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commsMundi

Integrated ICT solution

Tech sheet

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Introduction

COMMSMundi is one of the most advanced platforms for Unified Communications (or Multi-service Business Gateway, MSBG), which provides the maximum integration of technologies and significant cost savings. It is made up of a set of modules that can be purchased independently, and which, when combined with each other, allow the creation of an integrated low-cost Information and Communications Technology (ICT) solution that fits perfectly with the needs and growth of the company, ranging from the most basic demand to complete office-in-a-Box or ISP-in-a-Box solutions. The list of modules is extensive and continuously growing: Basic system (includes the unified management system, Telephony services (advanced VoIP switchboard, video conference, fax), multicompany/multiqueue Call Center,

Main features

BASIC SYSTEM

This is the basic module, whose acquisition is essential since it provides the necessary services for the rest of the modules. It consists of the unified management system, the user management module, basic networking functions (routing, NAT, DHCP, and DNS), an NTP server, and a MySQL database.

TELEPHONE SERVICE

The "Telephony Service" module consists of a high-performance digital VoIP switchboard that provides all the usual functions of a standard analog or digital switchboard (calls, forwarding, multi-conferences, IVRs...), along with other more advanced ones:

- Unlimited programming possibilities. Connection to VoIP operators.
- High quality video conference.
- Embedded Faxado T.38. Automatic fax discrimination. Sending and receiving of fax via email.
- access to configuration and consumption via the Web.

CALL CENTER

The "Call center" module allows you to manage multiple queues of calls, and serve several companies simultaneously.

ADVANCED NETWORKING

This module provides advanced packet identification (Detailed Packet Inspection) that allows decisions to be made at the application level or level 7 of the OSI reference model, in addition to having a load balancer that allows managing multiple connections to the Internet and a Control of Tier 7 bandwidth.

IP SECURITY

The “IP Security” module provides a complete security suite (UTM) that allows the company to be protected from unauthorized external access, as well as to limit access from the internal network to the outside.

BASIC IT SERVICES

This module provides basic services for the company, as well as Web, Mail and File Servers.

MONITORING

It provides a complete monitoring service (SNMP, Ping, HPing...) that allows monitoring the traffic on the Internet links, the connectivity with some representative sites, the internal state of the machine and the state of both local and remote sensors.

LINUX OR WINDOWS VIRTUAL SERVER

This service provides virtual machines that allow you to install any client application without interfering with data and telephony services.

CAPTURE AND AUTHENTICATION PORTAL

It allows managing user access to the Internet, mainly in public access applications.

BILLING

This service allows defining telephone rates (price per block of time, price per call establishment and initial franchise in seconds).

Addressed to...

The great capacity of scalability and update of **COMMSMundi** It allows you to cover a wide range of needs, from a small company with very few workers to large corporations with more than a thousand employees. It is therefore an optimal product for both SMEs and large companies and their delegations. Likewise, thanks to its enormous flexibility and modularity, it is equally valid for telecommunications operators, ISPs, booths, Call Centers, industrial control, teleworking, surveillance and security,... It is also especially suitable for managed service offers, both in vendor dependencies as well as customer dependencies. Its possibilities are endless.

Advantage

The integration of VoIP, data, services and monitoring technologies allows for homogeneous management and guarantees interoperability between them. This is complex to achieve when each function or technology resides in a different device, and even more so if the manufacturer is not the only one or there are several integrators. The management and administration interface is simple to configure and at the same time very powerful, which makes it easy to cover even the most complex implementations and customer requirements.

Additionally, it is accessible through a comfortable Web environment from any location for secure communication, which facilitates, speeds up and reduces the cost of the incident resolution process.

COMMSMundi It also makes it possible to offer an integrated solution for voice, data and services with a budget similar to that offered by a competitor for just a cheap digital voice switchboard.

Another very important advantage and a radical change compared to conventional solutions is the reduction of logistics to almost zero: it is a software that is acquired and downloaded from the Internet, avoiding slow and costly transport, customs procedures, storage and stocking. The time from the request to the installation is reduced to hours regardless of the client's location, and always on standard servers.

Engineering is drastically simplified, both in time (days, not weeks or months), and in the level of experience required for its programming. And it is a green technology: a very low consumption system that replaces many others.

Technical specifications

External voice interfaces (lines)

- Internet Supportfaces for analog voice lines, basic access ISDN (BRI), primary (E1/T1/J1), GSM and with VoIP operators, in any combination.
- auto detectto a wide variety of primary and basic access ISDN, analog telephony cards.
- Allows to connect external GSM modules.

Internal voice lines (Extensions)

It supports VoIP terminals with connection to Ethernet, analog or ISDN terminals through ATA adapters and computers with softphones.

Being IP terminals or adapters, the number of extensions is virtually unlimited.

data lines

It admits the connection of several independent lines through ADSL, cable, dedicated networks, radio access or others.

Telephone service

- Voice codec: G.711 (A and Mu law), iLBC, GSM, G.726 RFC3551, G.729 (G.723 on request with extra charge), ADPCM, 16 bit Signed Linear PCM, LPC10.
- Video codec: H.261, H.263, H.263+ and H.264 (pass-through only).
- Session protocols: SIP/RTP, IAX2, T38/UDPTL.
- Functions: caller ID, call forwarding, conference, conference rooms, call transfer, call waiting, music on hold or transfer, interactive voice menus (IVR),

integrated T.38 fax, voice messaging voice accessible via the Web or via email, etc.

- Secure VoIP communications via VPN.

advanced networking

- Routing and advanced NAT, based on traffic classes or types (Levels 2 to 7).
- Balance or charging between multiple Internet connections. Backup of connections.
- Bandwidth Control / QoS level 7, capable of detecting port camouflage attempts.

