



# DELL EMC NETWORKING W-330 SERIES ACCESS POINTS

## 802.11ac Wave 2 that scales up to multi-gig Ethernet

Multi-functional 330 series access points (W-AP334, W-AP335, W-IAP334, and W-IAP335) provide unprecedented Gigabit data speed and user experience for mobile devices and applications in a digital workplace. With the support of NBase-T Ethernet (2.5Gbps), 330 Series APs allow enterprises to well leverage their wired network infrastructures while eliminating the potential wired backhaul bottleneck.

With a maximum concurrent data rate of 1,733 Mbps in the 5GHz band and 800 Mbps in the 2.4 GHz band (for an aggregate peak data rate of 2.5Gbps), 330 Series APs deliver best-in-class next-generation .11ac Wi-Fi infrastructure that is ideal for lecture halls, auditoriums, public venues and high-density office environments.

The high performance and high density 802.11ac 330 Series APs support 160MHz channel bandwidth (VHT160), multi-user MIMO (MU-MIMO) and four spatial streams (4SS). They provide simultaneous data transmission to multiple devices, maximizing data throughput and improving network efficiency.

The 330 Series APs include the patent-pending enhanced ClientMatch technology that extends the client steering technology with MU-MIMO client awareness. They automatically identify MU-MIMO capable mobile devices and steers those devices to the closest MU-MIMO capable Dell access point. By grouping MU-MIMO capable mobile devices together, the network starts taking advantage of the simultaneous transmission to these devices, increasing its overall capacity. These dynamic roaming policies that are based on device types, help customers achieve the best WLAN performance in a mixed device environment during the technology transition period.

The 330 Series APs have an integrated Bluetooth Beacon that simplifies the remote management of a network of largescale battery-powered beacons while also providing advanced location and indoor way finding, and proximity-based push notification capabilities. It enables businesses to leverage mobility context to develop applications that will deliver an enhanced user experience and increase the value of the wireless network for organizations.

### Unique benefits

- Dual Radio 802.11ac Access Point with Multi-User MIMO
  - Supports up to 1,733Mbps in the 5GHz band (with 4SS/VHT80 or 2SS/VHT160 clients) and up to 800Mbps in the 2.4 GHz band (with 4SS/VHT40 clients).
- Antenna polarization diversity for optimized RF performance
  - Each 5 GHz radio chain has a switch and two antennas
  - Software controlled; Horizontally and vertically polarized
- Uplink port that scales up to 5Gbps
  - Supports up to 5Gbps with NBase-T Ethernet compatibility
  - Backwards compatible with 100/1000Base-T
  - Adds support for hitless PoE failover between the uplink port and the secondary 1000Base-T port when both ports are powered
- Built-in Bluetooth Low-Energy (BLE) radio
  - Enables location based services with BLE-enabled mobile devices receiving signals from multiple Dell Beacons at the same time.
- Advanced Cellular Coexistence (ACC)
  - Minimizes interference from 3G/4G cellular networks, distributed antenna systems and commercial small cell/femtocell equipment.
- Hitless POE failover
  - Sources POE power from both Ethernet ports, with seamless transition in case of failure.
- Quality of service for Unified Communication apps
  - Supports priority handling and policy enforcement for unified communication apps, including Skype for Business with encrypted videoconferencing, voice, chat and desktop sharing.
- RF Management
  - Adaptive Radio Management™ (ARM) technology automatically assigns channel and power settings, provides airtime fairness and ensures that APs stay clear of all sources of RF interference to deliver reliable, high-performance WLANs
  - 330 Series APs and IAPs can be configured to provide part-time or dedicated air monitoring for spectrum analysis and wireless intrusion protection, VPN tunnels to extend remote locations to corporate resources, and wireless mesh

connections where Ethernet drops are not available.

