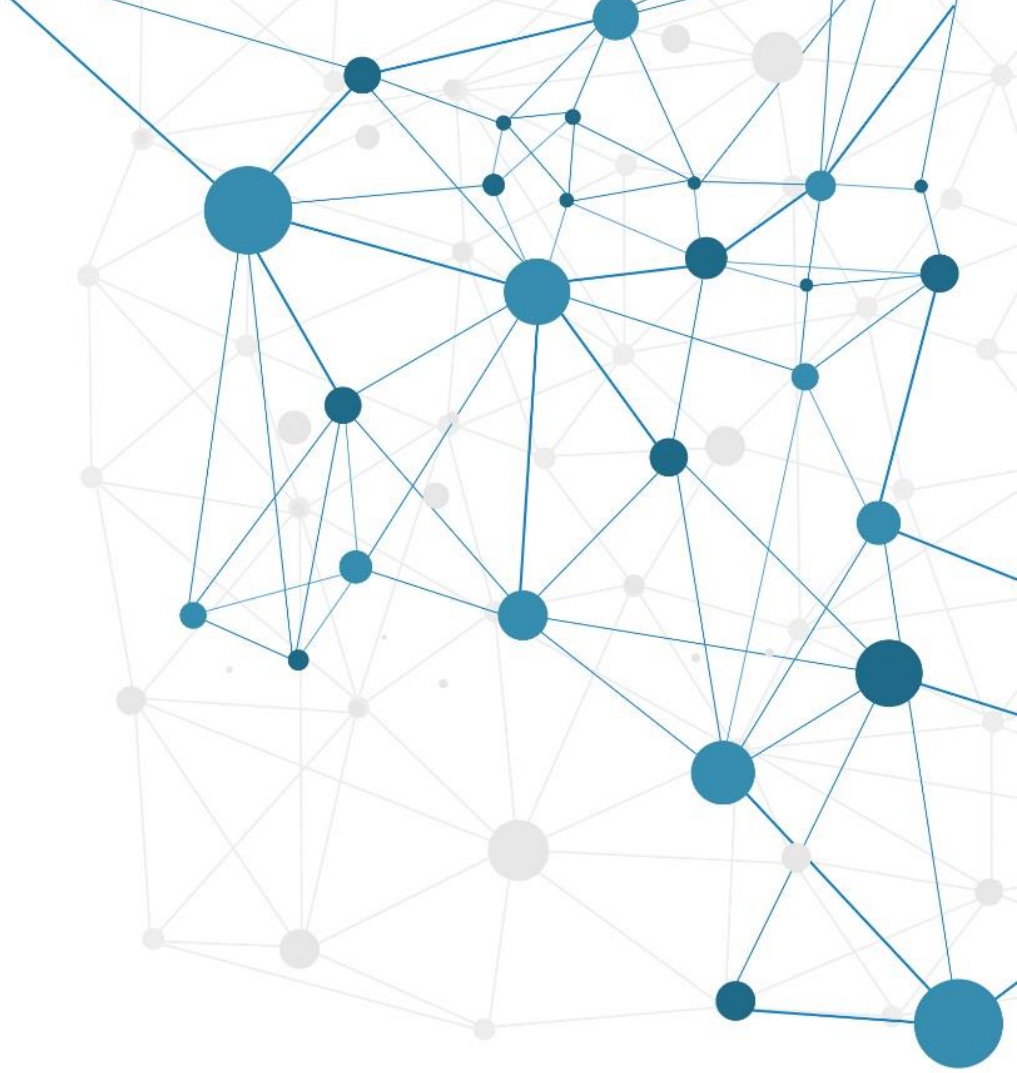




Cisco Catalyst 3650 Series Switch Datasheet



Router-Switch.com
Leading Network Hardware Supplier

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OVERVIEW

The Cisco® Catalyst® 3650 Series is the next generation of enterprise-class standalone and stackable access-layer switches that provide the foundation for full convergence between wired and wireless on a single platform. The 3650 Series is built on the advanced Cisco StackWise®-160 and takes advantage of the new Cisco Unified Access™ Data Plane (UADP) application-specific integrated circuit (ASIC). This switch can enable uniform wired-wireless policy enforcement, application visibility, flexibility, application optimization, and superior resiliency. The 3650 Series switches support full IEEE 802.3at Power over Ethernet Plus (PoE+), Cisco Universal Power over Ethernet (Cisco UPOE®) on the Cisco Catalyst 3650 Series multigigabit switches and offer modular and field-replaceable redundant fans and power supplies. The 3650 Series switches also come in a 12-inch lower depth form factor so that you can deploy them in tight wiring closets in remote branches and offices where depth of the switch is a concern. In addition, the 3650 multigigabit switches support current and next-generation wireless speeds and standards (including 802.11ac Wave 2) on existing cabling infrastructure. The 3650 Series switches help increase wireless productivity and reduce TCO.

