COMPRO 2000

Abstract

Compro 2000 is a distributed communication software, based on both hardware-software communication and client – server communication. It is developed in tune with Attendance Recording Devices (ARD), having a definite protocol through which it communicates with external devices The Attendance Recording Devices stores the attendance records in its own memory and can do various functions on them. Compro 2000 is simply a communication layer between the raw protocol of the hardware and the high-level user commands to be issued to a device. For example, it can capture thousands of data from the device at the click of a button, which is otherwise very difficult to perform in raw mode. Moreover, it offers various other operations with understandable feedback without involving the intricacies hidden in the raw communication protocol.

Purpose

The Attendance Recording Devices are generally connected in a serial network. But a special hardware device (called COBOX/COMCON TCP/IP) enables them to connect to Ethernet that is a very fast and common communication medium of LANs. A mixed network of devices can now be formed where multiple devices are connected to both Ethernet and the serial ports pf PCs, which are also connected to the Ethernet LAN. The software Compro 2000 deals with this mixed networking of attendance recording devices and communicates with them regardless of their position in the network. The prime goal of the software is to capture attendance records from any number of devices and to store them in files. It also offers access control on various commands to prevent unauthorized changes in device configuration to occur. But it does not offer any form of accounting or analysis based on the collected database.

Overview

It is already mentioned that the devices can exist in a mixed network of serial ports and Ethernet ports. For serial ports, a number of devices can be connected to a single serial (RS232) port of a PC, which can have a number of such ports. For Ethernet ports, a number of devices can be connected to a single COBOX, which is linked to the Ethernet LAN where all the PCs are also connected. Since the COBOXes are connected to Ethernet, they communicate through TCP/IP with PCs. So the devices assigned to a COBOX can be accessed through TCP/IP along with the devices hardware protocol. But to access the devices

connected to one of the serial ports of a PC, a **Communication Server** must be setup and be made to listen to a specified port to serve requests from a remote PC (client) to transfer data between the remote PC and the local serial port devices. The devices are then accessed through the server protocol along with the hardware protocol. Since the data can be collected by a number of clients, it must be stored in a single database, i.e., in a single PC that we call the **Database Server**. A separate server program must therefore be made active.

Design of the Software

The software is broken up into three parts:-

1) **COMPRO 2000 Client**:
   The client part is the main application which communicates directly with devices connected to COBOX ports and through the **Communication Server** programs running in other PCs to communicate to devices connected to their serial ports. It captures attendance records from attendance recording devices installed any where to the database server. It also performs various device-specific functions through high level user inputs.

2) **COMPRO 2000 Communication Server**:
   The Communication server serves as the communication medium between a client program running on a PC and the devices connected to a serial port of a remote PC connected in LAN on TCP/IP protocol.

3) **COMPRO 2000 Database Server**:
   The database server collects the captured data from any number of PCs running the client program and keeps it sorted by time. This is necessary because the data collected in a distributed environment must be accumulated to some unique place and so there will be only one database server active at any given time.

Features of Client

The Client supports a variety of options on Attendance Recording Devices as listed below:

- Scan
- Capture / View Data
- Set Date & Time
- Employee Masking
- Time Masking
- Master Card (General Purpose and Time Masking)
- Programmable In/Out
- Mailing
- Card Validation
- Siren
- Memory Dump
- Reset Memory
- Terminal Mode
- Validation Enable
- Retrieve Record

Some other accessories provided by Compro 2000 Client:

- View Network Activation Map
- View Event and Error Log
- View Tables of settings
- User Access Control
- Encrypted Password Security
- Backup / Restore Configuration Files

COMPRO 2000

(Client, Communication Server and Database Server)

Installation Guide

Installation of Compro 2000

- Step1: Check TCP/IP settings of the PC

  Compro 2000 is a network software that communicates through TCP/IP protocol. It is very important to install an Ethernet card and configure the LAN for the IP addresses of the PCs before installing any component of Compro 2000.

- To check if the PC has already an IP address, go to the MS-DOS Prompt and type **ipconfig < Enter >.** This will display the IP address of the PC if it has one.
- To check if the PC has an Ethernet card, go to **Settings > Control Panel > System > Device Manager**

- If no Dial-Up Adapter or Ethernet card is present , either install a card or install the Microsoft Loop back Adapter provided by Windows.

- **Step 2: Configure TCP/IP settings**

  After installing Ethernet card, it should first be configured for IP address. To configure, go to **Setting > Control Panel > Network > Configuration > TCP/IP ***

***Note** : Please make sure that the TCP/IP is installed with Network Card bindings. If the Ethernet Card is not present in the PC,then install a dummy Ethernet Adapter by clicking on ADD button & select & Add a **Adapter** from the "Select Network Adapter" dialog Box.. Select any manufacturer(e.g. D-Link) & any Model of that manufacturer & OK.*

- To set the IP address of the PC manually, click Properties.
- To set the friendly name (hostname) of the PC click on the tab Identification.

- Since the IP address for each PC has to be known before hand, it has always to be entered manually. But make sure that the IP address does not clash, i.e. no two PCs should have the same IP address.

- **Step 3: Installation of Compro 2000 Software components**

    - Compro 2000 has 3 components.