- Spectrum analysis
  - Capable of part-time or dedicated air monitoring, the spectrum analyzer remotely scans the 2.4GHz and 5GHz radio bands to identify sources of RF interference.
- Intelligent app visibility and control
  - AppRF technology leverages deep packet inspection to classify and block, prioritize or limit bandwidth for over 1,500 enterprise apps or groups of apps.
- Security
  - Integrated wireless intrusion protection offers threat protection and mitigation, and eliminates the need for separate RF sensors and security appliances.
  - IP reputation and security services identify, classify, and block malicious files, URLs and IPs, providing comprehensive protection against advanced online threats.
  - Integrated Trusted Platform Module (TPM) for secure storage of credentials and keys.
  - SecureJack-capable for secure tunneling of wired Ethernet traffic.
- Intelligent Power Monitoring (IPM):
  - Enables the AP to continuously monitor and report its actual power consumption and optionally make autonomous decisions to disable certain capabilities based on the amount of power available to the unit.
  - What capabilities to disable and in what order, is configurable in software
  - For the 330 Series Access Points, the IPM power-save feature applies when the unit is powered by a POE source. By default, the USB interface will be the first feature to turn off if AP power consumption exceed the available power budget.

### Choose your operating mode

330 Series APs offer a choice of operating modes to meet your unique management and deployment requirements.

- Controller-managed mode - When managed by Dell networking W-Series mobility controllers, 330 Series APs offer centralized configuration, data encryption, policy enforcement and network services, as well as distributed and centralized traffic forwarding.
  - Instant mode - In Dell Instant mode, a single IAP automatically distributes the network configuration to other IAPs in the WLAN. Simply power-up one IAP, configure it over the air, and plug in the other IAPs - the entire process takes minutes. If WLAN requirements change, a built-in migration path allows the 330 Series instant APs to become part of a WLAN that is managed by a Mobility Controller.
  - Remote AP (RAP) for branch deployments
  - Air monitor (AM) for wireless IDS, rogue detection and containment
  - Spectrum analyzer, dedicated or hybrid, for identifying sources of RF interference
  - Secure enterprise mesh\*
- \* Available in later deployments

### 330 series specifications

- W-AP334 and W-IAP334
  - 802.11ac – 5GHz 4x4 MIMO (1,733Mbps max rate) and 2.4GHz 4x4 MIMO (800Mbps max rate) radios, with a total of four dual-band RP-SMA connectors for external antennas
- W-AP335 and W-IAP335
  - 802.11ac - 5GHz 4x4 MIMO (1,733Mbps max rate) and 2.4GHz 2x2 MIMO (800Mbps max rate) radios, with a total of twelve integrated omni-directional downtilt dual-band antennas

### Wi-Fi radio specifications

- AP type: Indoor, dual radio, 5GHz 802.11ac 4x4 MIMO and 2.4GHz 802.11n 4x4 MIMO
  - In addition to 802.11n, the 2.4GHz radio supports all 802.11ac features as well (proprietary extension)
- Software-configurable dual radio supports 5GHz (Radio 0) and 2.4GHz (Radio 1)
- 5GHz:
  - Four spatial stream Single User (SU) MIMO for up to 1,733Mbps wireless data rate to individual 4x4 VHT80 or 2x2 VHT160 client devices
  - Four spatial stream Multi User (MU) MIMO for up to 1,733Mbps wireless data rate to up to three MU-MIMO capable client devices simultaneously
- 2.4GHz: Four spatial stream Single User (SU) MIMO for up to 800Mbps wireless data rate to individual 4x4 VHT40 client devices (600Mbps for HT40 802.11n client devices)
- Support for up to 255 associated client devices per radio, and up to 16 BSSIDs per radio
- Supported frequency bands (country-specific restrictions apply):
  - 2.400 to 2.4835GHz
  - 5.150 to 5.250GHz
  - 5.250 to 5.350GHz
  - 5.470 to 5.725GHz
  - 5.725 to 5.850GHz
- Available channels: Dependent on configured regulatory domain
- Dynamic frequency selection (DFS) optimizes the use of available RF spectrum
- Supported radio technologies:
  - 802.11b: Direct-sequence spread-spectrum (DSSS)
  - 802.11a/g/n/ac: Orthogonal frequency-division multiplexing (OFDM)
- Supported modulation types:
  - 802.11b: BPSK, QPSK, CCK
  - 802.11a/g/n/ac: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM
- Transmit power: Configurable in increments of 0.5 dBm
- Maximum (conducted) transmit power (limited by local regulatory requirements):
  - 2.4GHz band: +18 dBm per chain
  - 5GHz band: +18 dBm per chain
  - Note: conducted transmit power levels exclude antenna gain.

