

# IP-PBX Solution

.....Ultimate Choice for *Unified Communication*



**COMMLINK INFO TECH LTD**  
"Link the Future"

## Introduction

Commlink IP-PBX Solution is a total IP-PBX solution designed for small and medium-sized organization as well as scalable up to enterprise businesses. Designed with resellers and IT professionals in mind, it is the hybrid telephony solution. With a professional service and support organization standing behind it, it has around-the-clock proactive monitoring, remote management, software updates, complete phone mobility, and regular configuration backups. It is a unified IP-PBX solution having integrated module for video call support, video conferencing, Instant Messaging, SMS messaging and so on.

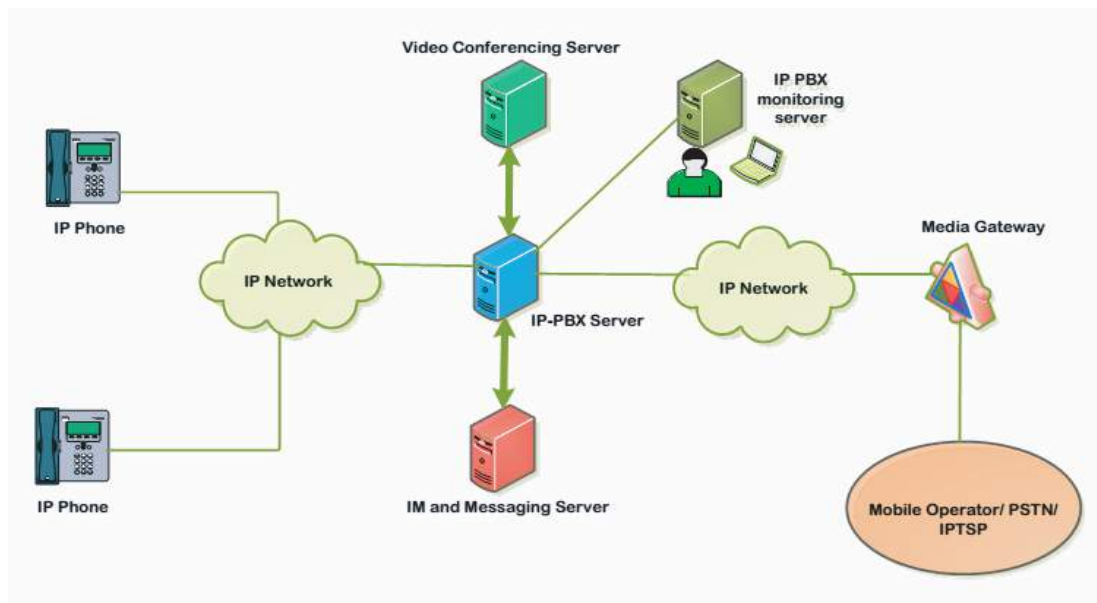
## Why Commlink IP-PBX System

Commlink IP-PBX Solution is based on a market tested and proven IP-PBX solution backbone by latest, secured, powerful technology deployed. Commlink IP-PBX Solution is a highly stabilized version of technologies used with modifications made to decrease internal structure lock contention, improve database handling. It shows a high performance improvement for busy systems with high task concurrency. Combined with web based control panel applications, Commlink has created a stable, feature-rich and user-friendly telephony platform. Commlink IP-PBX Solution scales from single-site businesses, with basic telephony needs, up to distributed IP-PBX and even multi-national corporations. It has advanced presence management and communication tools. Commlink IP-PBX Solution is market-proven, hybrid architecture allows systems to be proactively monitored and maintained. Anyone can quickly and easily learn about the status of the system and receive notifications based on operating thresholds that he define on real-time, graphical reports for system resources, trunk interfaces, and even see historical snapshots. It enables user to do more, rather than just talk.

## Commlink Value Proposition

- ◆ Expert in telecommunication and IP telephony products/solutions.
- ◆ Provides Total solution (i.e. lot more than a phone system!) for enterprise communication.
- ◆ Pool of External Consultants.
- ◆ Strong R&D team, comprising of 25+ BUET graduates.
- ◆ 24\*7 support by dedicated professionals.
- ◆ Seamless user experience across all locations/sites.
- ◆ Above all - Our Client Speak of us.

