

Cheat Sheet for comprehensive Cisco Certified Network Professional (CCNP) - Wireless

Wireless LAN Controllers (WLC)

Basic Configuration

- Initial Setup:

- `config t`
- `wlan-config <wlan-id> <ssid> <profile-name>`
- `interface wlan <wlan-id>`
- `ssid <ssid>`
- `security wpa2 aes <psk>`

- Advanced Settings:

- Load Balancing:

- `config load-balancing <wlan-id> <method> <threshold>`

- QoS:

- `config qos <wlan-id> <policy-name>`

- RF Profiles:

- `config rf-profile create <profile-name> <band>`
- `config rf-profile modify <profile-name> <parameter> <value>`

Monitoring and Troubleshooting

- Show Commands:

- `show wlan summary`
- `show ap summary`
- `show client detail <mac-address>`
- `show interface summary`
- `show load-balancing summary`

- Debug Commands:

- `debug client <mac-address>`
- `debug wlan <wlan-id>`
- `debug rf-manager`

Access Points (APs)

Basic Configuration

- Initial Setup:

- `config ap <ap-name> <ip-address> <mask> <gateway>`
- `config ap mode <ap-name> <mode>` (e.g., FlexConnect, Local)

- Advanced Settings:

- RF Optimization:

- `config rf-profile apply <profile-name> <ap-name>`

- Mesh Configuration:

- `config mesh enable <ap-name>`
- `config mesh group <group-name> <ap-name>`

Monitoring and Troubleshooting

- Show Commands:

- `show ap config general <ap-name>`
- `show ap join stats <ap-name>`
- `show ap dot11 <band> summary`
- `show ap dot11 <band> stats <ap-name>`

- Debug Commands:

- `debug dot11 <band> <ap-name>`
- `debug apmanager <ap-name>`

Mobility and RF Management

Mobility Groups

- Configuration:

- `config mobility group create <group-name>`
- `config mobility group add <group-name> <controller-ip>`

- Monitoring:

- `show mobility group summary`
- `show mobility group detail <group-name>`

RF Profiles

- Configuration:

- `config rf-profile create <profile-name> <band>`
- `config rf-profile modify <profile-name> <parameter> <value>`

- **Monitoring:**

- `show rf-profile summary`
- `show rf-profile detail <profile-name>`

Security and Compliance

WPA2 and PSK

- **Configuration:**

- `config wlan security wpa2 aes <psk>`

- **Monitoring:**

- `show wlan security <wlan-id>`

RADIUS Integration

- **Configuration:**

- `config radius add <server-ip> <shared-secret>`
- `config wlan security radius <wlan-id>`

- **Monitoring:**

- `show radius summary`
- `show radius statistics`

QoS and Traffic Management

QoS Policies

- **Configuration:**

- `config qos create <policy-name>`
- `config qos add <policy-name> <class> <dscp>`

- **Monitoring:**

- `show qos summary`
- `show qos detail <policy-name>`

Traffic Shaping

- **Configuration:**

- `config traffic-shaping enable <wlan-id>`
- `config traffic-shaping rate <wlan-id> <rate>`

- **Monitoring:**

- `show traffic-shaping summary`
- `show traffic-shaping detail <wlan-id>`

Advanced Features

FlexConnect

- **Configuration:**

- `config ap mode <ap-name> flexconnect`
- `config flexconnect local-switching enable <ap-name>`

- **Monitoring:**

- `show flexconnect summary`
- `show flexconnect detail <ap-name>`

Mesh Networks

- **Configuration:**

- `config mesh enable <ap-name>`
- `config mesh group <group-name> <ap-name>`

- **Monitoring:**

- `show mesh summary`
- `show mesh detail <ap-name>`

Best Practices and Tips

Performance Optimization

- **RF Tuning:**

- Use `config rf-profile modify` to adjust power levels and channel widths.
- Regularly review `show ap dot11 <band> stats` for interference and adjust accordingly.

Security Best Practices

- **Regular Updates:**

- Ensure WLC and AP firmware are up-to-date.
- Use strong PSKs and rotate them periodically.

Troubleshooting Tips

- **Client Issues:**

- Use `debug client <mac-address>` for detailed logs.

- Check ``show client detail <mac-address>`` for connection status.

- **AP Issues:**

- Use ``debug apmanager <ap-name>`` for detailed logs.
- Check ``show ap join stats <ap-name>`` for join process details.

Example Scenarios

Scenario 1: Configuring a New WLAN

1. ``config wlan create <wlan-id> <ssid>``
2. ``config wlan security wpa2 aes <psk>``
3. ``config qos <wlan-id> <policy-name>``
4. ``config load-balancing <wlan-id> <method> <threshold>``

Scenario 2: Troubleshooting a Client Connection

5. ``show client detail <mac-address>``
6. ``debug client <mac-address>``
7. Check ``show ap dot11 <band> stats <ap-name>`` for RF interference.

Scenario 3: Optimizing RF Performance

8. ``show rf-profile summary``
9. ``config rf-profile modify <profile-name> power-level <value>``
10. ``config rf-profile apply <profile-name> <ap-name>``

Summary of Key Commands

Category	Command	Description
WLAN Config	<code>`config wlan create <wlan-id> <ssid>`</code>	Create a new WLAN
Security	<code>`config wlan security wpa2 aes <psk>`</code>	Set WPA2-AES security
QoS	<code>`config qos create <policy-name>`</code>	Create a QoS policy
RF Profiles	<code>`config rf-profile create <profile-name> <band>`</code>	Create an RF profile
Monitoring	<code>`show wlan summary`</code>	Display summary of all WLANs

| **Troubleshooting** | `debug client <mac-address>` | Debug client connection
issues |

Conclusion

This cheat sheet provides a comprehensive overview of essential commands and configurations for Cisco CCNP Wireless. Use these commands and tips to efficiently manage and troubleshoot your wireless network.

By Ahmed Baheeg Khorshid

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