



**SRINIVAS  
UNIVERSITY**



**INSTITUTION'S  
INNOVATION  
COUNCIL**  
(Ministry of Education Initiative)  
Srinivas University - IIC - C202115982

# **INSTITUTE OF ENGINEERING & TECHNOLOGY**

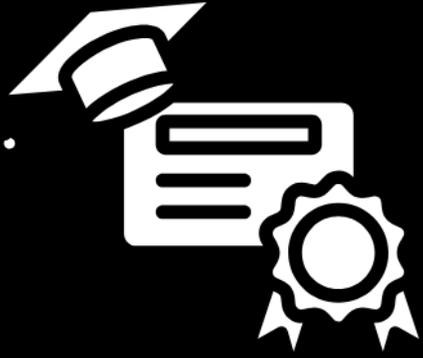
## **PHASE-3 PRESENTATION OF MAJOR PROJECT “SentraWatch”**

Presented By :

- 1) REGAN ELSTON TEMUDO-01SU22CF009
- 2) SHASHANK M B-01SU22CF010
- 3)SHRAVAN KUMAR UK- 01SU22CF011
- 4)VARAD MILIND BORADE- 01SU22CF015

# Table of Contents:

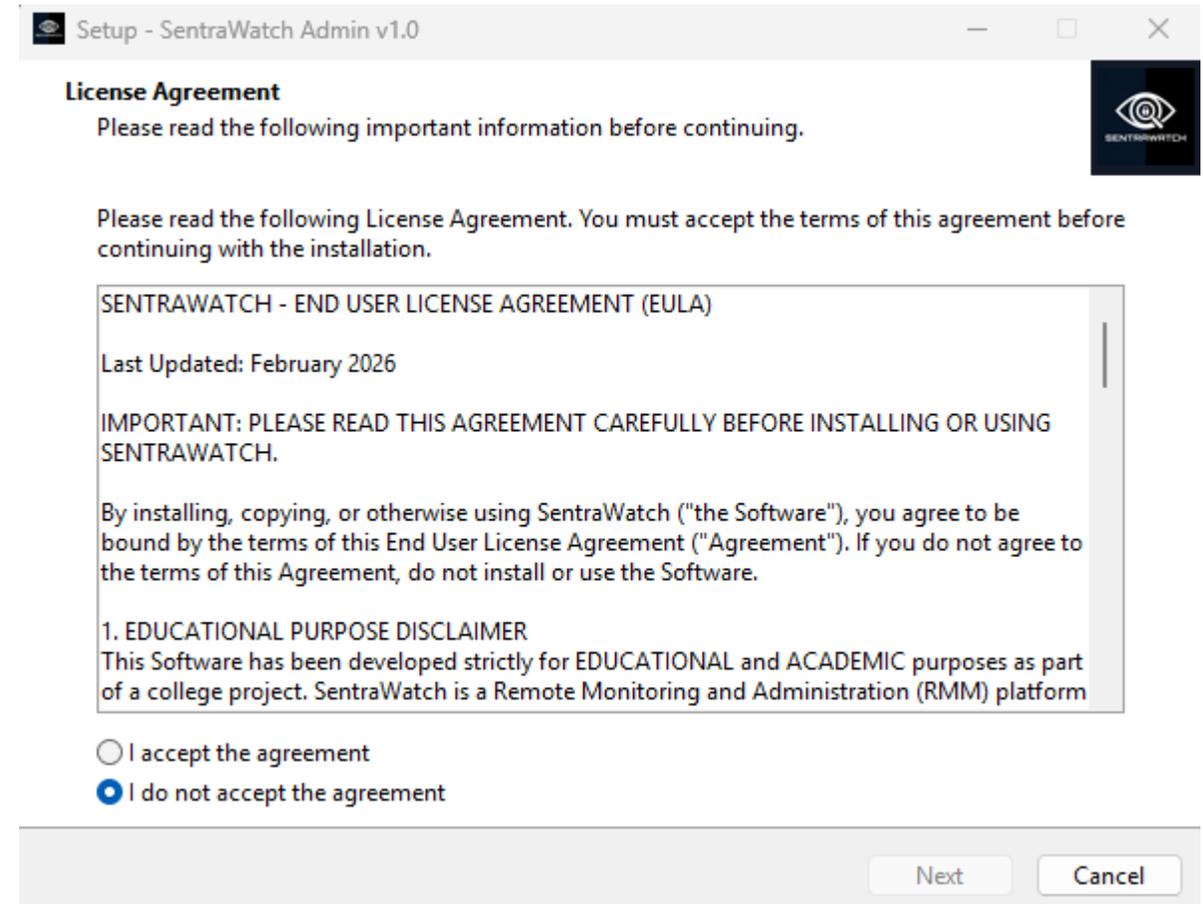
- **What is SentraWatch ?**
- **Admin Installation via exe File**
- **Client Installation**
- **Features of SentraWatch**
- **Conclusion**



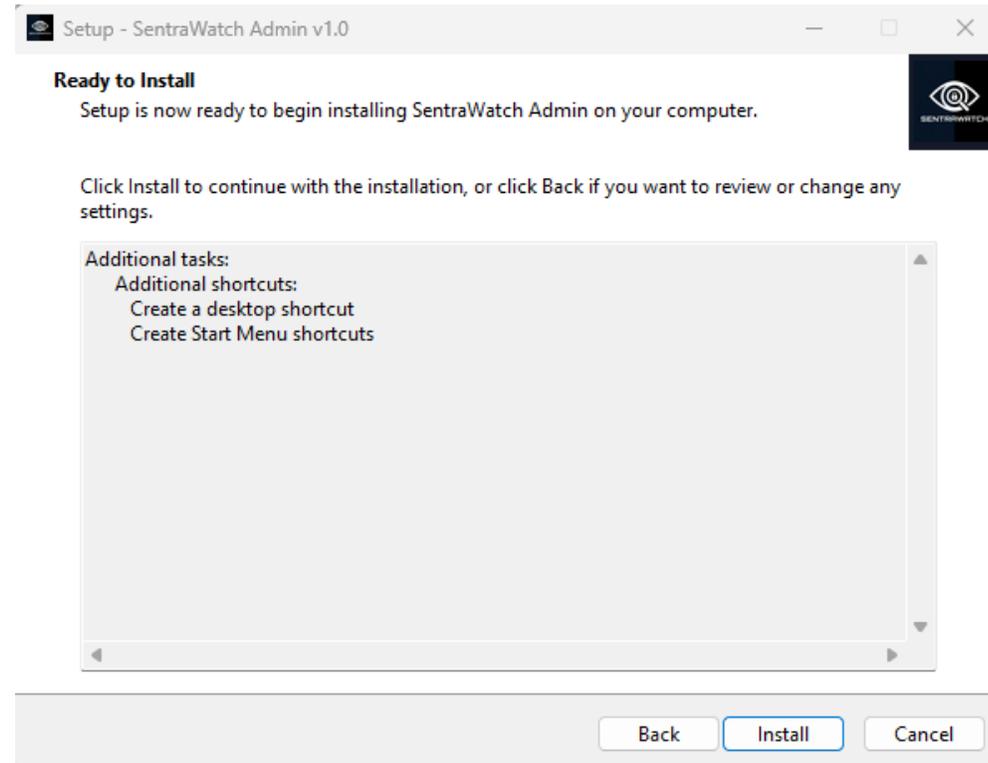
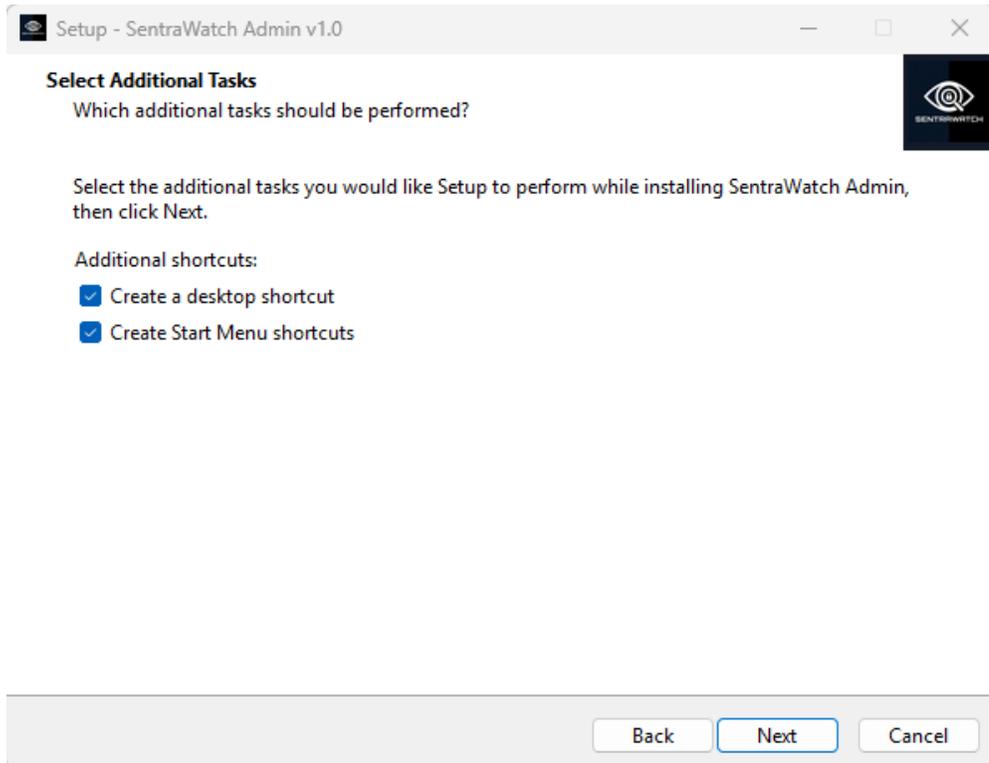
# SENTRAWATCH

