



M.E.I.P.S[®]

Solution With Cisco CallManager Express



Introduction

MIND CTI

Founded in 1995, MIND CTI Ltd. is a public company (NASDAQ: MNDO), a leading global provider of Call Management solutions to the enterprise market, and Billing and Customer Care solutions to the xSP market. MIND provides sales and support to its worldwide customers from offices in the United States, UK, Romania and Israel. With 300 employees and an experienced management team, MIND has a strong balance sheet and profitable operations.

With over 20,000 installations in more than 40 countries, MIND has rapidly become the solution of choice to major companies such as: Coca-Cola, Renault, Merck, NATO, European Parliament, Total, HSBC, Fidelity Investments, Sheraton, Urssaf, ACSA, Shinsei Bank, Intel, PwC (Pricewaterhouse Coopers) and many more. MIND sells its products through distributors and leading SI partners and is maintaining strategic relationships with blue chip technology partners such as Cisco, Avaya, Alcatel-Lucent and others.

MIND has a proven record in call management and accounting solutions since 1985. Through continuous research and development, MIND delivers state-of-the-art technology and advanced solutions that enable enterprises to manage, control, track, alert, budget and analyze their total telecommunication expenses and productivity. For companies that are aware of the importance and benefits of advanced call accounting and network management systems, MIND Call Management Solutions offer the most comprehensive, relevant and up-to-date solution.

Overview

In today's communication arena, there is rapid movement towards convergent networks supporting voice, video and integrated data. Customers are looking for advanced systems to manage multi-service networks. When converging voice and data on one network, M.E.IP.S, from MIND, is the perfect tool to accompany an IP switch. M.E.IP.S is a voice and IP services accounting and traffic-analysis solution suitable for any size organization.

MIND offers customers the M.E.IP.S-Enterprise IP Management solution for use with an IP PBX. As IP PBX's call processing platform keeps track of all IP generated phone calls, the call detail records are seamlessly integrated in the M.E.IP.S which collects and tracks the data from combinations of traditional voice circuits and VoIP networks. M.E.IP.S collects, records, and stores all call information in a database. Users are able to generate up-to-the-minute reports on their organization's telephone use, allowing them to manage their telecom resources effectively.

M.E.IP.S enables converged reporting and billing for voice, VoIP and data. M.E.IP.S collects data from different communication devices including the Cisco CallManager, Cisco gateways / routers, variety of Legacy PBXs and IP PBXs.



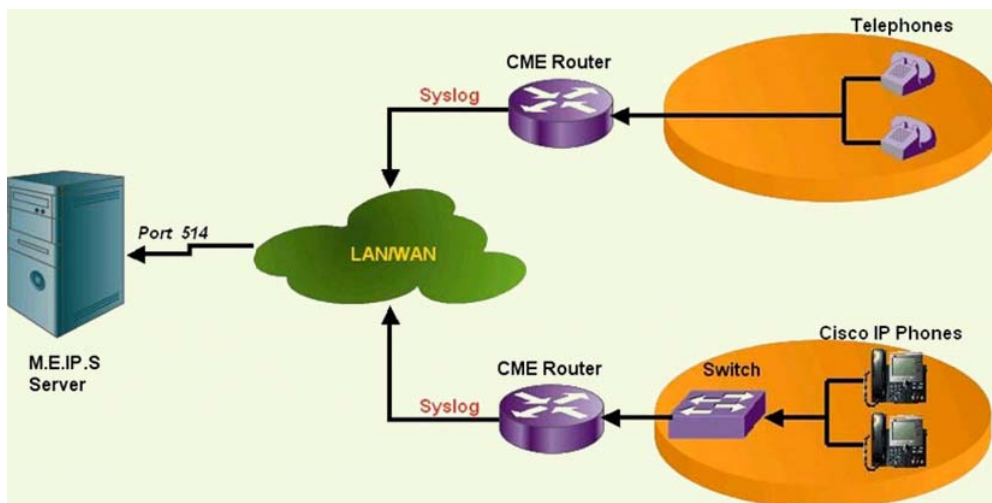
Cisco CallManager Express provides voice features comparable to an IP key system, and is recommended as a turnkey, bundled voice and data offering for offices with fewer than 120 users. The deployment consists of a data access router with the Cisco CallManager Express feature enabled, Cisco IP phones, and Cisco LAN switches with in-line power. In many cases, customers that previously used an access router for data connectivity can upgrade it with Cisco CallManager Express to support managed voice services as well. If an SMB customer or a small site of a large enterprise initially deploys Cisco CallManager Express and then later outgrows it, the customer can re-deploy the Cisco CallManager Express router as an SRST router.

