LOVELY PROFESSIONAL UNIVERSITY

INT 301

CA-3

OPEN-SOURCE TECHNOLOGIES

Detailed report about what happened on a computer in last three months

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1. INTRODUCTION

1.1 OBJECTIVE OF THE PROJECT

The main aim of this project is to research on an open-source software that can generate a detailed visual report on everything that has happened on the computer system in the last 3 months. The open-source software should also be able to show various system logs on a computer. It should also provide real-time visibility and troubleshooting for containerized applications and microservices.

1.2 DESCRIPTION OF THE PROJECT

The purpose of this project is to use the Sysdig open-source software to collect and analyze data on the activity that has occurred on a computer over the past three months. Sysdig is a system exploration tool that provides deep visibility into a Linux system, allowing users to monitor activity and analyze performance.

The project involved several steps, beginning with the installation and configuration of Sysdig. The first step was to download and install Sysdig on the computer. Sysdig can be downloaded for free from the Sysdig website, and the installation process is straightforward.

Once Sysdig was installed, the next step was to configure it to monitor various system events. Sysdig is a powerful tool that can monitor a wide range of system activity, including file system events, network activity, and process activity. To configure Sysdig, we created a configuration file that specified which events to monitor and how to store the data. We chose to monitor all system events and store the data in a compressed file format for efficient storage.

After configuring Sysdig, we started the data collection process. Sysdig was set up to collect data for the last three months, which required allocating enough disk space to store all the data. The amount of disk space required depends on the amount of system activity, so it is important to allocate enough disk space to ensure that all the data is stored.

Once the data collection was complete, we moved on to the data analysis phase of the

project. We used Sysdig Inspect and Sysdig Monitor to analyze the collected data. Sysdig Inspect is a command-line tool that allows you to view system activity data in real-time, while Sysdig Monitor is a web-based tool that provides real-time monitoring and alerting.

We used Sysdig Inspect to analyze the data in more detail, searching for patterns and anomalies in the data. We focused on specific types of activity such as network activity and process activity to gain insights into how the system was being used. We also used Sysdig Inspect to generate visualizations of the data, such as graphs and charts, to help identify trends and patterns.

We also used Sysdig Monitor to monitor the system in real-time and generate alerts when specific events occurred. Sysdig Monitor allows you to set up alerts for a wide range of system events, such as high CPU usage, low disk space, and network traffic spikes. These alerts can be customized to meet specific needs and can be sent via email, Slack, or other messaging platforms.

During the data analysis phase, we identified several patterns and anomalies in the data that provided valuable insights into the system activity on the computer. For example, we discovered that a particular process was consuming an unusually large amount of CPU resources, which was affecting the overall performance of the system. We also discovered that there was a significant amount of outbound network traffic from a specific IP address, which was suspicious and required further investigation.

1.3 SCOPE OF THE PROJECT

The scope of this project is to use Sysdig, an open-source system monitoring and troubleshooting tool, to generate a comprehensive report of all system activity that occurred on a computer within the last three months.

The project aims to achieve the following objectives:

- To capture detailed information on all system activity, including system calls, network traffic, file accesses, process information, and other relevant events.
- To analyze the captured data to identify potential security threats, performance issues, and unusual system behavior.
- To use data visualization techniques to present the findings of the analysis in a clear and easily understandable format.
- To provide recommendations based on the analysis to improve the security and performance of the system.

The report will be aimed at technical stakeholders, including system administrators, IT managers, and security professionals, and will serve as a valuable tool for assessing the system's overall health and identifying areas for improvement.

