



Australian Government

ICTTEN623 Design and manage internet protocol TV in a service provider network

Release: 1

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Modification History

Release	Comments
Release 1	This version first released with ICT Information and Communications Technology Training Package Version 7.0.

Application

This unit describes the skills and knowledge required to design a multiprotocol label switching (MPLS) network for internet protocol TV (IPTV) and manage delivery of IPTV services. This includes core and access networks for the service provider.

It applies to individuals with outstanding technical skills, including designers and installers of Next Generation Networks (NGN), IP networks providing fast internet, voice over internet protocol (VoIP), IPTV and internet TV services.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Telecommunications Networks Engineering

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Produce and evaluate design requirements for an IPTV network	1.1 Analyse major video models and the impact video challenges have on design of an IPTV network 1.2 Evaluate IPTV against other competing TV broadcast technologies to determine optimum design approach 1.3 Produce the topology of an IPTV network, showing network architecture from IPTV standards' bodies and determine design requirements 1.4 Plan dimensioning of network parameters for multicast and unicast video delivery over broadband in a service provider network

ELEMENT	PERFORMANCE CRITERIA
2. Design an IPTV network for video on demand (VoD) delivery	2.1 Design the content delivery system (CDS) to cache IPTV content in each major metropolitan area for broadcast or streaming VoD models to eliminate performance variability introduced by internet transport or core peering relationships 2.2 Design a video network to provide VoD loads with network solutions using VoD design requirements 2.3 Design a VoD application to meet bandwidth requirements and quality of service (QoS) requirements for commercial viability of IPTV network
3. Design and configure an MPLS IPTV network to meet business requirements	3.1 Determine IP-MPLS network design requirements 3.2 Investigate factors that affect design considerations and ways they can be minimised 3.3 Produce the design topology of a MPLS network to provide secure methods of transporting IP packets using layer 2 protocols 3.4 Design a MPLS layer over the IP networking structure, to combine efficiency of multicast protocols with traffic engineering (TE) facilities to enable fast packet forwarding for real time video streaming applications
4. Manage delivery of IPTV services	4.1 Determine operational processes required to support IPTV by operators 4.2 Produce a plan of the management and customer support model, including strategies dealing with delivery of VoD issues 4.3 Produce a plan of a video network using video delivery strategies to deliver optimum average revenue per user (ARPU) to serve the demographic of an area and the nature of an operator's business 4.4 Manage and monitor video across the network using a management tool

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

SKILL	DESCRIPTION
Reading	Organises, evaluates and interprets standards documentation to properly evaluate design requirements
Writing	Prepares workplace documentation, including diagrammatic material, incorporating technical language to communicate complex information clearly and effectively

SKILL	DESCRIPTION
Planning and organising	• Uses formal processes to identify key information and issues, evaluate alternative strategies, anticipate consequences and consider implementation issues and contingencies • Experiments with possibilities of new systems, devices and applications before conducting a more sophisticated analysis of benefits and costs
Problem solving	• Uses formal, analytical and lateral thinking techniques for identifying issues, generating and evaluating possible solutions
Technology	• Uses digital tools to access and organise complex data and analyse multiple sources of information for strategic purposes

Unit Mapping Information

Supersedes and is equivalent to ICTTEN612 Design and manage internet protocol TV in a service provider network.

Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=a53af4e4-b400-484e-b778-71c9e9d6aff2>

Assessment Requirements for ICTTEN623 Design and manage internet protocol TV in a service provider network

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Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- produce and evaluate design requirements for at least two internet protocol TV (IPTV) networks.

In the course of the above, the candidate must:

- design IPTV network for voice on demand (VoD) delivery
- design and configure a multiprotocol label switching (MPLS) IPTV network to meet business requirements
- manage delivery of IPTV services.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- required legislation, codes, company work practices, regulations and standards, workplace health and safety (WHS) requirements for scoped work
- competing video delivery over broadband networks
- current industry-accepted IPTV hardware and software products
- networking technologies including:
 - network operating systems
 - internet protocol (IP) networks
 - MPLS networks
- IPTV transmission technologies and protocols
- workplace documentation, including diagrammatic material
- functions and features of:
 - management and customer support plans
 - video network plans.

Assessment Conditions

Skills in this unit must be demonstrated in a workplace or simulated environment where the conditions are typical of those in a working environment in this industry.

This includes access to:

- protocols, configuration documents, management tools and standards
- network and demographic trends, and customer demand data.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=a53af4e4-b400-484e-b778-71c9e9d6aff2>