

M.E.I.P.S.[®]
MIND Enterprise IP Systems

**Solution with Cisco
CallManager Express**

MIND CTI Ltd.

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Windows, as used in this manual, shall refer to the *Microsoft*[®] implementation of a *Windows*[™] system.

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Table of Contents

INTRODUCTION.....	4
MIND CTI.....	4
Overview.....	4
SOLUTION ARCHITECTURE	5
FIGURE 1- M.E.IP.S ARCHITECTURE WITH CME	5
CDR Collection	6
Budget Control	6
Billing.....	6
M.E.IP.S BILLING FOR MULTI-TENANT UNITS AND ASPS.....	7
SYSLOG MESSAGES.....	8
How to Configure Cisco Devices for Syslog.....	8
CONTACT.....	9

Introduction

MIND CTI

MIND CTI (NASDAQ: MNDO) is a leading global provider of real-time mediation, rating, billing and customer care, call accounting and traffic analysis solutions for prepaid and post-paid voice, data and content. Our customers include worldwide leading carriers servicing millions of subscribers, using our end-to-end solutions for the deployment of new services and thousands of corporations worldwide. MIND operates from offices in the United States, Europe, China, and from its Israeli headquarters

MIND has a proven record in Call Accounting solutions since 1995 and was one of the first providers of IP telephony billing and call accounting solutions. MIND is recognized as a world leader in this field. To address customers' changing needs, MIND develops and delivers advanced solutions that enable enterprises to manage, control, track, and analyze raw data from a variety of communication sources.

The world's largest institutions and companies have chosen MIND's market leading enterprise solutions. These include financial institutions such as *ABN AMRO Bank*, *Credit Suisse First Boston Bank*, *HSBC*, *ING Investments*, *Fidelity Investments Merrill Lynch* and *CitiGroup*. Other major industries profiting from MIND's solutions include *Coca-Cola*, *Intel*, *Microsoft* and *Sun*. Major hotel chains, including *Hyatt*, *Ramada* and *Sheraton*, have also chosen MIND solutions. In addition, our multi-site management installations include the *Israeli Air Force*, *El Al*, *Politie-Holland*, *European Parliament* and *NATO*.

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.I.P.S.[®] is the perfect tool to accompany an IP switch. M.E.I.P.S. is a voice and IP services accounting and traffic-analysis solution suitable for organizations of any size.

MIND offers customers the M.E.I.P.S-Enterprise IP Management solution for use with an IP PBX. As the 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.I.P.S, which collects and tracks the data from combinations of traditional voice circuits and VoIP networks. M.E.I.P.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.I.P.S enables converged reporting and billing for voice, VoIP and data. M.E.I.P.S collects data from different communication devices including the Cisco CallManager, Cisco gateways / routers, and a variety of Legacy PBXs and IP PBXs.

Cisco CallManager Express provides voice features comparable to those of an IP key system, and is recommended as a turnkey, offering bundled voice and data for offices with less 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 a 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, and Enterprises adopt IP Telephony to reduce costs and increase productivity. The **M.E.I.P.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.I.P.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.I.P.S provides Enterprises with a robust Call Accounting reporting system, necessary for department expense planning, auditing, and reconciliation of communication budgets.

M.E.I.P.S enables organizations to set budgets for different departments and projects and even to restrict extension 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 as well. All calls, whether to a local extension, to another company site, long distance or international, or even received calls can be tracked and reported.