APPEARANCE

Figure 1. Cisco Catalyst 3650 Series Switch



KEY FEATURES AND BENEFITS

Converged Wired plus Wireless Access

The Cisco Catalyst 3650 Series is a standalone and stackable access switching platform that enables wired plus wireless services on a single Cisco IOS XE Software-based platform. With this, Cisco has pioneered a host of rich capabilities such as high availability based on stateful switchover (SSO) on stacking, granular QoS, security, and Flexible NetFlow (FNF) across wired and wireless in a seamless fashion. Also, the wired plus wireless features are bundled into a single Cisco IOS Software image, which reduces the number of software images that users have to qualify/certify before enabling them

in their network. The single console port for command-line interface (CLI) management reduces the number of touch points to manage for wired plus wireless services, thereby reducing network complexity, simplifying network operations, and lowering the TCO to manage the infrastructure.

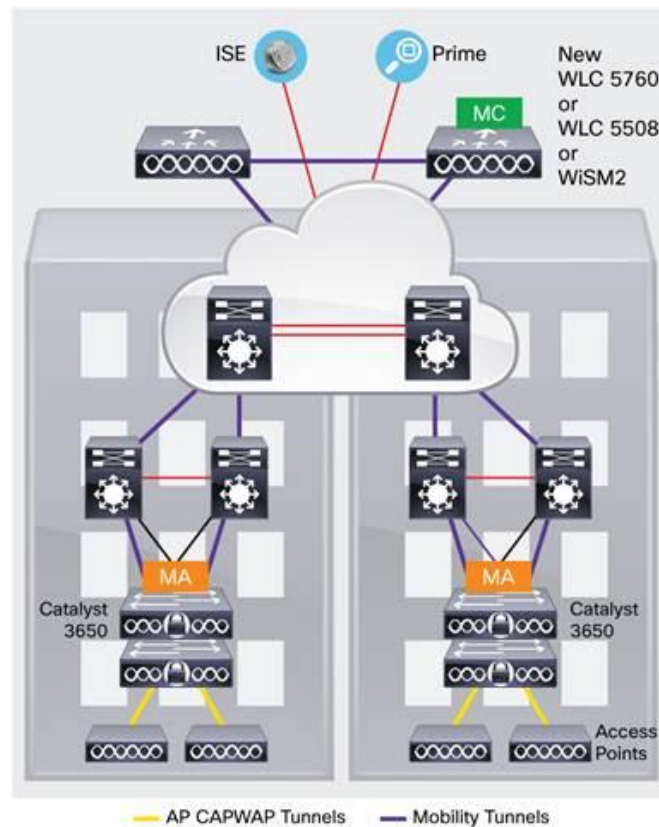
Converged wired plus wireless not only improves wireless bandwidth across the network but also the scale of wireless deployment. Each 48-port Cisco Catalyst 3650 provides 40 Gbps of wireless throughput (20 Gbps on the 24-port model). This wireless capacity increases with the number of members in the stack. This makes sure that the network can scale with current wireless bandwidth requirements, as dictated by IEEE 802.11n-based access points and with future wireless standards such as IEEE 802.11ac. Additionally, the Cisco Catalyst 3650 distributes the wireless controller functions to achieve better scalability. Each Cisco Catalyst 3650 switch/stack can operate as the wireless controller in two modes:

- **Mobility agent (MA):** This is the default mode in which the Cisco Catalyst 3650 switch ships. In this mode the switch is capable of terminating the CAPWAP tunnels from the access points and providing wireless connectivity to wireless clients. Maintaining wireless client databases and configuring and enforcing security and QoS policies for wireless clients and access points can be enforced in this mode. No additional license on top of IP Base is required to operate in the mobility agent mode.

- **Mobility controller (MC):** In this mode, the Cisco Catalyst 3650 switch can perform all the mobility agent tasks in addition to mobility coordination, radio resource management (RRM), and Cisco CleanAir® coordination within a mobility subdomain. The mobility controller mode can be enabled on the switch CLI. IP Base license level is required when the Cisco Catalyst 3650 switch is acting as the mobility controller. A centrally located Cisco 5508 Wireless LAN Controller (WLC 5508), Cisco Wireless Services Module 2 (WiSM2) (when running AireOS Version 7.3), and Wireless LAN Controller 5760 can also perform this role for larger deployments.

