



Coral[®] Sea Softswitch Product Overview
Release Version 2.4
May 2007



The information contained in this document is proprietary and is subject to all relevant copyright, patent and other laws protecting intellectual property, as well as any specific agreement protecting TADIRAN TELECOM® LTD.'s (herein referred to as the "Manufacturer") rights in the aforesaid information. Neither this document nor the information contained herein may be published, reproduced or disclosed to third parties, in whole or in part, without the express, prior, written permission of the Manufacturer. In addition, any use of this document or the information contained herein for any purposes other than those for which it was disclosed is strictly forbidden.

The Manufacturer reserves the right, without prior notice or liability, to make changes in equipment design or specifications.

Information supplied by the Manufacturer is believed to be accurate and reliable. However, no responsibility is assumed by the Manufacturer for the use thereof nor for the rights of third parties which may be affected in any way by the use thereof.

Any representation(s) in this document concerning performance of the Manufacturer's product(s) are for informational purposes only and are not warranties of future performance, either express or implied. The Manufacturer's standard limited warranty, stated in its sales contract or order confirmation form, is the only warranty offered by the Manufacturer in relation thereto.

This document may contain flaws, omissions or typesetting errors; no warranty is granted nor liability assumed in relation thereto unless specifically undertaken in the Manufacturer's sales contract or order confirmation. Information contained herein is periodically updated and changes will be incorporated into subsequent editions. If you have encountered an error, please notify the Manufacturer. All specifications are subject to change without prior notice.

© Copyright by TADIRAN® LTD., 2007.
All rights reserved worldwide.

The Coral is protected by U.S. Patents 6,594,255; 6,598,098; 6,608,895; 6,615,404

All trademarks contained herein are the property of their respective holders.

Table of Contents

1. Introduction.....	4
2. Unifying media, communications and applications.....	4
3. System Benefits	5
User Centric	5
Deploying Business Applications	6
Redundancy and Fault Tolerance.....	6
Distribute systems – “Office with no boundaries”	7
Scalability and Load sharing.....	7
Enterprise scenarios	8
4. Architecture - Open Standards.....	8
Operating Systems	9
CTI and Data Protocols.....	9
VoIP Protocols	9
Telephony Protocols	10
5. Administration	11
6. Hardware.....	14
Server	14
Wave Gateway Office.....	14
VoIP gateways	16
Sentinel Pro.....	18
VoIP Terminals.....	18
7. Applications	21
Unified Messaging	21
SIP Video.....	22
SIP Wireless.....	22
Conferencing.....	22
Distributed ACD	23
Closed User Groups	23
FlexIP Softphone	24
8. Coral Sea Softswitch Highlighted Feature List	26
Applications	26
Web Admin	26
Infrastructure.....	26
Closed User Group.....	26
IP-Net.....	26
IP Station Features	27
General Business & Features (SIP and MGCP)	27
Interfaces.....	28
Endpoints	28
API	28

1. Introduction

Over the past two decades, the communication industry has experienced the greatest technology evolution since the invention of the telephone in 1876. With the introduction of data into the voice world, the landscape of products and services has forever been changed.

From a communication perspective, the world has become smaller and international boundaries no longer exist. The work force can now be leveraged on a global scale and businesses no longer require a brick and mortar mentality to drive profitability and growth.

The demands on the communication industry create both challenges and opportunities for manufacturers. Open architecture platforms supporting industry standard voice, data and video applications are the expectation of the marketplace. This expectation, coupled with traditional voice reliability, presents additional challenges that must be continually addressed.

Organisations contend with increasingly complex communications environments featuring a wide array of communications methods and devices. Employees and customers communicate with each other through infinite combinations of phones, voice messaging, e-mail, fax, mobile clients, and rich-media conferencing. Often these tools are too complicated to operate effectively. The results are frustrated employees, information overload and multiple communications that slow down processes, reduce productivity and delay decisions.

Tadiran Telecom® has accepted the industry challenge and surpassed market expectations with the release of the Coral® Sea Softswitch. This solution not only provides a unified communication platform but also provides our clients a solid migration path to emerging technologies.

This traditional value must never be overlooked and demonstrates the longstanding dedication and commitment to our clients.

