Alcatel-Lucent Business Communication Solutions for enterprises with up to 1000 employees

Content

The dynamic enterprise

In response to the challenges of new compliance requirements, sophisticated user demands, increasing levels of information, network complexity and a highly competitive market, enterprises need to become increasingly dynamic: agile, mobile, knowledgeable and fast.

Alcatel-Lucent envisages the dynamic enterprise as one that interconnects people, networks, processes and knowledge to improve performance and productivity, while supporting a richer user experience. The dynamic communications framework at the heart of this strategy transforms enterprise communications and accelerates time to business. The framework supports a solution that is always on, flexible and standards-based, and which is supported by a commitment to innovation, partnering and results.

Alcatel-Lucent enables the dynamic enterprise with its secure open portfolio and worldwide industry expertise.

Alcatel-Lucent solutions

Data networking	The backbone of the dynamic enterprise framework is the data network: a solid, intelligent and secure infrastructure. Alcatel-Lucent data network solutions help enterprises achieve centralization and simplification, while delivering high resiliency, scalability and flexibility.
Unified communications	Alcatel-Lucent's unified communications solutions are a key element of the dynamic enterprise framework. They enable people to collaborate and share knowledge in real time, simplify communications and improve employee productivity, job satisfaction and overall company performance.
IP telephony	Alcatel-Lucent creates reliable, resilient, scalable and secure IP telephony frameworks that support the latest communications applications. Our complete range of feature-rich telephony solutions gives people the freedom to communicate how and where they want in a secure environment, wherever they are.
Contact centers	Alcatel-Lucent contact center solutions help businesses respond to the changing customer service and sales environment by aligning resources with customer needs and business objectives – in real time. Our contact center solutions allow enterprises to protect their assets, extend their reach and speak their customer's language.
User-centric mobility	Alcatel-Lucent helps enterprises plan for and deploy organization-wide mobile solutions, control costs and drive business objectives. Our solutions help enterprises concentrate on the three essentials for an effective mobile strategy: supporting users, building networks and securing assets. Alcatel-Lucent mobility solutions give employees the flexibility to communicate and collaborate wherever they are.

1. Your telecommunications infrastructure

The Alcatel-Lucent enterprise solution that you are about to acquire, which includes an IP network infrastructure and communications solution, is based on a layered architecture described below.

Enterprise architecture solutions are based of an IP infrastructure and a communications server solution called OmniPCX Enterprise. These can be distributed across several sites according to your buildings locations.

▼ *The communications architecture*

The starting point for the Alcatel-Lucent communications solution is a high-performance **communications software suite** – the OmniPCX Enterprise. This software suite includes a set of telecommunications applications based on the **Linux** operating system and can be used, under license, to access more than 500 telephony services. It can also be hosted on three types of **servers** that align with corporate requirements:

- Common hardware CPU ("rack" module)
- Crystal hardware CPU (crystal shelf)
- Market standard servers (IBMx3250, HP DL320)
- BiCS server (based on an IBM server)

The communications server supports several **media gateways** to provide connectivity to the telephone networks and other devices. Two types of media gateways are generally used in the OmniPCX Enterprise mid-market solution: Common hardware, for installations handling normal call volumes, and crystal hardware, for installations handling high call volumes.

The OmniPCX Enterprise adapts to all types of **network infrastructure**: voice and/or data, fixed or wireless. A **large number of tools** are available for access to the services offered.

When communication needs include management, unified communication, basic contact center services, or openness to a specific third-party application, the **Business integrated Communication Solution (BiCS)** should be considered. Designed to meet the needs of companies with up to 1000 users, it provides the most cost-effective, high-performance and flexible system available today.

IP ready solution

With this highly modular solution, you can upgrade your current communications system at your own pace to a modern and IP ready communications server.

Benefits

- Employees have access to higher **performing** tools, including the Alcatel-Lucent 9 Series range of telephones or the services described in the following section.
- Future-safe solution enables management of expenses over time to minimize costs.
- **IP-based** solution assures ease of switchover to 100-pecent IP telephony, while taking advantage of even more advanced applications (read the New Site/Full IP Solution section).

Architecture

This solution is based on an OmniPCX Enterprise server that can be equipped with all types of media gateways (e.g., common hardware rack 1 and rack 3, crystal hardware M2, M3, and the ACT14 and ACT28 which are 19-inch rackable).

The public network and all other equipment are connected directly to the chassis' analog or digital ports.

The existing cabling can be reused and there is no need to update the LAN because voice and data remain on separate networks.

Full IP solution

The OmniPCX Enterprise easily adapts to new site requirements for a full communications server with IP phones, which are directly connected to the IP network based on a direct IP switching communication server with the requisite Quality of Service (QoS).

Benefits

- Voice/data converged architecture **facilitates network management** and allows greater **adaptability** (ease of changing and adding)
- Opens the way for substantial **savings** and increased **efficiency** resulting from a single infrastructure: the same network is used for voice and data
- **Assures ease of application deployment** network wide with one centralized application for central and remote sites

Overview

For its IP network infrastructure, this full IP solution can be based on Alcatel-Lucent OmniSwitch chassis LAN switches and Alcatel-Lucent OmniStack Stackable LAN switches. For IP telephony, the solution is based on an OmniPCX Enterprise communications server. Together, the products provide a fully converged voice and data solution.

The IP telephones are connected directly to the IP data network. Voice-data cabling is unified for easy connection on the front panel, using RJ-45 modular jack connectors.

Although this is a 100 percent IP solution, analog devices such as fax machines or Minitel terminals can still be conneceted via the OmniPCX Enterprise chassis analog ports.

Architecture

The Full IP solution is based on an OmniPCX Enterprise server that can be equipped with all types of media gateways (common hardware rack 1, Rack 3, crystal hardware M2, and M3).

For larger configurations, the OmniPCX Enterprise server can be hosted on a market standard compatible IBMx3250 / HP DL320 server.

The IP telephones are connected directly to the IP data network. Voice-data cabling is unified for easy connection on the front panel, using RJ-45 modular jack connectors. Although this is a 100-per cent IP solution, analog terminals, such as fax machines or Minitel terminals can still be connected via the chassis analog ports.

The OmniPCX Enterprise also has an integrated SIP gateway for connecting SIP telephones and applications, such as the Alcatel-Lucent OmniTouch 8600 My Instant Communicator or SIP-based applications.

Note: SIP (Session Initialization Protocol) is an open standards protocol that will be increasingly used in public and business networks: it allows new multimedia applications using Voice over IP.

Multi-site

Alcatel-Lucent offers a multi-site IP infrastructure, allowing you to connect remote sites to the OmniPCX Enterprise server that's installed, for example, at your company's headquarters.

Benefits

Regardless of location, all users benefit from the **same level of service** and interact as if they were in the same building.

Communication **expenses are reduced** through:
- Centralization of telephone subscriptions (PSTN lines shared by all the sites)
- Elimination of inter-site communications costs (the data network is used to route the voice signals between the sites)
- Optimum use of the corporate private network

With this solution, you can optimize your management operational **resources**:
- The management platform considers the entire network as a single virtual entity so that any change is automatically replicated across the network.
- The management of your service contracts (integration, management, maintenance, improvement) is simplified by dealing with a single supplier.

Architecture

The architecture adapts according to the size, desired/required service level and the critical aspects of each branch office:
- **Small** branch office: requires the connection of a few IP telephones to the branch office network
- **Mid-sized** branch offices: requires the use of an IP media gateway
- **Node** (branch office that is significant in terms of size, critical aspects or service level requirements): requires the on-site installation of an OmniPCX Enterprise server.
- For a site **not equipped with an Alcatel-Lucent solution**, IP technologies (H.323, SIP) are used in addition to traditional or digital ones (Q.SIG, DPNSS). In this case, the supplied networked level of services is defined by the one established by the standard protocol employed.

Configuration for small branch offices

To equip a small branch office, you need only connect a few IP telephones to the data network of the branch office, and configure the required licenses at the central server level.

Benefits

- Fastest and least expensive way of offering the same level of communications service to all your employees
- Branch office employees are integrated into the main server and benefit from services offered by the head office server.

Remarks:
This solution demands a certain level of reliability on the part of the WAN to which the branch office is connected.
As it is a purely IP environment, connecting analog devices (fax machines, Minitels) requires gateways[1].

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[1] Alcatel-Lucent partners design, develop and market voice over IP gateway systems and technologies for converged networks. These partnerships are managed by the "Alcatel-Lucent Application Partner Program (AAPP)".

Configuration for mid-sized branch offices

This configuration is based on a media gateway (without CPU) installed in a branch office via an IP link.

The connectivity with the legacy voice network enables connections to the public network to be created locally for the analog or digital ports.

The RTP mode means that the IP telephones in branch offices do not use the WAN bandwidth for local calls.

In the event of WAN[2] failure, the server automatically connects to the public network to establish a backup link. In this case, the level of services provided is slightly lower.

Benefits

For mid-sized branch offices, usually with up to 100 employees, this solution offers:
- An ideal compromise between cost, availability and connectivity
- Complete integration of branch office employees in the main server in order to benefit from the services offered by the head office server

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[2] See the high availability options.

Configuration in small network nodes

Several OmniPCX Enterprise communications servers are connected together. By using the ABC protocol, this solution provides users with the same set of functions regardless of their site location. This makes it possible to centralize or distribute applications across the network, according to requirements and with no constraints.

(This server is then networked, with a maximum level of interoperability, with the main server using the ABC[3] protocol. The net result is a small network node).

Benefits

• Configuration assures both autonomy and reliability
• Provides an ideal solution for companies wanting to ensure that some of their critical remote sites (e.g., an industrial company's factory site), benefit from a level of service equivalent to that of the headquarters, even in the event of incidents.
• Different corporate sites easily share resources (i.e., applications, human skills and expertise).

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[3] **A**lcatel-Lucent **B**usiness **C**ommunication networking.

2. Improving employee efficiency

After selecting the most suitable infrastructure solution, a number of options are available to provide your employees with easy-to-use, comprehensive tools. These options optimize the work environment, while increasing employee productivity. As a result, employees:

- Are able to **access corporate information systems** easily and comfortably.
- Can **be reached at all times** and can cost-effectively communicate with co-workers
- Can easily **handle large call volume,** while maintaining high-quality reception.

▼ *User profiles*

Based on extensive studies, and to provide a solution that fits user requirements, Alcatel-Lucent has defined the following user profiles:

Profile	Examples	Characteristics	Essential	Premium	Privilege
Executive	- Management board - C-level executives	At desk: 40% Within company: 30% Outside company: 30%	x	x	Call by Name Dual Mode My Instant Communicator* Video enabler
Mobile Professional	- Sales Force - Technical Field Force - Consultant	Away from desk: 40% to 60%	Cellular Extension	+ Call by Name	My Instant Communicator*
On-site roamer	- IT staff - Security - On-site maintenance	In office, not at desk: 80% In a shared-office: 20%	DECT or WIFI + Call by name	+ My Instant Communicator* 4980	+ Call by Name
Office Worker	- Attendant - Helpdesk - Finance, Legal	At desk: 85% Away: 15%	License	+ Call by Name	+ My Instant Communicator*
Team Worker	- Project Manager - Line Manager	In office: 70% Away: 30%	My Teamwork	+ Call by Name	+ My Instant Communicator* Video enabler

(* Integrated or Unified Messaging)

Office Worker

Examples	Characteristics
Attendant, Helpdesk	*At desk: 85%*
Finance, Legal	*Away: 15%*

To communicate efficiently, your office workers need intuitive and high performance access to telephony services. For this reason, Alcatel-Lucent offers telephones adapted to each type of user profile, according to the requirements or the available budget.

