# BLINK

*USER'S MANUAL*

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# 1. INTRODUCTION

## 1.1 Document profile

This document gives description of the BLINK – retail billing system v.2.1.0 (in what follows referred to as the BLINK for brevity), its structure, installation and operation. The intent of this manual is to provide a handy guide on the capabilities of the system and management of its individual components.

## 1.2 Audience

This guide is intended for the system administrator whose responsibility is to install, configure and operate the BLINK. Users of this document are presumed to have a working knowledge of UNIX-like operating systems (Free BSD, Red Hat Linux) and at least some acquaintance with regular expressions.

## 1.3 Conventions

The table below describes the document conventions:

| Example | Convention |
|---|---|
| **Note**: *text* | Important information requiring special attention |
| [N] | Numbers in square brackets represent a reference to some other document |
| `Void` | Words in Times New Roman expanded by 1.5pt represent examples of source code, contents of logs, configuration files etc. |
| **Ulimit** | Boldface is used to highlight names of programs, files and directories as well as the names of the system configuration files |

## 1.4 Document structure

Here is a brief synopsis of the chapters and appendices in this document:

**Chapter 1**: **Introduction** describes the subject matter and structure of this document, the target audience and typographic conventions.

**Chapter 2**: **Overview** gives a brief coverage of the product, its purpose, supported functions and standards. It also describes various system architecture layouts depending on the system scalability and operating environment of the product.

**Chapter 3**: **Installation** leads you through the particulars of product installation: beginning with the system hardware requirements, operating systems, step-by-step software installation procedure and ending with the post-installation tasks.

**Chapter 4**: **Configuration** tells you how to accomplish the initial configuration of the BLINK and enumerates the files whose parameters are essential for this task.

**Chapter 5**: **Operation** is focused on the system operation, administration and management matters. The chapter is divided into sections that provide information about the BLINK management tools: administration console, BLINK Web Monitor, logging mechanism of the application, CDRs, etc. A brief coverage of system redundancy is available in this chapter as well.

**Chapter 6**: **Troubleshooting** provides information about the BLINK most frequent faults, describes their symptoms and methods of eliminating the trouble cause. The chapter includes the description of issue-specific, step-by-step troubleshooting processes, and reference table 'Malfunctioning symptoms and remedies'.

**Chapter 7: Reference information** provides a miscellany of auxiliary but nonetheless useful information including the use of regular expressions in configuring BLINK, dialpeer search algorithm, number translation patterns, definitions and acronyms used in the manual, etc.

**Appendix A** covers …

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# 2. PRODUCT OVERVIEW

## 2.1 Intent of the application

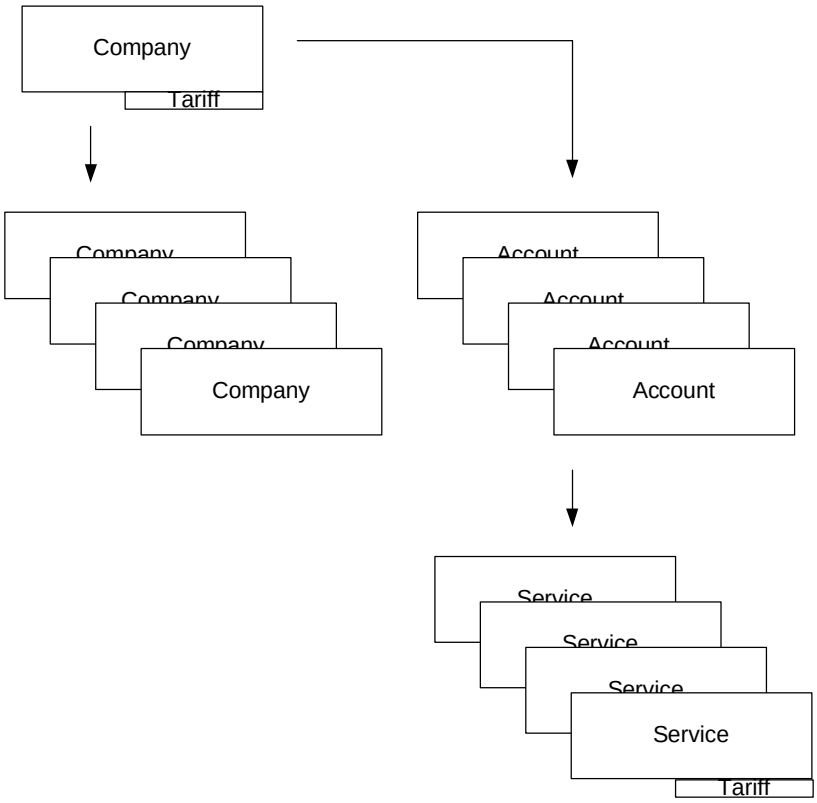
BLINK – feasible multi-service retail billing system. The BLINK is a solution that radically simplifies the authorization and accounting for services provides

- Radius authorization
- Radius authentification
- Radius accounting.