## Architecture



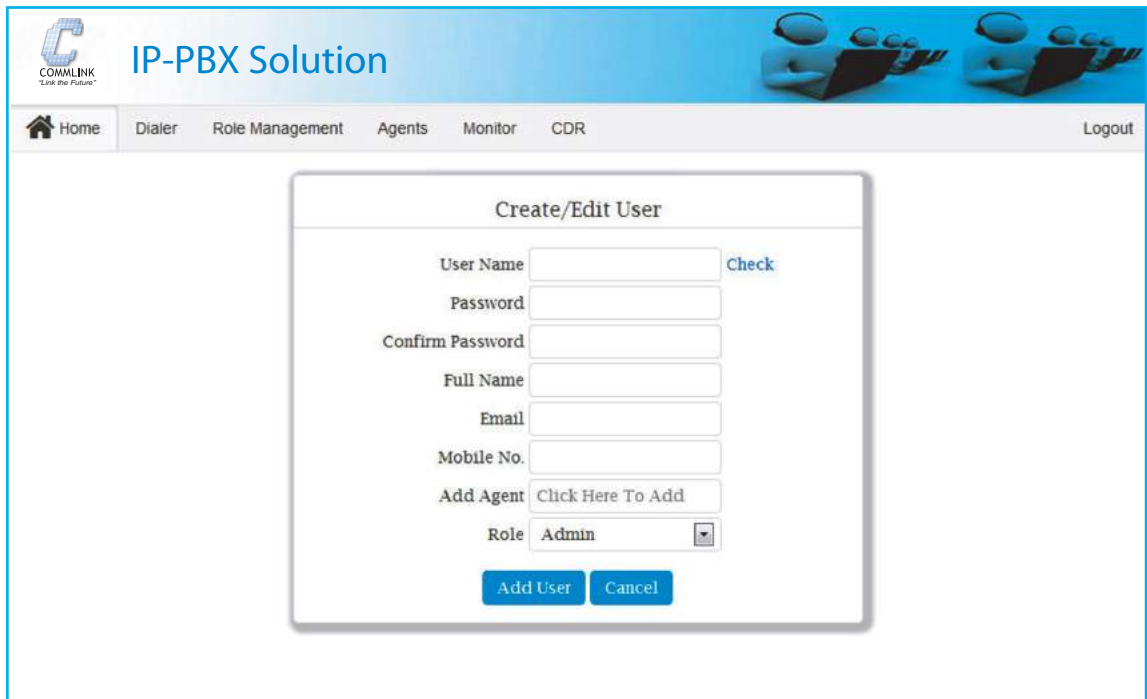
## Commlink IP-PBX System Web Portal

Commlink IP-PBX System has web interface from where administrator, service designers, monitoring agents, extension users etc. can do their respective task from locally or remotely based on their role defined by the Super Administrator.

## Login Page

The screenshot shows the login page of the Commlink IP-PBX System Web Portal. The header includes the Commlink logo and the text "IP-PBX Solution". Below the header is a navigation bar with a "Home" link. The main content area displays "Welcome to Call Monitor System". A login form is centered on the page, titled "Please Enter Your User Name & Password". It contains two input fields: "User Name:" and "Passwords:". Below these fields is a blue "Login" button.

