



PROFESSIONAL CLOUD SERVICE MANAGER

Syllabus

Syllabus for the certification course *Service Manager* leading to the CCC Professional Cloud Service Manager certification



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COUNCIL



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1. Overall Purpose of the Syllabus

The purpose of this syllabus is to provide a clear statement of the knowledge and skills required by a professional cloud service manager. The Professional Cloud Service Manager course ensures that the participants acquire the required skill-set and knowledge to become certified Cloud Service Manager by passing the associated Cloud Credential Council Cloud Service Manager exam.

This course is an IT Service Management (ITSM) course specifically for managing cloud computing and cloud based services using a consistent and applicable approach. This course will explain the aspects of cloud service management which are not covered in traditional ITIL best-practice and certifications. Furthermore, the course provides guidance to instructors on which areas must be emphasized to give candidates the best possible chance of exam success.

The information in this course applies to a hybrid IT environment which includes legacy IT, Traditional IT and Cloud Computing.

2. Structure of the Syllabus

The structure of this syllabus is layered as follows:

The history of cloud computing is presented at the start of the course. Throughout the three days, the course is focused on how cloud computing and cloud based services affect the design, delivery and operation of end-user and consumer services.

Each module has a clearly stated purpose and introductory synopsis followed by key topics and the specific learning objectives that must be met in order to achieve required results in practise and pass the Cloud Service Manager exam.

The flow of the learning modules is designed to build both understanding of the topics and practice in applying that knowledge to the service manager role.

3. The Role of the Professional Cloud Service Manager

As cloud computing continues to evolve, so does the role of the professional cloud service manager. This includes all the activities and responsibilities involved in designing, managing and retiring cloud computing and cloud based services.

The balance of maintaining the performance of existing systems, processes and functions while implementing new solution practices is further complicated by the need to consider the impact on both consumers and providers. The modules in this syllabus systematically lay out the core components of the cloud service manager function and necessary skills.

It is worth being aware that these functions are carried out within the context of the following emerging new trends and leading administration solutions:

- The service manager role often incorporates a number of 'sub-roles' (such as IT service manager, buyer and/or customer service manager) and may also incorporate operations management. This multiple nature is leading toward consolidated teams of administrators (i.e. a flattened hierarchy) and truly converged infrastructure management.
- Service management often covers 1st, 2nd, 3rd and 4th line support – potentially for multi-tenancy environments – and includes cloud service providers both inside or external to an organization.
- Standards for outsourcing (ISO/IEC 137500), service management (ISO/IES: 200000) and security compliance (ISO/IEC 27000) are influencing and even dictating service metrics, metering, reporting, billing and provisioning systems for cloud environments.
- ITIL processes need to be adapted in order to support cloud computing and cloud based services including; processes for handling escalations i.e. problem, incident, and event management, service reporting including SLA/OLA, availability, capacity, change, demand management, just to name a few.

- The multi-layered structure between cloud service providers and consumers is creating the need to refine service design and operational processes as well and number of key IT processes and functions.

4. Learning Level of the Syllabus

The modern version of Bloom's taxonomy of learning is a widely used classification framework for course syllabi and assessments for certification. The taxonomy classifies learning into six ascending levels.

- **Level 1** – the Knowing Level: Exhibit memory of previously learned materials by recalling facts, terms, basic concepts and answers
- **Level 2** – the Comprehension level: Demonstrative understanding of facts and ideas by organizing, comparing, translating, interpreting, giving descriptions, and stating main ideas
- **Level 3** – the Application level: Using new knowledge. Solve problems to new situations by applying acquired knowledge, facts, techniques and rules in a different way.
- **Level 4** – the Analysis level: Examine and break information into parts by identifying motives or causes. Make inferences and find evidence to support generalizations.
- **Level 5** – the Evaluate level: Present and defend opinions by making judgments about information, validity of ideas or quality of work based on a set of criteria.
- **Level 6** – the Creation level: Compile information together in a different way by combining elements in a new pattern or proposing alternative solutions.

The level of this advanced course for the Professional Cloud Service Manager role is level 3-4 (Apply, Analyse).

5. Syllabus – Core Skills

Module 1. Course Introduction

Module Purpose and Overview

The aim of this module is to explore the course, topics and timetable at a high level and position the three days of learning with the participants.

The Professional Cloud Service Manager course ensures that the participants acquire the required skill set and knowledge to become certified Cloud Service Manager by passing the associated Cloud Credential Council (CCC) Cloud Service Manager (CSM) exam.

