ESKITP902301

Design of Network Architectures and Technology

Overview

This sub-discipline Network Design (902) is concerned with the competencies required for network design in order to ensure that the business has a fit for purpose network infrastructure system. This includes overall network system design and the selection of hardware and software components that will meet the organisations requirements for the intended dimension of network traffic. A typical network will include any type of transmission medium and interface to a wide variety of wired and wireless devices which will support the delivery of products and services.

This sub discipline requires not only technical knowledge of individual hardware and software network products and services (or any combination of these) but also the architectural principles, standards and protocols that must be applied within the design of the network infrastructure. It is envisaged that those involved in network design should have a broad knowledge of all aspects of networking in order to produce the network designs, policies and documentation covering all transmission mediums in order to support the business requirements and strategy. This may include all aspects of communications infrastructure, internal and external, mobile, public and private, intranet and internet.

Working in the associate professional network design role (9023) is primarily focussed on assisting the production of overall architectures, topologies, configuration data and networking technology within the organisation.

Performance criteria

You must be able to:

1. develop network designs from a well-defined specification to meet the organisations requirements for the intended dimension of network traffic
2. incorporate appropriate security products and processes into network designs in line with organisational requirements
3. identify all relevant design and configuration principles and standards in network infrastructure designs in line with organisational procedures
4. apply the processes, tools and techniques to network infrastructure design in line with organisational procedures
5. gather and collate relevant information contained within the service catalogue, service level agreements, service improvement and service quality plans for network infrastructure design in line with organisational procedures
6. document network infrastructure designs and plans for network infrastructure components in line with organisational procedures
7. assess the suitability of infrastructure components'

Knowledge and understanding

You need to know and understand:

1. the fundamental concepts of network design
2. the fundamental concepts of data communications
3. the systems development lifecycle and how this is applied to the design of network architectures
4. how to source, gather and collate information from service level agreements in order to assess the suitability of infrastructure components
5. relevant internal policies, approaches and standards relevant to infrastructure design and their deliverables
6. the fundamental steps involved in carrying out routine data management tasks
7. information security and assurance policies directly relevant to the design of infrastructure
8. how to select appropriate hardware and software components
9. the different types of transmission medium and interface
10. the wide range of network, including wired and wireless

ESKITP902301

Design of Network Architectures and Technology

Developed by	e-skills
Version Number	1
Date Approved	December 2014
Indicative Review Date	April 2017
Validity	Current
Status	Original
Originating Organisation	e-skills UK
Original URN	ESKITP902301
Relevant Occupations	Information and Communication Technology; Information and Communication Technology Officer; Information and Communication Technology Professionals
Suite	IT and Telecoms
Keywords	Network Design, Network Infrastructure