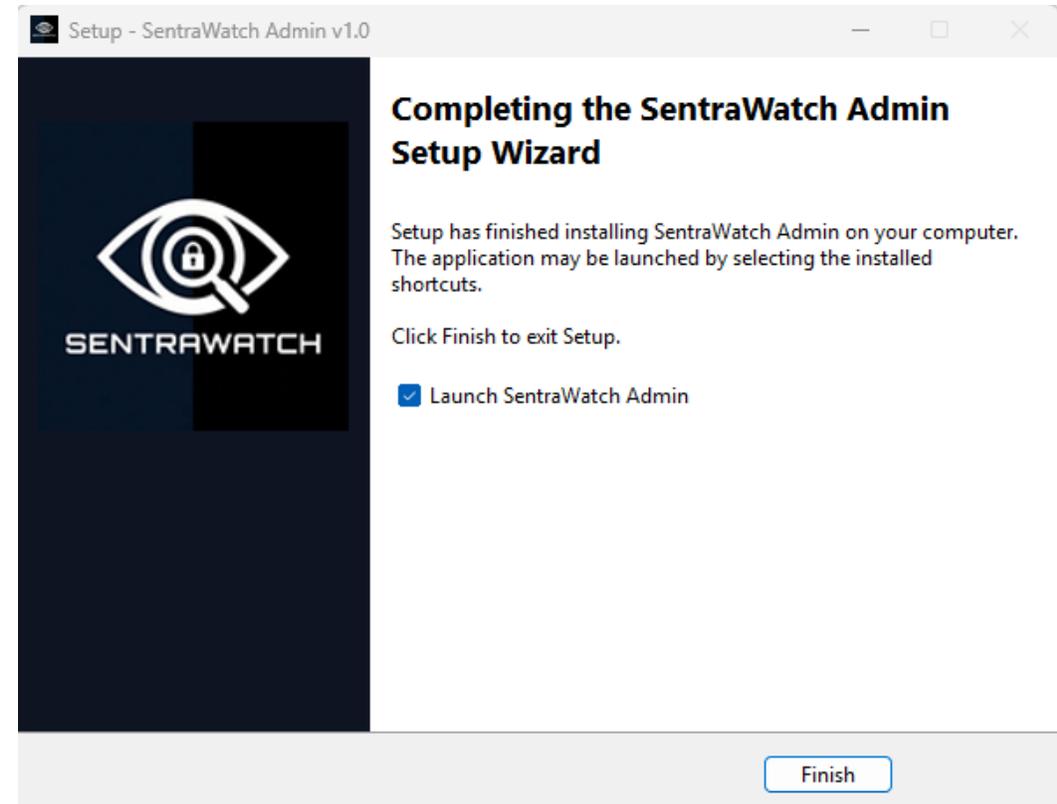
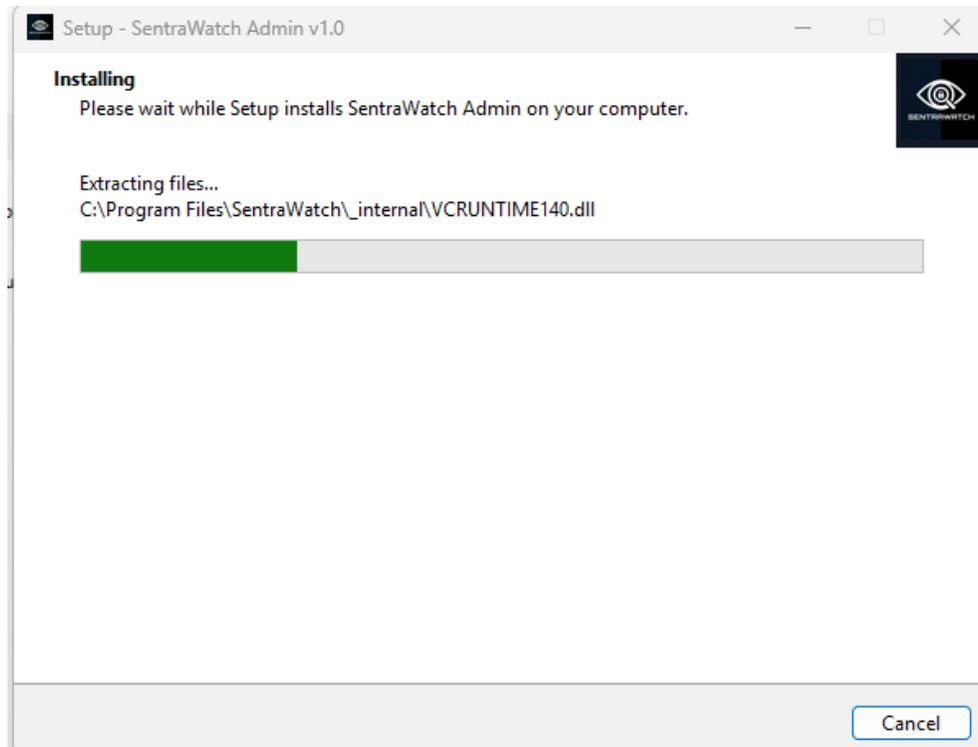
Centralized Monitoring. Decisive Action



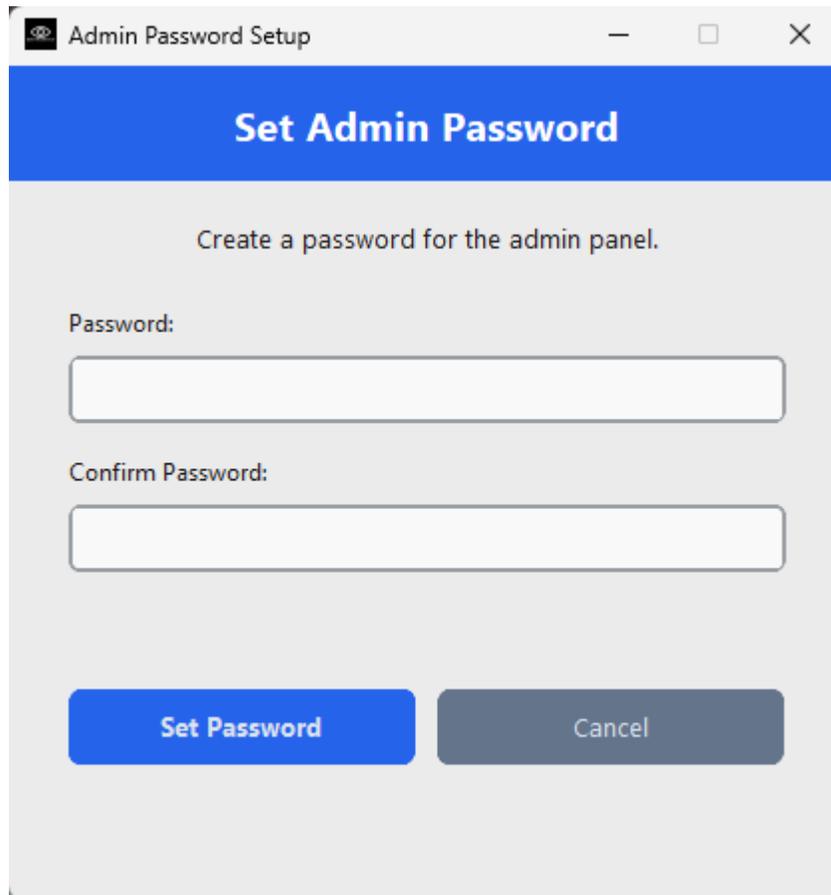


## SentraWatch – Admin .exe Setup





# Admin Password Setup



Admin Password Setup

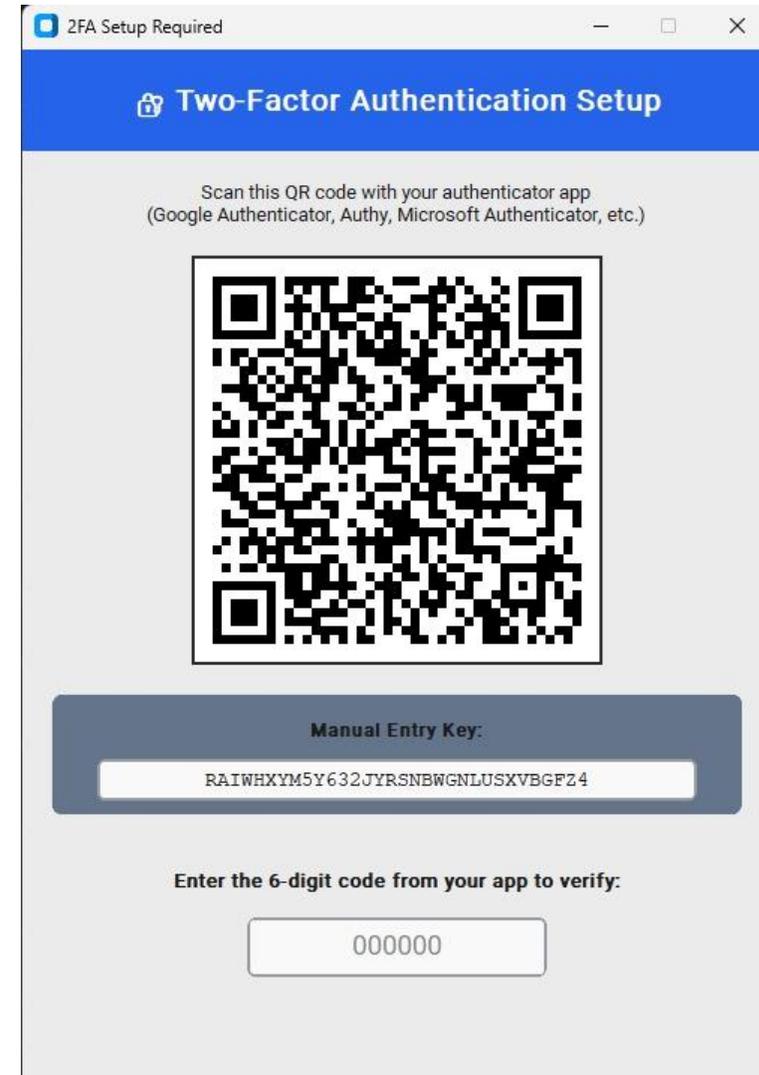
## Set Admin Password

Create a password for the admin panel.

