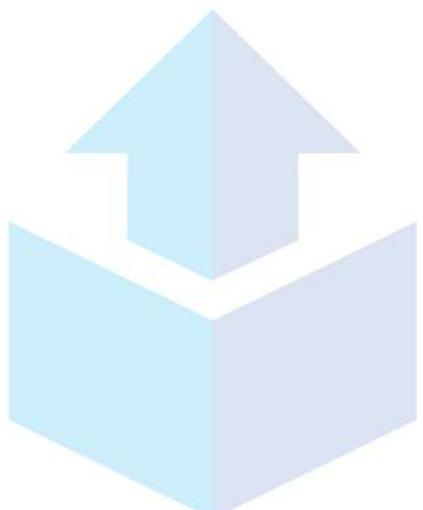


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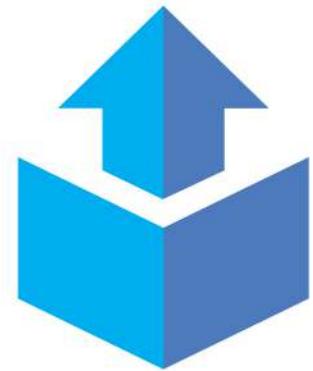


Online Course



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Course Modules



1. Software Design, Development, and Deployment

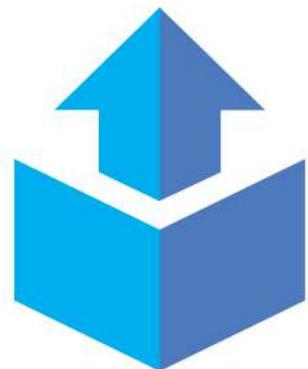
- Design a solution based on an on-premises, hybrid
- Deployment: maintainability, modularity (e.g., containers, VM, etc)
- Reliability: high availability and resiliency
- Performance: scalability, latency, and rate limiting
- Infrastructure: monitoring, observability, and metrics
- Recommend a deployment strategy to mitigate risk & impact
- Modify an existing network automation solution
- Use Git in a CI/CD development workflow
- Troubleshoot issues with a CI/CD pipeline

2. Infrastructure as Code

- Create a scalable solution for infrastructure automation
- Build, & operate a Python-based REST API with a web app framework
- Build, manage, and operate a Python-based CLI application
- Consume and use a new REST API, given the documentation
- Create a RESTCONF or NETCONF payload based on a given YANG
- Create a NETCONF filter by using XPath
- Configure network devices on an existing infrastructure

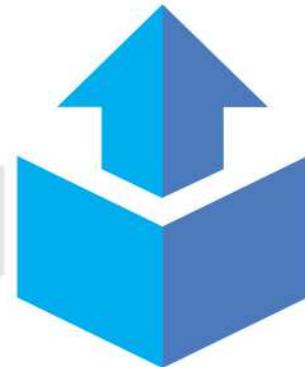
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- Create & use a role by utilizing Ansible to manage infrastructure
- Loop control
- Conditionals
- Use of variables and templating
- Use of connection plug-ins such as network CLI, HTTPAPI, & NETCONF
- Use Terraform to statefully manage infrastructure
- Loop control
- Resource graphs
- Use of variables
- Resource retrieval
- Resource provision
- Management of the state of provisioned resources
- Create a basic Cisco NSO service package to meet given business & technical requirements
- Create a service template from a provided NSO device configuration
- Create a basic YANG module for the service containers
- Create basic actions to verify operational status of the service
- Monitor service status by reviewing the NCS Python VM log file



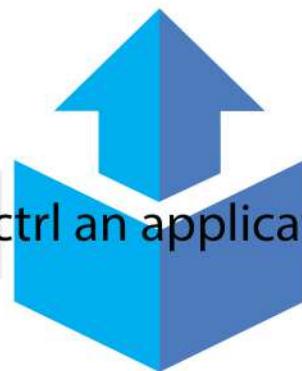
3. Network Programmability and Automation

- Create, modify, and troubleshoot scripts by using Python libraries
- Automate the configuration of a Cisco IOS XE network device
- Interfaces
- Static routes
- VLANs
- Access control lists
- BGP peering
- BGP and OSPF routing tables
- BGP and OSPF neighbors
- Deploy an app on a Cisco IOS XE device by leveraging the technologies
- Modify & troubleshoot an automated test by using pyATS to meet requirements
- Create a testbed file for connecting to Cisco IOS, IOS XE, or NX-OS devices
- Gather current configuration and operational state from devices
- Develop & execute test jobs & scripts using ATest to verify network health
- Design a model-driven telemetry solution based on given business
- Create YANG model-driven telemetry subscriptions
- Identify model elements and cadence
- On-change or event driven
- Optimize frequency
- Dial-out subscription
- Secure telemetry streams
- Confirm data transmission
- Identify network issues and make changes



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- Create a Docker image (including Docker file)
- From a provided image
- Expose ports
- Add or copy files
- Run commands during image build
- Manipulate entry point and initial commands
- Establish working directories
- Environment variables as part of a definition to ctrl an application
- Docker ignore file
- Volumes
- Package and deploy a solution by using Docker Compose
- Deploy and manage containers
- Define services, networks, volumes, and links
- Package and deploy a solution by using Kubernetes
- Use deployments, secrets, services, ingress, volumes, etc.,
- Manage the lifecycle of pods (e.g., scale up, scale down, etc.,)
- Monitor pods by building health checks)
- Use the kubectl interface
- Create, consume, and tshoot a Docker host & bridge-based netwrks





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