



MICROSOFT TRAINING

Prometheus Monitoring Systems Services

Learn to implement and manage robust Prometheus monitoring systems. Master real-time data collection and alerting for your infrastructure.

DURATION

24 Hours

LEVEL

Intermediate

FORMAT

Instructor-Led

- Globally Recognized Certification

- Expert-Led Hands-On Training

- Flexible Scheduling

Computer Pride | 1st Floor, ICEA Building, Kenyatta Avenue, Nairobi | www.computer-pride.co.ke

COURSE OVERVIEW

This intermediate-level course, "Prometheus Monitoring Systems Services," is meticulously designed to equip IT professionals with the essential skills to deploy, configure, and manage Prometheus, the leading open-source monitoring and alerting toolkit, within modern IT infrastructures. You will gain a deep understanding of Prometheus's architecture, its powerful time-series database, and its highly flexible query language (PromQL), enabling you to collect and analyze metrics from diverse systems and applications.

The curriculum delves into practical applications, including instrumenting services, setting up various exporters for different targets, and leveraging Grafana for advanced data visualization and dashboarding. A significant focus will be placed on configuring Alertmanager for robust incident notification and integrating Prometheus seamlessly within cloud-native and potentially Microsoft-centric environments, ensuring comprehensive observability. By mastering these core technologies, participants will learn to identify performance bottlenecks, anticipate system failures, and maintain optimal operational health across their digital estate.

Upon completion, you will possess the expertise to design and implement resilient monitoring solutions, critically analyze system performance data, and proactively respond to operational challenges. This course empowers you to elevate your organization's reliability, efficiency, and overall service delivery, positioning you as a key asset in any team responsible for maintaining complex, distributed systems.

Duration	24 Hours
Level	Intermediate
Vendor	Microsoft

COURSE CURRICULUM

01 Module 1: Introduction to Prometheus and Core Concepts

- Understanding modern monitoring paradigms (white-box vs black-box)
- Prometheus architecture: Server, Exporters, Pushgateway, Alertmanager, Grafana
- Data model: Metrics, Labels, Time-series
- Installation and basic configuration of Prometheus Server
- Introduction to PromQL: Querying basics and data selection

02 Module 2: Data Collection and Service Discovery

- Deploying and configuring standard exporters (Node Exporter, cAdvisor, Blackbox Exporter)
- Instrumenting applications with Prometheus client libraries
- Utilizing Pushgateway for ephemeral and batch jobs
- Advanced Service Discovery mechanisms (file-based, Kubernetes, Azure integration examples)
- Relabeling and metric transformation techniques

03 Module 3: Advanced PromQL, Visualization, and Alerting

- Complex PromQL queries: aggregation, rates, histograms, and functions
- Integrating Prometheus with Grafana: Data sources, dashboards, and panel types
- Configuring Alertmanager: Receivers, routes, inhibitions, and silences
- Defining effective Prometheus alerting rules and best practices
- Introduction to recording rules for pre-computation

04 Module 4: Prometheus in Cloud-Native and Enterprise Environments

- Monitoring Kubernetes (AKS) clusters with Prometheus Operator
- Deploying Prometheus on Azure Virtual Machines or Container Instances
- Strategies for monitoring Microsoft-specific services or applications with Prometheus (e.g., SQL Server, IIS via exporters)
- Best practices for secure Prometheus deployments
- Capacity planning and resource considerations for Prometheus at scale

05 Module 5: Scaling, High Availability, and Troubleshooting

- Overview of long-term storage solutions (e.g., remote write to Azure Data Explorer, Thanos, Cortex)
- Achieving high availability with Prometheus federation or clustering solutions
- Troubleshooting common Prometheus server and target issues
- Performance tuning for Prometheus and Alertmanager
- Observability beyond metrics: Logs and Traces in a Prometheus-centric ecosystem

CAREER PATHWAYS

Graduates of this program are prepared for the following roles:

- > **Cloud Operations Engineer (focus on Azure/Hybrid Cloud environments)**
- > **Site Reliability Engineer (SRE) specializing in Observability**
- > **DevOps Engineer with expertise in monitoring and alerting pipeline development**

FREQUENTLY ASKED QUESTIONS

Q: What specific prerequisites are recommended for individuals attending this intermediate Prometheus monitoring course?

Participants should have a foundational understanding of Linux command-line operations, basic networking concepts (IP addresses, ports), and familiarity with distributed systems or cloud environments. Prior exposure to basic monitoring concepts or a scripting language (like Python or Bash) would be beneficial but is not strictly required. This course is designed for those looking to move beyond basic system administration into specialized monitoring roles.

Q: How will this course specifically help me integrate Prometheus for monitoring applications deployed on Microsoft Azure services?

This course dedicates modules to practical scenarios involving Azure. You will learn to deploy Prometheus on Azure VMs, configure service discovery for targets within Azure environments, and explore methods for monitoring services like Azure Kubernetes Service (AKS) clusters. We will also discuss strategies for collecting metrics from applications running on Azure, providing a clear pathway to implementing robust observability within your Azure infrastructure.

Q: What kind of real-world problem-solving skills will I gain that are directly applicable to a Site Reliability Engineer (SRE) role after completing this course?

Upon completion, you will be proficient in designing and implementing comprehensive monitoring strategies to prevent outages and improve system reliability. You'll gain hands-on experience in defining actionable alerts, building insightful Grafana dashboards for quick incident response, and using PromQL to diagnose complex performance issues across distributed systems. These skills are crucial for an SRE to proactively identify and mitigate risks, optimize system performance, and ensure high availability.

ABOUT COMPUTER PRIDE



East Africa's Premier IT Training Center

With over 15 years of excellence, Computer Pride delivers globally recognized certification programs from leading technology vendors. Located on Kenyatta Avenue in Nairobi's CBD, our state-of-the-art facilities and expert instructors have empowered thousands of professionals across East Africa.

15+

Years of Excellence

10,000+

Professionals Trained

50+

Vendor Certifications

READY TO ENROL?

Take the next step in your technology career.

Location

1st Flr, ICEA Building
Kenyatta Ave, Nairobi

Email

info@computer-pride.co.ke

Phone

+254 705 900 900

www.computer-pride.co.ke