    - For Administration and Viewing of network activities, Compro 2000 Client is used. The Client may be installed in any number of PCs.

    - If the PC has Attendance Recording Devices (ARDs) connected to its local COM port, install Communication Server.

    - If the PC is intended to be the central storage of data captured from ARDs, install Database Server.

Note: The 3 components are located in separate folders in the CD supplied. To install a component, go to the appropriate folder and double click the Setup icon.

Getting started with Compro 2000 Client

- **Login**

Log on using Username and Password. Default user name and Password are “**root**” and “**root**”, respectively.

Tutorial

Main Client Window

Install Port

To get the system going, first install a port – either a Cobox or a COM port as shown above. For installing a COM port, make sure the Communication Server is installed and running on the PC (e.g., the PC 192.168.0.025 in the above example) otherwise the list of free COM ports cannot be imported.

- To install a Cobox, select Cobox, enter name, IP address and TCP port(default Port 10001) of the Cobox and click Install. The name can be anything, & is just a friendly reference to the Cobox.
  The IP settings of the COBOX(COMCON TCP/IP) can be done as per your network configuration.Refer the Annexure for details.

- To install a COM port select PC, type its name or select it from list, enter its IP address and then click Import to import the list of free COM ports of the PC. Then select a COM port and click Install. Note that there is no harm if the name of the PC does not match with the actual hostname of the PC but the IP address should be exact.

Install / Uninstall Terminals

Before performing any device options, first install a terminal (Attendance Recording Device) in one of the selected ports.

- To install a terminal, click on a port (a Cobox or a COM port) in the tree-view. The selected port will appear in the field Selected Port. Then select the device (Gateway 2000 or Microben Jr.).

Then enter the two character hexadecimal device address and Name and click Install.

- To uninstall a terminal, click on the terminal to select it. Then right click on it and select Delete in the popup menu.

Scan

Once devices are installed, first scan them to check their status. The meaning of the responses are given below.

OK	The device is active and responding to commands
No Connection	The TCP/IP address could not be connected. If the device is connected to a Cobox then the Cobox is not responding and if it is connected to a COM port then the Communication Server is not running on that PC.
Error	The TCP/IP address in connected but the device is not responding – possibly due to wrong address.

A “retry” status is displayed to show how many retries are attempted to contact the device.

- To see the internal status information of the scanned devices, click View Status.

Status Read

After scanning devices, see the internal status for each device that responded properly.

- To see the device status information while they are being scanned one by one, click Scan.

The information provided by the internal status for each device is:

1) Date
2) Time
3) Terminal Type
4) No. of Uncaptured Records
5) Error Status
6) No. of General Purpose Master Cards
7) No. of Masked ID Codes
8) No. of Mails
9) No. of Time Masking Master Cards
10) No. of Valid ID Codes for Card Validation

Selection of Devices

For any operation on a list of devices, the devices can be selected in a variety of combinations.

- To select any combination of devices, click on the checkboxes on the device list.
- To select all devices on the list, click Select all
- To deselect all devices on the list, click Deselect All.
- To load the device list afresh, click Refresh.
- To select all devices on a specific port e.g. a Cobox or a COM port or all COM ports of a PC, click Select Zone …

- To reload and deselect all ports, click Refresh.
- To see the selected devices connected to a port without existing this screen, select any combination of ports and clock Apply.
- To apply the selection of ports and exit this screen, click OK.

Device Properties

View device properties and change the retry / timeout values.

- To view properties select a device in a device list. The right click on it and select Properties on the popup menu. The above window will pop up.

- To change the retry/timeout values for a device, bring the above window. Then select Change … Another window will pop up. Enter the new retry/timeout values and click OK. *Default value of Time out is 1000 & Retry is 3.*

Master Setup

View / Change directories of captured files and dump files and the IP address of the database server.

- To set a new configuration, change the fields and click **OK**.
- You can mention interval (in the form of number of days) you want to keep event log and error log. For example if you select 10 days, then event and error log of previous 10 days will be maintained, on 11th day the error and event log of 1st day of the previous period will be deleted.
- The default folder of captured files (.Cap) is Drive:\Program Files\Time Office Software\Captured_Files and that of the Dump files (.Mdp) is Drive:\Program Files\Time Office Software \Dump_Files.

Capture Data

Capture attendance records from devices online/offline. In online mode, the selected devices will be continuously visited and attendance records will be captured soon after a card is swiped in any one of the selected devices.

- To start capturing, select the devices and click Start Capture.
- To capture in online mode, Check Capture Online. Note that in online mode no other option can be selected. To go to offline mode, uncheck Capture Online.
- After capturing, click View Data to view the captured data.
- Every time you capture data, a combined file is generated, if in the ***Advanced*** option of Maintenance ->Master Setup menu,"*Want to generate Combined File*" is selected as *Yes*.. The name of the file will be in the form of DDMMYY99.cmb. 99 represents the counter in which that combined file has been generated i.e. if the counter is 05, that means the combined file has been generated on the 5th time of capturing.

Note*: After capturing, a window will pop up asking for synchronization i.e. sending the captured data files to the database server. To send now, click Now, otherwise click Later.*
Please refer to the Annexure for the CAP File Format.

View Data

View the Captured / Dumped data after performing Capture / Memory Dump.