For total (EIRP) transmit power, add antenna gain

- Advanced Cellular Coexistence (ACC) minimizes interference from cellular networks
- Maximum ratio combining (MRC) for improved receiver performance
- Cyclic delay/shift diversity (CDD/CSD) for improved downlink RF performance
- Short guard interval for 20MHz, 40MHz, 80MHz and 160MHz channels
- Space-time block coding (STBC) for increased range and improved reception
- Low-density parity check (LDPC) for high-efficiency error correction and increased throughput
- Transmit beam-forming (TxBF) for increased signal reliability and range
- Supported data rates (Mbps):
  - 802.11b: 1, 2, 5.5, 11
  - 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54
  - 802.11n: 6.5 to 600 (MCS0 to MCS31)
  - 802.11ac: 6.5 to 1,733 (MCS0 to MCS9, NSS = 1 to 4 for VHT20/40/80, NSS = 1 to 2 for VHT160)
- 802.11n high-throughput (HT) support: HT 20/40
- 802.11ac very high throughput (VHT) support: VHT 20/40/80/160
- 802.11n/ac packet aggregation: A-MPDU, A-MSDU

#### Wi-Fi antennas

- W-AP334/W-IAP334: Four RP-SMA connectors for external dual band antennas. Internal loss between radio interface and external antenna connectors (due to diplexing circuitry): 2.3dB in 2.4GHz and 1.2dB in 5GHz.
- W-AP335/W-IAP335:
  - Four integrated 2.4GHz downtilt omni-directional antennas for 4x4 MIMO with maximum antenna gain of 4.3dBi per antenna.
  - Each 5GHz radio chain has both a vertically and a horizontally polarized antenna element; AP software automatically and dynamically selects the best set of elements for each data packet transmitted or received.
  - Eight integrated 5GHz downtilt omni-directional antennas for 4x4 MIMO with maximum antenna gain of 5.4dBi (vertical) / 4.2dBi (horizontal) per antenna. The 330 Series APs support polarization diversity on the 5GHz antenna subsystem.
  - The built-in antennas are optimized for horizontal ceiling mounted orientation of the AP. The downtilt angle for maximum gain is roughly 30 degrees.
  - The maximum gain of the combined (summed) antenna patterns for all elements operating in the same band is 8.6dBi in 2.4GHz and 8.5dBi (vertical) / 8.1dBi (horizontal) in 5GHz.

#### Other interfaces

- One uplink port (RJ-45, maximum negotiated speed 5Gbps)
  - Auto-sensing link speed (100/1000/2500/5000BASE-T) and MDI/MDX
  - 802.3az Energy Efficient Ethernet (EEE)
  - PoE-PD: 48 Vdc (nominal) 802.3at PoE
  - PoE-PD: 48 Vdc (nominal) 802.3at PoE

- Link aggregation (LACP) support between both network ports for redundancy and increased capacity
- DC power interface, accepts 1.35/3.5-mm center-positive circular plug with 9.5-mm length
- One 10/100/1000BASE-T Ethernet network interface (RJ-45)
  - Auto-sensing link speed and MDI/MDX
  - 802.3az Energy Efficient Ethernet (EEE)
- USB 2.0 host interface (Type A connector)
- Bluetooth Low Energy (BLE) radio
  - Up to 4dBm transmit power (class 2) and -91dBm receive sensitivity
  - Integrated antenna with roughly 30 degrees downtilt and peak gain of 5.1dBi (W-AP334/W-IAP334) or 2.27dBi (W-AP335/W-IAP335)
- Visual indicators (tri-color LEDs): for System and Radio status
- Reset button: factory reset (during device power up)
- Serial console interface (RJ45, RS232)
- Kensington security slot

#### Power

- The AP supports direct DC power and Power over Ethernet (POE)
- When both power sources are available, DC power takes priority over POE
- Power sources are sold separately
- Direct DC source: 48Vdc nominal, +/- 5%
  - Interface accepts 1.35/3.5-mm center-positive circular plug with 9.5-mm length
- Power over Ethernet (POE): 48 Vdc (nominal) 802.3af/802.3at compliant source
  - When using IPM, the AP may enter power-save mode with reduced functionality when powered by a POE source (see details on Intelligent Power Monitoring elsewhere in this datasheet)
  - Without IPM the AP will apply some fixed restrictions when using POE:
    - > The USB interface is disabled when using an 802.3at POE power source
    - > The USB interface and second Ethernet port are disabled, and both radios operate in 1x1 mode when using an 802.3af POE power source
- Maximum (worst-case) power consumption: 25.3W (802.3at POE), 13.2W (802.3af POE) or 25W (DC)
  - Excludes power consumed by external USB device (and internal overhead); this could add up to 5.9W (POE or DC) for a 5W/1A USB device
- Maximum (worst-case) power consumption in idle mode: 10.9W (POE or DC)