Password:

Confirm Password:

**Set Password** Cancel



2FA Setup Required

## Two-Factor Authentication Setup

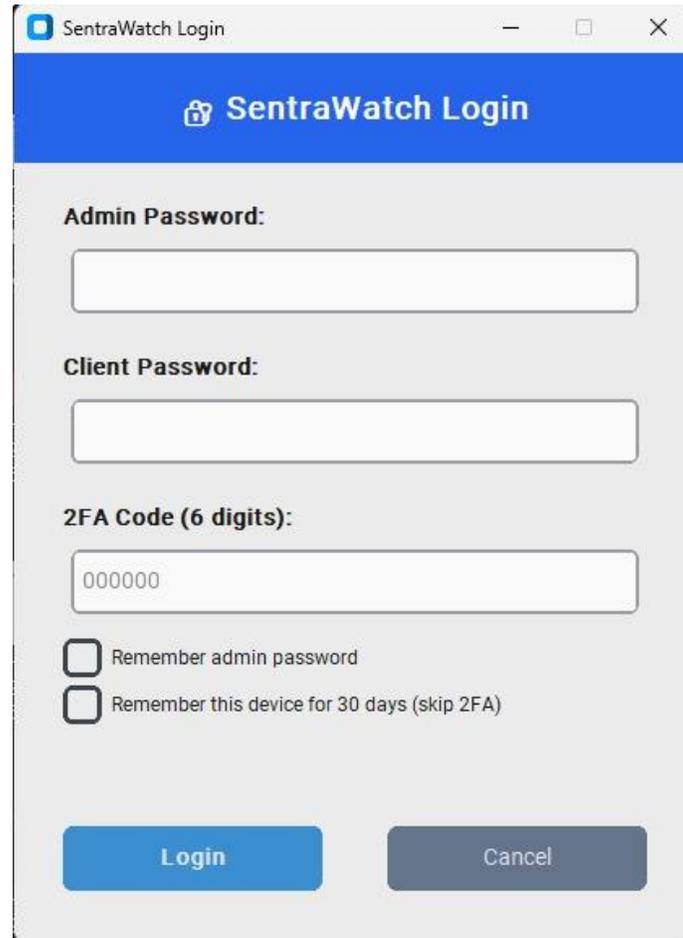
Scan this QR code with your authenticator app  
(Google Authenticator, Authy, Microsoft Authenticator, etc.)



**Manual Entry Key:**

Enter the 6-digit code from your app to verify:

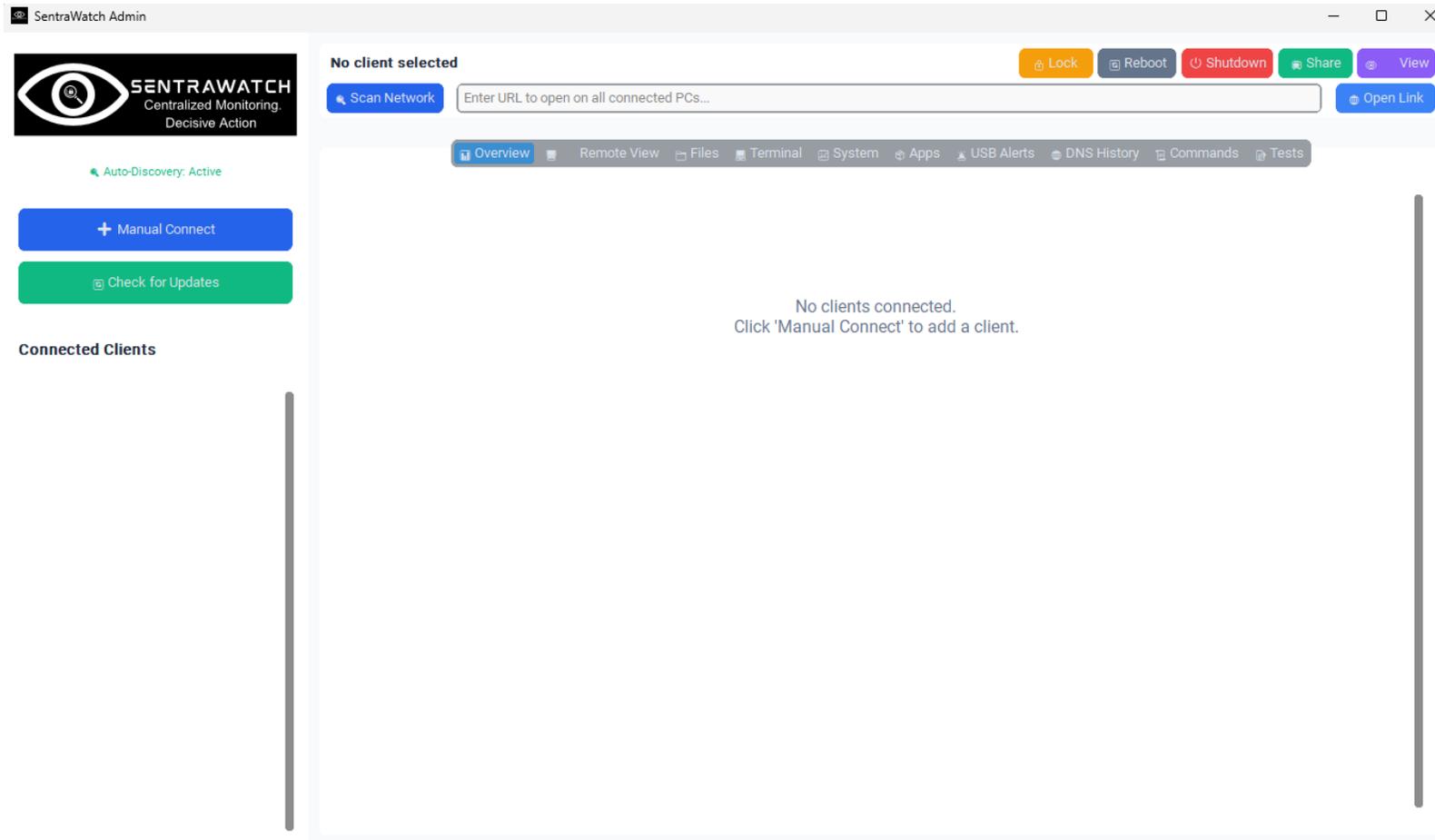
# Admin Login Panel



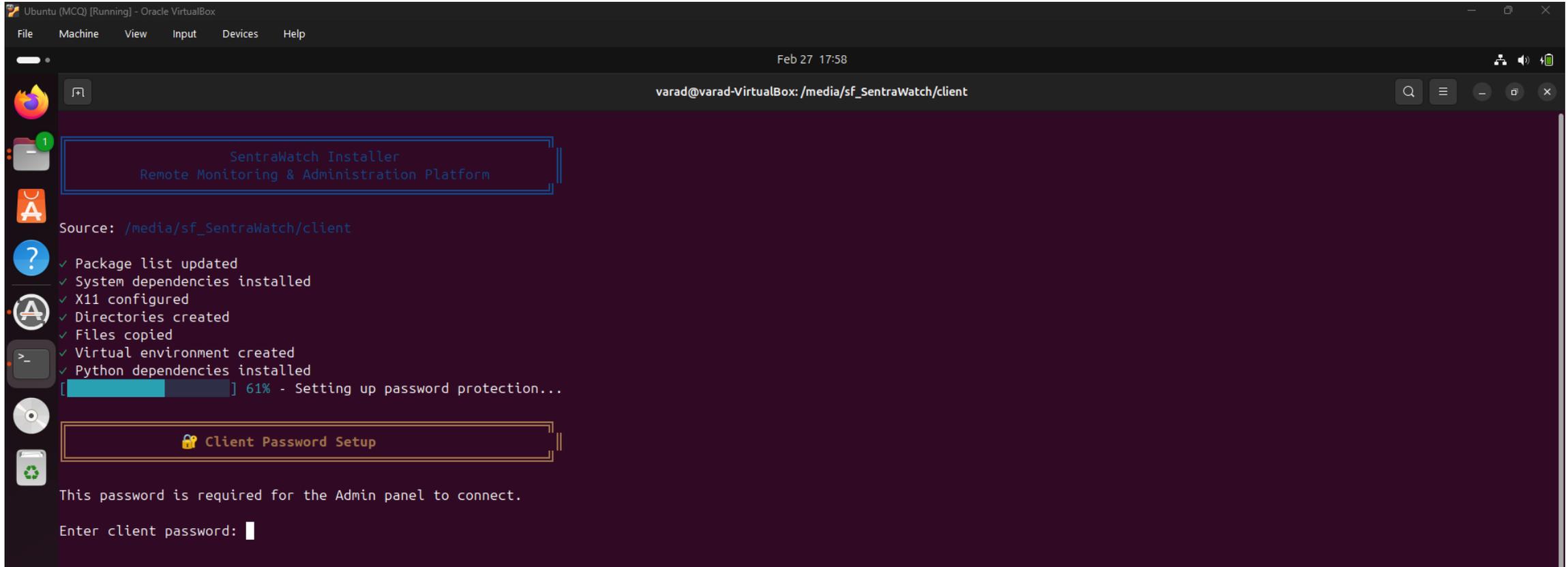
The image shows a screenshot of a web browser window titled "SentraWatch Login". The window has a blue header bar with a lock icon and the text "SentraWatch Login". Below the header, the form is divided into several sections:

- Admin Password:** A text input field.
- Client Password:** A text input field.
- 2FA Code (6 digits):** A text input field containing the placeholder "000000".
- Two checkboxes:
  - Remember admin password
  - Remember this device for 30 days (skip 2FA)
- Two buttons at the bottom: a blue "Login" button and a grey "Cancel" button.