Navigator keys, adjustable screens, alphabetical keypads etc., make these telephones highly ergonomic and intuitive tools. They also provide unrivalled sound quality and listening comfort; most of the telephones also have a hands-free speaker option with echo cancellation.

Every employee will benefit from the highest level of the feature range for every ordered phone, whether it's digital or IP.

Essential	License
Premium	+ Call by name
Privilege	+ My Instant Communicator
A la carte	IP Desktop Softphone Integrated Messaging

Team Worker	Examples **Project Manager** **Line Manager**	*Characteristics* *In office: 70%* *Away: 30%*

Globalization and environmental constraints are fueling the requirement for collaborative applications. To meet the demand for different types of teamwork, Alcatel-Lucent has a variety of offers.

- Team cooperation services for proximity collaboration.
- Standard audio conferencing for occasional collaboration,
- My teamwork for structured daily collaboration

Team worker characteristics:

A key characteristic of the team worker user profile is the need to collaborate with cross-functional teams. A good illustration is a high tech worker or a project manager. Team members also include legal advisors, HR managers, project financial analysts, information system managers, strategic marketing managers and sales administration managers.

Team workers from essential to privileged:
To respond to the different levels of service and customer VIP needs, Alcatel-Lucent has defined profiles with a range of granularity to address all needs.

Essential	My Teamwork
Premium	+ Call by name
Privilege	+ My Instant Communicator + Multi point video
A la carte	Standard audio conferencing Web based audio conferencing

On-site roamer	Examples	Characteristics
	IT staff Security On-site	*In office, not at desk: 80% In a shared-office: 20%*

Your company probably has some staff members who must move around the site (or in the case of a multi-site infrastructure, around another corporate site). On the one hand, they need to be contactable; on the other, they must be able to exchange data – whether they're in a meeting room, on a production lines or in another office).

To address this challenge, Alcatel-Lucent offers a unified voice and data mobility solution based on WiFi technology, as well as a mobile telephone solution, which is based on DECT technology.

On-site roamer characteristics
On-site roamers are mainly mobile on site. Typically, they are away from the desk inside the campus for less than 50 percent of the time. The rest of the time, they are in an office. On-site roamers are often service agents, security agents, nurses and facilities managers. For this group, professional campus mobile phones are the primary communications device.

Essential	DECT or VoWLAN + Call by name
Premium	+ My Instant Communicator + 4980
Privilège	+ License for fix phone
A la carte	Free Desktop Softphone

Mobile Professional	Examples	Characteristics
	Sales Force	Away from desk:
	Technical Field Force	40% to 60%
	Consultant	

Your sales reps, delivery personnel and other employees in your enterprise who work frequently off-site need high-performance tools in order to collaborate efficiently with colleagues and partners. They must also maintain service quality to customers, even from a distance. Alcatel-Lucent offers solutions designed to optimize the working conditions of these highly mobile employees: Cellular Extension solution, which ensure continuity of business communications, and the Integrated Messaging solution, which offers constant access to messaging systems and fast exchange of data.

Mobile professional characteristics
Mobile professionals spend 40 to 60 percent of their time away from their desks. In many cases their primary communications device is a mobile phone. Sales, sales managers, consultants and channel marketing managers are typical examples of this profile.

Essential	Cellular extension
Premium	+ Call by name
Privilège	+ Dual mode + Mv Instant Communicator

Executive

Examples	Characteristics
Management board	At desk: 40%
C-level Executives	Within company: 30%
	Outside company: 30%

The executive profile targets high performance and value-added features, as well as a converged approach. As an essential part of the offer, the executive must rely on highly reliable technology and tools that increase daily efficiency and reduce time for operation, the number of tools/interfaces, as well as the training to use them).

To meet this challenge, Alcatel-Lucent real-time collaboration solutions provide a unique, end-to-end, multi-media, multi-session collaborative experience that is both intuitive and powerful.

Executive characteristics
Includes CXOs as well as executive advisors and managers
Spends, on average, 40 percent of working hours at desk, 30 percent inside the enterprise and 30 percent outside the enterprise.
Needs immediate access to any type of collaboration with teams and communicates extensively

The executive user profile provides the richest combination of telephony, messaging, collaboration and mobility.

Privilège
+ My Instant Communicator
+ Multi point video
+ Dual mode phone
+ Call by name

▼ *Main communication Enterprise Services*

Whatver base solution you choose, your enterprise network will benefit from feature-rich and practical communication services. Alcatel-Lucent fixed/desktop and wireless telephones and softphones optimize access to these services. An overview of these services is provided in the table below.

Telephony features	Teamwork services
♦ Direct services access (voicemail, direct call, etc,) ♦ Individual directory ♦ Internal/external calls ♦ Associate, definition/modification per user ♦ Personal code ♦ Casual and directed conference (maximum of 29 participants) ♦ Waiting call consultation ♦ Voicemail drop on forwarded set ♦ Different ringing according to hierarchical levels ♦ Internal/external enquiry call ♦ Hunting groups ♦ Call pick-up ♦ Intrusion ♦ Multi-redial list ♦ Unanswered call list (internal/external) ♦ Text messaging (sending/receiving) ♦ Camp on busy extension/line ♦ Hold ♦ Store and re-dial external number ♦ Do not disturb ♦ Abbreviated dialing /speed dialing ♦ Multiple call protection ♦ Automatic callback on busy trunk/bundle ♦ Automatic callback on free/busy extension ♦ Appointment reminder ♦ Last number re-dial ♦ Immediate call forwarding on busy/no reply ♦ Unconditional call forwarding ♦ Call forwarding to extension or hunting group, voicemail, attendant, etc. ♦ Conditional external forwarding (busy or no reply) ♦ Call waiting signal restriction for calls ♦ Distinctive ringing (choice of ring tone) ♦ Substitution ♦ Over dialing ♦ Blind transfer to voicemail ♦ Transfer in conversation, on free/busy set ♦ Broker's call	♦ Log-on, log-off ♦ Manageable waiting queue ♦ ACD functions ♦ Exclusive hold ♦ Common hold ♦ Intercom group ♦ Hunting groups ♦ Group call pick-up ♦ Multi-extension agents (CCd key) for informal agent on reflexes phones only ♦ Supervision of user, multi-line appearance **Manager/secretary Team** ♦ Access to manager's voice message headers from secretary's phone ♦ Flexible configuration ♦ Manager discreet listening on filtered lines ♦ External call filtering ♦ External and internal call filtering ♦ Internal call filtering ♦ Selective filtering (scenarios) ♦ Private line ♦ Manager/secretary specific text-messaging ♦ Secretary absence notification ♦ Pre-programmed set profiles ♦ Forwarding of private line ♦ Immediate forwarding of manager phone to secretary phone activated by the manager or secretary **ISDN Features** ♦ ISDN mini-messaging storage ♦ Storing of unanswered calls with date, time and call-back ♦ Calling line identification presentation (CLIP) (n/a on analog phones) ♦ ISDN mini-messaging (transmit/receive) ♦ Overlap dialing mode ♦ Calling line identification restriction (CLIR) *Note: some functions are dependent on the station or are options.*

Some of the services that have the most impact on the performance of your communications network are discussed below.

Call by name

Once a person's contact information is stored in the OmniPCX Enterprise directory or any other LDAP directory, that person can be called by typing in their name, first name or initials on an Alcatel-Lucent phone equipped with an alphabetical keypad, or from a softphone.

The search is facilitated by a summary spellchecker tool. Call by name can be used for all call types: internal or external direct call, and consultation calls. This encourages enterprise-wide cooperation and productivity through time saving (quick and easy access to the directory, fast call-making, etc.)

Text messaging and SMS

Users of an Alcatel-Lucent phone equipped with a screen, softkeys and dynamic function keys, as well as an alphabetical keypad can **send and receive** text messages to and from a fellow employee or group of employees (e.g., an urgent callback request or meeting reminder message sent to all participants).

Note: The maximum length of the messages exchanged over a private network is 128 characters and 32 characters on public ISDN/PSTN networks. This service, integrated in the OmniPCX Enterprise, is not an SMS transmission service.

Sending or receiving SMSs on an Alcatel-Lucent 8 Series phone is possible by integrating, via an XML interface, an application produced by an Alcatel-Lucent partner.

Voice guides

Voice guides indicate how to use the OmniPCX Enterprise solution services: they guide users step-by-step and facilitate the operation of various functions. They are activated automatically to offer the different functions available to the user. To avoid errors, voice guides require the user's confirmation regarding a function's use. Voice guides indicate the functions activated on the station (e.g., a reminder that call forwarding to voicemail is activated). In addition, voice guides signal the errors made when an advanced function is used.

Customizable, voice guides also offer the following services:
   o Appointment reminder/alarm
   o Messages when the handset is off the hook
   o Greetings, etc.

Automatic Route Selection (ARS)

The ARS (**A**utomatic **R**oute **S**election) service determines the cheapest routing for your calls in a multi-carrier environment.

Regardless of the access mode (direct or indirect), type of connection (analog or digital) and the type of telephones used, the ARS service selects the most cost-effective route according to the time periods (day of the week, time of day, etc.) A solution of this type can take full advantage of the low-cost offers of the different telecom carriers.

Three-party conferencing

An Alcatel-Lucent station user can initiate a three-party conference at any moment by pressing the station "conference" key. The use of this three-party conference service is unlimited because it is a standard function of your OmniPCX Enterprise solution.

If you wish to include additional participants, optional services are available (see Chapter – the "Audio Conference" and "My Teamwork" sections).

"Manager/Secretary" functions

The OmniPCX Enterprise offers managers and their assistant(s) advanced services such as call filtering, discreet listen-in, text messaging, absence management, etc.

Benefits

- Collaboration between manager and assistant is easier, faster and more efficient
- Assistant manages communications more easily: call filtering/screening for one or more managers, instant information exchange, real-time checking of telephone status
- Manager can have several private and filtered lines managed by one or more assistants

Overview

Filtering: Several filtering cases are available: (e.g., filter all the calls; filter all the calls except those in a predefined list; filter outside calls only, and so on). If a manager has several assistants, the manager can apply a specific scenario to each one.

Discreet listen-in: This feature lets a manager monitor a conversation between his assistant and a caller (on a screened line). In this case, the manager's microphone is deactivated and the assistant is informed by a message displayed on the screen. The manager can take the call at any time.

Text messaging with immediate display[4]: An assistant can send a short text message to a manager whose line is busy. For example, the manager can be informed of a person's arrival for his or her next meeting. The message is displayed directly on the manager's screen without any intervention by the manager. The manager simply acknowledges receipt of the message or answers briefly using a predefined message, thereby informing the assistant immediately.

Absence notification: With this feature, an assistant has a specific key to indicate his/her presence or absence to the manager(s). As a result, a manager can answer the incoming calls or activate his/her mailbox or an automated attendant[5].

Speed dial number: Even when the "forwarding" mode is activated, the assistant can reach the manager by dialing a speed dial number.

Note: Add-on modules are required to use this Manager/Secretary

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[4] Only attendants and managers/assistants can send this type of message.
[5] See Chapter 3 "Company Greeting" section

Voicemail

The Alcatel-Lucent (4645/4635) Voice Messaging System is integrated into the OmniPCX Enterprise for more efficient management of the greeting functions. This powerful, simple and interactive solution has been specifically designed for mid-market enterprises.

► *Voicemail services*

Just like email, and in addition to the usual functions of a voicemail system (message recordings, playback, deletion, etc.) the Alcatel-Lucent 4645/4635 offers:
- Voicemail forwarding to one or more correspondents, or to a distribution list
- A specification of the message's level of urgency
- A message distribution check (acknowledgement of receipt, etc.)
- Recording and conservation of all or part of a telephone call with constant audio quality

► *Voicemail ergonomics*

The Alcatel-Lucent 4645/4635 Voice Messaging System offers a unique user interface accessible both by voice guide and display.