Key Topics

- Meet participants and instructor
- Course Overview
- Course Agenda
- Introduce case study, activities and course book

Learning Objectives

- (L2) Summarizes the course content, structure, modules and case study.

Module 2. Cloud Service Management Fundamentals

Module Purpose and Overview

The aim of this module is to introduce the fundamental cloud computing model and its characteristics to the participants.

Cloud computing and cloud based services are not new technology. Cloud principles go as far back as mainframes circa the 1950's and 1960's. The current cloud computing model is composed of five essential characteristics, three service models, and four deployment models. Various IT Service Management and cloud computing definitions exist and need careful examination. The basics of cloud

computing and how it should be considered from a provider and consumer view requires detailed exploration. Participants should be able to define the five essential characteristics, the three service models and the four deployment models of cloud computing. Understanding the three service perspectives of the consumer, business and IT are critical to the adoption of cloud computing and cloud based services.

Key Topics

- History of Cloud Computing
- Basics of Cloud Service Management
- Service Perspectives
- Relationship with IT Service Management (ITSM)
- Cloud Service and Support Models

Learning Objectives

- (L2) Describe fundamental concepts related to cloud service management.
- (L2) Explain basic terminology related to cloud service management.
- (L2) Explain the relationship between IT Service Management (ITSM) and cloud service management.
- (L3) Discover how cloud computing is changing how IT is managed and delivered.
- (L3) Illustrate the difference between the IT, Business and Consumer perspectives.
- (L3) Show the consumer and provider relationship.

Module 3. Cloud Service Management Roles

Module Purpose and Overview

The aim of this module is to introduce a number of important roles involved in the design, management and operation of IT and cloud based services and cloud computing.

This course is the first time where the cross-over between service management, the organization and cloud computing and cloud service management is documented, detailed, explained in depth and examined. Over thirty roles are presented, defined and described in an end-to-end role mode that is unique to this course. Sources of roles covered throughout this course include; traditional roles in IT, roles within the organization, and new and emerging roles in the cloud computing space. Understanding the relationship between all roles discussed and how they interact is a key requirement for successfully managing cloud computing environments and cloud based services.

Key Topics

- Cloud Management Roles
- Service Management Roles
- Organizational Roles

Learning Objectives

- (L1) Recall important roles involved in designing and running cloud services.
- (L4) Identify and explain important roles involved in cloud service management.
- (L3) Define cloud management roles and their main responsibilities.
- (L4) Compare and contrast the differences between different cloud management roles.
- (L4) Compare the relationship between cloud provider and cloud consumer.
- (L3) Illustrate how cloud and traditional IT roles interrelate in the delivery of IT services.

Module 4. Cloud Service Strategy

Module Purpose and Overview

The aim of this module is to explore the fundamentals of cloud strategy, define a cloud policy and understand the key drivers for adopting cloud computing and cloud based services.

Cloud strategy and policy formulation are basic yet important aspects to get right when adopting cloud computing and cloud based services. Creating a cloud adoption strategy is invaluable to organizations that do not know where to start when it comes to adopting and strategizing for the cloud. Key drivers

for adoption need to be identified and understood how to be used, which can help make the business case for cloud adoption. Securing financial commitment is a key element of a cloud computing adoption strategy. Cloud service providers, customers and certain consumers will need to know and understanding the risks involved in using cloud computing and produce relevant risk mitigation strategies using a risk management cycle.

Key Topics

- Cloud Strategy Fundamentals
- Key Drivers for Adoption
- Risk Management Overview

Learning Objectives

- (L3) Differentiate between potential risks and benefits of adopting a cloud strategy.
- (L1) Select different approaches for recognizing the value of cloud services.
- (L3) Compose a cloud strategy statement.
- (L3) Explain stakeholder management techniques.
- (L3) Produce an initial cloud adoption strategy.

Module 5. Cloud Service Design, Deployment and Migration

Module Purpose and Overview

The aim of this module is to explore the service management and end-to-end service design aspects of cloud computing and cloud based services as opposed to the technical design.

It is important to identify options for dealing with legacy systems in a hybrid cloud environment. Difficulties in benchmarking need to be understood and rationalized. Appropriate methods for the design, deployment and migration of cloud computing and cloud based services are vital for the success of those services.

Capacity planning plays an important role in cloud computing and is directly linked to demand management. Automation speeds up deployment of cloud computing services and include cloud service deployment and on-boarding, sometimes using cloud service orchestration.

The cloud marketplace also referred to as the cloud store or app store, is becoming more and more relevant in the selling and consuming of cloud based services.

