



# IBM Tivoli Netcool Configuration Manager 6.4.2: Operations and Configuration

TOD44 (Self-paced)

## Course description

This 40-hour self-paced course provides a comprehensive set of skills needed to operate, and configure the IBM Tivoli Netcool Configuration Manager solution for managing, modifying, and ensuring the compliance of network device configurations. This course provides a structured set of topics that cover many aspects of the solution and how it supports the network configuration management environment. This training provides access to virtualized servers, network devices, and extensive exercises to demonstrate how the solution manages network devices and the creating of compliance policies to ensure correct configuration settings. Class work includes the initial configuration of the software so that you can run network discovery. Discussions describing the methods that the solution uses for device management and its customization are included. Also included in the course ware are details about device modeling technology.

You work with the integrations between IBM Tivoli Netcool Configuration Manager, IBM Tivoli Network Manager, and IBM Tivoli Netcool/OMNIBus to gain experience with how these solutions work together to help manage the network.

The lab environment for this course uses the Linux platform.

For information about other related courses, visit the IBM Training website:

<http://www.ibm.com/training>



## General information

### Delivery method

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Self-paced (SPVC)

### Course level

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ERC 1.0

### Product and version

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IBM Tivoli Netcool Configuration Manager 6.4.2

### Audience

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Partners, Services, Support, Technical Sales.

### Learning objectives

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- Describe the solution architecture
- Discover and import network devices into the solution
- View and modify a configuration with the configuration editor
- Modify one or more devices with a command set
- Approve, stop and restart units of work
- Import devices that are discovered by IBM Tivoli Network Manager
- Implement view, add, modify, and delete rights throughout the application
- Create schedules for units of work and implement recurring units of work
- Describe how to optimize execution of tasks and steps to increase throughput
- Use the IBM device terminal to connect to a device and make changes

### Prerequisites

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Basic UNIX skills are helpful but not mandatory.

### Duration

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5 days

### Skill level

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Basic

<b>Classroom (ILT) setup requirements</b> <i>Does not apply to SPVC</i>	
Processor	LAN / Internet / DHCP / Fixed IP / None
GB RAM	
GB free disk space	
Network requirements	
Other requirements	

## Notes

This course is a new course.

## Course agenda

The course contains the following units:

### 1. [IBM Tivoli Netcool Configuration Manager solution overview](#)

This unit provides an overview of the features that the IBM® Tivoli® Netcool® Configuration Manager solution can provide. It also includes an overview of its architecture and scalability. Included is the terminology that you see throughout the course.

Lesson 1 Business value

Lesson 2 Architecture

Lesson 3 Terminology

In this unit, you start the lab images.

Exercise 1. Setting up the lab

### 2. [Configuration manager interface](#)

In this unit, you learn how to access the configuration manager interface and download it to your desktop with Java Web Start. You learn how to log in to the application and browse through the main portions of the interface.

Lesson 1 Accessing the application

Lesson 2 The queue manager

Lesson 3 The resource browser

Lesson 4 User preferences and help

In this unit, you start the Netcool Configuration Manager user interface and view some of the available features.

Exercise 1.Starting the user interface

### 3. [Single change configuration management](#)

This unit describes how to import devices into the solution. After you import devices and put them under management, you learn how to manipulate their configurations and submit units of

work. You learn how to connect to the command-line interfaces of specific devices. Finally, you learn about device synchronization so that the network and the database can have a common view of the device's state.

Lesson 1 Accessing the application

Lesson 2 The queue manager

Lesson 3 The resource browser

Lesson 4 User preferences and help

Lesson 1 Discovering network devices

Lesson 2 Navigating the configuration and changes

Lesson 3 Making direct connections to devices

Lesson 4 Device synchronization

In this unit, you discover devices and import their configuration files. You learn how to modify the device configurations.

