

# Scheme to Nurture Cloud Security Literate Personnel

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## Overview

There has always been a worldwide shortage and demand for cybersecurity personnel. The pandemic lockdown saw an increase in cloud usage and greater cloud adoption. Many enterprises pivoted to the cloud to take advantage of its elasticity, scalability and agility to enhance their time to market. The shortage of cloud professionals was dire, causing due diligence to be undertaken hastily, systems developed. In addition, the need for cybersecurity professionals skilled in understanding cloud technology exists but there is currently no process to upskill in cloud security.

## Background: Cloud Security Alliance (CSA)

CSA ([www.cloudsecurityalliance.org](http://www.cloudsecurityalliance.org)) is a not-for-profit organization with the mission to “promote the use of best practices for providing security assurance within cloud computing, and to provide education on the uses of cloud computing to help secure all other forms of computing.” CSA has over 100,000 individual members worldwide. CSA gained significant reputability in 2011 when the American Presidential Administration selected the CSA Summit as the venue for announcing the federal government’s cloud computing strategy.

## Background: Certificate on Cloud Security Knowledge (CCSK)

Since CSA first released CCSK in 2010, thousands of IT and security professionals have taken the opportunity to upgrade their skill sets and enhance their careers by obtaining the CCSK. *Certification Magazine* has listed CCSK at #1 on the Average Salary Survey 2016. *CIO.com*, Top Ten Cloud Computing Certifications, says: “This is the mother of all cloud computing security certifications. The Certificate of Cloud Security Knowledge certification is vendor-neutral, and certifies competency in key cloud security areas.”

[\(https://cloudsecurityalliance.org/education/ccsk/\)](https://cloudsecurityalliance.org/education/ccsk/)

There are several modes of CCSK training; these are:

1. **Self-learning:** The individual downloads CCSK materials (aka Body of Knowledge) from the CSA website; they are available free of charge. Having studied them, he will be well-prepared to take the online CCSK examination.
2. **Self-paced learning:** The individual buys a Learning Management System (LMS) license to gain access to learning materials that pace the individual through the topics.
3. **Classroom-based learning:** A human instructor conducts an in-person training to individuals in a classroom setting, fields questions from and interacts students.
4. **Virtual Instructor-Led Training (VILT):** This mode is the same as (3) but delivered via an online conferencing system (e.g., Zoom).

Mode (4) is prevalent during the pandemic lockdown period where in-person learning situations are discouraged or prohibited. For information on a CSA initiative during COVID-19 Pandemic, please see Annex A.

This proposal seeks to introduce a learning mode between modes (1) and (2). It is based on self-help approach, with guidance from volunteer experts and adopts a pay-forward philosophy.

### **Objective of Proposed Scheme**

The proposal is to create a program of learning, experimentation, presentation and upskill in general cloud technologies but focus on security and primarily use materials from CSA. This will not be specific to any cloud vendor but may use material from multiple cloud vendors as examples or support

- Upon successful completion of time in cohort, members will receive a CCSK examination token for two attempts to pass the CCSK v4
  - o Successful completion:
    - Attendance at least 90% of cohort meetings
    - Presentation of selected modules in CCSK v4 to other cohort members
    - Review and preparation for CCSK – quizzes, etc.
- Guest speakers will be invited, if possible. They can share what are the challenges in the cloud, what they do in the cloud. Somebody working in the cloud to share experience.

