

Module Title:	Connecting Networks
Module Code:	05H
Level:	6
Credits:	15
Pre-Requisites:	Networks 3: Scaling Networks

Module Description:

The aim of this module is to identify and configure remote access devices to connect to enterprise-wide computer networks, and using appropriate methodologies and tools troubleshoot large-scale multi-protocol networks. The module introduces students to common WAN technologies, network address translation (NAT) and port address translation (PAT).

Indicative Content:

- Wan protocols
 - IPv6 (including: protocols, dual stack, tunnelling, etc)
 - PPP Architecture and Network Address Translation(NAT)
 - Configuration and verification of WAN protocols on Cisco routers
 - Configuration and verification of Access Control Lists
 - Troubleshooting WAN technologies in Wide Area Networks
 - Router and switch verification and testing
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Learning and Teaching Methods:

Classroom, workshop and labs. Cisco online materials for self-study

Specific Learning Resources:

Computers over which learners have admin rights, routers, switches, cabling.
Network simulation software

Bibliography

Highly Recommended

Cisco NetSpace: Introduction to Networks, <http://www.netacad.com>

Cisco Networking Academy (2014) *Connecting Networks Companion Guide*. USA: Cisco Press

Recommended

Sadiku, M. and Musa, S. (2011) *Computer Communication for Metropolitan and Wide Area Networks (Computer Science, Technologies and Applications)* USA: Nova Science Publisher Inc.

Module Learning Outcomes

Subject Specific Learning Outcomes

On successful completion of this module you will be able to:

LO 1 | Compare and contrast the WAN technologies

LO 2 | Evaluate the security mechanisms for remote network access

LO 3 | Apply Network Address Translation for given network requirements

LO 4 | Evaluate and apply appropriate troubleshooting methodologies in WAN networks

Assessment Title or element	Weighting (%)
Assignment: report documenting the design of a wide area network with evaluation (includes 10% for demonstration) (2500 words) [end semester]	100%

Information correct at point of publication.