PURDUE UNIVERSITY | Delivered by simplilearn

Cloud Computing and DevOps Certification Program

Including GenAI and next-gen Cloud & DevOps

In Collaboration With:

aws | Microsoft

Learn
100+ hours
of Live Learning

Practice
200+ practice tests
& projects

Build
A stellar Cloud &
DevOps portfolio

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The Cloud and DevOps Revolution

Join the Growing Industry

Cloud computing continues to be a rapidly expanding and influential sector in the tech industry, driving a surge in job opportunities for skilled professionals.

Cloud

$723.4 Billion
Estimated public cloud spending in 2025
Gartner

21.5%
Expected public cloud market growth in 2025
ilink-digital

96%
Expected public cloud usage by companies by 2025
Nextwork

100K+
Cloud jobs available in the USA
Source: Linkedin

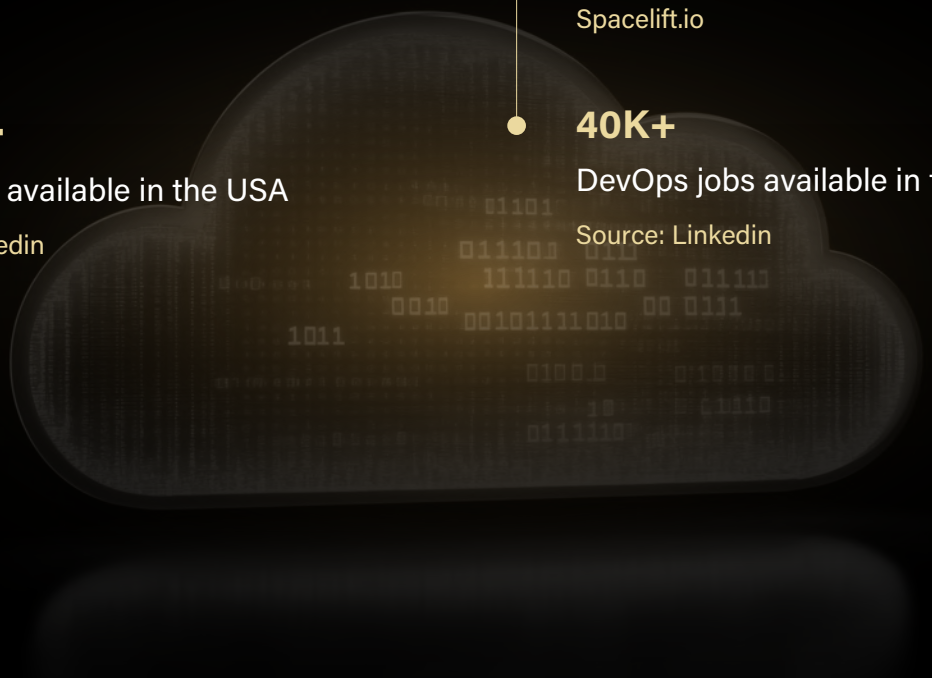
DevOps

North America
Largest DevOps market in 2025
IMarc Group

61.21%
Companies using DevOps are from USA
Spacelift.io

99%
Organizations benefit from effective DevOps implementation
Spacelift.io

40K+
DevOps jobs available in the USA
Source: Linkedin



About the Program

This program equips you with the technical skills and training needed to thrive in the rapidly growing Cloud and DevOps industry, helping you gain valuable experience with the three leading cloud providers: AWS, Microsoft Azure, and Google Cloud. Amazon Web Services continues to dominate the public cloud market with a market share of 32% followed by Microsoft Azure (23%) and Google Cloud (11%).

You will start by learning about Cloud Computing and DevOps fundamentals, including AWS and Azure services and Linux. Gain practical skills to build, deploy, and manage AWS cloud architecture and implement DevOps on AWS.

Next, you'll learn how to manage and maintain Azure Cloud resources and apply DevOps best practices on Azure. With the program, you will also explore the impact of GenAI on Cloud Computing and highlight the latest trends shaping the cloud and DevOps landscape.

