Automation in Action: A Cisco ISE Case Study from Build to Day 2 Operations

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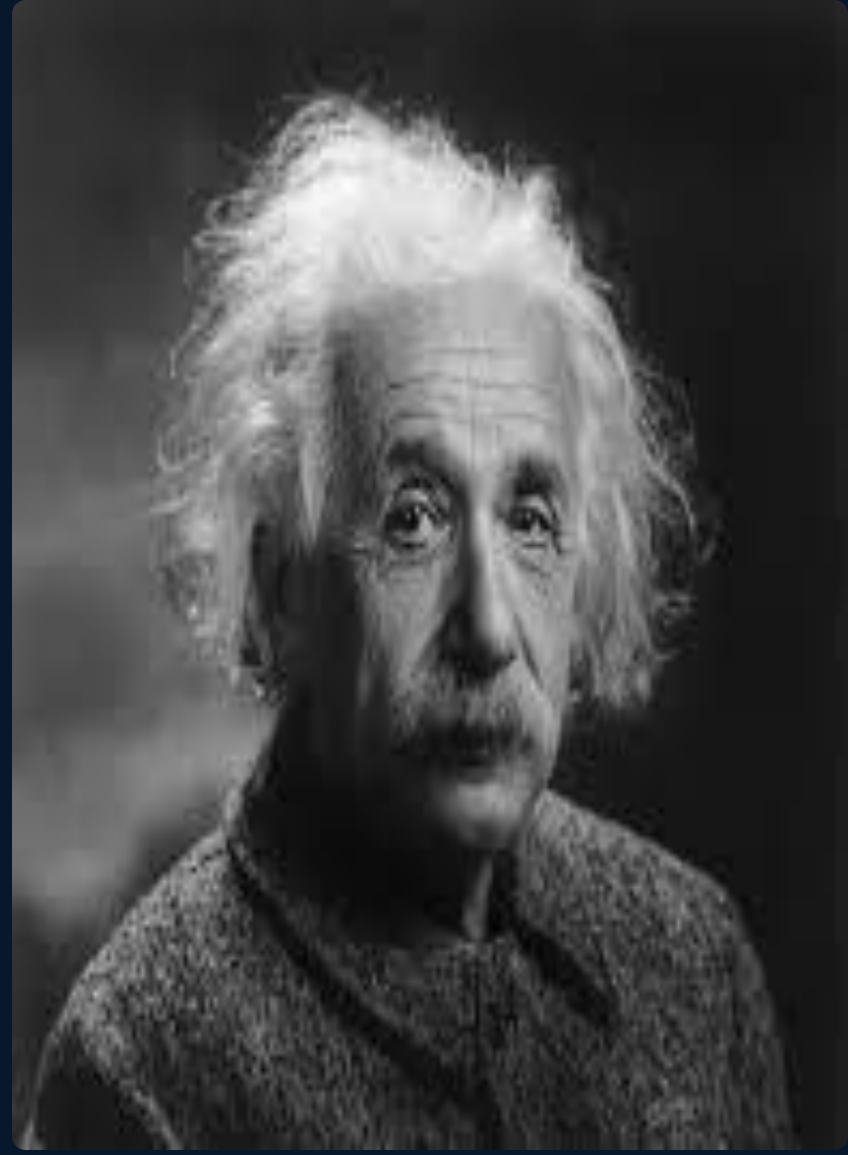
Agenda

- Introduction
- Case Study
  - ISE overview
  - Automation in Action
  - Adapting to Customer needs
- Business impact/ROI
- Q&A

