Container Orchestration Using Kubernetes

TECHNOLOGY

Course Introduction

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About Simplilearn

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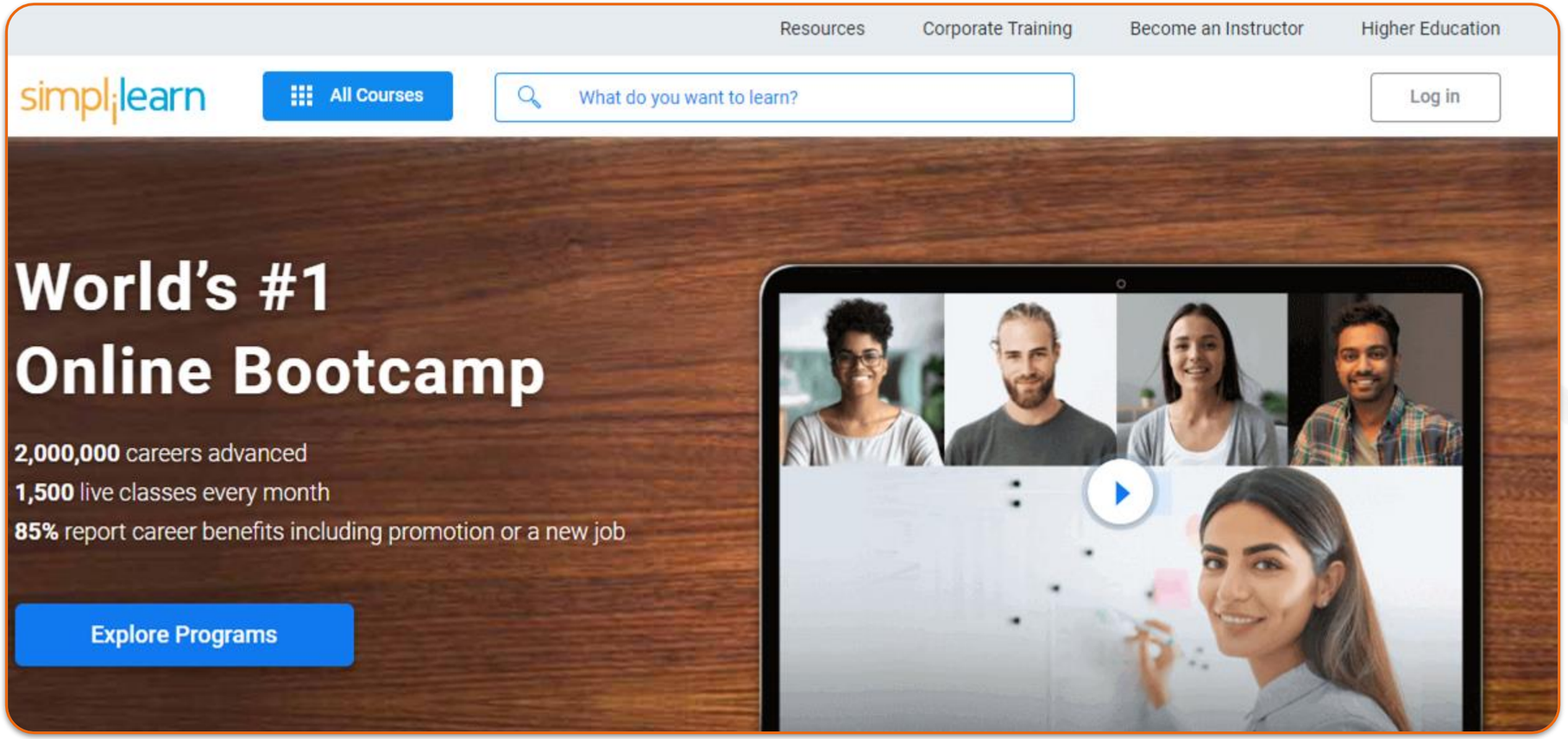
For over a decade now, Simplilearn is focused on digital economy skills.
Now, Simplilearn has become the **World's #1 Online Bootcamp.**



Simplilearn

At Simplilearn, we provide:

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- Live Virtual Classes

- Self-paced Learning Content

- Interactive Labs

- Real-time Scenario-based Projects

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Prerequisites

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Linux proficiency is a requirement for this course. Please ensure that you have a strong grasp of the fundamental principles of Linux.

Linux

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Introduction to Kubernetes

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What Is Kubernetes?

Kubernetes is a portable, extensible, and open-source platform for managing containerized workloads and services.

It facilitates declarative configuration and automation.

History

Created by Google to manage their containers AKA Borg

In June 2014, Google introduced Kubernetes as an open-source version of Borg.

In Aug 2023, the latest Version of Kubernetes,1.28 was released.

History

The original Borg project was written entirely in C++.

The original codename within Google was Project 7.