Through a combination of theoretical knowledge and hands-on learning, you will engage through interactive sandboxed labs, official on-demand content, live virtual classes led by industry experts, and peer-to-peer collaboration.

Upon completing the program, you will gain access to Purdue's elite Alumni network and Simplilearn's Job Assistance services.

Key Features of the Program

Learning Ecosystem

Comprehensive Curriculum

- 150+ hours of comprehensive learning content on cloud computing (AWS, Azure, Google Cloud) and DevOps
- Exclusive module on GenAI in the cloud and emerging trends like quantum computing, edge computing, AIOps, GitOps, and more

Taught by Experienced Professionals

- Certified professionals with years of hands-on expertise
- Masterclasses by Purdue faculty and staff
- Masterclasses by industry experts on GenAI

In Live Virtual classes with Hands-on Learning

- Live instructor-led sessions by industry experts
- 30+ hands-on projects in sand-boxed labs, 20+ cloud services, and 200+ guided practice tests
- Slack-based peer-to-peer learning and engagement
- Official on-demand content by AWS and Microsoft Azure

Dedicated Learning Support

- Dedicated cohort manager
- Flexi-Learn - Session recordings for easy future reference
- Mentoring session(s)
- 24x7 chat support

Build a Professional Portfolio

- Official Microsoft Azure-branded certificates
- Program completion certificate from Purdue University Online and Simplilearn

