

RHCA

Red Hat Certified Architect

Advanced Linux & Enterprise Infrastructure Path

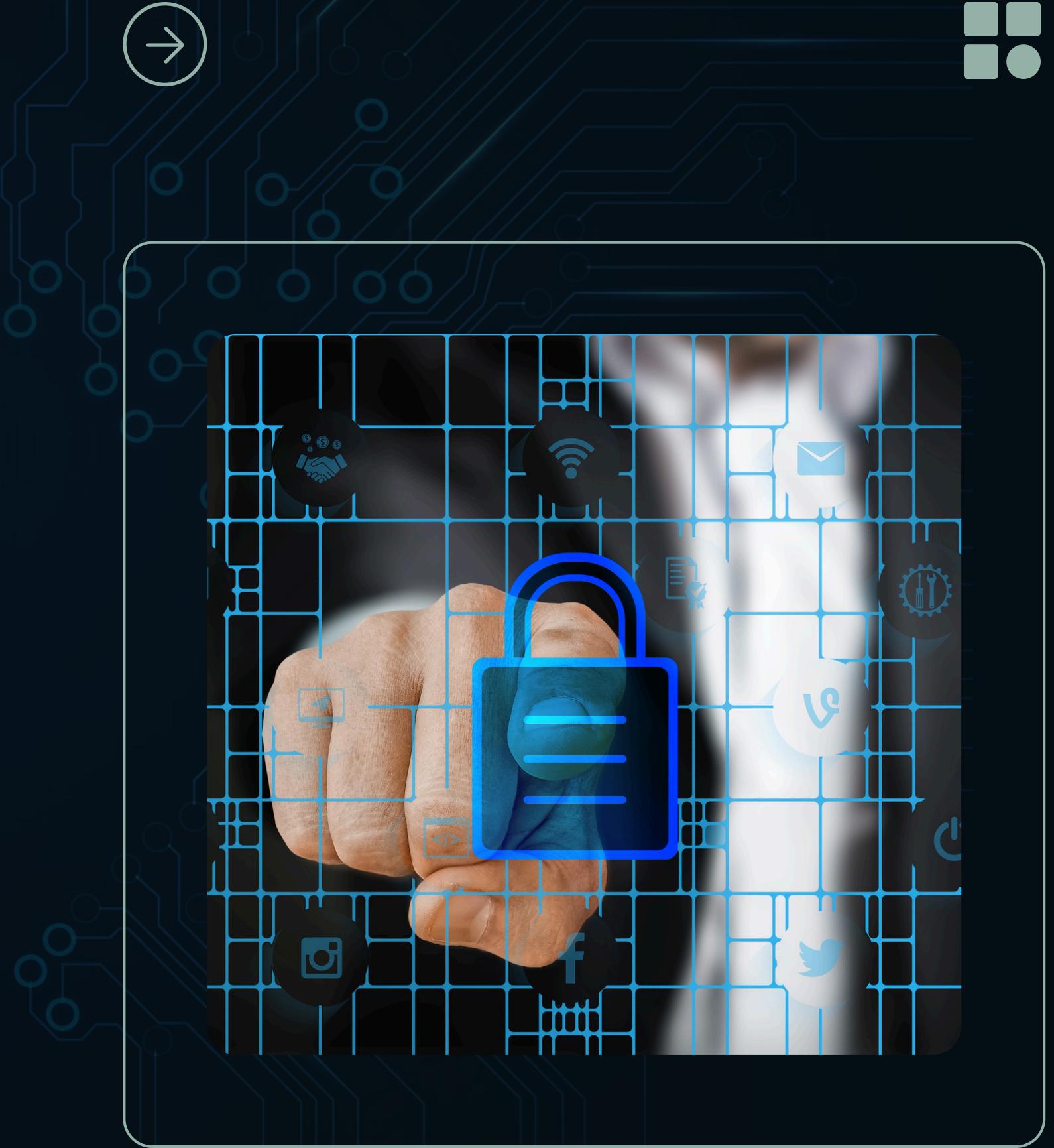


WHAT IS RHCA?

