

**WE UPGRADE BUSINESS  
COMMUNICATIONS.**

# ABOUT PASCOM

Our goal is to provide our customers with flexible, scalable telephony solutions to meet their business needs. To this end, we have developed varying telephony solutions - pascom Classic, pascom Virtual and pascom Cloud - to match the criteria stemming from circumstances - company size and structure, existing hardware and software etc.

Our VoIP phone systems offer, regardless of solution, numerous functions to make your daily business easier. Simple hotdesking, desktop and mobile softphones and Instant Messaging are just a few example UCC tools included as standard.

Although pascom VoIP Software solutions are simple to install, our offering also includes access to a highly qualified customer service and support team, who will gladly answer all your questions. Our extensive Community are also always on hand with useful tips & tricks.

With pascom, your company will benefit from constant availability and better yet - this can be all setup within minutes.

## PASCOM IS AN INTERNATIONAL VOIP SOFTWARE SOLUTIONS VENDOR



# PASCOM®

**We upgrade business communications.**

# FOREWORD

We created this E-Book in order to provide you with a quick, yet detailed insight into the world of VoIP software technology.

No matter whether you are interested in gaining first hand insight to the world of VoIP, want get to grips with the topic, are currently looking for a suitable VoIP solution or simply enjoy reading about IP technologies – then this E-Book is for you and will provide you with an excellent overview.

As well as gaining an overview of the varying types of VoIP software solutions, you can also delve deeper into each solution type for more detailed information. Moreover, we pay particular attention to the most important features which should be on offer when

considering a VoIP phone system for your business.

In our “Switching to VoIP Guide” we provide useful insight into how to best proceed in order ensure your switch delivers the maximum success particularly when facing certain scenarios.

So sit back, relax and enjoy reading this E-Book and we hope that you are able to take away plenty of useful information.