Exercise 1. Viewing an authentication resource

Exercise 2. Discovering a device from the user interface

Exercise 3. Discovering multiple devices with the BulkLoader command

Exercise 4. Viewing a device configuration

Exercise 5. Making a configuration change with the configuration editor

Exercise 6. Connecting to a device with the device terminal

Exercise 7. Changing a device configuration by using the device terminal

Exercise 8. Verifying that the configuration change was synchronized

#### 4. [Mass change configuration management](#)

This unit, teaches you about the template technology of command sets. You learn about the types that are available and the ways that you can use these templates to make mass changes to the network. You are also shown a method to use a CSV file to define a mass change with customized data for each line in the file.

Lesson 1 Command sets

Lesson 2 Building simple command sets

Lesson 3 Processing command sets

In the exercises for this unit, you view and apply command sets to lab devices.

Exercise 1 Finding the version, type, model, and operating system for target devices

Exercise 2 Viewing a modeled command set

Exercise 3 Applying a modeled command set in report only mode

Exercise 4 Applying a modeled command set

- Exercise 5 Creating an interrogative native command set
- Exercise 6 Applying the interrogative native command set
- Exercise 7 Creating a native command set
- Exercise 8 Applying the native command set
- Exercise 9 Applying command sets from a CSV file

## 5. [Administrative tasks](#)

This chapter covers topics that are necessary to operate Netcool Configuration Manager. These topics include approving Units of Work, stopping, and restarting Units of Work, processing complex searches, comparing configurations, restoring previous configurations, and viewing reports.

- Lesson 1 Approving changes
- Lesson 2 Stopping and restarting units of work
- Lesson 3 Searching and comparing units of work or resources
- Lesson 4 Restoring a versioned configuration
- Lesson 5 Reporting

In this unit, you submit two changes that require approval. You also dequeue and requeue a unit of work.

- Exercise 1 Making changes that require approval
- Exercise 2 Approving changes
- Exercise 3 Creating custom searches
- Exercise 4 Comparing configurations
- Exercise 5 Running reports

## 6. [Netcool integrations](#)

This unit covers the integration between Netcool Configuration Manager, Netcool/OMNIbus, and Network Manager. It also displays useful information in Dashboard Application Services Hub with the use of a configuration management event viewer.

- Lesson 1 Integration with other Netcool products

In this unit, you learn about the integration between Netcool Configuration Manager, Netcool/OMNIbus, and Network Manager.

- Exercise 1 Verifying the component status
- Exercise 2 Discovering devices with Network Manager
- Exercise 3 Deleting customer CC devices
- Exercise 4 Verifying integration with Configuration Manager
- Exercise 5 Applying a policy to devices from Tivoli Network Manager

Exercise 6 Applying a change to a device by using the device terminal

Exercise 7 Viewing device history in Activity Viewer

7. [Authentication and authorization model](#)

This unit provides lessons about the Netcool Configuration Manager security model. You learn how security is implemented, based on realms and groups. You also learn the authentication and authorization structures and how Tivoli Network Manager domains align with Netcool Configuration Manager realms. You learn how view, add, modify, and delete capabilities are implemented in the application.

Lesson 1 Enabling access control

Lesson 2 Realms

Lesson 3 Groups and users

Lesson 4 FIPS 140-2 security

The exercises in this unit demonstrate how to create users, groups and assign security attributes.

Exercise 1 Creating a group and a user

Exercise 2 Assigning security attributes

Exercise 3 Viewing the new user

8. [Device management](#)

This unit provides information on modeling and how it can be extended to include security. It also introduces you to how Netcool Configuration Manager interacts with devices and how those interactions can be customized for a customer's network.

Lesson 1 Modeling and drivers

Lesson 2 Security sets

Lesson 3 Device interaction

Lesson 4 Customizing device interaction

Lesson 5 Device authentication

Lesson 6 Access resource

Lesson 7 File transfer resource

The exercises in this unit demonstrate how to configure some of the Configuration Manager objects that you use for managing devices.