With mobility agents located in the wiring closets providing 40 Gbps of wireless per switch ($n \times 40$ Gbps for a stack of n switches) and mobility controllers managing some of the central wireless functions, the converged access-based wireless deployment provides best-in-class scalability for wireless and significantly improved wireless throughput.

Figure 2. Mobility Controller (MC) and Mobility Agent (MA)



Distributed Intelligent Services

Flexible NetFlow (FNF)

Full visibility into the wired plus wireless traffic is achieved because of the access point Control and Provisioning of Wireless Access Points (CAPWAP) tunnel termination on the switch. This helps identify users and user traffic flows in order to identify potential attackers and take corrective action at the access layer before the attack penetrates further into the network. This is achieved using FNF, which monitors every single flow entering and exiting the switch stack for wired and wireless users. It also helps identify the top wired/wireless talkers and enforce appropriate bandwidth provisioning policies.

QoS

The 3650 switch has advanced wired plus wireless QoS capabilities. It uses the Cisco modular QoS command line interface (MQC). The switch manages wireless bandwidth using unprecedented hierarchical bandwidth management starting at the per-access-point level and drilling further down to per-radio, per-service set identification (SSID), and per-user levels. This helps manage and prioritize available bandwidth between various radios and various SSIDs (enterprise, guest, and so on) within each radio on a percentage basis. The switch is also capable of automatically allocating equal bandwidth among the connected users within a given SSID. This makes sure that all users within a

given SSID get a fair share of the available bandwidth while being connected to the network. The UADP ASIC enables the hierarchical bandwidth management and fair sharing of bandwidth, thereby providing hardware-based QoS for optimized performance at line-rate traffic.

In addition to these capabilities, the switch is able to do class of service (CoS) or differentiated services code point (DSCP) based queuing, policing, shaping, and marking of wired plus wireless traffic. This enables users to create common policies that can be used across wired plus wireless traffic. The 3650 also supports downloadable policy names from the Cisco Identity Services Engine (ISE) when a user successfully authenticates to the network using the ISE.

Security

The Cisco Catalyst 3650 provides a rich set of security features for wired plus wireless users. Features such as IEEE 802.1x, Dynamic Host Configuration Protocol (DHCP) snooping, IP Source Guard and control plane protection, wireless intrusion prevention systems (WIPSs), and so on enable protection against unauthorized users and attackers. With a variety of wired plus wireless users connecting to the network, the switch supports session-aware networking, in which each device connected to the network is identified as one session, and unique access control lists (ACLs) and/or QoS policies can be defined and applied using the ISE for each of these sessions, providing better control on the devices connecting to the network.

Resiliency

Cisco StackWise-160 Technology

The Cisco Catalyst 3650 supports an optional stacking module that is based on the Cisco StackWise-160 technology. Cisco StackWise-160 technology is built on the highly successful industry-leading StackWise technology, which is a premium stacking architecture. StackWise-160 has a stack bandwidth of 160 Gbps. StackWise-160 uses Cisco IOS Software SSO for providing resiliency within the stack. The stack behaves as a single switching unit that is managed by an “active” switch elected by the member switches. The active switch automatically elects a standby switch within the stack. The active switch creates and updates all the switching/routing/wireless information and constantly synchronizes that information with the standby switch. If the active switch fails, the standby switch assumes the role of the active switch and continues to keep the stack operational. Access points continue to remain connected during an active-to-standby switchover. A working stack can accept new members or delete old ones without service interruption. StackWise-160 creates a highly resilient single unified system of up to nine switches, providing simplified management using a single IP address, single Telnet session, single CLI, auto-version checking, auto-upgrading,

auto-configuration, and more. StackWise-160 also enables local switching in Cisco Catalyst 3650 Series Switches.

Figure 3. StackWise-160 Kit with Stack Adapters and Cables



PRODUCT SPECIFICATIONS OF CISCO CATALYST 3650 SERIES SWITCH	
Performance Numbers for All Switch Models	
Switching capacity	176 Gbps on 48-port models (non-multigigabit models) 88 Gbps on 24-port models (non-multigigabit models) 254 Gbps on 24-port Multigigabit models with 2x10G uplink 272 Gbps on 24-port Multigigabit models with 4x10G uplink 392 Gbps on 48-port Multigigabit models with 4x10G uplink 472 Gbps on 48-port Multigigabit models with 8x10G uplink 472 Gbps on 48-port Multigigabit models with 2x40G uplink
Stacking bandwidth	160 Gbps
Total number of MAC addresses	32,000
Total number of IPv4 routes (ARP plus learned routes)	24,000
FNF entries	48,000 flow on 48-port models 24,000 flows on 24-port models
DRAM	4 GB
Flash	2 GB (non-Multigigabit models) and 4GB