## 2.2 Technical data and specification

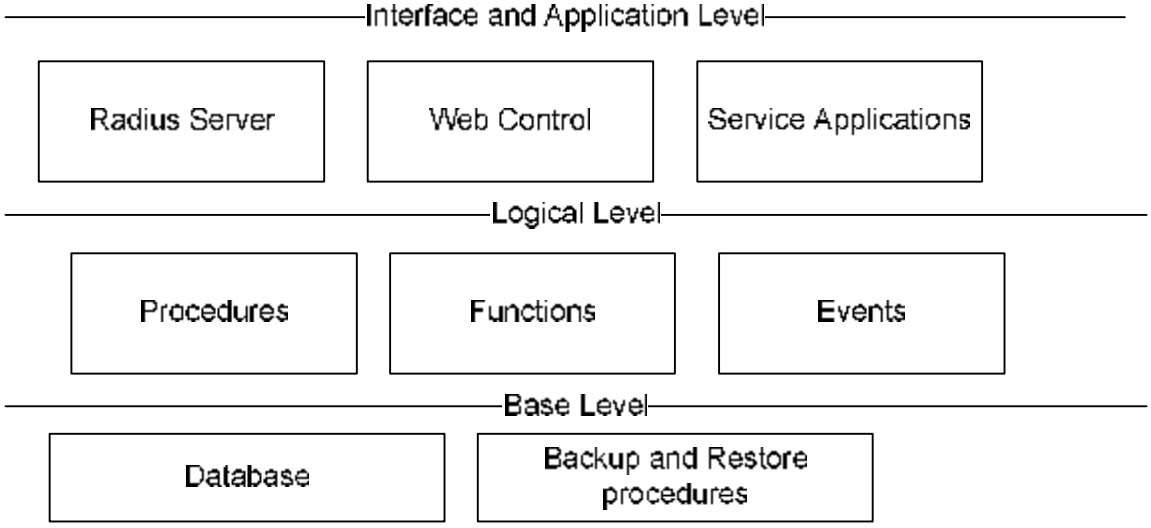
## 2.3 Logical Structure

*Account* is the main object in BLINK. It describes one payer party with all billing attributes.
Account includes all *services* with rating instructions – *tariffs*.
Accounts groups in *company*.
BLINK supports unlimited company inheritance structure – each company can have children and parent.

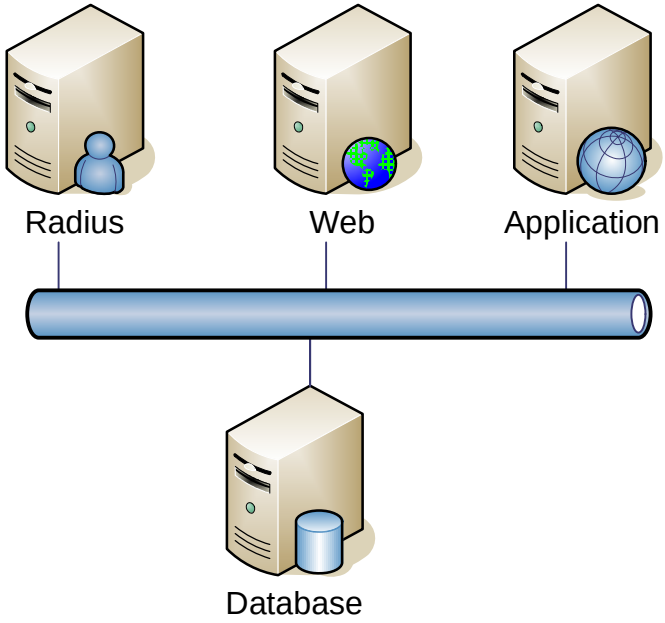


## 2.4 Levels Structure

BLINK have tree logical levels: Base, Logic, Interface and Application




## 2.5 Network Structure




In some cases all elements can be placed in one computer.

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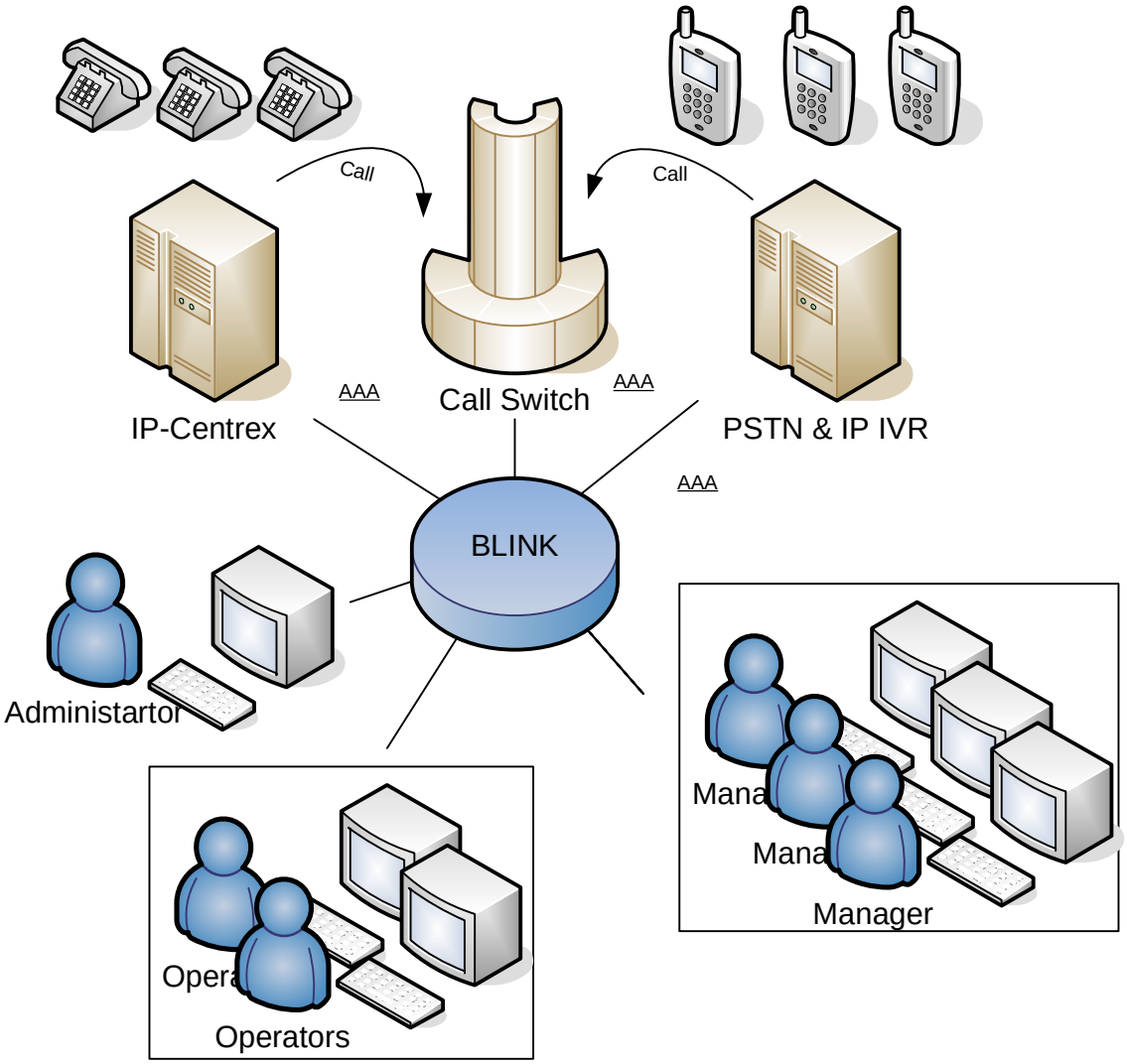
## *2.6 Implementation Structure*

