

# Cisco Catalyst 3650 Series Fixed GE Access Switch



The Cisco® Catalyst® 3650 Series Switch delivers converged wired and wireless access on a single platform, creating an uncompromised user experience in any workspace. The converged system provides a single platform for wired and wireless networkwide visibility for faster troubleshooting, advanced security and quality of service (QoS) control, maximum resiliency with fast stateful recovery, and scale with distributed wired and wireless data plane.

## Cisco Catalyst 3650 Highlights

- Built on Cisco Unified Access Data Plane (UADP) application-specific integrated circuit (ASIC) with programmability to support Cisco ONE Enterprise Networks Architecture and software-defined networking (SDN)
- Integrated wireless LAN controller functionality
- Native Flexible NetFlow (FnF) on all ports
- Granular, hierarchical bandwidth management
- Cisco TrustSec® support

## Cisco Catalyst 3650 Primary Features

- Integrated wireless LAN controller capability with:
  - Up to 40G of wireless capacity per switch (48-port models)
  - Support for up to 25 access points and 1000 wireless clients on each switch or stack
- 24 and 48 10/100/1000 data and Power over Ethernet Plus (PoE+) models with Energy-Efficient Ethernet (EEE)
  - Optional Cisco StackWise®-160 technology provides scalability and resiliency with 160 Gbps of stack throughput (for additional wired and wireless capabilities, please visit the [Cisco Catalyst 3850 Series Switches](#) page)
  - Fixed, built-in 4 x Gigabit Ethernet, 2 x 10 Gigabit Ethernet, or 4 x 10 Gigabit Ethernet Small Form-Factor Pluggable (SFP) and SFP+ uplink ports
  - Dual redundant power supplies and three modular fans, providing higher redundancy
  - Full IEEE 802.3at (PoE+) with 30W power on all ports in 1 rack unit (RU) form factor
- Software support for IPv4 and IPv6 routing, multicast routing, modular QoS, FnF Version 9, and advanced security features
- Single, consistent Cisco IOS® XE Software image across all license levels, providing an easy upgrade path for access points and software features

- Enhanced limited lifetime warranty (E-LLW) with next business day (NBD) advance hardware replacement and 90-day access to Cisco Technical Assistance Center (TAC) support

## Switch Configurations

The Cisco Catalyst 3650 Series Switches are available in LAN Base, IP Base, and IP Services feature sets. All switches ship with a default AC power supply. A DC power supply can be purchased as an option or spare. The base switch does not include any access point licenses. Figure 1 shows the Cisco Catalyst 3650 Series. Table 1 compares different switch models.

**Figure 1.** Cisco Catalyst 3650 Series Switches (Front and Back)



**Table 1.** Model Comparison for Cisco Catalyst 3650 Series Switches

Model	Total GE Ethernet Ports	Default AC Power	Available PoE Power	Uplinks
WS-C3650-24TS	24	250 WAC	-	4 x Gigabit Ethernet with SFP
WS-C3650-48TS	48			
WS-C3650-24PS	24 PoE+	640 WAC	390 W	
WS-C3650-48PS	48 PoE+			
WS-C3650-48FS	48 PoE+	1025 WAC	775 W	
WS-C3650-24TD	24	250 WAC	-	2 x 10 Gigabit Ethernet with SFP+ (or 4 x Gigabit Ethernet with SFP)
WS-C3650-48TD	48			
WS-C3650-24PD	24 PoE+	640 WAC	390 W	
WS-C3650-48PD	48 PoE+			
WS-C3650-48FD	48 PoE+	1025 WAC	775 W	
WS-C3650-48TQ	48	250 WAC	-	4 x 10 Gigabit Ethernet with SFP+ (or 4 x with SFP)
WS-C3650-48PQ	48 PoE+	640 WAC	390 W	
WS-C3650-48FQ	48 PoE+	1025 WAC	775 W	



### StackWise-160 Technology

The Cisco Catalyst 3650 provides maximum data, power, and wireless resiliency using Cisco StackWise-160 technology, which is built on the highly successful industry-leading Cisco StackWise technology. The StackWise-160 technology provides optional stacking with 160 Gbps of bandwidth for providing resiliency within the stack. The stack behaves as a single switching unit that is managed by an active switch elected from one of the member switches. The active switch creates and updates all the switching, routing, and wireless tables. In an event of the active member failure, the standby member assumes the role of the active switch, continuing to keep the stack operational.

## Cisco Catalyst 3650 Primary Advantages

### Converged Wired and Wireless Platform

The Cisco Catalyst 3650 is a stackable platform that converges wired and wireless services on a Cisco IOS XE Software based platform. The CAPWAP tunnels from the access points terminate at the 3650 switch, enabling users to configure and apply software features such as QoS, security, and FnF across wired ports and wireless SSIDs on the same switch at the same time. The converged wired and wireless platform supports the [Cisco Unified Access](#) solution. With “one policy, one management, one network,” the Cisco Catalyst 3650 and Cisco Unified Access help IT spend less time running the network and more time on business innovation.

### Advanced Security

The Cisco Catalyst 3650 is hardware capable of supporting Cisco TrustSec functionality. Cisco TrustSec uses the device and user credentials acquired during authentication for classifying the packets by security groups as they enter the network with scalability and simplified management. The classification is maintained through the network by the security group tag (SGT) and through integration with the Cisco [Identity Services Engine](#). The Cisco Catalyst 3650 is also hardware-ready for link layer MACsec encryption, which provides networkwide encryption to protect data traffic across the network.

### Application Visibility and Control (AVC)

With the native support for FnF on all the ports, the Cisco Catalyst 3650 can monitor both east-west and north-south wired traffic at the same time. The Cisco Catalyst 3650 switch terminates the wireless CAPWAP tunnels from the access point, providing full visibility into the wireless traffic at the switch. Because the wireless traffic is now

visible at the switch, it is possible to identify wireless traffic using FnF and prioritize the traffic using advanced QoS capabilities for an improved user experience and faster troubleshooting.

### SmartOperations

The Cisco Catalyst 3650 supports Cisco Catalyst [SmartOperations](#). SmartOperations features such as Auto Smartports, Auto QoS, and Smart Install reduce deployment time by automating most of the basic switch and port configurations.

### Foundation for Cisco ONE Enterprise Networks Architecture

The Cisco Catalyst 3650 is built on the UADP ASIC, which provides wire-rate hardware performance with software programmability. The UADP ASIC features a programmable data plane, enabling deployment of SDN services and support of future software features over the product lifetime. The Cisco Catalyst 3650 supports the [Cisco ONE Enterprise Networks Architecture](#) for openness, programmability, and operational simplicity.

## Reduced Total Cost of Ownership

The Cisco Catalyst 3650 reduces the total cost of ownership and provides superior investment protection through:

- Built-in wireless controller functionality
- Optional stacking
- Support for fixed GE or 10 GE uplink
- Support for IP Base and IP Services software options
- Dual redundant power supply and three individual fans to help ensure high availability
- E-LLW with NBD advance hardware replacement and 90-day access to Cisco TAC support