PhonEX™ ONE

MIND
Call Accounting & Billing

# Architectural Overview

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# Solution Highlights

PhonEX ONE is a comprehensive, flexible and fully web-based solution for call accounting management and control. It provides an intelligent tracking of all the traditional and VoIP calls, cellular activity, and data traffic. PhonEX ONE is scalable from a single site to monitoring call traffic in multinational organizations, as it can easily be adjusted to local languages and currencies. PhonEX ONE offers powerful reports in a system that runs itself, ensuring a quick return on investment and long-term usage. PhonEX ONE helps enterprises to reduce operational costs, improve employee productivity, monitor network activity, report usage trends and statistics, and optimize network resources.

PhonEX ONE is a PBX independent platform, integrating with various network communications equipment, including IP PBXs, hybrid systems and traditional PBXs. It is capable of working with numerous other system elements such as Gateways, Gatekeepers and Routers. PhonEX ONE is certified against the latest versions of PBXs as Cisco UCM, Avaya CM, 3COM VCX, Siemens HiPath and BT ITS.

Based on advanced ASP.NET technology and the standard MS-SQL database, PhonEX ONE is designed with a modular architecture, residing in one or several servers, according to the enterprise size and environment. Customized for specific organization needs, the system can collect data from multiple sites simultaneously, thus creating information in very short periods of time.

# PhonEX ONE Key Features

- Fully web-based solution for easy access from anywhere and at any time
- User-centric application, allows a complete view of user's communication usage
- Modular architecture, supporting an unlimited number of sites and extensions
- Easy to install, fast to generate and drill down reports, and a user friendly interface enables exporting to various types of files
- Graphical representation of reports data providing the possibility to observe comparisons, patterns and trends
- Converged reporting of nearly all legacy and IP PBXs, and other communication sources including mobile operators data and information
- Query generator enabling the creation of unlimited number of custom reports
- Completely customizable dashboard monitors (designed using the Silverlight technology) that offer the flexibility to analyze and interpret the most important elements in the system in order to improve business analysis and decision-making
- Basic reporting functionalities (Dashboard monitors) available on Smartphones
- “What if” reports to analyze and compare different service providers
- Traffic reports to monitor peak loads and bandwidth utilization
- Matrix charts offering the possibility to visualize multiple data series in a single chart and allows for quick comparisons between several entities
- Advanced Report Scheduler, automatically sends reports to a printer, file or email
- Near real-time monitoring and alerting and full visualization anywhere, anytime
- Multi P&L units, multilingual, multicurrency and multi CDR capability
- Dynamic hierarchy structure with an unlimited number of hierarchy levels
- Easily adjusts to organization hierarchies
- Automatically synchronizes with organizations Active Directory, LDAP, ODBC, File and Cisco AXL
- Supports business and personal call definitions
- Scheduled import available (hourly, daily, weekly and monthly)
- Bill Verification tool to identify hidden costs or problematic billing areas in telephony environments
- Monitors call Quality of Service (QoS)
- Real-time fraud alert
- ASP.NET technology to conform to company security policies

- Silverlight platform for developing an interactive Dashboard tool
- Enhanced security: access limitation on a user and group basis and enhanced protection from unauthorized users based on SSL encryption
- Supports server virtualization technology, which allows consolidating servers and using hardware more efficiently
- The most important processes (data collection and processing, fraud prevention, monitoring and alerting, reports generation and distribution) are executed as PhonEX ONE - specific Windows services
- Database structure based on Microsoft SQL database
- Event log for auditing and tracking system behavior including system violation logs
- Automatic alarms for 911, 411/112 and malicious calls

## Fully Web-based Solution

PhonEX ONE is a true web-based call management solution that enables managers and users to conveniently configure, administer, rate and access their telecommunication system at anytime and from anywhere. PhonEX ONE is designed using the Microsoft .Net technology and has extensive configuration capabilities using XML files with Server - Client interaction. The SSL encryption protects the security of all sessions' passwords, thus ensuring the safety of the administrators' and user's information.

## SQL Database

The PhonEX ONE database benefits from the power of the standard and open database architecture. The SQL database allows several users to have simultaneous access to the PhonEX ONE database and to query it using their own tools. The dual databases architecture - detailed and summary - is also part of the SQL product. This architecture increases the report production speed and makes the integration with other systems simpler.

**Note**: The PhonEX ONE database should not be restricted in size.

### MS SQL Express Database

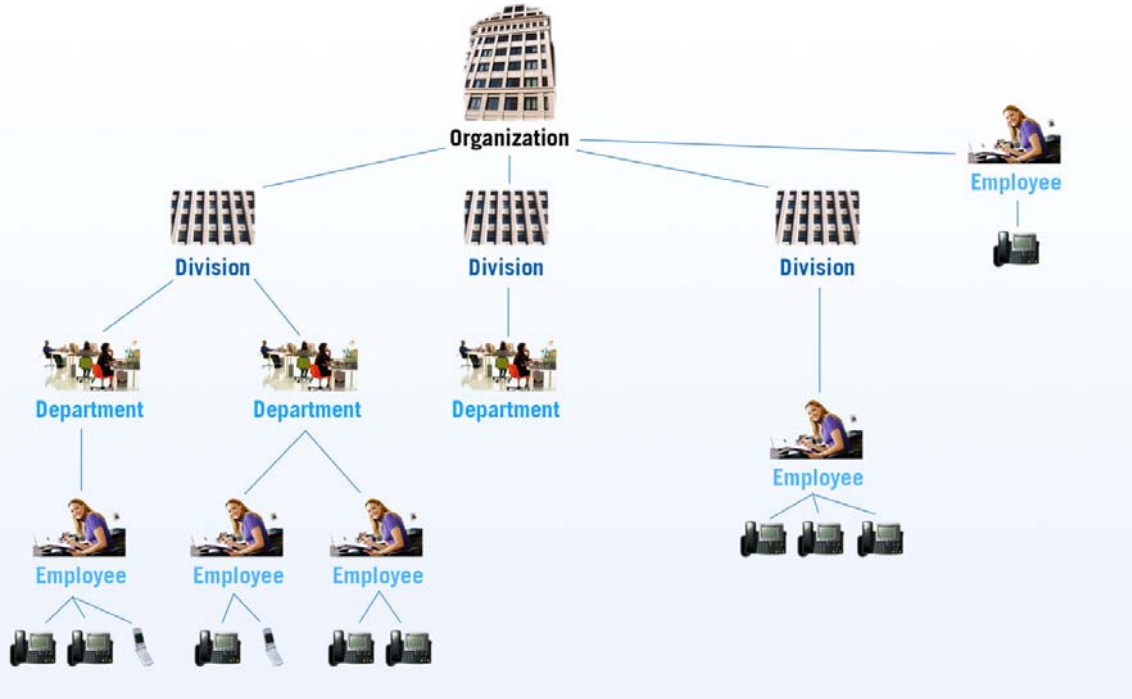
The PhonEX ONE system supports the MS SQL Express database, which is a free Microsoft SQL edition, a lightweight and embeddable version and the recommended solution for small enterprises. This database provides powerful and reliable data management tools, along with rich features, data protection and fast performance.

