



## Cisco: Enabling the Global Defense Mission

The responsibilities of defense agencies around the globe are expanding rapidly as their missions have grown from the traditional national defense and war-fighting operations to humanitarian relief, peace keeping, and actions targeting the global war on terrorism. This is occurring as defense manpower and budgets are in decline, while the speed of operations in a global environment increases. Additionally, the extensive use of dynamic coalitions and allied engagements is required with at times nontraditional partners. The result is a global defense community needing to field and integrate contemporary and traditional capabilities that will operate in the new global environment. This has prompted the global defense community to migrate from older legacy infrastructures to more flexible, adaptive, standards-based solutions founded on commercial-off-the-shelf (COTS) and IP-based applications and networking technology.

IP networking has become the foundation for converging voice, video, and data applications into unified communications and is *the* single internationally adopted networking standard. This unique combination enables disparate defense communities to connect and collaborate in ways previously unavailable. IP networking enables collaboration between everything that flies, drives, walks, or sails, and it allows collaboration between people, places, and things that had been constrained by limitations in geography and a single method of communication. Unified communications on an IP infrastructure provide unique global accessibility with the potential to reach anyone, anywhere, using any communications device—whether it is in a backpack, on an airplane, or on a ship.

### Applying IP Solutions to Defense Needs

The network is the ubiquitous enabler for global communications and collaboration. It is the platform that connects organizations and people, and it enhances mission effectiveness by helping them to collaborate in modern and effective ways. The network is the platform that improves agility, creates new opportunities for innovation, and provides more options for meeting a mission's operational requirements. IP networks provide the following primary benefits:

- **Interoperability:** IP networks overcome the lack of interoperability of proprietary point-to-point networks and provide ubiquitous connectivity for rapid information sharing across traditional and contemporary platforms. Even analog voice-based radio communications can be encoded with open-standards voice-over-IP (VoIP) equipment for transfer throughout the IP network.

- **Security:** IP not only simplifies interoperability; it does so securely through many robust security mechanisms. These help ensure that the systems and networks within the tactical communications system are trusted to operate securely with strategic and commercial networks, with tactical networks, and with systems of other military services and allies.
- **Flexibility:** In the battle zone, commanders must be able to adjust their mission profiles on the move, while adapting to changing tactical circumstances. This requires network and communications equipment that can support many different mission profiles using the same equipment. IP networks allow you to bring voice, video, and data together over the same communications channel using the same family of common IP-based C4 equipment—whether the node is mobile or fixed—facilitating agile and adaptable mission requirements.
- **Collaboration:** IP network-enabled interoperability allows commanders to collaborate on a truly global scale. The IP network unifies and enhances collaboration among military personnel, joint forces, coalition partners, and other federal and civilian agencies. Using applications on an IP-based network, commanders can quickly create unplanned incident collaboration profiles that help ensure fast, inclusive communications among critical team members.
- **Simplicity:** Commanders can set up secure communications links for voice, video, and data in a fraction of the time that is required with standalone and incompatible proprietary networks. Simple communications plans are more likely to withstand the stresses of all types of operation. A simple plan will be more readily understood, easily implemented, and flexible and have fewer areas of potential failure.
- **Redundancy:** IP was accepted by the U.S. Department of Defense as a redundant protocol to replace its inflexible circuit-switched network. Packet-based networks provide outstanding redundancy with automatic reroute and failover capabilities. Efficient transport protocols such as TCP and Stream Control Transmission Protocol (SCTP) help ensure that data is not lost or received out of order, even if packets take different paths through the network.

## COTS Technologies Speed Deployment Time and Lower Costs

To promote further efficiencies in their operations, many agencies are also adopting COTS technologies to lessen their reliance on custom-designed, proprietary, and military-specific equipment. These technologies reduce the total cost of ownership by spreading the cost of development over the total commercial market, as well as applying industry best practices so that the military does not have to pay for custom development. In addition, COTS technologies accelerate the time to deploy new and innovative technologies on the battlefield. Ultimately, a standards-based approach helps defense agencies build more affordable, flexible, adaptable, interoperable, and extendable systems.

## Innovative Global Government Solutions

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