This document provides a thorough overview of the Coral Sea Softswitch demonstrating its “BIG” capabilities in its small box.

2. Unifying Media, Communications and Applications

The Coral Sea Softswitch simplifies and combines voice, fax, video, and IP communications. It provides structure and an intelligence application that helps organisations integrate their communications more closely with business policies and practices. Instead of changing your business to fit equipment limitations, the Sea Softswitch is an application that allows you to configure and customise it to your needs.

With the Coral Sea Softswitch, employees, customers and business partners can communicate easily using advanced unified applications such as video conferencing,

integrated voice conferencing, mobile IP soft phones, voicemail, and more. The advanced web-based centralised management saves administrators and end users time and helps control costs, while improving productivity and competitiveness.

The Coral Sea Softswitch is very scalable and can easily fit from the smallest organisation to the largest enterprise. Using off-the-shelf servers, telephony gateways and endpoints, the Sea Softswitch can be tailored to fit any application in any environment.

The Coral Sea Softswitch can drive a large enterprise's communications environment or it can be used as an adjunct communication system providing companies with advanced features like:

VoIP network server	Communications for mobile workers
SIP video	Disaster recovery system
Conferencing server	Intelligent gateway server
IP call centers	

With a rich legacy of traditional telecom interfaces and compliance to industry standards, the Sea Softswitch can be connected in front, along side or behind existing telephone systems, providing advanced features listed above.

3. System Benefits

User Centric

Technology has made great in-roads in the home. People are now using multiple computers, mobility and SMS via cellular phones, video calls and conferences through IM to control who is contacting them and when. As consumers grow comfortable with these new technologies at home, they will want the same experience and empowerment within their business.



The Sea Softswitch uses the same technology standards as many service providers. With a simple-to-use web-based interface, users can start to improve their communication efficiency by taking control of who is contacting them, and when. Real-time communication means clarity and efficiency. Off-line communication misses key elements (i.e., interaction, inflection, tone relation

building, etc.), which causes misunderstanding and confusion. User interaction with the Sea Softswitch allows the creation of a virtual presence or office, allowing continuous connections whenever and wherever possible.

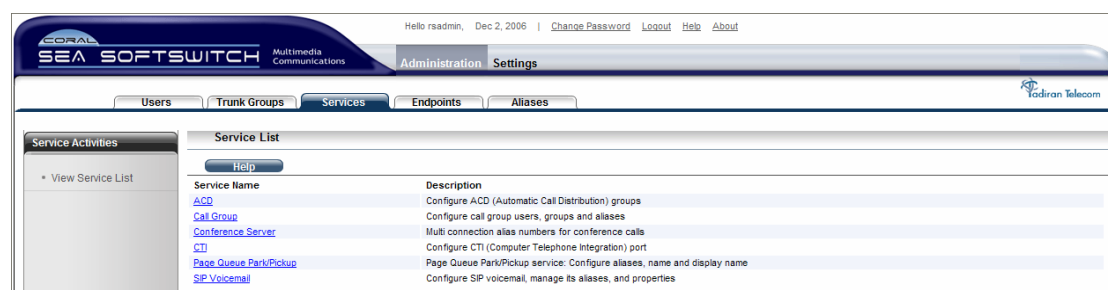
The Sea Softswitch presents the user with a unified communication experience of voice, data and video through easy-to-use desktop applications. If they want to check

voice messages, video conference, SMS, conference or presence, the Sea Softswitch supports these applications.

Deploying Business Applications

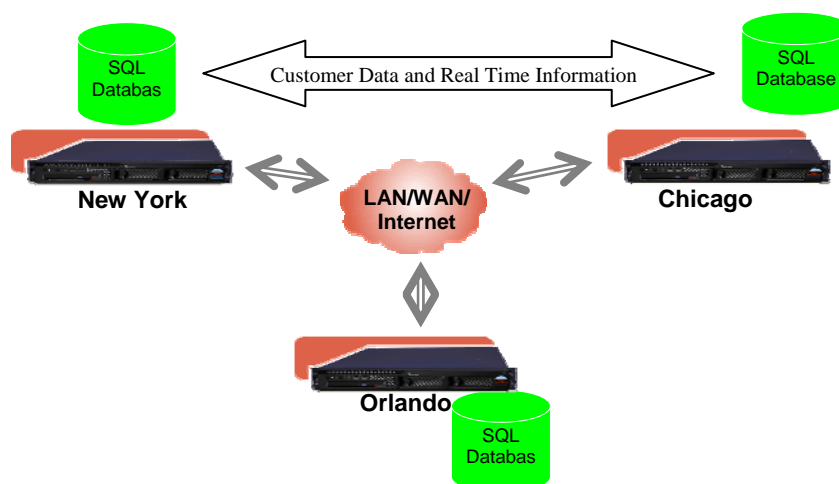
The main challenge facing businesses today is staying in front of the competition and anticipating market transitions. To do this, business practices and procedures must be enabled or changed very quickly. A company's communication platform needs to be open, modular and adhere to industry standards.

