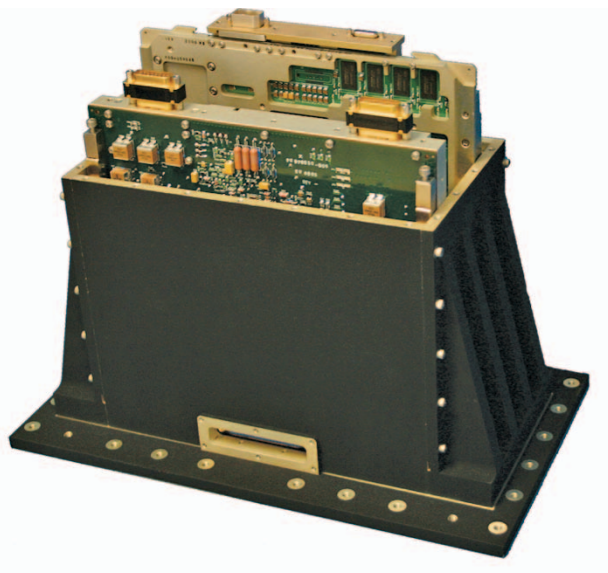


Cisco Space Router: Increase Utilization, Reduce Latency

Product Overview

Exploding demand for satellite capacity is driven by IP services such as high-definition video. Most applications on satellite networks today are IP applications, yet satellite networks have traditionally been deployed as a circuit-switched network. The Cisco Space Router provides the ability to route IP traffic on the satellite, eliminating the need to send the data to and from an extra ground station to implement the circuit-switched function. Routing IP traffic natively on the satellite with the router's built-in Cisco IOS® Software can increase throughput, reduce latency, and enable flexible bandwidth-on-demand applications between users in different geographic regions without static configuration.

Figure 1. Cisco Space Router



Features and Benefits

An option for the Cisco Space Router is an embedded RF Modem Interface Card that removes the need for a ground-based modem hub. That allows customers to deploy smaller satellite antenna dishes, increasing the attractiveness, revenue per user, and adoptability of satellite network services.

Cisco Space Routers allow you to implement routed services on the satellite using the same Cisco IOS IP routing used on ground station. The entire suite of Cisco IOS services is supported on the Cisco Space Router, improving the security, manageability, and upgradability of a satellite network:

- Cisco IOS Security and onboard termination of the uplink and downlink help protect transmissions from spoofing and other attacks.
- Dynamic IP routing allows secure peer-to-peer communication between users without cumbersome static configuration.
- Zero-Touch Deployment (ZTD) allows automated configuration of routers that are deployed on the ground behind the satellite antenna.
- QoS capabilities enable cost-effective support of bursty applications like Cisco TelePresence™ over satellites.

- The router and the Modem Interface Card are upgradable to new waveforms and Cisco IOS services, making it easy to add new billable services.
- The Cisco Space Router utilizes the common protocols, configuration policies, and management tools used by IPv6 and IPv4 ground infrastructures.

The Cisco Space Router is the cornerstone of Next Generation Global Services (NGGS), which ushers in a new era in satellite networking:

- Extends access to IP applications into areas not covered by traditional ground networks or 3G networks, delivering consistent and pervasive IP capabilities regardless of geographic location.
- Extends Cisco IOS Software to spacecraft, thus integrating the IP services and capabilities already present in Cisco IOS ground and 3G networks.
- Provides business continuity by ensuring access to IP applications in the event that ground or 3G networks are unavailable.