- To view data of a particular date, set the date using the up-down controls, select Captured Data / Dumped Data and then click View. To quickly set the date to today, click Today.
- If you want to view combined data file you have to mention the file counter number.

View Tables

View list of data sent to devices. The lists are :

1) ID Code of masked Employees
2) Valid Employee ID codes (when card validation is enabled)
3) ID codes of both General Purpose and Time Masking Master Cards
4) 4 Time Zones
5) 2 pairs of programmed In / Out times
6) 16 Siren times and duration

Note: You can also select particular employee ID to search in which terminals (ARDs)

1. The above mentioned employee is masked.
2. Enroll for validation.

You can view searched results in an intermediate window from which you can delete the ID from a particular terminal (ARD).

View Log

View Event and Error Logs. An event log is written after every operation while an error log is written whenever an error occurs.

Note: The log files are not deleted. When the log files become too large, it may take some time to load this window. In that case these may be manually deleted. The event log is located in the file event_log.txt whereas the error log in error_log.txt, both in the application path.

Activation Map

View active devices and device status pictorially during any communication operation in the network.

- To erase previous device status, click Refresh Map.

Set Date & Time

Set Date and Time of the selected devices.

- To set date and time, select the devices, set the desired date and time using the up down controls and click **Set**
- To quickly set the current time, click **Now**.
- To quickly set the date to today, click **Today**.

Employee Masking

The access of that employee will be denied by the terminal when ever he/she punches his card, if the employee is masked.

Mask / Unmask employee ID codes

- To mask an employee, enter the ID in the left field and click **Add**.
- To unmask an employee, enter the ID in the right field and click **Delete**.
- Unless and until you delete the masked employee from the terminals, the access of that employee will be denied by the terminal when ever he/she punches his card.

Time Masking

The Attendance Terminals can be set to accept Attendance punches only during the Time Slots being downloaded.4 such *Enable* Time Zones may be defined. The Time Zone which is not defined as enable, Cards will not be accepted during such time.

The default value of Enable Time Zone is 00:00 to 23:59(i.e. the whole day).The Time has to be defined in 24 hours Railway format. Across the day Time Zones are not valid.

Define 4 Time Zones for devices. Access for general ID codes except master card ID codes will be denied outside the time zones.

- To set the time zones, enter appropriate times, select devices and click Send.

Master Card

When ever an employee swipes a master card it asks the employee to swipe his/her ID card and the reason code gets embedded in his/her punching record.

Add/Delete Master Card ID codes.

- To add a master card, enter the ID code (upper field) and reason code and click Add.
- To delete a master card, enter the ID code in the lower field and click Delete.
- The default master card is General Pupose. To add/delete time masking master card, select Time Masking.

Programmable In / Out

The Attendance Terminals can be set in IN or OUT mode for the Time Zones. Two IN Time Zone & 2 OUT Time Zone may be defined. The Time Slots where it is neither IN or OUT, the machine goes in the NULL Mode, This setting is reflected in the transaction records & following Flags are stored in the I/O field:

IN : 01 or 11 OUT : 02 or 12 Null : 00

To download IN/OUT/NULL for the whole Day you must specify the following:

	IN MODE		OUT MODE		NULL MODE	
In-1	00:00	23:59	00:00	00:00	00:00	00:00
Out-1	00:00	00:00	00:00	23:59	00:00	00:00
In-2	00:00	00:00	00:00	00:00	00:00	00:00
Out-2	00:00	00:00	00:00	00:00	00:00	00:00

Program devices to be in In/Out/Null mode. A device will be in Null mode outside the programmed In/Out times.

- To program in/out times, enter appropriate times, select devices and click Send.

The Factory default value is NULL for all 24 hours.

Send messages to individual ID codes or a common bulletin board.

- To send individual messages, select Individual Paging, enter ID code and the 24 character message, select Add and then click Send. To delete a message, enter ID code, select Delete and then click Send.

- To send a common message for all ID codes (bulletin message), select Bulletin Board, enter date and the 50 character message and then click Send. To delete the bulletin for a particular date, enter an older date and click Send.

Bulletin message will be deleted from the memory of the terminal with the changing of the current date automatically.

Add / Delete ID codes to be granted access when card validation is enabled.

- To add an ID code to the ID validation list of devices, enter the ID code, select devices and click Add.
- To delete an ID code from the ID validation list of devices, enter the ID code, select devices and click Delete.

To make card validation table effective go to **Maintenance** menu, click **Option** button. Then select **Validation Enable** menu. Select the device for which you would like to enable the card validation. Put a check mark on **Enable Card Validation** and click on **Send** button.