	(Multigigabit models)
VLAN IDs	4,094
Total switched virtual interfaces (SVIs)	1,000
Jumbo frame	9198 bytes
Total routed ports per 3650 stack	208
Wireless	
Number of access points per switch/stack	50
Number of wireless clients per switch/stack	1000
Total number of WLANs per switch	64
Wireless bandwidth per switch	Up to 40 Gbps on 48-port models Up to 20 Gbps on 24-port models
Supported Aironet access point series	3700, 3600, 3500, 2600, 1600, 1260, 1140, 1040
Forwarding Rate of Switch Models	
Model	Forwarding Rate
4 x 1 Gigabit Ethernet Uplink-Models	
3650-24TS	41.66 Mpps
3650-24PS	
3650-48TS	77.37 Mpps
3650-48PS	
3650-48FS	
2 x 10 Gigabit Ethernet Uplink-Models	
3650-24TD	68.45 Mpps
3650-24PD	
3650-24PDM	
3650-48TD	104.16 Mpps
3650-48PD	
3650-48FD	
3650-8X24PD	172.61 Mpps
3650-12X48FD	261.90 Mpps
4 x 10 Gigabit Ethernet Uplink-Models	
3650-48TQ	130.95 Mpps

3650-48PQ	
3650-48FQ	
3650-48FQM	
3650-8X24UQ	202.38 Mpps
3650-12X48UQ	291.66 Mpps
8 x 10 Gigabit Ethernet Uplink-Models	
3650-12X48UR	351.19 Mpps
2 x 40 QSFP+ Uplink-Models	
3650-12X48UZ	351.19 Mpps

CISCO 3650 BASIC ORDERING INFORMATION

Product Number	Product Description
Cisco Catalyst 3650 4x1G Uplink Series	
WS-C3650-24TS-L	Standalone with Optional Stacking 24 10/100/1000 Ethernet and 4x1G Uplink ports, with 250WAC power supply, 1 RU, LAN Base feature set
WS-C3650-48TS-L	Standalone with Optional Stacking 48 10/100/1000 Ethernet and 4x1G Uplink ports, with 250WAC power supply, 1 RU, LAN Base feature set
WS-C3650-24PS-L	Standalone with Optional Stacking 24 10/100/1000 Ethernet PoE+ and 4x1G Uplink ports, with 640WAC power supply, 1 RU, LAN Base feature set
WS-C3650-48PS-L	Standalone with Optional Stacking 48 10/100/1000 Ethernet PoE+ and 4x1G Uplink ports, with 640WAC power supply, 1 RU, LAN Base feature set
WS-C3650-48FS-L	Standalone with Optional Stacking 48 10/100/1000 Ethernet PoE+ and 4x1G Uplink ports, with 1025WAC power supply, 1 RU, LAN Base feature set
WS-C3650-24TS-S	Standalone with Optional Stacking 24 10/100/1000 Ethernet and 4x1G Uplink ports, with 250WAC power supply, 1 RU, IP Base feature set
WS-C3650-48TS-S	Standalone with Optional Stacking 48 10/100/1000 Ethernet and 4x1G Uplink ports, with 250WAC power supply, 1 RU, IP Base feature set
WS-C3650-24PS-S	Standalone with Optional Stacking 24 10/100/1000 Ethernet PoE+ and 4x1G Uplink ports, with 640WAC power supply, 1 RU, IP Base feature set
WS-C3650-48PS-S	Standalone with Optional Stacking 48 10/100/1000 Ethernet PoE+ and 4x1G Uplink ports, with 640WAC power supply, 1 RU, IP Base feature set