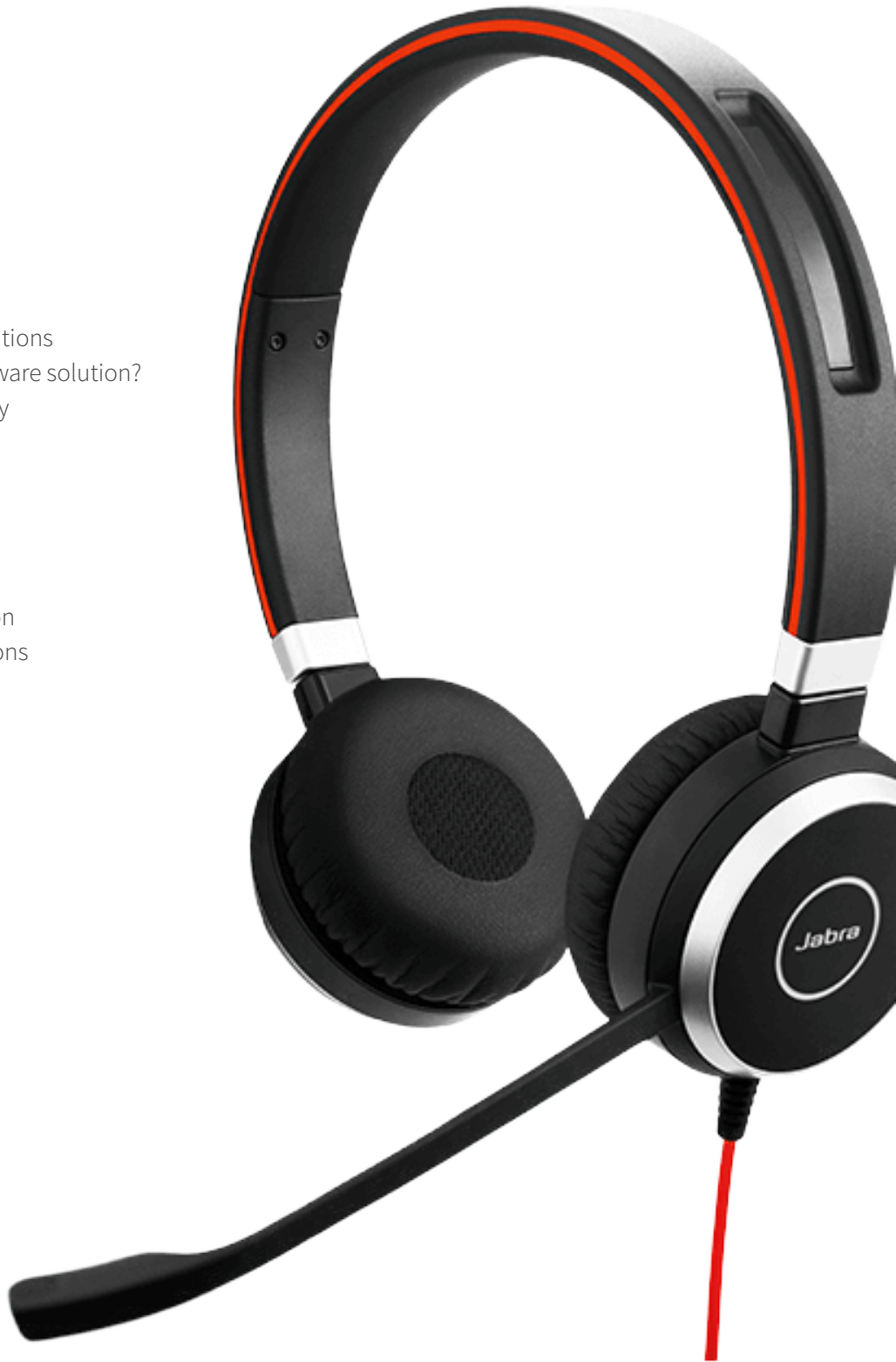


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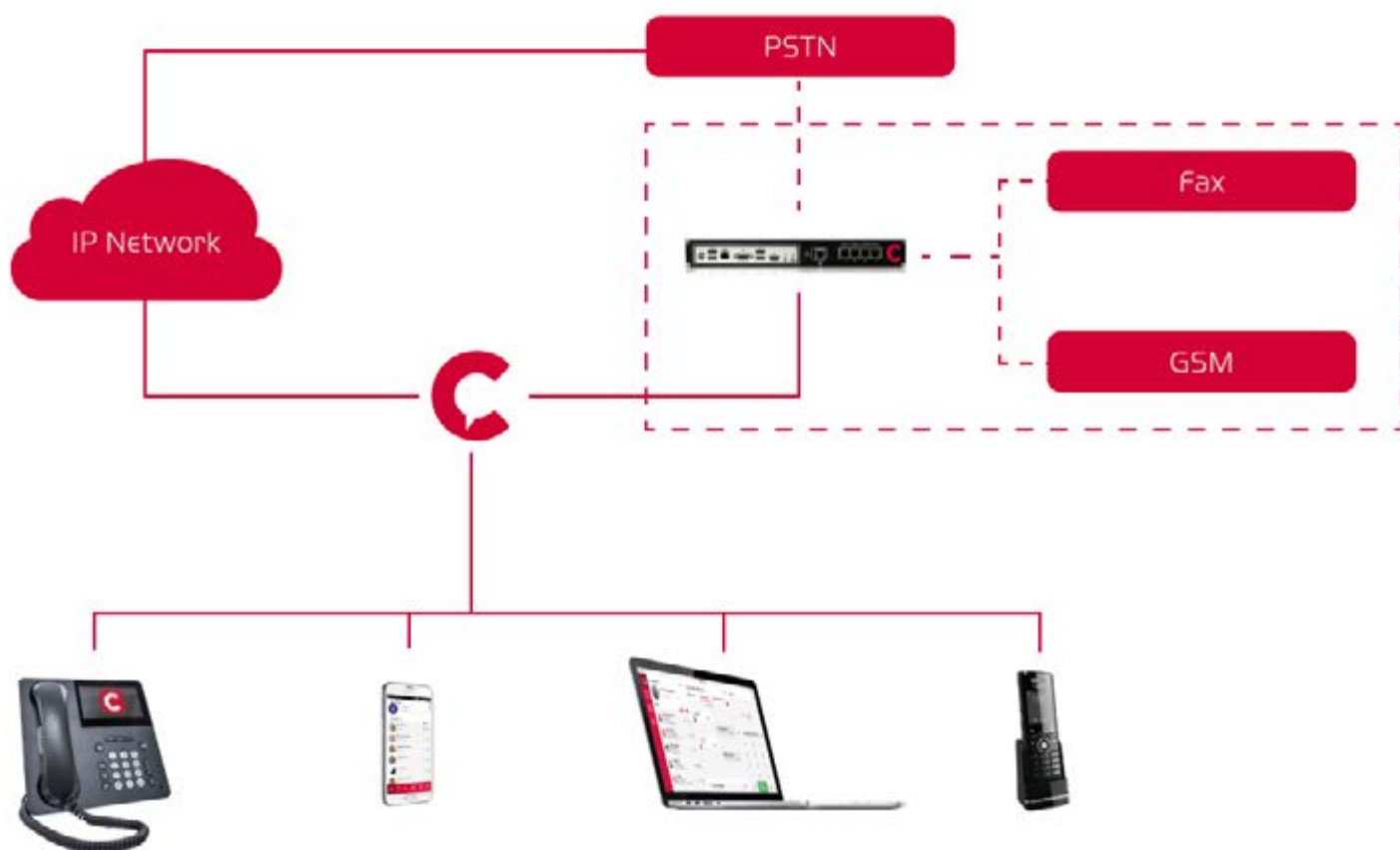