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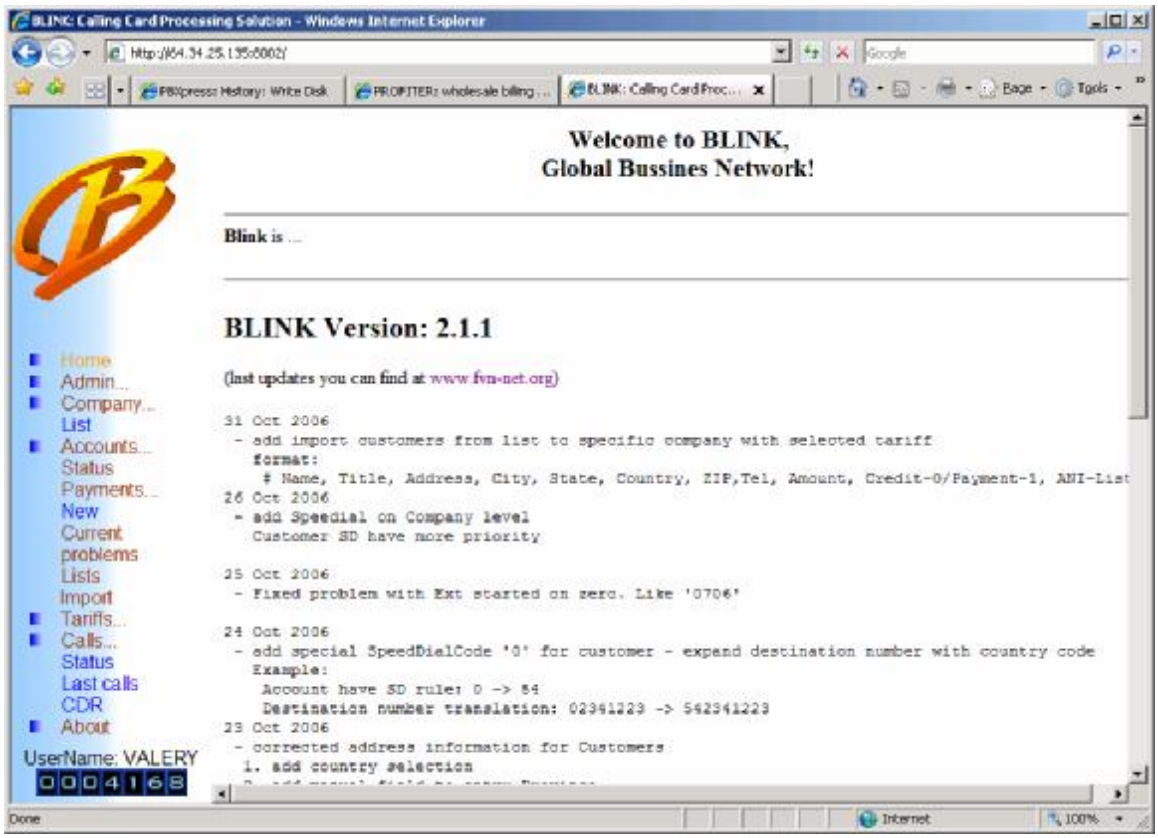
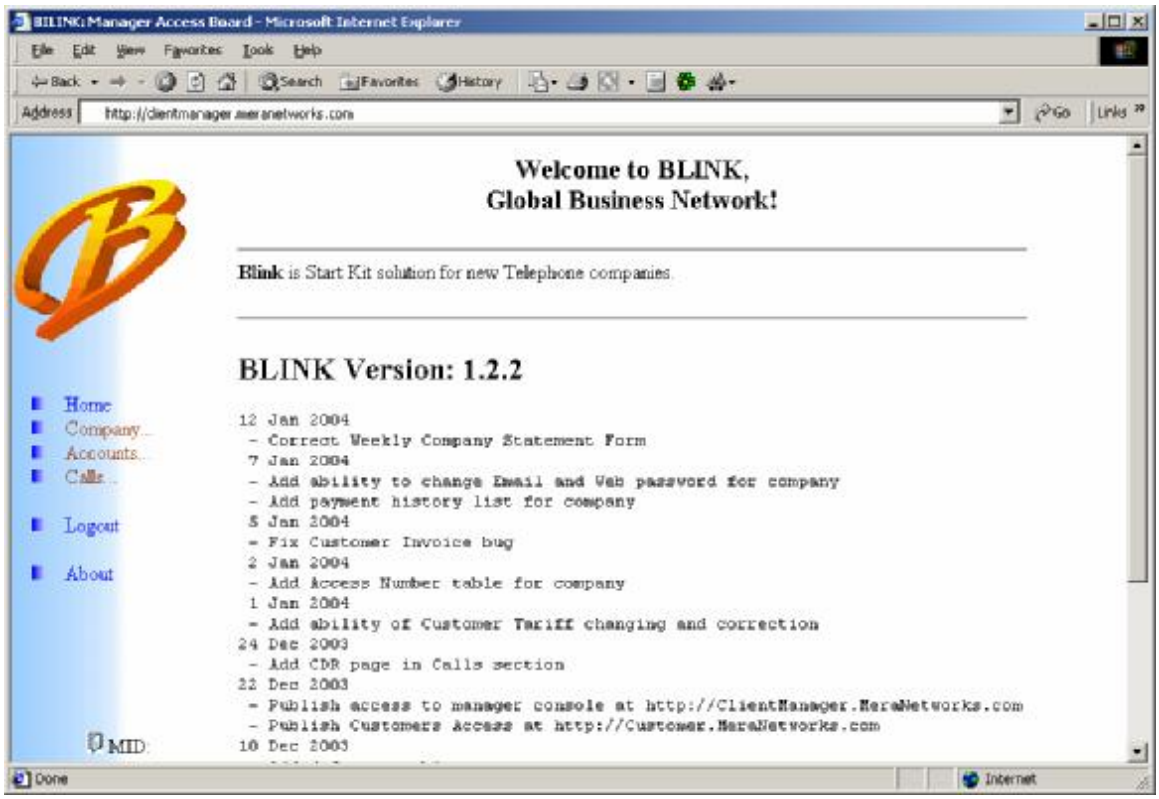
# 3. OPERATION