Technical aspects of cloud service design, deployment and migration are covered in the following courses also available from the Cloud Credential Council:

- Professional Cloud Solutions Architecture (PCSA)
- Professional Cloud Developer (PCD)

Key Topics

- Basics of Cloud Service Design
- Dealing with Legacy Systems, Services and Applications
- Benchmarking of Cloud Services
- Cloud Service Capability Planning
- Cloud Service Deployment and Onboarding
- The Cloud Store

Learning Objectives

- (L2) Discuss important aspects of cloud service design.
- (L3) Apply cloud service design techniques.
- (L4) Analyze the impact of demand and how to right-size cloud services at the design stage.
- (L2) Summarize key components required to deploy cloud services.
- (L3) Select appropriate cloud deployment methods.
- (L4) Outline the main stages of on-boarding cloud services.
- (L2) Discuss the importance of transition planning before deployment of cloud services.
- (L4) Outline what a cloud market place is.
- (L4) Differentiate between the consumer and provider perspective of a cloud market place.

Module 6. Cloud Service Management

The aim of this module is to take an in-depth exploration of the operational delivery and management of cloud computing and cloud based services. This information is specific to this course and is not currently available in a single central body of knowledge outside of this course. This module does not cover generic details about all ITIL processes or best-practices. Instead, this module focuses in on how to adapt key processes to successfully manage cloud computing and cloud based services in an ITSM environment. Attendees wishing to know more about ITIL® best-practices may take the appropriate ITIL course.

It is to be expected that many organizations already have established some form of IT Service Management (ITSM) and operational processes. It is imperative that organizations look to interface with existing structures and adapt their existing processes and procedures to manage cloud computing and cloud-based services. A key tenant is to reuse current best-practices where possible and adapt and change specific elements required to design, build, manage and retire cloud computing and cloud based services.

Service assurance is a pivotal requirement from customers and consumers of cloud computing and cloud based services and relies on adequate service level management structures. End-to-end service levels and the issues introduced by cloud computing and cloud based services are to be understood. Understanding what DevOps is, and how DevOps works and succeeds in a Hybrid IT environment is a very important aspect of cloud service management. Managing IT configurations and change management in a Hybrid IT environment requires extra special attention and care to get the right outcomes and yield the appropriate results.

Cloud computing brings forth a new and adaptive approach to scaling IT services up and down to meet demand. It also adds complexities so organizations need to ensure they can take advantage of quicker scalability of IT services.

Key Topics

- Cloud Service Management Perspective
- Cloud Service Level Management & Service Assurance
- Dev Op's In a Cloud Environment
- Managing Cloud Service Configurations
- Change Management for Cloud Computing Environments
- Reacting to demand for Cloud Services

Learning Objectives

- (L2) Discuss how service management principles apply to the running of cloud services.
- (L4) Operate cloud services under various types of service level agreements and contracts.
- (L2) Identify how cloud services can reduce unavailability of IT services.
- (L4) Analyze effective demand management across cloud based service models.
- (L2) Describe the basic concept of Dev-Ops.
- (L3) Illustrate the benefits, risks and issues of Dev-Ops within an IT organization.
- (L2) Discuss the reasons for and adaptive approach to change and configuration management.
- (L3) Discover an alternative approach to change and configuration management applicable to cloud based services.
- (L2) Discuss the importance and benefits of off-boarding or retiring cloud services.
- (L3) Show methods for reducing un-needed cloud services in line with decreased demand.
- (L3) Discover how to react to less demand for cloud services.

Module 7. Cloud Service Economics

The aim of this module is to present six different static and dynamic pricing models, not accessible during pre-cloud era, where everybody was focused on licensing the solution and charging for maintenance, implementation and integration services. The procurement and charging of cloud services are reviewed and a cloud cost model applicable to a Hybrid IT environment is introduced.

Various pricing models exist and are applicable when purchasing cloud computing and cloud based services.

Consumer and end-users alike need to understand the challenges faced in the procurement of cloud computing and cloud based services. It is important to know of a number of different ways for dealing with the shift from CAPEX (capital expenditure) to OPEX (operational expenditure). This includes managing and changing the attitudes and behaviours of people both inside and outside of the IT organization. Charging for cloud computing and cloud based services is different than for traditional IT. Therefore cloud service consumers and providers alike need to know and understand the following cost models:

- Traditional Cost Model
- Cloud Service Cost Model
- Hybrid IT Cost Model

Key Topics

- Pricing Models for Cloud Services
- Procurement of Cloud Based Services
- Cloud Service Charging

Learning Objectives

- (L2) Summarize key factors that contribute to the cost of cloud based services.
- (L2) Discuss specific financial aspects and considerations applicable to cloud services.
- (L4) Outline the various pricing models for cloud services.
- (L4) Examine the challenges with purchasing cloud based services.
- (L4) Discover how OPEX is replacing CAPEX and how to deal with this paradigm shift.
- (L4) Analyze different cloud service charging methods.
- (L4) Diagram a Hybrid IT cost model.

