

Cisco Internetworking Operating Systems (IOS)

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Introduction

The Cisco Internetworking Operating System (IOS) is a sophisticated operating system optimized for internetworking. Cisco IOS® provides the unifying principles around which an internetwork can be maintained cost-effectively over time. It is a software architecture, disassociated from hardware, that can be dynamically upgraded to adapt to changing technologies (hardware and software) as they evolve within a networking infrastructure. Cisco IOS can be thought of as an internetworking brain, a highly intelligent administrator that manages and controls complex, distributed network resources and functions.

Prerequisites

Requirements

There are no specific requirements for this document.

Components Used

This document is not restricted to specific software and hardware versions.

Conventions

Refer to Cisco Technical Tips Conventions for more information on document conventions.

Description

The early releases of Cisco IOS grew into a singular, monolithic system that is fundamentally router-centric. It was arranged as a set of procedures, allowing any of the procedure(s) to call any other. This monolithic structure did not enforce data hiding. Most of its operating code had structural and operational interdependencies.

Cisco IOS releases 9.21 through 11.2 represent engineering efforts to redesign Cisco IOS into modular components or subsystems. Organized as a set of layers, each subsystem now provides an independent entry point into the system code. The subsystems themselves are defined as discrete modules that support various functions within the embedded (Kernel) system. This layered subsystem design has allowed engineering to partition Cisco IOS into more manageable and easily upgradeable feature sets.

The Cisco IOS evolution to port-ready status indicates that Cisco IOS 11.3 and later can be more easily ported to new platforms. Bulletproofing, a synonym for still finer levels of modularity, allows Cisco IOS features to be defined tightly with little to no dependencies on other features or subsystems. Bulletproofing allows Cisco IOS feature/solution sets to be built specifically to customer requirements. As Cisco IOS continues to evolve, customers will be able to mix and match specific features to meet the requirements of their unique environments.

Historical Facts

- Cisco IOS 8.3 was the last popular Cisco IOS release before the 1990s.
- Cisco IOS 9.1 first customer shipped (FCS) in December 1992.
- Cisco IOS 9.1(16) is the last maintenance release of Cisco IOS 9.1. Cisco IOS 9.1 users were notified that, as of April 17, 1995, they should upgrade to Cisco IOS 10.0(9) or 10.2(5). Cisco IOS 9.17 has reached its end of sales (EOS) and end of maintenance (EOM) milestones. Cisco IOS 9.17(16) is the last maintenance release of 9.17. No more features or bug fixes were to be applied to the Cisco IOS 9.17 line.

For more information, refer to:

- Cisco IOS Software
- Types of Cisco IOS Software Releases
- Release Designations Defined

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Related Information

- [Technical Support & Documentation – Cisco Systems](#)

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