## *3.1 Administrator interface*

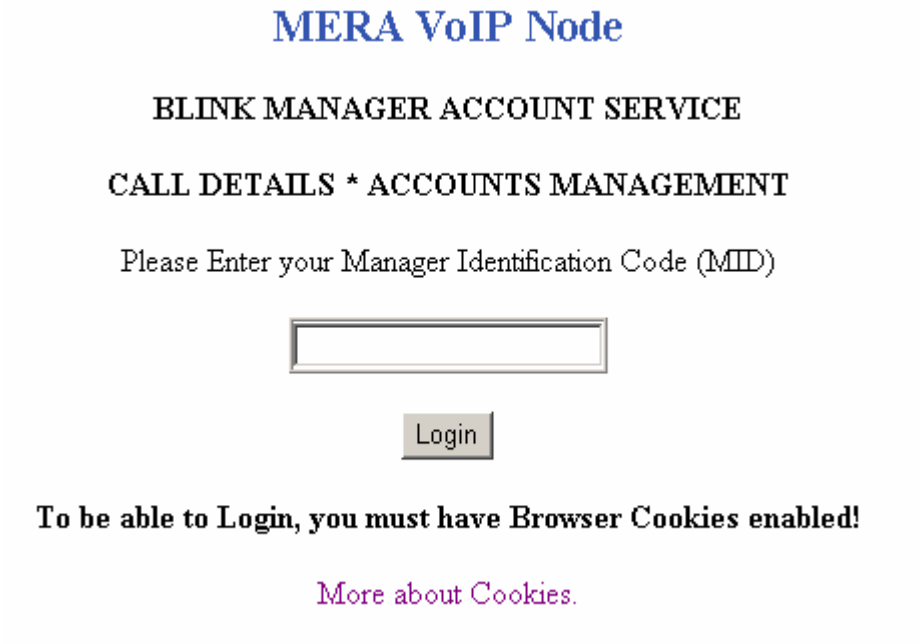



3.1.1 Company operations: Create, Edit, Move
3.1.2 Accounts operations: Create, Edit
3.1.3 Service types and operations
3.1.4 Tariff operations: Create, Import, Export
3.1.5 Access Numbers and access lists
3.1.6 Calls Monitoring

## *3.2 Manager interface*



1. **Company information**
   a. **Login**




**What are Cookies?**

A cookie is a very small text file placed on your hard drive by a Browser. It is essentially your identification information for us and cannot be executed as code or deliver viruses. It is uniquely yours and can only be read by the server that gave it to you. A cookie's main function is to tell the server that you returned to that Web page.

**How do I enable cookies?**

**If you have Netscape Navigator 4.x:**

- click on the "Composition" menu, then "Preferences";
- In the category section (in the right hand side of the window), click on "Advanced";
- on the right, in the lower part of the window, inside the "Cookies" section, check that "Accept all cookies" has been enabled.

**If you have Internet Explorer 5.x:**

- click on the "Tools" menu and select "Internet Options";
- click on "Protection";
- In the panel at the bottom of the window, click on "Custom Level";
- Scroll down this menu until you find "Cookies". Select "Allow Cookies that are stored on your computer "; select "Enable" or "Request confirmation";
- then select "Allow per-session cookies (not stored)"; select "Enable" or "Request Confirmation".

**If you have Internet Explorer 6.x:**

- click on the "Tools" menu and select "Internet Options";
- click on "Privacy";
- in the bottom panel click on "Advanced";
- select "Override automatic cookie handling";
- then select "Accept" in the section "Third Party Cookies" ["First Party Cookies"];
- finally select "Always allow session cookies".

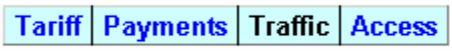
### b. Common information

| PID | Name | Balance | Usage | Activation | Tariff | Status |
|---|---|---|---|---|---|---|
| 26 | MoBleCom | 231.00 | 0.00 | 2/13/2004 | ▲WHTRF | A |
| | | | | | | |
| ▲ **Name** (Printed on invoice): MoBleCom | | | | | | |
| ▲125 Fisherville, suite A11, Toronto, ON, Canada, M5A 4F8 | | | | | | |
| ▲ **Phone:** 416 881 1234 **Fax:** 416 881 1230 | | | | | | |
| ▲ **Email:** henry@moblecom.com | | | | | | ▲Wpass |
| ▲ **Notes:** | | | | | | |

**PID** – Company identifier in the BLink system (System)
**Balance** – current company balance
**Activation** – date of activation of this Company in System
**Tariff** – wholesale tariff for this Company
**Status** – status of Company (A – active; C – closed)
**Email** – click mark to edit Email-address
**Wpass** – click green mark to edit Manager Access Password

### c. Navigation

Use this navigation bar or menu to choose information you need.



