



Australian Government

ICTTEN424 Install and configure internet protocol TV in a service provider network

Release: 1

ICTTEN424 Install and configure internet protocol TV in a service provider network

Modification History

Release	Comments
Release 1	This version first released with ICT Information and Communications Technology Training Package Version 2.0.

Application

This unit describes the skills and knowledge required to design and connect a multi-protocol label switching (MPLS) network for internet protocol TV (IPTV). This includes secure core and access networks for the service provider.

It applies to individuals who interpret technical information accurately and work proficiently with information communication technology (ICT). Technical staff installing an internet protocol (IP) service provider network for delivery of emerging technologies for IPTV using multicast (broadcast) and unicast video on demand (VoD) streaming complete this work.

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

Unit Sector

Telecommunications – 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. Prepare to implement IPTV service provider	1.1 Obtain and clarify work health and safety (WHS) requirements and risk control measures and procedures for a given work area with appropriate personnel 1.2 Use topology of an IPTV network and design plans to locate network elements for video over broadband 1.3 Select network elements to provide optimum video delivery service

ELEMENT	PERFORMANCE CRITERIA
	1.4 Obtain configuration instructions for network elements
2. Implement IPTV network to meet business requirements	2.1 Configure an IP-MPLS core network overlaying the IP network to deliver IPTV 2.2 Implement VoD application to meet bandwidth requirements and quality of service (QoS) requirements for commercial viability of IPTV network 2.3 Install and configure video service routers for content delivery system (CDS) applications to support TV streaming and internet streaming, with session shifting for follow-me or mobile video facility 2.4 Produce addressing scheme and protocols required for IP multicasting used in the IPTV network 2.5 Configure security measures in IPTV network to protect against security threats 2.6 Configure label switch routers (LSR) to provide secure methods of transporting IP packets using layer 2 protocols in an MPLS network 2.7 Configure MPLS-TE (traffic engineering) to provide routing on diverse paths to avoid congestion and guarantee bandwidth services 2.8 Troubleshoot network according to manufacturer's specifications and enterprise procedures
3. Build and configure CDN architecture network	3.1 Build content delivery network (CDN) architecture overlaying routing and switching architecture of an IP network to deliver internet TV to internet devices 3.2 Use routing and switching infrastructure to enable CDN share characteristics of each element to produce network functionality 3.3 Install and configure web cache communication protocol (WCCP) on router to redirect traffic flows in real-time to reduce transmission costs and download times
4. Complete and document network installation	4.1 Restore worksite to safe condition according to established safety procedures 4.2 Record and store essential installation information according to enterprise procedures 4.3 Notify appropriate personnel of completion of the task according to enterprise procedures

Foundation Skills

This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.

Skill	Performance Criteria	Description
Reading	1.1, 2.8, 4.2, 4.3	Recognises and interprets enterprise procedures, manuals and technical specifications to determine job requirements
Writing	4.2, 4.3	- Uses clear, specific and industry-related terminology to develop network documentation and maintain network records - Writes concisely when communicating with relevant personnel
Oral Communication	1.1, 4.3	- Liaises closely with personnel to determine specific installation and safety requirements - Uses listening and questioning skills to confirm understanding for requirements
Numeracy	2.4, 3.3	Interprets technical data to produce IP addressing schemes and determine cost efficiencies
Navigate the world of work	1.1, 2.8, 4.1-4.3	- Takes personal responsibility for adherence to legal and regulatory responsibilities relevant to own work, and draws attention to any issues that may affect self or others - Recognises and follows organisational procedures and protocols and meets expectations associated with own role
Get the work done	1.2-1.4, 2.1, 3.1-3.3, 2.2-2.8	- Understands key principles and concepts underpinning design and operation of digital systems and tools, and applies these as required including using industry-standard troubleshooting - Takes responsibility for planning and organising own workload, identifying benchmarks and scope for projects

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status

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ICTTEN424 Install and configure internet protocol TV in a service provider network	ICTTEN4215A Install and configure internet protocol TV in a service provider network	Updated to meet Standards for Training Packages.	Equivalent unit

Links

Companion Volume implementation guides are found in VETNet -

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

Assessment Requirements for ICTTEN424 Install and configure internet protocol TV in a service provider network

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Performance Evidence

Evidence of ability to:

- install relevant network hardware and software
- configure and test internet protocol television (IPTV) network according to specified guidelines
- configure label switch routers (LSR) in an multi-protocol label switching (MPLS) network
- build and configure content delivery network (CDN) architecture network
- implement secure network.

Note: If a specific volume or frequency is not stated, then evidence must be provided at least once.

Knowledge Evidence

To complete the unit requirements safely and effectively, the individual must:

- explain competing video delivery over broadband networks
- summarise current industry-accepted hardware and software products
- outline networking technologies incorporating detailed knowledge of network operating systems and IP networks
- describe transmission technologies and protocols including:
 - border gateway protocol (BGP)
 - enhanced interior gateway routing protocol (EIGRP)
 - flash
 - hypertext transfer protocol (HTTP)
 - internet group management protocol (IGMP)
 - open shortest path first (OSPF)
 - real time streaming protocol (RTSP)
 - routing information protocol (RIP)
 - web cache communication protocol (WCCP) operations.

Assessment Conditions

Gather evidence to demonstrate consistent performance in conditions that are safe and replicate the workplace. Noise levels, production flow, interruptions and time variances should be typical of those experienced in the telecommunications networks engineering field of work and include access to:

- a site where installation and configuration of an IPTV network may be conducted
- equipment currently used in industry
- information on different protocols
- relevant technical information, legislative requirements and other site and project-related documentation.

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

Links

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