Alcatel-Lucent OmniPCX Enterprise Communication Server

The expert enterprise phone system for medium, large and very large-sized companies

Alcatel-Lucent OmniPCX® Enterprise Communication Server (CS) offers business communications designed for the digital age. It connects the entire enterprise and provides organizations the freedom, quality, and agility they need to grow their business securely.

OmniPCX Enterprise CS Purple is the next generation of business communications solution, featuring advanced and flexible calls management, multimedia conversations, cloud openness and hybrid cloud connectivity with Rainbow™ by Alcatel-Lucent Enterprise to integrate mobility, video conferencing, and secure group messaging into your business applications.

Features	Benefits
Excellent voice connectivity to customers and employees	Quality business response: Zero lost calls; powerful com-munication tools ensure instant connection to the right people
Ensure employees can call wherever they are, on any device	Mobility: Standardized communication experience across the organization; employees can use desk phones, wire-less handsets, or softphones at the office, on site, at home or on the move
A borderless and mobile collaboration application lets employee connect the phone system to the Alcatel-Lucent Rainbow cloud-based unified communications service	Instant business response: Employees exchange instant messages, video, and screen sharing with their teams and business community while leveraging the office phone Simplicity: Unified communications delivered by a cloud service connected to the phone system; seamless user experience; agile IT operations
Serve users across multiple sites, with guaranteed high availability and security	Cost-saving: Expect lower telecom bills with free Voice over IP (VoIP) across sites, built-in least-cost routing and centralized trunks to SIP, and traditional service providers Reliability: High-availability options maintain vital business continuity during network or server outages, and continuous confidentiality with native encryption

Technical specifications

Advanced Business Communications

User experience
- Centralized directory with call by name
- Multi-line telephony
- Call options, including speed dial
- Audio conferencing
- Personal and enterprise call routing and forwarding
- Call shift of current session between desk phone and mobile device of choice
- Call-back and call history features
- Messaging notification and control
- Contextual voice prompts
- Informal group features
- Desk-sharing for shared offices
  - ¬ ALE Enterprise and Essential DeskPhones (IP)
  - ¬ Alcatel-Lucent Premium DeskPhones (IP)
  - ¬ Logon, logoff, re-logon
  - ¬ Automatic logoff

Manager/assistant
- Teams
- Filtered lines and private lines
- Text messaging, IM and voice messaging
- Discreet listening

Teams and groups
- Hunting groups and queues
- Supervision

Multi-tenancy
- Services per entity:
  - ¬ Speed dial
  - ¬ CLIP/CLIR
  - ¬ Auto attendant
  - ¬ Greeting message
  - ¬ Music on hold
  - ¬ Night service

Supported phones:
- Alcatel-Lucent New Office Environment (NOE) protocol
  - ¬ ALE Enterprise ALE-300, ALE-400, ALE-500 DeskPhones (IP)
  - ¬ ALE Essential ALE-20h, ALE-30h DeskPhones (IP/digital)
  - ¬ ALE Essential ALE-20, ALE-30 DeskPhone (IP)
  - ¬ Alcatel-Lucent 8008 (G) Deskphone (IP)
  - ¬ Alcatel-Lucent IP Desktop Softphone

- ¬ Alcatel-Lucent 8158s, 8168s WLAN Handsets
- Alcatel-Lucent 8234, 8244, 8254, 8262, 8262EX DECT handsets

Standard Business Communications

User experience
- Multi-line telephony
- Personal call forwarding
- Group features
- Message waiting indication
- Computer Telephony Integration (CTI)
- Supervision and call pick up

Supported phones
- Session Initiation Protocol (SIP)
  - ¬ ALE SoftPhone
  - ¬ Alcatel-Lucent 8088 Smart DeskPhone
  - ¬ ALE-500, ALE-400, ALE-300, ALE-30, ALE-3, ALE-2, 8008(G) DeskPhones
- Third-party SIP softphones
  - ¬ Developer and Solutions Partner Program (DSPP)

Huddle video rooms
- Session Initiation Protocol (SIP)
- Peer-to-peer video
- Join a video conference
  - ¬ Third-party video room systems (DSPP)
- Supported phones
  - ¬ 8088 Smart DeskPhone

Unified Communications and Collaboration

Enterprise mobility, desktop integration, enterprise instant messaging
- Cloud-based UC&C:
  - ¬ Alcatel-Lucent Rainbow cloud connectivity
  - ¬ Alcatel-Lucent Rainbow user experience
  - ¬ See on-the-phone presence status
  - ¬ Search directory and click to call from desk phone or cordless handset
  - ¬ Pop-up notification when phone rings
  - ¬ Communication history
  - ¬ Call to/from Rainbow client (WebRTC Gateway)
  - ¬ One number service: desk phone, Rainbow smartphone and desktop apps
  - ¬ RCC: support of NOE Phones and ALE-2, ALE-3 and 8008 (G) SIP Phones

