

# Cisco CCNA (200-301) Cheat Sheet

One-page cram sheet for network fundamentals, access, IP connectivity, services, security, and automation.

<b>Best for</b>	<b>Focus</b>	<b>Use with</b>
Last review before drills or exam day	Concept links + Cisco logic + troubleshooting flow	Use with ports sheet and commands sheet

## 1. Network fundamentals

<b>Two-tier / three-tier</b>	Know access, distribution, and core roles plus when small designs collapse layers.
<b>IPv4 / IPv6</b>	Be fast with subnetting, default gateways, prefix length, and IPv6 address types.
<b>ARP and ND</b>	ARP maps IPv4 to MAC; Neighbor Discovery handles key IPv6 discovery tasks.
<b>Cabling basics</b>	Copper, fiber, SFP types, and where each medium fits in campus or WAN links.

## 2. Network access

<b>VLAN / trunk</b>	Access ports carry one VLAN; trunks carry multiple VLANs with tags.
<b>STP / RSTP</b>	Prevents Layer 2 loops; know root bridge, port roles, and why blocked states exist.
<b>EtherChannel</b>	Bundles links for redundancy and bandwidth; verify with LACP-oriented commands.
<b>Wireless basics</b>	AP modes, SSIDs, channels, roaming, and WPA2/WPA3 enterprise concepts.

## 3. IP connectivity

<b>Static vs dynamic routing</b>	Static is simple; OSPF scales better when topology grows.
<b>OSPF</b>	Know areas, DR/BDR ideas, neighbors, LSDB logic, and route selection basics.
<b>Default route</b>	Used when no more specific path exists; common edge design concept.
<b>FHRP</b>	HSRP/VRRP concepts provide default gateway availability for hosts.

## 4. IP services

<b>NAT / PAT</b>	Translate private addresses; PAT lets many hosts share one public IP using ports.
<b>DHCP</b>	Automates addressing; relay is critical when server sits in another subnet.
<b>DNS / NTP / Syslog</b>	Name resolution, time sync, and centralized logging show up often in operations questions.
<b>QoS basics</b>	Marking, classification, queuing, and why voice/video traffic needs low delay.

## 5. Security + automation

<b>ACL</b>	Permit or deny traffic by source, destination, protocol, and port.
<b>Port security / 802.1X</b>	Control endpoint access on switch ports and enterprise wired/wireless edges.
<b>SSH over Telnet</b>	Prefer encrypted management; Telnet is legacy and insecure.
<b>JSON / API / controller</b>	CCNA now expects basic automation literacy, not deep coding.