Module 8. Cloud Service Governance

This module aims to define, discuss and model corporate governance, governance of IT and governance of cloud computing and cloud based services under a prescribed framework.

Cloud service providers need to examine their current understanding of governance and recognise that governance is fundamentally different to management. This is a very important distinction to make. Cloud service providers need to work under a defined governance framework as well as structures for influencing and defining governance for cloud computing and cloud based services, within an IT and corporate environment.

Understanding the risks that apply to both the provider and consumer in using cloud computing and cloud based services will help shape policy and governance decisions. Additional technical governance, compliance and controls need to be identified, understood, introduced and controlled including activities for establishing cloud governance.

Key Topics

- Basic Governance Definitions
- Cloud Governance Framework
- Cloud Governance Considerations

Learning Objectives

- (L2) Summarize the different governance layers applicable to IT and Cloud Service Management.
- (L2) Recognize the importance applying governance to cloud based services and service delivery.
- (L3) Discuss the difference management and governance.
- (L3) Discover key governance requirements of cloud service provision.
- (L4) Model a governance structure including governance of cloud computing and cloud based services.
- (L3) Discover activities for establishing cloud governance.
- (L2) Identify IT Governance, compliance and controls.

Module 9. Showing the Value of Cloud Services to the Business

This module aims to look at the value of cloud services and also asks a very important question; Why is it so difficult for IT to show the value that IT delivers back to the business?

IT needs to show the organization, its customers and consumers that IT is a strategic enabler and provides value within the organization. One key aspect of this is to link the value of cloud computing and cloud based services to the IT and corporate strategy. Strategy value mapping should be examined and a strategy mapping value hierarchy created, understood and used.

Measuring the value of cloud computing and cloud based services is vital to report on the successful delivery of cloud computing and cloud based services. In addition it is no vital to report if value for money is being achieved and is customer confidence and loyalty being maintained. A balanced scorecard approach is one method for showing the true value of IT in a Hybrid IT environment. Such an approach shows IT strategy linked to business strategy which also delivers and measures business success.

A concise set of cloud computing measurements for IaaS, PaaS and SaaS should be defined, for each service model in use. These measurements are used to measure the value of cloud computing and cloud based services holistically, end-to-end. The IT organizations should aim to create a holistic reporting structure to show the value of IT, cloud computing and cloud based services within a balanced scorecard approach.

Key Topics

- Understanding the Value of Cloud Services
- Linking the Value of Cloud Services to Strategy
- Measuring the Value of Cloud Services

Learning Objectives

- (L2) Identify the importance of showing the value gained from using cloud based services to the organization.
- (L3) Choose between different methods for measuring the value of cloud computing and cloud services to the business.
- (L3) Demonstrate how to link cloud value back to IT strategy.
- (L2) Discuss how to influence business change to accept adoption of cloud services.

Module 10. Popular Service Management Frameworks

This module aims to provide information on numerous cloud computing, IT Service Management and governance frameworks, standards and best-practice references.

This module is not part of the syllabus and will not be examined. It is included as a bonus module to provide information on common IT frameworks and standards which participants can take away and use for future reference.

Key Topics

- Best Practice Frameworks
- ISO Standards
- Governance Frameworks
- Cloud Standards

Learning Objectives

- Name a number of popular and relevant IT frameworks and standards.
- Recall the purpose of the IT frameworks and standards.
- Understand where to find additional information on each listed IT framework and standard.

6. Course & Exam Details

Course Details

Suggested delivery format is instructor led classroom based learning.

Suggested duration: 24 learning hours.

Exam Details

Aspect	Details
Exam Type	Scenario Based, Complex Multiple Choice
Number of Questions	25
Duration	75 minutes
Provisions for additional time relating to language	15 minutes of additional time
Prerequisite	<p>There are no formal prerequisites; however, it is recommended that participants have achieved the Cloud Technology Associate certification (or its equivalent) from the Cloud Credential Council and that participants are conversant with Cloud concepts and vocabulary.</p> <p>Participants further benefit from a strong background in IT service management, who have completed one or more ITIL certifications or who have practical experience in applying ITIL and IT service management best-practices.</p>
Supervised (Proctored)	Yes
Open Book	No
Pass Score	65%
Delivery	Online