Career Support

Networking Opportunities

- Purdue Alumni Association membership

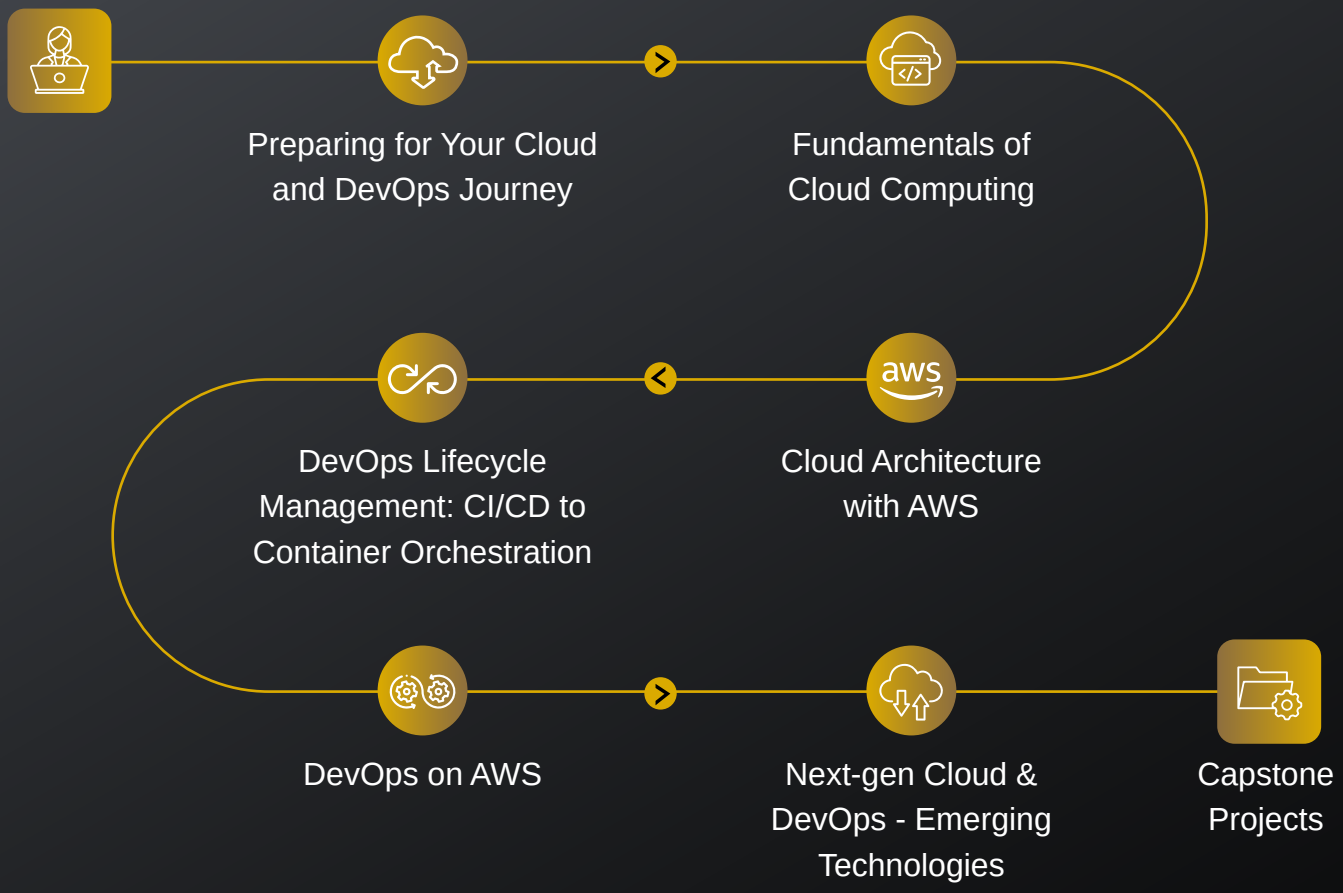
Simplilearn Career Assistance*

- One-on-one interview service by TopInterview
- Resume makeover assistance from TopResume
- Access to the Resume Rabbit employer network
- 30-day premium subscription to career.io

**Applicable in USA region only*

Learning Path Visualization

Core Topics



Electives

- Masterclasses by Purdue
- Generative AI on the Cloud
- Cloud Administration and DevOps With Microsoft Azure
- Cloud Architecture With Google Cloud

Module 1

Preparing for Your Cloud and DevOps Journey

After completing this module, you will be able to:

- **Understand AWS Cloud:** Gain proficiency in essential AWS services and cloud concepts
- **Navigate Azure with Confidence:** Understand Azure architecture, management, and key services
- **Control Linux:** Develop essential Linux administration and command-line skills

Module 2

Fundamentals of Cloud Computing

After completing this module, you will be able to:

- **Understand Core Cloud Concepts:** Grasp the essentials, including deployment models (public, private, and hybrid), service models (IaaS, PaaS, and SaaS), and key concepts like virtualization, scalability, and security
- **Identify Cloud Services:** Recognize and differentiate core cloud services such as compute, storage, networking, and databases
- **Make Informed Cloud Decisions:** Confidently choose the right cloud deployment and service models for your needs and understand the implications of cloud adoption for your organization

Module 3

Cloud Architecture With AWS

After completing this module, you will be able to:

- **Manage Compute Resources:** Confidently utilize EC2, Lambda, and other compute services to power your applications
- **Store and Access Data:** Effectively manage data with S3, EBS, and other storage services
- **Configure Networks:** Design and implement secure and scalable networks using VPC, subnets, and security groups
- **Deploy and Manage Databases:** Utilize RDS, DynamoDB, and other database services to support your applications
- **Secure Your AWS Environment:** Implement security best practices and manage access control with IAM
- **Monitor and Automate:** Monitor your infrastructure with CloudWatch and automate deployments with CloudFormation