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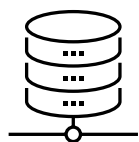


Voice over IP (VoIP) Software enables the transmission of voice calls via an IP network, e.g. the Internet, instead of classic, older telephone lines. In doing so, the phone call will be encrypted in “packets” and sent via over the network, i.e. via the World Wide Web.



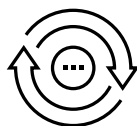
## THE DIFFERENT TYPES OF VOIP SOFTWARE SOLUTIONS

VoIP software solutions come in a number of forms based on different frameworks. pascom for example uses Asterisk, an Open Source framework, on which we have developed our software. Using Asterisk as our base, we are able to offer a range of solutions built around the demands of today's most common technological infrastructures.



### **HARDWARE PHONE SYSTEMS**

This VoIP phone system solution comes pre-installed on server hardware. You simply need to unpack and connect the server to your network.



### **VIRTUAL PHONE SYSTEMS**

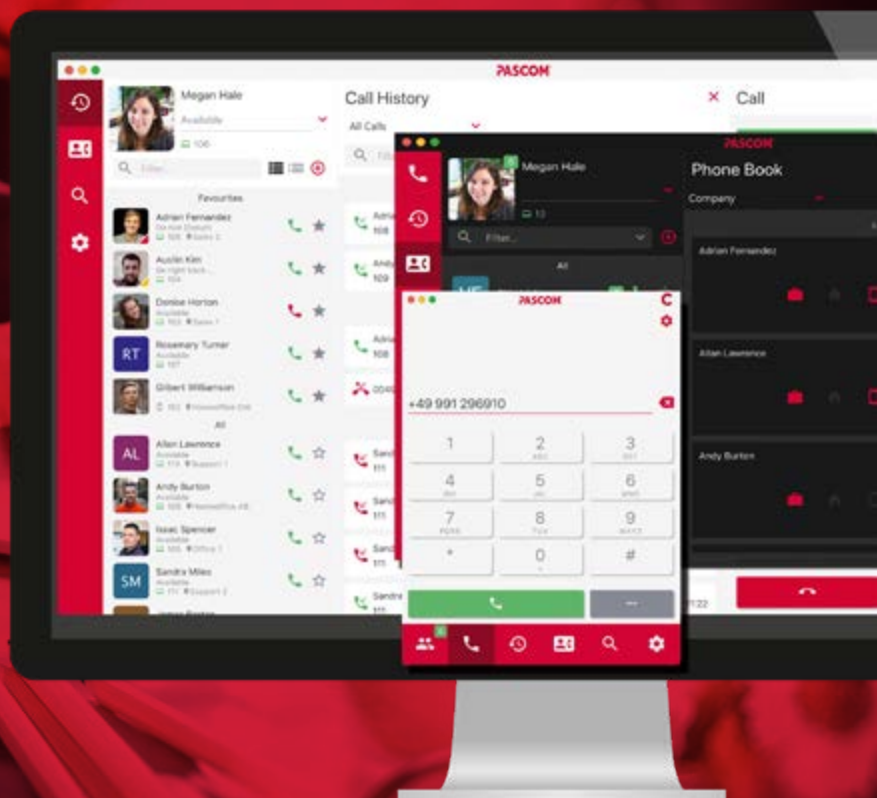
A virtual phone system is installed and operated inside a virtual infrastructure. Simply add and configure your phone system and get calling.