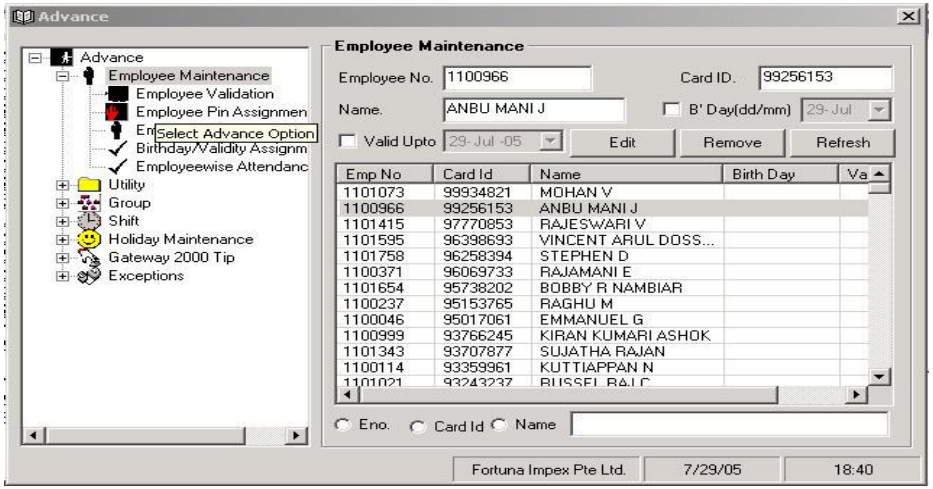
Siren

Set 16 siren times and duration for devices. The Siren may be Day of the week specific & can be selected for the desired days only.

- To set the siren, enter start times and duration & the Day of the week, select devices and click Send.

ADVANCE MENU*

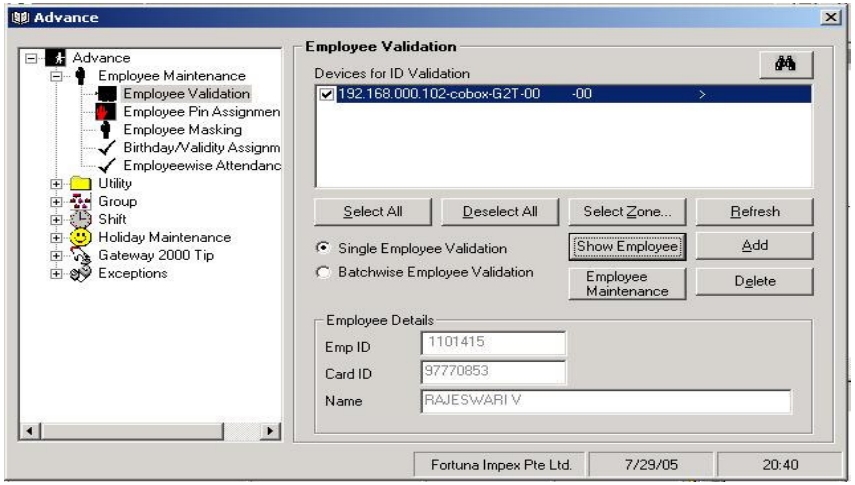
Employee Maintenance



Enter Employee Id, Card No, Name, Date of Birth, Validation Period through this option. Record will be saved in the local database and record must be downloaded to the terminal using Employee Validation to get the effect in the reader. Record can be downloaded to the terminal immediately after saving in the local database.

**** Only supported on selected FORTUNA Models***

Employee Validation



Used to download Employee Id, Card Id, Name to the terminal. Employee records can be downloaded one by one or Batch wise (Select Batchwise Employee Validation option).

- Select Employee and click on Add button to send to the selected reader.
- Select employee and click on Delete button to delete from the reader

In case Batch Download option is selected, the Employee List as entered using Employee Maintenance option appears. Select the List using SHIFT or CTRL keys as in Windows. Press OK button & the control is transferred to the main form. Click on the Add button to Batch wise Download.

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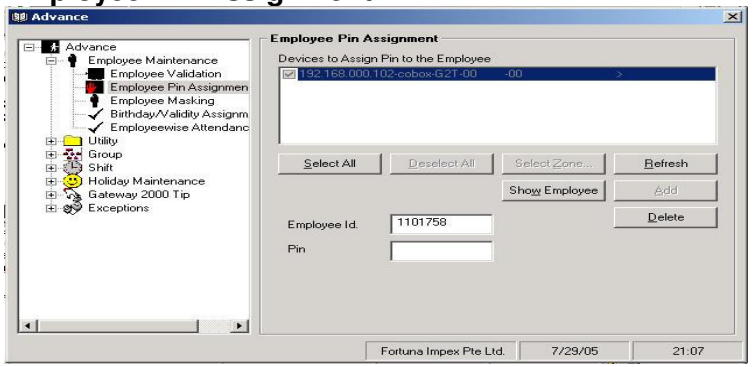
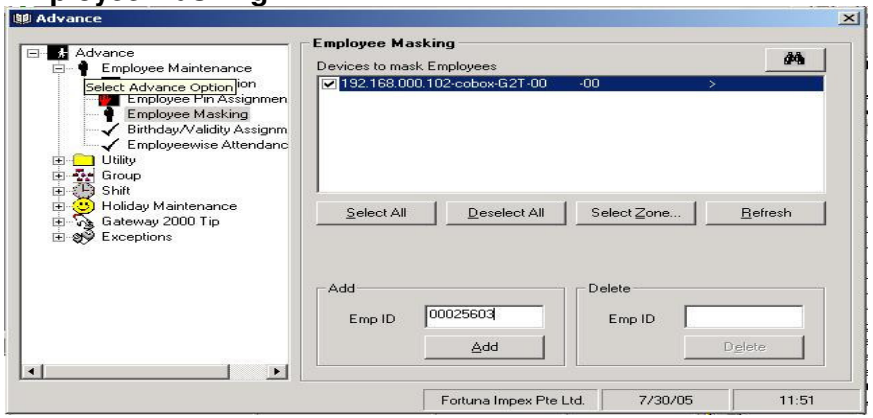
Employee Pin Assignment



Used to download PIN against the Employee ID. Employee records can be downloaded one by one. The PIN get downloaded in all the terminals by default & hence the terminal selection window does not get activated.