Messaging
- Integrated voice messaging:
  - ¬ Alcatel-Lucent 4645 Voice Messaging Service
  - ¬ 7000 mailboxes
  - ¬ 30 simultaneous accesses
  - ¬ Up to 8 supported simultaneous languages per system
  - ¬ IMAP compatible
  - ¬ SMTP for email notification
- Third-party SIP voice messaging: DSPP
- Centralized fax management:
  - ¬ Alcatel-Lucent OpenTouch Fax Center

Web conferencing
- Cloud-based conferencing:
  - ¬ Alcatel-Lucent Rainbow cloud connectivity

Customer welcome and Contact center

Greeting services
- Call queuing services
- Alarm indication
- Attendant group features
- Busy Lamp Field
- Multi-tenant services
- Record online
- Trunk and charging features
- VIP line features
- User management features
- Add-on module
- Headset capability

Attendants
- Centralized attendant console
  - ¬ Alcatel-Lucent 4059EE Attendant Console
  - ¬ ALE Dispatch Console
- Attendant contextual menus
  - ¬ ALE-500, ALE-400, ALE-300 DeskPhones
- Automated Attendant application:
  - ¬ Alcatel-Lucent Visual Automated Attendant (VAA)

Voice announcement
- External/Internal voices guides
  - ¬ From ALE DeskPhones
  - ¬ From audio file in Supervision Desktop

Customer welcome and contact center

- Alcatel-Lucent OmniTouch Contact Center Standard Edition:
  - ¬ Built-in OmniPCX Enterprise call distribution
  - ¬ Distribution over ABC network
  - ¬ Agent context menus: ALE Enterprise and Essential DeskPhones, 8008 DeskPhone, IP Desktop Softphone, ALE SoftPhone
  - ¬ Supervision desktop application
  - ¬ Reports
  - ¬ ALE Connect for omnichannel hybrid cloud services and web-based agent/supervisor desktop application

Recording and quality management

- Phone, softphone and trunk recording:
  - ¬ Alcatel-Lucent OmniPCX RECORD Suite (TDM or IP connectivity)
  - ¬ Third-party recorders: DSPP

Emergency communication services

Building and campus emergency communications solution:

- 112 (EU), E911 (North America) services
  - ¬ Alcatel-Lucent Visual Notification Assistant (VNA)
- Emergency Notification - Notify specific users about ongoing emergency calls

Hospitality communication services

- Guest features
- Room service features
- Room directory features
- Billing and barring features
- Integration with Property Management Systems
  - ¬ AHL: refer to DSPP
  - ¬ SourceTech Extend Embedded PMS gateway with FIAS protocol
- Compatible phone sets: ALE DeskPhones Enterprise and Essential ranges, 8088 Smart DeskPhone, 8008 (G) SIP Phone. 3rd party analog phones, SIP phones (refer to DSPP)

Architecture

System architecture

- 100% software architecture:
  - ¬ 100% IP, SIP communications
  - ¬ Communication Server
  - ¬ Software OXE Media Services (OMS)
- Hybrid architecture:
  - ¬ IP, SIP, digital, analog, DECT communications

- ¬ Communication Server
- ¬ Rack modules and Cabinets for media services and TDM connectivity

Capacity

- Single server or VMware delivery: 15,000 users (IP or SIP), 5000 TDM users, 9,000 Rainbow users
- 100 servers in a single network
- Fully networked servers, 100,000 IP/TDM users with single image
- 250 servers in a supra network
- Several hundred of users in a supra network
- BHCC per server: 300,000
- Software OXE Media Services (OMS)
  - ¬ IP, SIP, ABC network deployment
  - ¬ Up to 120 ports per virtual machine
  - ¬ G.711, G.729.AB, G.722, OPUS
  - ¬ Transcoding
  - ¬ Ad hoc, meet-me and mastered audioconferencing
  - ¬ Dynamic voice guides

High availability

- Communication Server and database duplication
- Seamless communications failover
- Ethernet redundancy on GD-4 and GD/GA-XL, GA-4 boards
- Branch office full continuity with Passive Communication Server (PCS)

Communication Server platform

Industry servers

- HP ProLiant DL servers

Virtual machines

- VMware vSphere
- Linux Kernel-based Virtual Machine (KVM) such as Proxmox
- Microsoft Hyper-V
- Nutanix hypervisor - Acropolis OS
- Amazon AWS

Hosted cloud platform

- In Alcatel-Lucent OpenTouch Enterprise Cloud (OTEC)

