
IP-PBX Buyers Guide

2006

Produced by:
VOIPNEWS

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PBX Basics

A PBX is essentially an automatic switchboard for telephone systems. It provides the same basic functions for any business or enterprise that the old ranks of telephone operators did that you will remember seeing in old movies with handfuls of wiring plugs in their hands. Those essential features are to provide switching and connection between any two (or more) telephone users, make sure the connection remains properly in place until it is ended and then end it properly and finally to record basic metering and tracking statistics for accounting purposes. Any system to do that automatically for telephone calls is a PBX – private branch exchange. The reason businesses move to PBXs is to avoid requiring every employee to have a direct line to the telephone system, each of which incurs a connection and line charge. Instead, a smaller number of lines get shared by all the users and managed by the PBX.

One option for an enterprise is to have a PBX hosted and managed externally – this saves maintenance and upgrade costs but adds charges for providing the and running the service.

An IP-PBX (internet protocol private branch exchange) is basically an exchange and extension manager for calls based on internet protocol – also known as VoIP and Internet telephony. The essential advantage it offers the small to medium sized business is the ability to use features and functionality that have only been affordable or available to large businesses up to now. It is an added benefit that VoIP and internet telephony are usually also more cost effective when looking at long term operating costs.

What's Different about IP-PBX

The benefits of an IP-PBX to any enterprise are similar to and different from the benefits of a VoIP system in general. Obviously the cost savings and reduction in basic wiring infrastructure from needing only one network for communication instead of two are clear. And the savings from the lower basic cost of completing external calls are also clear. But IP-PBX brings far greater benefits because of manageability, upgradeability and enhanced feature sets.

Even in businesses as small as five employees, the benefits of an IP-PBX can be profound. If telecommunications and voice calling are critical parts of your business then the use of an IP-PBX and VoIP telephone system may well provide both cost savings and a great jump in capabilities and efficiency.

An additional more hidden benefit is that there is a huge reduction in the costs associated with moving, adding and removing users from the system. In many IP-PBX systems, users can even log in transparently to any end telephone in the system and immediately have the system make that phone operate as 'their' phone until they log in somewhere else. All IP-PBX systems radically simplify and reduce the costs associated with growth and reduction in size of the system as well as reduce basic operating and maintenance costs.

Basic Features

Besides the inherent PBX features of call switching, call completion, call connection, call termination and basic accounting that any PBX system must have, the basic features found in any low-end IP-PBX system should include:

- Automated attendant – an automatic system to answer phones with the ability to build phone menu systems, add call menus, transfer to voicemail and create flexible and programmable rules to handle all of these features.
- Call menus – flexible call management menus with user selectable options – a more advanced version of the traditional phone tree/menu systems. A better quality system will allow you to have multiple sets of menus and even change them based on time or on information gleaned from caller ID.
- Managing extensions – features to help the phone system administrator by allowing the addition of new extensions, removal of unneeded extensions, change of extension locations and much more from a web-based control panel
- Voicemail and voice mailboxes – any IP-PBX should allow an almost infinite number with far more flexibility than regular phone systems – more advanced features would include the ability to record ALL incoming and outgoing conversations automatically.
- Call forwarding – automatic, programmed or manual call forwarding to any number
- Call hold – placing callers properly on hold with no drop off in queues with user selectable hold music and programmable options about handling hold time length.
- Conference calling – handling multi-party conference calls – internally and externally
- Branch office support – the ability to manage and remotely administer extensions at other offices just as easily as if they were local
- Web-based management and administration – to make it quick and easy to manage your phone system directly from a web browser – this can include the ability to add end-user configuration and management functions as well
- Some form of integration into your basic data network so that ‘click-to-call’ functionality can be added or even full blown CRM systems.

Advanced Features

More advanced features include:

- Call routing – setting up programmed rules to route calls appropriately based on flexible criteria like caller ID or time or even next available extension in the designated call management group.
- Integration with Outlook or other email systems – incoming calls can be matched with contact management records and outgoing calls can be initiated from within Outlook so users can click on contact management systems records and dial from within Outlook or other PC applications.
- Voicemail to email – sending all voicemail from a mailbox to an email account where messages can be opened and listened to on a PC – as well as stored and managed.
- Scalability – the ability to rapidly grow or reduce the system under your control – the better systems can scale to handle dramatically larger numbers of users – in the hundreds of users.
- Scheduled call routing – handling incoming calls differently based on time received – and even setting up several systems of call management that are all different depending on time of day or day of the week.
- Rights management – allowing different groups of employees different rights within the phone system for management, administration, usage and more.
- Group management – managing groups of callers and call recipients
- Call queue management – providing visibility into and the ability to manage incoming call queues. This can include specific call management as well as general system management of rules and varying loads, hold times, etc.
- Handling both analog and IP phones – many IP-PBX systems can manage both VoIP phone systems and regular telephone systems at the same time – although not all functionality is available to regular phone users – this feature is useful for managing merged groups or multiple sites.
- Hoteling – allowing users to make any physical phone in the system act as if it were any other number, so that any user can make any phone on the system act as if it were their own phone for any period of time – this feature is particularly useful for telecommuting.
- Automatic ring back features – features to automatically return calls based on various programmable criteria.

Other Issues

There are many other advanced IP-PBX features and more appear all the time since IP-PBX systems are essentially managed by software which can be readily extended.

The clearest benefits of any IP-PBX system come when comparing it to legacy plain old telephone service (POTS) PBX systems which are typically remotely hosted and managed and very unresponsive to user needs and changes. In addition, POTS systems are typically more costly to run, maintain and upgrade, making a clear case for conversion to IP-PBX based solely on operating costs over a period of at most a couple of years.

But the real benefits to any enterprise, whether large or small, come from the enhanced and new features that IP-PBX systems bring to organizations. While large enterprises and big call centers have had many of these features for some time, they have not had all of them and nor have these benefits been available to smaller organizations even if they could have afforded them.

In particular, IP-PBX systems are extremely scalable and since they are owned and managed in house, they are also easier to upgrade and are extensible, meaning that they will also have a longer life as new features can easily be added to any IP-PBX system.

Conclusion

IP-PBX systems are the wave of the future. They provide small to medium sized businesses the abilities and features that are available to large enterprises and they do it while providing the potential to reduce long-term operating costs considerably. As with any rapidly growing technology, there are a wide variety of providers and a range of features at a widely varying set of price points.

IP-PBX systems can cost as little as \$700 for 5 users but the costs can grow to multiple tens of thousands or even higher as the numbers of users grow to the thousands. It is more important to make sure that your system has the basic features that you require now for the operation of your enterprise and for its future growth. Once that set of features is established and you have determined the service levels with which you are comfortable you can go take a hard look at the costs of the systems that match your needs and at the potential ROI. Don't forget that ROI number because it is certain to be to your advantage when compared with a non-VoIP, non-IP-PBX system.

The basic things you can expect and should look for in an upgrade to IP-PBX are:

- Basic operating cost reductions due to lower call charges and the need for only one communications network and lower maintenance costs.
- A minimal investment risk because your enterprise data network is your new backbone and it is already in place and functioning effectively.
- Straightforward installation costs based on tested, reliable components connecting to a system your IT personnel already understand
- Improved efficiency and operations within your organization

It is the last of these that is most important and critical to the success of the upgrade. This is where the power of 'converged networks' – combined voice and data networks – really comes into its own in terms of providing your enterprise with more tools, capabilities and options that it has previously had. The cost savings are essentially a bonus.