Building a Ground System in 45 Minutes or Less

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Infrastructure as Code (IaC)

Techniques, practices, and tools from software development applied to creating reusable, maintainable, extensible, and testable infrastructure.
Key Takeaways

You **can** code everything

You can start this at your **Enterprise**
Why IaC is Important to you

**Structure**
Create design patterns and easily replicate them

**Speed**
Templatize and Define every aspect of your infrastructure

**Monitoring**
Track current and historical IaC configuration, get notified when changes occur, maintain audit compliance and governance controls

**Security Compliance**
Ensure the resources you deploy adhere to Security Control requirements
Build and Operate Infrastructure as Software

**Application**
- Source code
- Interpreter
- Desired application state

**Infrastructure**
- JSON/YAML
- Service API
- Desired infrastructure state
Reusable – Multiple Environments

IaC Template

Ansible
CloudFormation
Terraform

Development
Reusable – Multiple Environments

Development

Production

Ansible
CloudFormation
Terraform

IaC Template
Reusable – Multiple Environments

Development

Production

Ansible
CloudFormation
Terraform

TS/SCI
TS-US-EAST

Secret
SECRET-US-EAST

SRG IL4/IL5

AWS GovCloud (US West)*

AWS GovCloud (US East)

Commercial

AWS Commercial Regions

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Maintainable—Integrate in CI/CD Pipelines

- **Story**
- **App Developers**
- **App Source Code**
- **Source Control**
- **GitHub**
- **Jenkins Pipeline**
- **Terraform**

Code Updates flow from Dev to Staging and Prod through the pipeline.
Getting Started

- Highly Available
- Firewalls
- Hardened OS
- Load Balancers
- Auto Scaling
- Logging
- Auditing
- NIST 800-53

https://aws.amazon.com/quickstart/architecture/compliance-nist/
Questions