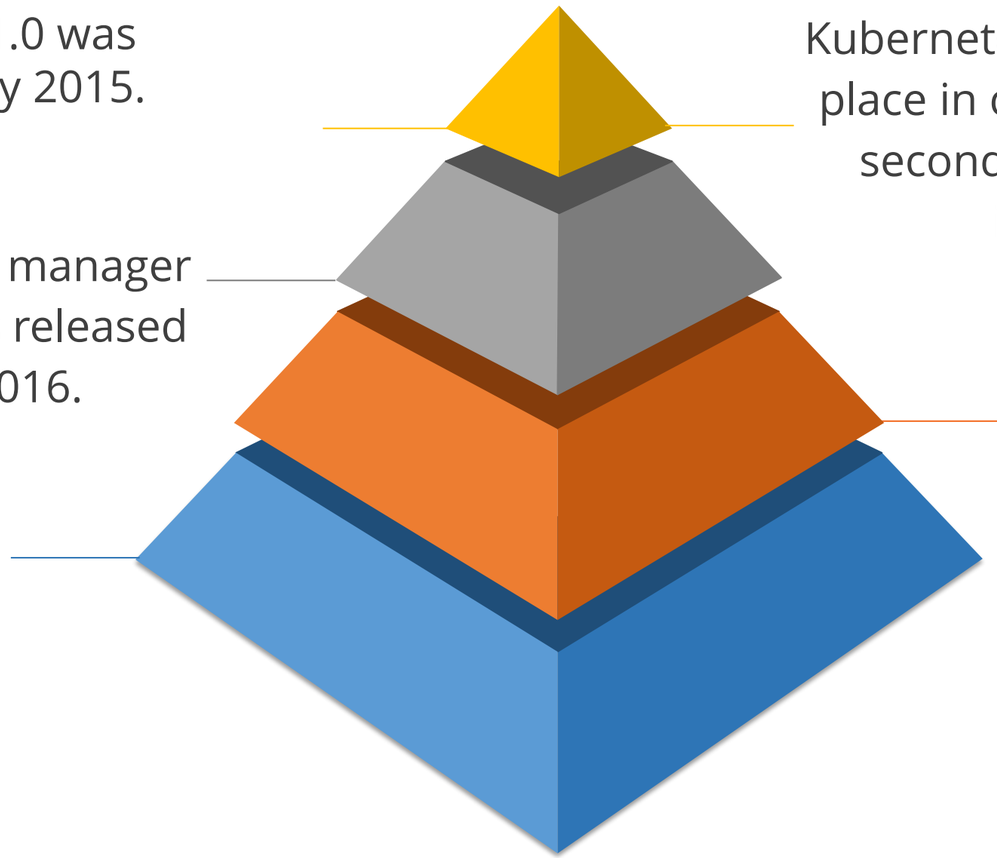
The seven spokes on the wheel of the logo are a reference to Project 7 codename.

Kubernetes Timeline

Kubernetes v1.0 was released in July 2015.

Helm, the package manager of Kubernetes was released in February 2016.

Kubernetes released the latest version 1.28 in Jan 2023.



Kubernetes Project reached ninth place in commits on GitHub and second place in authors and issues, in 2019.

Google partnered with the Linux Foundation to form CNCF and offered Kubernetes as a seed technology.

Kubernetes Practice

Kubernetes provides a framework for running distributed systems strongly.

Containers facilitate the packaging and execution of applications. You must ensure proper management of containers to prevent any disruptions in service.

Benefits of Kubernetes

Agile application creation and deployment

Continuous development, integration, and deployment

Application-centric management

Resource isolation and utilization

Cloud and OS distribution portability

Loosely coupled, distributed, elastic, and liberated micro-services

Skills Acquired

- Cluster architecture
- Workloads and services
- Load balancing and scheduling
- Storage handling
- Configuration and security
- Troubleshooting clusters
- Azure Kubernetes service

Importance of CKA

CKA

In collaboration with the Linux foundation, the Cloud Native Computing Foundation (CNCF) created the Certified Kubernetes Administrator (CKA) to help develop the Kubernetes ecosystem.

Why CKA?

It has the highest velocity of open-source projects.

It witnesses ongoing expansion among the wide range of companies and organizations that utilize Kubernetes.

It is dedicated to expand the Kubernetes administrator's community.

CNCF

For the benefit of companies offering training, CNCF has open sourced the curriculum around which the CKA exam has been developed.

For more information, please contact
trainingpartners@cncf.io

Exam Details

The focus of the certification program is on the skills required to be a successful Kubernetes administrator in the industry. The general domain includes:

Domain or concept	Percentage coverage in the CKA exam
Cluster Architecture, Installation, and Configuration	25%
Workloads and Scheduling	15%
Services and Networking	20%
Storage	10%
Troubleshooting	30%

Cost

The cost involved is $395 and includes one free retake.

Quarterly exam updates are planned to match Kubernetes releases.

Check out the CNCF regularly to get up-to-date information on the certification examination.

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Learning Path

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Course Outline

01 Course Introduction

02 Core Concepts

03 Kubernetes Clusters

04 Workloads

05 Scheduling

Course Outline

06 Services, Load Balancing, and Network

07 Storage

08 Azure Kubernetes Service

09 Troubleshooting and Kubernetes Case Studies

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Course Components

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Course Components

Simplilearn's comprehensive learning platform will give you an in-depth understanding of the key concepts with the help of the following course components:

- Lesson-End Projects
- Course-End Projects
- Assisted Practices
- Knowledge Checks
- Course-End Assessments
- E-Books

Let’s get started!