# SentraWatch Admin Dashboard



# Client Installation – Password Setup



```
varad@varad-VirtualBox: /media/sf_SentraWatch/client

SentraWatch Installer
Remote Monitoring & Administration Platform

Source: /media/sf_SentraWatch/client

✓ Package list updated
✓ System dependencies installed
✓ X11 configured
✓ Directories created
✓ Files copied
✓ Virtual environment created
✓ Python dependencies installed
[██████████] 61% - Setting up password protection...

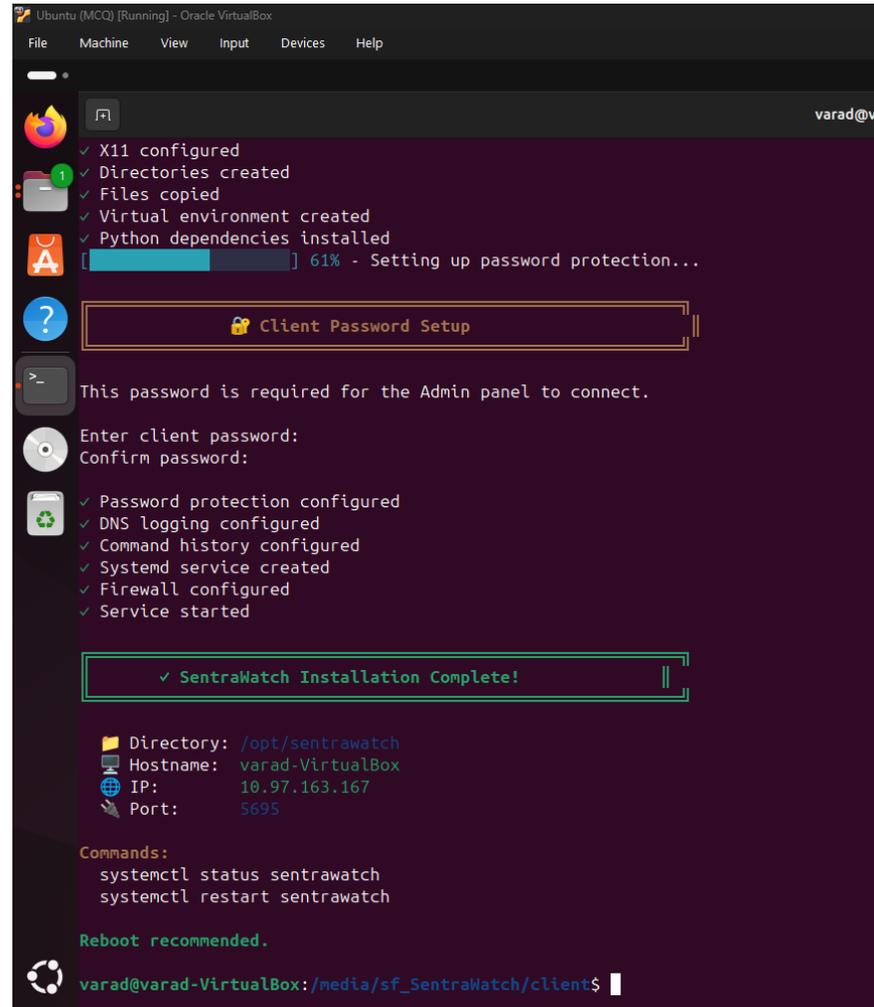
Client Password Setup

This password is required for the Admin panel to connect.

Enter client password: █
```

You can also just save a password.txt file and it will automatically take that as the password.

# Client Installation Completed



```
Ubuntu (MCQ) [Running] - Oracle VirtualBox
File Machine View Input Devices Help

varad@varad-VirtualBox:~$
✓ X11 configured
✓ Directories created
✓ Files copied
✓ Virtual environment created
✓ Python dependencies installed
[██████████] 61% - Setting up password protection...

Client Password Setup

This password is required for the Admin panel to connect.
Enter client password:
Confirm password:

✓ Password protection configured
✓ DNS logging configured
✓ Command history configured
✓ Systemd service created
✓ Firewall configured
✓ Service started

SentraWatch Installation Complete!

Directory: /opt/sentrawatch
Hostname: varad-VirtualBox
IP: 10.97.163.167
Port: 5695

Commands:
systemctl status sentrawatch
systemctl restart sentrawatch

Reboot recommended.

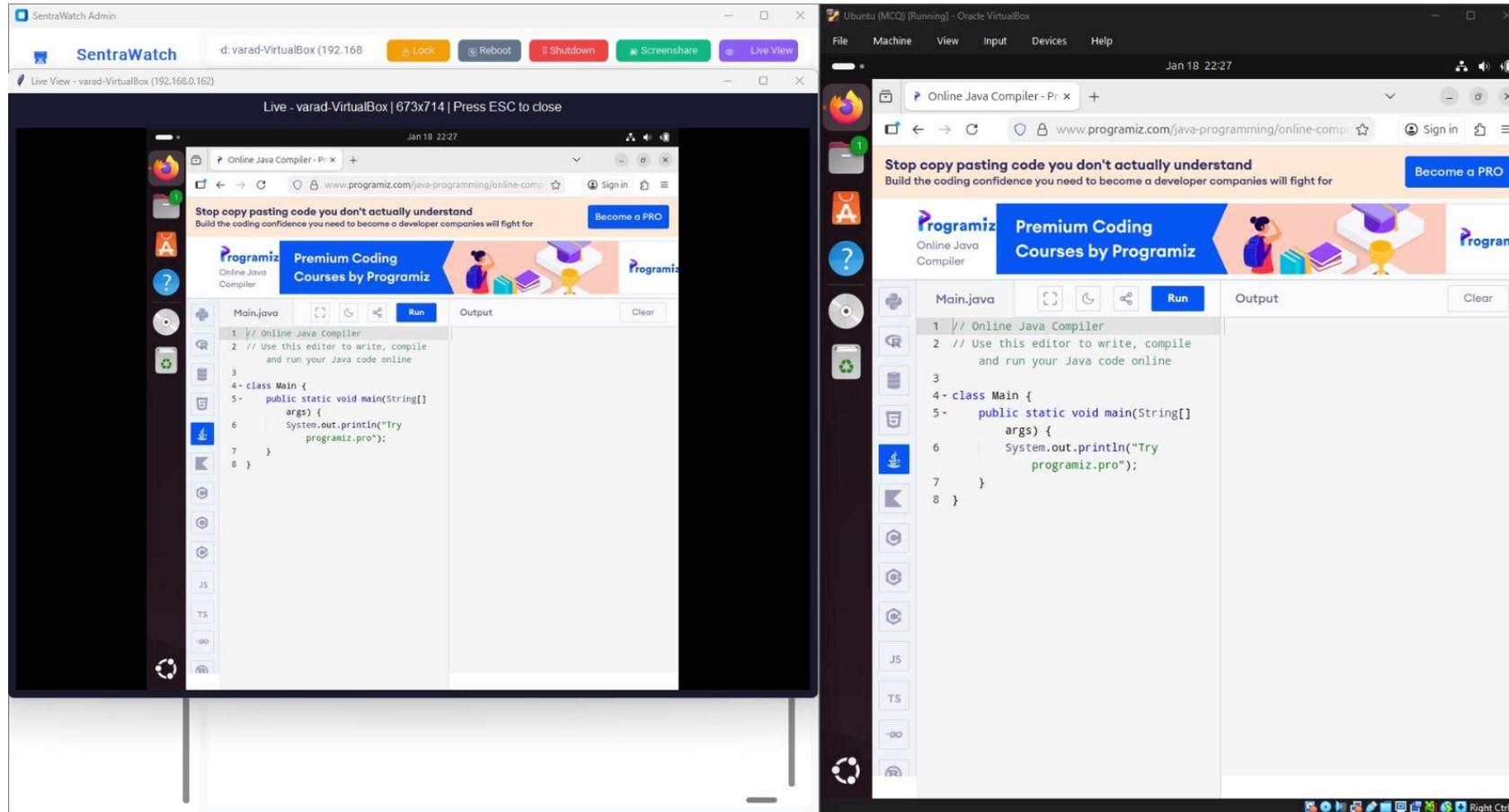
varad@varad-VirtualBox:/media/sf_SentraWatch/client$
```

# Features of SentraWatch

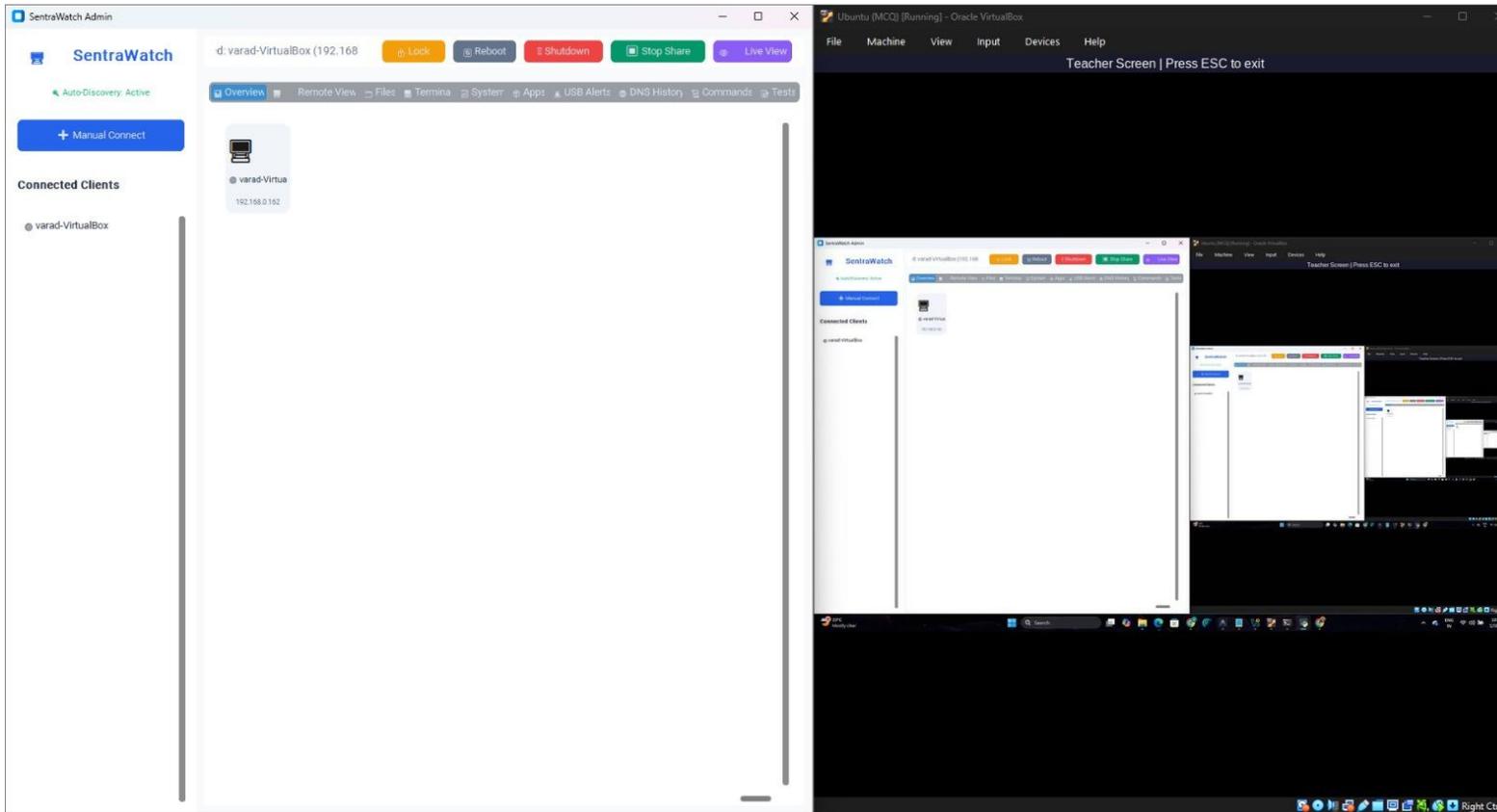
Feature	Description
 <b>Thumbnail Grid View</b>	Real-time thumbnail overview of all connected clients
 <b>Live View</b>	Full-screen screenshot monitoring of student screens
 <b>Screen Broadcast</b>	Share teacher's screen to all student computers
 <b>Remote Control</b>	Full VNC-based remote desktop control
 <b>File Manager</b>	Browse, upload, download, and manage files remotely
 <b>Remote Terminal</b>	Execute commands on student computers
 <b>Lock Screen</b>	Lock student computers during exams
 <b>DNS Monitoring</b>	Track all website access (domains visited)
 <b>Command History</b>	View all terminal commands executed on client
 <b>USB Monitoring</b>	Real-time alerts when USB devices are connected
 <b>MCQ Test System</b>	Create, distribute, and auto-grade MCQ tests
 <b>Leaderboard</b>	View and publish test rankings to students
 <b>PDF Export</b>	Export test results to PDF reports
 <b>Auto-Discovery</b>	Automatic detection of clients on the network
 <b>Power Control</b>	Remote shutdown and reboot capabilities
 <b>Open URL on All PCs</b>	Open a website on all connected clients simultaneously
 <b>Clear History</b>	Clear DNS and command history on clients
 <b>Password Protection</b>	Separate admin & client passwords, 3-attempt lockout
 <b>Two-Factor Auth (2FA)</b>	TOTP-based 2FA with session management (Google Authenticator compatible)