WS-C3650-48FS-S	Standalone with Optional Stacking 48 10/100/1000 Ethernet PoE+ and 4x1G Uplink ports, with 1025WAC power supply, 1 RU, IP Base feature set
WS-C3650-24TS-E	Standalone with Optional Stacking 24 10/100/1000 Ethernet and 4x1G Uplink ports, with 250WAC power supply, 1 RU, IP Services feature set
WS-C3650-48TS-E	Standalone with Optional Stacking 48 10/100/1000 Ethernet and 4x1G Uplink ports, with 250WAC power supply, 1 RU, IP Services feature set
WS-C3650-24PS-E	Standalone with Optional Stacking 24 10/100/1000 Ethernet PoE+ and 4x1G Uplink ports, with 640WAC power supply, 1 RU, IP Services feature set
WS-C3650-48PS-E	Standalone with Optional Stacking 48 10/100/1000 Ethernet PoE+ and 4x1G Uplink ports, with 640WAC power supply, 1 RU, IP Services feature set
WS-C3650-48FS-E	Standalone with Optional Stacking 48 10/100/1000 Ethernet PoE+ and 4x1G Uplink ports, with 1025WAC power supply, 1 RU, IP Services feature set
Cisco Catalyst 3650 2x10G and 2x1G Uplink Series	
WS-C3650-24TD-L	Standalone with Optional Stacking 24 10/100/1000 Ethernet and 2x10G Uplink ports, with 250WAC power supply, 1 RU, LAN Base feature set
WS-C3650-48TD-L	Standalone with Optional Stacking 48 10/100/1000 Ethernet and 2x10G Uplink ports, with 250WAC power supply, 1 RU, LAN Base feature set
WS-C3650-24PD-L	Standalone with Optional Stacking 24 10/100/1000 Ethernet PoE+ and 2x10G Uplink ports, with 640WAC power supply, 1 RU, LAN Base feature set
WS-C3650-24PDM-L	Standalone with Optional Stacking 24 10/100/1000 Ethernet PoE+ and 2x10G Uplink ports, with fixed 640WAC power supply, 1 RU, LAN Base feature set
WS-C3650-48PD-L	Standalone with Optional Stacking 48 10/100/1000 Ethernet PoE+ and 2x10G Uplink ports, with 640WAC power supply, 1 RU, LAN Base feature set
WS-C3650-48FD-L	Standalone with Optional Stacking 48 10/100/1000 Ethernet PoE+ and 2x10G Uplink ports, with 1025WAC power supply, 1 RU, LAN Base feature set
WS-C3650-24TD-S	Standalone with Optional Stacking 24 10/100/1000 Ethernet and 2x10G Uplink ports, with 250WAC power supply, 1 RU, IP Base feature set

WS-C3650-48TD-S	Standalone with Optional Stacking 48 10/100/1000 Ethernet and 2x10G Uplink ports, with 250WAC power supply, 1 RU, IP Base feature set
WS-C3650-24PD-S	Standalone with Optional Stacking 24 10/100/1000 Ethernet PoE+ and 2x10G Uplink ports, with 640WAC power supply, 1 RU, IP Base feature set
WS-C3650-24PDM-S	Standalone with Optional Stacking 24 10/100/1000 Ethernet PoE+ and 2x10G Uplink ports, with fixed 640WAC power supply, 1 RU, IP Base feature set
WS-C3650-48PD-S	Standalone with Optional Stacking 48 10/100/1000 Ethernet PoE+ and 2x10G Uplink ports, with 640WAC power supply, 1 RU, IP Base feature set
WS-C3650-48FD-S	Standalone with Optional Stacking 48 10/100/1000 Ethernet PoE+ and 2x10G Uplink ports, with 1025WAC power supply, 1 RU, IP Base feature set
WS-C3650-24TD-E	Standalone with Optional Stacking 24 10/100/1000 Ethernet and 2x10G Uplink ports, with 250WAC power supply, 1 RU, IP Services feature set
WS-C3650-48TD-E	Standalone with Optional Stacking 48 10/100/1000 Ethernet and 2x10G Uplink ports, with 250WAC power supply, 1 RU, IP Services feature set
WS-C3650-24PD-E	Standalone with Optional Stacking 24 10/100/1000 Ethernet PoE+ and 2x10G Uplink ports, with 640WAC power supply, 1 RU, IP Services feature set
WS-C3650-24PDM-E	Standalone with Optional Stacking 24 10/100/1000 Ethernet PoE+ and 2x10G Uplink ports, with fixed 640WAC power supply, 1 RU, IP Services feature set
WS-C3650-48PD-E	Standalone with Optional Stacking 48 10/100/1000 Ethernet PoE+ and 2x10G Uplink ports, with 640WAC power supply, 1 RU, IP Services feature set
WS-C3650-48FD-E	Standalone with Optional Stacking 48 10/100/1000 Ethernet PoE+ and 2x10G Uplink ports, with 1025WAC power supply, 1 RU, IP Services feature set
WS-C3650-8X24PD-L	Standalone with Optional Stacking 24 (16 10/100/1000 and 8 100Mbps/1/2.5/5/10 Gbps) Ethernet and 2x10G Uplink ports, with 715WAC power supply, 1 RU, LAN Base feature set
WS-C3650-8X24PD-S	Standalone with Optional Stacking 24 (16 10/100/1000 and 8 100Mbps/1/2.5/5/10 Gbps) Ethernet and 2x10G Uplink ports, with 715WAC power supply, 1 RU, IP Base feature set