Introduction

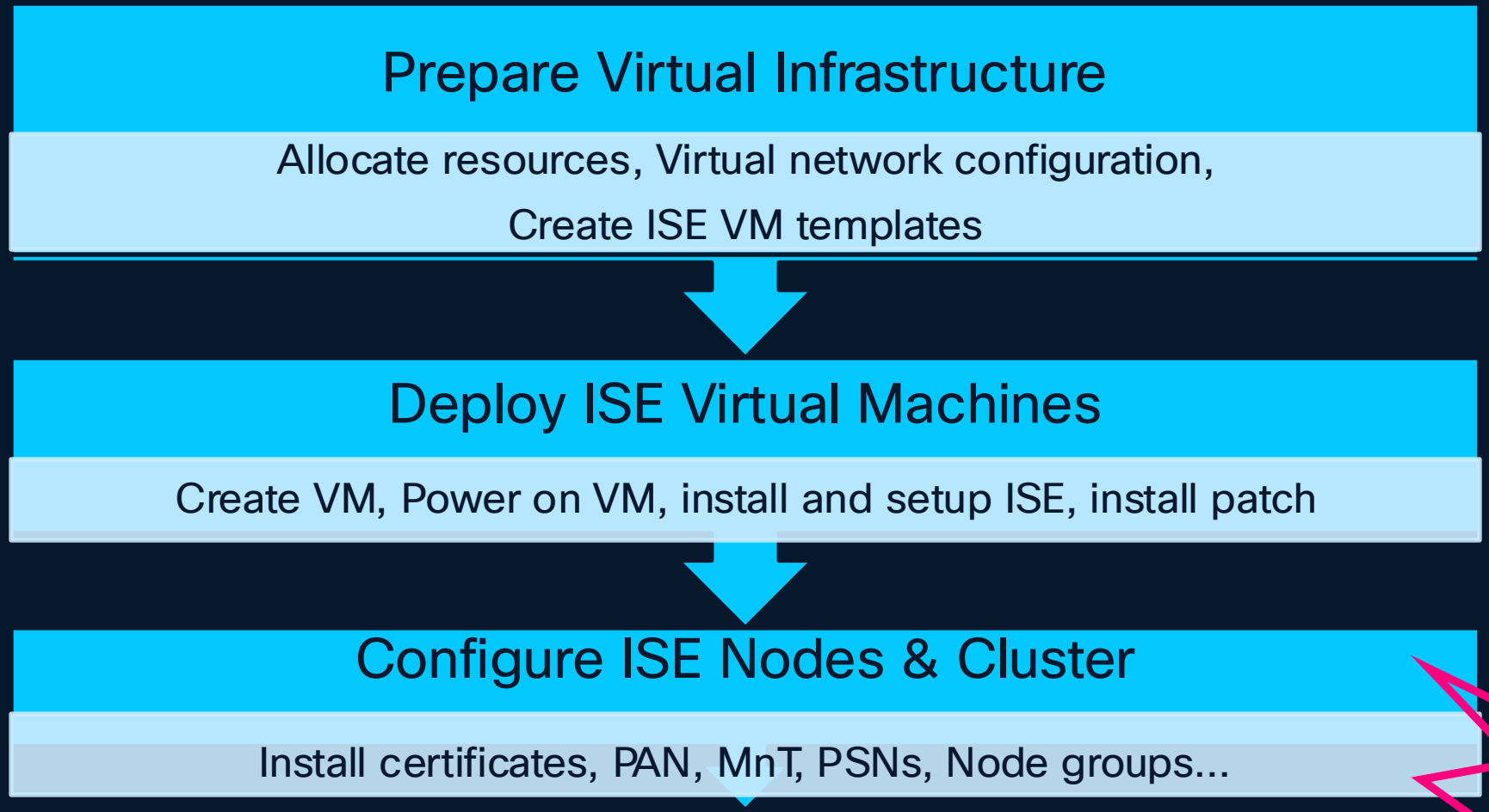
“We cannot solve our problems with the same thinking we used when we created them”



Why automation?

Automates the time-consuming tasks involved in deploying and maintaining ISE clusters

Case Study: ISE Overiew



Day 0 Tasks

cisco

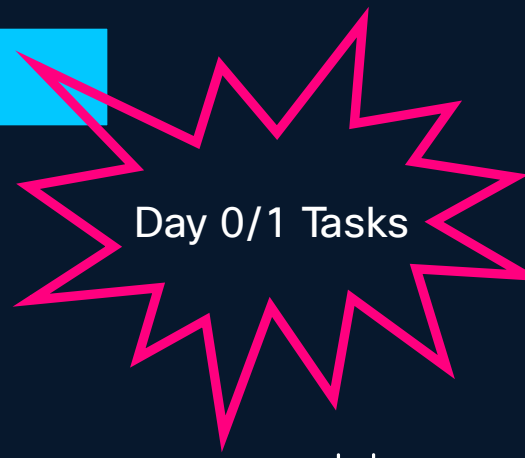
ISE AND Active Directory (AD) Integration

Configure and join AD domain/s

Provisioning users for ISE Management

RBAC-based administrator accounts to manage ISE via graphical and command-line interfaces.

Config File repository, Backup, logging..