## Agent/User Addition

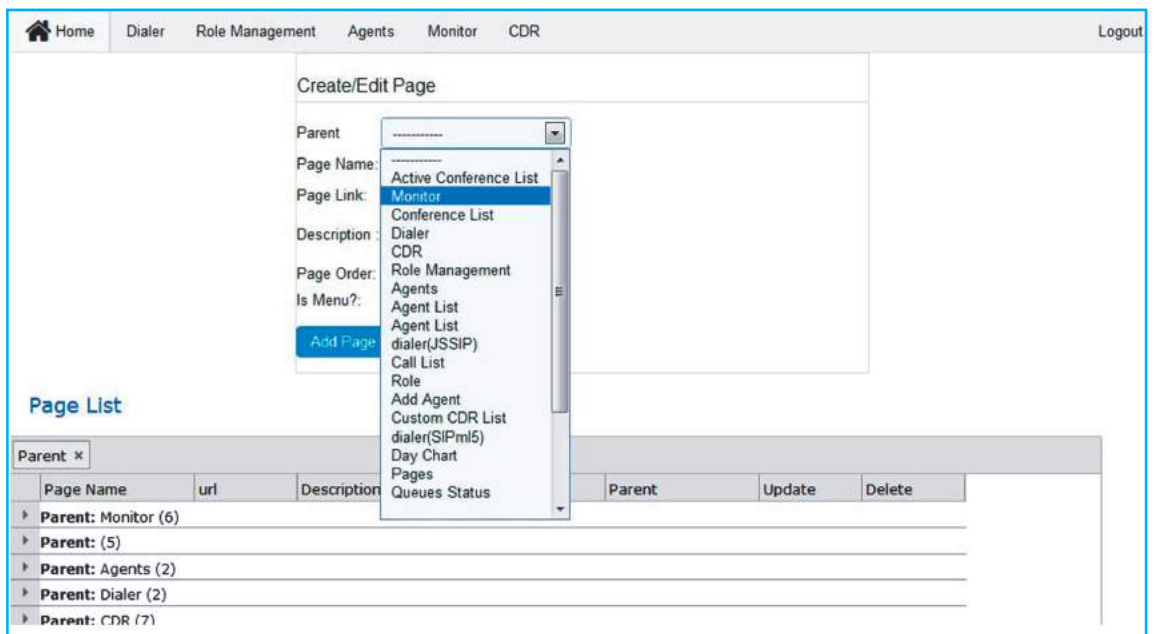


The screenshot shows the 'IP-PBX Solution' web interface. The top navigation bar includes 'Home', 'Dialer', 'Role Management', 'Agents', 'Monitor', 'CDR', and 'Logout'. The main content area displays a 'Create/Edit User' form with the following fields:

- User Name:  [Check](#)
- Password:
- Confirm Password:
- Full Name:
- Email:
- Mobile No.:
- Add Agent: [Click Here To Add](#)
- Role:

At the bottom of the form are two buttons: 'Add User' and 'Cancel'.

## Role Management



The screenshot shows the 'IP-PBX Solution' web interface with the 'Role Management' section active. The top navigation bar is the same as the previous screenshot. The main content area displays a 'Create/Edit Page' form with the following fields:

- Parent:
- Page Name:
- Page Link:
- Description:
- Page Order:
- Is Menu?:

A dropdown menu is open for the 'Page Link' field, showing a list of options: Active Conference List, Monitor, Conference List, Dialer, CDR, Role Management, Agents, Agent List, Agent List, dialer(JSSIP), Call List, Role, Add Agent, Custom CDR List, dialer(SIPml5), Day Chart, Pages, and Queues Status. The 'Monitor' option is currently selected.

Below the form is a 'Page List' table with the following columns: Parent, Page Name, url, Description, Parent, Update, and Delete.

Parent	Page Name	url	Description	Parent	Update	Delete
Parent: Monitor (6)						
Parent: (5)						
Parent: Agents (2)						
Parent: Dialer (2)						
Parent: CDR (7)						

## Web Dialer

**IP-PBX Solution**

Home | Dialer | Role Management | Agents | Monitor | CDR | Logout

**User Phone Status**

status:

register: ☐

user:

Login Account Settings

To:

call

1 2 3

4 5 6

7 8 9

## CDR Search and Listening Recorded Files

**IP-PBX Solution**

Home | Dialer | Role Management | Agents | Monitor | CDR | Logout

**Search Recorded Call**

From: Enter the Starting Date To: Enter The Ending Date

Caller: Enter The Caller Id Callee: Enter The Callee Id

Days: Enter Number Of Days To Show Duration: Enter The Duration

SEARCH

CDR List

Page No - 0

Drag a column and drop it here to group by that column

Call Date	Caller	Callee	Duration	Disposition	Recording
/21/2013 05:58 PM	1007	03593451106	30	ANSWERED	0:30
/21/2013 05:57 PM	1007	01712774479	27	ANSWERED	0:36
/21/2013 05:53 PM	1007	01740620916	108	ANSWERED	1:59
/21/2013 05:48 PM	1007	01740620916	147	ANSWERED	2:38
/21/2013 05:36 PM	1007	01712774479	42	ANSWERED	0:49
/21/2013 05:35 PM	1006	01740620916	37	ANSWERED	0:39
/21/2013 05:33 PM	01714034845	s	6	ANSWERED	0:00
/21/2013 05:30 PM	1007	01723084403	0	NO ANSWER	0:05
/21/2013 05:26 PM	1006	01552108512	38	ANSWERED	0:42
/21/2013 05:24 PM	1007	01680299005	29	ANSWERED	0:44