# Thumbnail View

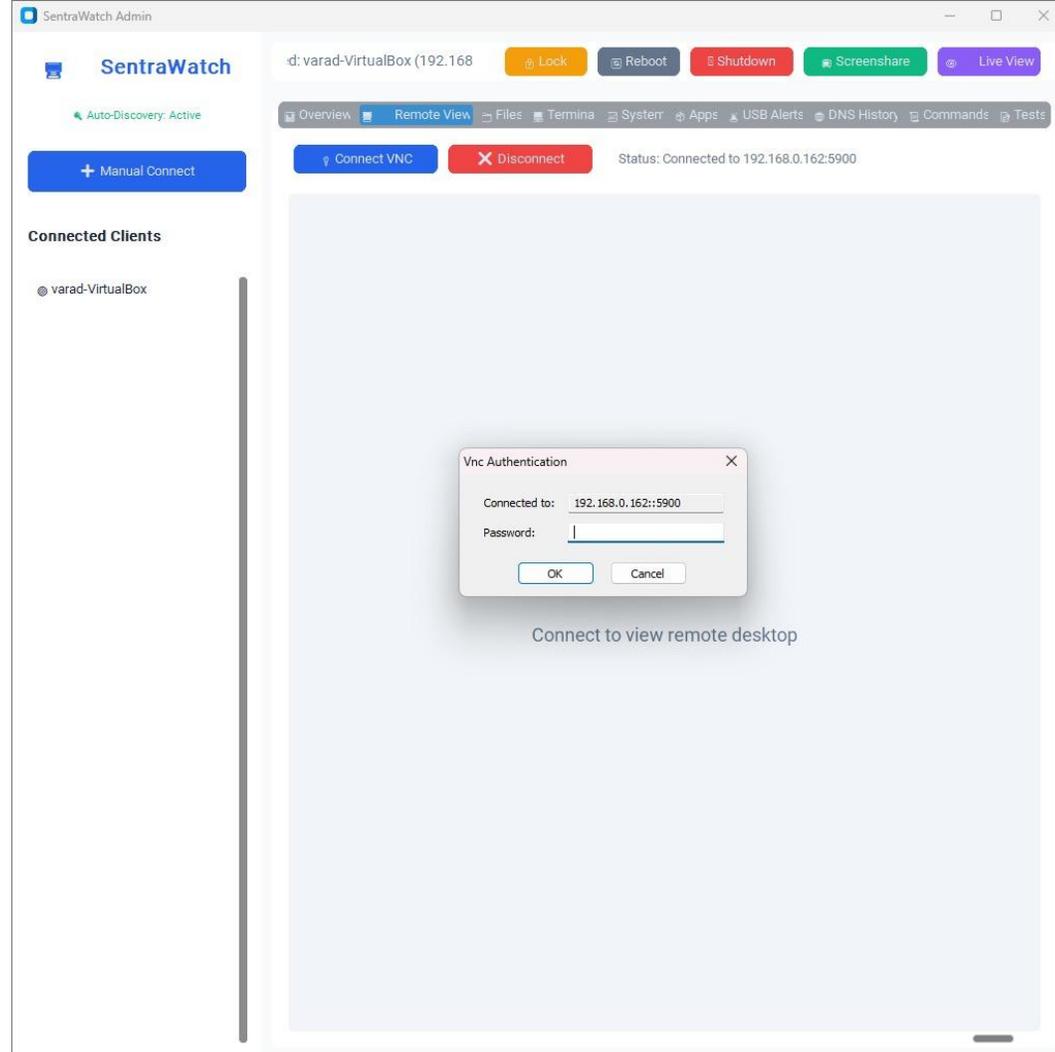
The screenshot displays the SentraWatch Admin web interface. On the left sidebar, there is a logo for 'SENTRAWATCH Centralized Monitoring. Decisive Action' and a status indicator 'Auto-Discovery: Active'. Below this are buttons for '+ Manual Connect' and 'Check for Updates'. Under the 'Connected Clients' section, a single client 'varad-VirtualBox' is listed. The main content area shows 'Selected: varad-VirtualBox (10.97.163.167)' with action buttons for Lock, Reboot, Shutdown, Share, and View. A search bar labeled 'Scan Network' is present with the placeholder text 'Enter URL to open on all connected PCs...'. A navigation bar includes 'Overview', 'Remote View', 'Files', 'Terminal', 'System', 'Apps', 'USB Alerts', 'DNS History', 'Commands', and 'Tests'. The central thumbnail shows a terminal window with a dark background and white text, representing the remote view of the selected client.



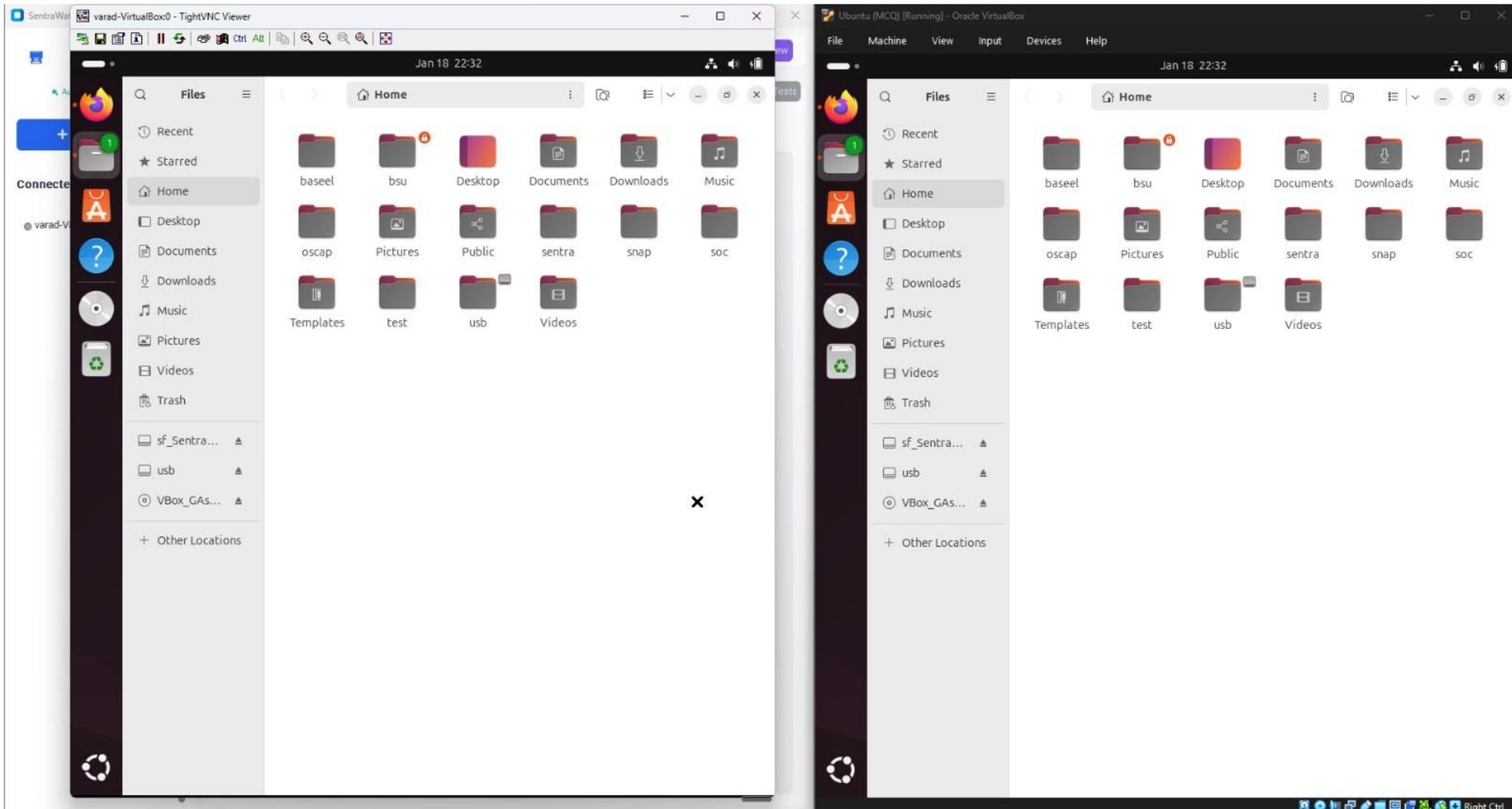
Live View Real-time screenshot monitoring of student screens -----> Regan, Shashank.