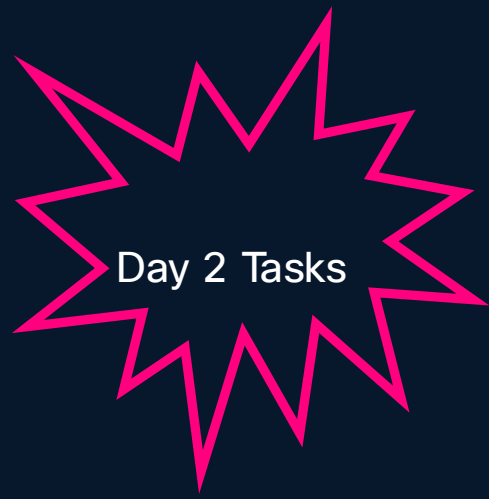
Software(Major version) Upgrade

Patch Upgrade

Hotpatch Install

Certificate renewal/Install

Config and Policy Management



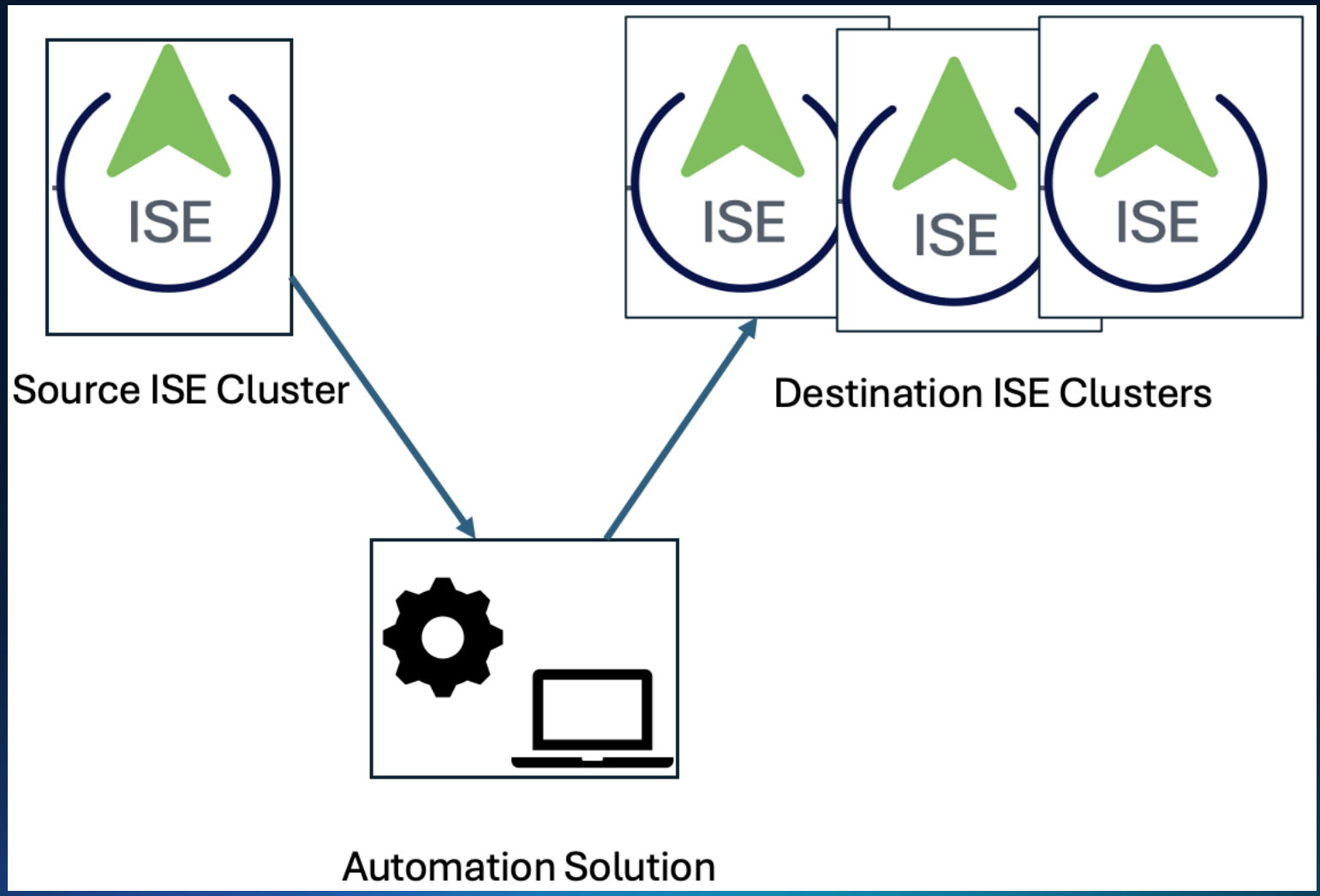
Case Study: Automation in Action

ISE as CODE – Isaac -Phase 1

Case Study: Adapting to Customer Needs

- Configuration and Policy synchronizer
- Stability and Availability
- Performance Optimization

Configuration and Policy Synchronizer – IseSync



Day 2 Task

IseSync Modes

Modular Java based solution

Has three synchronization modes

- Network access policy
- Network access device
- Endpoints

IseSync –Network Access Policy Synchronization

Objects Synchronized
Identity Source Sequences
Certificate Profile
User Identity Groups
Endpoint Groups
Network Device Group (NDG) Types
Network Device Groups (NDG)
Allowed Protocols
Network Access Library Conditions
Downloadable Access Lists (dACL)
Authorization Profiles
Network Access (RADIUS) Policy Sets
Network Access Policy - Authentication Rules
Network Access Policy – Authorization Rules