Optimized platform

- In Rack modules and Cabinets

Rack modules and Cabinets

OmniPCX Enterprise RM1 (19-in. rack)

- 3 modular slots (stackable up to 3 with RM3)
- Hot-swappable boards
- Height: 66 mm (2.60 in)

- Width: 442 mm (17.40 in)
- Depth: 400 mm (15.75 in)
- Weight: 10 kg (22 lb)

OmniPCX Enterprise RM3 (19-in. rack)

- 9 modular slots (stackable up to 3 with RM1)
- Hot-swappable boards
- Height: 154 mm (6.06 in)
- Width: 442 mm (17.40 in)
- Depth: 400 mm (15.75 in)
- Weight: 17 kg (38 lb)
- Power Supply: 150Watts

OmniPCX Enterprise XL-Rack (19-in. rack)

- 14 modular slots
- 48 V power supply and battery backup
- Hot-swappable boards
- Height: 265,9 mm (10.47 in)
- Width: 482,6 mm (19.00 in)
- Depth: 362 mm (14,25 in)
- Weight: 7kg (15,43 lb)(empty)

Connectivity

- Hybrid SIP, IP, digital, analog switching
- IPv4 or IPv6 support

SIP

- SIP proxy/registrar/redirect server and SIP gateway
- Server redundancy (active/passive)
- Branch office survivability
- SIP Device Management for ALE devices and softphone

IPv6

- IPv6 and IPv4 dual stack
  - ¬ Communication server
  - ¬ RM1 and RM3
- IPv6/IPv4 proxy
  - ¬ RM1 and RM3
- IPv6 or IPv4 stack
  - ¬ ALE DeskPhones (IP)

IETF standards

- SIP and RTP RFC: 1321, 1889, 1890, 2046, 2119, 2198, 2327, 2617, 2782, 2833, 2976, 3261, 2543, 3262, 3263, 3264, 3265, 3311, 3323, 3324, 3325, 3327, 3362, 3515, 3550, 3551, 3725 (partial), 3842, 3891, 3892, 3398, 3608, 3903, 3960 (partial), 3711, 3966 (partial), 4028, 4235, 4497, 4568, 4662, 4733, 4904, 5009, 5246, 5621, 5806, 6035, 6140, 7315, 7433, 7434, 7913, 8599

VoIP
- OPUS and G.722 audio wideband
- G.711 A-law and μlaw, G.729.AB audio
- Call admission control
- Automatic compression algorithm allocation
- Dynamic jitter buffer, echo cancellation, packet loss concealment (PLC), VAD: silence suppression and comfort noise generation
- DTMF Q23, robust DTMF relay, RFC 2833, in band DTMF, DTMF INFO
- Generic signal qualification and modem transport
- Anti-saturation mechanism; backward and forward automatic gain control
- Embedded signal quality diagnostic tool
- QoS: TOS or DiffServ tagging, 802.1 p/Q
- VoIP ticket for quality experience analysis

Fax
- G3, super G3 fall-back
- Automatic fax detection
- G.711 transparent and T.38 and T38 with G711 fallback (SIP)

DECT
- DECT/GAP
  - ¬ Alcatel-Lucent 8214 DECT Handset
  - ¬ Third-party GAP handsets
- DECT/Alcatel-Lucent GAP (AGAP) for Premium Business Communications
  - ¬ Alcatel-Lucent 8234, 8244, 8254, 8262, 8262EX DECT handsets
- Built-in controller
- Hybrid IBS/RBS and IP DECT networks
  - ¬ Alcatel-Lucent 8378 DECT IP-xBS base station
  - ¬ Alcatel-Lucent 8379 DECT IBS
  - ¬ Alcatel-Lucent 8328 SIP-DECT single/dual Base station

VoWLAN
- Premium Business Communications
  - ¬ 8158s, 8168s WLAN Handsets in NOE mode
- Alcatel-Lucent OmniAccess® WLAN access points and WLAN controllers
  - ¬ Built-in QoS

Public networking protocols
- SIP, SIP/TLS, E164 support
  - ¬ Audio, video
- T0-CCS ISDN (BRA)
- T2-CCS ISDN (PRA)
- T1 CCS (PRI)
- DDI or NDDI/non-DID analog networks

Private networking protocols
- Alcatel-Lucent ABC
  - ¬ User feature transparency
  - ¬ Network-wide management
  - ¬ Network-wide routing
  - ¬ Centralized applications
- IP
  - ¬ ABC based on enhanced QSIG (tunneling)
  - ¬ SIP
  - ¬ ABC VPN for networking over ISDN/PSTN network
  - ¬ ABC Direct IP Link
- TDM
  - ¬ ABC
  - ¬ QSIG BC, QSIG GF