### **CLOUD PHONE SYSTEMS**

A cloud solution has the significant advantage that the hosting is done for you. You can sign up and be up and running in literally minutes no complex setup being required.

Choosing the right communications solution is essential to ensuring the optimum performance. This is not only true for larger organisations with many employees, but also for small business and startup companies.



**1**

## HOW MANY EMPLOYEES SHOULD USE THE SOFTWARE?

Not every solution is ideal for every company size, i.e. number of employees. In the past, the cloud variant was considered a choice for up to ca. 25 users, primarily for cost reasons. With pascom, this is no longer the case as the benefits and cost-savings of a centralised cloud hosted solution far out-weight the benefits of an on-site (self hosted) solution. For example, with an on-site solution, you are responsible for software updates, integrating office and home office locations and mobile device management. In the cloud, these are done for you.

**2**

## WHICH TELEPHONY FUNCTIONS DO YOU REQUIRE?

VoIP software is an extremely complex technology including a vast number of features. These range from an AutoAttendant function, setting up a call centre, video telephony tools, through to audio conferences. Our tip: create a list of functions / features that are indispensable for you, your employees and your business. For example, Instant Messaging is great for internal collaboration and IVR menus and custom prompts provide excellent customer service tools.

**3**

## WHAT COSTS ARE ASSOCIATED WITH THE SOLUTION SETUP?

Differing costs can be associated with the differing phone system variations. In general, cost should not be the deciding factor when choosing the system for your business., but one thing to really look closely at is any extra costs for features or add-ons. Plus also be wary of introductory pricing. In the long term, a solution with higher initial costs can become more cost effective through long-term usage. Before making a decision it is a good idea to calculate the your ROI and the TCO of the system.

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Independent of the fact that ISDN telephony is fast becoming a thing of the past, VoIP solutions offer other significant advantages. Should you currently be deciding whether or not to switch and to which variation of VoIP solution, this pros and cons list will hopefully help you further.

## ADVANTAGES

### Cost Savings

Since VoIP uses Internet Protocols for data transmission, significant cost savings can be realised. All calls within a company network are free of charge. National or international, i.e. calls outside of the company network, can be routed according to least cost routing - i.e. selecting the cheapest provider / option for the call.

### Mobile Integration

VoIP solutions can also include mobile apps for Smartphones and Tablets. Use your office number and take your office with you, ensuring you and your team stay in the loop even while on the go, on a business trip or on the road.

### One Number - Contactable Worldwide

Independent of location, your company only needs one number. This can be transferred to branches worldwide, regardless of where your phone system is hosted.

### Higher Quality Telephony

HD Voice audio tools significantly increase phone call audio quality. It is worth noting that this is only available when both parties are using HD Voice enabled IP endpoints.

However, quality does not only refer to the spoken word, but also the entire in-call experience. Call Flow Management, customisable queuing and call distribution tools help ensure that callers enjoy a vastly improved, professional in-call experience.

### Productivity Boosts

Professional call management enables automatic call qualification, routing callers to the right contact at the first time of asking etc. Currently on a call, use Instant Messaging to ask questions of colleagues. Busy in a meeting, simply transfer the call to a colleague with a single click or use the UC presence tools to automatically forward calls to other extensions.

### Maintenance and Security

Fast and uncomplicated remote support thanks to a secure VPN Internet connection provides businesses with additional flexibility. System technicians can access the company servers or computers at any time and deliver maintenance and support services quickly and efficiently. .

Such connections utilise end-to-end encryption. Through this and additional security protocols, the VoIP telephony services are also highly secured.

## DISADVANTAGES

The disadvantages that a VoIP solution entails are relatively limited. Here are two points worth mentioning:

### No connectivity with power and Internet

As the software transmits voice as data packets via the Internet, it is logical that this no longer works as a result of provider downtime or power failures. However, this is rare and should you experience such a scenario, failover options can be built in and in most issues can be overcome with mobile UC and mobile VoIP.