Skills

- IAM
- EC2 Instance
- AWS Storage
- AWS Security
- VPC
- API

Tools

Module 4

DevOps Lifecycle Management: CI/CD to Container Orchestration

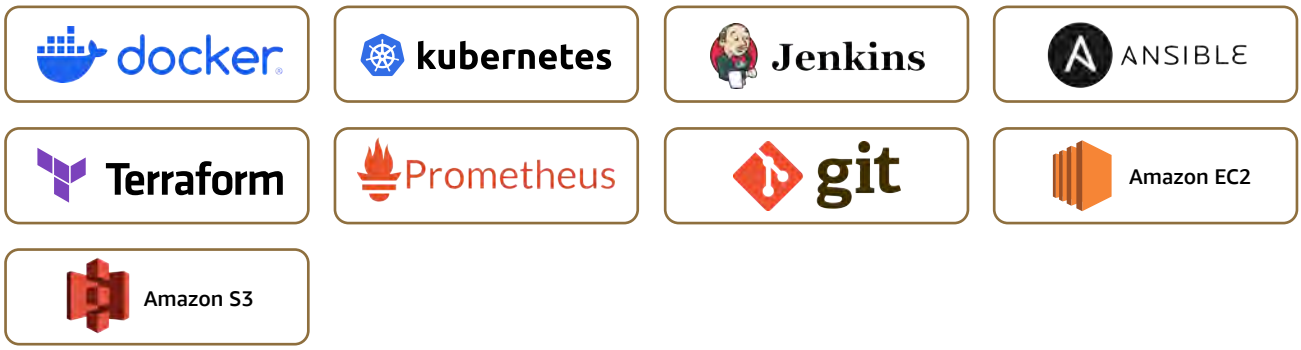
After completing this module, you will be able to:

- **Automate Software Delivery:** Implement CI/CD pipelines using Jenkins to streamline code integration, testing, and deployment
- **Manage Infrastructure as Code:** Utilize Ansible and Terraform to automate configuration management and infrastructure provisioning
- **Containerize Applications:** Package applications and dependencies using Docker for consistent and portable deployments
- **Orchestrate Containerized Workloads:** Deploy and manage containerized applications at scale using Kubernetes
- **Monitor and Observe Systems:** Implement monitoring solutions with Prometheus to gain insights into application and infrastructure performance
- **Monitor and Automate:** Monitor your infrastructure with CloudWatch and automate deployments with CloudFormation

Skills

- Containerization
- Container Orchestration
- Configuration Management
- Monitoring

Tools



Module 5

DevOps on AWS

After completing this module, you will be able to:

- **Automate Infrastructure With IaC:** Design and deploy infrastructure using CloudFormation, creating and managing code templates for consistent resource provisioning
- **Implement Automated CI/CD Pipelines:** Build and manage CI/CD pipelines using AWS CodePipeline and CodeBuild for efficient software delivery
- **Deploy and Manage Containerized Applications:** Containerize applications with Docker and orchestrate them using Amazon ECS and Kubernetes on AWS

Skills

- IaC
- CI/CD
- Containerization and Orchestration
- Automation
- Monitoring and Troubleshooting

Tools

AWS CodeFormation | AWS CloudWatch | docker | Amazon EKS

AWS CodePipeline | kubernetes | AWS CodeDeploy | AWS CodeBuild

Module 6

Next-gen Cloud & DevOps - Emerging Technologies

After completing this module, you will be able to:

- **Understand Modern Cloud Concepts:** Understand and apply evolving cloud strategies like multi-cloud, serverless, and edge computing
- **Leverage Cutting-Edge Tech:** Explore and integrate AI/ML, quantum computing, and IoT within cloud environments
- **Optimize Cloud Efficiency:** Implement DevOps, FinOps, and automation for cost-effective and sustainable cloud solutions

Skills

- Multi-Cloud and Hybrid Cloud
- Serverless Computing
- Edge Computing
- Sustainable Cloud
- Quantum Computing

Module 7

Capstone Project on Cloud Computing & DevOps

- The projects are the final step in the learning path and will enable you to showcase your expertise to future employers
- Dedicated mentoring sessions will teach you how to solve real-world, industry-aligned problems

1 Microservice Containerization With AWS CodePipeline and ECS Cluster

Set up a DevOps pipeline to automate CI/CD for containerized microservices using AWS CodePipeline and ECS Cluster. The project involves complex builds, code validation, and deployment across application servers.

Tools Covered

2 Automated Azure Web App Deployment With Containers

Automate infrastructure provisioning and microservices deployment on the Azure cloud using Azure Web App Service and Pipelines. The project includes containerization and CI/CD automation.

Tools Covered

3 Multi-Cloud Deployment for a Web Application

Implement a DevOps pipeline to migrate monolithic applications to microservices using AWS and Azure with automated deployments using Jenkins and Ansible playbooks.

