# Network design NTDS

Designing communication networks to support strategic and operational requirements and producing network strategies, architectures, policies and related documentation.

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| **Guidance Notes:**  Network design covers all aspects of the communications infrastructure, including, but not limited to, networks that are wired or wireless, digital or analogue, virtual or physical, local area, wide area, mobile/cellular, and any other defined protocols and scales of operation. In the cloud context, network design also includes designing virtual network topologies, hybrid cloud connectivity, and leveraging cloud-native networking services to ensure scalability, security, and performance.  Activities may include, but are not limited to:   * analysing business requirements and translating them into network design specifications * designing network topologies, security measures, and connectivity solutions for various environments * defining network configurations and policies using code * planning for network scalability, redundancy, and high availability, including in cloud-based networks * defining network infrastructure as code to enable automation and streamline provisioning and management * designing disaster recovery and business continuity solutions to ensure network resilience and minimize downtime * collaborating with stakeholders to ensure network designs align with business objectives and industry best practices |

## Level 2

Assists with defining configurations for networks and network components under routine supervision.   
Follows established network architectures and standards.   
Assists in documenting network configurations and producing detailed network specifications under guidance.

## Level 3

Specifies the technical configurations and components required for a small network or a network segment in a more complex infrastructure.  
Follows organisational architectures and standards.

## Level 4

Designs specific network components using agreed architectures, design standards, patterns and methodology.  
Translates logical designs into physical designs that meet specified operational parameters for capacity and performance.  
Reviews and verifies network designs against non-functional requirements, including validation and error correction procedures, access, security and audit controls.  
Contributes to the development of recovery routines and contingency procedures. Contributes to alternative network architectures, networking topologies and design options.

## Level 5

Produces, or approves network providers', network architectures, topologies and configuration databases for own area of responsibility.  
Specifies design parameters for network connectivity, capacity, speed, interfacing, security and access, in line with business requirements.  
Assesses network-related risks and specifies recovery routines and contingency procedures.  
Creates multiple design views to address the different stakeholders' concerns and to handle both functional and non-functional requirements.

## Level 6

Takes responsibility for major aspects of network specification, standards, technologies and overall network design models within the organisation.  
Produces network design policies, principles and criteria covering connectivity, capacity, interfacing, security, resilience, recovery and access.