## Dynamic Hierarchy

PhonEX ONE user-centered architecture provides a consolidated solution for collection, analysis, reporting and managing of all telecommunication and data traffic expenses. This provides a single point of reporting (employee based) for different telecommunication and data devices and services, such as office extension, home extension, soft phone, mobile phone gateways, SIP devices, routers and data traffic service. The user-centric and cross billing reports capabilities provide consolidated telephony and tracking of network traffic expenses for

the various device types assigned to employees. As an enhancement, PhonEX ONE also supports DATA collection from different network elements that provide additional dimensions to the employee.

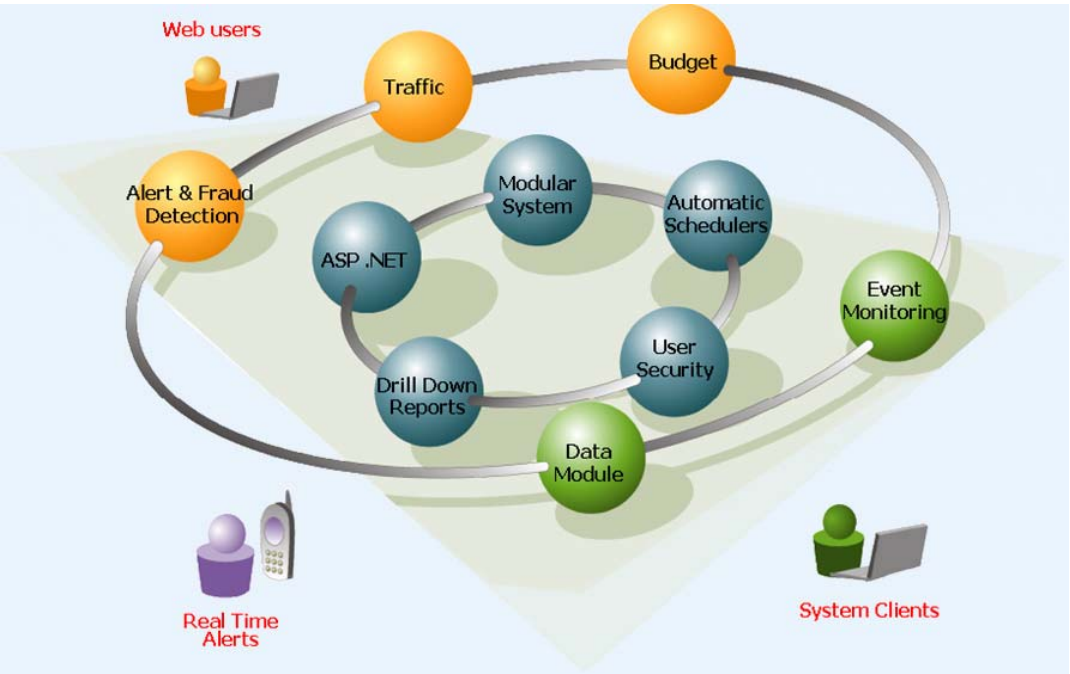
PhonEX ONE features a dynamic hierarchy structure supporting an unlimited number of sites, hierarchies and extensions. Any complex hierarchy can be implemented in the PhonEX ONE hierarchy tables, while employees can be associated to any complex hierarchy level, including the Organization level.




***PhonEX ONE Hierarchy Layout***

## Modular Architecture

PhonEX ONE's scalable and modular architecture, its configuration and operating platform options allow completely customized solution which can be adapted to the unique needs of any customer. Modularity enables further configuration even while the system is running, without interrupting traffic.




***PhonEX ONE Architecture***

The PhonEX ONE system consists of three key servers: a ***Database server***, an ***Applications server*** and a ***Web server***. The entire PhonEX ONE system can be installed on a single server or on separate servers. The following sections briefly describe several common hardware configuration options:

**Single Server**

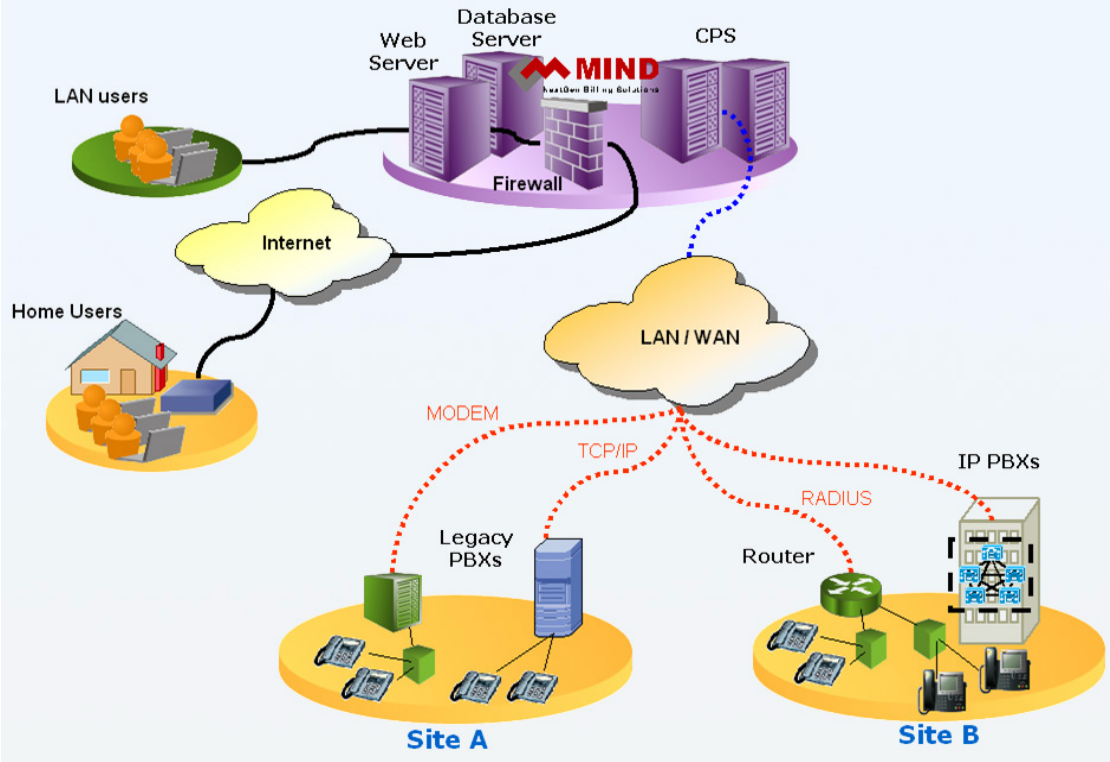
The Single Server configuration integrates all three PhonEX ONE servers in one server. This is a typical basic installation which is suitable for small to medium-size organizations.