Tools Covered

Electives

Academic Masterclass by Purdue University Online

- Attend an online interactive masterclass and get insights about technological advancements and techniques in Cloud Computing & DevOps
- Learn why Cloud Computing and DevOps are important and have become essential for any organization to understand, implement, and invest in Cloud and DevOps skills to scale up

Generative AI on Cloud

After completing this module, you will be able to:

- Attend an online interactive **GenAI masterclass** and get insights about advancements in technology/techniques in Cloud Computing & DevOps
- **Build and Deploy Generative AI Solutions:** Understand the cloud infrastructure, data preparation, model development, and deployment processes required to create and manage generative AI applications
- **Implement Responsible AI Practices:** Apply ethical considerations, ensure data privacy, and learn about explainable AI techniques to develop responsible and transparent AI solutions
- **Leverage GenAI Services From Cloud Providers:** Gain experience using generative AI offerings from major cloud providers (AWS, Azure, Google Cloud) and specialized services like Azure OpenAI for text generation

Cloud Administration and DevOps With Microsoft Azure

After completing this module, you will be able to:

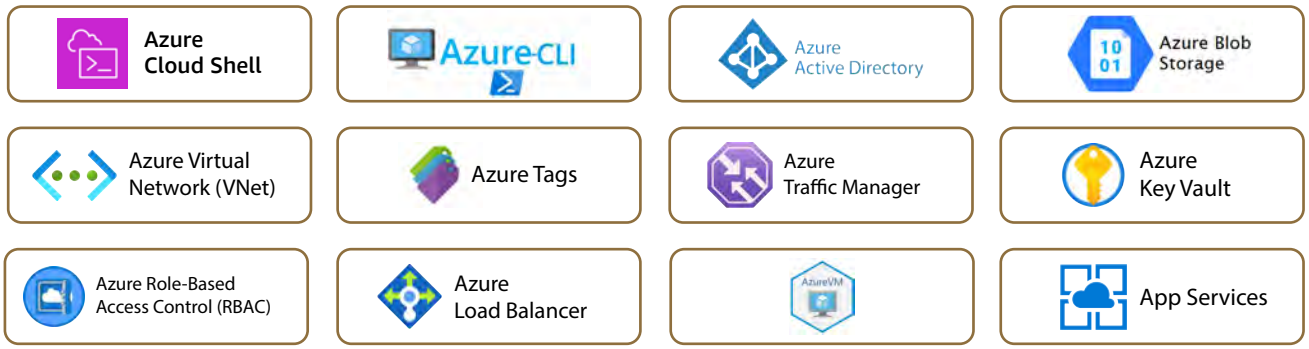
- **Demonstrate Foundational Azure Knowledge:** Understand core Azure concepts and terminology (AZ-900)
- **Design and Implement Azure Architectures:** Plan and implement Azure solutions based on architectural best practices

- **Manage Azure Resources and Governance:** Configure subscriptions, implement RBAC, and manage Azure resources effectively
- **Deploy and Monitor Azure Solutions:** Deploy virtual machines, containers, and networking components and monitor their performance
- **Secure and Protect Azure Data:** Implement data protection strategies and manage Azure identities and governance

Skills

- Networking, Security and Governance
- Storage
- RBAC

Tools



Cloud Architecture With Google Cloud

After completing this module, you will be able to:

- **Learn Google Cloud Fundamentals:** Covers core services, infrastructure, and console navigation
- **Understand Key Google Cloud Services:** Explores compute, storage, networking, security, and database solutions
- **Learn Practical Application:** Includes case studies and best practices for real-world scenarios

Program Outcomes

Curriculum Expertise

- Master AWS, Azure & Google Cloud and get ready for official industry-aligned cloud certifications

- Understand the DevOps lifecycle from CI/CD to container orchestration and the principles of DevOps applications on AWS and Microsoft Azure
- Learn about the impact of GenAI on cloud computing and the latest trends and technologies

