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## Getting Started with HP Wireless Networks

**Duration: 1 Day    Course Code: 00239674**

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### Overview:

The Getting Started with HP Wireless Networks Instructor Led training (ILT) helps network technicians understand the wireless concepts they need to know before attending HP A-Series Networking Technologies (ILT) and HP E-Series Networking Technologies (ILT). Specifically, the course focuses on the 802.11 standards used to implement wireless networks and the security options used to protect wireless access and transmissions. In addition, this course introduces network technicians to the HP A-Series wireless products, which are designed for data centers and enterprises, and the E-Series wireless products, which are designed for small-to-medium businesses (SMBs).

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### Target Audience:

Professionals who deploy SMB and enterprise-edge solutions based on HP technologies, including HP reseller systems engineers, customer IT staff, HP system engineers, HP services field and call center support engineers.

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### Objectives:

- Describe the main features, advantages, and disadvantages of the 802.11 a, b, g, and n standards
  - Describe appropriate deployments for various 802.11 standards
  - Describe WLAN architecture options (such as standalone, controlled, and optimized WLAN)
  - Describe the security challenges created by wireless networks
  - Describe the mobility needs of SMBs
  - Describe the HP E-Series wireless products
  - Explain how E-Series solutions meet the needs of SMBs
  - Compare and contrast the mobility needs of SMBs and enterprises
  - Describe the HP A-Series wireless solutions and their roles in the enterprise wireless network
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### Prerequisites:

### Testing and Certification

#### Recommended preparation for exam(s)

- HP AIS - Network Infrastructure [2011]
  - HP AIS - Network Infrastructure [2011] - upgrade from AIS - ProCurve Networking [2004] & [2006]
  - HP AIS - Network Infrastructure [2011] - upgrade from AIS - ProCurve Networking [2008] & AIS - HP ProCurve Networking [2010]
  - HP AIS - Network Infrastructure [2011] - upgrade from Cisco/3Com/H3C
  - HP AIS - Network Security [2011]
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## Content:

### **Module 1: Wireless LAN Technology**

- Need for wireless networks
- Overview of 802.11 standards
- Definition of Physical and Data Link layers
- RF bands and channels
- RF bands
- Channels
- Modulation schemes and advertised transmission speeds
- Modulation schemes
- Advertised transmission speeds
- 802.11b, the first widely adopted 802.11 standard
- Adding speed with 802.11a
- Providing both speed and compatibility with 802.11g
- Dramatically increasing performance with 802.11n
- 802.11n and MIMO
- Approximate spectral placement of channels in the 2.4 GHz range
- Approximate spectral placement of channels in the 5.0 GHz range
- 802.11n channel bonding
- Comparison of 802.11a, b, g, and n
- 802.11a
- 802.11b
- 802.11g
- 802.11n
- 802.11a, b, g, or n?
- Activity: Case study
- Data rate versus actual throughput
- Data rate and signal strength
- Shaping the wireless signal
- Three dimensions

### **Module 2: Basics of WLAN Configuration**

- Types of wireless networks
- Ad hoc mode
- Infrastructure mode
- In-cell relay mode
- BSS and BSSID
- ESS and ESSID
- WLAN
- Open versus closed systems
- Active and passive scanning
- Active scanning
- Passive scanning
- Preparing to connect
- 802.11 authentication and association process
- Step 1: authentication
- Step 2: 802.11 association
- Optional step: supplemental authentication
- Open-system authentication
- Shared-key authentication
- Limitations of shared-key authentication
- 802.11 association
- Activity: Wireless devices and WLAN architectures
- Standalone (autonomous) and controlled APs

### **Module 3: WLAN Security Basics**

- Unsecured wireless networks
- Authentication, data privacy, and data integrity
- Security options overview
- MAC-Auth
- MAC-Auth—Advantages and disadvantages
- Advantages
- Disadvantages
- WEP
- WEP—Advantages and disadvantages
- Advantages
- Disadvantages
- Activity: Jeopardy information review
- Development of WPA and WPA2
- Authentication options for WPA and WPA2
- WPA/WPA2-PSK
- WPA/WPA2-PSK—Advantages and disadvantages
- Advantages
- Disadvantages
- WPA/WPA2 with 802.1X
- WPA/WPA2 with 802.1X—Advantages and disadvantages
- Advantages
- Disadvantages
- Web-Auth
- Web-Auth—Advantages and disadvantages
- Advantages
- Disadvantages
- Activity: Wireless security options at a glance

Wireless security options quiz

### **Module 4: HP E-Series Wireless Solutions for SMBs**

- Activity: SMB wireless requirements
- HP E-Series wireless products
- HP E-Series MultiService Mobility (E-MSM) APs and controllers
- Activity: HP E-MSM APs and controllers
- Optimized WLAN architecture
- HP E-MSM317
- HP E-MSM415 RF Security Sensor
- HP E9552, E9152, E8760, E7760, and E-M110 APs
- E-M111 Client Bridge

### **Module 5: HP A-Series Wireless Solutions for the Enterprise**

- Activity: Enterprise wireless requirements
- HP A-Series controllers
- Unified wireless and wired network
- Advanced features
- Types of A-Series WLAN controllers
- Activity: HP A-WA2x00 Series APs
- HP wireless bridges

- Access controllers and controlled APs
  - Wireless bridge
  - WLAN architectures
  - Standalone WLAN architecture
  - Centralized WLAN architecture
  - Optimized WLAN architecture
  - Powering wireless devices through PoE
  - PoE support in HP switches
  - Advantages of using PoE and PoE
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### Further Information:

For More information, or to book your course, please call us on Head Office +254 713 027 191

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