The Sea Softswitch's open system architecture allows for the changing of business practices or applications quickly, thereby increasing productivity and giving your company a competitive edge. The Sea Softswitch's connectivity allows an easy-to-use interface to customers and the ability to quickly and efficiently connect to coworkers. With the Sea Softswitch, when a new business process is required, new application integration and deployment is easy.



Redundancy and Fault Tolerance

Each server in a Sea Softswitch deployment accesses the same database. In duplicated or multiple Sea Softswitch server environments, all customer information and events in the Sea Softswitch are maintained inside each server, including events and configuration changes to all servers simultaneously.



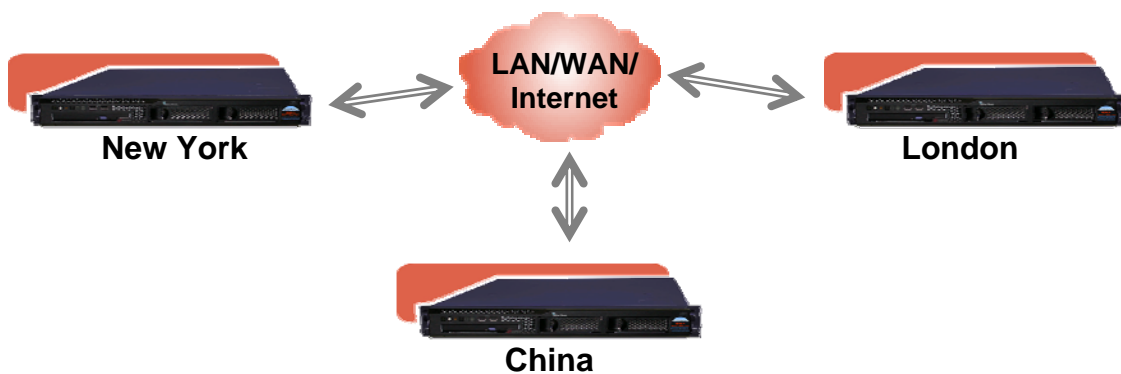
This sharing of information ensures that unlike cluster storage systems, which are typically made up of network-connected storage with a collection of managed physical disks that store static information, all Sea Softswitch servers share the

dynamic information or event states of all end-points, gateways and users in an enterprise network along with database information.

If a server or network connection fails, another server can automatically take over the event processing and administration. Once connected back to the network, updated information is automatically passed to the server.

Distributed Systems – “Office with no boundaries”

The Sea Softswitch knows no geographical boundaries. This allows server engines and telephony gateways to be strategically placed in an enterprise for reliability and disaster recovery. For example, long distance or SIP trunk gateways can be placed in New York, London and China, and all programmed users and applications can access them.



Adding an application to one Sea Softswitch server is the same as adding the application to every Sea Softswitch server in the network. Every user can have access to the application making deploying new services easier and faster.

All Sea Softswitch servers connected in a LAN or WAN environment are continuously updating one another. This functionality is included on all Coral Sea Softswitch servers. When two or more Sea Softswitch servers are connected in a WAN data network, customer database information and call events are shared between servers.

The Sea Softswitch administration screen allows a GUI interface to the status of all the Sea Softswitch servers. If connectivity between servers is disrupted, the Sea Softswitch programming screens will display the loss of connectivity so appropriate action can take place.