A very frequently asked question is whether data can be securely transmitted over a VoIP connection. In particular, concerns and question marks remain regarding the possibility of unauthorised access by hackers as well as eavesdropping on calls as well as unauthorised reading of data streams.

#### **SECURITY COUNTERMEASURES AGAINST THE THREAT OF HACKERS AND VOIP FRAUD**

The main concern regarding hacker attacks, is that they will gain access to the VoIP phone system (PBX). Once inside, the hackers then use this access to initiate international & premium rate calls, resulting in high costs for the system owner - this is known as VoIP Fraud.

There are several ways in which you can protect yourself against such attacks. On one hand, classic network security in the form of a firewall is required. On the other, strong password policies are essential. With so called Brute Force attacks, hackers attempt to guess a users access credentials. The more stringent your username and password security is, the harder it is to determine these credentials. With our solutions, the access data is automatically generated. Moreover, repeated login attempts within short time frames are not permitted on our systems. Doing so will result in the account temporarily being blocked.

#### **SECURITY COUNTERMEASURES AGAINST EAVESDROPPING AND UNAUTHORISED DATA THEFT**

During a VoIP (IP) phone call, there are two different aspects which are encrypted. Firstly, the signaling and secondly the voice data itself. On the signaling level, all data pertaining to who is phoning with whom and where is encrypted. The voice packets which are send and received by participating phones during a call are only transmitted in encrypted form. As a result, the entire call is completely obscure, protecting you against eavesdropping and data theft.



Depending on business size, organisational structure and existing IT infrastructure (hardware and software) is deployed, certain VoIP solution types will be better suited to fulfilling your requirements.



### **SMALL MEDIUM BUSINESSES, SELF-EMPLOYED & STARTUPS**

The key to success for any business is constant, reliable availability and this is especially pertinent for startups and SOHO / SMB companies with up to 10 employees. Alongside the often significant cost savings associated with switching to a VoIP software solution, such solutions also provide smaller companies with tremendous additional benefits.

Next, it is important to know what switching entails, i.e. what is required. Firstly, you will need an Internet connection. Depending on the number of users to be added, the better performing it should be. For fewer employees and thus a smaller user base, a standard connection with just a few Mbit/s should be more than sufficient.

In addition, VoIP enabled devices are important. That means, your telephone should use SIP (Session Initiated Protocol) technology. SIP phones manage the complete process of an IP based call. The VoIP solution can “recognise” the individual phones and routes corresponding incoming calls to them. Conversely, such phones also initiate VoIP calls as soon as you dial out.

### **Why should you as a Small Business owner or Entrepreneur switch to VoIP?**

For starters, classic ISDN telephony is fast becoming a thing of the past, meaning you are already under pressure to find an alternative solution. VoIP solutions are not stopgap solutions. Even with just a few employees, flexibility is key and that is exactly what is on offer.

You can keep costs in check in that you only need one connection with which you can make unlimited calls. In addition, simply install the mobile app and use the same connection on your smart device. Making calls with your own employees inside of your network, then the calls are free as they are routed via over your network instead of a phone line. No matter in which direction your company is growing, VoIP software solutions can be adapted to match your current needs.

Depending on business size, organisational structure and existing IT infrastructure (hardware and software) is deployed, certain VoIP solution types will be better suited to fulfilling your requirements.

### MEDIUM-SIZED BUSINESSES (SME)

When talking about a typical medium sized business, we are referring to companies sized from 10 to ca. 500 employees - regardless of which industry.

The biggest challenge for companies of this size is the need to optimise business communication processes. This refers to both the interlinking of employees as well as ensuring a flawless external communication, be it with customers, suppliers or business partners.

In our experience, most medium sized businesses already have individual departments which deal the most important aspects of business, such as sales or marketing. If you also have in-house employees who work in a customer service capacity, you then ideally need a Call Centre solution.

#### **What does VoIP have to offer medium sized business?**

VoIP phone system software is available in different guises all of which can be adapted to suit your business needs. For starters, there are the numerous integration options. If you employ more than 10 staff, chances are you have your own servers, which can be used to easily install the software.

