

پک حرفه‌ای مهندسی مانیتورینگ

فهرست سرفصل‌های دوره‌های آموزشی

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سرفصل‌های دوره آموزشی

Ansible

Introduction of DevOps

Understanding DevOps concepts

DevOps Automation

Continuous Integration

Continues Delivery

Continuous Deployment

The roles of Ansible in CI/CD

The benefit of CICD

What is Ansible?

Automation Deployment Pipeline

Need of Ansible

What Ansible can do?

Advantages of using Ansible?

Agent-Based VS Agentless systems

Ansible's Agentless Architecture

Install Ansible

Validate Ansible Installation

Ansible Vs Puppet Vs Chef Vs SaltStack

Ansible Architecture

Host, Group and Host Inventory

Ansible Ad-Hoc commands

Playbooks, plays, tasks and modules

Ansible configuration

Ansible-playbook Structure

Taks, vars, files, templates, meta, defaults, handlers

Ansible-playbook Syntax

Run ansible playbook

Variables, variable types and priorities

Command, expect, script, shell and raw modules

file, copy and fetch modules

Group and user modules

zyper_repository, zypper, yum_repository and you modules

Template, lineinfile, replace and service module

Archive and unarchive module

Async actions and concurrent tasks

wait_for and wait_for_connection modules

Mail module

Subversion and git modules

get_url, timezone and iptables modules

Mariadb modules

Find module and local_action feature

Conditions

Loops

Standard loops

Nested loops

Import playbooks and tasks

Handlers

Ansible Vault

Encrypt files and strings

Vault ID

Implement an Ansible playBook to Setup a webserver

Integrate Jenkins & Ansible

CICD with Git, Jenkins and Ansible (Application Deployment)

Ansible & VMWare

Ansible & Cisco

Ansible & Mikrotik

Develop Custom Module

Module format

Module's return value and error handling

Setup nginx servers behind haproxy via Ansible playBook

Ansible & Windows Hosts

Manage windows features

Manage windows services

Execute shell module on windows

Windows Package management

Package Silent Installation

Implement an Ansible PlayBook to Setup IIS

Integrate Ansible and Docker

Docker_image and docker_image modules

docker_container and docker_container modules

docker_network and docker_network_info modules

docker_volume and docker_volume_info modules

docker_swarm module

Ansible Galaxy

Ansible Tower

Ansible AWX

AWX prerequisites and Installation

AWX Dashboard

AWX - organizations, teams and users

AWX - hosts, groups and inventory

AWX - credentials

AWX - projects and templates

AWX - Schedule templates, notification and permissions

ELK Stack

Introduction to Elastic Stack

- What is the Elastic Stack? Overview and History
- Working with data, structured vs. semi-structured vs. unstructured data
- Overview of the data analysis process
- What is Big Data? Characteristics (3Vs: Volume, Velocity, Variety)
- Elastic Stack vs. ELK Stack, Evolution and Components
- Common Use Cases: Log Management, Business Analysis, Security Analytics, Monitoring
- Installing Elastic Stack Components: Elasticsearch, Logstash, Kibana, Beats

Deep Dive into Elasticsearch

- Elasticsearch Architecture: Nodes, Clusters, and Indexes
- What is API and advanced usage of API in Elasticsearch
- Data Modeling and Indexing
- Understanding Mapping, Documents, and Fields
- CRUD Operations: Create, Read, Update and Delete data
- Search Queries: Term, Match, Range, Aggregations
- Advanced Search and Filtering: Bool Queries, Nested, and Geo Queries
- Performance Tuning with Sharding, Replication, Caching, and Index Management

Data Collection with Logstash

- Introduction to Logstash, architecture and Pipeline Concepts
- Configuring input plugins for various data sources
- Reading data from different sources (logs, metrics, CSVs, Databases, etc.)
- Input Plugins: File, Syslog, Beats, JDBC
- Data Transformation using filters for parsing, enriching, and transforming data
- Output Plugins: Elasticsearch, File, Email, Kafka
- Managing and Debugging Pipelines
- Logstash Configuration Best Practices

Data Visualization with Kibana

- Introduction to Kibana, Interface and Navigation
- Index Patterns and Data Discovery
- Building Visualizations with Pie Charts, Bar Graphs, Line Graphs, and Maps
- Creating Dashboards for Monitoring and Analytics
- Working with Kibana Lens for Simplified Data Exploration
- Advanced Visualizations: Timelion, Vega, Canvas
- Alerts and Reporting in Kibana
- Alarm and triggers in Kibana
- Security and Access Control in Kibana

Data Shipping with Beats

- Overview of Beats: Filebeat, Metricbeat, Packetbeat, Auditbeat, Heartbeat
- Installing and Configuring Beats

- Collecting and Parsing Log Files with FileBeat
- System and Application Metrics with MetricBeat
- Network Traffic Analysis with PacketBeat
- Security Event and File Integrity Monitoring with AuditBeat
- Uptime Monitoring with HeartBeat
- Sending Data from Beats to Elasticsearch/Logstash

Unified Data Collection with Elastic Agent

- Introduction to Elastic Agent
- Replacing Beats with Elastic Agent
- Configuring Elastic Agent for Data Collection (Log and Metric)
- Centralized Management with Fleet

Security and Monitoring in the Elastic Stack

- Securing the Stack: Role-Based Access Control (RBAC) and Encryption
- HTTPS interfaces and Secure communications
- Auditing and Compliance, Monitoring Access and Changes
- Implementing Security Rules and Alerts
- SIEM (Security Information and Event Management) and SOC Use Cases

Advanced Elastic Stack Topics

- Machine Learning in Elastic Stack: Anomaly Detection and Forecasting
- IoT integration with Elastic Stack
- Advanced alarm and triggers deployment (sending email, SMS, Physical action, etc)
- APM (Application Performance Monitoring): Tracing and Performance

Metrics

- Scaling Elasticsearch Clusters, High Availability and Load Balancing
- Backup and restore Strategies for Elasticsearch
- Handling Large Datasets, Index Lifecycle Management (ILM) and Rollups

Real-World Use Cases and Projects

- Setting Up a Centralized Logging Solution
- Building a Real-Time Monitoring Dashboard for Infrastructure Metrics
- Security Analytics and Threat Detection with the Elastic Stack
- Implementing Application Performance Monitoring (APM) for services
- IoT Management and monitoring platform with elastic stack