./AccentSync **--env.sync-mode=network-access-policy**

Stability and Availability

Stability and Availability

Monitor use cases

Certificate expiration

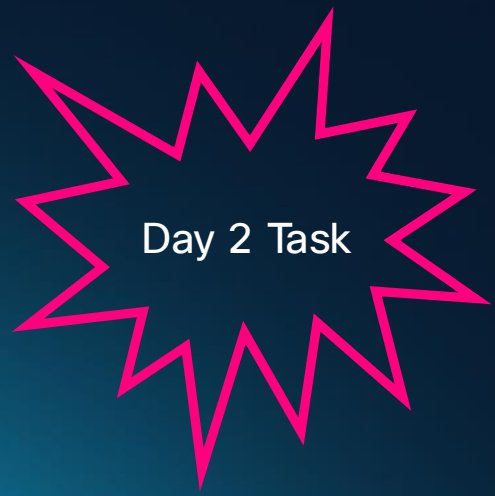
Application service status

Disk utilization

Last configuration data backup status

Node synchronization status

Context Visibility status



Stability and Availability-continued..

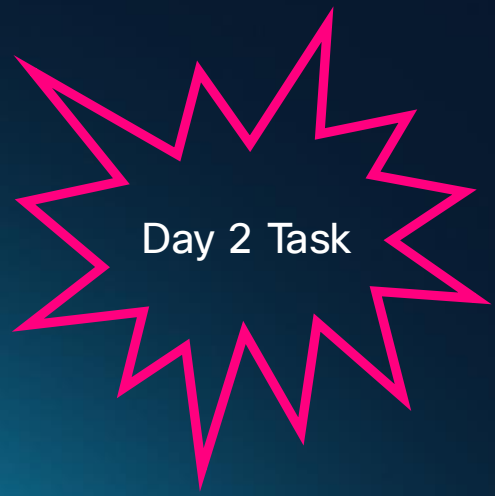
Remediate use cases

Application service

Node synchronization

Node recovery

Context Visibility

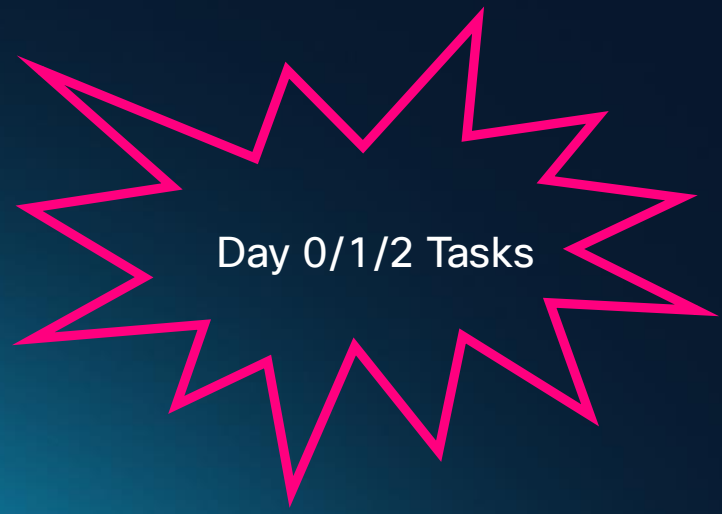


Performance Optimization

Operational Efficiency Gains with Automation

- Accelerated initial ISE deployment
- Reduced times for software upgrades*
- Faster Certificate renewal*

* Achieved with parallel installation on multiple nodes



ISE Automation –Current options

Business Impact/ROI

Business Impact

Operational Efficiency

- Automates repetitive tasks
- Reduces errors
- Accelerates software upgrades

Cost Savings

- Decreases operational expenses by cutting Engineer-hours
- Minimizing rework
- Reduces costs by eliminating the need for dev-test environment, automation, and ISE expertise through Cisco-managed support

Stability and Availability

- Proactively detect and remediate issues
- Ensuring continuous business operations

Measurable Return on Investment (ROI)

The ROI of the ISE automation solution is measured by quantifying the annual Full-Time Equivalent (FTE) hours saved by comparing the time taken using manual processes vs automation

Measurable Return on Investment (ROI)-contd..

A Sample ROI Calculation for Day 0/1/2 tasks (not a comprehensive list)

Task –A 500 node ISE deployment	Hours/Year Saved	Estimate
Deployment Build	1000	One-time
Upgrade –Software, Patch, HotPatch (HP)	2583	2 patch/HP + 1 version upgrade
Monitoring	1848	Based on weekly monitoring
Certificate renewal	167	
CLI configuration	50	
Rebuild (remediation)	8	
Total Manual Hours/Year	4655	~ 2.5 to 3 FTE

Thank you