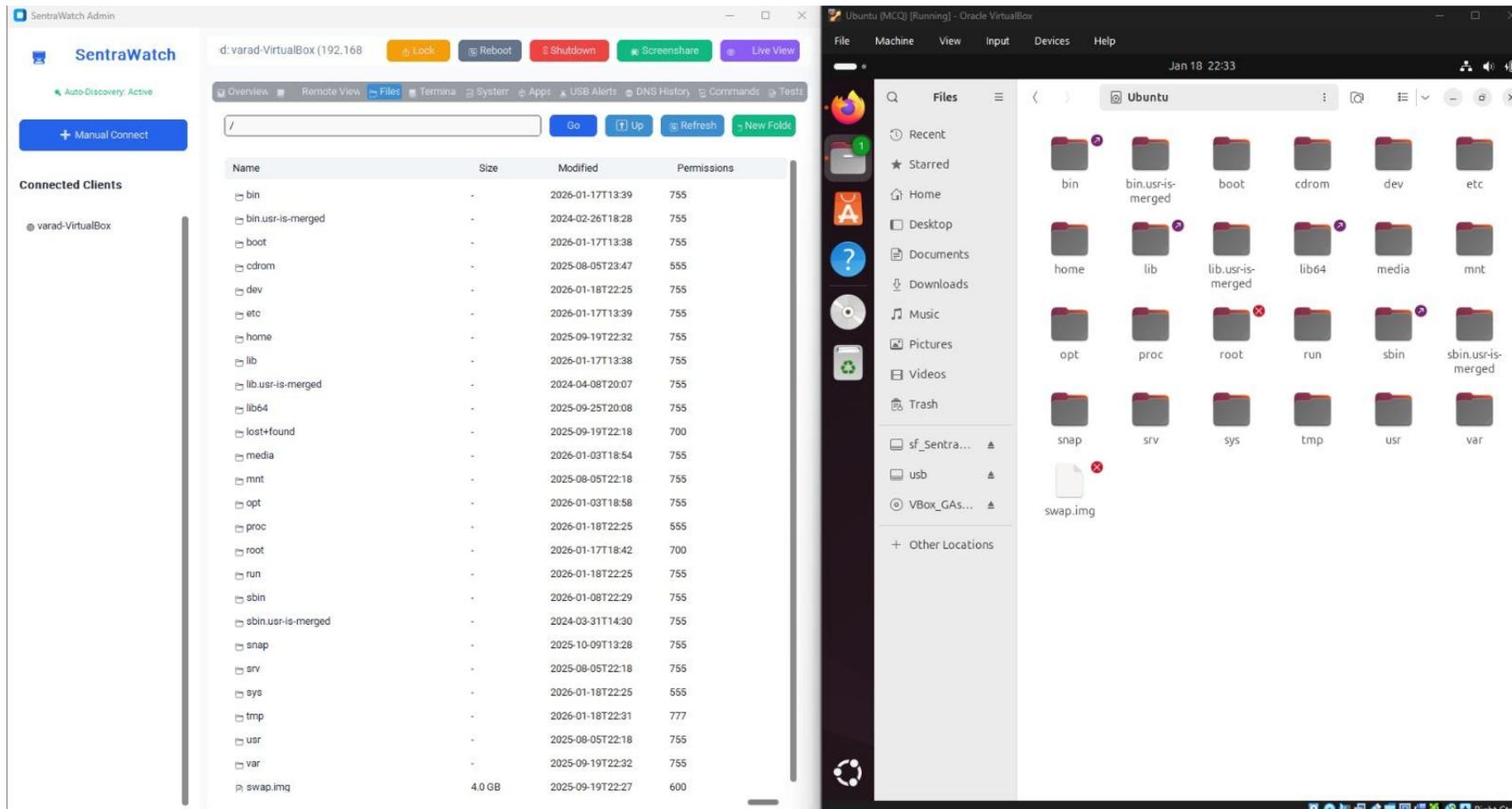
Screen Broadcast Share teacher's screen to all student computers-----> Shashank, Regan



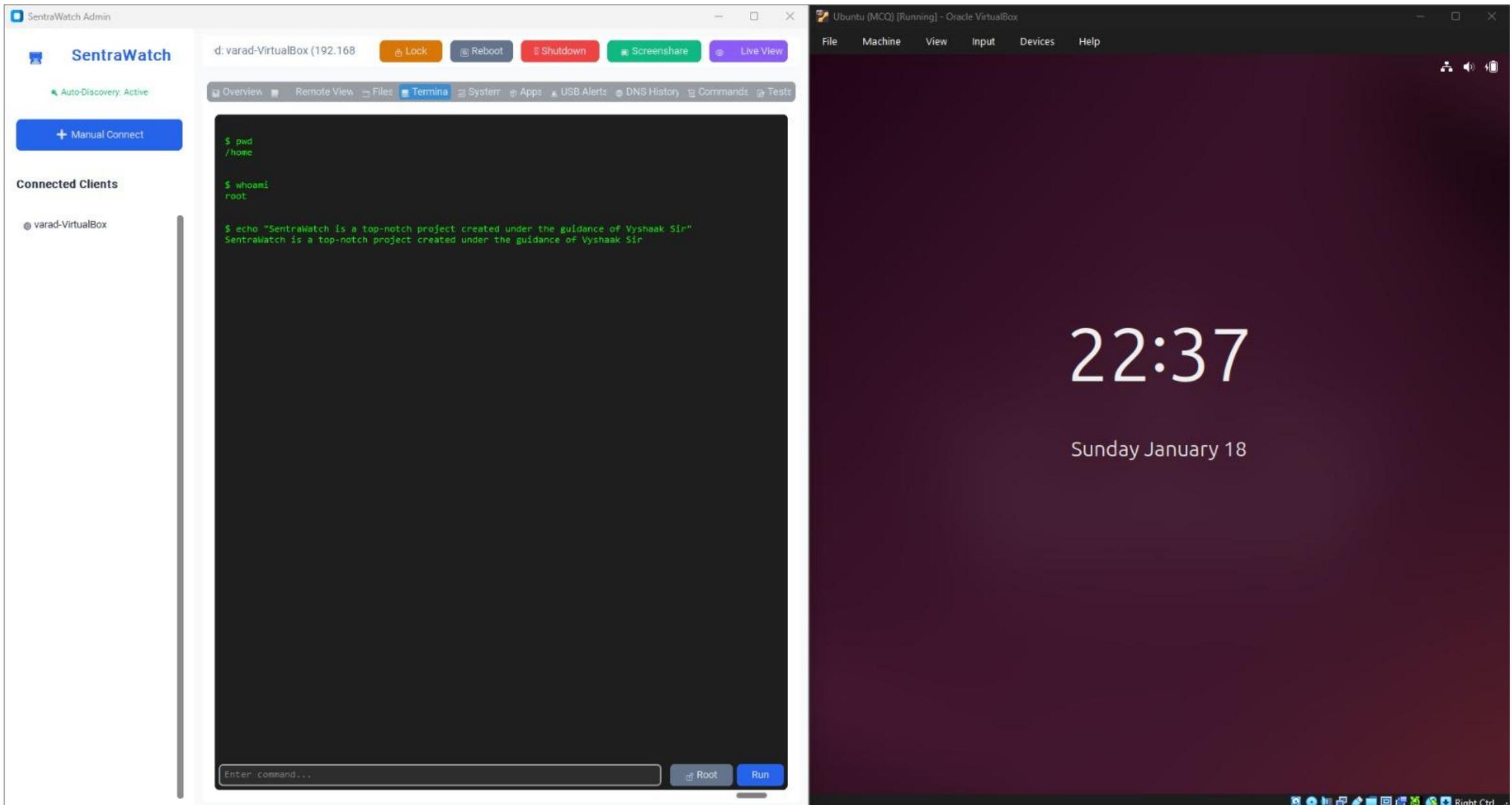
## VNC Auth - Varad Shravan



Remote Control Full VNC-based remote desktop control-----> Shravan, Varad



File Manager Browse, upload, download, and manage files remotely-----> Regan, Varad



The image shows two overlapping windows on a desktop. The left window is 'SentraWatch Admin', a DNS monitoring tool. It displays a list of DNS queries for the IP address 192.168... (varad-VirtualBox). The log includes columns for Timestamp, Type, and Domain. The right window is a browser displaying an 'Online Java Compiler' page. The page has a navigation menu with items like 'Free Python Course', 'How to Create a Website', 'Test Your IQ', and '5 Best Online Universities'. Below the menu is a code editor for 'Main.java' with a 'Run' button and an 'Output' section.

Timestamp	Type	Domain
2026-01-18 17:02:02	HTTPS	www.programiz.com
2026-01-18 17:02:02	AAAA	www.programiz.com
2026-01-18 17:02:02	A	www.programiz.com
2026-01-18 17:02:01	AAAA	programiz-fonts.b-cdn.net
2026-01-18 17:02:01	A	programiz-fonts.b-cdn.net
2026-01-18 17:02:01	HTTPS	cdn.playground-v2.programiz.com
2026-01-18 17:02:01	AAAA	cdn.playground-v2.programiz.com
2026-01-18 17:02:01	A	cdn.playground-v2.programiz.com
2026-01-18 17:02:01	AAAA	fonts.programiz.com
2026-01-18 17:02:01	HTTPS	fonts.programiz.com
2026-01-18 17:02:01	A	fonts.programiz.com
2026-01-18 17:02:01	AAAA	www.programiz.com
2026-01-18 17:02:01	HTTPS	www.programiz.com
2026-01-18 17:02:01	A	www.programiz.com
2026-01-18 17:00:36	HTTPS	www.programiz.com
2026-01-18 17:00:36	AAAA	www.programiz.com
2026-01-18 17:00:36	A	www.programiz.com
2026-01-18 16:57:14	AAAA	programiz-fonts.b-cdn.net
2026-01-18 16:57:14	A	programiz-fonts.b-cdn.net
2026-01-18 16:57:14	HTTPS	cdn.playground-v2.programiz.com
2026-01-18 16:57:14	AAAA	cdn.playground-v2.programiz.com
2026-01-18 16:57:14	A	cdn.playground-v2.programiz.com
2026-01-18 16:57:14	HTTPS	fonts.programiz.com
2026-01-18 16:57:13	AAAA	fonts.programiz.com
2026-01-18 16:57:13	A	fonts.programiz.com
2026-01-18 16:57:13	HTTPS	www.programiz.com

```

1 // Online Java Compiler
2 // Use this editor to write, compile
  and run your Java code online
3
4 class Main {
5     public static void main(String[]
      args) {
6         System.out.println("Try
          programiz.pro");
7     }
8 }