#### Mounting

- The AP ships with two (white) mounting clips to attach to a 9/16-inch or 15/16-inch flat T-bar drop-tile ceiling.
- Several optional mount kits are available to attach the AP to a variety of surfaces; see the Ordering Information section for details.

## Mechanical

- Dimensions/weight (unit, excluding mount accessories):
  - 225mm(W) x 224mm(D) x 52mm(H)  
8.9"(W) x 8.9"(D) x 2.0"(H)
  - 1150g / 41ozl
- Dimensions/weight (shipping):
  - 335mm(W) x 290mm(D) x 76mm(H)  
13.2"(W) x 11.4"(D) x 3.0"(H)
  - 1550g /55oz

## Environmental

- Operating:
  - Temperature: 0° C to +50° C (+32° F to +122° F)
  - Humidity: 5% to 95% non-condensing
- Storage and transportation:
  - Temperature: -40° C to +70° C (-40° F to +158° F)

## Regulatory

- FCC/Industry of Canada
- CE Marked
- R&TTE Directive 1995/5/EC
- Low Voltage Directive 72/23/EEC
- EN 300 328
- EN 301 489
- EN 301 893
- UL/IEC/EN 60950
- EN 60601-1-1, EN60601-1-2

For more country-specific regulatory information and approvals, please see your Dell EMC representative.

## Reliability

MTBF: 531,662 hrs (61yrs) at +25C operating temperature

## Regulatory model numbers

- W-AP334 and W-IAP334: APIN0334
- W-AP335 and W-IAP335: APIN0335

## Certifications

- CB Scheme Safety, cTUVus
- UL2043 plenum rating
- Wi-Fi Alliance (WFA) certified 802.11a/b/g/n/ac

## Warranty

- Limited lifetime warranty

## Minimum operating system software versions

- Controller AOS 6.5.0.0
- InstantOS 4.3.0.0

## IT Lifecycle Services for Networking

### Experts, insights and ease

Our highly trained experts, with innovative tools and proven processes, help you transform your IT investments into strategic advantages.



#### Plan & Design

Let us analyze your multivendor environment and deliver a comprehensive report and action plan to build upon the existing network and improve performance.



#### Deploy & Integrate

Get new wired or wireless network technology installed and configured with ProDeploy. Reduce costs, save time, and get up and running fast.



#### Educate

Ensure your staff builds the right skills for long-term success. Get certified on Dell EMC Networking technology and learn how to increase performance and optimize infrastructure.



#### Manage & Support

Gain access to technical experts and quickly resolve multivendor networking challenges with ProSupport. Spend less time resolving network issues and more time innovating.



#### Optimize

Maximize performance for dynamic IT environments with Dell EMC Optimize. Benefit from in-depth predictive analysis, remote monitoring and a dedicated systems analyst for your network.



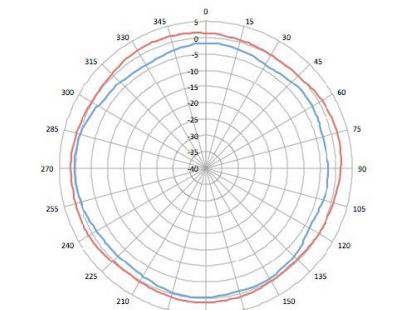
#### Retire

We can help you resell or retire excess hardware while meeting local regulatory guidelines and acting in an environmentally responsible way.