Background of the cohort (i.e. pre-requisites)

- They can be in IT or security and building their knowledge in the cloud or have an interest in cloud

### Goals

- Create a cohort that supports each other's learning and growth
- Cohort members are able to pass the CCSK exam
- Cohort members facilitate their own cohort

### Initial Cohort qualifications

- 5-10 members per cohort
- Leaders for the next cohort – need to be comfortable in directing/ facilitating another group
- Have experience in technology or security but are interested in cloud security
- Willing to upskill and apply knowledge to future projects or working groups

### Selection Process

- Individuals apply for selection into cohort
- individuals may be interviewed to determine their interest in cloud technologies
- Selection made by CSA volunteers and a few weeks before commencement

### Tentative Schedule

CSA proprietary

1. Total 16 sessions, first session will cover introduction
2. Each session will be of 2 hours
3. Each of the next 14 sessions (sessions 2-15) will cover each of the modules in CSA's Guidance document
  - a. Cohort member assigned to module will present relevant points in module
  - b. Tie CCM, CAIQ, Top Threats, ENISA to module
  - c. Real world examples of what can go wrong if controls are not present
4. Session 16 - final session
  - a. CCM
  - b. ENISA
  - c. CCSK prep - group to self-help and answer
5. One quiz per session (10 questions) or mock test

CSA Guidance for Critical Areas of Focus in Cloud Computing V 4.0

Domain 1: Cloud Computing Concepts and Architectures

Domain 2: Governance and Enterprise Risk Management

Domain 3: Legal Issues, Contracts and Electronic Discovery

Domain 4: Compliance and Audit Management

Domain 5: Information Governance

Domain 6: Management Plane and Business Continuity

Domain 7: Infrastructure Security

Domain 8: Virtualization and Containers

Domain 9: Incident Response

Domain 10: Application Security

Domain 11: Data Security and Encryption

Domain 12: Identity, Entitlement, and Access Management

Domain 13: Security as a Service

Domain 14: Related Technologies

Points:

- Attendance at each session – 5 points (total = 80)
- 3 presentations to cohort – 10 (total = 30)
- 16 quizzes – 5 points (total = 80)
- Cohort total = 190 (must have 171 or 90% of total to receive token for CCSK exam)

Target group to focus on:

1. Women or girls in Cloud Security
2. Women wanting to get back into the work force
3. Unemployed PMET affected by pandemic
4. Polytechnic ICT students after ROD from NS
5. ... any other groups

A cohort can comprise individuals or groups of individuals (listed above) or a combination thereof

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## **Annex A - CCSK Initiative During COVID-19 Pandemic**

In the March to June 2020 period, CSA APAC partnered with government agencies in Malaysia, Singapore, Thailand and Philippines to provide complimentary Certificate of Cloud Security Knowledge (CCSK) Learning Management System (LMS) licenses to over 500 IT professionals to continue with learning during the COVID-19 work from home (WFH) arrangement. The government agencies that participated were Infocomm Media Development Authority of Singapore (IMDA), Malaysia Digital Economy Corporation (MEDC), Digital Economy Promotion Agency (DEPA) of Thailand, and Department of ICT (DICT) of Philippines.

The modus operandi was as follows: Each government agency decided on a set of selection criteria to qualify the LMS license recipients based on its objectives for the ICT sector. Some chose to focus on private sectors, others on public sectors, ICT companies, user organisations, university lecturers, etc. The LMS licenses were awarded from the list of applicants that the government agency invited, when demand exceeded the supply of licenses. In each country, the first tranche of 100 licenses will be replenished with another 100, once all of them were awarded.

Once the LMS license recipients have completed the online learning modules, they would have learnt about fundamentals of cloud security, operations and governance issues. They would be prepared to take the CCSK examination, if they so desire.

Indeed, MDEC saw the value in encouraging Malaysian recipients who produced as proof their certificate of CCSK completion to obtain the CCSK qualification by giving them a free CCSK token each purchased from CSA. This step went beyond the original objective to equip such individuals to harness the cloud paradigm when economic activities resume. In Singapore, recipients would tap on the IMDA CITREP+ scheme to claim reimbursement for their CCSK exam token purchase. There were no such schemes in the Philippines and Thailand.

The LMS licenses provided by CSA without charge, if procured commercially, are worth US\$ 200,000 in total; they not only provided the recipients with new skills and competency, the gift did not deplete the recipients' pockets in any way but ensured time stuck at home was spent wisely and productively.