

# DevOps Foundations: Version Control and CI/CD with Jenkins



## Course-End Project





**SlackUp Jenkins**

## Objective

To create a Slack channel to receive Jenkins build notifications and use it to invoke Jenkins jobs remotely by configuring the slash commands in Slack



# Problem Statement and Motivation



## Real-time scenario:

You are a DevOps Engineer at La' Market that recently adopted a microservices-based architecture for its flagship web application. Different development teams manage the respective functionalities of the application.

To improve the efficiency of deploying updates and manage releases, the company has decided to enable developers to trigger Jenkins jobs directly from their Slack channels once the build is completed and the team's channel is notified on Slack.

You are tasked with implementing Slack integration in Jenkins to remotely invoke Jenkins jobs from a Slack channel, facilitating automated deployment processes and enabling real-time updates and team collaboration.

# Industry Relevance

The following tools used in this project serve specific purposes within the industry:

1. **Jenkins:** It is an open-source automation server commonly used in the software development industry for building, testing, and deploying projects. It supports continuous integration and continuous delivery (CI/CD) practices, enabling teams to increase efficiency, detect issues early, and accelerate software releases.
2. **Slack:** It is a widely-used collaboration tool that enhances communication and workflow efficiency across various industries by providing integrated chat, file sharing, and third-party app integrations.



# Tasks

The following tasks outline the process of integrating Slack with Jenkins and setting up a Slack channel to remotely trigger Jenkins jobs:

1. Create a Slack channel to get Jenkins build notifications
2. Configure Slack integration with the Jenkins plugin
3. Configure the post-build step to invoke Slack notification
4. Configure the slash command in Slack to invoke the Jenkins job





# Project References

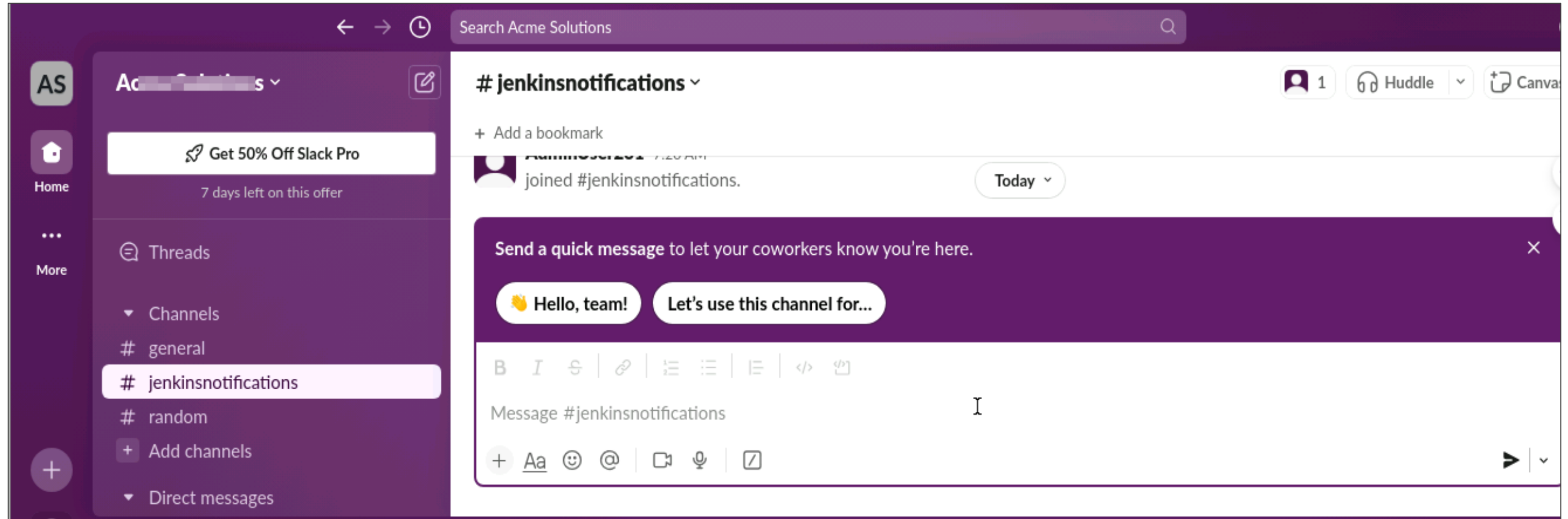
- **Task 1:** Lesson 07
- **Task 2:** Lesson 05
- **Task 3 and 4:** Lesson 06






# Output Screenshots

Slack channel to obtain Jenkins build notifications:




# Output Screenshots

Slack Jenkins CI integration app to integrate Slack with Jenkins:

 slack app directory

[Browse](#) [Manage](#) [Build](#)

[< Browse Apps](#)



## Jenkins CI

DescriptionPermissionsSecurity & Compliance

Jenkins CI is a customizable continuous integration server with over 600 plugins, allowing you to configure it to meet your needs.  
This integration will post build notifications to a channel in Slack.