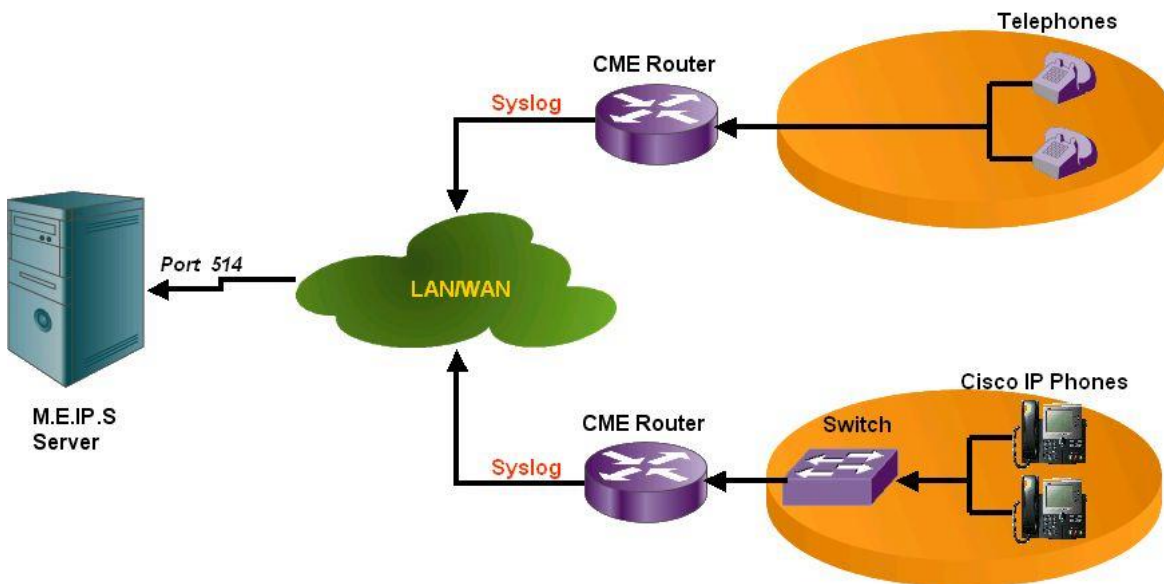


Figure 1- M.E.I.P.S Architecture with CME

CDR Collection

The data collection function in M.E.IP.S 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; CDR collection is therefore done directly from the CME Router using the syslog messages (at this point) or the RADIUS protocol (future development).*

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:

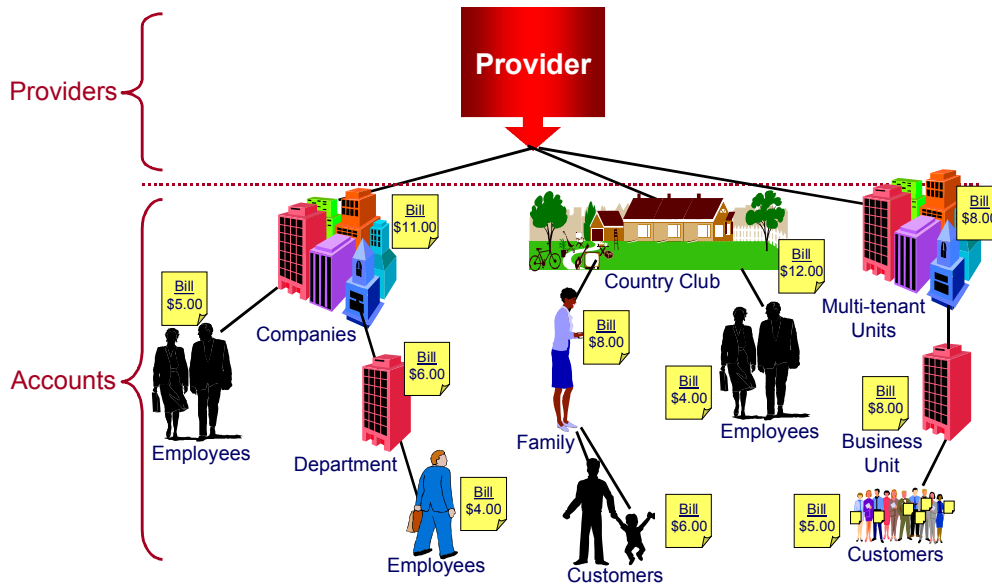
- Checking and comparing different carriers' tariffs
- Producing top destination reports
- Distinguishing between private and non-private calls
- Analyzing if a specific trunk or trunk group is overloaded
- Controlling the budget of different hierarchical levels within the company (Division, Department, 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 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 like to charge their customers according to the time they spend with them on the phone. With M.E.IP.S, reports are effortlessly produced 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 Messages

How to Configure Cisco Devices for Syslog

Step-by-Step Instructions to Configure IOS Devices

Follow these instructions to configure IOS devices.

To make sure 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 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 that all messages from levels 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 syslog messages, ensure that the following are configured:

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

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

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

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