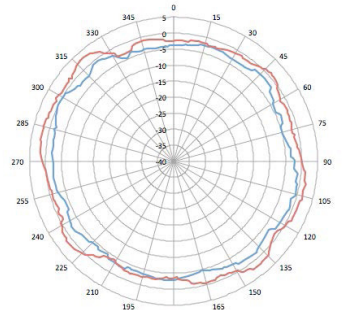
Learn more at  
[Dell.com/lifecycle services](https://Dell.com/lifecycle services)

## Antenna pattern plots

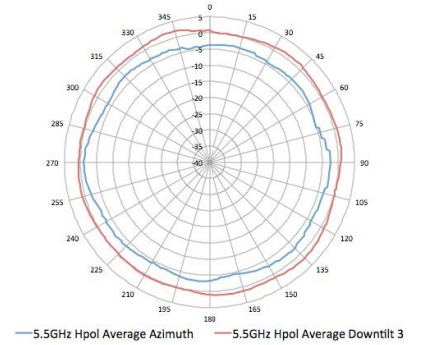
Horizontal planes (top view, AP facing forward)  
 Showing azimuth (0 degrees) and 30 degrees downtilt pattern



— 2.45GHz WiFi Average Azimuth — 2.45GHz WiFi Average Downtilt 30  
 2.45GHz Wi-Fi (antennas 5,6,7,8)  
 5.5GHz

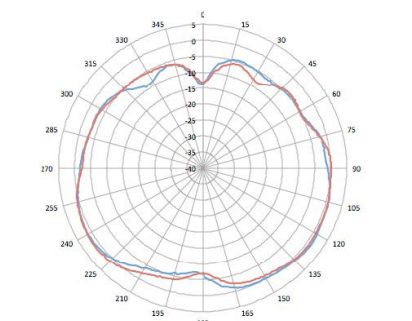


— 5.5GHz Vpol Average Azimuth — 5.5GHz Vpol Average Downtilt 30  
 5.5GHz Wi-Fi Vpol (antennas 0,1,3,4)

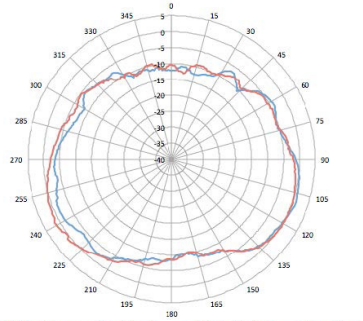


— 5.5GHz Hpol Average Azimuth — 5.5GHz Hpol Average Downtilt 30  
 5.5GHz Wi-Fi Hpol (antennas A,B,C,D)

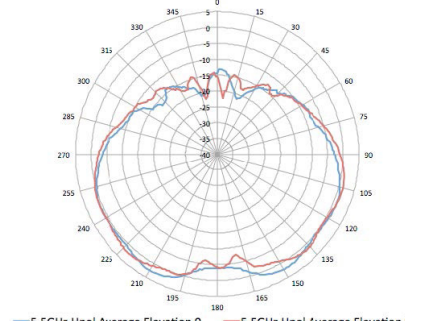
Elevation planes (side view, AP facing down)  
 Showing side view with AP rotated 0 and 90 degrees



— 2.45GHz WiFi Average Elevation 0 — 2.45GHz WiFi Average Elevation 90  
 2.45GHz Wi-Fi (antennas 5,6,7,8)  
 5.5GHz



— 5.5GHz Vpol Average Elevation 0 — 5.5GHz Vpol Average Elevation 90  
 5.5GHz Wi-Fi Vpol (antennas 0,1,3,4)



— 5.5GHz Hpol Average Elevation 0 — 5.5GHz Hpol Average Elevation 90  
 5.5GHz Wi-Fi Hpol (antennas A,B,C,D)

## RF performance table

	Maximum transmit power (dBm) per transmit chain	Receiver sensitivity (dBm) per receive chain
<b>802.11b 2.4GHz</b>		
1Mbps	18.0	-96.0
11Mbps	18.0	-89.0
<b>802.11g 2.4GHz</b>		
6Mbps	18.0	-91.0
54Mbps	18.0	-75.0
<b>802.11n HT20 2.4GHz</b>		
MCS0/8/16	18.0	-90.0
MCS7/15/23	17.0	-71.0
<b>802.11n HT40 2.4GHz</b>		
MCS0/8/16	18.0	-88.0
MCS7/15/23	16.0	-68.0
<b>802.11a 5GHz</b>		
6Mbps	18.0	-88.0
54Mbps	16.0	-73.0
<b>802.11n HT20 5GHz</b>		
MCS0/8/16	18.0	-88.0
MCS7/15/23	16.0	-70.0
<b>802.11n HT40 5GHz</b>		
MCS0/8/16	18.0	-86.0
MCS7/15/23	16.0	-67.0
<b>802.11ac VHT20 5GHz</b>		
MCS0	18.0	-88.0
MCS9	13.0	-63.0
<b>802.11ac VHT40 5GHz</b>		
MCS0	18.0	-86.0
MCS9	13.0	-61.0
<b>802.11ac VHT80 5GHz</b>		
MCS0	18.0	-83.0
MCS9	15.0	-58.0
<b>802.11ac VHT160 5GHz</b>		
MCS0	18.0	-80.0
MCS(	14.0	-55.0