Scalability and Load Sharing

Each Sea Softswitch supports high traffic request for services, whether it is voice, video or feature based. If additional traffic or load capabilities are required, you simply add another Sea Softswitch server. For example, when opening up a new office or building, you simply connect the Sea Softswitch servers together, and they look and act as one single server.



This unique expansion capability of the Sea Softswitch gives enterprises and customers unlimited growth potential.

Enterprise Scenarios

The Coral Sea Softswitch has the flexibility and scalability to fit into many enterprise and business sizes. These include:

Standalone (SME) - the Sea Softswitch in an all-IP environment. When combined with telephony gateways and SIP analog trunk and station adapters, the Sea Softswitch gives small growing businesses the communication tools that are cost effective and feature rich today, while providing limitless expansion for the future.

Networking or Enterprise Communications - with its ability to join geographically dispersed satellite or remote offices, the Sea Softswitch is the perfect platform to provide seamless (networking or enterprise) communications.

Co-Hosted Solution - the buzz word in telecommunications today is "hosted" solutions. One issue that hosted solutions cannot overcome is redundancy or latency of the last mile. The Sea Softswitch overcomes this obstacle by allowing a local processing engine to be located on the customer premises. The database for the customer is housed in the central NOC (Network Operations Center), as well as locally at the customer premises. For disaster recovery, if a network failure occurs, the local Sea Softswitch processing engine continues to process calls seamlessly and without interruption.

The Sea Softswitch in a co-hosted implementation allows call centers and CTI functionality to access legacy databases in a secure and reliable local network, rather than exposing sensitive customer information to WAN connections.

4. Architecture - Open Standards

The Sea Softswitch is designed around open industry standards that are focused on applications, operating systems, CTIs, VoIP, mobility, telephony and messaging.

Operating Systems

The Sea Softswitch uses a run-time Linux operating system. This operating system has the same functionality of other Linux operating systems, but has many non-business applications and drivers removed.

Open Database

The Coral Sea Softswitch comes with an enterprise-class SQL database. It is highly scalable both in the sheer quantity of data it can manage and in the number of concurrent users it can accommodate.

CTI and Data Protocols

The Sea Softswitch supports open industry standards for computer telephony integration (CTI) of third-party applications. CSTA is a universally accepted protocol that allows information exchange between external applications and communication systems. The Sea Softswitch supports CSTA Phase 3 protocol standards used in this information exchange.

The Sea Softswitch also makes it easy to exchange information between an existing company database and its own. With Lightweight Directory Access Protocol (LDAP), companies can share information from their existing data records with the Sea Softswitch.

VoIP Protocols

The Sea Softswitch conforms to published VoIP protocols. These include SIP, MGCP, Video and Fax/Modem.

SIP

Session Initiation Protocol (SIP) is a signaling protocol that is used by technology products for creating session-oriented connections between two or more endpoints in an IP network. These endpoints could be IP telephones, instant messaging clients, or a collaborative multimedia conference application. The core protocol itself is defined within a standards forum. These protocols or RFC definitions for applications related to telephony and multimedia have been generally accepted by telecommunication equipment manufacturers.

SIP is becoming the defacto standard for VoIP switching. Though its feature set may be limited when compared to other current protocols, its adoption by the IP and IT communities mean that more collaborative and interoperable features will be developed through SIP than any other protocol in the future.

The Coral Sea Softswitch currently supports the following SIP RFCs:

- RFC 3261 (SIP: Session Initiation Protocol)
- RFC 3262 (Reliability of Provisional Responses in Session Initiation Protocol (SIP))
- RFC 3263 (Locating SIP Servers)
- RFC 3264 (An Offer/Answer Model with Session Description Protocol (SDP))

- RFC 3265 (Specific Event Notification)
- RFC 2327 (SDP– Session Description Protocol)
- RFC 1889 and 1890 (RTP/RTCP)
- RFC 3515 (REFER)
- RFC 2833 (DTMF over IP)

As more RFCs become published standards, the Sea Softswitch's open standards architecture will allow these functions to be easily integrated.

MGCP

Media Gateway Control Protocol (MGCP) is a centralised signaling protocol used for controlling telephony gateways from external call control elements called media gateway controllers or call agents. A media gateway or call agent is a network element that provides conversion between the audio signals carried on traditional analog and digital TDM circuits to data packets carried over the Internet or over other packet networks.

