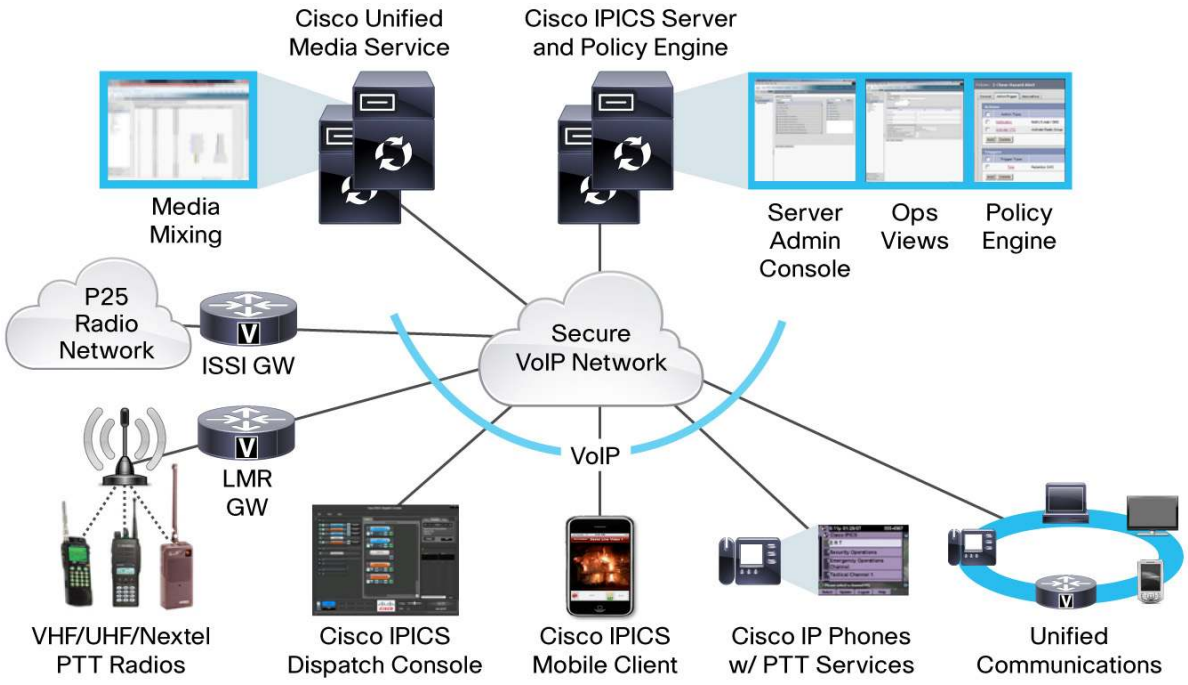
Cisco IP Interoperability and Collaboration System: Release 4.5

The Cisco IP Interoperability and Collaboration System (IPICS) solution simplifies radio dispatch operations and improves response to incidents, emergencies, and facility events. It dissolves communication barriers between land mobile radio systems and devices, including mobile phones, landline phones, IP phones, and PC users, supporting communications among users of all devices, wherever they are located.

When time is critical, IPICS delivers information into the hands of the right people, at the right time and the right format. By providing flexible, scalable communication interoperability, IPICS enhances the value of existing and new radio, telephony, and IP communications networks.

Cisco IPICS System



The Cisco IPICS system consists of several hardware and software components that make up a system.

Cisco IPICS Dispatch Console

The IPICS Dispatch Console (IDC) is a state-of-the-art end-to-end radio dispatching solution designed for mission-critical radio communications. It is the vital link between dispatchers and field personnel, helping coordinate field response and safeguarding personnel.

Running on a standard PC platform, it extends existing push-to-talk (PTT) radio channels, so users with a variety of communication devices can participate in the event. The IPICS Dispatch Console provides control of radio resources through an easy-to-use on-screen interface (see Figure 1). It allows users to monitor and coordinate emergency response across incompatible radio systems and between multiple agencies, jurisdictions, and departments. An intuitive GUI provides access to all dispatch features, including:

- PTT and monitor up to 50 radio channels and talkgroups
- Channel patching
- Integrated telephony client for incoming and outgoing calls
- Radio-to-telephone patching
- On-screen receive and transmit indicators for channel activity
- Handset, headset, or desktop microphone operation
- Individual channel mute/all mute
- All talk
- Instant recall recording per channel
- Last call transmit
- Alert tones
- Channel multi-select
- Confirmation tones for trunked systems
- Unit ID/talker ID
- Emergency alert/acknowledge
- Coded/clear channels
- Frequency select

Figure 1. Cisco IPICS Dispatch Console

The Cisco IPICS Dispatch Console integrates with virtually any analog or digital radio system, supporting dynamic, any-to-any PTT communications. It also introduces rich interactive media IPICS incident support, giving dispatchers the power to consolidate information relating to an incident, and instantly share that information among IPICS incident participants.