Solution Architecture

Cisco CallManager Express is becoming increasingly popular as small and medium businesses seek to manage their VoIP calls, Enterprises adopt IP Telephony to reduce costs and increase productivity. The **M.E.IP.S** solution for Cisco CallManager Express gives the best call accounting solution for Cisco networks and hybrid networks as businesses seek to manage their IT costs and free up resources to concentrate on their core competency.

The M.E.IP.S solution for Cisco CallManager Express enables enterprises to take responsibility for traditional Enterprise IT services such as Voice and VPN by providing the key VoIP management, billing and reporting tool. M.E.IP.S provides Enterprises with a robust Call Accounting reporting system necessary for department expense planning, auditing, and reconciliation of communication budgets.

M.E.IP.S enables organizations to set budgets for different departments and projects and even to restrict extension's usage, reduce phone and bandwidth expenses, and prevent telephone misuse. It includes flexible multi-level costing capabilities and supports customer hierarchical security, allowing managers to see the usage data for their department, but not necessarily for other departments. All calls, whether to a local extension, to another company site, long distance or international, or even received calls can be tracked and reported.



M.E.IP.S Architecture with CME

CDR Collection

The data collection function in the M.E.IP.S application is designed to allow collection from different network data sources elements such as the Cisco CallManager and Cisco Gateways/Routers. This feature allows M.E.IP.S to easily integrate with the CallManager Express and to be able to collect call records directly from the CME Router using the Syslog messages or the RADIUS protocol.

Note: The Cisco CallManager Express does not keep database storage of call records; therefore the CDR collection is done directly from the CME Router utilizing the Syslog messages or the RADIUS protocol.

Budget Control

Telephony and bandwidth consumption is estimated to be one of the largest expenses in any organization. M.E.IP.S helps companies reduce their communications costs by:

- Providing a single administration point for monitoring and controlling all your voice, data and video communications.
- Producing customizable tables and/or graphs showing the total usage and costs for all your network communications.
- Creating users' accountability for controlling their own costs.

M.E.IP.S can be used for:

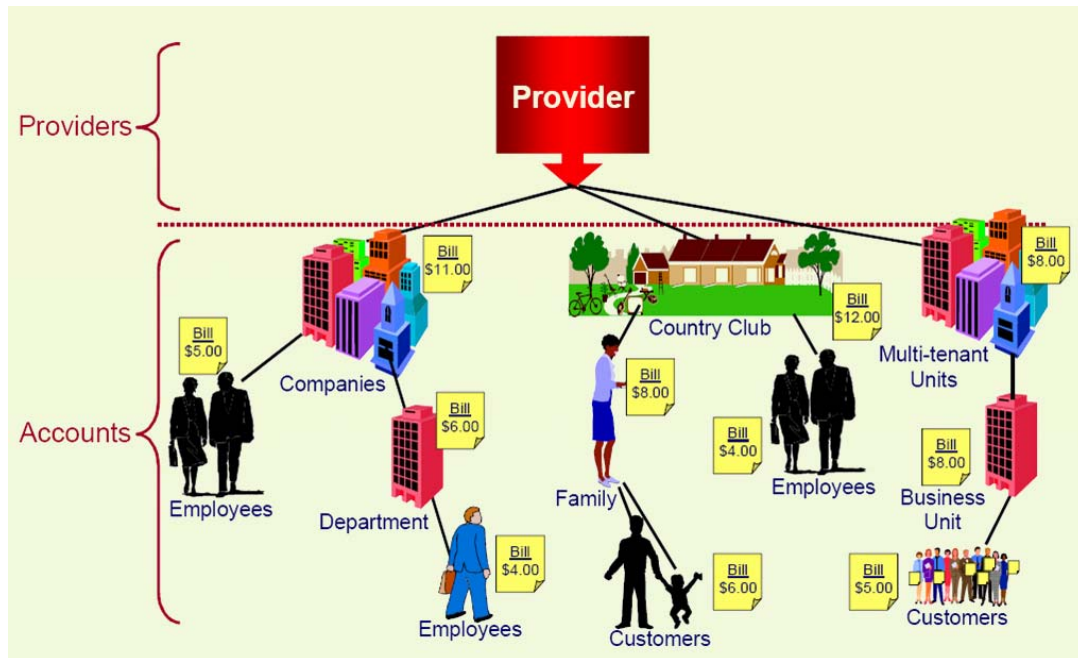
- Checking and comparing different carriers' tariffs
- Producing top destination reports
- Distinguishing between private and non private calls
- Analyzing if a specific trunk or trunk group is over-loaded
- Controlling budget of different hierarchy levels within the company (Account, Extension, Department, etc.)
- Pricing the communication budget for a specific project
- Warning of possible toll fraud in the organization
- Bandwidth overview (by site, company, division, department or user)

Billing

Organizations that bill clients for the telephone and bandwidth use (hotels, shared offices, multi-tenant units, universities, business centers and ASPs) require reliable billing systems. M.E.IP.S enables different types of companies to bill their clients and produce customized reports of any kind.