Maximum capability of the hardware provided (excluding antenna gain). Maximum transmit power is limited by local regulatory settings.

## Ordering information

Part number	Description
<b>330 series access points</b>	
W-AP334	Dell Networking W-AP334 NBase-T wireless access point, 802.11n/ac, 4x4 MU-MIMO, dual radio, antenna connectors
W-IAP334-RW	Dell Networking Instant W-IAP334 NBase-T wireless access point, 802.11n/ac, 4x4 MU-MIMO, dual radio, antenna connectors – Restricted regulatory domain: Rest of World
W-IAP334-US	Dell Networking Instant W-IAP334 NBase-T wireless access point, 802.11n/ac, 4x4 MU-MIMO, dual radio, antenna connectors – Restricted regulatory domain: United States
W-IAP334-JP	Dell Networking Instant W-IAP334 NBase-T wireless access point, 802.11n/ac, 4x4 MU-MIMO, dual radio, antenna connectors – Restricted regulatory domain: Japan
W-AP335	Dell Networking W-AP335 NBase-T wireless access point, 802.11n/ac, 4x4 MU-MIMO, dual radio, integrated antennas
W-IAP335-RW	Dell Networking Instant W-IAP335 NBase-T wireless access point, 802.11n/ac, 4x4 MU-MIMO, dual radio, integrated antennas – Restricted regulatory domain: Rest of World
W-IAP335-US	Dell Networking Instant W-IAP335 NBase-T wireless access point, 802.11n/ac, 4x4 MU-MIMO, dual radio, integrated antennas – Restricted regulatory domain: United States
W-IAP335-JP	Dell Networking Instant W-IAP335 NBase-T wireless access point, 802.11n/ac, 4x4 MU-MIMO, dual radio, integrated antennas – Restricted regulatory domain: Japan
<b>Mounting Accessories</b>	
W-AP-220-MNT-C2	Dell Networking Access Point Mount Kit (ceiling grid). Contains 2x ceiling grid rail adapters (for Interlude and silhouette style rails). Color: black
W-AP-MNT-CM1	Suspended ceiling rail mount kit for indoor campus access points (metal, industrial grade). Fits most rail types.
W-AP-220-MNT-W1	Dell Networking Access Point Mount Kit (basic, flat surface). Contains 1x flat surface wall/ceiling mount bracket. Color: black
W-AP-220-MNT-W3	Indoor Access Point flat surface mount kit (box style, secure, low-profile, large, white)
W-AP335-MNT-C1	Spare Dell Networking Access Point Mount Kit (ceiling grid). Contains 2x ceiling grid rail adapters (for flat rails). Color: black. Spare.
W-AP335-MNT-W1W	Dell Networking Access Point Mount Kit (basic, flat surface). Contains 1x flat surface wall/ceiling mount bracket. Color: white
W-AP335-MNT-W2	Dell Networking Access Point Mount Kit (secure, flat surface). Contains 1x flat surface wall/ceiling mount cradle. Color: black
W-AP335-MNT-W2W	Dell Networking Access Point Mount Kit (secure, flat surface). Contains 1x flat surface wall/ceiling mount cradle. Color: white
<b>330 Series accessories: other</b>	
AP-AC-48V36C	48V/36W AC-to-DC Desktop Style Power Adapter with Type C DC plug (1.35/3.5/9.5mm circular, 90-degree angled). Note: Does not include country specific AC power cord (PC-AC-xx).
PD-9001GR-AC	30W 802.3at PoE midspan injector, 10/100/1000BASE-T Ethernet

Learn more at [Dell.com/Networking](http://Dell.com/Networking)