- Select Employee ID & enter the PIN no and click on Add button to send.
- Select employee and click on Delete button to delete from all the readers.

Employee Masking



Same as Employee Masking under Utility menu

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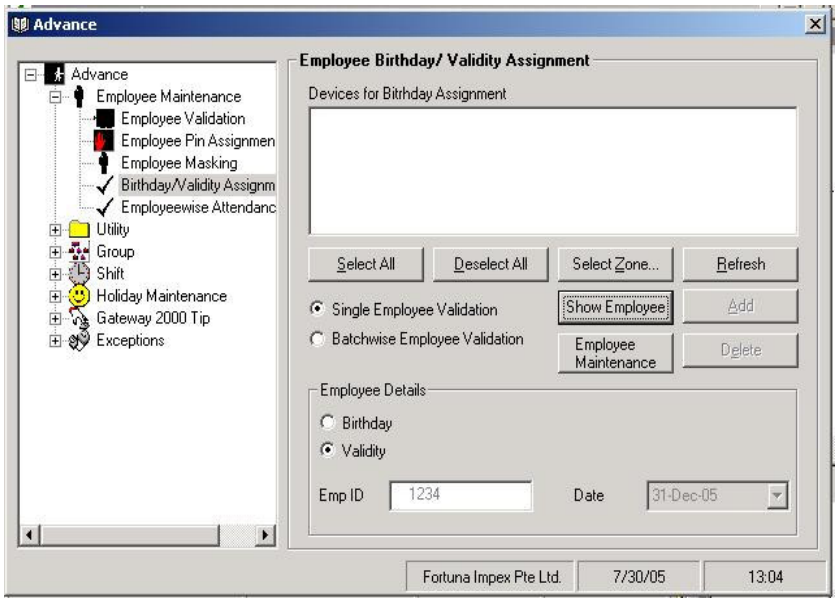
Employee Birth Day / Validity Assignment

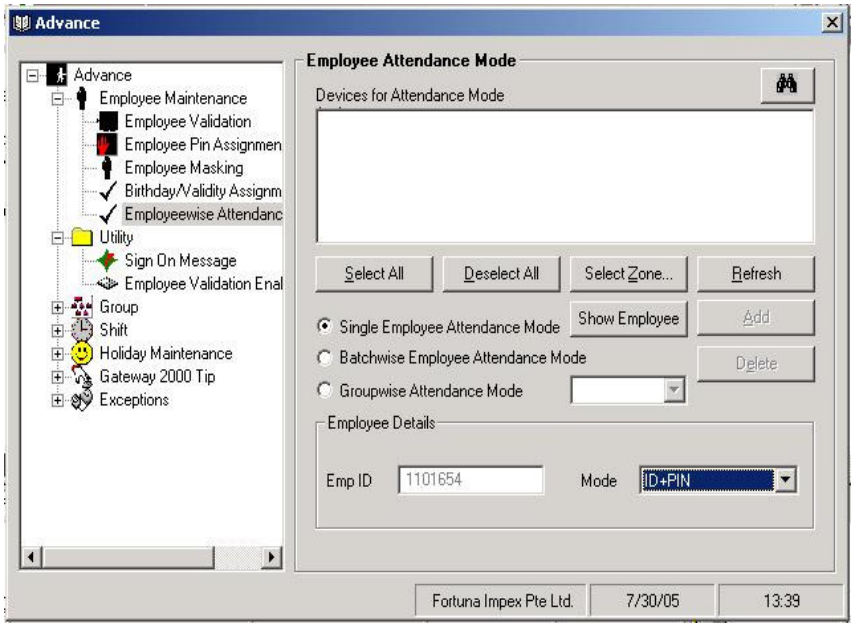
This option is exercised to wish the employee on his birthday using "Paging". The validity option is there for making the Card invalid after the Validity is over.



Use this option to download Validation period or Birth date of an employee which was added in the Employee Maintenance earlier.

- Click Show Employee button to view added Employees.
- Multiple employees can be downloaded at a time. (Use Batch wise Employee assignment).

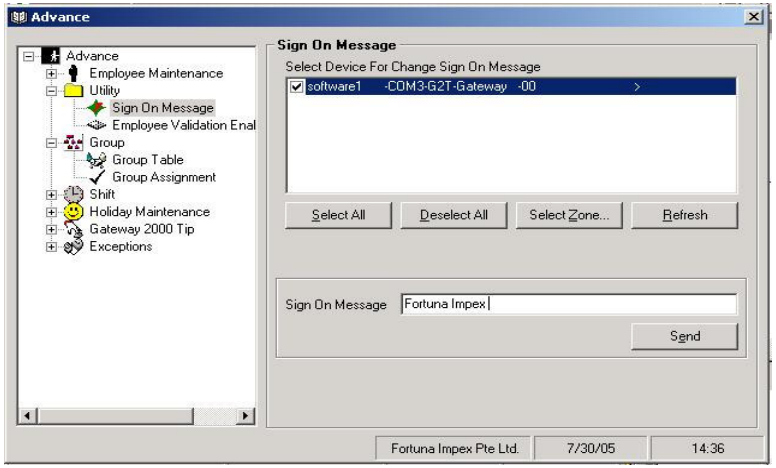
Employee Attendance Mode



Select this option to set attendance mode for an employee. If ID + PIN mode is selected then Attendance terminal will ask for PIN for the employee immediately after punching the card.

