Professional Cloud Developer (PCD)

Certificate:	Professional Cloud Developer	**Course ID:**	CCC-PCD
Duration:	3 days (virtual) classroom	**Language:**	English
Course Delivery:	Classroom, Exam, eBook	**PMI® PDUs:**	24
Accreditor:	Cloud Credential Council		

A thorough understanding of the technology platform and cloud-computing provider is essential for any cloud application developer. However, application developers benefit further from having a thorough understanding, and working-level knowledge, of vendor-neutral application design principles, ensuring that applications provide the most value throughout the application lifecycle.

The Cloud Developer course is for application developers who are designing and developing applications for cloud environments. This training is delivered as a 3-day classroom or virtual classroom program. The training covers best practices on application design for cloud environments and supports many vendor technology solutions, covering Open Source and major Vendor Standards. The principles covered in the course apply to the entire application lifecycle, and are relevant to any technology or platform.

The course material includes various reference materials that help to continue participants' educational experience when they are back at work after completion of the course. The course prepares candidates for the Professional Cloud Developer Certification (PCD) Exam provided by the Cloud Credential Council. The PCD is endorsed, recognized and supported by several key technology vendors and standards bodies. The content for this course, as well as the PCD certification is based on the cloud standards developed by NIST.

Audience:

The Professional Cloud Developer course will be of interest to:

- Application Developers
- Cloud Architects

Learning Objectives:

At the end of this course, the participant will gain competencies in and be able to:

- Understand Cloud Architecture Patterns, caching, RESTful services and session management, together with security and compliance fundamentals in cloud.
- Apply and analyze knowledge about database integrations, messaging in cloud environment, and scalable coding.
- Understand development monetization techniques and license models.
- Apply knowledge about semantic web and ontologies.
- Understand development and deployment in IaaS
- Understand tenant aware application development, interoperable cloud code and application architecture models in PaaS
- Understand Software development in SaaS, Development of APIs and Mashups together with understanding of cloud service catalogues and application marketplaces.

Prerequisites:

There are no formal prerequisites; however, it is recommended that participants are knowledgeable in programming languages such as Java, PHP, JavaScript, etc. (and that participants are conversant with Cloud concepts and vocabulary). Participants further benefit from a strong background in application design and development.

Course Material:

Participants receive a copy of the classroom presentation material and the Participant Handbook.

About the Examination:

The Professional Cloud Developer Certification is the most recognized and well-respected Professional Certification provided by the Cloud Credential Council (CCC). Professional Certifications are awarded to candidates who have completed an approved certification-training program.

Information on recommended follow-on training courses, including approved technology certification, is available from the Cloud Credential website (www.cloudcredential.org).

- **Exam Format:** Web based, Closed Book
- **Questions:** 25 scenario-based questions
- **Pass Threshold:** 65%
- **Duration:** 60 minutes. For non-native speakers an additional 15 minutes is available.
- **Proctoring:** Live or webcam

Technical Requirements:

For eBooks:

- Internet is required only for downloading the eBook. The eBooks can be read offline.
- eBooks can be downloaded and read on the following devices Laptop, tablet, Smart Phone, eReader PDF Reader, recommended Adobe Reader.

Agenda:

Day 1	Day 2	Day 3
Cloud Architecture Patterns	Metadata and Semantic Deployment and Testing in the Cloud	PaaS Application Architecture Models
Service Modularity, Encapsulation and Orchestration	Scalable Coding	PaaS: Interoperable Cloud Code
Development Monetization Techniques	IaaS: Deployment automation and elastic sizing of environments	SaaS: Cloud service catalogues and application marketplaces
Cloud Security and Compliance Fundamentals	PaaS: Tenant-Aware Application Development	SaaS: Mashups & Open APIs
		Certification Exam Preparation
		Self-Study and Q & A
		Exam

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COURSE OUTLINE

Module 1: Course Introduction

Module 2: Cloud Architecture Patterns
2.1 Cloud Overview
2.2 Multi-Form and Platform Factors
2.3 Understand Cloud Caching
2.4 RESTful vs. RESTless Services
2.5 Stateful vs. Stateless Services
2.6 Designing to Expect Failure
2.7 Bulk API for Bulk Data Uploads with Locking Mechanism
2.8 Foundational Knowledge About Cloud Parsers

Module 3: Service Modularity, Encapsulation, and Orchestration
3.1 Migration and Encapsulation of Existing Legacy Apps to a Cloud Platform Where Possible
3.2 Expose Business Logic as a Web Service
3.3 Cloud Messaging
3.4 Integration of Database as a Service
3.5 Transactional Coding in the Cloud
3.6 DevOps vs. NoOps

Module 4: Development Monetization Techniques
4.1 License Models Comparison
4.2 Developing for Cost
4.3 Hidden Cost of Cloud Development
4.4 Software License Models
4.5 License Acquisition Scenarios
4.6 Insource Outsource and CrowdSource
4.7 Monetizing Apps via Application Markets

Module 5: Cloud Security and Compliance Fundamentals
5.1 OAuth, SAML, and SSO supported in Cloud Environments
5.2 Integration with Identity as a Service (IDaaS)
5.3 Security at Every Layer
5.4 Custom Security Roles
5.5 Encryption and Anonymization Techniques
5.6 Developing for Compliance

Module 6: Metadata and Semantic
6.1 Semantic Fundamentals
6.2 OWL/RDF
6.3 Open Metadata and Metadata API

Module 7: Deployment and Testing in the Cloud
7.1 Cloud Testing Goals
7.2 Generic Stages of Cloud and Non-Cloud Testing and Development Life Cycles
7.3 Utilization of Crowdsourcing for Massive Cross-Platform Testing
7.4 Cloud Testing Automation
7.5 Cloud Component, Package, and Solution Testing

Module 8: Scalable Coding
8.1 Polyglotism or Coding Languages in the Cloud
8.2 Designing to Handle Massive Success
8.3 Performance Engineering for Scalability, Reliability, and Recovery

Module 9: IaaS: Deployment Automation and Elastic Sizing of Environments
9.1 Service/Application Deployment into Public, Private, and Community Clouds
9.2 Automated Cloud Bursting

Module 10: PaaS: Tenant-Aware Application Development
10.1 Understand Differences Between Native PaaS and CePaaS
10.2 Multi-Tenant Resource Sharing, Isolation, and Customization Mechanisms
10.3 Tenant-Aware Error Tracking
10.4 Multi-Tenant Data Access Controls
10.5 Platform Scalability and Importance of Open Platform APIS

Module 11: PaaS: Application Architecture Models
11.1 Open Source and Technology Driven PaaS
11.2 Cloud Enabled Data Access Frameworks

Module 12: PaaS: Interoperable Cloud Code
12.1 Understand Device Based Platforms
12.2 Interoperable Platforms
12.3 Code Share: Sharing Source Code Across Organizations
12.4 Cloud Persistence Coding

Module 13: SaaS: Cloud Service Catalogs and Application Marketplaces
13.1 Developing Apps as SaaS solutions for Deploying to App Stores
13.2 Cross-Platform Application Cloud Catalogs
13.3 Developing Apps as SaaS Solutions for Single and Multi-Tenancy Models
13.4 BYOD Concepts

Module 14: SaaS: Mashups and Open APIS
14.1 API Development
14.2 Mashups
14.3 Mobile Coding
14.4 Understanding Social APIs
14.5 Understand Major Open APIs

Module 15: Exam Preparation Guide
Mock Exam