WS-C3650-8X24PD-E	Standalone with Optional Stacking 24 (16 10/100/1000 and 8 100Mbps/1/2.5/5/10 Gbps) Ethernet and 2x10G Uplink ports, with 715WAC power supply, 1 RU, IP Services feature set
WS-C3650-12X48FD-L	Standalone with Optional Stacking 48 (36 10/100/1000 and 12 100Mbps/1/2.5/5/10 Gbps) Ethernet and 2x10G Uplink ports, with 1100WAC power supply, 1 RU, LAN Base feature set
WS-C3650-12X48FD-S	Standalone with Optional Stacking 48 (36 10/100/1000 and 12 100Mbps/1/2.5/5/10 Gbps) Ethernet and 2x10G Uplink ports, with 1100WAC power supply, 1 RU, IP Base feature set
WS-C3650-12X48FD-E	Standalone with Optional Stacking 48 (36 10/100/1000 and 12 100Mbps/1/2.5/5/10 Gbps) Ethernet and 2x10G Uplink ports, with 1100WAC power supply, 1 RU, IP Services feature set
Cisco Catalyst 3650 4x10G Uplink Series	
WS-C3650-48TQ-L	Standalone with Optional Stacking 48 10/100/1000 Ethernet and 4x10G Uplink ports, with 250WAC power supply, 1 RU, LAN Base feature set
WS-C3650-48PQ-L	Standalone with Optional Stacking 48 10/100/1000 Ethernet PoE+ and 4x10G Uplink ports, with 640WAC power supply, 1 RU, LAN Base feature set
WS-C3650-48FQ-L	Standalone with Optional Stacking 48 10/100/1000 Ethernet PoE+ and 4x10G Uplink ports, with 1025WAC power supply, 1 RU, LAN Base feature set
WS-C3650-48FQM-L	Standalone with Optional Stacking 48 10/100/1000 Ethernet PoE+ and 4x10G Uplink ports, with fixed 975WAC power supply, 1 RU, LAN Base feature set
WS-C3650-48TQ-S	Standalone with Optional Stacking 48 10/100/1000 Ethernet and 4x10G Uplink ports, with 250WAC power supply, 1 RU, IP Base feature set
WS-C3650-48PQ-S	Standalone with Optional Stacking 48 10/100/1000 Ethernet PoE+ and 4x10G Uplink ports, with 640WAC power supply, 1 RU, IP Base feature set
WS-C3650-48FQ-S	Standalone with Optional Stacking 48 10/100/1000 Ethernet PoE+ and 4x10G Uplink ports, with 1025WAC power supply, 1 RU, IP Base feature set
WS-C3650-8X24UQ-L	Standalone with Optional Stacking 24 (16 10/100/1000 and 8 100Mbps/1/2.5/5/10 Gbps) Ethernet and 4x10G Uplink ports, with 1100WAC power supply, 1 RU, LAN Base feature set