## Technical Specifications

System expandability	Up to 5500 end-users
<b>Supported Trunk Interfaces</b>	Analog trunk lines Digital Lines Analog lines PRI-ISDN ISDN BRI/PRI lines IP trunks lines (H323/SIP)
<b>Supported User Interfaces</b>	Digital Sets Analog Sets IP phones (IP Key phones / Soft phones) SIP Phones (SIP desk phones / soft phones) DECT Phones VoWLAN (WIFI Sets)
<b>Management</b>	Web based GUI CLI interface through SSH client
<b>BHCC</b>	9024
<b>VoIP Signaling</b>	<ul style="list-style-type: none"> <li>• SIP, • H.323</li> <li>• MGCP</li> </ul>
<b>PSTN Signaling</b>	<ul style="list-style-type: none"> <li>• ISDN, • SS7/C7</li> <li>• CAS</li> <li>• GR303</li> <li>• MFC/R2</li> </ul>
<b>Codec/Voice Compression</b>	<ul style="list-style-type: none"> <li>• G.711U, • G.711U64, • G.711A,</li> <li>• G.711A64, • G.723.1,</li> <li>• G.726-16, • G.726-24, • G.726-32</li> <li>• G.726-40, • G.729A, • SPEEXN8,</li> <li>• SPEEXN11</li> <li>• SPEEXN15, • SPEEXN18, • iLBC-13,</li> <li>• iLBC-15, • GSM, • H.261, • H.263,</li> <li>• H.263p, • H.264</li> <li>• MPEG4</li> </ul>
<b>IPv6 support for server and gateway</b>	It supports IPv6
<b>Connectivity</b>	IP Connectivity, SS7 Trunking, SIP Trunking, PRA Trunking, External Media Gateway, Internal Media Gateway (Cards Support)
<b>Operating System</b>	The system runs on Linux/Unix/Solaris operating systems

## Features

### Voice and Video Call

Commlink IP-PBX system utilizes the Session Initiation Protocol (SIP). The Session Initiation Protocol (SIP) is the IETF standard for the establishment of multimedia sessions over IP. These sessions might be used for audio, video or other real-time data communication sessions.

### Instant Messaging

Commlink IP-PBX Solution has integrated Instant messaging system to create a unified communication platform for telephony and instant messaging

### Presence

- Always-on subscription management
- Presence update notification relay
- User and buddy lists
- Enforce complex authorization policies
- Centralize user presence

### Messaging

Commlink IP-PBX Solution is integrated with a SMS platform by which one send SMS to any mobile network or web based interface.

### Mobility

It supports mobility features like Find Me / Follow Me, remote IP extensions and fixed / mobile convergence. It has mobile dialer. The system knows all about your Converged Phones, so it's easy to make calls and interact with other users, no matter where they are. The phones can be connected via Wireless Network like Wi-Fi.

### Supported SIP Clients

- Analog SIP client with SIP client device such as Integrated Access Device.
- Hard IP Phone for Voice and Video Call.
- Soft IP Phone for Voice and Video Call.
- Web based SIP Dialer for Voice and Video Call.
- Desktop/Tablet PC/Application based SIP Client for Voice and Video Call.

## Media Gateway

Media Gateways allow an IP telephony server to operate in native IP mode while providing PSTN and/or TDM PBX connectivity. Commlink IP-PBX Solution supports two kinds of media Gateways:

(1) Integrated Media Gateway: One is integrated media gateway where the media gateway will be connected to the main system as cards. Our system has provision to enter such media gateway cards.

(2) Distributed Media Gateway: The other kind of media gateway integration is separated media gateway where media gateway will be connected with our IP-PBX system through IP network.

The media gateway has the capability to increase the number of ports (IVR, E1, FXO, FXS etc.). The media gateway support SIP, SS7, and PRA etc. protocol depending on requirement.

## IP Telephony

Benefits of IP telephony are endless, i.e. cost effectiveness, scalable, improved voice quality, reduced installment, etc. We allow you to make the move to a VoIP IP-PBX solution, using SIP (Session Initiated Protocol) - the de facto standard for VoIP communication. The solution provides proxy, registrations, and redirection tasks for different SIP applications.

