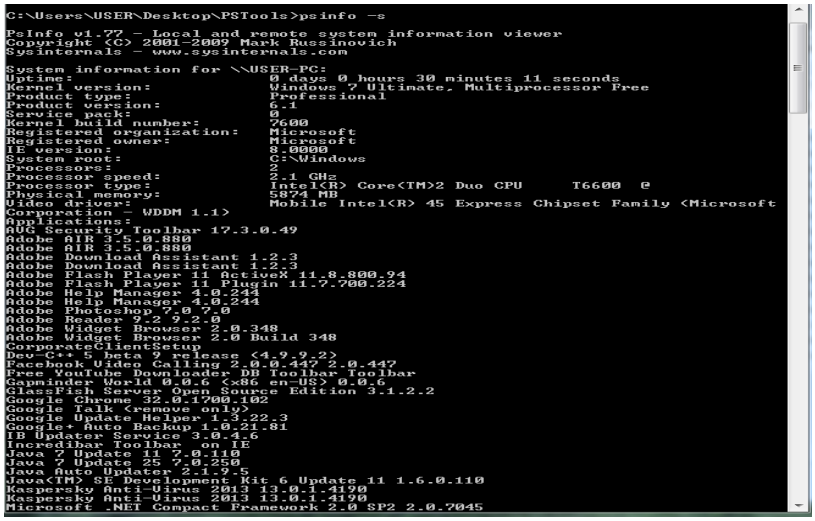
Ethernet adapter VMware Network Adapter VMnet1:

   Connection-specific DNS Suffix  . :
   IPv4 Address. . . . . . . . . . . : 192.168.80.1
   Subnet Mask . . . . . . . . . . . : 255.255.255.0
   Default Gateway . . . . . . . . . :

Ethernet adapter VMware Network Adapter VMnet8:

   Connection-specific DNS Suffix  . :
   IPv4 Address. . . . . . . . . . . : 192.168.126.1
   Subnet Mask . . . . . . . . . . . : 255.255.255.0
   Default Gateway . . . . . . . . . :
ipconfig exited on 172.16.0.121 with error code 0.
```

Figure.2.Psexec launches remotely

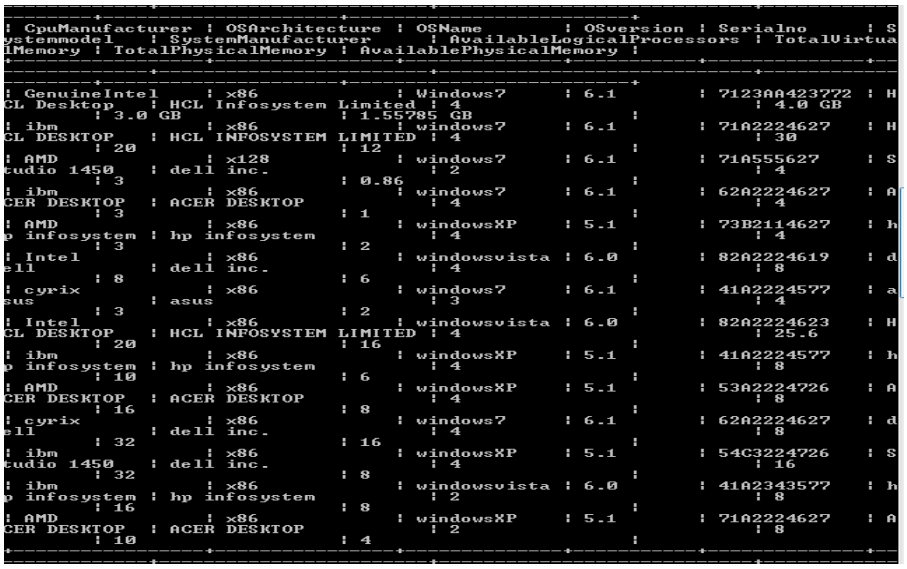


```
C:\Users\USER\Desktop\PSTools>psinfo -s

PsInfo v1.77 - Local and remote system information viewer
Copyright (C) 2001-2009 Mark Russinovich
Sysinternals - www.sysinternals.com