Incident dispatch supports sharing of multimedia data, including:

- Live video sent from surveillance cameras, Access Control gateways, and mobile clients
- Archived videos such as Flip Video
- Photos
- Alarm monitoring
- Journal and live statuses
- Website links to resources, such as FEMA and hazardous material databases, standard operating procedures, and maps

What Is New in IPICS 4.5

Cisco IPICS industry leading IP collaboration platform includes new features and functions such as:

- **Direct radio network interoperability**, which allows TCP/IP communication across P25 networks that use the Interswitching System Interface (ISSI) protocol. This capability is provided through the new ISSI Gateway and new end-to-end native P25 communication features in the Cisco IPICS Dispatch Console (IDC).
- **Radio signaling**, providing dispatchers and radio users with features such as talker ID, emergency call, and private calls. These capabilities are provided through the new Unified Media Service (UMS) platform.
- **IT database integration**, a Lightweight Directory Access Protocol (LDAP) authentication feature that allows Cisco IPICS users to be authenticated against a common Active Directory repository.
- **High availability for multiple SIP providers**, which minimizes single-points-of-failures in Cisco IPICS deployments, by allowing the dial engine, dial-in functionality, and dial-out functionality to work with multiple SIP providers.
- **Improved audio high availability**, which provides redundancy and failover for the UMS. This minimizes media downtime for virtual talkgroups (VTGs) and remote connections if a critical media service fails.
- **More efficient configuration**, as IPICS now supports script-based bulk uploading of a large number of users, channels, or Cisco Video Surveillance Operations Manager (VSOM) video links.
- **Language support** for internationalization of the IDC, dial engine prompts, and IP-phone services.
- **Operating system backup**, available on a USB drive.
- **Custom splash screen**, which can be configured for the Administration Console and the IDC.
- **Joystick integration** with 32-bit external systems.
- **Enhanced IDC dialer**, which supports 10 lines, 3 patches per line, and last-number redial.
- **Enhanced IDC logging**
- **Lazy SIP resource allocation**, conserves system resources

- **Highly secure communication**, the ISSI gateway with P25 radio systems provides the option of end-to-end encrypted calls directly with dispatchers.
- **Server and virtual machine support** for the IPICS Server, UMS, and ISSI Gateway virtualized using the Cisco Unified Computing Systems C-200 Series server.

Cisco IPICS Mobile Client

Incidents can happen anywhere, and at any time. The IPICS Mobile Client application, when introduced into an IPICS incident, complements a radio by giving the responder access to an incident talkgroup and all supporting media such as current incident status, related live and stored videos and pictures. Responders may also use the IPICS Mobile Client to add their own status, videos and pictures to an incident, instantly making the information available to all other incident participants (see Figure 2).

Figure 2. Cisco IPICS Mobile Client for iPhone

High Availability

The IPICS system has the option of adding a secondary hot standby server for both the UMS and IPICS server to provide high availability with no single point of failure. If a primary server fails, the secondary server automatically takes over service without communication interruption. The servers can be geographically separated or located together. Administrative functions and data logs are constantly synchronized, to avoid any loss of information should a server go down.

Loop Prevention

As multiple dispatchers patch channels together, there is always the possibility of creating a channel loop that causes audio feedback into the communication path. The IPICS 4.0 system automatically identifies potential audio loops and resolves them before they become an issue. Audio channels and talkgroups remain clear without feedback.

Radio Pooling

This allows the IPICS system administrator to group dispatch radio assets together into logical radio pools. Cisco simplifies dispatcher ease of use by automatically sending communications to all the selected radio channels or talk groups in the radio pool.

Enhanced IPICS Application Programming Interface

A web service Application Programming Interface (API) is available to integrate IPICS with third-party applications. These can include Command and Control, Physical Security Information Management (PSIM), and Computer Aided Dispatch (CAD) applications.

Table 1. IPICS System Capabilities

System Capabilities	Specification
IPICS Users in Database	Up to 50,000
Active Users	Up to 1000
Active Dispatch Consoles	Up to 250
VTGs	Up to 150 active
Radio Channels	Up to 1500 active channels
Dial-In/Dial-Out Users	Up to 200 active dial users
Mobile Clients	Up to 1000 active (included in Active Users above)

Licensing Information

The Cisco IPICS server checks the license count for proper software and resource licenses. For example, one dispatch console license is required for each IPICS Dispatch Console client logged into the IPICS server. This means that the Cisco IPICS Dispatch Console can be installed on as many PCs as needed, and the licensing is only based upon the Cisco IPICS Dispatch Console sessions that are in use at any given time.

Bundle	IPICS Server License	Virtual Talk Groups	Policy Engine	Radio Channel Ports	Silver Consoles	Platinum Consoles	IP Phones	Dial Ports
IPICS4.X-BDL1-K9	1	1	1	2	1	0	1	1
IPICS4.X-BDL2-K9	1	10	0	8	10	4	10	10
IPICS4.X-BDL3-K9	1	50	1	10	10	4	10	10

Ordering Information

The IPICS solution is only available direct from Cisco Advanced Services or through select technology partners. To place an order, visit the Cisco Ordering Homepage or contact your IPICS Account Manager.

