

System Administration of Windchill

Training Course Description

3 day course

Summary

In this course, you will gain an understanding of how to perform routine Windchill system administration tasks, including how to manage Windchill services and optimize Windchill components for performance. You will focus on daily, weekly, and monthly system maintenance tasks required by the Windchill system administrators. You will also learn how to implement file vaulting and content replication. Other topics that will be reviewed include managing the Windchill database, troubleshooting background queues, improving workflow performance, optimizing visualization publishing process, managing users licenses and setting up the client environment.

This course is intended for System Administrators and Application Developers.

Software: Windchill Base, Advanced or Premium

Course Topics:

Day 1

Module 1 Introduction to the Windchill System Environment
Module 2 Managing Windchill Services
Module 3 Managing Windchill Properties
Module 4 File Vaulting and Replication Overview
Module 5 Implementing File Vaults
Module 6 Implementing Content Replication

Day 2

Module 7 Tuning Windchill Server
Module 8 Managing Background Queues
Module 9 Managing Your Visualization Publishing System
Module 10 Tuning Workflow Processes
Module 11 Windchill Backup and Recovery
Module 12 Managing Log Files and Alerts

Day 3

Module 13 Windchill License Management
Module 14 Daily System Monitoring Tasks
Module 15 Weekly System Monitoring Tasks
Module 16 Monthly System Monitoring Tasks
Module 17 Setting Up the Client Environment
Module 18 Miscellaneous System Enhancements

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Details

Introduction to the Windchill System Environment

- i. Client Requirements
- ii. The Windchill Server
- iii. The Windchill Database
- iv. Optional Servers
- v. Role of the System Administrator
- vi. Understanding Windchill Contexts
- vii. Windchill Product Characteristics
- viii. Windchill Library Characteristics
- ix. Using Folders
- x. Data Management Objects
- xi. Iteration and Revision Controls
- xii. Access Controls
- xiii. Process Controls
- xiv. Understanding the Windchill User Interface
- xv. Using the Navigator
- xvi. Navigating Products and Libraries
- xvii. Locating Information
- xviii. Understanding Information Pages
- xix. Accessing Help

Knowledge Check Questions

Managing Windchill Services

- i. Identifying Major Windchill Services
- ii. Starting/Stopping Apache Web Server
- iii. Starting and Stopping Windchill Directory Server
- iv. Starting/Stopping Oracle
- v. Starting/Stopping SQL Server
- vi. Starting/Stopping Windchill
- vii. Running Apache as a Windows Service
- viii. Windchill Directory Server Control Panel
- ix. Running Windchill Directory Server as a Service
- x. Running Windchill as a Windows Service
- xi. Automating Windchill Startup
- xii. Automating Windchill Shutdown

Managing Windchill Properties

- i. System Administration Utilities
- ii. The Windchill Command
- iii. The Windchill Shell
- iv. Windchill Configuration Properties Files
- v. The site.xconf File
- vi. The JMX Clients
- vii. Using JConsole to Modify Property Values
- viii. The xconfmanager Utility
- ix. The xconfmanager - Options
- x. The xconfmanager - Example
- xi. The xconfmanager - Validate Changes
- xii. Properties Managed by Windchill Configuration Assistant

xiii. Creating a Custom XCONF File

File Vaulting and Replication Overview

- i. File Vaulting
- ii. File Storage Options
- iii. Local File Vaulting Architecture
- iv. Content Replication
- v. Content Replication Architecture
- vi. Windchill File Servers
- vii. Centrally Vaulted Content
- viii. Remotely and Centrally Vaulted Content
- ix. File Vaulting Strategies
- x. Types of File Vaults
- xi. Checking an Object into a Windchill Main Server
- xii. Requesting Objects That Have Not Yet Been Replicated
- xiii. Requesting Objects from File Servers That Are Not Preferred
- xiv. Server to Server Replication
- xv. Content Synchronization and Replication
- xvi. Local Replication for File Servers
- xvii. Configuring Windchill File Vaults to Use Amazon S3 Storage

Implementing File Vaults

- i. Planning External File Storage
- ii. Multiple Vaults Configuration
- iii. Vaulting Rules
- iv. Single Vault Configuration
- v. Implications of Forcing Contents into a Single Vault
- vi. Single Vault versus Multi Vault Configuration
- vii. Vaults with Automatic Folder Creation
- viii. The Central Cache Vault
- ix. Setting Up External Storage
- x. Specifying File Threshold Value for Vaults
- xi. Managing Revaulting
- xii. Maintaining Vaults
- xiii. Changing the Location of Files in Vaults
- xiv. The Default System Target Vault