Exercise 1 Finding the actual model of a device

Exercise 2 Using an authentication resource

Exercise 3 Viewing a resource access document

Exercise 4 Creating a device script resource

Exercise 5 Viewing a file transfer resource

## Exercise 6 Working with security sets

### 9. [Using workflow and scheduling](#)

This unit teaches you about ticketing and scheduling. Netcool Configuration Manager directs tickets to the appropriate groups for approval. You learn how to estimate how long a UOW might take. You also learn about scheduling units of work and setting time zones.

Lesson 1 Controlling the flow of tickets

Lesson 2 Scheduling units of work

Lesson 3 Understanding server time

In this unit you learn how to schedule units of work, and create recurring units of work.

Exercise 1 Scheduling work

Exercise 2 Creating a recurring unit of work

Exercise 3 Working with time zones

### 10. [UOW management](#)

This unit teaches how worker servers break down units of work into tasks and processes them. You learn how worker servers select and process tasks. Some tasks are processed in parallel with each other for efficient completion. Others are processed one after the other. This unit presents the quality checks that are part of the change management philosophy that the application supports.

Lesson 1 Units of work and tasks

Lesson 2 Task processing

Lesson 3 Change management quality

In this unit you learn how Configuration Manager processes units of work.

Exercise 1 Finding a worker server resource

Exercise 2 Splitting a unit of work

Exercise 3 Enabling the scheduling alert

Exercise 4 Viewing system servers

### 11. [IBM device terminal](#)

This unit presents the IBM Device Terminal (IDT), which an authorized user can make direct VTY connections to the devices under management. You can filter the input for these connections to intercept restricted commands and collect keystroke logs to record all input.

Lesson 1 Device terminal overview

Lesson 2 Device terminal command filtering

Lesson 3 Device terminal administration

The exercises in this unit demonstrate how to use the IBM Device Terminal to make changes to devices.

Exercise 1 Using the IBM device terminal

Exercise 2 Viewing the synchronization filter

Exercise 3 Creating a command filter

Exercise 4 Applying and testing the new command filter

12. [Advanced command sets](#)

This unit teaches you how to build command sets. You learn the advantages of choosing modeled or native command set types. You build and test modeled command sets by using their advanced search and replace features. You also learn about command set groups.

Lesson 1 Command set types

Lesson 2 Native command sets

Lesson 3 Modeled command sets

Lesson 4 Applying command sets

Lesson 5 Command set groups

The exercises in this unit demonstrate how to create, test and apply modeled command sets.

Exercise 1 Creating a modeled command set to add commands

Exercise 2 Creating a modeled command set to modify commands

Exercise 3 Testing the command sets

Exercise 4 Applying command sets

13. [Device OS upgrade manager](#)

This unit is about using Netcool Configuration Manager to upgrade the operating systems on network devices. You learn the upgrade process and the objects you need to create to ensure a successful upgrade.

Lesson 1 OS upgrade overview

Lesson 2 OS registry

Lesson 3 OS specification

Lesson 4 Optional resources

Lesson 5 Launching an OS upgrade

In the exercises for this unit, you work with two Netcool Configuration Manager resources. The operating system upgrade process requires these resources. The first resource is a catalog of IOS images. The second resource is the upgrade template for the upgrade of a device to a specific IOS image.

Exercise 1 Modifying an operating system registry

Exercise 2 Creating an operating system specification

Exercise 3 Testing the network for upgrade compatibility



## Exercise 4 Viewing the upgrade results

### 14. [Out-of-band change \(OOBC\) daemon](#)

This unit teaches you how to use the out-of-band change (OOBC) daemon. OOBC is an external application that monitors a syslog file and parses it for events that warrant synchronizing the device. You learn how to install and configure this utility to monitor any flat file that receives syslog messages from the network.

Lesson 1 Overview

Lesson 2 Installing OOBC

Lesson 3 Configuring OOBC

The exercise in this unit demonstrate how Configuration Manager identifies out of band device changes.