## SIP Trunk

- Eliminating the need to invest in costly (and less capable) TDM-gateway equipment infrastructure or desktop equipment
- Nullifying the need to purchase equipment, such as managed-media gateway devices, to interface between IP voice and the PSTN
- Reducing monthly expenses, since only one connection for data and voice is needed.
- Allowing companies to outsource their PSTN connectivity to a third party, reducing long-distance charges.
- Accessing the benefits of a hosted VoIP service, without discarding existing investments in a traditional phone system.

## System Accessibility

Commlink IP-PBX Solution has web-based graphical user interface as well as Command Line Interface (CLI) to create, modify service or monitor the whole system. The administrator can create the monitoring agents with different role to different agent to monitor the whole system. Monitoring agents can view the status of the whole system or modules and can restart or reset the different component of the system i.e. phones, media gateways, module etc.



## **Interactive voice response (IVR)**

It plays pre-recorded voice when any caller calls to the short code or the long code. It will take options from caller to select the service he/she wants by taking DTMF. It walks callers through self-service applications or gathers caller information needed to identify the best available agent or service

## **Web Based Reporting**

It generates Hourly, Daily, Monthly or Yearly Graphs as you wish on Calls with one click. It has extremely User Friendly Interface. It will also generate Summary Reports / Invoices. It has provision to view Detailed Summaries & Invoices for Each DID (Direct Inward Dialing Number). User or administrator can search and view the reports on different criteria as he wish

## **Real-Time Monitoring**

The administrator can monitor the calls on queues, waiting status, channel usage etc. on real time. It provides real-time monitoring of agents, their idleness, performance etc.

- Status of ongoing calls
- Status of different extensions
- Status of different agents
- Call on Queues, waiting status
- Status of Channels, i.e.SS7 channels, PRA channels, SIP Trunks etc.

## **Conferencing**

A conference bridge allows a group of people to participate in phone call. The most common form of bridge allows participants dial into a virtual meeting room from their own phone. Meeting rooms can hold dozens or even hundreds of participants. This is in contrast to three-way calling, a standard feature of most phone systems which only allows a total of three participants. One of the best ways to cut down on travel costs is teleconferencing. Commlink IP-PBX Solution provides two kind of conferencing (a) Inward conferencing, where the participants will call a predefined number and will enter username and password (Optional. It depends on moderator's policy of conferencing) to enter a conference room (b) Outward Conferencing, where call will be generated by the system to the participants.

## Scalability

- TDMoE (Time Division Multiplex over Ethernet)
- Uses commodity Ethernet hardware
- Voice-over IP
- Allows for integration of physically separate installations
- Uses commonly deployed data connections
- Allows a unified dialplan across multiple offices

## Computer-Telephony Integration

- This system can be integrated with different scripts like PHP script, Python script etc.
- Graphical Call Manager
- Predictive Dialer
- TCP/IP Management Interface

## Call Agent and Auto Answering Module

- Pre-recorded voice can be uploaded to the system by web interface. These voice file can be used as greeting voice of the system.
- Caller will get different menu to select as per pre-configured by system administrator.
- Call will just select the proper menu as per his requirement
- The console supports many operators concurrently logged-in.
- The system support many calls queues with prioritization and call overflow features like Number of calls overflow, No Operator and Wait Time
- Operator can answer the calls as well as view the status of all the phones connected to the IP-PBX system
- The system can call external script like php, python, java etc. and can take appropriate action according to the response from external system/scripts. It support queue scripts. So different music for different queues and IVRs are configurable. System administrator or user will just configure this as per his requirement.
- The system has been integrated with Short Message Service (SMS) system. So user can put absentee note. When a caller will call that number he will get the absentee note.
- The system is integrated with different databases, directory and personal directory groups etc. with the help of external script calling.
- Telephony features are: handset ringing, call recall, Call Park and recall. Call toggle, Emergency-mode, Night service and Conference, Call Forward on different criteria, Call Parking, Queuing, Call Retrieval etc.

## Security

Commlink IP-PBX System supports end-to-end Real-time Media Encryption, Access Security Gateways, and Malicious Call Trace. It supports strong and standard Signaling Encryption and end-to-end Media Encryption to ensure security of IP voice packets.

## Other Features

- It support virtualization, clustering & redundant mode
- Uses standard routers and switches
- Web Administration
- Support for integration of external application for External Call Control
- Monitoring of agent assigned to a call
- Intercom
- External Call Transfer Restrictions
- External Call Transfer Restrictions
- Bandwidth Management
- Blacklists
- Call Transfer
- Internal/ External Database Integration
- DND
- Fax
- Route by different criteria.



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