WS-C3650-8X24UQ-S	Standalone with Optional Stacking 24 (16 10/100/1000 and 8 100Mbps/1/2.5/5/10 Gbps) Ethernet and 4x10G Uplink ports, with 1100WAC power supply, 1 RU, IP Base feature set
WS-C3650-8X24UQ-E	Standalone with Optional Stacking 24 (16 10/100/1000 and 8 100Mbps/1/2.5/5/10 Gbps) Ethernet and 4x10G Uplink ports, with 1100WAC power supply, 1 RU, IP Services feature set
WS-C3650-12X48UQ-L	Standalone with Optional Stacking 48 (36 10/100/1000 and 12 100Mbps/1/2.5/5/10 Gbps) Ethernet and 4x10G Uplink ports, with 1100WAC power supply, 1 RU, LAN Base feature set
WS-C3650-12X48UQ-S	Standalone with Optional Stacking 48 (36 10/100/1000 and 12 100Mbps/1/2.5/5/10 Gbps) Ethernet and 4x10G Uplink ports, with 1100WAC power supply, 1 RU, IP Base feature set
WS-C3650-12X48UQ-E	Standalone with Optional Stacking 48 (36 10/100/1000 and 12 100Mbps/1/2.5/5/10 Gbps) Ethernet and 4x10G Uplink ports, with 1100WAC power supply, 1 RU, IP Services feature set
WS-C3650-48FQM-S	Standalone with Optional Stacking 48 10/100/1000 Ethernet PoE+ and 4x10G Uplink ports, with fixed 975WAC power supply, 1 RU, IP Base feature set
WS-C3650-48TQ-E	Standalone with Optional Stacking 48 10/100/1000 Ethernet and 4x10G Uplink ports, with 250WAC power supply, 1 RU, IP Services feature set
WS-C3650-48PQ-E	Standalone with Optional Stacking 48 10/100/1000 Ethernet PoE+ and 4x10G Uplink ports, with 640WAC power supply, 1 RU, IP Services feature set
WS-C3650-48FQ-E	Standalone with Optional Stacking 48 10/100/1000 Ethernet PoE+ and 4x10G Uplink ports, with 1025WAC power supply, 1 RU, IP Services feature set
WS-C3650-48FQM-E	Standalone with Optional Stacking 48 10/100/1000 Ethernet PoE+ and 4x10G Uplink ports, with fixed 975WAC power supply, 1 RU, IP Services feature set
Cisco Catalyst 3650 8x10G Uplink Series	
WS-C3650-12X48UR-L	Standalone with Optional Stacking 48 (36 10/100/1000 and 12 100Mbps/1/2.5/5/10 Gbps) Ethernet and 8x10G Uplink ports, with 1100WAC power supply, 1 RU, LAN Base feature set
WS-C3650-12X48UR-S	Standalone with Optional Stacking 48 (36 10/100/1000 and 12 100Mbps/1/2.5/5/10 Gbps) Ethernet and 8x10G Uplink ports, with 1100WAC power supply, 1 RU, IP Base feature set

WS-C3650-12X48UR-E	Standalone with Optional Stacking 48 (36 10/100/1000 and 12 100Mbps/1/2.5/5/10 Gbps) Ethernet and 8x10G Uplink ports, with 1100WAC power supply, 1 RU, IP Services feature set
Cisco Catalyst 3650 2x40G Uplink Series	
WS-C3650-12X48UZ-L	Standalone with Optional Stacking 48 (36 10/100/1000 and 12 100Mbps/1/2.5/5/10 Gbps) Ethernet and 2x40G Uplink ports, with 1100WAC power supply, 1 RU, LAN Base feature set
WS-C3650-12X48UZ-S	Standalone with Optional Stacking 48 (36 10/100/1000 and 12 100Mbps/1/2.5/5/10 Gbps) Ethernet and 2x40G Uplink ports, with 1100WAC power supply, 1 RU, IP Base feature set
WS-C3650-12X48UZ-E	Standalone with Optional Stacking 48 (36 10/100/1000 and 12 100Mbps/1/2.5/5/10 Gbps) Ethernet and 2x40G Uplink ports, with 1100WAC power supply, 1 RU, IP Services feature set
Cisco Catalyst 3650 Bundles	
WS-C3650-24PWS-S	Cisco Catalyst 3650 24 Port PoE 4x1G Uplink w/5 AP licenses IPB
WS-C3650-24PWD-S	Cisco Catalyst 3650 24 Port PoE 2x10G Uplink w/5 AP licenses IPB
WS-C3650-48FWS-S	Cisco Catalyst 3650 48 Port FPoE 4x1G Uplink w/5 AP licenses IPB
WS-C3650-48FWD-S	Cisco Catalyst 3650 48 Port FPoE 2x10G Uplink w/5 AP licenses IPB
WS-C3650-48FWQ-S	Cisco Catalyst 3650 48 Port FPoE 4x10G Uplink w/5 AP licenses IPB
WS-C3650-48PWD-S	Cisco Catalyst 3650 48 Port PoE 2x10G Uplink w/5 AP licenses IPB
WS-C3650-48PWS-S	Cisco Catalyst 3650 48 Port PoE 4x1G Uplink w/5 AP licenses IPB
Cisco Catalyst 3650 Series Spare StackWise-160 Module, Cables and Blank	
C3650-STACK-KIT=	Cisco Catalyst 3650 Stack Module spare
STACK-T2-50CM=	Cisco StackWise-160 50CM Stacking Cable Spare
STACK-T2-1M=	Cisco StackWise-160 1M Stacking Cable Spare
STACK-T2-3M=	Cisco StackWise-160 3M Stacking Cable Spare
STACK-T2-BLANK=	Cisco Catalyst 3650 Stacking Blank Spare
Cisco Catalyst 3650 Series RTU Feature License and Software Options	
C3650-RTU=	Paper SW License for Cisco Catalyst 3650 Switches
C3650-48-L-E	Cisco Catalyst 3650 48-port LAN Base to IP Services Paper RTU License
C3650-24-S-E	Cisco Catalyst 3650 24-port IP Base to IP Services Paper RTU License