**Multiple Servers**

The Multiple Servers configuration consists of three servers: a Web Server, an Application Server and a Database Server. This configuration is most suitable for large enterprises, as it allows for a large storage capacity and an increase of the processing power. This configuration also solves performance and scalability issues that occur when using a single physical server, even if equipped with additional memory and/or increased processor speed. Multiple servers' configuration is an advantage in cases of large number of users accessing the Web simultaneously, while inquiring the Database and requiring reports. In this situation the Web Server, Application Server and Database Server may be installed on separate hardware servers so that data collection and call costing jobs, which run on the Application Server, are not affected by a large number of Web users.

**Multiple Application Servers**

The Multiple Application Servers configuration is useful for increasing the scalability of the collection and costing processes of PhonEX ONE. For example, data can be collected and rated simultaneously from several Sites.




***PhonEX ONE Solution Architecture***

**Note:** Supports server virtualization technology, which allows the user to consolidate servers and use hardware more efficiently.

## Status Monitor

Users and system administrators are able to view the system's status online. The Monitor displays the real time status of different system elements, providing information on disconnections, errors, processes and all other changes in the system. Whenever a problem occurs, it is immediately shown on the monitor.

The Monitor is an essential tool to audit and control the system's behavior and to observe the system's faults the minute they happen. Some of the statuses shown are: Data sources, Data process, Scheduler, New Trunk Groups etc.

## Maintenance Tools

The Maintenance tool is essential for debugging and working with the PhonEX ONE database. This feature is thought to be of great help for the system administrators who maintain the database. Another feature is the automatic maintenance using the system's scheduler. All the actions performed with the Maintenance tools are enabled for the Administrator user rights only. The **Maintenance** module will allow the administrator to perform several actions such as: Backup all, Delete items, Delete records and Restore.

## System Logs

The PhonEX ONE system stores the most recent actions regarding the system use. It shows when the system was used and who used it. The Event Log viewer is an effective management tool based on the Microsoft Event Viewer, a system administrator that can easily observe and track the system's suspicious behavior.

All the important operations performed by the user are logged. The term “important operations” includes all logins, logoffs, failed attempts to provide the correct password - that lead to account suspending and operations dealing with the database (insert/update/delete). The information in the log file includes the date/time, the IP and the message about the operation performed.

The default log level is considered to be WARNING. The Administrator can change this level.

# System Security

## Management, Control and Security

PhonEX ONE is designed to enable a smooth and easy management and control over the system. PhonEX ONE's controlling entity is the Administrator. The Administrator manages and controls all the system's users throughout the entire organization. PhonEX ONE enables the following abilities:

- The system's rules may be configured only by the administrator, having view/edit/delete permissions.
- The Administrator may manage and restrict users from having certain privileges.
- Users have their own privileges and security groups. Sensitive features can be disabled for selected users.
- The Administrator is provided with full control for managing users easily. Using an online view of each of the users' status, each change in any of the tables' status (add, remove, import) is immediately written into the system log event and generates a detailed audit trail.
- Support for unlimited levels of web users accounts to accommodate complex organizational and business models. This ability makes it easier to define and manage accounts or P&L (Profit and Loss) units by allowing an unlimited hierarchy within the organization's structure and an unlimited number of system rules allocated to users or user groups. This ability suits not only large enterprises, but also SMEs with a complex hierarchy of web users.

## Security Groups

The PhonEX ONE application provides security features that limit all or part of the program to authorized personnel only. The security features can be used to deny access of non-authorized personnel to the PhonEX ONE system parameters, to PhonEX ONE's database, and to specific reporting and query capabilities. Seven default policies are available:

- Administrator
- Employee
- No rights
- Operator
- PhonEX ONE IM
- Reports Only
- Unit Manager

In addition, PhonEX ONE has a tool that allows defining custom policies – through a wizard that scans all the system entities (reports, hierarchical levels and units, employees, extensions, system tools, etc.) upon which the access can be granted or denied.

## Directory Authentication

PhonEX ONE provides two ways of managing the system's users: system authentication and directory authentication. The users list can be managed and maintained in PhonEX ONE by the administrator users. This system authentication option is recommended when small number of users is used. In addition, PhonEX ONE provides the option of authenticating users against the organizational directory as ***Active Directory, Lotus notes, Netscape directory*** or any other LDAP directory. In this case users are authenticated and authorized against the organizational directory while policy rights groups binding is done in the background, so that users are automatically logged in with their rights. This option is preferred as a manner of work when large number of users has to be maintained.

## Web Security

The enhanced user security features make PhonEX ONE a perfect solution for the enterprise environment. PhonEX ONE allows online users to access the system from a Web browser anywhere. To maximize the access security, PhonEX ONE uses a Secured Socket Layer protocol (SSL) that provides data encryption, server authentication and message integrity for a TCP/IP connection between the Microsoft Internet Information Server service protocols (SHTTP) and the browsers. The scope of this technology includes key exchange, encryption, message integrity and messaging support for authenticating a remote party using a security model that is based on digital certificates and certificate authorities. Certificate Authorities (CA) can either be a third-party such as ***Verisign*** or ***Thawte***, or exist internally.

Whether the CA exists internally or externally, its function is to serve as a trusted authority that issues and checks the validity of the digital certificate. The SSL on the IIS web server platform provides secure end-to-end encrypted communications between the PhonEX ONE web server and the users' Internet Explorer, which has built-in SSL functionality.

In addition to the protocol level security, there are some more features that support the security of the Web applications, such as:

- Tiered security interface, which allows complete control over access rights;
- Encrypted passwords that consist of a minimum of 6 alphanumeric characters;
- Passwords are disabled after x consecutive attempts; detailed log events are generated, allowing the Administrator to easily track such attempts;
- PhonEX ONE supports system segregation and security administration.

## Database Security

All the sensitive information and restricted data (such as customer passwords) are stored encrypted in the database, since the Database security is one of the most vital components of the overall security requirements. PhonEX ONE uses the Microsoft Frameworks security functionality. The static password authentication information is protected by cryptographic hash algorithms, safe from hacking or removal.

# Mediation

## PBX Data Collection

PhonEX ONE is easily integrated with most PBXs through the CDR/SMDR port or via a network connection. The exclusive system architecture allows for fast and easy installation and configuration for each Call Detail Record (CDR) format provided by most PBX's, including multiple line call data records.

PhonEX ONE has a flexible interface to interconnect to PBXs. PhonEX ONE supports an unlimited number of CDR formats, includes several common default interfaces and uses a flexible user interface for easy definition or editing of CDR formats. PhonEX ONE is capable of collecting call records from an unlimited number of data sources, using various connection methods, such as MODEM, Scannex NetBuffer, Microsoft OCS DB, Cisco UCM version 5.1/6.x/7.x, 3Com NBX, Alcatel OmniPCX Enterprise, ODBC and more. The modular architecture gives the system the required flexibility, adjusted to large enterprises with high Voice and VoIP traffic.

Major PBX vendors are supported, including 3Com, Alcatel, AVAYA, BT, Bosch, Cisco, Ericsson, Lucent, Matra, Mitel, NEC, Nortel, Panasonic, Phillips, SDX, Siemens and others.