One of the highest-level certifications in Linux and enterprise IT infrastructure.

Core Skills: Validates expertise in administration, automation, security, cloud, containers, and enterprise services

The RHCA Professional: Tasked with designing, deploying, and managing large-scale Linux-based infrastructures.





New Challenges in the Digital World

COURSE OBJECTIVES



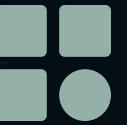
Master advanced Linux system administration.

Design enterprise-level architectures

Implement automation and configuration management.

Secure Linux systems and work with DevOps tools (containers/cloud).



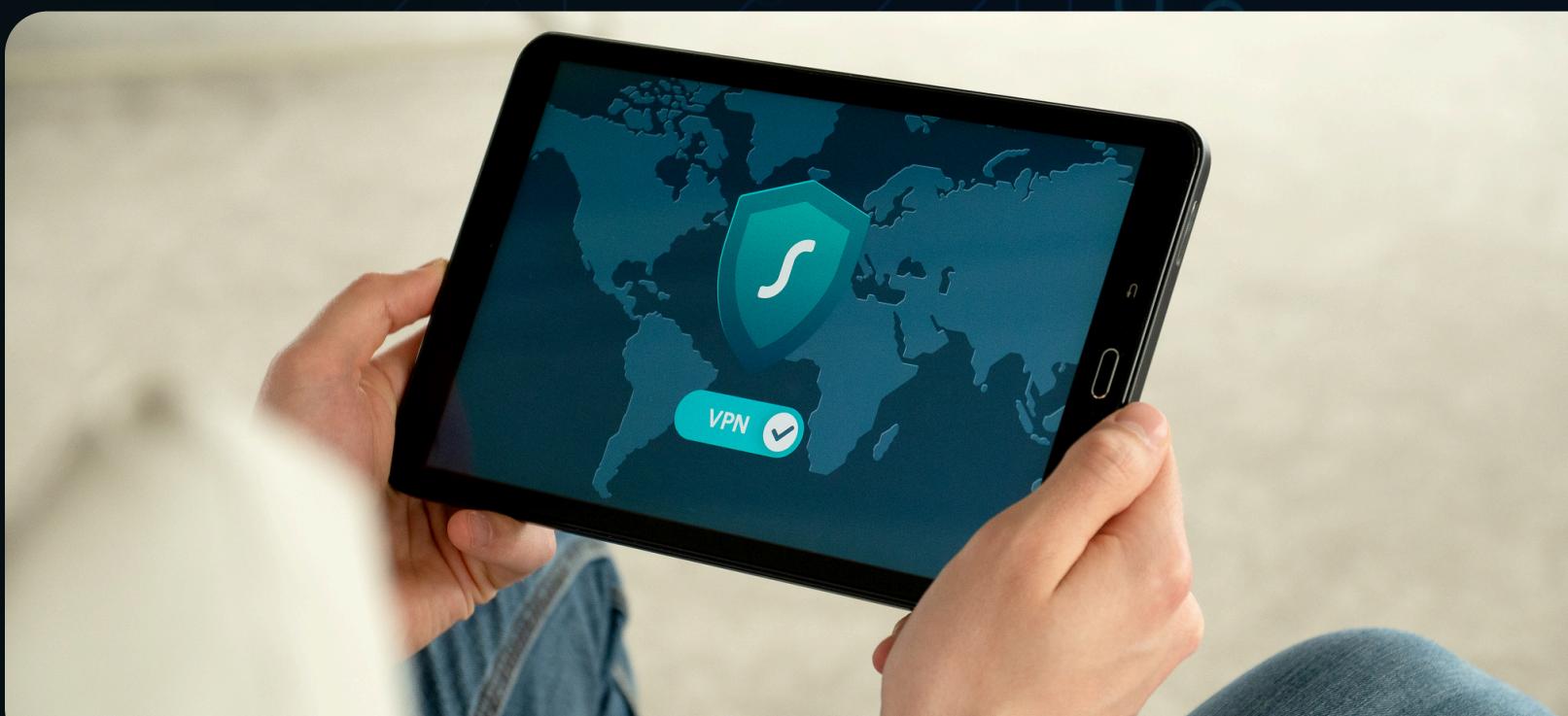


RHCSA / RHCE certified professionals.

