

This guide shows the various resources which are available to prepare for the ESC-N (Electronic Systems Certified Networking Specialist) exam, and is focused on online learning and CEDIA books. Online courses with the “LES” extension in the course code are “lessons” (shorter presentations with one or two learning objectives, often pulled from the larger, more comprehensive eCourses). Additional resources to enhance your learning are shown in the last section. Advanced face-to-face training is available, including classes at EXPO with extensive hands-on training. www.cedia.net/train/in-person-training



KEY TO ABBREVIATIONS:

F-RES = [CEDIA FUNDAMENTALS OF RESIDENTIAL ELECTRONIC SYSTEMS](#), FOLLOWED BY /#, INDICATING CHAPTER NUMBER

A-RES = [CEDIA ADVANCED RESIDENTIAL ELECTRONIC SYSTEMS](#), FOLLOWED BY /#, INDICATING CHAPTER NUMBER

DOMAIN I: NETWORK INFRASTRUCTURE

Task 1: Install communications cabling in the home using industry standards and recommended practices in order to create a robust, reliable network infrastructure.

General	F-RES/6 A-RES/2
Cabling	EST233 Network Cabling Infrastructure

CEDIA EXAM PREP RESOURCES

Task 2: Perform the required level of cabling test procedures in order to ensure system performance meets or exceeds design specifications and client expectations.	
General	F-RES/7 A-RES/2
Mapping, Verification, Qualification, Certification	EST233 Network Cabling Infrastructure
High Performance Infrastructure	Webinar: Gigabit+ Infrastructure: Building the Future with Fiber Optic and Cat6a
Task 3: Secure the infrastructure by evaluating and fortifying all network cabling locations (patch panels, wiring drops, NID, etc.) in order to ensure client privacy and information security.	
General	A-RES/2
Termination, Patching, Physical Infrastructure	EST233 Network Cabling Infrastructure
Task 4: Design a wired network infrastructure using appropriate communications cabling that meets the performance requirements of the client in order to ensure long term operation and reliability.	
General	A-RES/10,11,12
Bandwidth, PoE, and Alternative Distribution Methods	EST233 Network Cabling Infrastructure
DOMAIN II: NETWORK CONFIGURATION	
Task 1: Understand the OSI model, how it applies to the network, and how to use this knowledge to efficiently and effectively troubleshoot and resolve network related issues.	
General	A-RES/10
Fundamentals	F-RES/13
OSI and Troubleshooting	EST243 IP for Technicians

CEDIA EXAM PREP RESOURCES

Task 2: Implement a Local Area Network using IP addressing best practices, sub-netting, and routing in order to ensure proper network functionality and long term reliability.

General	A-RES/10,11,12 EST243LES2 MAC Addresses
LAN Setup Fundamentals	EST243 IP for Technicians

Task 3: Implement a network that meets the performance requirements of all client devices in order to ensure proper functionality and long term reliability.

General	A-RES/10,11,12
Additional Performance Requirements	EST243 IP for Technicians

DOMAIN III: WIRELESS NETWORKING

Task 1: Survey and analyze the RF spectrum using available wireless networking tools in order to ensure performance and troubleshoot problems in a residential environment.

General	A-RES/11
Site Surveys and RF Spectrum Analysis	EST253 Wireless Network Technologies

Task 2: Apply knowledge of existing wireless communication protocols (802.11a/b/g/n) in order to specify the proper hardware in a residential wireless networking application.

General	A-RES/11 EST253LES2 Wireless Technologies
Wireless Protocols and Components	EST253 Wireless Network Technologies

CEDIA EXAM PREP RESOURCES

Task 3: Ensure reliability, security, and consistent performance of the wireless portion of a residential network by proper configuration of the SSID, channel, encryption standards and security settings.

General	A-RES/11,12 EST253LES1 WiFi Channel Selection
Channel selection, encryption, and security	EST253 Wireless Network Technologies

Task 4: Optimize the wireless network by implementing multiple access points and wireless network controllers in order to accommodate mobile devices as control interfaces and media streaming sources.

General	A-RES/11,12
Wireless Controllers, Roaming, Access Points	EST253 Wireless Network Technologies
Optimizing for Mobile Devices	White Paper: Mobile Devices Pt.2: Ten Steps to Creating a Robust Wireless Environment

DOMAIN IV: NETWORK DESIGN

Task 1: Implement network segmentation within a residential setting through the use of VLANs and QoS in order to maximize performance of multiple client devices.

General	A-RES/12
VLANs and QoS	

Task 2: Configure a home network with remote access through the use of VPN and port management in order to safeguard client information and allow interaction from external locations.

General	A-RES/12
DNS, Port Forwarding, and VPNs	

CEDIA EXAM PREP RESOURCES

Task 3: Secure a home network using available hardware and software tools in order to protect client privacy and information from internal and external threats.

General	A-RES/10,12
Network Security Basics	F-RES/13
Network Security Best Practices	White Paper: Network Security Best Practices
Hardware, Software, and Wetware to Ehnance Security	EST243LES1 Network Security
Network Security	Webinar: Protecting Customer Information by Securing the Network

DIG DEEPER

YOU MAY WISH TO EXPLORE SOME TOPICS IN MORE DETAIL IN ORDER TO GAIN MORE ADVANCED KNOWLEDGE, OR PREPARE FOR ADDITIONAL CERTIFICATIONS. SHOWN HERE ARE SOME ADDITIONAL RESOURCES WHICH MIGHT INTEREST YOU.

Networking Basics	Document: OSI Model
Infrastructure	Document: Fiber Optic Bend Radius Document: Fiber Optic Cable Classifications Document: Fiber Optic Cable Construction Document: Fiber Optic Cable: Transmission Wavelengths Document: Fiber Optic Quick Connectors Document: 10/100 Ethernet on Cat5e
Fiber Standard	Document: EIA Fiber Color Chart
Performance Qualification	Document: Far End Crosstalk Diagram
Network Security Threats	Webinar: Hacking Home Automation
Wireless	Document: 802.11 WiFi 2.4Ghz Overlap Diagram Document: Wireless Signal Strength Document: Attenuation of Wireless Signals by Construction Materials
Emerging Trends	Webinar: Internet of Things: The Connected Device Revolution