

Lovely Professional University

System investigation on computer

Submitted by

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Report Github Repository Link:

<https://github.com/rakibul03/sys-report>

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Introduction

A system report is a comprehensive document that provides an overview of a computer system's performance, configuration, and events that have occurred over a given period of time. It typically includes information about the operating system, hardware specifications, system utilization metrics, and any incidents or issues that have been observed. The purpose of a system report is to provide a detailed analysis of the system's performance, identify any areas of concern, and make recommendations for improvements or actions to be taken.

The system report serves as a valuable tool for system administrators, IT professionals, or other stakeholders to assess the health and performance of a computer system. It can be used to understand system behavior, identify trends or patterns, detect anomalies or potential issues, and make informed decisions for system maintenance, optimization, and security enhancement.

In summary, a system report provides a comprehensive analysis of a computer system's performance, configuration, and events, and serves as a valuable tool for understanding system behavior, identifying areas of concern, and making informed decisions for system maintenance and optimization.

System information

There are several open-source software tools available for obtaining system information in Ubuntu, a popular Linux-based operating system. Here are two common methods:

Using "lshw"

1. Open a terminal window in Ubuntu.
2. Install "lshw" if it is not already installed by running the following command:

```
sudo apt-get update  
sudo apt-get install lshw
```

Run the "lshw" command with administrative privileges to generate a detailed report of your system's hardware information:

```
sudo lshw
```

The "lshw" command will provide a comprehensive list of hardware components in your system, including details such as the processor, memory, storage devices, network interfaces, and more.

```
*-memory  
  description: System Memory  
  physical id: 1000  
  size: 2GiB  
  capacity: 2GiB  
  capabilities: ecc  
  configuration: errordetection=multi-bit-ecc
```

```
*-firmware  
  description: BIOS  
  vendor: SeaBIOS  
  physical id: 0  
  version: 1.16.2-1.fc37  
  date: 04/01/2014  
  size: 96KiB
```

```
to *-display
```

```
description: VGA compatible controller  
product: Virtio GPU  
vendor: Red Hat, Inc.  
physical id: 1  
bus info: pci@0000:00:01.0  
logical name: /dev/fb0  
version: 01  
width: 64 bits  
clock: 33MHz
```

```
*-cpu:0
```

```
description: CPU  
product: Intel(R) Core(TM) i7-6600U CPU @ 2.60GHz  
vendor: Intel Corp.  
physical id: 400  
bus info: cpu@0  
version: 6.78.3  
slot: CPU 0  
size: 2GHz  
capacity: 2GHz  
width: 64 bits
```

Configure Software

Step 1: Install Sysstat

1. Open a terminal window in your Ubuntu system.
2. Run the following command to install Sysstat:

```
sudo apt-get update  
sudo apt-get install sysstat
```

This will download and install the Sysstat package on your system.

Step 2: Configure Sysstat

1. Once Sysstat is installed, you can configure it by editing the `/etc/default/sysstat` file using a text editor like nano or vim:

```
sudo nano /etc/default/sysstat
```

In the configuration file, you can set various options such as:

- **ENABLED**: Set it to **true** to enable Sysstat data collection, or **false** to disable it.
- **SAVEDIR**: Specify the directory where the collected data will be stored. The default is `/var/log/sysstat`.
- **COLLECT_OPTIONS**: Specify the data collection options. For example, you can set the collection interval (in seconds), the number of days to retain the data, and more. Save the changes and exit the text editor.

Step 3: Start Sysstat Service

1. Start the Sysstat service using the following command:

```
sudo systemctl start sysstat
```

2. Enable the Sysstat service to start automatically at system boot:

```
sudo systemctl enable sysstat
```

Collect Data

1. Run the following command to check the status of Sysstat service:

```
sudo systemctl status sysstat
```

You should see the service as active and running.

2. You can also check the data collection by running the following command:

```
sar -q
```

This will display the system load averages for the current day, indicating that Sysstat is collecting data.

```
(kali㉿kali)-[~]
$ sar -q
Linux 6.1.0-kali7-amd64 (kali)  04/11/2023      _x86_64_      (2 CPU)

01:38:36 AM  LINUX RESTART      (2 CPU)

01:40:45 AM  runq-sz  plist-sz  ldavg-1  ldavg-5  ldavg-15  blocked
01:50:45 AM           1       307      0.08     0.07     0.06         1
02:00:45 AM           0       276      0.02     0.09     0.08         0
02:10:45 AM           0       306      0.40     0.19     0.10         1
02:20:45 AM           0       302      0.00     0.02     0.04         0
02:32:41 AM           3       305      0.00     0.01     0.02         1
02:40:45 AM           0       301      0.07     0.02     0.00         0
02:50:45 AM           0       299      0.00     0.05     0.03         0
03:00:45 AM           0       300      0.01     0.02     0.00         1
03:10:45 AM           0       301      0.02     0.04     0.01         0
03:20:45 AM           0       299      0.29     0.14     0.04         0
04:00:54 AM           5       301      0.00     0.00     0.00         1
Average:           1       300      0.08     0.06     0.03         0
```

Step 5: Data Collection and Analysis

1. Sysstat collects data at the specified interval (default is every 10 minutes) and stores it in the directory specified in the configuration file.
2. You can use various Sysstat commands to analyze the collected data, such as `sar`, `sadf` etc. These commands allow you to view system performance metrics, resource utilization, CPU usage, memory usage, disk I/O, and more.
3. You can customize the analysis by specifying different options and parameters with the Sysstat commands, and generate reports or save the data for further analysis.

Conclusion

In conclusion, a system report is a comprehensive overview of a computer system or IT infrastructure that provides detailed information about its hardware, software, network, configurations, performance metrics, logs, and recommendations. It is a valuable tool for system administrators, IT professionals, and other stakeholders to monitor, troubleshoot, analyze, and document the performance and status of a system. A well-prepared system report can provide insights into system health, resource utilization, performance trends, and potential issues, enabling informed decision-making, proactive maintenance, and system optimization. By analyzing the data and information presented in a system report, stakeholders can take appropriate actions to improve system performance, stability, and security, ensuring smooth and efficient operation of the computer system or IT infrastructure.