C3650-24-L-S=	Cisco Catalyst 3650 24-port LAN Base to IP Base Paper RTU License
C3650-48-L-S=	Cisco Catalyst 3650 48-port LAN Base to IP Base Paper RTU License
C3650-24-L-E=	Cisco Catalyst 3650 24-port LAN Base to IP Services Paper RTU License
C3650-48-S-E=	Cisco Catalyst 3650 48-port IP Base to IP Services Paper RTU License
L-C3650-RTU=	Electronic SW License for Cisco Catalyst 3650 Switches
L-C3650-48-S-E=	Cisco Catalyst 3650 48-port Switch IP Base to IP Services Electronic RTU License
L-C3650-48-L-S	Cisco Catalyst 3650 48-port Switch LAN Base to IP Base Electronic RTU License
L-C3650-48-L-E=	Cisco Catalyst 3650 48-port Switch LAN Base to IP Services Electronic RTU License
L-C3650-24-L-S=	Cisco Catalyst 3650 24-port Switch LAN Base to IP Base Electronic RTU License
L-C3650-24-S-E=	Cisco Catalyst 3650 24-port Switch IP Base to IP Services Electronic RTU License
L-C3650-24-L-E	Cisco Catalyst 3650 24-port Switch LAN Base to IP Services Electronic RTU License
Access Point Licenses	
L-LIC-CT3650-UPG	Primary upgrade license SKU for Cisco 3650 wireless controller (e-delivery)
L-LIC-CTIOS-1A	1 access point adder license for Cisco IOS Software based wireless controller (e-delivery)
LIC-CT3650-UPG	Primary upgrade license SKU for Cisco 3650 wireless controller (paper license)
LIC-CTIOS-1A	1 access point adder license for the Cisco IOS Software based wireless controller (paper license)
Cisco Catalyst 3650 Series Spare Power Supplies and Fan	
PWR-C2-250WAC=	250 WAC power supply spare
PWR-C2-640WAC=	640 WAC power supply spare
PWR-C2-1025WAC=	1025 WAC power supply spare
PWR-C2-640WDC=	640 WDC power supply spare
PWR-C1-715WAC	715WAC power supply spare
PWR-C1-1100WAC	1100WAC power supply spare

PWR-C1-440WDC	440WDC power supply spare
PWR-C2-BLANK=	Power supply blank spare
FAN-T1=	Fan module spare
Cisco Catalyst 3650 Series Spare Power Cords	
CAB-TA-NA=	AC power cord for Cisco Catalyst 3650 (North America)
CAB-TA-AP=	AC power cord for Cisco Catalyst 3650 (Australia)
CAB-TA-AR=	AC power cord for Cisco Catalyst 3650 (Argentina)
CAB-TA-SW=	AC power cord for Cisco Catalyst 3650 (Switzerland)
CAB-TA-UK=	AC power cord for Cisco Catalyst 3650 (United Kingdom)
CAB-TA-JP=	AC power cord for Cisco Catalyst 3650 (Japan)
CAB-TA-250V-JP=	Japan 250VAC power cord for Cisco Catalyst 3650 (Japan)
CAB-TA-EU=	AC power cord for Cisco Catalyst 3650 (Europe)
CAB-TA-IT=	AC power cord for Cisco Catalyst 3650 (Italy)
CAB-TA-IN=	AC power cord for Cisco Catalyst 3650 (India)
CAB-TA-CN	AC power cord for Cisco Catalyst 3650 (China)
CAB-TA-DN=	AC power cord for Cisco Catalyst 3650 (Denmark)
CAB-TA-IS=	AC power cord for Cisco Catalyst 3650 (Israel)
CAB-C15-CBN=	Cabinet jumper power cord, 250 VAC 13A, C14-C15 connectors
CAB-C15-CBN-JP=	Japan Cabinet Jumper Power Cord, 250 VAC 13A, C14-C15
Cisco Catalyst 3650 Series Spare Accessory and Rack Mount Kits	
ACC-KIT-T1=	Accessory kit for Cisco Catalyst 3650 Series
RACK-KIT-T1=	Rack mount kit for Cisco Catalyst 3650 Series
4PT-KIT-T1=	Extension rails and brackets for four-point mounting for Cisco Catalyst 3650 Series

SOURCES

<https://www.cisco.com/c/en/us/products/collateral/switches/catalyst-3650-series-switches/datasheet-c78-729449.html>