Implementing Content Replication

- i. Installing the File Server - Requirements
- ii. Enabling Remote File Server Support
- iii. Generating the Security Key
- iv. Using the File Server Management Utility
- v. Registering the File Server
- vi. Configuring Replica Vaults
- vii. Creating Replication Rules
- viii. Creating Replication Schedules
- ix. Replication Performance and Scalability

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- x. Replication and Visualization Service
- xi. Setting the Preferred File Server
- xii. User-Initiated Replication

Tuning Windchill Server

- i. Windchill Server Tuning Objectives
- ii. Monolithic Windchill Configuration
- iii. Multi-Tiered Windchill Configuration
- iv. Server Heap Size
- v. Capturing Java Thread Dumps for Windchill
- vi. Setting Windchill Cache Sizes in wt.properties
- vii. Setting Windchill Cache Sizes in db.properties
- viii. Viewing Windchill Cache Statistics
- ix. Limiting Search Results
- x. Windchill Configuration Assistant (WCA)
- xi. Affected Files
- xii. Running the Windchill Configuration Assistant
- xiii. Propagating Values from Intermediate Properties Files
- xiv. Rolling Back Configuration Change
- xvi. Number of Method Servers
- xvii. Cleaning Windchill System Cache
- xviii. Why Do Windchill Method Servers Stop Unexpectedly?
- xix. Using Anti-Virus Software
- xx. Server Cluster Configuration
- xxi. Server Status
- xxii. WAN Performance Optimizing Options
- xxiii. WAN Acceleration

Managing Background Queues

- i. Windchill Background Queues
- ii. Queue Manager
- iii. Queue Entry States
- iv. Out-of-the-Box Background Queues
- v. Single Method Server Configuration
- vi. Configuring a Background Method Server
- vii. Configuring Multiple Background Servers
- viii. Distributing Background Queues
- ix. Tuning Background Queues
- x. Performing Regular Queue Maintenance

Managing Your Visualization Publishing System

- i. Windchill Visualization Services Architecture
- ii. Sizing a Visualization Publishing System
- iii. Sizing CAD Worker Hardware
- iv. Running CAD Workers on Virtual Platforms
- v. Minimum Recommended CAD Worker Hardware
- vi. Calculating the Number of CAD Workers
- vii. Optimizing Your Visualization Publishing System

- viii. Worker Agent Administration
- ix. The WVS Job Monitor
- x. Viewing Job Details
- xi. WVS Job Scheduler Administration
- xii. Publish and Thumbnail Control
- xiii. Visualization Configuration Administration
- xiv. Configuring Your Visualization Publishing System
- xv. Publisher Queues and Jobs
- xvi. Configuration Options for Publisher Jobs
- xvii. Configuring Additional Publisher Queues
- xviii. Deleting a Queue
- xix. WVS Configuration Properties
- xx. Publish Job Types and Sources
- xxi. Setting Publish Job Priority

Tuning Workflow Processes

- i. Workflow Queues
- ii. Pool Queues
- iii. Monitoring Workflow Queue Entries
- iv. Configuring Queue Pooling
- v. After Queue Pooling
- vi. Configuring Dedicated Workflow Queues
- vii. Tagging Dedicated Workflow Queues
- viii. After Dedicated Queues

Windchill Backup and Recovery

- i. Windchill Backup Architecture
- ii. Windchill Data Repositories
- iii. Types of Backup
- iv. Performing a Cold Backup
- v. Recovering from a Cold Backup
- vi. Performing a Hot Backup
- vii. Recovering from a Hot Backup
- viii. Oracle Backup and Recovery Using Enterprise Manager
- ix. Oracle Archive Log Mode
- x. Oracle Flash Recovery Area
- xi. Oracle Suggested Backup Strategy
- xii. Suspending Background Queues
- xiii. Read Only Mode for Vaults
- xiv. Generating Vault Backup Information
- xv. The WContentVerify Tool
- xvi. Mirroring the Local Cache Vault
- xvii. Rebuilding Replica Vaults
- xviii. Backing up the Windchill Directory Server
- xix. Backing Up LDAP Data Using the Backup Command
- xx. Restoring Windchill Directory Server
- xxi. Backing Up LDAP Directory Data Using Control Panel