An example of the user interface on the 8 Series range of Alcatel-Lucent IP Touch 4068 EE phones

Examples of options:
- For the message sender
  - message editing
  - indication of confidentiality
  - indication of priority level (urgent, normal, etc.)
- For the message recipient
  - archiving
  - next/back/pause
  - transfer
  - transfer with additional oral input, etc.

► *Configuration and administration*

The Alcatel-Lucent 4645/4635 Voice Messaging System can be integrated in the Alcatel-Lucent OmniPCX Enterprise Communication Server CPU. Its configuration and administration are carried out from the same management tools as the OmniPCX Enterprise, in particular the Alcatel-Lucent OmniVista 4760 Network Management System.

▼ *The phone set range*

The Alcatel-Lucent 8 Series Phones - IP range

The five telephones in the Alcatel-Lucent 8 Series range provide the power of both voice and data. These highly ergonomic and elegantly designed phones (available in polar white or urban grey) offer simple and intuitive access to many functions:

IP Touch 4068 EE

For intensive use
- Large adjustable color screen (240x320 pixels, 4096 colors)
- Alphabetical keypad, intuitive function keys, informative icons
- Hands-free function, loudspeaker and headset jack
- Bluetooth connectivity (optional Bluetooth handset)
- XML, application openness and two Ethernet ports

IP Touch 4038 EE

For frequent use
- Large screen with four adjustable levels of grey (100 x 160 pixels)
- Alphabetical keypad, intuitive function keys, informative icons
- Hands-free function, loudspeaker and headset jack
- XML, application openness and two Ethernet ports

IP Touch 4028 EE

For ordinary use
- Adjustable black and white screen
- Alphabetical keypad, intuitive function keys
- Hands-free function, loudspeaker and headset jack
- XML, application openness and two Ethernet ports

IP Touch 4018 EE

For basic plus use
- Display with 1 line x 20 characters
- Programmable function keys
- Hands-free function, loudspeakers
- Two Ethernet ports

IP Touch 4008 EE

For basic use
- Display with 1 line x 20 characters
- Programmable function keys
- Hands-free function, loudspeakers
- One Ethernet port

All phones can run in SIP mode (SIP level of services).
Gigabit connectivity is available on the IP Touch 4028, 4038 and 4068 Phones EE.

Accessories available as options:

Headset		A 3.5mm **micro-headset** with presence detection for easier connection/disconnection of headsets or Konftel type conference modules.
Stand		A **telephone stand with 60° screen tilt** to optimize the workspace and for better reading comfort.
Add-on module — Smart display		Fourteen programmable keys (up to 3 modules per telephone) with easy identification of the functions associated with the keys thanks to the display of their name on an LCD. *Not available on the 4018*
Add-on module — Label		Ten or 40 programmable keys (up to 50 keys per telephone). *Not available for the 4018 incompatible with the smart display models*

▶ Ergonomic and optimum XML functions

Alcatel-Lucent IP Touch phones offer you the full range of telephony services found in the OmniPCX Enterprise, and much more besides.

They will be whatever you want them to be. For example, your IP Touch can be a "security agent" delivering:

- **Access control** to monitor the entrance to a building/parking lot/remote site (video surveillance) and control door opening
- **Building control:** for any type of alarm, letting you directly control the building security functions (such as closing fire doors, alerting employees and security services).
- **Alarm management:** enabling you to broadcast immediately to all parties specified by the company security procedure

What's more, you can develop your own applications – or have them developed by an Alcatel-Lucent partner – to customize the IP Touch to the unique demands of your business, using the XML interface (see Chapter 1, "XML services" section).

Note: The 4018 EE and 4008 EE are not XML compatible

▶ Powered from the network: Power-over-Ethernet (PoE)

IP Touch 8 Series telephones are also compatible with the international Ethernet standard 802.3af – the standard enabling telephones to be directly powered via the Ethernet.

▶ Easy deployment

To simplify installation and solution updates, you can download the Alcatel-Lucent 8 Series software.

The Alcatel-Lucent 9 Series Phones - digital range

There are three digital phones in the Alcatel-Lucent 9 Series range. They combine design (available in polar white or urban grey) and ergonomy, offering simple and intuitive access to the extensive services of the OmniPCX:

For frequent use
- Large screen with four adjustable levels of grey (100 x 160 pixels)
- Alphabetical keypad, intuitive function keys, informative icons
- Hands-free function, loudspeaker and headset jack

For ordinary use
- Adjustable black and white screen
- Alphabetical keypad, intuitive function keys
- Hands-free function, loudspeaker and headset jack

For basic use
- Display with 1 line x 20 characters
- Programmable function keys
- Loudspeaker

Accessories available as options:

Category		Description
Headset		A 3.5mm **micro-headset** with presence detection for easier connection/disconnection of headsets or Konftel type conference modules.
Stand		A **telephone stand with 60° screen tilt** to optimize the workspace and for better reading comfort.
Add-on module	Smart display	Fourteen programmable keys (up to 3 modules per telephone) with easy identification of the functions associated with each key by displaying their name on an LCD. *Not available on the 4019*
	Label	Ten or 40 programmable keys (up to 50 keys per telephone). *Not available for the 4019 incompatible with the smart display models*
Interface	AP	To connect analog equipment (such as fax machines, etc.) using just one line.
	S0	To connect S0 equipment to your system and take advantage of ISDN.
	V24 / CTI	To connect your telephone to a computer, Braille console or any other V24 equipment and send/receive data via your telephone line.

▼ *Unified Communication solutions*

Alcatel-Lucent IP Desktop Softphone applications (optional)

IP Desktop Softphone allows you to make/receive business calls on your PC, and access specific OmniPCX Enterprise services such as dial-by-name.

Benefits

- A cost effective soft phone application enabling the same level of features as a desk phone, while requiring only a standard PC.

Architecture

In order for the IP Desktop Softphone to work, it need only be installed on a PC connected to the communication server via an IP link. It does not require any additional servers.

Overview

▶ *IP Desktop Softphone*

IP Desktop Softphone takes the form of a toolbar on your desktop and provides the same level of services as the Alcatel-Lucent IP Touch 4068 EE Phone (graphical interface XML applications interface, programmable keys, ring tones, etc.)

Integrated messaging

The "integrated messaging" option enables users of the Alcatel-Lucent 4645/4635 Voice Messaging System to consult voicemail (in *.wav file format) and to fax from their usual messaging accounts such as Lotus Note®, Microsoft Outlook Express® etc.

Benefits

- Employees can access all messages (voice, fax, mail) from their mailbox regardless of where they are; a significant bonus with remote working on the rise.
- Easier and faster to manage messages and prioritize their importance when the reception (inbox) interface is always the same
- Easy to deploy and manage

Architecture

Using the IMAP4 protocol, a link is established between the OmniPCX Enterprise communication server hosting the Alcatel-Lucent 4645/4635 Voice Messaging System and the corporate e-mail server.

Messages are stored by type (voice, fax, mail) on the different servers but IMAP4 enables them to be extracted and manipulated using the same client.

Overview

Example of integration with MicroSoft Outlook

OmniTouch 8600 My Instant Communicator

OmniTouch 8600 OmniTouch 8600 My Instant Communicator is the world's first multimedia, multi-session, unified communications product to provide an integrated user experience across all communications options and all devices. It combines voice, video and data services with media blending capabilities through a single, intuitive user interface.

As part of the Alcatel-Lucent Unified Communications suite of next-generation, IP-based applications for enterprises, OmniTouch 8600 My Instant Communicator transforms enterprise communications. End users benefit from real-time, unified communications, a consistent user experience and complete control over their communications. They can tailor and manage calls, messages, directories, collaborative work tools and information from any location, using any device.

In addition to helping users manage incoming and outgoing calls, OmniTouch 8600 My Instant Communicator also provides a snapshot of all activity — call backs, new voicemail, missed calls, and faxes — in a single window. The result is simplified, integrated management of all communications, including voice and video calls, instant messages and multimedia collaboration applications (option My Teamwork). To further enhance the user-centric experience, OmniTouch 8600 My Instant Communicator offers a choice of interface options that allow users to adapt the unified communications experience to their preferences.

Benefits

- Greatly **improves user experience** by proposing a similar user interface and experience on various devices; provides **ubiquitous access to applications (PC, Mobile, IP Touch), enabling identical services whatever the device or network.**

- N**omadic features** let employees take and place business calls wherever they are - in the office or on the road - while retaining their business identity.

- Open to the **customer environment, supporting either Microsoft or IBM desktop applications;** provides employees **with immediate access to contacts, settings and applications**, thus improving personal productivity

Architecture

OmniTouch 8600 My Instant Communicator is built around the applicative framework of the Alcatel-Lucent OmniTouch Unified Communications Application Suite. The 8600 is a thick client installed on the user's PC.

Overview:

OmniTouch 8600 My Instant Communicator provides the following services:
- **Telephony services with VoIP interface**, including soft phones
- **Integrated or unified messaging services**
- **One number services**
- **Telephony presence**
- **Rich presence**: access to telephony presence information (option My Teamwork)
- **Instant Messaging**: access to instant message services (option My Teamwork)
- **Video collaboration** with peer-to-peer capabilities (option My Teamwork)

▶ *Enhanced user interface thanks to non-intrusive toast window*

With OmniTouch 8600 My Instant Communicator, enterprise end users can manage incoming and outgoing communications through an intuitive user interface that is common to all devices, including Alcatel-Lucent IP Touch™ phones, PCs and Pocket PCs powered by Windows Mobile® software.

Incoming calls are managed through non-intrusive "toast" desktop alert windows that let end users see a caller's identity. The "toast" window allows end users to respond to incoming communications with multiple media.

▶ *Telephony services*

Telephony services can be accessed through two distinct soft phones. Both provide all the key telephony services such as pick-up, transfer, third-party conference, access to voicemail, record messages, programmable keys …
- The thin client or Web Softphone offer (requires only a compatible web browser, non installation on a client PC).
- The Alcatel-Lucent 4980 Softphone, thick client offer (installed on a PC). The 4980 is a feature-rich solution providing groupware and all advanced telephony features that the OmniPCX Enterprise has to offer.

▶ *Integration into the customer environment*

OmniTouch 8600 My Instant Communicator allows for further customization through integration with other vendors' desktops.

Microsoft desktop integration:

- Telephony, messaging and one number services can be provided within Microsoft Outlook messaging software.
- Telephony and conferencing services can be provided within Microsoft Office® Communicator.
- Multi-media conferencing, instant messaging and rich presence can be provided within Microsoft Office® Communicator (option My Teamwork)

(Option My Teamwork)

IBM desktop integration:

- Telephony, messaging and one number services can be provided within IBM Lotus Notes.
- One number services, telephony and conferencing services can be provided within IBM Sametime software.
- Multi-media conferencing, instant messaging and rich presence can be provided within Microsoft Office® Communicator (option My Teamwork)

OmniTouch 8600 My Instant Communicator options

- Alcatel-Lucent 4635/4645 **Voice Messaging System**
- **VxML messaging system** (fully software-based)
    - Vxml port for text to speech: You can "listen" to your mail on a telephone or with a headset on a PC (associated with "text-to-speech" technology).
    - DTMF …
- **Voice encryption**
- **Fax** services

Fax server

OmniTouch Fax server is the perfect solution for an enterprise that is adapting its workforce and realigning its business processes to a newly adopted IP environment. It integrates seamlessly with VoIP technology and the T.38 fax relay capabilities of leading Alcatel-Lucent VoIP gateways.