2. SYSTEM DESCRIPTION

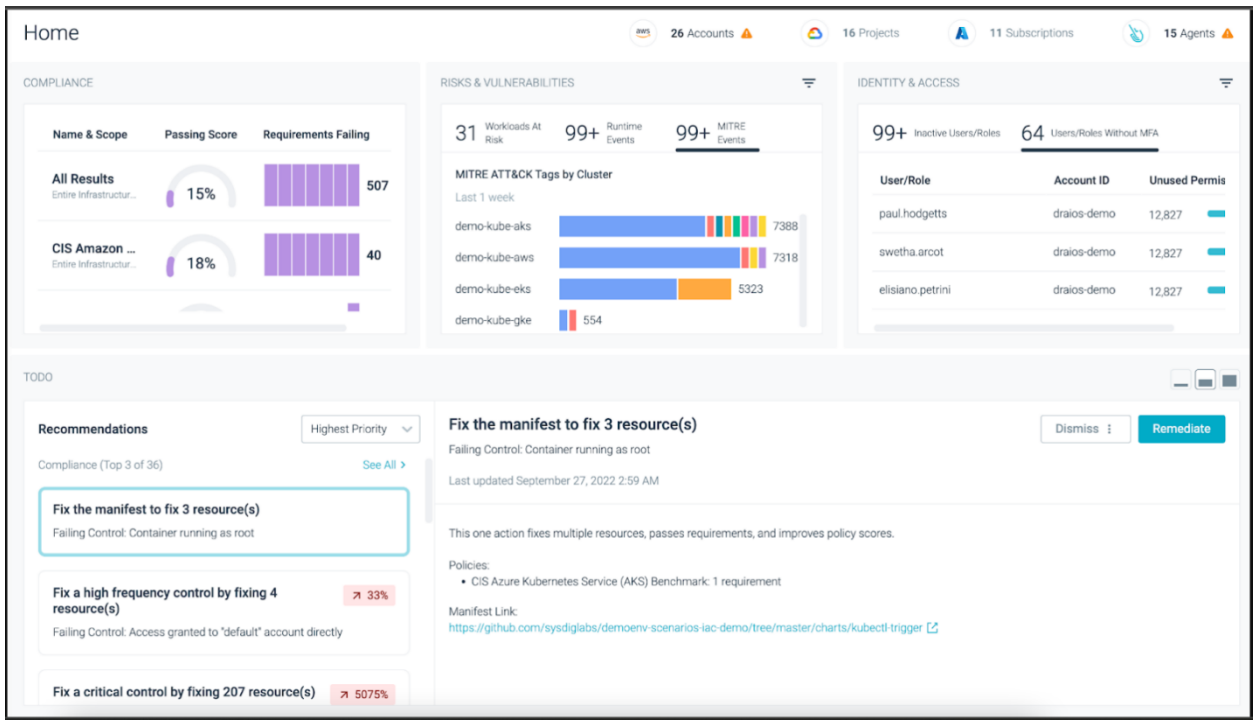
2.1 TARGET SYSTEM DESCRIPTION

The above mentioned open-source software can be used in any system with windows operating system.

It works with 32-bit and 64-bit versions of Windows 11, Windows 10, Windows 8, Windows 7, Windows Vista, and Windows XP. A 64-bit version is included in the download.

3. ANALYSIS REPORT

3.1 SYSTEM SNAPSHOTS



The above image shows the home page of the software which basically is the summary of the system information.

There are two columns in view.