Business process integration

Interfaces for Developer and Solutions Partner Program (DSPP)
- Comprehensive set of services to accompany and support Solution developers.
- APIs for Telephony, Management, Analytics, Contact Center and Recording services.
- Industry standard technology such as REST Web services with OmniPCX Open Gateway (O2G) , SIP, LDAP, SNMP, CSTA and other proprietary protocols.
- Refer to DSPP API Communication Hub web site https://api.dspp.al-enterprise.com/

Security by default

Authentication
- Local or external RADIUS for management
- IEEE 802.1X TLS1.2 for phone devices
- Integrated audit tool to assess security management
- Local or external LDAPS authentication for OXE SIP Device Management (for ALE SoftPhone)

Traffic filtering
- Communication Server
  - ¬ Iptables software firewall
- ALE DeskPhones
  - ¬ ARP spoofing protection
  - ¬ PC port switch VLAN filtering

Encryption for management
- SSHv2 for secure sessions
- TLS1.2 for secure HTTP session
- Local or external LDAPS for directory access
- WBM certificate auto-enrollment

Native encryption
- Client/device confidentiality (signaling protocol and media)
- DTLS 1.2 and SRTP with AES 256 or 128
  - ¬ 100% software based
  - ¬ SHA2 certificate authentication
  - ¬ ALE Enterprise and Essential DeskPhones (IP), IP Desktop Softphone
  - ¬ GD/GA-XL, GD4, OMS and PCS
  - ¬ TLS/DTLS scalability with External Encryption Gateway
  - ¬ IP-XBS DECT encryption
  - ¬ A4645 Voice Messaging System encryption
  - ¬ OmniPCX Record encryption
- TLS 1.2 and SRTP with AES 256 or 128
  - ¬ SIP trunks
  - ¬ Rainbow WebRTC Gateway encryption
  - ¬ VAA private SIP trunk encryption
  - ¬ ALE SoftPhone and ALE DeskPhones (ALE-500, ALE-400, ALE-300, ALE-30, ALE-3, ALE-2) in SIP mode
- Migration from IP Premium Security Encryption

Integrity
- Call Server, Media gateway, Enterprise, Essential and Premium DeskPhones binary signatures

User policy enforcement
- Call monitoring and barring
- Internal toll fraud protection by class of services

Session Border Controller
- SIP perimeter defense:
  - ¬ Alcatel-Lucent OpenTouch Session Border Controller (OEM AudioCodes Mediant Virtual Edition)
  - ¬ Zero Touch Remote Worker with ALE SoftPhone and ALE DeskPhones (ALE-500, ALE-400, ALE-300, ALE-30, ALE-3, ALE-2) in SIP mode

Operations

Element management
- Command Line Interface (CLI)
- Web-based management (WBM)
  - ¬ Configuration
  - ¬ Mass provisioning

Centralized operations
- Alcatel-Lucent OmniVista 8770 Network Management System
- Unified Management Center (UMC)
- Media and Management IP flows separation
- Logs and incidents: SNMPv3 and Syslog

- Cloud Connect Operations (CCO)
  ¬ Push/Get licence files
  ¬ Software download and installation
  ¬ Inventory
  ¬ Incidents
  ¬ Remote Management console

European Directives and International Standards

EC Directives
- 2014/53/EU : ROHS
- 2011/65/EU: ROHS
- 2012/19/EU: WEEE
- 2014/30/EU: EMC
- 2009/125/EC: Ecodesign
- 2014/35/EU: LVD
- 1907/2006 : REACH Regulation

Safety
- IEC 60950-1
- UL/CSA 60950-1
- IEC 62368-1
- UL/CSA 62368-1

EMC
- IEC CISPR 32 Class B
- CENELEC EN 55032 Class B
- FCC Part 15B
- IEC CISPR24
- CENELEC EN 55024
- CENELEC EN 61000-3-2
- CENELEC EN 61000-3-3
- ICES-003

Miscellaneous environments
- RM1, RM3:
  ¬ DNV certificate: Maritime
  ¬ IEC 60945: Maritime

- Railway environment:
  ¬ Compliant with NF EN 50121-4, ensuring electromagnetic compatibility for railway environment applications.

Environmental conditions
- ETSI – ETS 300 019 Part 1-1: Storage
- ETSI – ETS 300 019 Part 1-2: Transportation
- ETSI – ETS 300 019 Part 1-3: In Use

Telecom
- ETSI EG 201 121
- ETSI ES 203 021
- ETSI ES 203 038
- ETSI TBR 010, 022, 003, 033, 004, 034, 008
- FCC Part 68
- Canada CS03

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