Industry Partnership

- Master AWS cloud fundamentals via on-demand content from AWS Skillbuilder
- Access official on-demand content from Microsoft Azure and earn Microsoft-branded certificates

University Partnership

- Earn a program completion certificate from Purdue University Online and Simplilearn
- Get Purdue Alumni Association membership
- Attend masterclasses delivered by Purdue faculty and staff

Career Accelerator Services

- Avail one-on-one interview service by TopInterview
- Get a resume makeover from TopResume
- Access Resume Rabbit employer network
- Get 30-day premium subscription to career.io

Certificates

Upon completing this program, you will receive a program completion certificate from Purdue University Online and Simplilearn and official certificates from Microsoft on the completion of Microsoft on-demand courses.

You will also receive certificates from Simplilearn for each course in the learning path. These certificates will testify to your skills in cloud computing and DevOps.

Career Outlook in the Cloud and DevOps Industry

Due to the high demand for Cloud Computing professionals, salaries in this field often reflect the market reality. The company's size, geographic location, and industry can significantly influence compensation levels. Taking these variables into consideration, we have compiled an estimate of what you can expect to earn in the following roles:

Cloud Solutions Architect

A Solutions Architect designs and implements cloud computing solutions, including designing the cloud infrastructure, cloud application architecture, and cloud security architecture.

Source: ZipRecruiter

Average Annual Salary
$126,000–$183,000

DevOps Engineer

A DevOps Engineer is responsible for bridging the gap between development and operations teams, implementing automation, and managing the infrastructure to ensure efficient software delivery and deployment.

Source: Glassdoor

Average Annual Salary
$125,908-$142,454

Cloud Systems Administrator

A Cloud Systems Administrator manages and maintains cloud infrastructure, ensuring availability, performance, security, and efficient operations.

Source: ZipRecruiter

Average Annual Salary
$88,500-$151,000

Who Should Enroll in This Program?

Professionals Seeking Career Growth

- Platform engineers/back-end developers/web developers who want to understand cloud architecture, implement DevOps principles, and become cloud DevOps engineers/site reliability engineers
- Network engineers/cloud developers who want to transition to site reliability engineer roles
- Cloud infrastructure analysts who want to become Cloud DevOps architects

Professionals Aiming to Break Into Cloud & DevOps

- DevOps engineers who want to transition to Cloud DevOps engineers
- Tech support engineers who want to transition to cloud architects
- Business process associates who wish to become cloud administrators/cloud architects

Here are some roles this program can prepare you for:

Eligibility Criteria

For admission into this Cloud Computing and DevOps Certification Program, candidates:

- Should have at least one year of professional experience (preferred, but not mandatory)
- Must be at least 18 years old and have a high school diploma or equivalent
- May have a non-programming background

Application Process

The application process consists of three simple steps:

Submit an Application

Complete the application, including a brief statement of purpose explaining your interest and qualifications for the program

Application Review

A panel of admissions counselors will review your application and statement of purpose to determine whether you qualify for acceptance

Admission

An offer of admission will be made to qualified candidates. You can accept this offer by paying the program fee

Talk to an Admissions Counselor

Our team of dedicated admissions counselors is prepared to address your questions or concerns about the Cloud Computing and DevOps Certification Program. Our team is available to:

- Answer your questions about the application process
- Discuss your financing options
- Provide insight into the curriculum, program outcomes, and more

Complete your Application

Contact Us | 1-800-212-7688

About Purdue University and Simplilearn Partnership

Purdue University is a top public research institution developing practical solutions to today's toughest challenges. Ranked in each of the last four years as one of the 10 Most Innovative Universities in the United States by U.S. News & World Report, Purdue delivers world-changing research and discovery.

Purdue University Online has partnered with Simplilearn to deliver various online professional programs. Simplilearn's award-winning immersive learning model focuses on applied learning experiences intended to create immediate impact.

#1

Most Recognized U.S. Public University

Source: American Caldwell GUV Rankings, 2025

#2

Public University in the World

Source: American Caldwell GUV Rankings, 2025

#9

Most Innovative U.S. University

Source: U.S. News & World Report, 2025

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