IP Security - Unified Threat Management (UTM)

It includes a powerful firewall, VPN server under IPSEC and L2TP/IPSEC, Proxy server (scans traffic at the application level), advanced content filter, certification authority, antivirus, antispam, Intrusion Detection System (IDS).

IT basic services

Web server, email server (POP3, IMAP, SMTP, fetch mail, webmail) and files. backup utility.

monitoring

Complete monitoring system that allows:

- Visualize voice traffic.
- file consumption graphs of internal resources.
- Graphically display the data traffic (load distribution between the different managed interfaces).
- Monitor the status of COMMS MUNDI itself or remote sites through SNMP, ICMP Ping or TCP Ping.
- Capture numerical data within any web page and graphically visualize its temporal evolution.
- Monitor the status of signals and/or alarms from local or remote sensors.
- generate alarm (mail, SMS) according to signal levels

Virtualization

Creation of multiple virtual servers (their number is limited by the amount of memory and disk space available). Virtual machines support most Linux distributions, Windows 2000/2003/XP/Vista and other operating systems (Solaris...).

Capture and Authentication Portal

- Management of user access to the Internet and usage accounting.
- Inclusion of personalized information on the welcome and access web page.
- Use ARDIUS as a protocol for Authorization, Authentication and Accounting for use.

Billing

- Definition of telephone rates and assignment of rates based on the characteristics of the calls (internal, national, international, etc.).
- Consult the cost of each call.

call center

- System of automatic call distribution (ACD) with management of multiple queues (campaigns) and various distribution algorithms. Management of telephone agents.
- Integration with the IVR and with the COMMS MUNDI message generation and management system.

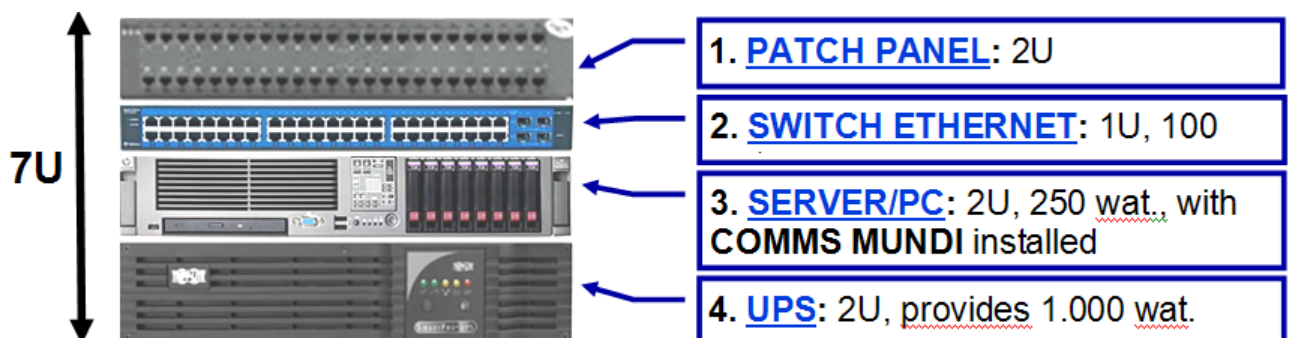
hardware platform

COMMSMundi can be installed on most commercial PCs and servers with 64-bit AMD or Intel processors and virtualization extensions (ask for a list of approved servers) and it is compatible with telephone cards, data (Ethernet), and IP telephone terminals of multiple manufacturers.

COMMSMundi as a comprehensive solution

COMMSMundi is the comprehensive telephony solution that fully covers the above specifications, as well as being optimal for both very small companies and large projects or an operator solution. The main advantages it provides are detailed below:

- **Physical space:** The figure below shows an example of the necessary equipment for a comprehensive telephony solution: A low-capacity UPS, a patch



panel, a small switch and a server in which it is installed. **COMMSMundi**. The space required would be around 7U, a small fraction of what a standard installation occupies. However, this solution could serve networks of several thousand users with the use of a powerful server. This reduced space allows installation in virtually any location, a great advantage over the traditional alternative.

- **Energy consumption:** The figure above also provides an indicator of consumption reduction. Compared to several thousand watts for a traditional implementation, this alternative might only require a few hundred. This reduces the dimensions and price of the uninterruptible power supply (UPS) solution and virtually eliminates the need for an air conditioning installation,
- **engineering time:** The pre-installation of **COMMSMundi** is carried out in about 30 minutes, while the engineering of the whole can be done in less than a week by medium-profile technicians, facts that report a strong economic and temporary reduction in deployment.
- **Stock of spare parts:** The integrator only needs one low-cost server to provide spare coverage for multiple projects.
- **Redundancy in equipment and services:** By adding just a second server, you can have a 1+1 (active/passive) redundant architecture.
- **Scalability and growth:** The internal structure of the SW **COMMSMundi** allows the hiring of modules as needed and with immediate activation. The high efficiency allows maximum utilization of the server's HW resources. In the case of exceeding the recommended load limits, a simple and very economical update of the CPU to one with higher performance and adding more memory can represent multiplying at least by two the capacities of the infrastructure. growth larger ones are achieved by simply replacing the server with another with a higher number of CPUs. Finally, virtually unlimited scalability can be achieved by deploying architectures with several servers, among which the load of services and users is distributed.
- **link redundancy:** CM has the ability to program alternative voice routes and load balancing on data lines that guarantee a very high availability of all communications.

Traffic control: The level 7 traffic control system of **COMMSMundi** reliably identifies different types of applications, prioritizes them and enables deployment.