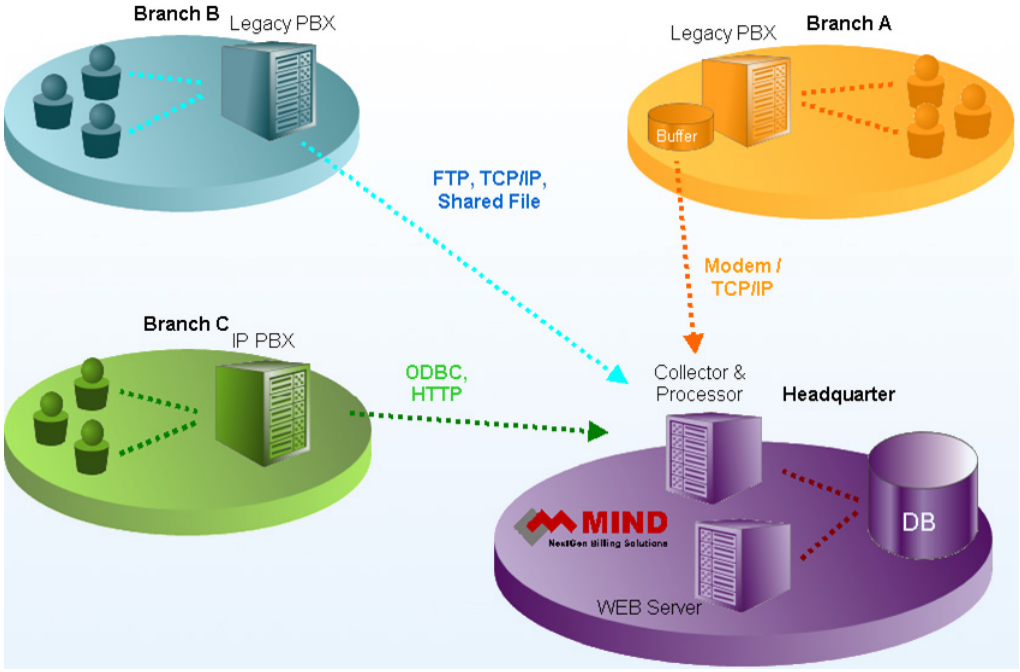
## Cellular Data Collection

PhonEX ONE has the capability of collecting and processing cellular based carrier network (mobile operators) data. Usually, mobile operators provide .csv files daily, weekly or monthly. The system contains generic/universal drivers that can be adjusted to understand the call data as provided by mobile operators (or by other systems) in this format, after making the appropriate mapping configurations.

## PhonEX ONE Collector

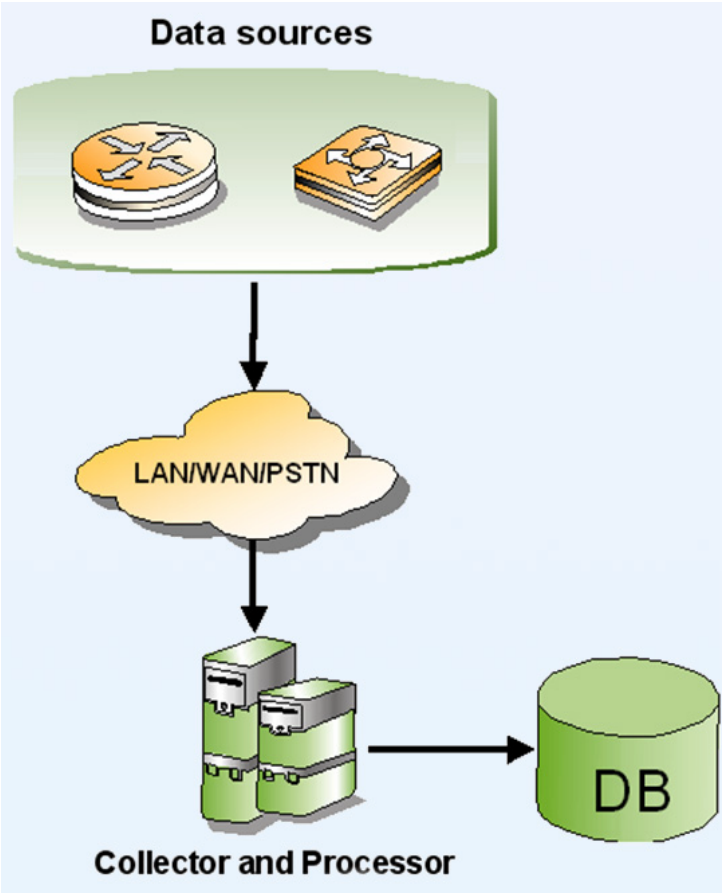
The PhonEX ONE Collector is part of the CPS (Collect and Process Server) and responsible for configuring the system's sites and data sources (DS). An option to install and integrate the PhonEX ONE Collector on a separate server is recommended. The PhonEX ONE collector, working in the background, is capable of transferring the usage records files by using a FTP or TCP/IP protocol, Modem, Shared file, ODBC, HTTP, Syslog and Radius. The key features of the PhonEX ONE collector are:

- Password protected connection
- File transfer recovery mechanism
- Fully safe data transfer
- Backup of transferred data
- Comprehensive logging of the transfer sessions




***General Multisite Environment***

The Collector enables the configuration of several data sources within a single site; this option enables a special system configuration and many flexible options with sites management.




***PhonEX ONE Collector***

## Buffers

The common way of collecting the call detail record from a remote PABX site is by using a local buffer; this buffer collects and stores all information until the collector initiates a collection session and pulls down the records. MIND CTI recommends using a 3rd party vendor buffer - the Scannex Modem Buffers (http://www.scannex.co.uk) or the Scannex Net Buffer. These buffers were considered very reliable and with good resilience capabilities. As an alternative solution, there is the option to use a PC with MIND CTI's WinSite software.

## PhonEX ONE Network Receiver

PhonEX ONE's Network Receiver mediation component is able to collect the different raw calls data for each session and data source, aggregate and filtrate the different events related to the same session from different sources and transform them into valuable and billable records. PhonEX ONE is able to collect call records from different vendors and sources, based on UDP, TCP/IP, Syslog and RADIUS, within a single billing and accounting system. Currently, PhonEX ONE supports the AVAYA Reliable Session Protocol (RSP), Cisco Syslog and RADIUS, and AudioCodes Syslog.

## Data Processing

PhonEX ONE processes the call records retrieved from the PBX and stores them in its Microsoft SQL database. Each call record received is stored in its raw format in case further investigation is required.

- The system saves data on calls that do not pass user-defined threshold requirements. It is easy to change the threshold parameter and repeat the sorting.
- Undefined lines (the result of different communication problems) are stored in a separate file on a daily basis. This file is used to identify problems and is erased automatically after several days (the amount of days is defined by the user).
- The statistics, the percentage of calls that are below defined thresholds, as well as bad calls are stored on data collection.
- All these tools allow for absolute reliability and avoid data loss.