Benefits

OmniTouch Fax server offers huge advantages compared to analog fax servers:
- Boosts employee productivity (e-mail-based faxing, because there is no more walking back and forth to fax machines)
- Provides speedy and efficient fax delivery, including dramatically more efficient means of fax broadcasting
- Streamlines paper workflow and fax workflow management (storage/archiving/tracking), and creates an audit trail fully in line with security and regulatory compliance
- Reduces costs:
    - lowers hardware costs, maintenance costs and number of possible points of failure thanks to its full boardless Fax over IP (FoIP) solution.
    - eliminates dedicated analog fax lines, as well as specialized fax equipment, maintenance and supplies
    - reduces administration costs, thanks to centralization of communication assets
    - lowers costs of consumables
- Also meets the requirements of mobile workers who need to send or receive faxes while outside the office with faxing facilities from web browser

Architecture

OmniTouch Fax server is a scalable, full software, boardless Fax over IP (FoIP) solution ready for mobility and faxing anywhere, anytime. OmniTouch FAX server:

- Can run on a server connected to the enterprise LAN
- Shares the same server infrastructure (up to 4 channels and 500 users) with OmniTouch Unified Communications.
- Is pre-integrated into the Business integrated Communication Solution (BiCS) (up to 4 channels and 500 users).

Overview

OmniTouch Fax server seamlessly integrates with OmniTouch Unified Communications, complementing the unified messaging service.
- Fax messages are presented in the e-mail inbox (for both unified messaging and integrated messaging models).

Features
- **Web administration:** Monitor fax status; manage local users and Fax profiles, …
- **User web access:** Support fax access from web interface
- **E-mail integration:**
  o Submit faxes from any SMTP-based messaging system
  o Outlook fax extension through Outlook forms
  o Notes fax extension through Notes forms
  o E-mail notifications to confirm sent/failed outbound faxes and inbound faxes

Fax characteristics:
- IP faxing using SIP/T.38 and H.323/T.38 (only through certified gateway platform)
- SIP stateless and state full proxies
- Group 3 fax and transmission speed of up to 9600 b/s
- 100x200, 200x200, 300x300 and 400x400 resolutions
- Up to 4 simultaneous fax communications when embedded into BiCS
- Up to 30 simultaneous fax communications when running on a dedicated server

▼ *Collaboration solutions*

Standard audio conferencing

The audio conferencing service included in OmniPCX Enterprise allows up to 29 internal and/or external users to participate in a telephone conference. Depending on your needs, you can select the maximum number of participants required (thresholds of 6, 14 or 29 participants).

Benefits

- Employees can have efficient and effective meetings by telephone, which include all the required collaborators.
- Employers can save money as they no longer need to reserve and rent a teleconferencing bridge from a carrier.

Architecture

These functions are supplied with one or more system boards in line with the customer requirements.

Notes:
The telephones in the Alcatel-Lucent 8 and 9 Series equipped with a screen provide a special conference menu, which makes the use of this service even easier. Smart display add-on modules are recommended for efficient management of the participants. You can also associate Bluetooth[6] conference modules with your Alcatel-Lucent 4068 EE IP Touch phones for increased freedom of movement and listening comfort.

Overview

Several types of conferencing are available:

- **Casual conference (spur of the moment)**
An employee, already in communication with two other persons (3-party conference), can bring other parties into the conversation - up to a maximum of six.

- **Meet-me conference**
This function can be used to plan a telephone conference with up to 29 persons. A prefix and access code are sent in advance to the participants.

- **Mastered conference**
With this function, a designated conference master can handle conference management: conference connection/disconnection, and monitoring of the telephone status for inserting new participants, etc. If needed, the conference master can also put the conference on hold to have a private conversation.

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[6] Offered by Alcatel-Lucent partners. These partnerships are managed by the "Alcatel-Lucent Application Partner Program (AAPP)".

Alcatel-Lucent Omnitouch 4125 Compact conferencing Module

Benefits

The Alcatel-Lucent OmniTouch 4125 Compact Conferencing Module adds high quality, easy-to-use audio conferencing capabilities to Alcatel-Lucent IP Touch 8 Series Phones and Alcatel-Lucent 9 Series Digital Phones.

- Easy switching between hands-free capability on Alcatel-Lucent IP Touch 8 Series and 9 Series Digital Phones and the OmniTouch 4125 Compact Conferencing Module
- OmniSound®3 technology with full duplex, 360° ultra-sensitive microphone and three built-in surround speakers transmits crystal clear conference calls

Overview

OmniTouch 4125 is directly connected to the IP Touch phone.

With the OmniTouch 4125 Compact Conferencing Module, up to five local participants can collaborate with remote participants while enjoying crystal clear and natural sound.

To help foster more creative exchanges, sound quality remains consistently high even as participants move around the room.

Team cooperation services

Benefits

Alcatel-Lucent telephones are designed to optimize the employee working environment. The services described below enable OmniPCX Enterprise solution users to help each other manage their calls.

Overview

MLA – Multiline Appearance

Most Alcatel-Lucent telephones are capable of handling several lines[7]. They are used to handle high call volume by identifying the origin of these calls.

Multiline display on an IP Touch 4038 phone

A group of users can be defined to which all incoming calls are presented simultaneously. The group members can answer the calls according to their availability, thereby reducing the waiting time for callers.

Associate
Any user can designate another colleague as his or her associate: in peak periods, the user need only dial a speed dial number to transfer unanswered calls to the associate's station.

Call supervision and pick-up
It is possible to check the status of another telephone in real time (free, forwarding activated, online, etc.) to pick-up calls placed to that phone. Several phones may supervise the same number.

Note: The supervised telephone must be associated with a number listed in the company directory. This function can be accessed from the high- end Series 8 and 9 or Reflexes phones.

Night service:
When the server is on night service, a general ring indicates outside calls to a specific phone so that the users still present can answer these calls (depending on their rights).

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[7] See Chapter 2 "Desktop phones" sections

The Alcatel-Lucent OmniTouch My Teamwork application

OmniTouch My Teamwork is an application enabling employees to collaborate remotely with colleagues or external participants.

Benefits

With OmniTouch My Teamwork:
- Team productivity is increased: internally and with your external contacts.
- You save time and money: no need to be physically in the same room to work on the same document (thus saving on travel expenses).
- You collaborate easily: easy to deploy and use (even remotely); all it requires is a Web browser (no software installation).

Architecture

Using a customer/server architecture and integrating **SIP** and **XML** technologies, you can access OmniTouch My Teamwork from your IP Touch 4068 EE or 4038 EE sets, or even from a PC.

What's more, because OmniTouch My Teamwork is browser based, your employees can access it when they are out of the office.

Note: If the OmniTouch My Teamwork server is placed in a demilitarized zone (DMZ), you can share applications with external parties in complete security.

Overview

A graphical, intuitive and friendly interface allows users to easily organize and manage their conferences.

Presence

Presence
The list of contacts displayed on the OmniTouch My Teamwork homepage lets you know at a glance who is on-line and their status (busy, on the phone, etc.)

Instant messaging

Instant messaging
You can start a text conversation by double-clicking the contact's icon. For fast callbacks or urgent questions, the instant messaging in OmniTouch My Teamwork provides an interactive and efficient alternative to sending email.

Audio conferencing
You can improvise audio conferences in a few clicks on the homepage or else program the details in advance: determine the length, access type, send invitations to your contacts (automatic notification by e-mail etc.) Up to 120 callers (depending on number of audio ports available) can participate in your casual or programmed conferences.

Meet - me conference

Casual conference

Audio conferencing and Application sharing

Application sharing
During your conversation, you can share all types of files or applications: Word documents, PowerPoint presentations, specialized software (accounting, CRM, project management, etc.) You can then edit the shared documents, spreadsheets or presentations.

Recording
OmniTouch My Teamwork can be used to record audio and multimedia conversations (recording of conversations, shared files and video). These recordings can then be used to bring those who were absent up to date, for archiving requirements, to develop product demonstrations and presentations that can be easily distributed to the people involved.

Point-to-point video conference
In addition to the conference, a point-to-point video client is embedded. Escalation from pure audio or multimedia to video happens with a single click.

Any commercial webcam can be used, providing it meets the requirements of the Microsoft standard video interface.

You can use your phone or PC as the phone for conferences, (a multimedia PC with speaker and microphone is required).

► *video conferencing (optional)*

By choosing the video option, you benefit from an advanced video conferencing solution that is integrated with My Teamwork, which provides multi-point video conferencing.

This option requires a video Multipoint Control Unit (MCU) certified by the Alcatel-Lucent Application Partner Program.

My Teamwork also offers an easy way to extend an existing video system, which can serve as a video room for a group, to remote employees at other locations who can join through their existing desktop.

![Alcatel·Lucent]

▼ *Mobility solutions*

Unified mobility: VoWLAN

The VoWLAN solution is used to unify the voice infrastructure and the data infrastructure to offer your employees greater freedom of movement and increased business efficiency. Employees who often move around in company facilities can now do so with their portable PC, PDA, wireless IP Touch telephone, etc. while staying connected to the corporate voice and data network at all times.

Benefits

- The Alcatel-Lucent unified voice-data mobility offer is an integrated, scalable and secure solution that:
- Optimizes use of the WLAN network employed both for voice and data
- Enhances the mobility, reactivity and productivity of your employees; they can continue to use all their work tools as they move within the company.
- Offers secure access to network and high voice quality using standard protocols
- Provides autonomy to meet typical needs with up to 4/6/8 hours of talk time (according to the battery type) and 160 hours of standby time.

Architecture

Installing OmniAccess WLAN access points and switches creates a coverage area.

Optimal voice quality (voice priority over pure data transfer) is managed using a standard protocol, thus ensuring full interoperability.

Overview

Alcatel-Lucent offers a range of equipment designed for optimal use of this VoWLAN solution:

Mobile IP Touch 310	Mobile IP Touch 610

► *Mobile IP Touch user interface*

The telephones in the Mobile IP Touch range are practical and deliver high performance: as on Alcatel-Lucent desk phones, their integrated menus are used to activate and manage the various OmniPCX Enterprise communication services.

► *Twinset*

Combining a Series 8 or Series 9 phone and a VoWLAN phone provides the following functions:
• a ring or beep tone informs the user of all incoming calls on the twinset
• the second phone can be called on its main set number
• for both phones, a single voice mailbox and a single function for activating or canceling forwarding

► *Accessories:*

Alcatel-Lucent IP Touch 310 and 610 telephones: • Battery pack • Charger, dual desktop charger	 Charger for 310 Charger for 610
• Clothing carry clip for Alcatel-Lucent IP Touch 310 and 610 telephones • Swivel clip for the Mobile IP Touch 310 phone • Standard or comfort pouch for the Mobile IP Touch 610	
Configuration cradle • Reduces initial configuration time • Supports configuration of users and administrative employees, stored/downloadable/modifiable profiles • Password protected	

The DECT solution

You can opt for a DECT solution to optimize your employees' telephone mobility so they can be reached at all times and in all company buildings.

Benefits

- This integrated solution ensures your employees can be reached, while enabling them to manage their communications effectively (call transfer, conferencing, etc.) even when they are not in their office.
- On DECT phones, internal calls are free and external calls received are the same price as fixed line calls.

Architecture

To take advantage of DECT technology, just connect the Intelligent Base Stations (IBS) directly to the system digital ports.

When users are mobile, they remain connected to the network at all times. This is because the signals transmitted from their sets are relayed from different access points as they move around the site, with no interruption in service.

Overview

300 DECT™

400 DECT™

The 300 DECT™ and 400 DECT™ provide a high performance mobility solution: users access the same level of services as on Alcatel-Lucent desktop telephones.

▶ *User interface*

The user can navigate between several interactive menus and easily manage multiple calls via the drop-down menus.