Exercise 1 Starting the out-of-band change daemon and making an out-of-band change

Exercise 2 Verifying the device synchronization

### 15. [Compliance manager interface](#)

This unit is an introduction to the client graphical user interface (GUI) for the compliance manager. It provides an overview of the client technology and the way the software downloads to the client computer. You learn the main aspects of the compliance user interface.

Lesson 1 Accessing the application

Lesson 2 The Policy Definitions tab

Lesson 3 The Devices tab

Lesson 4 The Execution tab

Lesson 5 The Results tab

Lesson 6 Integration with configuration management

The exercise in this unit introduce the student to the compliance manager user interface.

Exercise 1 Viewing devices, policies and parameters

Exercise 2 Working with processes

### 16. [Compliance reports](#)

This unit presents the user with an overview of the compliance reports that are available in Tivoli Common Reporting. It shows how to access these reports and provides examples. You learn how to calculate a score to measure the compliance of your network.

The exercises in this unit demonstrate some of the available reports for compliance analysis.

Exercise 1 Running compliance reports

Exercise 2 Running remedial actions

Exercise 3 Rerunning compliance reports

Exercise 4 Running alternative report formats and scheduling a report

## 17. [Build and run a policy](#)

This unit provides an overview of the objects that make up a compliance policy and the role of objects in the compliance process. This unit shows how to create and test a simple policy. The unit also teaches the student how to exempt devices from a policy and how to include a policy into a production process for scheduled execution.

Lesson 1 Policy overview

Lesson 2 Building a definition

Lesson 3 Building a rule

Lesson 4 Email action

Lesson 5 Build and test a policy

Lesson 6 Exempting a device from a policy

Lesson 7 Build and run a process

The exercises in this unit demonstrate how to create compliance policies.

Exercise 1 Creating a policy realm

Exercise 2 Creating definitions

Exercise 3 Creating rules

Exercise 4 Creating an email action

Exercise 5 Creating policies

Exercise 6 Working with processes

## 18. [Remediation](#)

This unit provides an overview of the objects that make up a compliance policy and the role of objects in the compliance process. This unit shows how to create and test a simple policy. The unit also teaches the student how to exempt devices from a policy and how to include a policy into a production process for scheduled execution.

Lesson 1 Remediation actions

Lesson 2 Parameterization

Lesson 3 Approvals

The exercises in this unit build on the previous unit by expanding compliance policies to include remediation actions.

Exercise 1 Creating command sets

Exercise 2 Creating remedial actions

Exercise 3 Adding remedial actions to rules

Exercise 4 Running remedial actions

## 19. [Advanced definitions](#)

This unit teaches you about the more advanced features to determine whether a configuration is compliant. This unit describes the different data structures that you can analyze and the different methods for analyzing them. It describes parameterization of definitions in detail. Finally, it introduces the use of JavaScript.

Lesson 1 General concepts

Lesson 2 CLI definitions

Lesson 3 Show command definitions

Lesson 4 SmartModel definitions

Lesson 5 Using parameters in definitions

Lesson 6 Using JavaScript

In this unit, the student learns how to use various advanced features in policies, including XPath to search for text, and the extract function to retrieve text from a device.

Exercise 1 Creating a policy that uses XPath definitions

Exercise 2 Creating a policy that uses an extraction

Exercise 3 Testing the new policies

Exercise 4 Creating a process

## 20. [Preemptive compliance](#)

This unit teaches how you can use compliance to inspect changes that you make in the configuration manager and notify users when changes take a device out of compliance. This unit teaches how to configure the application to enable preemptive compliance and how it affects users.

Lesson 1 Overview

Lesson 2 Requirements and configuration

The exercise in this unit demonstrate how to implement preemptive compliance to prevent a change from making a compliant device no longer compliant.

Exercise 1 Enabling preemptive compliance

Exercise 2 Testing pre-emptive compliance

## For more information

To learn more about this course and other related offerings, and to schedule training, visit [ibm.com/training](https://ibm.com/training).

To learn more about validating your technical skills with IBM certification, visit [ibm.com/certify](https://ibm.com/certify).