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- xxii. Restoring LDAP Directory Data Using Control Panel
- xxiii. Exporting LDAP Data
- xxiv. Importing LDAP Data

Managing Log Files and Alerts

- i. Windchill Logging Mechanism
- ii. Windchill Log Properties
- iii. Setting Windchill Log Levels
- iv. Populating JMX-Administrators
- v. Viewing Windchill Log Files
- vi. Managing Log Files Using JConsole
- vii. System Error Reporting
- viii. Using the Persisted Log Events Page
- ix. The Log Event Details Page
- x. The Log File Viewer Page
- xi. Administration Actions After Receiving Error Reports
- xii. System Configuration Collector
- xiii. Performance Advisor for PTC Windchill
- xiv. Indexing Administration
- xv. SQL Server Log File Viewer
- xvi. Setting up SQL Server Alert Notifications
- xvii. Oracle Alerts
- xviii. Setting Up a Mail Server for Oracle Alerts
- xix. Setting Up Direct Oracle Alert Notifications
- xx. Setting Metric Thresholds for Oracle Alerts
- xxi. Managing Directory Server Logs
- xxii. Managing Web Server Logs

Windchill License Management

- i. Windchill Licensing
- ii. Managing License
- iii. License Validation
- iv. License Types
- v. License Management Utility
- vi. Viewing License Information
- vii. License Notification
- viii. License Profiles Required for CAD Integrations
- ix. Retrieving License Online
- x. Importing License from a File
- xi. Managing User Licenses
- xii. License Profiles
- xiii. License Profile Hierarchy
- xiv. License and Standard Profile Interaction
- xv. License Groups
- xvi. License Usage Report
- xvii. Managing Licenses for Test and Development Systems

Daily System Monitoring Tasks

- i. Daily System Monitoring Tasks Checklist
- ii. Perform and Verify Scheduled System Backups
- iii. The Server Status Page
- iv. PTC System Monitor
- v. System Monitoring Using JMX Clients
- vi. Monitoring CPU and Memory Usage by Windchill Processes
- vii. Monitor System Availability
- viii. Monitoring Queues Using Queue Manager
- ix. Monitoring Queues Using JMX Clients
- x. Monitoring Queues Using Queue Analyzer
- xi. Queue and Workflow Health Check Script
- xii. Monitor File Vaults
- xiii. Monitoring Vaults Using the System Configuration Collector
- xiv. Review Application Server Logs
- xv. Review Database Logs
- xvi. Check Database Schema Statistics
- xvii. Monitor Network Health
- xviii. Review PTC Technical Support Subscription E-mails

Weekly System Monitoring Tasks

- i. Weekly System Monitoring Tasks Checklist
- ii. Monitor Disk Space Usage
- iii. Identifying BLOBS That Have Not Been Vaulted
- iv. Remove Unreferenced Files from File Vaults
- v. The RemoveUnreferencedFiles Tool
- vi. Automated Cleanup of Replica Vaults
- vii. Generating Unreferenced Files Report
- viii. Defragment Windows Disks
- ix. Check Performance Using Monitoring Tools
- x. Perform Database Maintenance

Monthly System Monitoring Tasks

- i. Monthly System Monitoring Tasks Checklist
- ii. Execute Performance Benchmarks
- iii. Windchill File Server Test
- iv. Perform Database Diagnostics
- v. Resolve Disconnected Principals
- vi. Cleaning up Data for Deleted Users
- vii. Evaluate System Settings Using Windchill Configuration Assistant
- viii. Generate Throughput and Security Audit Reports
- ix. Perform Workgroup Manager Maintenance Tasks
- x. Review Windchill and Creo Settings
- xi. Purge Obsolete or Unused Data
- xii. Apply Maintenance Patches and Updates
- xiii. Clone Production Server to Test Server

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- xiv. Yearly Administrative Tasks
- xv. Monitor License Usage

Setting Up the Client Environment

- i. Setting Up Your Browser
- ii. Browser's ActiveX Settings
- iii. Pop-Up Blocker Interference
- iv. Browser Locale Settings
- v. Memory Allocation for Applets
- vi. Installing Creo View
- vii. Installing Desktop Integration
- viii. Setting Your Preferred File Server Site
- ix. Product Structure Explorer Preferences
- x. Configuring the Windchill Home Page

Miscellaneous System Enhancements

- i. Browser Support
- ii. Database Support
- iii. Java Support
- iv. Platform Support
- v. Web Server and Servlet Engine Support
- vi. Windchill Software Matrices

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