Redial List

Call Forwarding

▶ *Twinset*

Combining a Series 8 or Series 9 phone with a DECT phone provides the following functions:
- a ring tone or beep tone informs the user of all incoming calls on the twinset
- the second phone can be called on its main set number
- for both phones, a single voice mailbox and a single function for activating or canceling forwarding,
- manager/secretary filtering from both phones

▶ *Specific business applications*

Hotels/Hospitals: Possibility of providing your guests/patients with the wireless telephones described above (no interference with medical apparatus).	
Dangerous environments: For high fire risk environments such as petrochemical plants, flameproof handsets are available.	Explosionproof handset
High risk activities: Solitary and mobile workers (security agents, production line inspectors, on-duty hospital personnel, etc.) can be provided with sets connected to an automatic alarm server (alarm management by level of criticality, alarm distribution per group/sets/loop).	Alarm for solitary worker

▶ *Accessories*

Four types of chargers are available for the 300 DECT^{TM} and 400 DECT^{TM} wireless telephones: • Basic charger/wired charger • Charger with hands-free function • Dual charger with spare battery	Corded Voice Basic Dual

Note: The Alcatel-Lucent DECT solution is compatible with the standard market access protocols and therefore with other makes of telephone. In this case, the level of services available is more basic and is not comparable to the level of service available with the 310 DECT^{TM} & 410 DECT^{TM} in the Alcatel-Lucent Mobile Reflexes.

The Cellular Extension solution

The Cellular Extension solution is used to integrate cellular phones into the corporate communications server. This is the perfect solution for mobile professionals.

Benefits

- One number service: all calls to the user's desktop telephone are redirected to his/her mobile phone.
- On their mobile phone, users have access to most of the services available to them from their desktop telephone, such as conferencing and short dialing.
- The enterprise cuts costs: international calls made from a mobile telephone integrated in the cellular extension are billed in line with the company's negotiated call price.

Architecture

Incoming calls

A DDI (Direct Dialing In) number associated with the OmniPCX Enterprise system is assigned to the user. All calls to this DDI number normally intended for the desktop telephone are automatically redirected to the mobile phone when a cellular extension has been activated.

Outgoing calls and access to the services

The user dials a dedicated remote extension service application number, followed by an identification code where necessary (CLI supplied automatically by the carrier), and can access the OmniPCX Enterprise services. To avoid the dialing phase , the mobile phone may run the ACE application (Alcatel-Lucent Cellular Extension client) to enable a fully transparent service (Note: ACE client is available on a limited number of cellular phones).

Overview

First level of service provided by Cellular Extension :
Anyone calling your employee will be able to reach the employee on their cellular or business phone, just by dialing their office number. If the configuration 'twin-set" is used, incoming calls will ring at both the employee's desk phone and cellular phone at the same time, and the two phones will share the same mailbox. This first level of service doesn't require any configuration on the cellular phone side. As such, it is compatible with any cellular device, and is independent from the cellular network, which makes this solution extremely easy to deploy.

Advanced level of service provided by Cellular Extension :
As described in the architecture section, your employee (with a Cellular Extension license) can dial their DISA number (Enterprise Communication server) to access their enterprise communication services (inquiry call, shuttle call, call transfer, 3-way conferencing, call forwarding, short dialing, call park, companies' mailbox access, reverse a call …). To provide a transparent service to your employee, Alcatel-lucent proposes a list of terminals on which you can install a client. Of course, this list might be enriched in the future.

Cellular Extension clients are available for the following terminals:
- **PDA** running Windows Mobile 6: HTC TyTN, HTC P3300, HTC S710, HTC S620, HTC TyTN 2
- **Nokia E-series Phones** running Nokia Intellisync Call Connect for Alcatel-Lucent: E50, E51, E61, E61i, E65, E90
- **Blackberry** devices : 81xx, 83xx, 87xx, 88xx and 90xx

Dual Mode phone

The dual mode GSM/WLAN enables the end user to benefit from advanced telephony services inside and outside the company, using the same handset and telephone number. Inside the company the phone set is recognized as a WLAN phone of the company and outside it is an Alcatel-Lucent cellular extension of the system. As a result, the phone benefits from all advanced functions of both the Alcatel-Lucent WLAN mode and GSM mode, including: call by name, transfer, and conference.

In addition, the cost savings are important: no GSM cost inside the company.

Thanks to the Nokia partnership, a cellular client (Nokia Intellisync Call connect) is available on the following dual mode devices : **Nokia E-series Phones** E51, E61i, E65, E90.

The Free Desktop Environment application (optional)

The Free Desktop Environment application provides you with access to your user profile and personal data, after logging on, as well as identification on any station in the company. When the session is closed, automatic forwarding to voicemail or another number is executed.

Benefits

Accessing this virtual office…
- Provides greater flexibility in the management of space and offices
- Facilitates movement within the company
- Offers employees an identical working environment at any point in the company

Architecture

Users can access the Free Desktop Environment either by opening a session on an IP Touch 8 Series XML compatible phone, or from a Web page.

Overview

The Free Desktop Environment application can be used in different contexts.
Examples include:

- A meeting room or a transit office can be equipped with an ordinary extension using a restricted telephone profile. When users in an enterprise are connected to this extension, they retrieve their own telephone profile.
- Offices can be equipped with telephones, fax machines, workstations, network connections, etc., for use by temporary workers or visitors. In this case, a welcoming agent assigns a telephone extension (with a specific profile) to the user.

Free desktop scenario (activation using an IP Touch phone)

1) John's telephone   2) John is moving

4) Telephone with default profile   3) John **connects** to an extension with the IP Touch keyboard

3. Continuously improving customer satisfaction

Managing an enterprise involves many challenges, including that of maintaining a positive and professional image among your customers. The better your contact with customers, the greater their satisfaction. Moreover, they will reward you with their loyalty. A satisfied customer is an added-value for your enterprise. The Alcatel-Lucent Enterprise offer helps you capitalize on this value by providing you with CRM tools. Adapted solutions are available depending on the size of your company and the flow of communications processed daily: from an enterprise greeting to a complete contact center.

▼ Enterprise Greeting

Alcatel-Lucent Enterprise Greeting offers are simple, economical and effective, enabling you to maintain a fine balance between investment and customer satisfaction. You will improve the call reception process in your enterprise (significant reduction in the number of calls not answered, the average call waiting time, etc.), while optimizing your operational expenditure.

Solutions for your switchboard operators

Alcatel-Lucent has perfected several attendant stations to facilitate the task of your employees working as switchboard operators. With these stations, they can carry out several operations at the same time and handle large call volumes. This in turn leads to greater efficiency.

The Automated Attendant

The Alcatel-Lucent Automated Attendant is a low-cost solution for properly greeting your customers. It comprises a virtual attendant that guides callers to the appropriate department, service or person within the enterprise.

This cost-effective and fully integrated solution provides considerable assistance to your switchboard operators in peak activity periods or when the enterprise is closed: the Automated Attendant can play greeting messages and provide information about business hours around the clock.

The Easy Contact pack

The Easy Contact pack is a powerful and very accessible solution for creating a contact center in your enterprise. It integrates an automatic call distribution application (the OmniTouch Contact Center CCd module) for optimal management of your telephone communications and continuity of service. For employees in charge of the switchboard but also handling other responsibilities at the same time, a Multi Extension Agent (MEA) function lets them easily administer several lines (line for the switchboard function, lines for other business calls – suppliers, colleagues, specific services for call holding, transfer, etc.)

If your enterprise is growing fast and call volumes are likely to increase, this pack has been specifically designed to allow you to evolve at your own pace towards a contact center.

▼ *Serving your customers efficiently*

Using the technologies and applications of the Alcatel-Lucent Contact Center offer, you can ensure timely and efficient service for your customers.

The Welcome pack

Does your company want to assign the processing of calls to a certain number of employees, thereby creating a small contact center? The Welcome pack is designed for 5 to 25 agents and meets the following criteria:

- A packaged solution that is easy to install and use
- Real-time supervision of agents (CCs module included in the pack, for up to 3 supervisors)
- Integration of an automatic call distribution application (CCd module included in the pack)
- Operation on standard PC server platforms

Agent phones

Alcatel-Lucent provides your agents with ergonomic and powerful phones, capable of supporting a very high call volume. They increase efficiency by helping agents easily access contact center call functions.

Sets for Contact Center

| 8 or 9 series | IP Desktop Agent | Analog |

Uses soft keys to access features

The Alcatel-Lucent OmniTouch Contact Center CCd module

The Contact Center Distribution CCd module provides extremely efficient multimedia call distribution based on the expertise and know-how of your contact center agents (predefined individual or group). Agent activity and productivity are optimized.

Calls are first classified according to the number dialed and available information regarding the caller. They are then queued. Next, they are routed according to agent availability, the estimated cost of call processing, and waiting time already clocked up, etc.

Note: Callers put on hold can access interactive voice applications (see the CCivr module) without losing their place in the queue. Call queues are closed once the maximum waiting time has been reached and new calls are then redirected to a call dissuasion device.

The Alcatel-Lucent OmniTouch Contact Center CCa module (optional)

The Contact Center Agent CCa module is an application that your agents can use in addition to their phones to manage their activities more easily.

The CCa module provides access to enhanced telephone and call management functions on a PC. It can take the form of a task bar and, using statistical indicators, provides information about activity and performance levels; for example, the number of calls on hold, and the number of calls already processed. CCa can also be integrated into other applications to provide recording, directory searching and other functions.

Note: Agents working from home can access all the services offered by Cca, if they have a multimedia PC (VoIP), GSM, etc.

The Alcatel-Lucent OmniTouch Contact Center CCivr module (optional)

The Contact Center Interactive Voice Response CCivr module offers more functionality than an ordinary automated attendant. It is used to establish a genuine dialogue with the customer to provide him or her with access to automated and interactive services. For example, customers can check the status of their account over the phone by following the instructions indicated (say "Check my account" to access this service, type in your customer number, say "Repeat" to hear the status of your account again).

CCivr can enhance customer service through services that can be accessed 24/7; savings are considerable (because your employees remain focused on other tasks), and the use of industrial standards means your investment is safe.

▼ Managing your customer relations

With the services described in this section, your enterprise contact center agents will have the tools and information to ensure better customer relationship management.

The Alcatel-Lucent OmniTouch Contact Center "CTI" module (optional)

To ensure that customers receive a qualified and personalized response at their first call, Computer Telephony Integration (CTI) functionality supplements the call distribution device CCd functionality.

The CTI module lets you integrate the telephony in your computer environment. All the information needed for processing customer requests is displayed on the agent's screen (in the form of pop-ups) during the call:

- The caller is immediately identified.
- The transfer of customer data (coming from other corporate programs dedicated to CRM or invoicing for example) is synchronized with the call.

This avoids unnecessary communication transfer and tiresome repetitions: your customers quickly receive the answers they need. Using this unified interface, agents are more efficient and customers are more satisfied. As a rule, an Alcatel-Lucent CTI toolbar is integrated into the CRM application that already exists in the enterprise.

▼ Prospecting

The Contact Center application includes options to help you win new customers.

The Alcatel-Lucent OmniTouch Contact Center CCo module (optional)

The Contact Center Outbound (CCo) module is used to set up telemarketing campaigns such as satisfaction surveys, remote sales operations or emergency calls, etc. By optimizing information flows (for example, cross-sales), you can strengthen your customer relationship and increase sales. CCo also lets you take advantage of multiple dialing modes, automatic voice detection, callbacks, and so on.

▼ *Ensuring and controlling sales action efficiency*

Efficient and regular monitoring of your operations and the quality of service delivered by your contact agents can have a very positive impact on generating sales for your company. Specific tools help you carry out this monitoring.

The Alcatel-Lucent OmniTouch Contact Center CCs module (optional)

The Contact Center Supervision CCs module lets you manage the entire contact center via a unique graphical interface.

The supervision application is used to manage the continuous routing of all calls and the configuring of agent profiles for improved marketing efficiency. CCs provides an overview of the operations with detailed and accurate monitoring. Alarms can be triggered, if something goes wrong. It also provides real-time statistics or historical data that can be exported to Microsoft Excel for in-depth analysis. This allows personalized reports to be generated.