System information for \\USER-PC:
Uptime:                    0 days 0 hours 30 minutes 11 seconds
Kernel version:            Windows 7 Ultimate, Multiprocessor Free
Product type:              Professional
Product version:           6.1
Service pack:              0
Kernel build number:       7600
Registered organization:   Microsoft
Registered owner:          Microsoft
IE version:                8.0000
System root:               C:\Windows
Processors:                2
Processor speed:           2.1 GHz
Processor type:            Intel(R) Core(TM)2 Duo CPU     T6600  @
Physical memory:           5874 MB
Video driver:              Mobile Intel(R) 45 Express Chipset Family (Microsoft
Corporation - WDDM 1.1)
Applications:
AVG Security Toolbar 17.3.0.49
Adobe AIR 3.5.0.880
Adobe AIR 3.5.0.880
Adobe Download Assistant 1.2.3
Adobe Download Assistant 1.2.3
Adobe Flash Player 11 ActiveX 11.8.800.94
Adobe Flash Player 11 Plugin 11.7.700.224
Adobe Help Manager 4.0.244
Adobe Help Manager 4.0.244
Adobe Photoshop 7.0 7.0
Adobe Reader 9.2 9.2.0
Adobe Widget Browser 2.0.348
Adobe Widget Browser 2.0 Build 348
CorporateClientSetup
Dev-C++ 5 beta 9 release (4.9.9.2)
Facebook Video Calling 2.0.0.447 2.0.447
Free YouTube Downloader DB Toolbar Toolbar
Gapminder World 0.0.6 (x86 en-US) 0.0.6
GlassFish Server Open Source Edition 3.1.2.2
Google Chrome 32.0.1700.102
Google Talk (remove only)
Google Update Helper 1.3.22.3
Google+ Auto Backup 1.0.21.81
IB Updater Service 3.0.4.6
Incredibar Toolbar  on IE
Java 7 Update 11 7.0.110
Java 7 Update 25 7.0.250
Java Auto Updater 2.1.9.5
Java(TM) SE Development Kit 6 Update 11 1.6.0.110
Kaspersky Anti-Virus 2013 13.0.1.4190
Kaspersky Anti-Virus 2013 13.0.1.4190
Microsoft .NET Compact Framework 2.0 SP2 2.0.7045
```

Figure.3.show application software installed in remote computer



```
+-------------+-------------------+-------------+-----------+-------------+---
| CpuManufacturer | OSArchitecture | OSName      | OSversion | Serialno    | S
ystemmodel    | SystemManufacturer     | AvailableLogicalProcessors | TotalVirtua
lMemory | TotalPhysicalMemory | AvailablePhysicalMemory |
+-------------+-------------------+-------------+-----------+-------------+---
-------+-----------------------+----------------------------+-------------------
-------+
| GenuineIntel    | x86               | Windows7    | 6.1       | 7123AA423772 | H
CL Desktop    | HCL Infosystem Limited | 4                          | 4.0 GB
        | 3.0 GB          | 1.55785 GB          |
| ibm             | x86               | windows7    | 6.1       | 71A2224627   | H
CL DESKTOP    | HCL INFOSYSTEM LIMITED | 4                          | 30
        | 20              | 12                  |
| AMD             | x128              | windows7    | 6.1       | 71A555627    | S
tudio 1450    | dell inc.              | 2                          | 4
        | 3               | 0.86                |
| ibm             | x86               | windows7    | 6.1       | 62A2224627   | A
CER DESKTOP   | ACER DESKTOP           | 4                          | 4
        | 3               | 1                   |
| AMD             | x86               | windowsXP   | 5.1       | 73B2114627   | h
p infosystem | hp infosystem          | 4                          | 4
        | 3               | 2                   |
| Intel           | x86               | windowsvista | 6.0      | 82A2224619   | d
ell           | dell inc.              | 4                          | 8
        | 8               | 6                   |
| cyrix           | x86               | windows7    | 6.1       | 41A2224577   | a
sus           | asus                   | 3                          | 4
        | 3               | 2                   |
| Intel           | x86               | windowsvista | 6.0      | 82A2224623   | H
CL DESKTOP    | HCL INFOSYSTEM LIMITED | 4                          | 25.6
        | 20              | 16                  |
| ibm             | x86               | windowsXP   | 5.1       | 41A2224577   | h
p infosystem | hp infosystem          | 4                          | 8
        | 10              | 6                   |
| AMD             | x86               | windowsXP   | 5.1       | 53A2224726   | A
CER DESKTOP   | ACER DESKTOP           | 4                          | 8
        | 16              | 8                   |
| cyrix           | x86               | windows7    | 6.1       | 62A2224627   | d
ell           | dell inc.              | 4                          | 8
        | 32              | 16                  |
| ibm             | x86               | windowsXP   | 5.1       | 54C3224726   | S
tudio 1450    | dell inc.              | 4                          | 16
        | 32              | 8                   |
| ibm             | x86               | windowsvista | 6.0      | 41A2343577   | h
p infosystem | hp infosystem          | 2                          | 8
        | 16              | 8                   |
| AMD             | x86               | windowsXP   | 5.1       | 71A2224627   | A
CER DESKTOP   | ACER DESKTOP           | 2                          | 8
        | 10              | 4                   |
+-------------+-------------------+-------------+-----------+-------------+---
-------+-----------------------+----------------------------+-------------------
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Figure.4. extracting manufacture, memory (ram) details