The option to increase the number of independent collector units enables PhonEX ONE to collect and process a high volume of call records into the centralized database. Each CPS (Collecting and Processing Server) is capable of handling (that is, both collect and process) ~30 - 50 data sources, depending on the total number of employees and the call records load. The average time for processing the call records is ~100 records/sec, meaning ~4,320,000 records/day.

# Redundancy

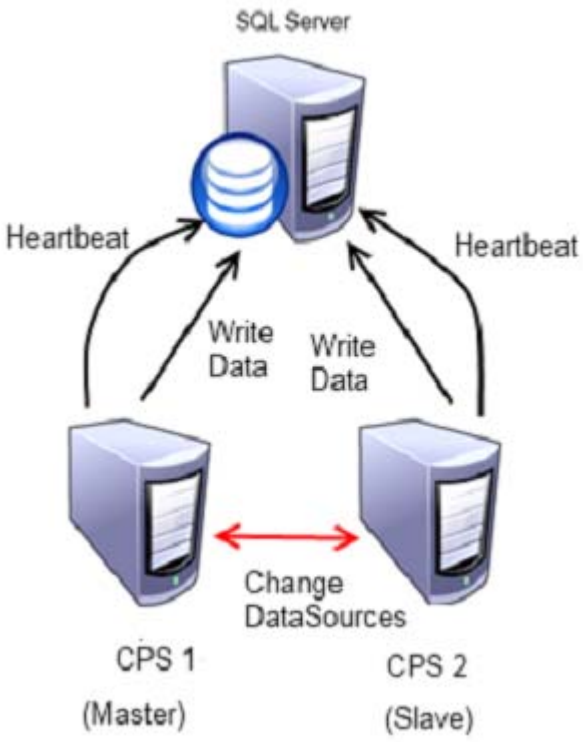
PhonEX ONE **Redundancy** feature provides *Web Server Redundancy, SQL Server Redundancy* and *Data Source Redundancy*, and is meant to offer increased reliability of the system in case of failure. Data Source redundancy implies the existence of a master/slave configuration so that when the active CPS goes down, the passive one can be activated in order to grant continuous system functionality.

## Data Sources Redundancy

### 1. Collector

A primary and a backup CPS must be defined for each data source. The Collector works in active/passive mode. If the active CPS goes down, the passive CPS is activated and remains active until it fails or the user modifies the active one in the system.

The Collector collects the data and saves it in the database as a job (entry in the Jobs table and binary data is uploaded – in case of redundant data source). In the case of connection methods where PhonEX ONE is the client, the collector from the backup CPS takes the data source parameters from the primary CPS.



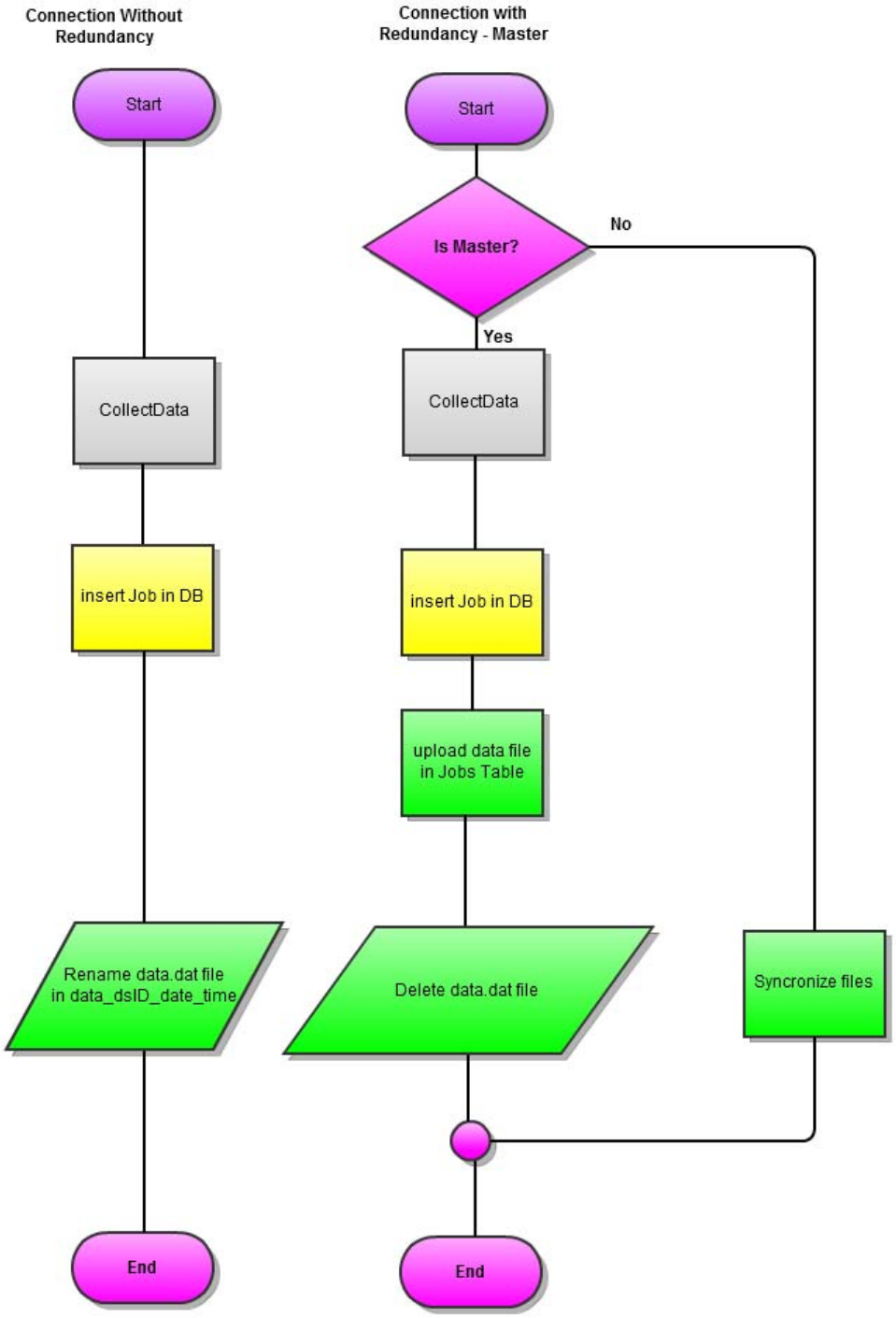

The data is received for both CPSs (master and backup) for the tasks in which PhonEX ONE is server. For the client data source, any configuration file should be duplicated on both master and slave CPS.