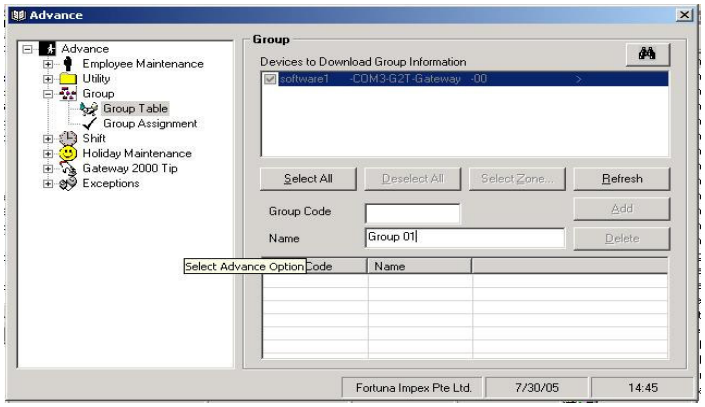
- Select Single or Multiple Employee and click on Add or Delete button to Add an Employee to the terminal or delete from the terminal.
- In Group wise download all the employee in that group will be downloaded. (Use Group Assignment to tag an employee to a particular group).

Sign-On Message



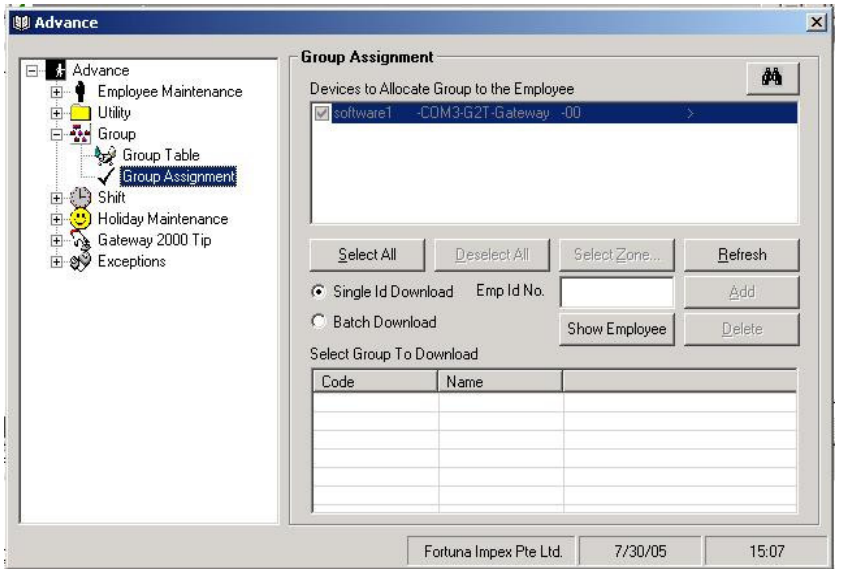
Select this option to display a welcome message permanently in the readers display. Maximum length of the message will be 16 character long.

Group



Define New group to categorize the employees. Group Code will be generated automatically.

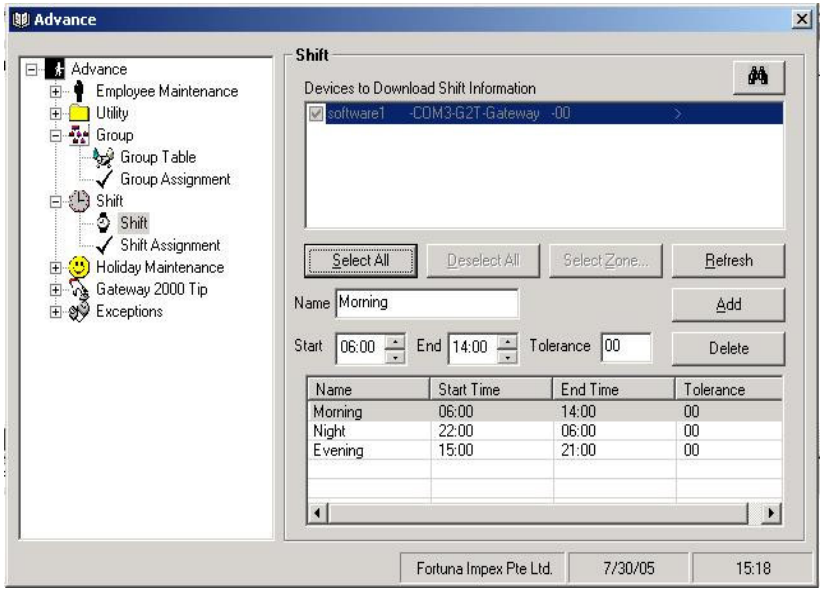
Group Assignment



Assign employees to a particular group added earlier in the group option.