Add to Slack

# Output Screenshots

Slack Notification plugin for Jenkins:

The screenshot shows the Jenkins web interface. At the top, there's a navigation bar with the Jenkins logo, a search bar, and user information. Below this, a breadcrumb trail shows 'Dashboard > Manage Jenkins > Plugins'. The main section is titled 'Plugins' and contains a sidebar with 'Updates' (76), 'Available plugins' (highlighted with a red box), 'Installed plugins', and 'Advanced settings'. The 'Available plugins' section shows a search for 'Slack'. A table lists two plugins: 'Slack Notification' (version 714.v62ffe7c796cd) and 'Global Slack Notifier' (version 1.5). The 'Slack Notification' plugin is highlighted with a red box and has a checkmark in the 'Install' column. Its description states: 'Integrates Jenkins with Slack, allows publishing build statuses, messages and files to Slack channels.' The 'Released' column shows '14 hr ago' for the Slack Notification plugin and '5 yr 2 mo ago' for the Global Slack Notifier.

Install	Name ↓	Released
<input checked="" type="checkbox"/>	<a href="#">Slack Notification</a> 714.v62ffe7c796cd <a href="#">slack</a> <a href="#">Build Notifiers</a> Integrates Jenkins with Slack, allows publishing build statuses, messages and files to Slack channels.	14 hr ago
<input type="checkbox"/>	<a href="#">Global Slack Notifier</a> 1.5 <a href="#">slack</a>	5 yr 2 mo ago

# Output Screenshots

Slack plugin configuration in Jenkins:

Dashboard ▾ > Manage Jenkins ▾ > System >

**Slack**

Workspace ?

Credential ?

- none - ▾

- none -

SlackToken

Default channel / member id ?

# Output Screenshots

Slack notification configurations for Jenkins builds:

Dashboard > Slack\_Jenkins\_Job > Configuration

## Configure

- General
- Source Code Management
- Build Triggers
- Build Environment
- Build Steps
- Post-build Actions**

### Post-build Actions


#### Slack Notifications

- ☒ Notify Build Start
- ☒ Notify Success
- ☒ Notify Aborted
- ☒ Notify Not Built
- ☒ Notify Unstable
- ☒ Notify Regression

SaveApply


# Output Screenshots

Slash commands integration with Slack:

 slack app directory

[Browse](#) [Manage](#) [Build](#)

[< Browse Apps](#)



[Add to Slack](#)

## Slash Commands

Description	Permissions	Security & Compliance
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*Please note, this is a legacy custom integration - an outdated way for teams to integrate with Slack. These integrations lack newer features and they will be deprecated and possibly removed in the future. **We do not recommend their use.** Instead, we suggest that you check out their replacement: [Slack apps](#).*

Slash Commands allow you to listen for custom triggers in chat messages across all Slack channels. When a Slash Command is triggered, relevant data will be sent to an external URL in real-time.

For example, typing `/weather 94070` could send a message to an external URL that would look up the current weather forecast for San Francisco and post it back to Slack.

# Output Screenshots

Slash commands customization to remotely trigger Jenkins jobs:

 slack app directory

[Browse](#) [Manage](#) [Build](#)

Please note, this is a legacy custom integration - an outdated way for teams to integrate with Slack. These integrations lack newer features and they will be deprecated and possibly removed in the future. **We do not recommend their use.** Instead, we suggest that you check out their replacement: [Slack apps](#).

Slash Commands allow you to listen for custom triggers in chat messages across all Slack channels. When a Slash Command is triggered, relevant data will be sent to an external URL in real-time.

For example, typing `/weather 94070` could send a message to an external URL that would look up the current weather forecast for San Francisco and post it back to Slack.

Choose a Command

Commands should be a single word (and can't be blank). Example: /deploy

Add Slash Command Integration

By creating a slash command, you agree to the [Slack API Terms of Service](#).



# Output Screenshots

Remote Jenkins job triggering using the configured slash command:

The screenshot shows a Slack interface for the channel **#jenkinsnotifications**. At the top right, there are icons for 1 member, a Huddle button, and a Canvas button. Below the channel name, there is a link to "Add a bookmark".

The message history shows three updates from the **jenkins** app at 12:33 PM:

- Slack\_Jenkins\_Job - #1 Started by user admin ([Open](#))
- Slack\_Jenkins\_Job - #1 Success after 0.1 sec ([Open](#))
- Slack\_Jenkins\_Job - #2 Started by user admin ([Open](#))

A blue command menu is open, showing the slash command **/deploy deploy** with the description "Command · Custom · Invoke Jenkins deployment job". Below the menu, a text input field contains the text **/depl**, which is underlined in red. A red box highlights this input field. To the right of the input field, a green button with a right arrow and a dropdown arrow is also highlighted with a red box. Below the input field, there is a row of icons for adding attachments, text formatting, emojis, mentions, and other features. At the bottom right, a hint says "Shift + Return to add a new line".



**Thank you**