The Collector performs the following operations:

1. **Collection of Data** - *takes data from the source; Rename Data.Exp to data.dat and afterwards to data_dsID_date_time.dat*;

Redundant Connection Methods can save the synchronized information;

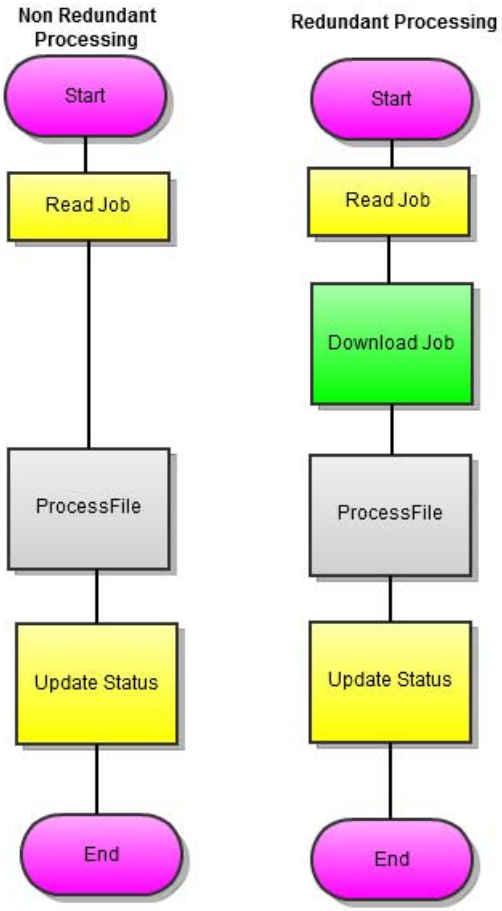
2. **Insert Job** - inserts an entry in the Jobs table;
3. **Upload of data files in the database** (this operation is performed only for Redundant Data Source – Master);
4. **Deletion of files that have been uploaded in the database**;
5. **Synchronization of files** (this operation is performed only for Redundant Data Source – Slave). The synchronization can be customized per connection method.

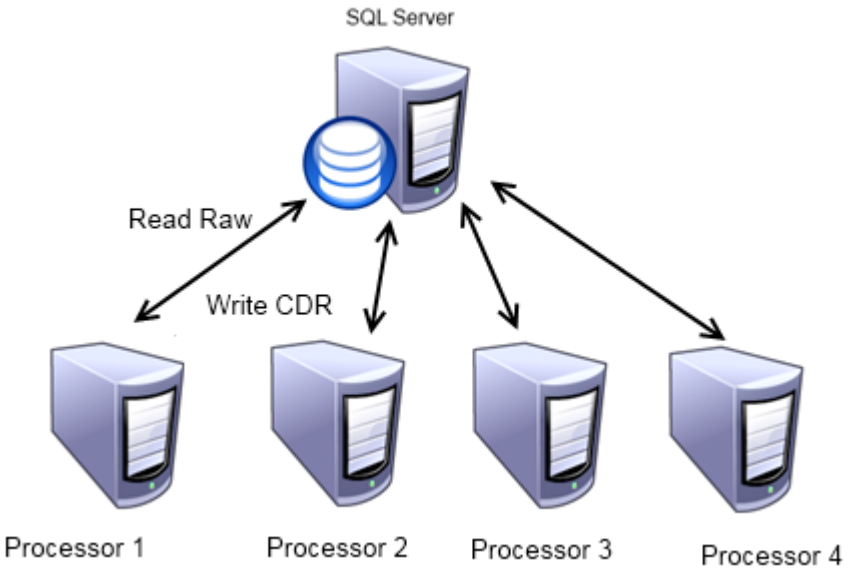



## 2. Processor

The Processor is a task that runs continuously and works in either *non-redundant* or *redundant*

mode.




The Processor takes a job (a file inserted by the collector in the database) and processes it. Redundant data sources will be processed by the Processors based on redundancy type, while the data sources that are not redundant will be processed only by the processor from the CPS. The Processor periodically writes call statistics and the last updated time for the current job in database. If the status is not updated by the processor for a certain period of time, the

Processor is considered inoperative and all the jobs started by this processor are taken over by another processor. The processor saves buffer files in the database after each job so that each processor has the same context of processing. The backup and error files will be written (for processed jobs) in the data source folder of the Processor's CPS.

Redundant Processor works in either **Active Cluster** or **Full** mode:

- **Full** – the processor takes the oldest job from all redundant data sources; therefore the data source is processed by any CPS.
- **Active Cluster** - the processor takes the oldest job from redundant data sources from his cluster (CPSs are grouped in clusters; a cluster is a set of CPSs and a SQL Server). The data source is processed by all the CPSs that are defined in the active cluster.

The *Active Cluster* mode implies reading the job from the database, downloading the data file and driver buffer files, processing the data, uploading the driver buffer files and updating the status after finishing.

# Rating

PhonEX ONE offers a flexible and powerful rating engine that allows enterprises an unlimited number of rating schemes and billing plans. Administrators can set different tariffs for individual trunks or trunk groups and update the system with future tariff changes and updates. The Charges feature enables the Administrator to define and maintain the dialing prefixes for the system, define all the telephone companies (carriers) that work with the organization, define a daily profile for each telephone company, specifying the telephone operation schedule (working days, non-working days and holidays), define various day types that differ in charges, specify various tariffs (i.e. inexpensive, standard, peak, international) for each telephone company, create a call destination list according to various tariffs and call destinations and define prefixes that are charged identically.

The Costs feature allows different types of taxes to be defined. Taxes are charges added to the cost of the call, based on the calculated cost of the call.

PhonEX ONE supports different methods of call cost calculation:

| Charge Method | Description |
|---|---|
| Charge by Duration | Charge By Duration is used to describe Charge Rates that have graduated fees based on the duration of the call. Additionally, the duration of the call may be based on pulses or on length (number of seconds). |
| Fixed Charge | Tariff is based on a flat fee. |
| Charge by Destination | Charge by destination code received from the Carrier, supports the employee mobility feature. |

# Reports

PhonEX ONE offers a series of advanced features that facilitate report production and viewing. PhonEX ONE produces quick and clear reports on almost every aspect of the communications system and time resolution, tailored to suit individual needs. PhonEX ONE provides full or partial monitoring capability of telephone, fax and modem usage for the entire enterprise. Whether minute-by-minute updates, monthly reports or data on long-term usage patterns are required, PhonEX ONE supplies with this information. Reports can be produced for any hierarchical level of the enterprise and can be presented in detailed tabular form with summary and graphical options.

## Query Generator

The PhonEX ONE system's query is a fast and powerful feature that enables unlimited number of custom reports with exactly the information required. A query form helps users select, sort and summarize data and also format reports. PhonEX ONE allows users to store and re-use their own custom queries, to define customized report layouts and to export information to various external systems in many possible formats.

PhonEX ONE includes eleven predefined standard query reports meant to help the users handle the query definition process more easily.

## Dashboard

PhonEX ONE Dashboard is a management and reporting tool that provides business users with an at-a-glance and relevant perspective on the current status of their business. The Dashboard is an interactive and feature-rich graphical representation of system data that offers users the flexibility to analyze and interpret the most important elements in their system in order to improve business analysis and decision-making.

The ***Outgoing Calls, Incoming Calls, Incoming Call Analysis, Device Summaries, QoS Distribution, Device Type Statistics, Top Carriers, Carrier Statistics, Unified Traffic, Call Volumes, Top Destinations, Comparative Trunk Group Volumes*** and ***Top Calls*** dashboard monitors are completely customizable in order to meet the specific requirements of each user and provide the quick answers to key questions with one simple glance.