Lawyers and Accountants Offices

Lawyers and accountants offices would like to charge their customers according to the time they spend with them on the phone. With M.E.IP.S, reports are produced effortlessly and conveniently printed, viewed, exported or distributed automatically by e-mail.



M.E.IP.S Billing for Multi-Tenant Units and ASPs

Hotels

Hotels need to charge their guests for communication expenses. M.E.IP.S billing solution for hotels:

- Provides charge details to the customer
- Allows using different tariffs in different rooms
- Can act as an integral part of a PMS application
- Allows blocking a guest's extension after he/she vacates the room, using a special module.

Syslog

How to Configure Cisco Devices for Syslog

Step-by-Step Instructions to Configure IOS Devices

These instructions should be followed when configuring the IOS devices:

To make sure that the logging is enabled, use the logging on command.

Router(config)# logging on

To specify the Essentials server that is to receive the router Syslog messages, use the logging <ip_address> command, where the ip_address is the IP address of the server collecting the Syslog messages.

Router(config)# logging 1.1.1.1

To limit the types of messages that can be logged to the Essentials server, set the appropriate logging trap level by using the logging trap informational command, where informational signifies severity level 6. This means all messages from level 0-5 (from emergencies to notifications) will be logged to the Essentials server.

Router(config)#logging trap informational

Valid logging facilities are local0 through local7. Valid levels can be:

- Emergency
- Alert
- Critical
- Error
- Warning
- Notification
- Informational
- Debug

To check if the device is sending Syslog messages, run the sh logging command.

You should see all the Syslog messages being sent. If you are having problems seeing the Syslog messages, ensure that the following is configured:

- logging on
- logging console debug
- logging monitor debug
- logging trap debug

NOTE: Further information can be found on Cisco web site at:

http://www.cisco.com/en/US/products/sw/cscowork/ps2073/products_tech_note09186a00800a7275.shtml

Radius

Configure Router for Vendor-Proprietary RADIUS Server

Although an Internet Engineering Task Force (IETF) draft standard for RADIUS specifies a method for communicating vendor-proprietary information between the network access server and the RADIUS server, some vendors have extended the RADIUS attribute set in a unique way. Cisco IOS software supports a subset of vendor-proprietary RADIUS attributes.

As mentioned before, to configure RADIUS (whether vendor-proprietary or IETF draft-compliant), you must specify the host running the RADIUS server daemon and the secret text string it shares with the Cisco device. You specify the RADIUS host and secret text string by using the **radius-server** commands. To identify that the RADIUS server is using a vendor-proprietary implementation of RADIUS, use the **radius-server host non-standard** command. Vendor-proprietary attributes will not be supported unless you use the **radius-server host non-standard** command. To specify a vendor-proprietary RADIUS server host and a shared secret text string, use the following commands in global configuration mode:

Step Command Purpose

1. **Radius-server** host {hostname | ip-address}

non-standard

Specify the IP address or host name of the remote RADIUS server host and identify that it is using a vendor-proprietary implementation of RADIUS.

2. **Radius-server** key string Specify the shared secret text string used between the router and the vendor-proprietary RADIUS server. The router and the RADIUS server use this text string to encrypt passwords and exchange responses.

Specify RADIUS Accounting

The AAA accounting feature enables you to track the services users are accessing as well as the amount of network resources they are consuming. Because RADIUS accounting is facilitated through AAA, you need to issue the **AAA accounting** command, specifying RADIUS as the accounting method.

NOTE: Further information can be found on Cisco web site at: http://www.cisco.com/en/US/partner/products/sw/iosswrel/ps1835/products_configuration_guide_chapter09186a00800ca7ab.html-1001089

About MIND

MIND CTI (NASDAQ: MNDO) is a leading global provider of true web based call management and call accounting solutions. As one of the first call accounting application developers in 1995, MIND is recognized as a world leader in this field, with over 16,000 installations. A pioneer in call accounting and management solutions, MIND uses its innovative technologies to keep you at pace with the world's changing networks and requirements. MIND CTI operates from offices in the United States, UK, Romania, with headquarters in Israel. MIND offers an easy to use call accounting solution for you to manage, control and measure your telecommunications expenses and resources. For information about MIND and its products visit the company's web site: <http://www.mindcti.com/enterprise>.

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