**d. Payments**

**Payments**

| Date | Value | Type | Description |
|---|---|---|---|
| 06 sep 2003 | 1,000.00 | Credit | Credit Limit |
| 12 jan 2004 | 304.56 | Statement ($304.56) | #150103003 |
| 15 jan 2004 | 42.23 | Charge | Current charge |
| | **653.21** | **Current balance** | |

List of transactions.
One line – one transaction.
Statement Number in Description field (#150103003) is a link to the Statement Form. For details about this statement just place the mouse pointer over Statement number (#150103003) and click.

**e. Tariff**

**Tariff : C0021**

| Prefix | Description | Rate | Free | MinCall | Resolution | MaxCall |
|---|---|---|---|---|---|---|
| 1 | USA & Canada | 0.018 | 0 | 30 | 6 | 0 |
| 1242 | Bahamas | 0.166 | 0 | 30 | 6 | 0 |
| 1246 | Barbados | 0.346 | 0 | 30 | 6 | 0 |
| 1264 | Anguilla | 0.274 | 0 | 30 | 6 | 0 |

**Rate** – Wholesale rate in US $ per minute

**f. Traffic**

**Traffic**

| Prefix | Destination | Rate | Calls | Duration | Charge |
|---|---|---|---|---|---|
| 1 | USA & Canada | 0.0200 | 1 | 11.00 | 0.22 |
| 91 | India | 0.1460 | 33 | 254.60 | 37.18 |
| 9111 | India, New Delhi | 0.1180 | 3 | 21.30 | 2.52 |
| 9198 | India, Mobile | 0.1090 | 3 | 7.40 | 0.81 |
| | | | | | |
| **Total** | | | 40 | 294.30 | 40.73 |

**Prefix –** country code / country code + area code
**Calls** – number of calls
**Duration** – in minutes
**Charge =** Rate x Duration

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### g. Access Numbers

**Access**

| Number | Description | Rate | Calls | Duration | Charge |
|---|---|---|---|---|---|
| 14166423115 | Toronto GW | 0.0100 | 35 | 247.30 | 2.48 |
| 14166423116 | Toronto GW | 0.0100 | 0 | 0.00 | 0.00 |
| 14166423117 | Toronto GW | 0.0100 | 0 | 0.00 | 0.00 |
| 14166443051 | 1 866 644 3051 | 0.0430 | 0 | 0.00 | 0.00 |
| 14166443052 | 1 866 644 3052 | 0.0430 | 0 | 0.00 | 0.00 |
| | | | | | |
| **Total** | | | 35 | 247.30 | 2.48 |

**Number** – access number to System

## 2. Accounts information

The Company Manager has all rights to change/add any type of information about account (except Account number). Manager will accept and register new customers and take care about accounts.

Use this menu at the left side of home sheet to take any information about account you need. Just click ***Accounts*** and choose an appropriate topic from drop-down menu.

To close drop-down menu click the main topic ***Accounts*** again.

### a. Common information and account search

| Company | Accounts | Closed | Credit | Balance | Usage |
|---|---|---|---|---|---|
| MoBleCom | 6 | 0 | 180.00 | 0.00 | 0.00 |

| | |
|---|---|
| **Account** | |
| **Invoice** | |
| **Phone Number** | |
| **Name** | |
| **Address** | |
| **Credit Card** | |

Clear Find...

**Accounts** – total number
**Closed** – status of account (A – active, C – closed)
**Fill** any window for search and click button **Find**

**b. Accounts list**

| Account# | Name | Title | Balance | Address |
|---|---|---|---|---|
| 6372002600000001 | Valery Clark | Valery Clark | 30.00 | 15 West Miles Ave, #111, A3B 3B7 |
| 6372002600000002 | Elena Smit | Elena Smit | 30.00 | 111 Vaterloo Rd, #A1, M2R 3B6 |
| 6372002600000003 | Andy Smity | Andy & K | 30.00 | 12 Gordon Crt, suite 123, N1R 9A1 |
| 6372002600000004 | Anny Darvin | Anny Darvin | 30.00 | 5 Airport Dr, #715, B1A 2A3 |
| 6372002600000005 | Dick Grand | Dick Grand | 30.00 | 17 Cactus Rd, V1B 1S1 |
| 6372002600000006 | Dan King | Dan King | 30.00 | 5 Drewry St., #71, C3R 3B1 |

**Title** – business name (to be printed on invoices)

**c. Account details**

| Account# | Name | Balance | Activation | Status |
|---|---|---|---|---|
| 6372002600000001 | ▲ Valery Clark | 30.00 | 2/23/2004 3:27:40 PM | A ( 17 ) |
| | | | | Reactivated after payment. |
| ▲ **Name** (Printed on Invoice): Valery Clark | | | | |
| ▲ 15 West Miles Ave, #111, Toronto, ON, Canada, A3B 3B7 | | | | |
| ▲ **Email:** Valery@csystems.com | | | | |
| ▲ **CreditCard:** | | | | |
| ▸ **Notes:** | | | | |

**Status** – account status:

A – active (C – closed);

17 – status reason code (Reactivated after payment)

**Notes –** click this green mark to make some notes about account (to store additional information)

**Credit card –** click this green mark and fill in drop-down form:

- choose type of credit card clicking black mark at the right side of **Type** window (Visa, Master card, American express card),
- enter card number (for convenience Manager can separate every four digits by point or space),
- expired date (without any spaces),
- enter card holder name.

To save entry information click button **Save card info**.

To reset previous information click button **Reset**.

Then click **Return to info** (to close drop-down form) and continue working.