## Reports Layout

The PhonEX ONE standard and query reports are generated in the Crystal Reports format. Crystal Reports allow users to examine all report information online, select graphical representations of the data, print the report, or send it by email.

### Drill Down Reports

PhonEX ONE web-based drill down reporting features give users simple, flexible and faster access to database information. The extensive reporting drill-down capabilities help the users better monitor the summary report information. Once a report is produced, administrators can drill into different hierarchies, starting from one report, without having to reproduce the same

report over and over again.

### "Cross-Site" Option

Some reports support cross-site summaries that are displayed on the last page for all the selected sites together. This information is very important for those users who need to see the summary information across their organization.

### "View Chart" Option

All the reports in summary format and most of the standard reports (*Summary, Location Summary, Account Summary, Cost Distribution by Employee, Cost Distribution by Department, Top Employees, Top Destinations, Monthly Activity* and *Organizational Monthly Activity*) can be presented graphically. Each chart can be displayed in one of the four styles: vertical bar chart, area chart, line chart and pie chart.

### "What If..." Report

"What if" report allows users to compare the real cost of the selected calls with the cost of the same calls as if they were made using an alternative carrier, or an alternative origin of call. The user can see at a glance if it is cheaper to use a different carrier for certain calls to a specific destination. The report displays the difference between the real cost and the calculated cost for the selected carrier as a percentage. It lists the real cost of the call next to the cost according to the alternate carrier. PhonEX ONE can create a summary report showing the call cost information for up to six different carriers simultaneously.

### Advanced Report Scheduler

The PhonEX ONE Scheduler allows queries and reports to be programmed to run at specific times. The Scheduler can perform a task on a one-time basis, or schedule it to run at regular intervals. The output of the task can be sent automatically to a printer, file or electronic mail.

## Predefined Reports

PhonEX ONE includes several predefined standard report formats often required by a telecommunications manager. These reports were designed following a close consultation with customers. Additionally, a user-friendly interface allows report formats to be created according to specific user needs.

PhonEX ONE provides the following built-in, standard reports to easily track inappropriate telephone use. These reports are especially designed for accelerated report generation using the system's intelligent database:

- Summary
- Location Summary
- Account Summary
- Monthly Activity
- Organizational Monthly Activity
- Employee Details

- Account Details
- Cost Distribution by Employee
- Cost Distribution by Department
- Overrun Calls
- Top Employees
- Top Destinations
- Unsused Devices
- Undefined Devices
- Undefined Accounts
- Trunk Group Trends

**Summary Reports**

PhonEX ONE provides the user with a built-in tool for the easy generation of summary reports. The user can generate a full summary in a few of seconds for the entire enterprise or for any one of the enterprise's departments or hierarchy levels. The summary reports include fixed monthly costs for extensions and taxes as defined by the user. The summary reports can be automatically distributed via e-mail.

**Location Summary**

This report includes all telephone calls for a selected location and all the calls that are associated with employees linked to a location. The user can generate a general report for the entire enterprise or specify a certain location.

**Account Summary**

This report produces a summary of the activity of all the defined accounts.

**Monthly Activity**

The Monthly Activity report details the call activity (cost, calls and hours) per month, beginning with the last month in the report and going back a designated number of months. An average of the months is also listed.

**Organizational Monthly Activity**

The report details the call activity per month, beginning with the last month in report and going back a designated number of months for each of the designated levels of the report.

**Employee Details**

This report provides a detailed listing of all the outgoing and incoming calls for a specified employee. This report has two formats: Call details and Totals. The Call details report is an extended report that displays all call details while the Totals report is a summary report that displays one item per page.

**Account Details**

This report provides details of all the defined accounts, the calls placed on every account and a report about the budget of each account.

**Cost Distribution by Employee/Device**

This report shows the percentage of the total call cost as distributed among the employees/devices within a department. It also shows the percentage of the total call cost as distributed among destination types for a single employee/device.

**Cost Distribution by Department**

This report shows the percentage of the total call costs as distributed among the different levels of an enterprise, sorted by division and department.

**Overrun Calls**

This report provides up-to-the-minute information on the specific employees that exceed the established user-defined limits.

**Top Employees/Devices**

The Top Employees report displays the most widely used devices in an enterprise (in terms of duration, number of calls) or the most expensive ones. The report functionality allows generating either a top employees or a top devices report. The calls are sorted by duration, cost and number of calls and grouped by device, employee, employee-device, employee-unit or by employee-device-unit.

**Top Destinations**

This report includes the destinations most extensively called in an enterprise or the most expensive ones. The report offers the possibility to choose the entity that will be regarded as destination - *Dialed Numbers, Destinations (Phones), Destination Groups (Phone Groups)* or *Destination Types*. Calls are sorted by duration, cost and number of calls.

The drill-down report takes into consideration the assignments that can exist between an employee (device) and various devices (employees), organization units or both devices and organization units (according to the selection made in *Group by* group box) for the drill-down destination number. It is also filtered and sorted by the same options as the previous report.

**Unused Devices**

The Unused Devices report displays the devices that were only used for certain call types. The main information displayed in the report is device and employee. The report also displays the devices that were not used on a given time period. No other standard report provides information about these devices. The report offers the possibility to easily see all the devices, along with the employees they belonged to, that are not used (that is, that have no calls at all) or that were only used for certain call types.

**Undefined Devices**

This report provides users with a summary of calls on all the devices within the system that have not been assigned to any department. This report is useful to find new devices installed on the

IP PBX which have not been defined in PhonEX ONE yet.

**Undefined Accounts**

This report allows the user to access a summary of the calls made on accounts that have not been defined in the system.

### Trunk Group Trends

The *Trunk Group Trends* standard traffic report and chart include the possibility to highlight peak values that exceed certain threshold ranges defined by each user, in order to provide more relevant information that allows them to create analysis and take decisions. Three threshold ranges that must not overlap can be defined and employed in order to highlight peak values using three pre-defined colors.

## Other Report Features

### Relative Dates

For user convenience, PhonEX ONE offers the option to use date codes in Standard Reports and Queries options.

### Report Output Options

All the reports have the option to be saved, printed or e-mailed as a Text file (*TXT), Word document (*.DOC), Excel document (*.XLS), Acrobat Document (*.PDF), Crystal Report (*RPT). Web page (*.HTML), Export delimited (*CSV) and as a Rich Text Format document (*.RTF). In addition, a user-friendly interface allows report formats to be created according to the requirements of various accounting applications.

### Multicurrency and Multilanguage Capabilities

PhonEX ONE can be used in multinational, global organizations since it easily adapts to local currencies and languages. There are nine international languages available in PhonEX ONE and additional languages can be added if specifically required. PhonEX ONE can configure each site and tariff company with local currency parameters, and can generate reports in two currencies simultaneously (i.e. Euro and USD), fulfilling the multisite environment in different countries.

### Multi CDR

PhonEX ONE system is independent of communication systems platform (Legacy, VoIP) and resilient to capture and report on activity of multiple sources such as:  cell phones, PDA's, routers, gateways, phone cards, sip devices, conferencing and more.