CCs is available in two forms: the full client software for call center administrators and supervisors and the "light" version designed specifically for team leaders.

4. Optimizing your IT operations

Tighter control over operations enable you to increase your ROI. Using Alcatel-Lucent solutions, you can also achieve substantial savings. By using VoIP technology, for example, you can reduce your telecommunications bills for internal and international calls and for calls to GSM devices. You also benefit from a reduction in the total cost of your investment through lower management costs, centralized maintenance, lower upgrade costs and by optimizing resources such as voicemail or greeting resources. Optimization also means ensuring the continuity of operations by preventing potential failures with greater security and reliability.

▼ *Management solutions*

OmniVista Network Management System - 2500

Alcatel-Lucent OmniVista 2500 delivers the best value in the industry by providing simplified management that creates a secure, reliable network infrastructure. Implementing OmniVista reduces overall administrative costs, and minimizes the maintenance required, which results in an improved return on investment.

OmniVista 2500 provides better network availability by anticipating potential risks and reacting to important events, resulting in less downtime and improved productivity. The northbound interface makes the OmniVista solution easier to integrate into the existing network application framework, simplifying data sharing.

Features

The OmniVista 2500 application is the foundation for managing networks composed of Alcatel-Lucent and other network devices.

• **Discovery**
OmniVista 2500 provides the ability to control the discovery of Alcatel-Lucent LAN switches, OmniAccess wireless devices and third-party devices the IT staff member wishes to manage.

• **Topology and Spanning Tree Map**
Using the topology map, a user can quickly determine network issues based on the dynamic, color-coded status feature so that a user can pinpoint current and impending problems at a glance.

• **VLAN Manager**
The OmniVista 2500 VLAN Manager allows users to create and manage VLANs across multiple switches.

• **Resource Manager**
The OmniVista 2500 Resource Manager provides control of switch software and switch configuration for automated backup/restoration of configurations and software image files, and allows bulk download of software images.

• **Interactive CLI**

Alcatel-Lucent Operating System (AOS) devices support command line interface (CLI) scripting, which saves time by allowing repetitive CLI tasks to be pushed simultaneously across multiple devices, such as the initial configuration of multiple network devices or when global changes such as SNMP community strings are needed.

• **Troubleshooting optimization**

OmniVista 2500 optimizes troubleshooting allowing users to monitor the health of the network and set alarm thresholds to provide early warning of potential problems before they become critical events.

• **Locator**

OmniVista 2500 Locator is one of the first mechanisms to defend the network against security threats. With the Locator function, the network is better able to isolate problem resources through increased awareness of what is on the network.

• **Performance - Health and statistics**

OmniVista 2500 allows users to get performance information from multiple devices at once, enabling users to correlate information and analyze network-wide activities.

• **Statistics**

OmniVista 2500 constantly monitors the network, using multiple profiles and collected statistics from across multiple devices and modules at a time, which are viewable on a common graph or information table.

Features Supported by Device Family	OmniVista 2500 Core Application												OmniVista 2700 Supplemental Applications					Element Manager
	Infrastructure Deployment & Configuration					Performances Monitoring & Troubleshooting					Automation of Operations		Security, Performances Optimization, Northbound Interface					
	Discovery & Topology	Trap Management with "Action on Event"	CLI / Telnet Launch	Web based Element Mgr or third party app launch	VLAN provisioning through Wizard	Locator	Device MIB Browsing	Utilization & Statistics	Inventory Reports	Health	Interactive Telnet	Resource Manager	PolicyView 2730	SecureView SwitchAccess 2750	SecureView ACL 2760	Quarantine Manager 2770	Web Services (2) 2790	User interface type
OmniSwitch AOS series (1)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	AWV
OmniStack 6200 series	●	●	●	●		●	●	●	●			●				●	●	WBM
OmniAccess WLAN series	●	●	●	●			●									●	●	WBM
Alcatel-Lucent 7750 Service Router (SR) series & 7450 Ethernet Service Switch (ESS) series	●	●	●	●		●	●										●	S620 SAM
3rd party device w/ SNMP support & MIB-2 compliant	●	●	●	●		●	●	●								●	●	WBM

Management with Alcatel-Lucent OmniVista 4760 NMS

OmniVista 4760 NMS is a unified management application suite that includes 10 independent modules. It gives you the possibility of controlling your entire communications solution yourself, and of taking advantage of added value services such as controlling your communication costs, editing reports or managing your corporate directory.

Benefits

- Reducing **operational costs**
- Managing all network users centrally as if they formed a single group
- Taking advantage of remote operations
- Controlling your solution **proactively** with automatic editing of standard or customized reports
- Processing employee or departmental requests considerably **faster**, thanks to the well-planned design of the modules for managing modifications, additions and changes
- Saving/restoring configurations automatically
- Using secure protocols and carrying out user authentication to avoid fraud

Overview

All suite modules are independent and integrated with each other: the modules that you select to meet your requirements operate in a unified way.

The suite of modules provided by OmniVista comprises:

Configuration

Graphical interface for (e-)/Reflexes, Alcatel8 89 Series telephones

*This module offers **user-friendly** parameter configuration:*
- Migrations, additions and changes are **fast and easy**. For example, you can filter a group of users and then modify their profiles in one go.
- An image of the Alcatel-Lucent phone sets can be viewed on the screen for easier management of each set and to control user keys.
- Automatic saving of the server database assures restoration following an incident.
- Possibility for real-time or programmed **data import/export** enables batch configurations.

Alarms

Example of an Alarm list

*This module offers **real-time system control**:*
- Fast access to the status of equipment
- Color codes for the lists of alarms and details
- Audio alarms, automatic e-mails and scenarios
- Reports

Accounting

*This module offers an integrated **metering** application for **controlling communication costs**. It:*

- Stores all calls on the network and determines their cost, according to the carrier information.
- Allows for cost analysis per user, department, cost center, etc.
- Can automatically generate reports summarizing the data analyzed (see diagram)

Example of metering report

Corporate directory

This module provides:
- A **continuously updated** directory, which can include photos
- The possibility of making a call or sending an email **with a single click** on the Web page in question (see diagram on the right).
- **Customizable** Web templates: logo, fields, backgrounds, etc.
- Multiple search criteria accessible from all Alcatel-Lucent applications.

This module can also automatically synchronize your existing databases using the LDAP protocol.
The directory can be accessed from an Internet browser or, for example, from the Alcatel-Lucent 4059 or from the OmniTouch 8600 My Instant Communicator.

Topology

Example of network topology

This module allows you to display a complete network topology with:
- Logical display of the voice network, and real-time updating with the alarm color code.
- A panoramic view with the possibility of zooming in to view the defective port.
- Single click access to configuration.

Tracking

*This module is used for **exception management, and delivers**: :*
- Automatic control of expenditure per users/ departments
- Notification by e-mail/alarm in the event of abusive behavior.
- Reports to control traffic peaks and associated costs.

Example of « Tracking » report

Performance

*This module is used to **observe resource use and traffic**, and enables: :*
- Measurement of user response time, internal and external line usage and the volume of attendant and subscriber communications; analysis of the traffic on the DECT base stations
- Reports

VOIP performance

Half hour	Sent volume	Received volume	Lost volume	Lost volume rate
8:00:00 AM	0	0.5	0	0.32 %
8:30:00 AM	0	3.34	0	0.14 %
9:00:00 AM	0	21.75	0	0 %
9:30:00 AM	0	21.54	0	0.01 %
10:00:00 AM	0	38.63	0	0 %
10:30:00 AM	0	82.29	0	0 %
11:00:00 AM	0	25.31	0.01	0.03 %
11:30:00 AM	0	54.76	0	0 %
12:00:00 PM	0	31.99	0	0 %

*This module is used to **control the voice over IP quality** and includes:*

- Several indicators such as round trip delay
- Automatic transmission of reports by e-mail (with information in a history format)

OPERATIONS Audit

*This application provides **both centralization and follow up of the recorded operations** performed in the OmniPCX Enterprise network.*

- Operations are recorded however they are performed.
- Operations are summarized, detailed and displayed in the audit grid.
- Filtering is provided via pre-defined or created reports templates.

Operations audit option enhances enterprise security:

- In the event of a **security threat**, specific analysis provides information on operations performed during a determined time range.
- For **Service Level Agreements**, e-mail distribution of monthly reports provides a list of operations made for specific customers or departments by the administrators in charge.

SIP Manager

*SIP Manager provides **SIP devices' centralized management**: provisioning, inventory, firmware and configuration update.*

- Bulk user provisionning and automatic deployment
- SIP devices managed: **Thomson ST2022** and **ST2030**.
- SIP users and devices are displayed either in an organization tree or in a multi-selection grid.
- Automated association between OmniPCX Enterprise Users and SIP devices

▼ *A high level of availability*

The trend towards convergence of voice and data on a single network infrastructure, while supporting business critical networking such as life-saving applications, is gaining momentum. As a result, enterprise networks need to deliver a new class of high availability.

The following options will improve the reliability of the whole solution:
- High availability in the IP network infrastructure
- A redundant communications server
- A passive communications server for remote site survivability
- A back-up solution for remote sites

These solutions ensure the continuity of operations, if the network or hardware fails. They optimize server availability at all sites (main site, remote offices).

High availability in the IP infrastructure

The Alcatel-Lucent OmniSwitch 9000s, OmniSwitch 6850s, and OmniAccess Wireless LAN switches incorporate a wide range of features, such as smart continuous switching, wire-speed performance, native server load balancing and firewall clustering. All of these are crucial aspects of availability as they help ensure that mission-critical applications and network security are "always on."

These switches are part of Alcatel-Lucent's end-to-end enterprise switch family. This family includes core switches, stackable/modular closet switches, and wireless LAN (WLAN) switches that use the Alcatel-Lucent Operating System (AOS) for security, simplified OneTouch manageability, high availability, and reduced total cost of ownership. Combined with the Alcatel-Lucent OmniVista Network Management System, the network's high availability is ensured through security features that offer enhanced intrusion control and remediation.

Benefits

- High availability enables users to have seamless network **access** even in the case of a hardware fail over.
- **Non-stop business**

Architecture

▶ *Network topology techniques for high availability*

At the network level, there must be topological redundancy and resiliency in the network links to ensure that no single point of failure exists. Multiple physical paths through the network need to exist that consist of interconnecting closets and core/aggregation networking devices. IEEE standards are used to promote efficient use of those links via the dynamic link aggregation control protocol and the per VLAN spanning tree protocol. Then, technologies such as rapid spanning tree and equal cost multi-path routing are used to quickly detect and divert traffic when failures occur. Lastly, the virtual router redundancy protocol (VRRP) is used to provide automatic backup for critical routers and gateways.

► *Reliability*

Adding components in parallel can also enhance reliability. For example, if one component has an availability of 99 percent and the aim is to achieve availability of 99.999 percent, two redundant components need to be added so that three are operating in parallel. Serial or sequential components, such as cabling or network links where only one is operating at a time, are different; adding further serial components actually decreases reliability. For example, if three components - each with 99 percent reliability are connected in a series - the reliability is reduced, as the failure of one component impacts the other two. To increase the reliability of serial components, redundancy or parallel paths need to be deployed.

► *Hardware requirements for high availability*

Chassis Management Modules (CMM) are the management/supervisory modules that are critical to the entire operation of the switch. They are typically designed to run in redundant configurations with one CMM having the primary role and the other a secondary role. The primary manages the current switch operations, while the secondary runs in parallel, serving as a "hot standby." In the event of a failure, the secondary CMM takes over. What is critical to availability is how fast this failover occurs. With an intelligent design, the CMMs are synchronized at all times, and smart continuous switching is used to ensure that there is no interruption to users or to the flow of data.