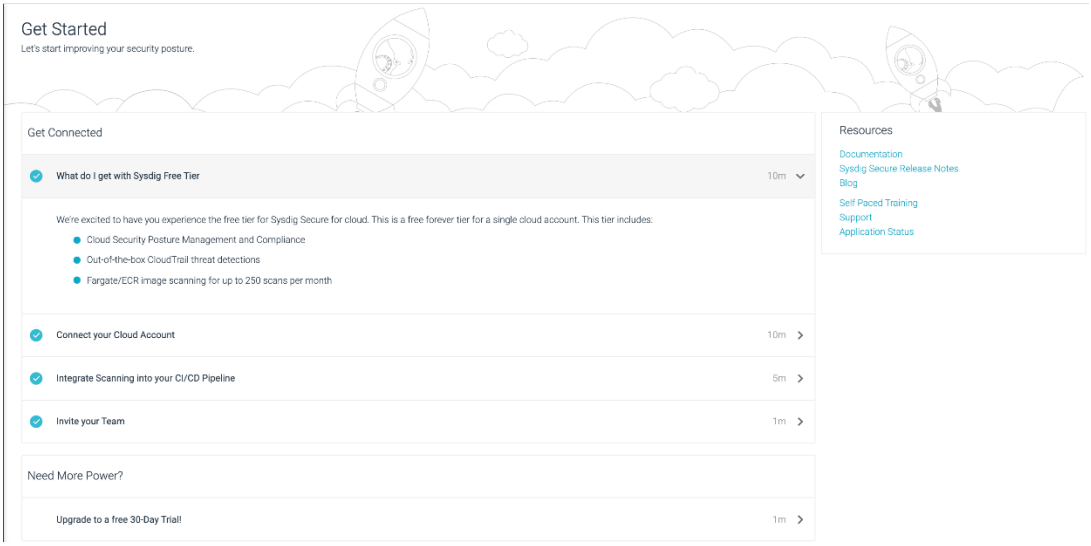
i. On the left-hand side, we can see the names of various hardware and software components and which can be clicked upon to get the detailed information regarding the selected component.

ii. The right column contains all the information in detailed form, which we are talking about.

There are also three tabs in total on top of the application window.

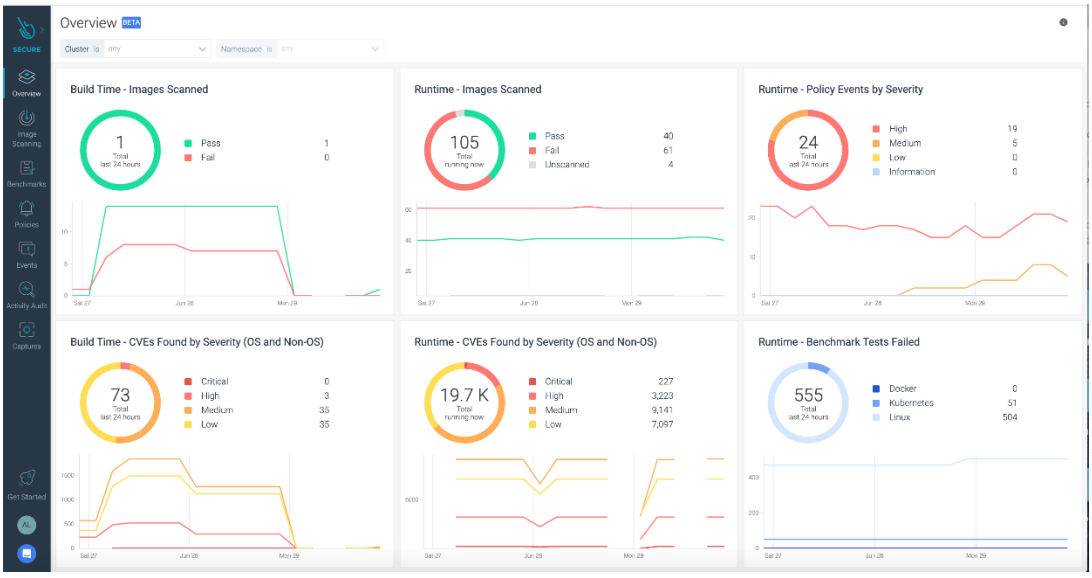
i. Get Started

To get online help on its usage and to know more about the software.