Figure 2. Satellite Network with and without Cisco Space Router

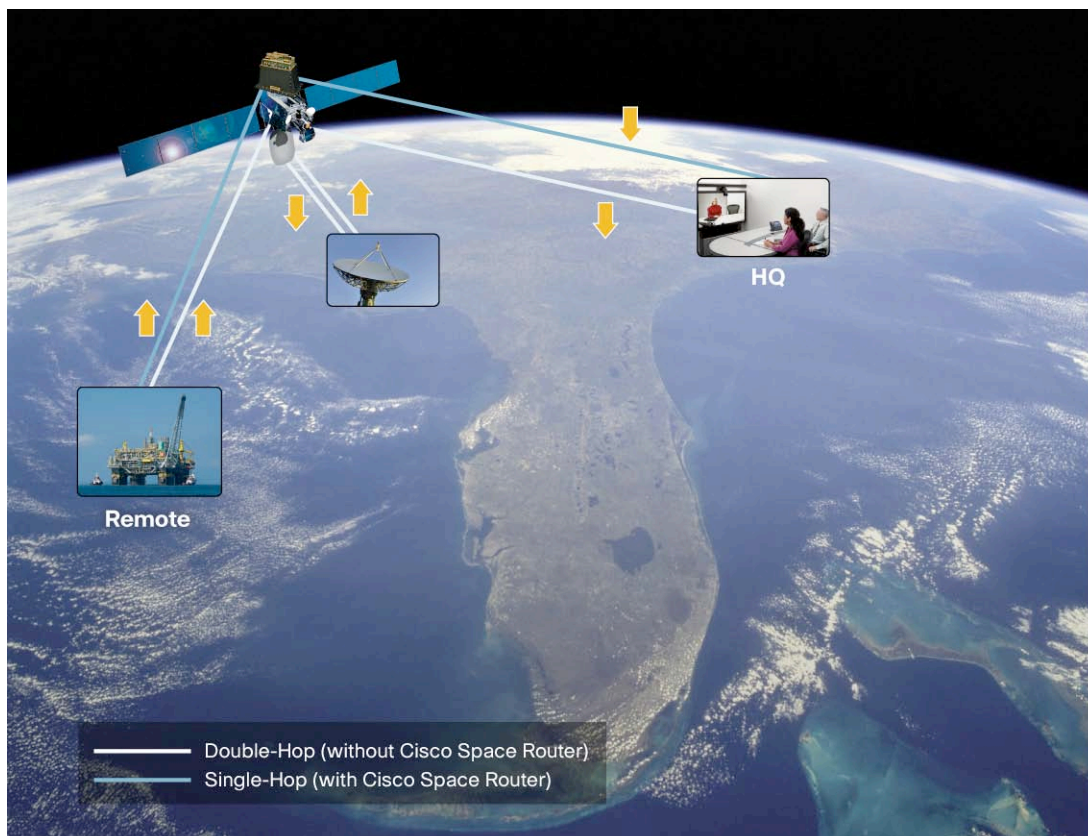


Photo Credit: NASA/courtesy of nasaimages.org

The Cisco Space Router Series introduces several innovative features to the satellite networking industry:

- Onboard routing between transponders removes the need to “double-hop” network traffic from the satellite to a ground gateway hub (see Figure 2).
- Onboard routing between terminals using different waveforms reduces latency by shortening the end-to-end path compared to switching at ground station.
- Onboard demodulation of satellite signals separates the uplink and downlink to enable support of smaller satellite antennas.

Additional features and benefits of the Cisco Space Router are included in Table 1.

Table 1. Cisco Space Router Features and Benefits

Feature	Benefit
Full Suite of Base Cisco IOS 12.4T(15) Services	Puts all the power of Cisco IOS routers directly onboard spacecraft
Modem Interface Card (optional)	Software-defined radio with support for additional upgradable waveforms directly onboard satellites
Supported Waveforms	<ul style="list-style-type: none"> • Linkway S2 modem compatible waveform • Linkway 2100 modem compatible waveform
Dynamic Onboard IP Routing	Increase transponder utilization and reduce latency by establishing new user-to-user sessions without double-hopping user traffic
QoS	Bill users according to flexible QoS profiles rather than requiring dedicated bandwidth for circuit-switched users
Bandwidth Management	Quickly change and configure committed and peak information rates for customers
Zero Touch Deployment (ZTD)	Automated, template-based user terminal deployed with Cisco Next-Generation Global Services model allows bootstrap and offline configuration of Cisco ground router before delivery to users

For More Information

For more information about Cisco Internet Routing in Space or Cisco Space Routers, visit www.cisco.com/go/iris.



Americas Headquarters
Cisco Systems, Inc.
San Jose, CA

Asia Pacific Headquarters
Cisco Systems (USA) Pte. Ltd.
Singapore

Europe Headquarters
Cisco Systems International BV
Amsterdam, The Netherlands

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at www.cisco.com/go/offices.

CCDE, CCENT, CCSI, Cisco Eos, Cisco HealthPresence, Cisco IronPort, the Cisco logo, Cisco Lumin, Cisco Nexus, Cisco Nurse Connect, Cisco StackPower, Cisco StadiumVision, Cisco TelePresence, Cisco Unified Computing System, Cisco WebEx, DCE, Flip Channels, Flip for Good, Flip Mino, Flip Video, Flip Video (Design), Flipshare (Design), Flip Ultra, and Welcome to the Human Network are trademarks; Changing the Way We Work, Live, Play, and Learn, Cisco Store, and Flip Gift Card are service marks; and Access Registrar, Aironet, AsyncOS, Bringing the Meeting To You, Catalyst, CCDA, CCDP, CCIE, CCIP, CCNA, CCNP, CCSP, CCVP, Cisco, the Cisco Certified Internetwork Expert logo, Cisco IOS, Cisco Press, Cisco Systems, Cisco Systems Capital, the Cisco Systems logo, Cisco Unity, Collaboration Without Limitation, EtherFast, EtherSwitch, Event Center, Fast Step, Follow Me Browsing, FormShare, GigaDrive, HomeLink, Internet Quotient, IOS, iPhone, iQuick Study, IronPort, the IronPort logo, LightStream, Linksys, MediaTone, MeetingPlace, MeetingPlace Chime Sound, MGX, Networkers, Networking Academy, Network Registrar, PCNow, PIX, PowerPanels, ProConnect, ScriptShare, SenderBase, SMARTnet, Spectrum Expert, StackWise, The Fastest Way to Increase Your Internet Quotient, TransPath, WebEx, and the WebEx logo are registered trademarks of Cisco Systems, Inc. and/or its affiliates in the United States and certain other countries.

All other trademarks mentioned in this document or website are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (0907R)