► *Good network management improves availability*

Up to this point the discussion has focused on the role hardware plays in ensuring network availability. However, a smart network management system is also required to ensure the network stays available. Supporting this is a recent study by a leading analyst group that revealed that up to 80 percent of network outages are caused by human or process errors such as mis-configuration of devices. To minimize accidental misconfiguration or process errors in network management, several steps need to be taken:

First, the tasks need to be compartmentalized by allowing access only to commands necessary for their function and to limit "exploring and playing." Next complex tasks, such as QoS polices, can be automated via tools such as the Alcatel-Lucent OneTouch network management tool. When enabled, this tool automatically identifies high priority traffic – data or voice – and configures the switches from the edge to the core so they can put high priority polices in place. The last step is to leverage the network management system by identifying ideal windows of time during slow periods in order to update the network devices.

Redundancy with OmniPCX Enterprise

The redundancy option lets you "duplicate" your communications server in case of failure. This means that two servers co-exist for the same solution; one is the "main" server while the other is the "back-up" server. The server databases are also duplicated and updated continuously.

Benefits

- The redundancy option ensures that you **never lose an ongoing communication**, even when the main server switches to the back-up server.
- Redundancy is a cost-effective way of attaining a **high level of availability** on the main site and across the entire communications solution.

▶ *Automatic switchover*

The two servers (main and backup) query each other and continuously manage the multimedia gateways, external connections and other network equipment. If one doesn't answer, the other automatically takes over.

▶ *Spatial redundancy*

Because the main server and backup server are both connected to the IP network, they do not need to be located in the same place. This means they can be located in different buildings or on different premises, thereby facilitating the continuation of activities in the event of a disaster in one of the buildings.

Architecture

The redundancy option is used to switchover from the main server to the redundant server via an IP link. The redundant server can be located on the LAN or WAN and across different subnets.

This redundancy option is recommended more particularly for contact centers providing emergency or non-stop 24/7 services. It provides protection against any failures, while enabling execution of maintenance operations.

Backup solution for remote sites

If the IP link between the headquarters' communication server and the IP multimedia gateway of a remote site is lost, a back-up signaling link is used to establish a connection to the public network. This service is designed to ensure continued telephone service at remote sites.

Benefits

- Offers the best trade-off between cost and availability for remote sites
- Is easy to implement as it requires no specific technical skills at the remote site level: everything is managed centrally.
- All the equipment on these remote sites (analog, digital and IP) is recoverable, and can still transmit, receive calls and access the standard functions offered by the solution (6-way conferencing, transfer, etc.)

Architecture

The IP multimedia gateways are deployed in the remote offices and connected via the WAN. If the WAN fails, the multimedia gateway starts up again and uses a public network connection to re-establish the link with the communication server installed on the main site. Once the WAN has been fixed, the multimedia gateway will reconnect automatically.

Full survivability for remote sites: Passive communications server

If the IP link between the enterprise main site communication server and the IP multimedia gateway of a remote site is lost, a local passive communication server takes over. This means that the remote site remains alive by reaching the local passive communications server. The passive communications server substitutes for the main central communications server, when it is not reachable. This service is designed to ensure full service continuity at remote sites, in case of WAN failure or disaster recovery.

Benefits

- Offers **full service continuity**, whatever the failure, for remote sites
- Assures **high availability** for remote sites; all equipment (analog, digital and IP) is recovered.
- Provides a **high performance** solution with several remote sites being rescued by one passive communications server

Architecture

Passive communications servers are positioned at the remote sites. One passive communications server can rescue several remote sites at the same time. Once the WAN has been fixed, the remote site reconnects to the main communications server. The architecture assures high availability in minimizing additional management, as databases are automatically synchronized between the main and the passive communications server at remote sites.

▼ *Security solutions*

Your enterprise networks and the communication server must be highly available to support the latest business-critical applications and IP communications. They must be reliable and secure in order to ensure that hardware failures don't cause interruptions and that intruders are prevented from accessing and harming the network.

Security needs to be applied at various level of your enterprise:
- Network security
- OmniPCX Enterprise security
- Security options not only cover the headquarters and the main subsidiaries, they also cover the entire network.

Security of the network

Business communications today are dynamic and mobile with the widespread use of PDAs, phones, and PCs over LANs, wireless LANs, and public networks. Keeping this information secure as it passes between and over these devices remains a primary concern for you and your business.

► *Secure, dynamic mobility in the enterprise network*

Your network can play a unique role in protecting the availability and privacy of information. It can prevent security problems by providing identity-based access, by protecting PCs from viruses and malware, and by detecting and controlling intrusions.

Is your network part of the identity management solution and does it protect your PCs? For most organizations the answer is still no. Yesterday's LAN switch does not provide the depth of feature support necessary for an efficient, effective network-based solution.

With the convergence of voice and data onto a single IP network, it's common to connect both an IP phone and a PC to the same LAN switch port. However, yesterday's LAN switches do not provide the tools to authenticate multiple clients on a single port. Today's switches need to be able to authenticate multiple clients on a single LAN switch port to eliminate this barrier.

By deploying auto-sense authentication found in modern LAN switches, an administrator will save costly operations staff time by eliminating the need to partition ports based on the authentication method supported by the device and user that uses the port. Today's switch can support multiple methods of authentication on a single port without involving an administrator.

Alcatel-Lucent Access Guardian eliminates the barriers and reduces the cost of deploying identity-based network access controls and allows your network to help protect PCs from viruses and malware.

► *Secure access to your network*

Access Guardian, designed by Alcatel-Lucent, is a proactive network security solution that provides intelligent interworking between standards-based devices. Alcatel-Lucent Access Guardian provides identity-based network access to enable enforcement of device and network security policies, resulting in increased privacy and communications availability.

Access Guardian authenticates network users including employees, contractors and guests, confirms their PC's conformance to security policies, and then provides access rights based on the user's role. With the Alcatel-Lucent Access Guardian, the network is able to prevent virus and worm attacks, ensure performance, protect IP telephony devices regardless of vendor, and provide network services to all authorized users – all while protecting the privacy and availability of your business communications.

> • *Mobility demands improved IT security.*
> • *Your network is part of the solution.*
> • *Identity-based access ensures security, privacy and* availability.

► *Alcatel-Lucent Access Guardian implementation overview*

Alcatel-Lucent's Access Guardian combines LAN switch and wireless LAN controller authentication and access control features with standards-based directory services.

The LAN switch or wireless LAN controller provides 802.1x authentication and additional authentication options for devices not supporting 802.1x. This means that all devices on the network can be authenticated, not just the newest PCs. In addition to 802.1x authentication, the LAN/WLAN switches also provide auto-sensing authentication policies, access controls after authentication and the option of policy conformance verification.

Access Guardian works with directory servers supporting RADIUS as well as RADIUS implementations from Microsoft, Juniper, Bradford, and others.
Operation of Access Guardian:

- Authenticate the user or device
- Verify the device meets security policies (optional)
- Authorize network access rights based on role and policy conformance

► *Simple to implement*

Most networks have a mixture of users and device types similar to these examples and likely even broader. Printer, LAN-based video cameras, XBox, PlayStation, wireless LAN APs and other non-PC devices make up half of the devices on the network. If the network does not support auto-sense authentication of non-802.1x devices, then implementing 802.1x for some devices requires changing the configuration of the network port as devices are moved or added.

Alcatel-Lucent Access Guardian removes this problem by auto-sense application of multiple methods of accurate authentication. All types of devices can be authenticated without any network configuration changes. This means identity-based access is possible, affordable and accurate.

► *Communication server security*

The OmniPCX Enterprise communication server is based on the Linux operating system 2.4.17.
As part of Alcatel-Lucent's hardening of the Linux operating system, all non-essential software has been removed from Alcatel-Lucent's customized version of the OS. The main advantage is:
⇨ Reducing the potential security risks imposed by the excess of software
Although Alcatel-Lucent has eliminated over 85 percent of the standard Linux core distribution, several optional features remain within Alcatel-Lucent's distribution. Only services that are vital for operation are enabled by default.
The communication server is hardened to resist attacks by broadcast flooding. An internal defense mechanism enables the minimum reservation of processor power to the primary function of the communication server – call handling.
The communications server is resistant against DoS (Denial of Services) attacks and others, including the Ping of Death and Teardrop etc.

► *Network security*

To improve the security at this level, an automatic authentication of IP Touch phones has been put in place based on the standard 802.1X. Alcatel-Lucent supports the recommended standards for local and remote administration such as SSH (Secure Shell), SSL (Secure Socket Layer), SNMP v3 and IPSec (for the 4760 server and client).

► *Security of network administration functions*

Access to the network administration functions is password protected and restricted by access rights to the critical elements comprising the solution. Any illegal access is stored and alarms activated automatically. The validity of the passwords is limited in time.
The management platform administrator can create different users and define a level of authorized actions for each user.

► *Voice communications security*

Security of IP telephony takes a layered approach (network, communication server strengthening, system management); the ultimate stage is security of the users' communications.

► *Voice communications security options*

Since 2005, a secure solution (IP Touch Security with THALES) has been available, which provides the customer with the assurance of full confidentiality against network attacks such as eavesdropping and spoofing of IP phones.
The Alcatel-Lucent solution is designed for real-time traffic and sensitive applications such as VoIP, and is based on a dedicated hardware solution that does not impact the VoIP QoS. The solution is also based on robust and proven Thales Mistral encryption technology, which has been evaluated by the Common Criteria certification for encryption module (EAL3).

5. Hotel/hospital management

Managing a hotel, hospital, clinic, retirement home, conference center, training center or any other reception infrastructure implies specific needs in terms of personnel reactivity, CRM and billing monitoring among others.

That is why Alcatel-Lucent has developed communication technologies specifically adapted to hotel/hospital structures. With Alcatel-Lucent's hotel/hospital offer, you can take advantage of advanced functionalities for room management and comprehensive administrative services (optimized check-in/check-out formalities, simplified billing system); you can welcome your guests or patients even more efficiently than you do today.

Benefits

Alcatel-Lucent's Hotel/Hospital offer has been designed to:
- Increase the **efficiency of your employees:** connect all the personnel to OmniPCX Enterprise so your employees are more available, alert and mobile.
- Improve **customer satisfaction:** service your customers before and after their stay with efficient hotlines and contact centers; during their stay, offer them access to telephone lines, voicemail and the Internet from their rooms.
- Optimize your **operations:** assure the best management of your resources and your costs.

Architecture

An Alcatel-Lucent exclusive and high performance technology, the Alcatel-Lucent Hospitality Link (AHL) is used to connect and synchronize the OmniPCX Enterprise hotel/hospital functions with the front-office applications already installed in your establishment. For example, these include the specialized CMS (Call Management System) and the PMS (Property Management System).

Note: The hotel services on the IP Touch phones can be customized using XML (see OmniPCX Enterprise Main Services, Chapter 1).

▼ *Improving employee efficiency*

The OmniPCX Enterprise helps your employees optimize their daily tasks and thereby save valuable time.

Managing rooms and suites

Permanent updating of room status provides your employees with information about whether a room is occupied or not, whether it is ready to be cleaned, whether a light bulb needs replacing, whether a guest does not want to be disturbed, and so on.

This information can be consulted and modified from the devices/phones in the establishment (room service, reception, management, etc.) or from your front-office application. You can also automatically print out the updates to monitor movements within your establishment.

Managing room service

When a call reaches the room service telephone(s), key information is automatically displayed, including the telephone number of the guest or group, name, language, profile and code of the service that the guest is calling.

This provides your employees with an overview of the purpose of the call before answering and allows them to provide a personalized answer. As a result, they have all the information needed to deliver fast and efficient service to the guest.