- Select an employee or multiple employees and select Group from the list and click add button to download to the attendance reader.

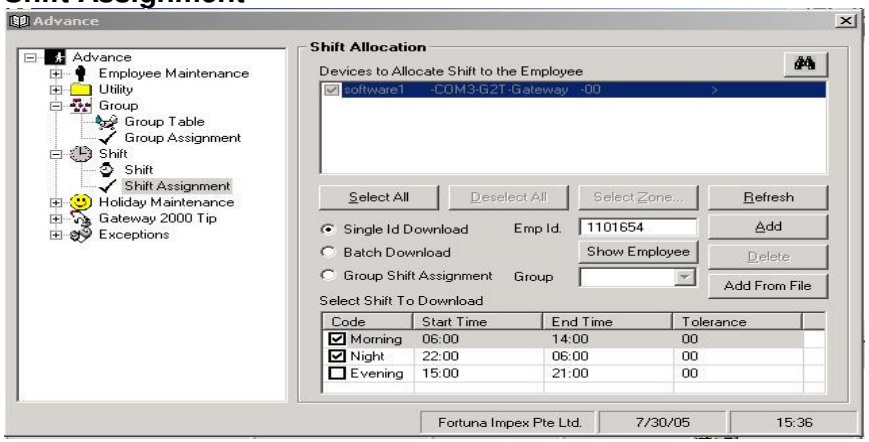
Shift



Define Shift Name, Start Time, End Time, Shift tolerance time. Tolerance is defined in minute. It signifies how long a card will be accepted before shift start time or after shift end by the reader for an employee allocated to that shift.

- Mention shift name, Start Time, End Time, Tolerance in minute and click add button to add to the terminal.
- To delete a shift select an exiting shift from the list and click on delete button.

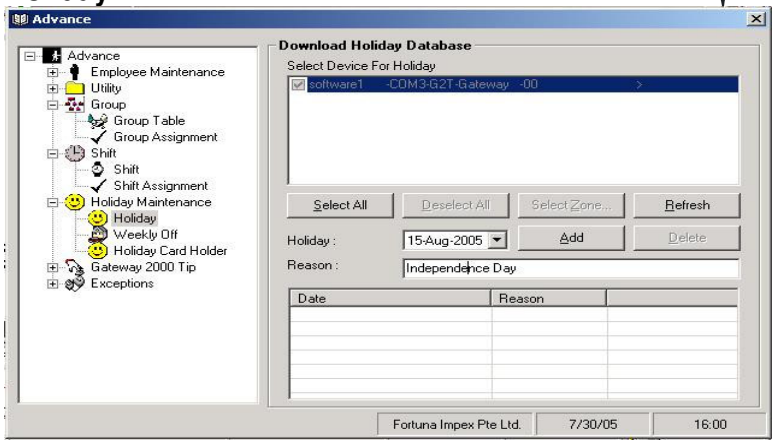
Shift Assignment



Select this option to assign an employee to the shift. Multiple shift can be assigned to an employee.

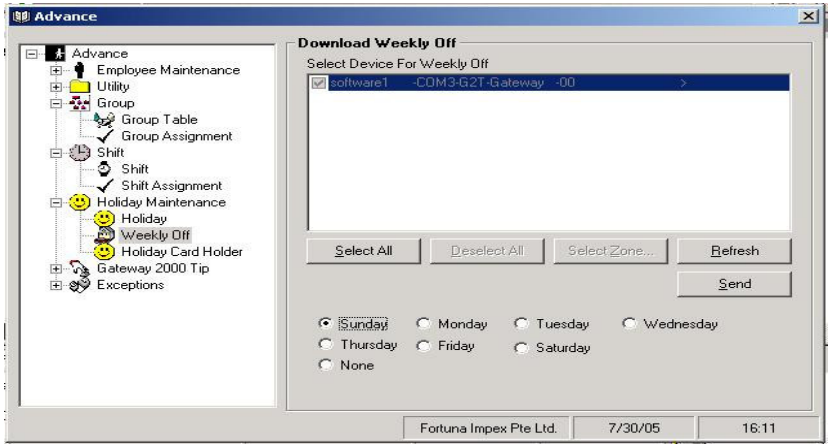
- Select employee using show employee button and click on add button to download. If Group Shift assignment option is selected then all the employee in that group will assigned to the selected shifts.

Holiday



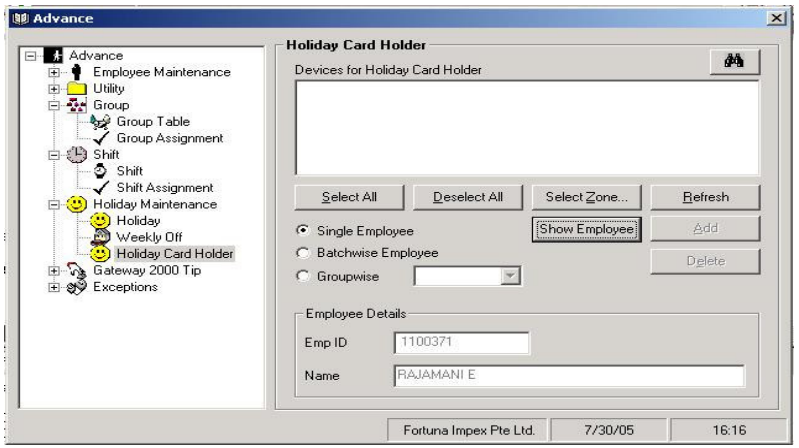
Define holidays as per calendar.