Table 2. Ordering Information

Part Number	Description
CIS-IPICS-VM	Order this for a virtualized version of the IPICS system, and structure all software as options to this part number.
IPICS4.X-BDL1-K9	IPICS basic bundle used for small deployments. Order this as option to a 1 RU MSP (CPS-MSP-1RU-K9) or a 2 RU MSP (CPS-MSP-2RU-K9), or as an option to the CIS-IPICS-VM.
IPICS4.X-BDL2-K9	IPICS medium bundle used for Cisco Call Manager Integration. Order this as option to a 1 RU MSP (CPS-MSP-1RU-K9) or a 2 RU MSP (CPS-MSP-2RU-K9), or as an option to the CIS-IPICS-VM.
IPICS4.X-BDL3-K9	IPICS large bundle used for large deployments. Order this as option to a 1 RU MSP (CPS-MSP-1RU-K9) or a 2-RU MSP (CPS-MSP-2RU-K9), or as an option to the CIS-IPICS-VM.
CIS-IPICS4-HA-K9	High availability secondary server bundle. Order this as an option to a 1 RU MSP (CPS-MSP-1RU-K9) or a 2 RU MSP (CPS-MSP-2RU-K9), or as an option to the CIS-IPICS-VM.
CIS-IPPE4.0-K9	Policy engine server software, which provides the policy engine feature. Order this as an option to a 1 RU MSP (CPS-MSP-1RU-K9) or a 2 RU MSP (CPS-MSP-2RU-K9), or as an option to the CIS-IPICS-VM.
CIS-CON4.0-SIL	Cisco Dispatch Console Silver License, used for primary dispatchers. Order this as an option to a 1 RU MSP (CPS-MSP-1RU-K9) or a 2 RU MSP (CPS-MSP-2RU-K9), or as an option to the CIS-IPICS-VM.

Part Number	Description
CIS-CON4.0-PLA	Cisco Dispatch Console Platinum License, used for supervisors or dispatchers that need telephony features. Order this as an option to a 1 RU MSP (CPS-MSP-1RU-K9) or a 2 RU MSP (CPS-MSP-2RU-K9), or as an option to the CIS-IPICS-VM.
CIS-MC	Mobile Client IPICS License. Order one per each Android and iPhone mobile client needed in the system. Order this as an option to a 1 RU MSP (CPS-MSP-1RU-K9) or a 2 RU MSP (CPS-MSP-2RU-K9), or as an option to the CIS-IPICS-VM.
CIS-MC-100	Mobile Client IPICS License 100 Units. This includes 100 mobile client licenses for Android or iPhone devices. Order this as an option to a 1 RU MSP (CPS-MSP-1RU-K9) or a 2 RU MSP (CPS-MSP-2RU-K9), or as an option to the CIS-IPICS-VM.
CIS-PHN	IP Phone Client License. This is used for each Cisco IP phone that needs to access talkgroups and channels. Order one per each Android and iPhone mobile client needed in the system. Order this as an option to a 1 RU MSP (CPS-MSP-1RU-K9) or a 2-RU MSP (CPS-MSP-2RU-K9), or as an option to the CIS-IPICS-VM.
CIS-VIP-CHNL	IPICS Channel/Radio Port License. Order one for each channel or radio needed on the IPICS system. Order this as an option to a 1 RU MSP (CPS-MSP-1RU-K9) or a 2-RU MSP (CPS-MSP-2RU-K9), or as an option to the CIS-IPICS-VM.
CIS-VIP-DIAL	IPICS VIP dial-out ports. This is used for each dial out port connected to a telephony system. Order this as an option to a 1 RU MSP (CPS-MSP-1RU-K9) or a 2-RU MSP (CPS-MSP-2RU-K9), or as an option to the CIS-IPICS-VM.
CIS-VIP-VTG	Virtual talkgroup (VTG). Order one for each desired VTG. Order this as an option to a 1 RU MSP (CPS-MSP-1RU-K9) or a 2-RU MSP (CPS-MSP-2RU-K9) or as an option to the CIS-IPICS-VM.
CIS-OPSVIEW2	IPICS operational views. This feature allows administrators to segment dispatchers in the IPICS system. Order one for each desired VTG. Order this as an option to a 1 RU MSP (CPS-MSP-1RU-K9) or a 2-RU MSP (CPS-MSP-2RU-K9), or as an option to the CIS-IPICS-VM.
CIS-NATIVE-IDC	Native dispatch position for end-to-end P25 encryption. Order one for each desired dispatch position to have end-to-end encryption. Order this as an option to a 1 RU MSP (CPS-MSP-1RU-K9) or a 2-RU MSP (CPS-MSP-2RU-K9), or as an option to the CIS-IPICS-VM.

Service and Support

Using the Cisco Lifecycle Services approach, Cisco and partners provide a broad portfolio of end-to-end services and support that can help increase your network's business value and return on investment (ROI). This approach defines the minimum set of activities needed, by technology and by network complexity, to help you successfully deploy and operate Cisco technologies and optimize their performance throughout the lifecycle of your network.

For More Information

For more information about Cisco IPICS, visit http://www.cisco.com/go/ipics or contact your local account representative.

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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.

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