# PhonEX ONE Modules

## PhonEX ONE Traffic

The Traffic Module is a call accounting application designed to track daily call loads, maximum call loads, and average call loads in your organization over a designated period of time. The Traffic Module is a stand-alone program that works in conjunction with the PhonEX ONE Call Management System. In the Traffic Module, it is possible to obtain detailed information on the traffic and load of calls in the telephone system.

The Traffic Module's query generator enables you to produce up-to-the-minute reports on your organization's telephone use. Regardless of the parameters or the sorting method you choose, you will get a report that analyses call traffic according to any specified time segment. The Traffic Module allows you to pinpoint and eliminate problem areas that may be needlessly costing you money.

For each time segment in a designated time resolution, the Traffic Module reports contain information on the number of calls begun, number of calls completed, average call duration, average call load, and peak call load on the system. Whether you need minute-by-minute updates, monthly reports, or data on long-term use patterns, the Traffic Module allows you to tailor reports to suit your needs.

The Traffic Query functions can be used to produce four different types of reports:

- Daily Traffic Reports
- Peak Traffic Reports
- Average Traffic Reports
- Sizing Traffic Reports

In the Traffic reports module the users can construct customized traffic reports for tracking down usage information, and save their custom traffic queries for frequent and convenient use. The data is presented in tabular form, and some of the report options allow analyzing the information graphically, as well.

### Matrix Queries

**Matrix Query** reports offer users the possibility to get a different view of the data already existing in the database, displayed in a different format. The Matrix Queries can be used in order to generate table-like reports, with summarized information for different combinations of the system entities. All this information can be presented graphically as well.

## PhonEX ONE Bill Verification

PhonEX ONE Bill Verification Module helps you identify hidden costs or problematic billing areas in a telephony environment, in order to achieve immediate cost savings. Use PhonEX ONE Bill Verification to compare vendor bills with the actual usage calculated by PhonEX ONE and to verify the accuracy of the bill you receive from your carriers. This is accomplished by comparing the totals for each entry in the provider's bill with the computed totals for the corresponding set

of calls that exists in the internal application database and generating reports that include the bill comparison details.

## PhonEX ONE Budget

The Budget Module is a stand-alone program that controls the budget allocation within an organization. Usage thresholds can be set and alarmed if and when exceeded. Users can also be notified as to percent of allocated budget used, for example, 50%, 75% 100% of the budget. On some PBX's, exceeding the budget will prevent users from placing calls (except for 911, 411/112 calls).

Four Budget Reports are available in the PhonEX ONE system:

- Monthly Budget Summary
- Device Budget Usage
- Device Budget Exceptions
- Letters for Device Budget

### Monthly Budget Summary

This report gives a general picture of the budget usage split by months.

### Device Budget Usage

The report displays information about the current budget for specific devices. The information is a basic one, including total current budget and usage (value and percentage).

### Device Budget Exceptions

This report displays information regarding the exceptions within the current budget. According to user's selection, the report contains the devices that have exceeded the current allocated budget and/or the devices that have no usage.

### Letters for Device Budget

The report displays basic budget information for the devices in the filters, for the past period selected; the current month may or may not be included. Depending on the report format, some columns may or may not be displayed. This report includes only the months on which there is no budget defined for the current device.

## PhonEX ONE Guard and Alerter

Using the help of Guard/Alerter, organizations will be aware of everything that occurs in the system, providing them the ability to accurately monitor, optimize performance and keep high serviceability of their system.

Real time monitoring of the network usage is critical if you want to eliminate the costs incurred from fraudulent network usage. PhonEX ONE Guard/Alerter is a powerful fraud detection tool that enables the detection of the most sophisticated misuse, abuse or fraud in the network. The PhonEX ONE Guard/Alerter module can be installed on the CPS or on the Web Server.

PhonEX ONE Alerter module is designed to track and respond to predefined events and

problems that occur in the network. Alerter ensures that system administrators and users always know of the problems and events in real-time, so appropriate actions can be taken.

### Key features

- Flexibility - The Guard provides flexibility in defining rules by using the powerful query generator.
- Various rules - Missing call records retrieval from the different sites. More than 10K€/ week International calls for department X. Less than 1,000 calls / day for a site.
- Option for creating several alert levels per rule.
- Performance - The Guard/Alerter is completely integrated within the PhonEX ONE system and takes full advantage of the system's database and processing capabilities.
- Ability to send alerts via e-mail or a build-in Instant Messaging.
- Alerts are activated immediately - Once the defined rules are activated, they send signals to the Guard/Alerter module.
- Applies the system's user security rules.

## PhonEX ONE Hotel

The **Hotel** module is a standalone call accounting application (that works in conjunction with the PhonEX ONE Call Management Solution) designed to keep track of phone usage in hospitality environments (hotels) where the PMS software is either not used or used, but without the ability to communicate with the PBX. The PhonEX ONE system acts either as a PMS or as a mediator between the PBX and PMS, exchanging information and data with both sides, in order to provide a complete picture of the system activity inside the hotel and to allow almost complete control to the managers over the devices in all rooms.

PhonEX ONE Hotel allows defining multiple hotel rates per CDRs (in addition to the existing rates), generating easy-to-read reports for billing phone usage, blocking/unblocking devices on the PBX side, automatically transmitting call usage information to the hotel's PMS, creating profit/loss reports or operating with check-in/check-out dates for rooms and displaying relevant reports for each hotel guest.

The Hotel Module provides five standard hotel reports:

- Daily Activity
- Profit And Loss
- Device Calls
- Room Calls
- Guest Bill

### Daily Activity Report

This report produces a daily summary for each device and can be used to summarize phone usage over any designated period of time.

### Profit and Loss Report

This report summarizes each destination type (local, long distance, etc.) and their respective charges and costs. The amount of profit and percent of profit are displayed for each type of call.

### Device Calls Report

The Device Calls report produces a detailed report of phone usage and charges for a designated device over a given period of time.

### Room Calls Report

This report produces a detailed report of phone usage and charges for a designated room over a given period of time.

### Guest Bill Report

This report produces an accurate bill for the guests that occupied different hotel rooms.

## 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.

## How to contact us:

Email: sales@mindcti.com


**Headquarters:**
MIND CTI LTD
POB 144
Yoqneam Ilit, 20692, Israel
Phone: +972-4-993-6666
Fax: +972-4-993-7776

**U.S. Office:**
MIND Software Inc.
12520 Prosperity Drive, Suite 220
Silver Spring, MD20904, USA
Phone: +1-301-572-1100
Fax: +1-301-586-8680
Toll Free (US): +1-877-736-8674

**U.K. Office:**
MIND Software Ltd.
Parkview
Arlington Business Park
RG7 4TY, UK 1210
Tel: +44 (0)118-965-7880
Fax: +44(0)118-965-7889

**Romania Office:**
MIND Software Srl.
Str.Ciurchi Nr. 126-128
Tudor Office Center
Iasi, 700366, Romania
Phone: +40-332-450450