**d. Service list**

**Services list**

| Date | Service | Tariff | Number | Status | PIN/ID\|Password |
|---|---|---|---|---|---|
| 2/23/2004 | ANI | ANI | 9043214512 | A(100) | |
| 2/23/2004 | PIN | ANI | | A(100) | 9043214512 8512* |

**Date** – activation service date
**Service** – type of services (ANI, PIN, H323)
**ANI** – Automatic Number Identification
**PIN** – Authorization by PIN Code (Password)

What is **PIN**?
It is combination of 14-digits: first 10 digits – your phone number (home or cell) + any four digits (digit security number) easy for customer to remember with star (*) at the end.
Don't forget about "star" at the end.
Customer needs PIN code *to view* his Account information from Web site and in case of *calling from unregistered* (in System) phone.
Manager can add/delete or change services, make/change a tariff line for each service.

***How to add service to any Account.***
Open Account you need and click green mark to the right of **Services list** title. Then fill in a drop-down form.

| Date | Service | Tariff | Number | Status | PIN/ID\|Password | Action |
|---|---|---|---|---|---|---|
| ▲ 2/23/2004 | ANI | ANI | 9043214512 | A(100) | | ⊗ |
| ▲ 2/23/2004 | PIN | ANI | | A(100) | 9043214512 8512* | ⊗ |
| ☐ ANI ☐ PIN ☐ H323 | | | | | | |

<- Return to info

There are two general services – ANI and PIN.
How to add **ANI** service:

- § mark window before ANI;
- § enter phone number in **Number** field;
- § click green mark in **Action** field;
- § click **Return to info** (to close drop-down form).

Repeat this procedure every time you need to add another ANI service.
How to add **PIN** service:

- § mark window before PIN;
- § enter phone number in **Number** field;
- § enter any four digits (easy to remember for Customer) in **PIN** field without any spaces. This is digit customer security number;
- § click green mark in **Action** field;

§ click button **Return to info** (to close drop-down form).

**e. Speed Dial list**

**Speed Dial List**

| Code | Number |
|---|---|
| 100 | 7095100 |

Speed Dial List contains list of substitution and extension rules to translate input phone number to destination number.

Example of substitution rule:
100 -> 7095100
Customer enters number 100 – it connects him with number 7095100

Example of extension rule:
**** -> 1905882
Customer enters any number with four digits – destination number will be with prefix 1905882 (1234 -> 19058821234)

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### f. Payments

| Date | Value | Type | Description |
|---|---|---|---|
| 04 dec 2003 | 30.00 | Credit | Activation |
| 16 dec 2003 | (0.17) | Invoice ($0.17) | #150121986 |
| 01 jan 2004 | (27.71) | Invoice ($27.88) | #150122005 |
| 05 jan 2004 | 70.00 | Credit | Credit for |
| 16 jan 2004 | 10.00 | Payment | Payment by Direct Bank |
| 16 jan 2004 | (49.78) | Charge | Current usage |
| | **(67.66)** | **Current balance** | |
| | 100.00 | Credit | |
| | 32.34 | IVR balance (you have...) | |

Payment by Cheque

☑ Payment ☐ Credit ☐ Correction

☐ Credit Card ☑ Cheque ☐ Cash

☐ Debit Card ☐ Direct bank

**Amount (000.00)**

Correct MIND ->

Payment section contains history of payment transactions and form to enter new payment or credit with its description.

***How to make payment***:

- § mark an appropriate window (Payment);
- § select type of payment (by credit card, cheque, cash, debit card or direct bank) marking the proper window;
- § input amount and click (green mark to the right of **Amount** field).

Then you will see this payment with its description in the **Payments** list.

Red color of payment in (round) brackets means that it is negative.

What is **credit**?

Blink offers two types of payment policy – prepaid and post-paid account systems.

***Prepaid*** system.

How to give credit:

- § mark an appropriate window (Credit);

Generate Invoice Now... - this button allows to generate new Invoice for this account

### g. 20 Last calls

**20 Last calls**

| Time | Destination | Duration | Charge | Sucharge | ANI | DNIS |
|---|---|---|---|---|---|---|
| 15 jan 2004 11:28:44 | 919810729919 | 00:01:24/00:02:00 | 0.38 | 0.00 | 4166356006 | 14166423115 |
| 15 jan 2004 11:24:51 | 919891618869 | 00:00:17/00:01:00 | 0.19 | 0.00 | 4166356006 | 14166423115 |

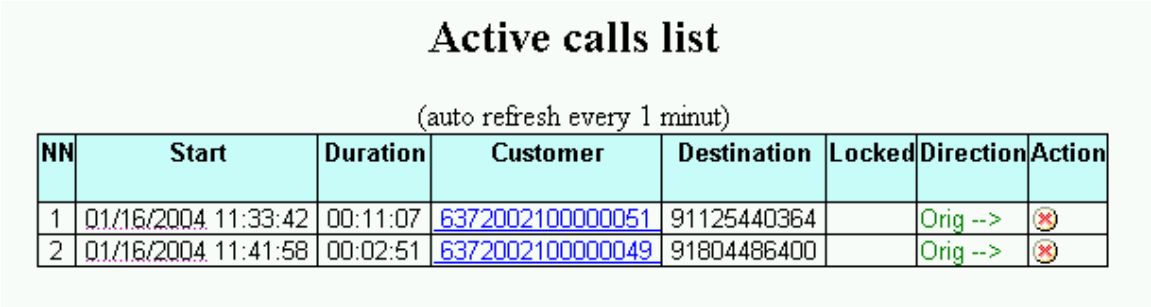
**DNIS** – Access number
**Surcharge –** additional charge

**h. New Account**

Manager can fill this form for every new Customer and then click button "Register".