Even adding, updating or removing users is easy. Leveraging this simplicity ensures solution costs can be calculated to match your company. Moreover, when growing your company, VoIP affords considerable flexibility over traditional phone systems. System administration is centralised, meaning that even when expanding and opening new company locations, all the necessary phone system modifications and configurations (except physical hardware deployments) can be managed centrally.

Depending on business size, organisational structure and existing IT infrastructure (hardware and software) is deployed, certain VoIP solution types will be better suited to fulfilling your requirements.



### LARGE ENTERPRISE

Once your company has reached a certain size, the technology itself is almost a secondary concern. At this point, what usually comes to fore for our enterprise customers is the need for a centralised and standardised communications process.

Often, such companies have a central location which, however, operates completely independently of other smaller branch locations. As a result, these remote offices require their own IT department who also manage a separated standalone phone system.

For large companies, it is therefore important to implement a centralised communications solution. In doing so, the phone system will be deployed in the head office and then extended to include all the additional company sites. The great advantage here is that moving forward, the phone system will only require one head office based IT department to manage it.

#### Monthly Challenges:

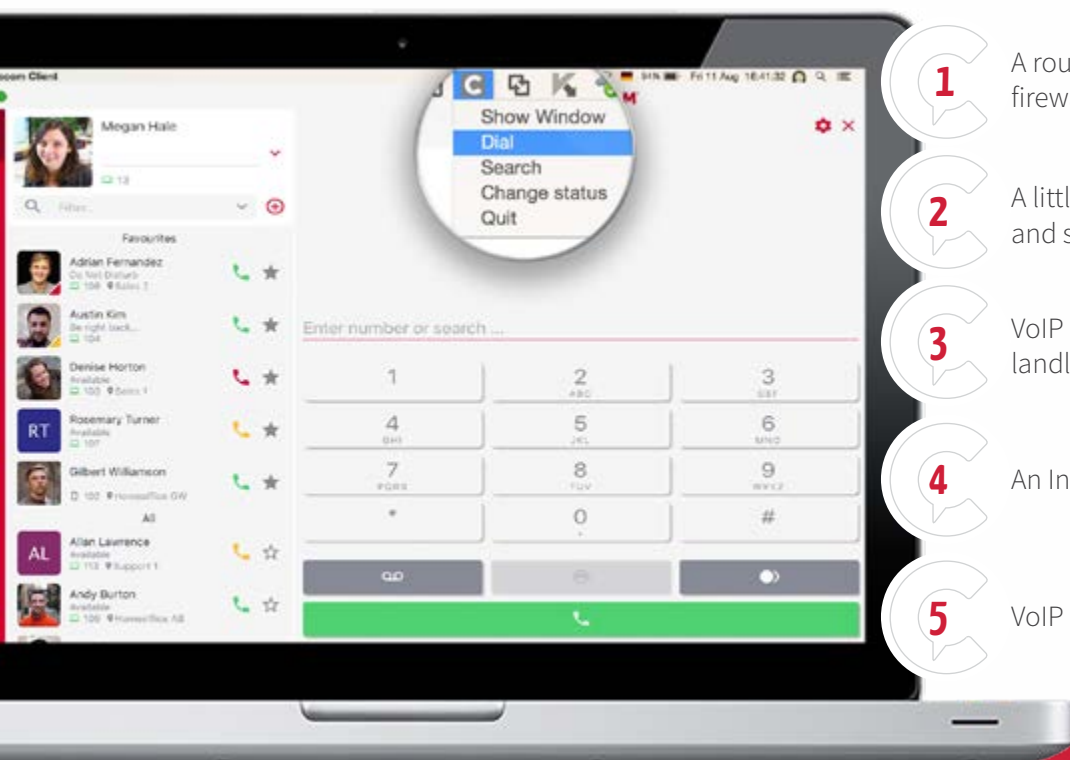
- **2.400**  
Call Centre Agents
- **2.500.000**  
Outbound calls / month
- **350.000**  
Inbound calls / month
- **4.560**  
Trunk lines
- **5 pascom**  
High Availability Clusters

#### Solution:

- Migration from Alcatel to pascom
- Implementation of Skill Based Routing
- Centralised user management
- Deployed advanced Hot Desking tools
- Redundant system with automatic fail-over



When switching to a VoIP telephony solution, in essence you only need five things:



1

A router with appropriate, up to date firewall.