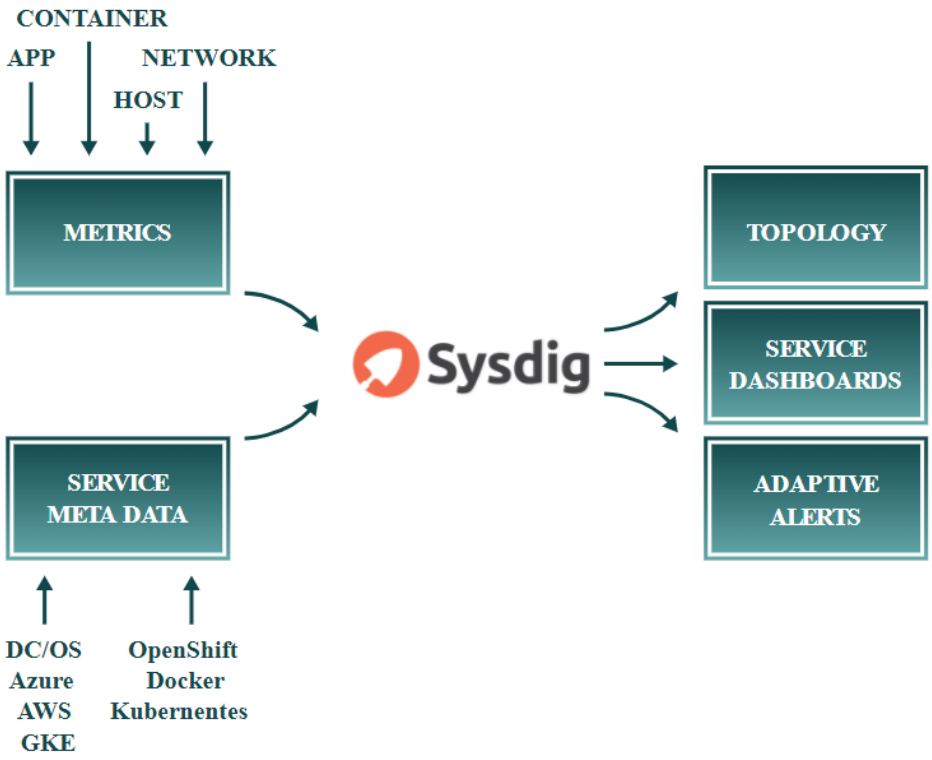


ii. View

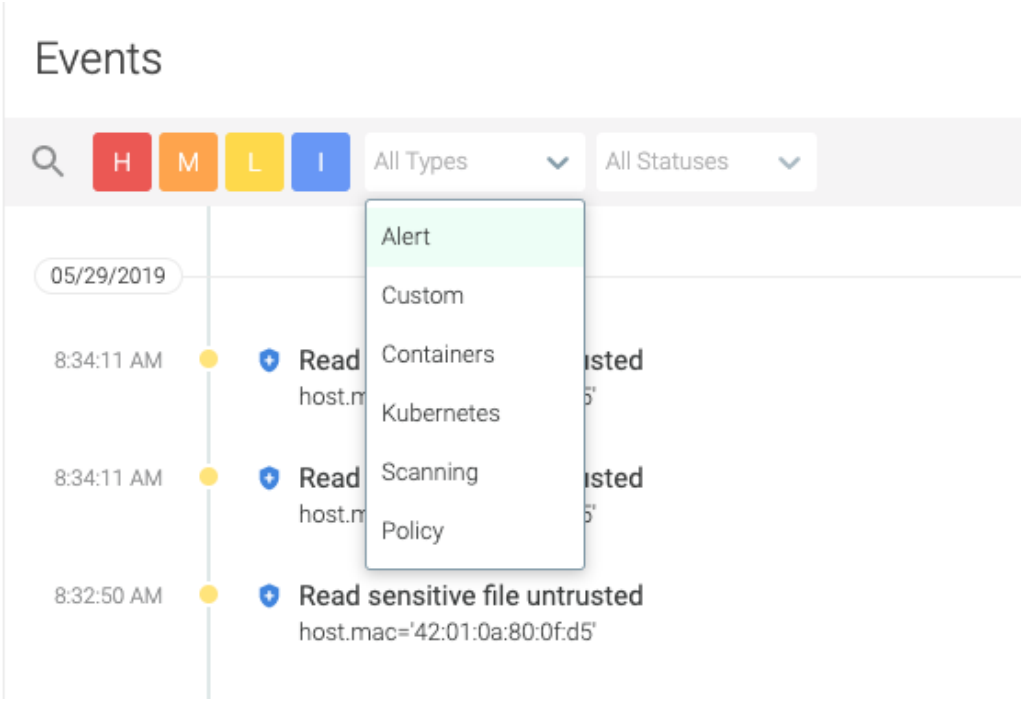
To select any of the sections to get information on it. For example: CPU.