Linux system administrators.

DevOps and Cloud engineers.

Security and Enterprise Infrastructure professionals.



TARGET AUDIENCE

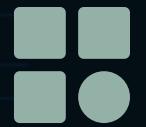


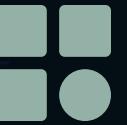
MODULE 1 & 2 - ARCHITECTURE & FILE SYSTEMS

System Architecture:
*Covers Kernel, Shell,
File system, and User
space.*

Boot Process:
*Includes BIOS/UEFI,
GRUB bootloader, and
systemd startup.*

Storage: Managing
*ext4, XFS, NFS, and
CIFS; using LVM and
RAID for flexible disk
management.*





MODULE 3 & 4 - PERMISSIONS & PROCESS MANAGEMENT

User Management

Local users/groups, password policies, and PAM basics

Permission Models

Standard permissions, ACLs, and special bits (SUID, SGID, Sticky bit).

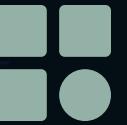
Processes

Managing foreground/background tasks and signals.

Services

Using systemctl to manage dependencies and startup services.





MODULE 5 & 6 - NETWORKING & SECURITY



Networking:

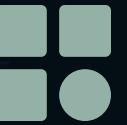
IP addressing, routing, and DNS; managing services like SSH, FTP, and HTTPS.

System Hardening:

Disabling unused services and secure SSH configuration.

Security Tools:

SELinux for access control and Firewalld for network security.

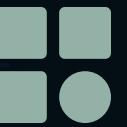


MODULE 7 - ANSIBLE AUTOMATION

Definition
An agentless configuration management and automation tool.

Key Components:
Inventory, Playbooks, Roles, and Modules.

Use Cases:
Server provisioning, configuration management, and patch automation.



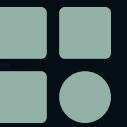
• MODULE 8 & 9 – CONTAINERS & CLOUD



Container Tools:
Red Hat prefers Podman, Buildah (building), and Skopeo (management).

Kubernetes:
Used for container orchestration, managing pods, and deployments.

Cloud/Virtualization:
KVM hypervisors, Libvirt, and hybrid/private cloud concepts.