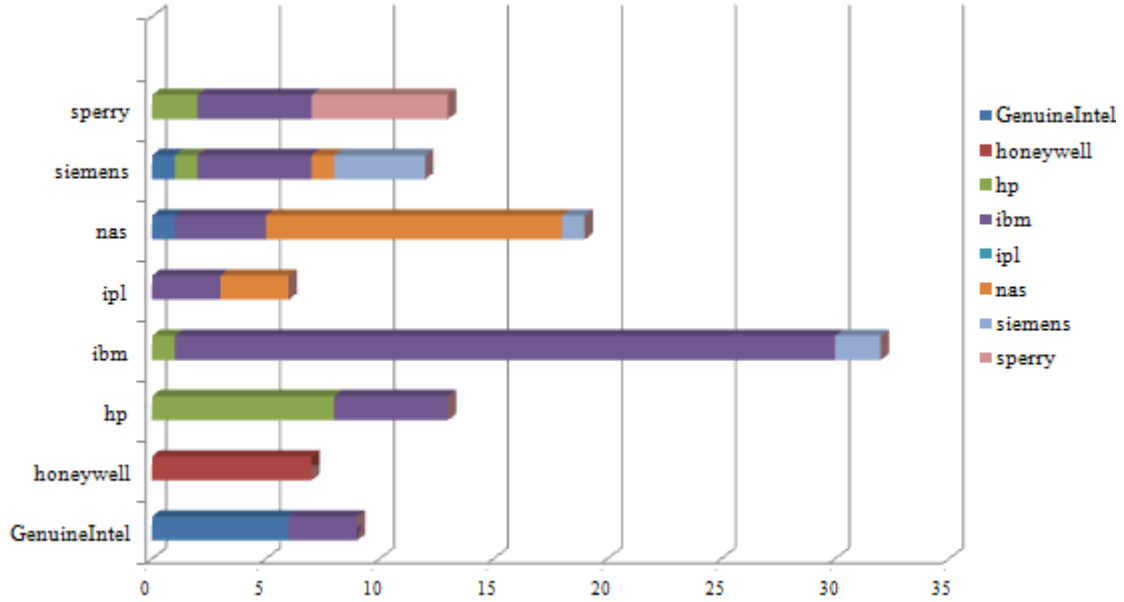

Figure.5. CPU performance graph

VI. CONCLUSION

Remote Information configuration can automatically scan network for available computers. It can monitor the details of CPU, Memory, operating system, Disk Drives and create a database to store those details. As an enhancement, the remote information configuration is monitoring entire details of computers over a local area network. In the future work it can evaluate memory utilized by each computer thereby alert network administrator that particular computer is running out of memory .If one or more of employees are installing application software's which are not relevant to work, network administrator will soon come to know about it by using this software and get alert message of particular software is looting information of that computer. The program will also help us to know which application software is using maximum memory without knowing the user.

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