2

A little bit of time for the installation and setup

3

VoIP Provider for connectivity to fixed landline numbers.

4

An Internet connection

5

VoIP enabled hardware / interfaces

### Switch to VoIP step by step

Review your connectivity needs, existing hardware and IT infrastructure.



Implementation concept and solution recommendations



Phone system pre-configuration



Installation



Setup and system administrator training.

### REQUIRED HARDWARE

It is quite likely that you already have some if not all of the required hardware already. All you need is:

- Router
- IP enabled telephone
- Adapter for connecting fax, etc.
- Headset, if you use your PC for calls
- PC

Several options for making calls are available when using our VoIP software. On one hand, you can use a normal IP enabled telephone.

An alternative option is to use our integrated softphone which allows you to make calls via your desktop or smart device. All you need is a headset for your PC for the best audio quality.

### REQUIRED SOFTWARE

Other than the VoIP software, you do not require any additional software applications, as our software already delivers all the relevant tools, including:

- All clients / applications
- Instant messaging
- Desktop remote telephone control or CTI
- Fax integration
- File transfers
- Phone book management
- Voice mail and much more

Transitioning to a VoIP-based telephony solution can be achieved within seven simple steps

1. Import your users from your LDAP/Active Directory services. If such services are not available to you, it is also possible to manually add users or import them via an Excel file.
2. Turn on any devices, such as phones, which you want to use with the software. The software can then detect and register these devices.
3. Now assign the telephones to the users added in step one.
4. Install all the clients that you wish to use. These offer functionality such as chat, telephone book management softphone etc.
5. Now define a central switchboard. This will be the first point of contact when a caller calls your business. At this point, you can music on hold, an AutoAttendant that automatically answers calls outside of business hours and much more.
6. Now it is time to put the system through its paces.
7. If everything works as planned, then it is time to register with your voice provider. Distribute your DIDs (Direct Inward Dials) to the corresponding internal user (extensions and phones). Next, you can also setup any specific call routing, i.e. define what should happen, for example, when a user does not answer a call after a certain period of time.

Once your software based VoIP phone system has been completely setup, there will be next to no administrative overhead. The systems themselves are relatively static, meaning the only administrative hassle is the adding and removing of employees.





A top notch telephone system will leave callers with an impression of professionalism. The configuration and application options have a decisive influence on how professionally you are able to master your call volume.

*Questions like “how long does a call ring for before being forwarded?”, “Do callers hear music whilst on hold?”, “Are Auto Attendants available outside of business hours?”.*

All these questions can be easily answered thanks to the extensive functionality of our VoIP software based phone systems.

## MOBILE VOIP & MOBILE AVAILABILITY

A key VoIP software feature to look out for is mobile apps which can be installed on Smartphones and Tablets. Well developed mobile VoIP apps offer an optimised for mobile user interface, making them simple and intuitive to use.

Through using mobile VoIP apps, all the same functions such as chat, softphone and call transfers will be available to you plus you will be available under your office extension and your callers will still benefit from music on hold etc.

In addition, all your calls will be made via the Internet using your existing office tariff. This is especially important for employees or business owners who are often on the go or traveling abroad. All you need is a good Internet connection, i.e. LTE or WiFi.





Set up your VoIP Call Centre so that you offer the most enjoyable and efficient customer service possible. Nothing scares off customers like a negative in-call experience like waiting endlessly in a queue or being transferred countless times.



### Create teams with a common extension number:

Form internal teams performing respective tasks and give them their own extension. Doing so ensures that when a customer calls, you can direct them to the right contact at the first time of asking.



### Distribute calls to team members according to agent skills

Within in your teams, determine which employees are best suited to fulfill which service requests i.e. skills. In this way, your customers will benefit from excellent customer service, getting definitive answers, quicker and without having to go round the houses.



### Team members can also “pause” themselves:

A further Call Centre function is the pause tool. Should an employee be tied up e.g. with complex paperwork, they can pause themselves. An automatic routing of calls to another qualified employee will be implemented without your customers noticing any difference.