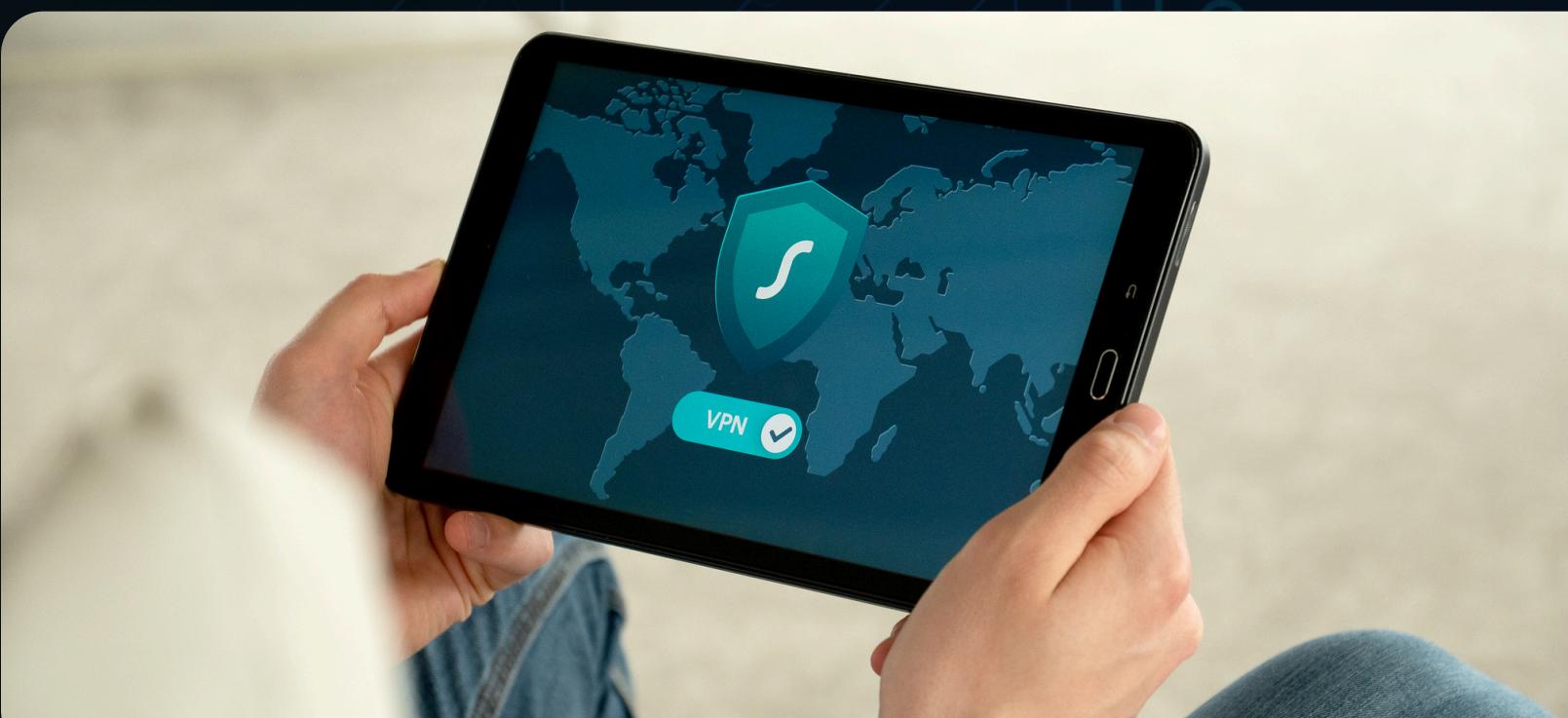


High Availability:
Ensuring continuous service through load balancing and failover mechanisms

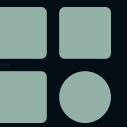
Clustering Tools:
Pacemaker and Corosync for cluster management.

Backups: Full and incremental strategies with automated scheduling.

Monitoring: Tracking system performance, logs, and resource utilization.



MODULE 10 & 11 – AVAILABILITY & MAINTENANCE



MODULE 12 & 13 - TROUBLESHOOTING & ENTERPRISE DESIGN

Troubleshooting:
Diagnosing boot, network, storage, and performance issues.

Architect
Responsibilities:
Requirement analysis, security planning, and scalability

Documentation:
Creating architecture diagrams, SOPs, and disaster recovery plans.