```

DNS Monitoring Track all website access (domains visited)----->  
 Shravan, Regan

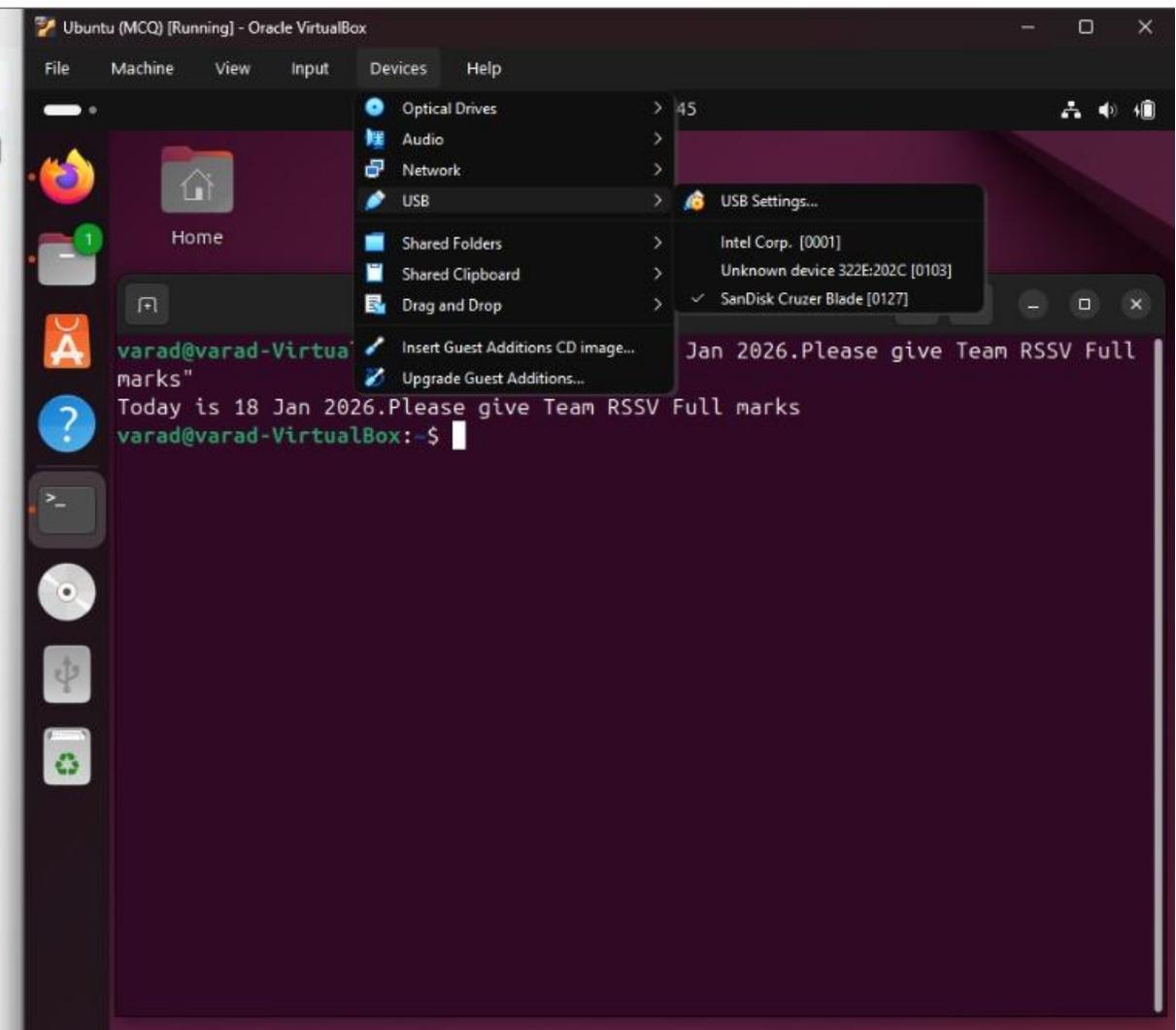
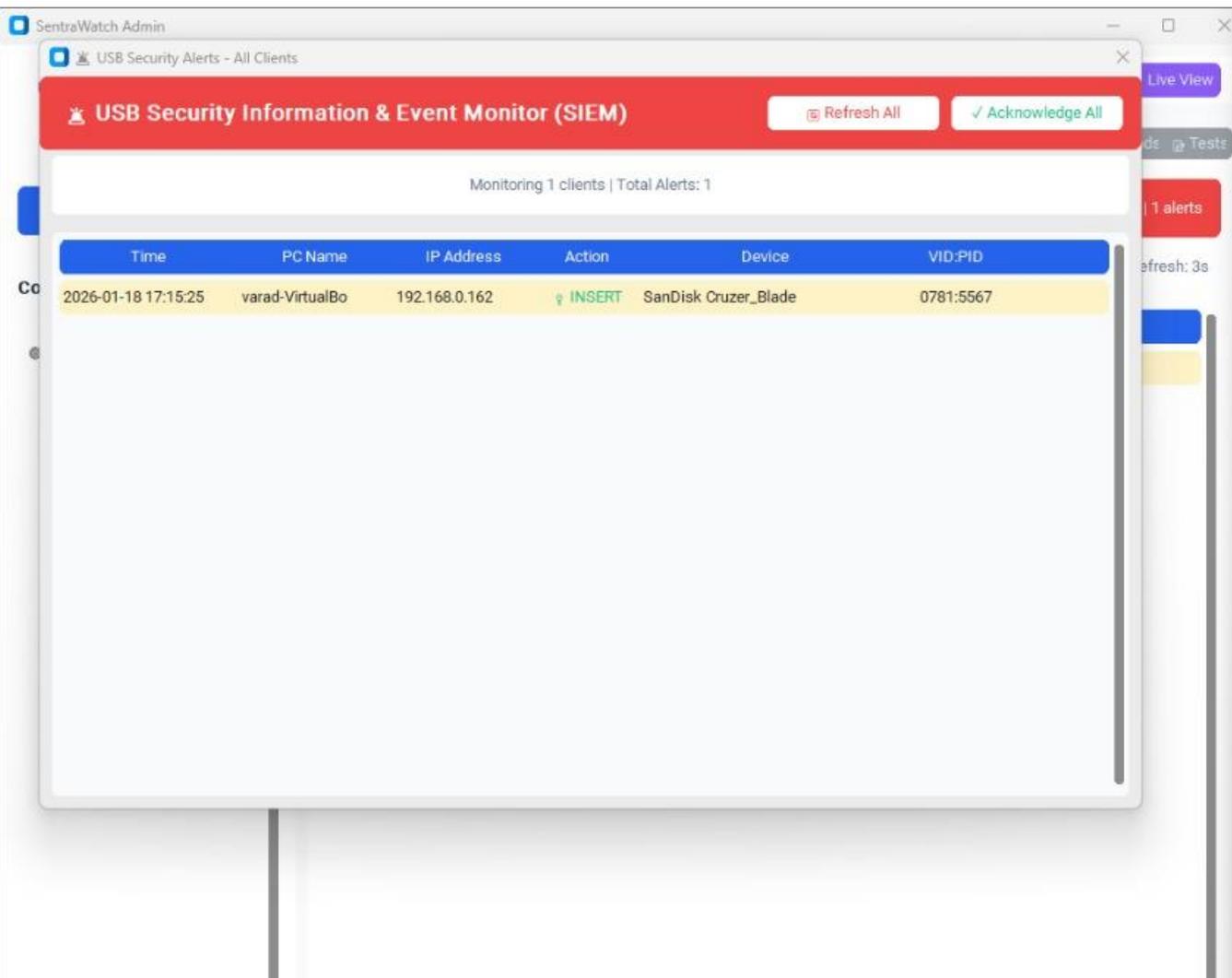
The screenshot shows the SentraWatch Admin web interface. On the left, there's a sidebar with 'SentraWatch' branding, 'Auto-Discovery: Active' status, and a 'Manual Connect' button. Below that, under 'Connected Clients', the client 'varad-VirtualBox' is listed. The main area displays a 'Commands' tab for the selected client, showing a list of 200 commands. The commands include various system administration tasks like checking history, running curl requests, installing packages, and restarting services.

```
d: varad-VirtualBox (192.168) [Lock] [Reboot] [Shutdown] [Screenshare] [Live View]
Overview Remote View Files Terminal System Alerts Apps USB Alerts DNS History Commands Tests
Refresh History 200 commands
172. tail -10 ~/.bash_history
173. ls -la ~/.bash_history
174. sudo cat ~/.bash_history | tail -5
175. ls -la ~/.bash_history
176. curl http://localhost:5695/api/history/commands | python3 -c "import sys,json; d=json.load(sys.stdin); print
177. wc -l ~/.bash_history
178. sudo cp /media/sf_SentraWatch/client/client.py /opt/sentraWatch/client.py
179. sudo systemctl restart sentraWatch
180. history -a
181. curl http://localhost:5695/api/history/commands | python3 -c "import sys,json; d=json.load(sys.stdin); print
182. sudo /opt/sentraWatch/venv/bin/python /opt/sentraWatch/client.py 2>&1 | head -20
183. sudo systemctl restart sentraWatch
184. sleep 12 # Wait for ExecStartPre sleep
185. curl http://localhost:5695/api/history/commands | python3 -c "import sys,json; d=json.load(sys.stdin); print
186. echo "hello"
187. sudo bash install.sh
188. source ~/.bashrc
189. echo "lmao"
190. sudo bash install.sh
191. grep -c "api/test/start" /opt/sentraWatch/client.py
192. sudo systemctl status sentraWatch
193. sudo cp /media/sf_SentraWatch/client/client.py /opt/sentraWatch/client.py
194. sudo systemctl restart sentraWatch
195. curl -X POST http://localhost:5695/api/test/start -H "Content-Type: application/json" -d '{"id":"test1",
196. sudo cp /media/sf_SentraWatch/client/client.py /opt/sentraWatch/client.py
197. sudo systemctl restart sentraWatch
198. sudo cp /media/sf_SentraWatch/client/client.py /opt/sentraWatch/client.py
199. sudo systemctl restart sentraWatch
200. echo "Today is 18 Jan 2026.Please give Team RSSV Full marks"
```