Weekly Off



Define Weekly off day.

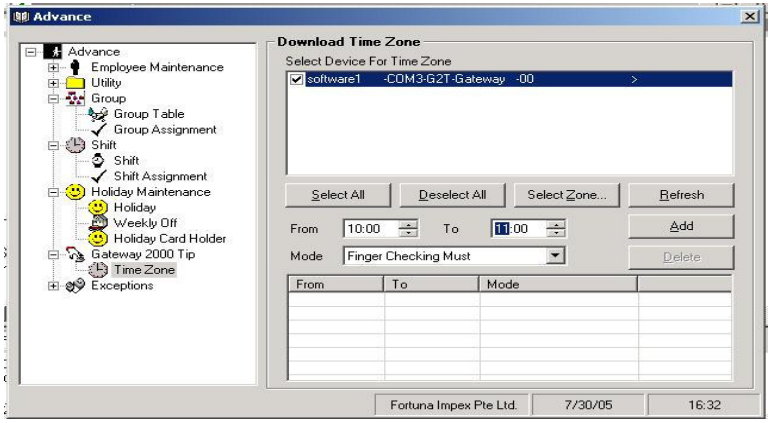
Holiday Card Holder



Define employees who can come on holidays or weekly off days.

- Select one or multiple employee or a group and click on Add button to add those employees to the Card reader or delete to
-
- delete from the card reader.

Time Zone

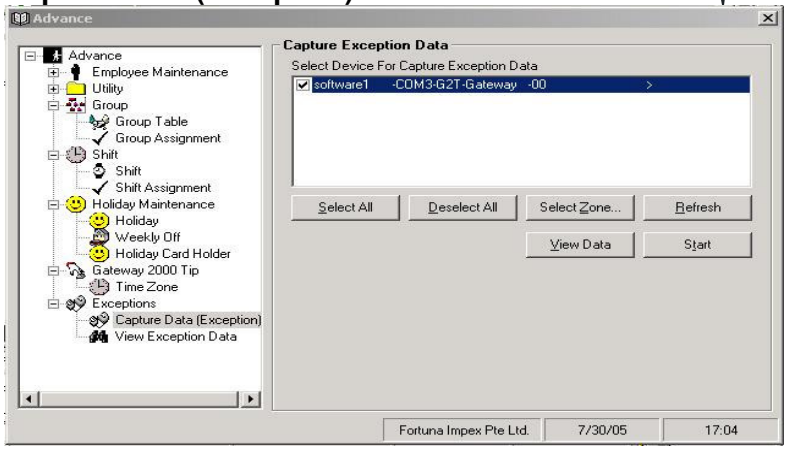


Define different Time zone on the basis of that the reader will prompt for Finger Checking. There are 5 modes.

1. Ignore Time Zone – Finger checking Depending on the personal settings.
2. Finger Checking Must - Reader will prompt finger checking for all cards.
3. No Finger Checking – Self Explanatory.
4. Finger Checking Random (Thin) – Finger checking will be randomly but after a long interval.
5. Finger Checking Random (Thick) – Finger checking will be randomly but in short interval

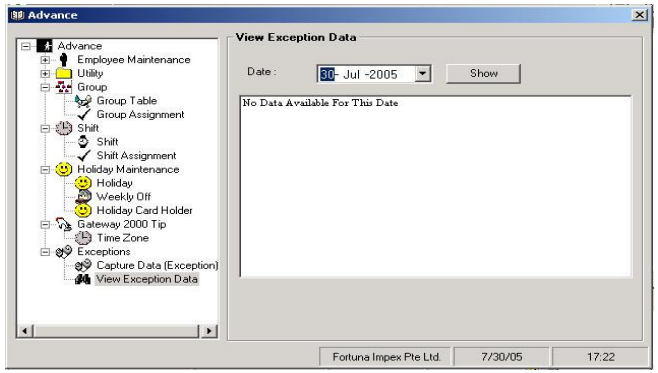
NOTE : This option is only available for Gateway 2000_Tip range.

Capture Data (Exception)



If any person punches a card and failed to verify his finger for several times then the ID gets locked for a certain period at the same time the reader registers an exception data for that Id code. The no of occurrences and lock period will be user definable.
Use this option to capture those exception data from the reader.

View Exception Data



This option is to view Exception data that has been captured using Capture Data (Exception).
Note : This option is applicable for Gateway Tip Smart only.

Compro 2000 Communication Server

To start the communication server click Start Server (not visible here). To stop it, click Stop Server. The green light will glow to indicate the server is running.

Meaning of the Communication Status indicator lights (yellow):

Listening	The Server is listening for incoming requests from clients
Busy	The server is currently serving a request from a client and will not listen to other clients during this time
Could not Send	The server tried to send the reply to the client but the client had already closed the connection.