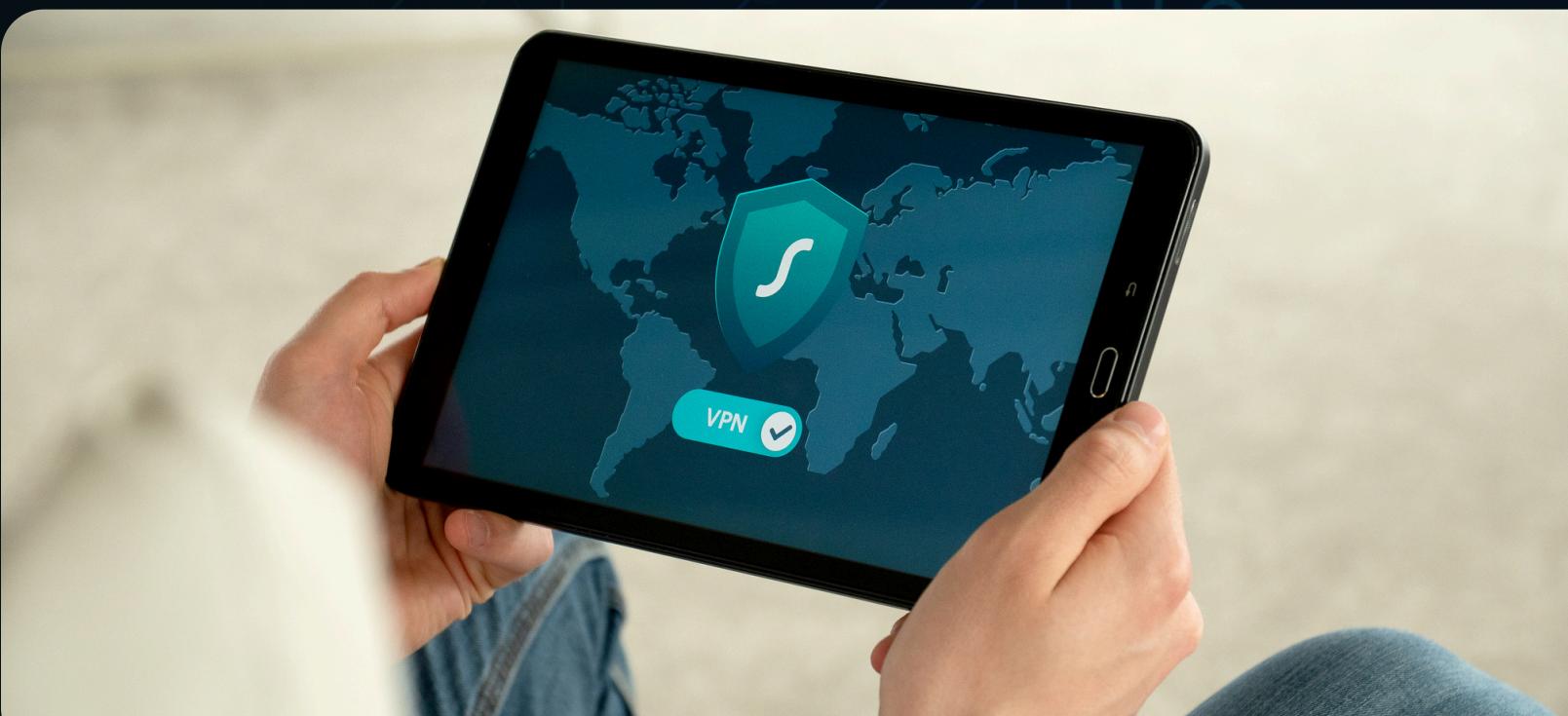


Design: Build robust architectures and manage them at an enterprise scale.

Security: Ensure infrastructure is secure by design.

Automation: Automate everything using Red Hat tools.

Final Goal: RHCA professionals mainly work on Enterprise Infrastructure Design.



