

SIP phones

Alcatel **OmniPCX** Enterprise

Enterprise

Recommendations for
deployment of SIP phones on
OmniPCX Enterprise

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Along with the launching of Release 6.2 of the OmniPCX Enterprise, Alcatel has validated a SIP interoperability with a certain number of third party SIP devices. This list of certified Devices is provided through the AAPP program by the mean of a set of IWRs (InterWorking Report).

This statement paper is designed to provide Alcatel's partners the necessary visibility and evaluation criteria for deploying low cost SIP Phone devices.

Background:

First of all, Alcatel has placed the IETF SIP protocol at the heart of its open connectivity strategy evolution for Enterprise communication solutions. There are three pertinent domains:

- SIP endpoints: low cost devices, soft-agents
- SIP trunking: IP peering between private and public domains
- SIP multi-media session management for applications (blending, presence, localisation, etc.)

This paper will address and elaborate the market reality of emerging low cost end-points/devices (terminals) based on SIP, and alternative solutions.

For the last two decades the enterprise communication market has been dominated by two desktop device technologies that support and vehicle telephony services, these being digital and analogue phones. Until the recent emergence of IP convergence in 2000-1, analogue phones remained the only alternative technology to digital for the following reasons:

1. Extremely low prices due to economies of scale generated by the residential market
2. Provides a "minimum" of communication services
3. Vast choice of suppliers and availability
4. Independent of the communication infrastructure vendor: "free to choose"
5. Easy to deploy – connects to an analogue port

The arrival of IP convergence technologies has raised the issue of how to address the same basic requirements for low cost communication devices, but in an IP network. Although there are a number of alternatives using IP; soft phones, wifi, PDAs, there is still an opportunity to address physical, low cost desk-top devices using IP technologies. In this context, SIP has been identified as a technological enabler.

- Consequently, Alcatel has been at the forefront of pioneering and enabling SIP as an end-point technology, and has recognized early in the game, the potential to become the ubiquitous low-cost device preference expected of the market. However, the reality of deployment will depend on a number of market pre-requisites that must be addressed before SIP becomes a true and viable solution:
 - The devices must deploy correctly a minimum criteria within the SIP protocol: RFC3261, RFC3262, RFC3264, RFC3265, RFC3515.
 - The devices need to support a minimum of IP infra services and compatibility (codecs, POE, DHCP, QoS tickets etc.)

- The communication system has to control the SIP endpoints across network topologies (IP Domains, Call Admission Control, redundancy, survivability, etc.)
- The level of telephony services provided to SIP phones is lower than the one provided to analogue sets today and is dependant on the capabilities of the set (e.g. conferencing resources in set). Standard SIP Telephony feature set is still limited today. Careful assessment of end users requirements must therefore been done before installing the SIP sets.
- Manageability/serviceability tools must ensure smooth/economic deployment (domain names, proxy addresses, VLAN assignments, etc.)
- Finally and most importantly, the economies of scale are triggered that will allow true low-cost prices to be achieved: ISPs/ASPs (operators/carriers) must finally launch mass-market SIP. This is something that is still not foreseen before end of 2006 beginning of 2007. Care should be taken concerning far-east start-up initiatives pushing forward pricing tactics (e.g. here today - gone tomorrow).

SIP phones certification through AAPP

As far as telephony services are concerned, SIP has still to mature. However, IP-PBX vendors are under pressure from the market to test and recommend a number of SIP endpoints that are interoperable with their IP-PBX range.

Alcatel has decided to partner with Thomson and FCI (First Communication Inc) to certify a first batch of interoperable low end SIP phones, and to give a first level of support to customers when these products are installed.

Alcatel testing has focused on SIP interoperability.

It is important to remember that these sets **are not** part of the official IP Touch Range, nor are they provided as OEM sets. Sourcing of sets is done directly through the vendors (Thomson and FCI).

Consequently, Alcatel's technical support is limited to the issues regarding SIP interoperability only, and not the end user functionality or system interfaces provided by the devices themselves (ergonomics, audio including hands-free, IP infra, availability, security, manageability and serviceability, etc...).

Recommendations for risk containment:

- Beg 2006 : deploy small number of SIP phones to evaluate user acceptability, vendor device reliability, and overall solution management at a local level.
- End 2006 : extend device deployment across network topologies to evaluate device integration and behaviour. Initiate large scale installations as appropriate.
- 2007 : full-scale deployment providing pre-requisite criteria is met (see above)

Before deciding a SIP versus low-end end-to-end (proprietary) technology, it is important to understand not only the end-user feature requirement, but the evolution of the network and IP foundation technologies that might be deployed in an overall enterprise communication strategy.

For example:

- POE compliance/options: 802.3af

- Codec support: G711, G.723 & G.729
- DTMF in-band support
- Encryption protocols: AES
- Authentication protocols: 802.1x
- Wideband telephony: 200 – 7KHz voice
- XML services
- Dual subnet redundancy servers
- Etc.

None of the above can be imposed or guaranteed today by SIP device manufacturers that are linked to arising residential markets and deployment. Each manufacturer is free to invent or deploy the technology as they feel fit. There is no defacto market stability (yet).

The following product guideline indicates the advantages and visibility of Alcatel's support of SIP proposed by Thomson on its ST2020 (as an exemple), and the alternative end-to-end (IP proprietary) technology. This is designed to allow Alcatel's customers to weigh the consequences and potential strategic impact on their core-enterprise communication strategy.

Entry level IP phones	ST2020	e-Reflexe 4010	IP Touch 4018
Infra IP			
POE	Class 0	Class 0	Class 2
DHCP/tftp	YES	YES	YES
QoS 802.1p/DiffServ	YES	YES	YES
Automatic Voice VLAN Assignment	NO (802.1Q)	YES	YES
Call Admission Control/Codec selection	NO *	YES	YES
Authentication (signalling at application level)	http digest authentication	MAC@ login/password	MAC@ login/password or IKE/IPsec
Communications encryption	NO	NO	YES
Com Servers redundancy (level 2)	YES	YES	YES
Com Servers spatial redundancy (level 3)	Yes (with DNS)	NO	YES
Branch Office Availability	NO	Limited	Full
System Integration with OmniPCX	barring, charging,ARS Partial (requires APS)	YES	YES
Management Integration with OmniPCX		YES	YES
* requires evolution on OmniPCX Enterprise			

Entry level IP phones	ST2020	e-Reflexe 4010	IP Touch 4018
Voice			
Audio codecs G711, G723.1,G729A	YES	YES	YES
Wideband ready	NO	NO	YES
DTMF : RFC2833	YES	YES	YES
Mono-line/multi-line	Monoline	Dual line	Multi-line
Loud speaker/handsfree	LS	LS	LS+HF
Basic SIP feature set (CLI, transfer, forwarding)	YES	YES (interop)	YES (interop)
OmniPCX telephony basic and advanced features set	NO	YES	YES
Access to OmniPCX Voice Mail (4645, 4635)	YES	YES	YES
Voice mail services (direct access, forward,MWI)	Basic	Complete	Complete
Complete integration with applications (UC-CC)	NO	YES	YES

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