The screenshot shows a terminal window on a client machine. The prompt is 'varad@varad-VirtualBox: ~'. The user has entered the command 'echo "Today is 18 Jan 2026.Please give Team RSSV Full marks"' and the output is 'Today is 18 Jan 2026.Please give Team RSSV Full marks'. The terminal window is titled 'varad@varad-VirtualBox: ~' and is running on an Ubuntu (MCQ) virtual machine.

```
varad@varad-VirtualBox: ~
varad@varad-VirtualBox:~$ echo "Today is 18 Jan 2026.Please give Team RSSV Full marks"
Today is 18 Jan 2026.Please give Team RSSV Full marks
varad@varad-VirtualBox:~$
```

Command History View all terminal commands executed on client-----> Shravan, Shashank



USB Monitoring Real-time alerts when USB devices are connected-----> Shashank, Varad

Create New Test ✕

Test Name:  Duration (min):

### Questions

**Q1:**

A)

B)

C)

D)

**Q2:**

A)

B)

C)

D)

MCQ Test Create - Varad, Shashank

SentraWatch Admin

SentraWatch

Auto-Discovery: Active

+ Manual Connect

Connected Clients

- varad-VirtualBox

id: varad-VirtualBox (192.168) [Lock] [Reboot] [Shutdown] [Screenshare] [Live View]

Overview Remote View Files Terminal System Apps USB Alerts DNS History Commands Tests

+ Create New Test Push Test to All View Results Leaderboard Export PDF

### Saved Tests

- maths (1 Q)
- Maths (2 Q)
- Maths chapter 1 arthi (2 Q)
- Project Demo (2 Q)

### Test Preview

#### Project Demo

Duration: 10 minutes | Questions: 2

**Q1: Did you like SentraWatch ?**

- A) Its OK
- B) Needs Improvement
- C) Best Project
- ✓ D) It Delicioulsy Awesome

**Q2: What is 1+1 ?**

- ✓ A) 2
- B) 4
- C) 8
- D) 0

Ubuntu (MCQ) [Running] - Oracle VirtualBox

File Machine View Input Devices Help

 **Project Demo**

Duration: 10 minutes | Questions: 2

Enter your details to begin:

Name:

USN/Roll No:

 **Start Test**

Right Ctrl

Ubuntu (MCQ) [Running] - Oracle VirtualBox

File Machine View Input Devices Help

 **Time: 9:46**

 Varad |  01SU22CF015

Question 1 of 2

**Did you like SentraWatch ?**

- A) Its OK
- B) Needs Improvement
- C) Best Project
- D) It Delicioulsy Awesome

◀ Previous    Next ▶    ✓ Submit Test

Right Ctrl ...

Ubuntu (MCQ) [Running] - Oracle VirtualBox

File Machine View Input Devices Help

 **Time: 8:30**

 Varad |  01SU22CF015

Question 2 of 2

**What is 1+1 ?**

A) 2

B) 4

C) 8

D) 0

Test Su...

 **Name: Varad**  
**USN: 01SU22CF015**

**Your score: 1/2**  
**Time: 85s**

OK

◀ Previous    Next ▶    ✓ Submit Test

Right Ctrl

SentraWatch Admin

**SentraWatch** | IP: varad-VirtualBox (192.168) | Lock | Reboot | Shutdown | Screenshare | Live View

Auto-Discovery: Active

+ Manual Connect

Overview | Remote View | Files | Termina | System | Apps | USB Alerts | DNS History | Commands | Tests

+ Create New Test | Push Test to All | View Results | Leaderboard | Export PDF | 10 |

**Connected Clients**

- varad-VirtualBox

**Results: Project Demo**

Name	USN	Score	Time	Status
Varad	01SU22CF015	1/2	85s	Submitted

Questions: 2

SentraWatch Admin

**SentraWatch** | IP: varad-VirtualBox (192.168) | [Lock](#) | [Reboot](#) | [Shutdown](#) | [Screenshare](#) | [Live View](#)

Auto-Discovery: Active

[+ Manual Connect](#)

Overview | Remote View | Files | Termina | System | Apps | USB Alerts | DNS History | Commands | Tests

[+ Create New Test](#) | [Push Test to All](#) | [View Results](#) | [Leaderboard](#) | [Export PDF](#) | 10 |

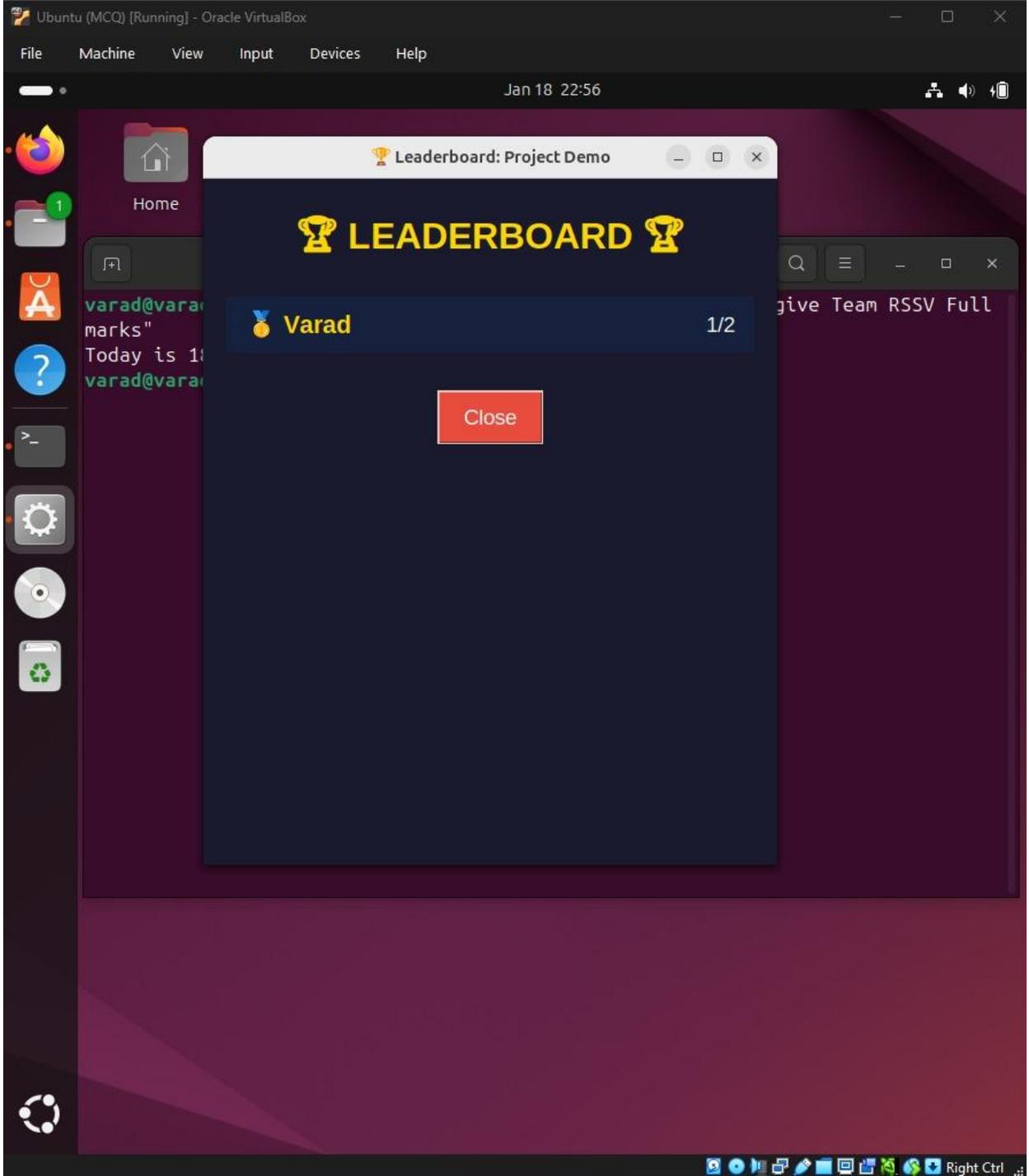
**Connected Clients**

- varad-VirtualBox

**Results: Project Demo**

Name	USN	Score	Time	Status
Varad	01SU22CF015	1/2	85s	Submitted

Questions: 2



SentraWatch Admin

id: varad-VirtualBox (192.168) [Lock] [Reboot] [Shutdown] [Screenshare] [Live View]

Auto-Discovery: Active

+ Manual Connect

Overview Remote View Files Termina System Apps USB Alerts DNS History Commands Tests

+ Create New Test Push Test to All View Results Leaderboard Export PDF 10 |

Connected Clients Saved Tests Test Preview

Save As

Downloads

Organize New folder

Varad - Personal

- Desktop
- Downloads
- Documents
- Pictures
- Music
- Videos

Name	Date modified	Type	Size
Today			
math	1/18/2026 4:23 PM	Microsoft Edge P...	2 KB
1000121336	1/18/2026 2:14 PM	Microsoft Edge P...	1,880 KB
Yesterday			
maths_results	1/17/2026 7:18 PM	Microsoft Edge P...	2 KB
Varad_Milind_Borade	1/17/2026 11:06 AM	Microsoft Edge P...	241 KB
Last week			
Guidelines	1/15/2026 10:27 PM	Microsoft Edge P...	150 KB

File name: Project Demo\_results

Save as type: PDF files

Save Cancel

Project Demo\_results.pdf

File C:/Users/USER/Downloads/Project%20Demo\_results.pdf

Ethical Hacking Ess... Home | Parivahan... 5354 Cyber Security Roa... NITK Surathkal Other favorites

1 of 1

### Test Results: Project Demo

Generated: 2026-01-18 22:57

#	Name	USN	Score	Time	%
1	Varad	01SU22CF015	1/2	85s	50%



Auto-Discovery: Active

+ Manual Connect

Check for Updates

Restart App

Connected Clients

No client selected

Lock Reboot Shutdown Share View Remote

Scan Network

Enter URL to open on all connected PCs...

Open Link

Overview Remote View Files Terminal System Apps USB Alerts DNS History Commands Tests

No clients connected.  
Click 'Manual Connect' to add a client.

# Conclusion:

- Establishes centralized governance and complete visibility over lab infrastructure
- Strengthens exam integrity through controlled access and monitoring mechanisms
- Enhances faculty oversight with real-time supervision capabilities
- Ensures accountability via structured logging and audit-ready reports
- Reduces system misuse, unauthorized activities, and operational disruptions
- Supports data-driven administrative decisions using monitored insights
- Designed as a scalable, open-source solution adaptable to institutional growth

Thank You