Employee mobility

DECT or VoWLAN phones can be made available for your highly mobile employees so they can be reached at all times and made more efficient. (See "On-site/Off-site mobility" sections, Chapter 2)

▼ *Continuously improving customer satisfaction*

Customers in a hospitality environment expect to feel as comfortable, if not more so, than they do at home. A pleasant surrounding, comfortable furniture and welcoming personnel are just the first steps towards the optimal satisfaction of your customers. They also require user-friendly communication services: the ability to contact the reception desk and staff easily, a direct telephone line with personal voicemail and even Internet access.

The OmniPCX Enterprise lets you improve the conditions of your guests/patients during their stay: for example, by providing them with practical and easy to use telephones, by offering them access to voicemail, and by managing their wake-up calls more easily.

Guest/patient telephone lines

By installing Alcatel-Lucent telephones in the bedrooms or common rooms in your establishment, you will be providing guests/patients with maximum service quality - by assuring permanent contact with your personnel and the possibility of making outside calls, if required.

Note: For improved billing transparency, the phones in common rooms or double (or more) rooms can be equipped with a printer to deliver the different callers with call tickets.

▶ *For a single room*

You can make a direct line telephone and personal voicemail (see next section) available to each guest or patient, if in a hospital environment.

From their telephone, guests/patients can call "room service" at any time; make outside calls (via an attendant, by dialing a direct access personal code); activate Do Not Disturb (automatic transfer of the call to an attendant or voicemail) and lock their telephone to prevent any unauthorized use.

▶ *For a suite*

For guests in a suite, you can provide up to five phones. The phones are linked for incoming calls so that all the free phones ring. If all the room phones are busy, the incoming call is put on hold. A beep informs guests, and they can then activate the dual-line function.

Voicemail

The OmniPCX Enterprise allows your guests to move around the establishment or activate the "Do Not Disturb" feature with the assurance that they will be informed of any important messages on their return. They can also take advantage of very functional and easy-to-use voicemail.

▶ *User advantages*

The voicemail in the Alcatel-Lucent hotel or hospital offer provides your guests or patients with access to the following services:
• Easy access to messages by pressing a specific key on their telephone
• Access protected by a personal password
• Ability to customize their own greeting message
• Voice guides available in eight languages
• Access to the establishment's general messages (announcements for visits and tours, reminders of activity times, etc.)
• Message transfer in the event of a room change

Note: Messages received before check-in are kept until the guest/patient arrives.

▶ *Message management*

To enable your customers to access their messages quickly from the telephone in their room, the OmniPCX Enterprise makes it easy for your employees to manage the voicemail system through:
• New message notification (LED on the terminal or another signal)
• Attendant management of messages with the ability to drop or cancel messages
• The ability to print out a list of waiting messages on the hotel's or hospital's equipment

Note: The OmniPCX Enterprise voice mail can manage both guest/patient messages and administrative messages.

Wake-up call management

Your guests/patients can:
• Record, modify or cancel any wake-up call request directly from the telephone in their room, ensuring independence and flexibility (they can also contact the organization's personnel).
• Choose to be greeted by music or a voice guide when they pick up the telephone.
• Take advantage of the wake-up service even when "Do Not Disturb" is activated on their telephone.

The room service can print out a list of wake-up call requests for better visibility of the operations that need to be carried out, as well as any modifications to these requests.

Automatic actions are programmed in the event of no answer (if the telephone rings free or busy): four additional wake-up attempts are made and, if they also fail, an alarm is sent to the organization's personnel (automatic attendant callback or automatic printout of a "no answer" notification).

▼ *Optimizing your operations*

Time is money! And you need plenty of time to:
- process check-ins and check-outs
- enter information regarding guests/patients into the computer
- total the bills for the room, telephone, and meals, etc.

The OmniPCX Enterprise will save you a considerable amount of time by enabling simplified operations. From the reception/front-desk terminal, you can check all rooms (with easier management of your guests'/patients' files, check-ins, and check-outs) and all calls (with a reliable system for metering the telephone communications of guests/clients).

Check-in/check-out management

With the OmniPCX Enterprise system for individual or group check-in and check-out, you can manage clientele movement faster and much more efficiently.

▶ *Guest/patient file*

The OmniPCX Enterprise also lets you store all important guest/patient data such as room and telephone numbers, name and first name, the time they want to be woken, and preferred language - all in a single file that can be consulted at all times.

This detailed file also provides a global view of the rooms: availability (occupied/free), telephone number and status ("Being cleaned", "Do Not Disturb", etc.) Because all the information is centralized, you can manage check-in/check-out/room changes very easily.

The guest/patient file also simplifies calls: any guest/patient or staff member listed can be reached by simply typing in the name and/or first name on the establishment Alcatel-Lucent stations (see the Dial by Name feature, Chapter 1).

Note: A flexible and practical numbering plan means you can assign guests/patients telephone numbers that correspond to their room numbers.

▶ *Individual check-in*

When a guest/patient arrives at check-in, you need only enter the appropriate personal data and different services being chosen at the reception/front-desk computer (opening a personal telephone line, pre-payment, safe, TV, etc.) Your guest/patient file is then updated.

▶ *Group check-in*

When a group arrives for check-in, a group profile is created in the system listing the information applicable to each group member see individual check-in) as well as key data applicable to the group as a whole (room distribution, opening of a group account telephone, collective wake-up option, etc.)

► *Individual check-out*

When a check-out is entered on the OmniPCX Enterprise, a number of actions are automatically carried out:
- Printing of a standard bill
- Cancellation of guest/patient telephone direct access
- Deactivation of the message capability
- Notification of the number of messages not listened to
- Cancellation of waiting messages
- Cancellation of "Do Not Disturb" and telephone lock
- Change of room status ("Occupied" to "To be cleaned")

Note: If the telephone is being used, check-out is only authorized when the call has terminated.

► *Group check-out*

Group check-outs can be done using a single global entry, and result in the same actions as for an individual check-out. In addition, two other actions take place:
- Printout of a standard bill for the entire group, then for each member of the group
- Cancellation of the group number

Managing bills and communications

The OmniPCX Enterprise can transparently integrate bill management in the reception/front-desk terminal.

► *Billing services*

The OmniPCX Enterprise lets you group all guest/patient expenses in a single click (room, telephone communications, meals, TV, and other supplements) to create a single bill ready for printing.

► *Pre-payment of telephone communications*

Upon check-in, the guest/patient can purchase a telephone communications credit. When the credit is used up, a beep indicates the imminent cut-off of the call. Direct access is then blocked (except for emergency numbers), and the guest/patent is informed by a voice guide or an attendant of the available options: recharge the account, pay any excess at the end of the stay, etc.

► *Cost control*

For each call, the automatic selection of the least cost carrier (see ARS service, Chapter 1) lets you offer your guests/patients more advantageous rates and efficient metering. This allows you to bill all the communications of your guests/patients, which increases your revenue.

6. Services

Alcatel-Lucent and its business partners offer a full range of professional and support services that complement services offered by business partners and that fulfill customer requirements to ensure maximum satisfaction.

Services	Detailed offer		
Professional Services	**Integration Services** Consult and Design Integrate and Deploy Project management (for voice and data)	**Application Services** Off-the-shelf applications Customized applications	**Security Services** Consult and design Integrate and deploy Project management
Support Services	**Software Support** Software maintenance and evolution	**Hardware Support** Hardware maintenance and replacement	

For optimal system integration, a wide range of integration services is available, from consulting and designing to operating and maintaining your communications solution. If you need to enrich your solution with additional features, Application Services offers you ready-to-use, off-the-shelf applications for business, contact centers or network management. If further customization is needed, our development teams can customize applications to specific customer needs. Support Services protect your investment and keep your material and software up-to-date.

Professional Services

Integration Services - Consult and Design, Integrate and Deploy, Project Management - enhance your new technologies with complete pre-integration consulting and design services that ensure a successful transition and offer significant customer value.

- **Security Services** build a foundation for your company's overall security strategy through Integration and Customization Services for Alcatel-Lucent OmniAccess™ 3500 Nonstop Laptop Guardian (NLG).
- **Application Services** – Customized applications for specific customer needs and a rich range of business, contact center or network management off-the-shelf applications.

Integration Services

Consult and Design
- Business and solutions consulting
- Proof of concept consulting
- Network audit and design consulting

Integrate and Deploy
- Site survey
- Deployment assistance
- Integration
- Acceptance
- tests
- Staging
- Coaching

Project Management
- Scoping
- Planning
- Delivering
- Coordinating

Application Services

Close partners in solution customization: Our team of experts partner with you to define and develop tailored solutions for your business.

Flexible and transparent development methodology: We keep you fully informed as we work with you to develop and adapt your solution to your evolving needs before it is integrated into your system.

A rich portfolio of existing customized and off-the-shelf applications is available.

Security Services

A complete **security services offer** builds a foundation for your company's overall security strategy while minimizing security risks through services, such as audit, consultation, integration and customization.

Areas:
- Network security: User pre- and post-admission control
- Mobility: Laptop Guardian products
- Business-critical security: OmniAccess 8550 Web Services Gateway

Support Services for IP Telephony
With Software Maintenance Service (SMS) and Software Evolution Service (SES), Alcatel-Lucent services for the enterprise strengthen your offer through adaptable, flexible and extensive support services and a global network of experts.

Support Services for IP Networking
Hardware and software support services for Alcatel-Lucent Enterprise IP networking products are purchased through a service fee that covers both software support (remote technical) and hardware support (advanced replacement and return-to-factory). The hardware support level is defined within the business partner distribution contract: The business partner can order only one level of service – either advanced replacement or return-to-factory – for all the IP networking products purchased.

Software Maintenance Service and **Software Evolution Service**
Reassurance and timely intervention of 24/7 technical assistance by telephone, fax, e-mail or online.
SES also provides unlimited major and minor software updates and documentation, so that your enterprise benefits from the latest applications.

IP Networking
Remote technical software support: Access 24/7 to Level 3 technical support from appropriately certified personnel. Web and phone access to support services. Remote diagnostics. Access to software patches from business partner web site.

Hardware Maintenance Service - unlimited repair and replacement of your communications equipment.
Hardware Replacement Service - eco-friendly solution for replacing material you no longer need.

IP Networking
Return-to-factory (RTF):
Repairs are completed within 21 working days (excluding transportation) from the time the faulty part is received at the Alcatel-Lucent warehouse.

Advanced replacement (AVR):
Replacement of networking infrastructure products within one working day (excluding transportation) from the time the eService request is received at the Alcatel-Lucent Support Center.

Conclusion

Alcatel-Lucent solutions are high performance, innovative solutions that remain accessible to small- and medium-sized enterprises (SMEs) which, like your company, want to reconcile development goals and budgetary constraints. For this reason, the OmniPCX Enterprise has been designed as both an ambitious and realistic solution.

Ambitious…

The Internet has opened huge market opportunities for mid-sized businesses, enabling them to gain significant market share. To continue growing your business, you need a real, competitive advantage. This is where the Alcatel-Lucent OmniPCX Enterprise solution plays an important role: it provides you with a great opportunity to improve employee efficiency, increase customer satisfaction and ensure more cost-effective IT operations. We can assure that your OmniPCX Enterprise solution will stimulate the:

- Efficiency and collaborative work of your existing teams, mobile sales force and in-the-field teams
- Development of added-value services for your customers
- Efficient management of your operations.

…and Realistic

You're competing with larger corporations. Alcatel-Lucent understands the challenges you face. We have taken into account your sales targets and practical constraints to offer you a solution that is adaptable and flexible; a solution that is capable of bringing you innovations in line with rapidly changing markets.

Alcatel-Lucent's commitment is to assure you satisfaction, as well as meet your communications requirements. Your Alcatel-Lucent partner will be happy to provide you with any further information and all necessary support until your new communications system is installed.

www.alcatel-lucent.com