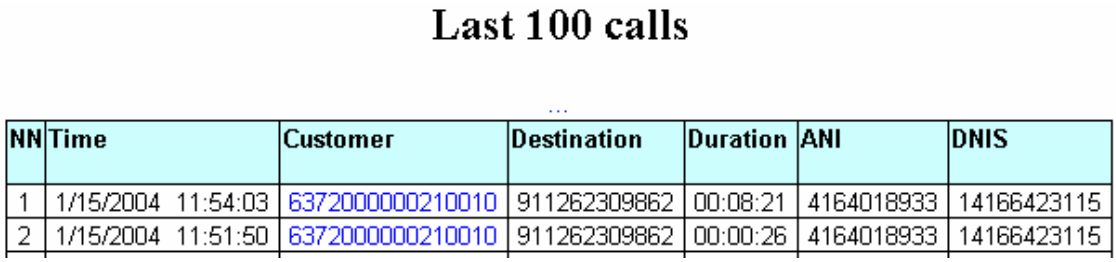
**3. Calls Information**

**a. Current Calls List**




| NN | Start | Duration | Customer | Destination | Locked | Direction | Action |
|---|---|---|---|---|---|---|---|
| 1 | 01/16/2004 11:33:42 | 00:11:07 | 6372002100000051 | 91125440364 | | Orig --> | |
| 2 | 01/16/2004 11:41:58 | 00:02:51 | 6372002100000049 | 91804486400 | | Orig --> | |

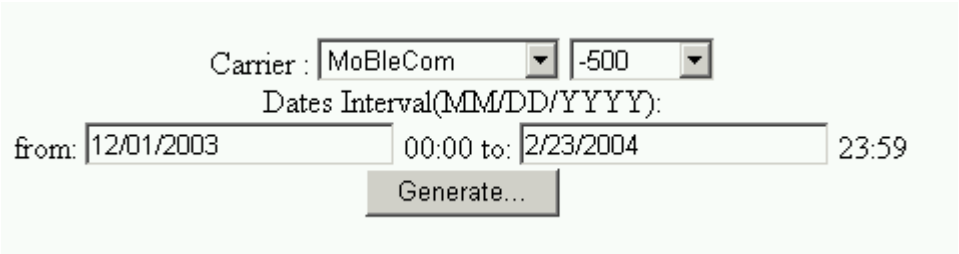
**b. Last Calls Protocol**




| NN | Time | Customer | Destination | Duration | ANI | DNIS |
|---|---|---|---|---|---|---|
| 1 | 1/15/2004 11:54:03 | 6372000000210010 | 911262309862 | 00:08:21 | 4164018933 | 14166423115 |
| 2 | 1/15/2004 11:51:50 | 6372000000210010 | 911262309862 | 00:00:26 | 4164018933 | 14166423115 |

Using this Protocol Manager can track any phone number he is interested in (who was calling, where, when and how long).

**c. CDR**

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## *3.3 Operator interface*

## *3.4 Customer interface*

### 3.4.1 How to login

### 3.4.2 Check balance and payments

### 3.4.3 Call details

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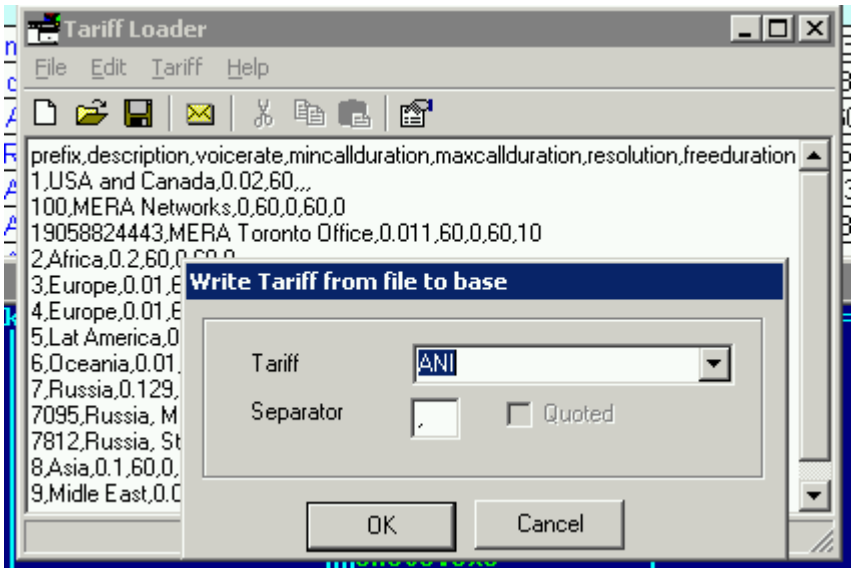
## *3.5 Service Applications*

All service applications you can use on application server to manipulate with tariffs, create PIN's or send invoice notifications to your customers.

### 3.5.1 Tariff loader

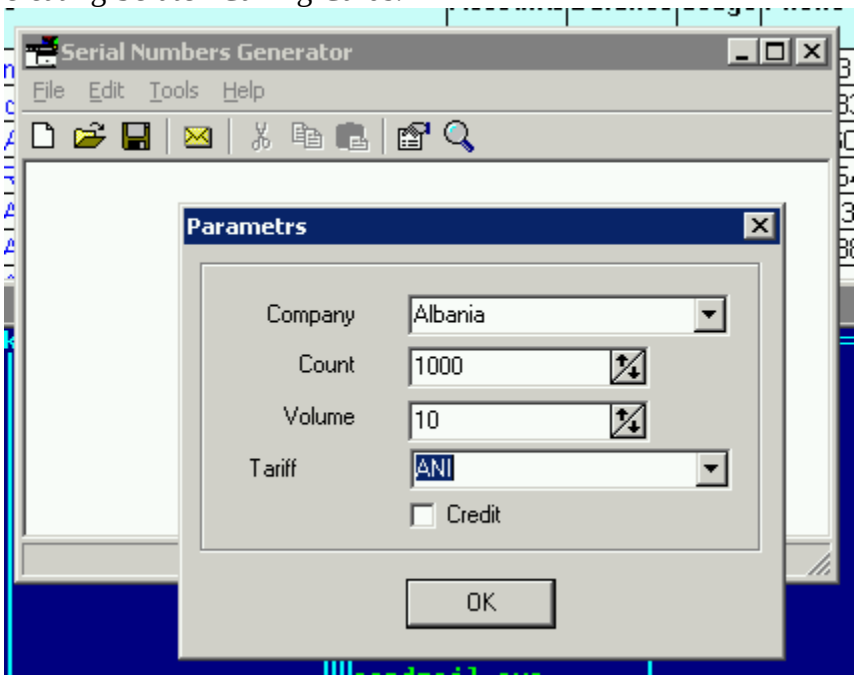
Tariff loader application allows you to upload or download rates in database. This is preferable way to operate with huge tariffs (more when 10 000 rows).