KEY TAKEAWAYS & MASTERY



FINAL QUIZ

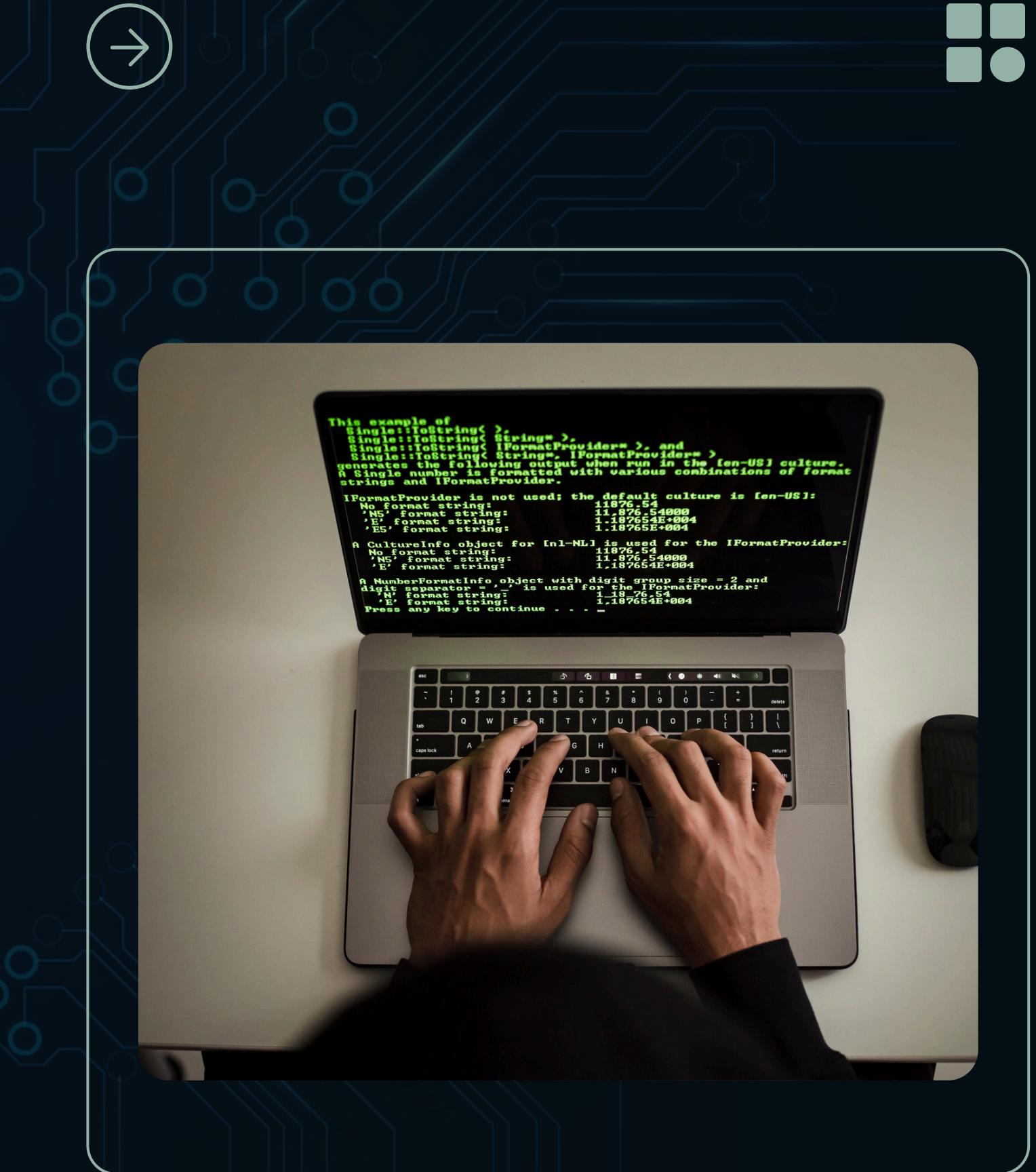
Certification Target: Advanced Linux Professionals.

Kernel Loader: GRUB Bootloader.

Automation Tool: Ansible.

SELinux Purpose: Access Control & Security.

Flexible Storage: LVM (Logical Volume Manager).