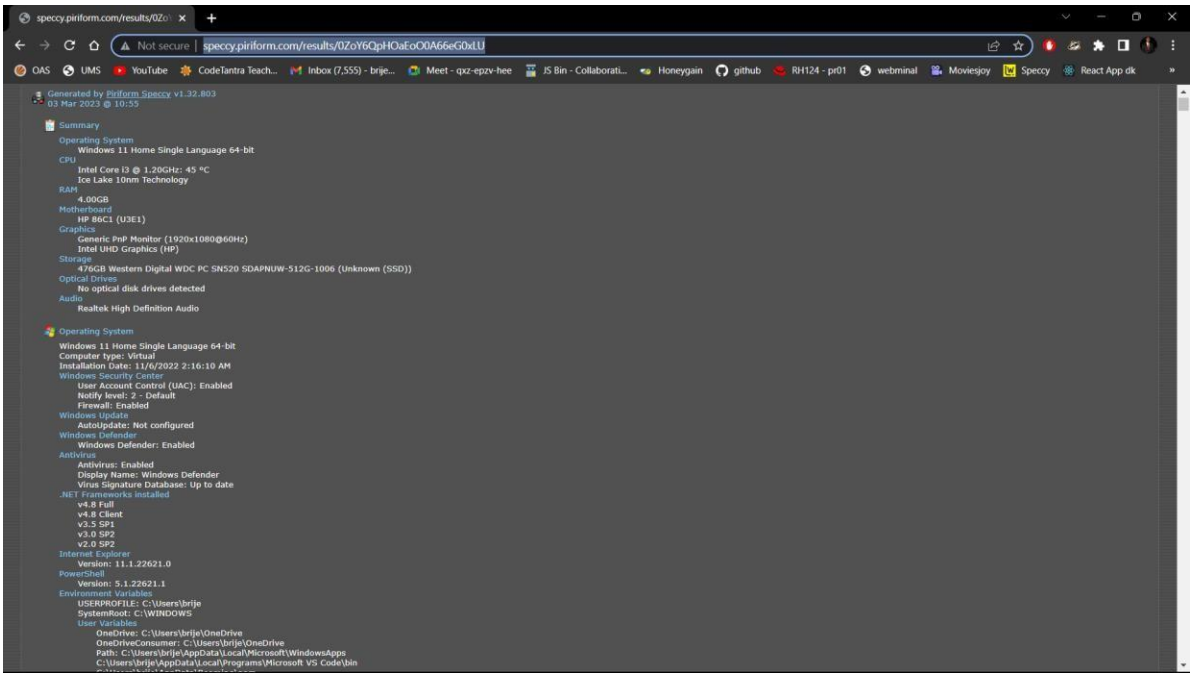
iii.