Tariff loader operates with CSV format files.



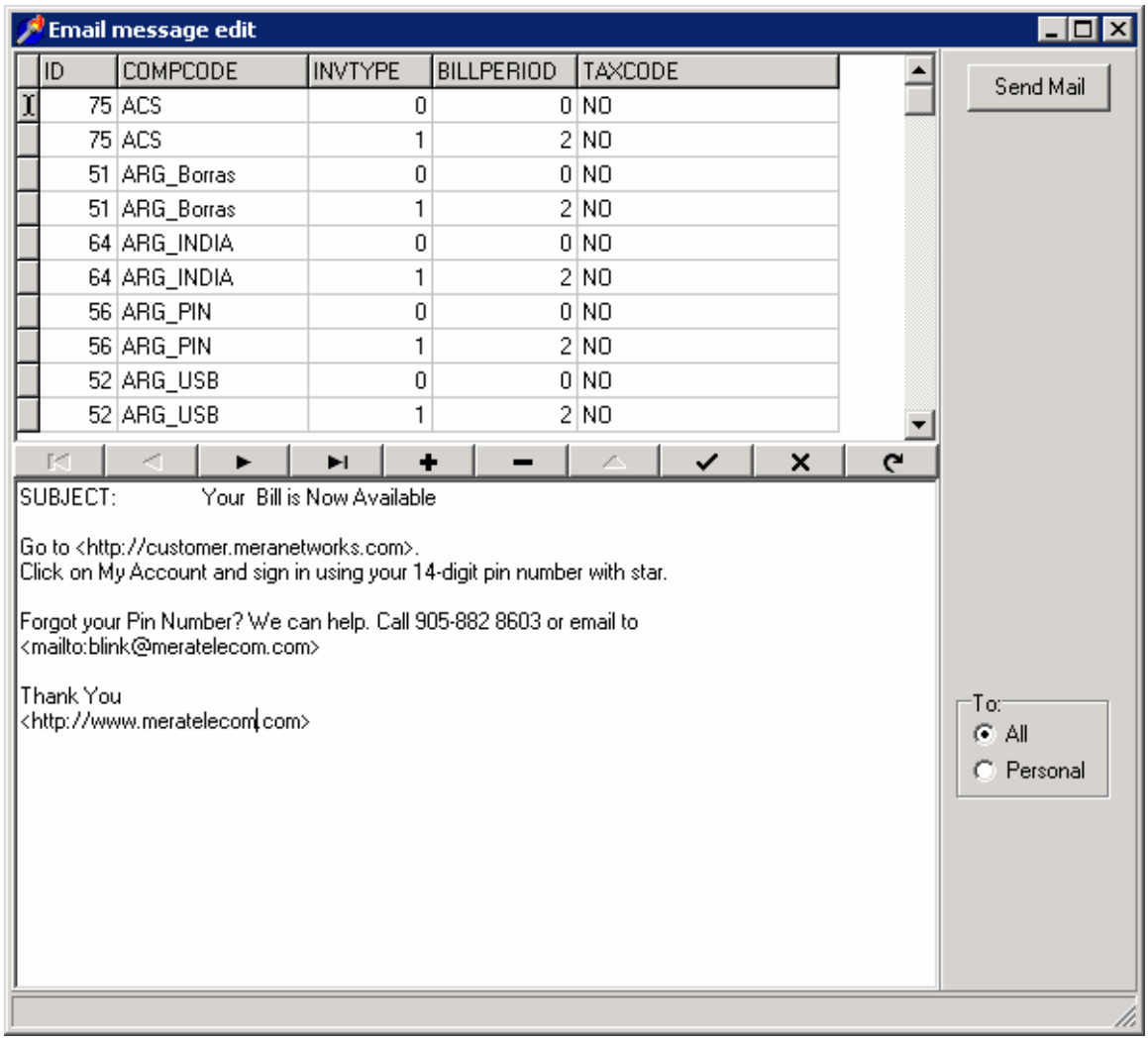
### 3.5.2 PIN generator

PIN generator allows you create automatically thousands of unique PINs and serial numbers. This application generate text file with information to printing company for creating Scratch Calling Cards.



### 3.5.3 Invoice notification

Invoice notification application allow you send mass email notifications to customers.




| ID | COMPCODE | INVTYPE | BILLPERIOD | TAXCODE |
|---|---|---|---|---|
| 75 | ACS | 0 | 0 | NO |
| 75 | ACS | 1 | 2 | NO |
| 51 | ARG_Borras | 0 | 0 | NO |
| 51 | ARG_Borras | 1 | 2 | NO |
| 64 | ARG_INDIA | 0 | 0 | NO |
| 64 | ARG_INDIA | 1 | 2 | NO |
| 56 | ARG_PIN | 0 | 0 | NO |
| 56 | ARG_PIN | 1 | 2 | NO |
| 52 | ARG_USB | 0 | 0 | NO |
| 52 | ARG_USB | 1 | 2 | NO |

# 4. TROUBLESHOOTING

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# 5. REFFERENCE INFORMATION

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# APPENDIX

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## Table of reference

| Reference | Title of the document |
|---|---|
| [1] | Remote Authentication Dial-In User Service (RADIUS), RFC2138, April 1997 (http://www.pasteur.fr/cgibin/mfs/01/21xx/2138?8#mfs) |
| [2] | RADIUS Accounting, RFC 2139, April 1997 (http://www.pasteur.fr/cgi-bin/mfs/01/21xx/2139) |

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