FINAL QUIZ

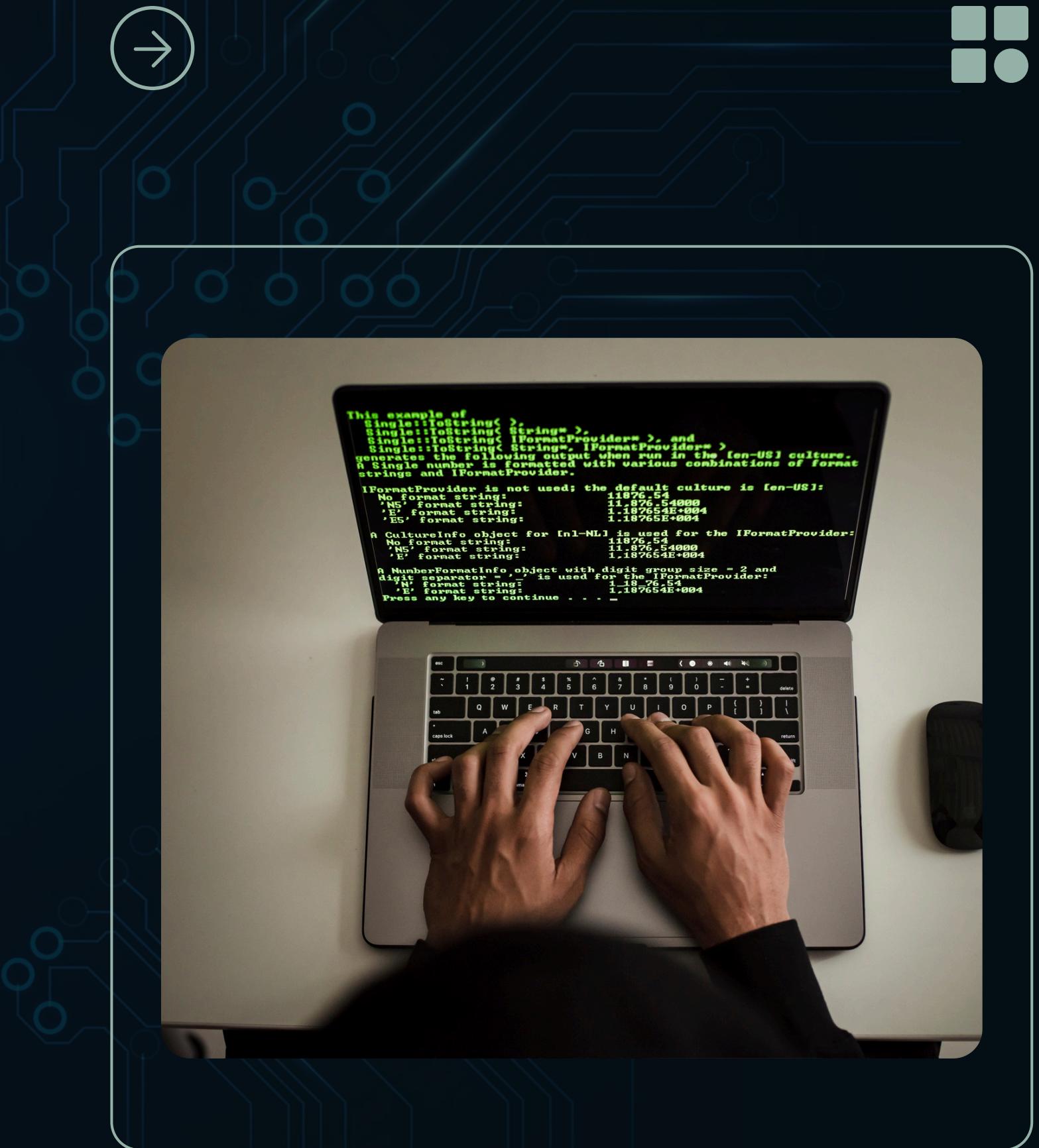
Preferred Container Tool: **Podman**.

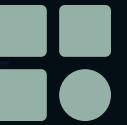
Kubernetes Use: **Container Orchestration**.

High Availability Goal: **Continuous Service Availability**.

Service Manager: **systemctl**

Primary Work Focus: **Enterprise Infrastructure Design**





THANK YOU



Thank you for your attention and commitment to cyber safety.