Software Configuration Management
How Cisco IT Uses Software Configuration Management to Minimize Business Risk

A Cisco on Cisco Case Study: Inside Cisco IT
Overview

- **Challenge**
  
  Reduce risk of new application deployment

- **Solution**
  
  Inject greater rigor into application change management by adopting Software Configuration Management (SCM)

- **Results**
  
  Increased quality and reduced risk
  
  Increased developer productivity
  
  Improved IT service to internal clients
  
  Enhanced scalability
Overview (Contd.)

Next Steps

- Apply SCM to other Oracle 11i business flows and Web applications
- Introduce concurrent development
Challenge: Reduce Risk of New Application Deployment

Drivers for change:

Implementation of Oracle 11i

- Unprecedented amount of change for Cisco
- 400 to 500 developers producing code
- Simple production promotion could no longer provide needed tracking and management

- Sarbanes-Oxley Act
  - Need to ensure that application changes don’t cause outages affecting timely delivery of accurate information

- Transition to a process-focused enterprise
  - Larger and more complex software implementations with cross-functional dependencies
Solution: IT Software Configuration Management

- Old paradigm
  Developers saddled with code version tracking, code deployment, application patch processes, quality reviews, security controls, and dependency tracking

- New paradigm
  Developers focus on core competencies: design and development
  IT SCM team provides centralized and automated mechanisms to manage and predict change
Solution: Earlier Check Point for New Code

- Before 2003, Cisco IT checked code just before an application was moved into production
- Now new code is under SCM control as soon as it leaves development

RISK → Defer risk, inject maturity and predictability
SCHEDULE → Reduce slippage
PRODUCTIVITY → Increase developers throughput and team focus on core competencies
COST → Core competency focus decreases overall cost to business flow and to project

PVCS Standards
Application Governance Standards
Developer Standards
Approval Gates

Release Management
Environment Lockdown
Process Control
Solution: SCM Resources, Tools, Process

- Resources
  - Application code migration
  - Configuration migration
  - Facilitation of quality control and analysis
  - Environment management
  - Application patch management
  - Coordination with Cisco Infrastructure change management group
Solution: SCM Resources, Tools, Process

- Tools
  
  Application change tracking and development tool
  
  Archiving software version manager

- Process
  
  Repeatable processes enable Cisco IT to manage change and predict its effect
  
  Automatic checking for naming standards
Results: Stable, Flexible, Productive Application Environment

- Increased quality and reduced risk
  >90% reduction in manual deployment-related outages, from 10-15 per quarter to 1 per quarter

- Increased developer productivity
  Freed developers to work exclusively on code
  Reduced application maintenance requirements by enforcing naming standards
  Cisco Customer Care team could hire 10% fewer people than planned
Results: Stable, Flexible, Productive Application Environment (Contd.)

- Improved IT service to internal clients
  
  Quality (*example*: “Of 1000 lines of code, 10% failed due to quality issues”)

  Velocity of change (*example*: “50 of 1000 lines of code changed today”)

- Enhanced scalability
  
  SCM accommodates steadily increasing number of languages, developers, applications, and sites
Next Steps: More Business Flows, Web Content

- Other Oracle 11i business flows
  Quote-to-Cash, Procure-to-Pay, Plan-to-Build, Hire-to-Retire

- Web applications used for revenue generation, revenue recognition, and customer service
  Cisco Connection Online (CCO), Cisco Connection Internal (CCI), and Cisco Connection External (CCX)
Next Steps: More Business Flows, Web Content (Contd.)

- Concurrent development
  
  Enabled by centralized archive software version manager
  
  Benefits: more relaxed development cycles and better code quality
To read the entire case study, or for additional Cisco IT case studies on a variety of business solutions, visit Cisco on Cisco: Inside Cisco IT

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