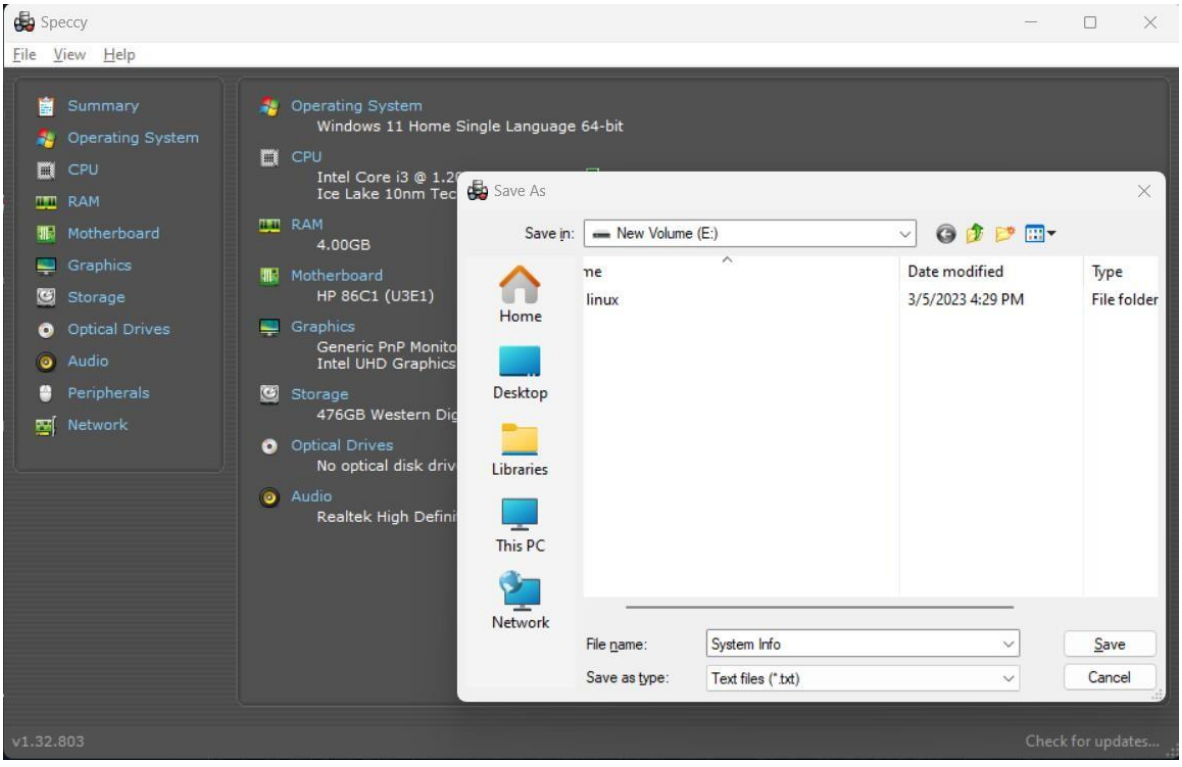
You can generate a weblink by publishing snapshot option and can view and share your system's details.



This is an image showing details online with the snapshot link generated.



The details can also be exported in in form of a text file and can be saved on your system.



CONCLUISON

In this project, we used Sysdig, an open-source software tool, to monitor and track system activity on a computer for a period of three months. We analyzed the data collected by Sysdig and generated a detailed report on the system's activity, including information on resource usage, network traffic, process activity, and file system events.

Our report provided valuable insights into how the system was being used and what activities were consuming the most resources. We identified potential security threats and performance issues and provided recommendations to address them.

Now, moving on to the conclusion, this project demonstrated the importance of using monitoring tools like Sysdig to gain visibility into system activity. The data collected by Sysdig can help us understand how our systems are being used, identify potential issues and threats, and make informed decisions about how to optimize system performance and security.

By analyzing the data collected by Sysdig, we were able to gain insights that would have been difficult, if not impossible, to obtain otherwise. This project highlights the value of monitoring and analysis tools like Sysdig for organizations and individuals looking to improve the security and performance of their systems.

Overall, we can conclude that Sysdig is an effective and valuable tool for monitoring and analyzing system activity. Its open-source nature and ease of use make it accessible to a wide range of users, from individual developers to large organizations. By using Sysdig to monitor our systems, we can make informed decisions and take proactive steps to improve system performance and security.

4. BIBILIOGRAPHY

i. google.com
ii. wikipedia.org
iii. lifewire.com
iv. ccleaner.com
v. speccy.piriform.com

GITHUB LINK

Upload files · sandeepdahiya8119/INT301-CA3 (github.com)