### Agent statistics and utilisation visible to all team members:

In order to further optimise customer service, all team members are able to see which other members are often busy and which team members are currently free. This achieves an optimisation that goes way beyond enhancing customer service.

The music that your customers or business partners hear whilst on hold is an important factor in whether they stay on the line or hang up. The reasons behind a call vary significantly and on top of this, waiting in a queue until someone picks up is most definitely not a popular pastime.

When you choose your music on hold, it is not only important to make the time spent waiting enjoyable for your customers, but also to underline and support the image you want to portray as a company.

Is your customer base more of a discerning nature, then you cannot go wrong with classic music. Server a predominantly younger clientele, then choosing music from the current charts is probably the way forward. Whatever you choose, you should nevertheless be careful to select music that will meet the broader taste.

Next, the reason for calling plays a large role in choosing the right music. Should you run a hotline designed to accept orders, i.e. handle customers intending to purchase your services, then the music should be energetic, captivating and positive.

Conversely, if the purpose of the queue is to handle calls from customers who need help or have technical questions, then soothing sounds are the more appropriate choice.

In general, it is a good idea to update your music on hold regularly. This will help avoid frequent callers always listening to the same music over and over again - which can be frustrating. Of course, it is also possible to record your own music - if you are lucky enough to have the talent & tools at your disposal.



### Tips for the right Music on Hold:

1. Fits with your corporate image
2. Appropriate for your callers / target customer demographical group
3. Reason behind the customer calling
4. Keep it fresh and change regularly
5. Good quality is essential
6. Enrich to include your own custom prompts

**1. Do you still need a telephone line connection?**

In principle, you may be able to cancel your traditional telephone line connection. However, with pascom you can simultaneously make calls using both the ISDN and the new “SIP Trunking” standards. Even GSM failovers are possible.

**2. Does VoIP voice audio quality suffer?**

On the contrary, VoIP audio quality is considerably better compared to traditional ISDN phone lines. Voices are considerably more audible and clearer to understand. In addition, noise canceling technologies mean you have no noise that could distract you.

**3. What costs are involved when making the switch to VoIP?**

Depending on the variation of our solution you are considering, differing costs can be associated. In order to help you with your decision, we recommend getting in touch with a pascom employee who will be happy to advise you.

**4. What invoicing options are available with pascom?**

We offer a number of payment options. In order to save you unnecessary accountancy hassle, the direct debit option is the most attractive option. The invoice amount will be debited at the beginning of each contractual period.

**5. Where and how can I order a pascom VoIP solution?**

A free pascom phone system edition is available to from our website and provides the option of free pascom.cloud hosting or self-hosting. For all further orders, we suggest contacting a pascom team member who will happily provide you with a personalised consultation.

**6. What is the minimum contractual period?**

The contractual period for our both our on-premise and cloud phone system subscriptions is 12 months.

**7. Which telephones are compatible with pascom solutions?**

An IP enabled telephone is required. IP phones communicate using the same networking technology as desktop computers and PCs. Naturally, you can also use pascom's desktop and mobile apps which are included as standard in all pascom VoIP solutions.

**8. Can I keep my existing number?**

Yes of course. Simply inform your current provider and start the porting process. In most cases, you will be able to keep your number and the process is usually free of charge. Got any questions, our team will be happy to advise you on how best to proceed.

**9. Are service numbers available with VoIP?**

Of course it is possible to integrate number blocks, vanity numbers and service numbers. Get in touch and we will walk you through it.

**10. Do you need special / specific devices?**

All you need is; Internet, IP enabled telephones or headsets, should you wish to use our PC softphones. It is possible that you may need an adapter to connect analog devices such as a fax.

**11. Is a broadband Internet connection sufficient?**

Yes a broadband connection is sufficient for VoIP telephony.

**12. What's the difference between a Cloud and an On-premise solution?**

With a cloud VoIP solution, pascom perform all the solution maintenance and upgrades so you do not have to. At the same time, cloud solutions ensure you enjoy unprecedented reliability, as the solution is hosted directly by pascom. As a customer, you only need a DSL connection. With on-premise VoIP solutions, you are responsible for the operation, maintenance and hosting of the solution, regardless of whether it is hardware based or virtualised.

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