MGCP assumes call control architecture and call agents will synchronise with each other to send coherent commands to the gateways under their control. MGCP is, in essence, a master/child protocol, where the gateways are expected to execute commands sent by the Call Agents.

Below is a list of MGCP RFCs that the Coral Sea Softswitch supports:

- RFC 2705 Media Gateway Control Protocol (MGCP) Version 1.0
- RFC 2897 MGCP Advanced Audio Package
- RFC 2833 RTP Payload for DTMF Digits, Telephony Tones and Telephony
- RFC 3064 MGCP CAS Packages
- RFC 3435 Media Gateway Control Protocol (MGCP) Version 1.0.
- RFC 3660 Basic Media Gateway Control Protocol (MGCP)
- RFC 3661 Media Gateway Control Protocol (MGCP) Return Code Usage.
- RFC 3991 Media Gateway Control Protocol (MGCP) Redirect and Reset Package
- RFC 3992 Media Gateway Control Protocol (MGCP) Lockstep State Reporting

Fax and Modem

The Sea Softswitch also supports both fax and modem connections. Unlike voice calls that have smooth analog signals, fax and modems can have sharp peaks and dips in the analog signals. This means that special compression and decompression algorithms must be employed to ensure none of the information is lost. The Sea Softswitch supports this special signaling Internet Fax and Modem Support (T.38).

Telephony Protocols

Many companies still have traditional TDM or circuit-switched communications systems deployed. The Sea Softswitch also adheres to traditional TDM telephony protocols. This enables the Sea Softswitch to network to legacy telecommunications equipment.

Networking - QSIG

QIG protocol is a universally accepted standard that allows unlike telecommunication platforms to network together. This allows PBX features to be extended across different platforms. The Sea Softswitch platform supports a wide range of features including:

Name and number ID	Message Waiting Indicator
Camp On	Conference
Paging	Transfer and Transfer Recall
Call Forwarding	Centralised Voicemail
Call Back (Busy or Idle)	Tandem Trunking
Centralised Attendant	Call Pickup

Networking QSIG support is available either by traditional ISDN PRI circuits or by VoIP.

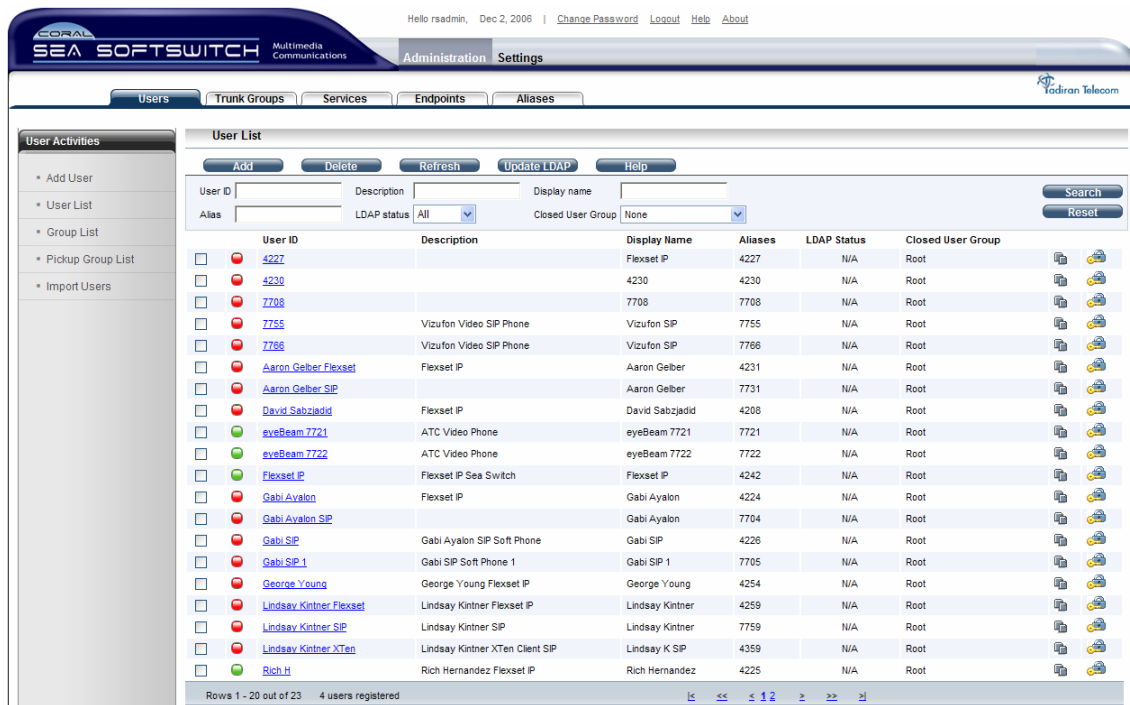
Standards Compliance:

Basic Call	ETS 300172, ECMA 143, ISO DIS11572
Generic Procedures	ETS 300239 clause 7.3 (Version 1)
	(including Connection Oriented Procedure Transport)
Primary Rate Physical Interface	ETS 300011 (Version 1)
Data Link Layer	ETS 300170
	ISDN DSS1 Compatible
Network Facility:	Primary Rate Interface (PRI) ITU Q.931
Trunk Interface Card:	PRI23 or PRI30 or VoIP

5. Administration

Without easy administration, an application of any type is difficult to deploy and costly to your business. The administration console of the Sea Softswitch is designed for intuitive ease-of-use, and gives a true portal into the performance of the system.

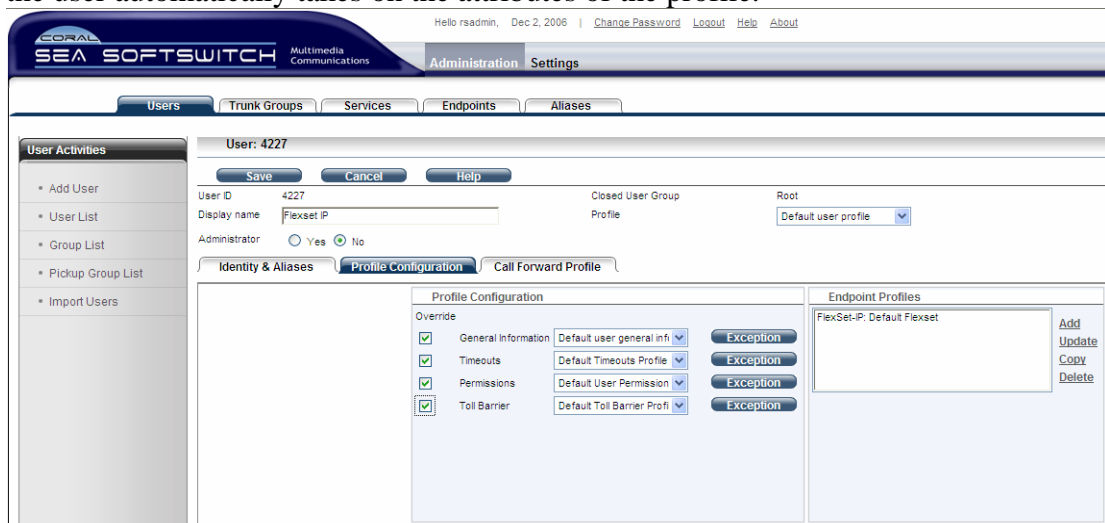
With the Coral Sea Softswitch, the system administrator does not need to know SQL or character/line programming. All programming of the Sea Softswitch is done through a web-based GUI interface. Additionally, all database programming is accomplished in real time, with changes in the database instantly and simultaneously distributed to all Sea Softswitch server engines on the system.



Programming the Sea Softswitch, whether single or multiple Sea Softswitch servers share the same database, can be accomplished through one access point. Simply launch an Internet session (Internet Explorer 5.5 and up) in a static IP address or URL name and you have access to the Sea Softswitch login screen.

The Sea Softswitch user interface was designed to simplify the programming for the system administrator. The programming screen is very intuitive with tabs on the top and a left hand navigator bar. A complete on line programming manual is available by simply pressing the F1 key on the keyboard from anywhere on the programming interface.

The Sea Softswitch also makes implementing the system quick and very easy. Profiles can be defined and assigned to any system, department or user. A profile consists of predefined program entries of commonly grouped items. Once a profile is assigned, the user automatically takes on the attributes of the profile.



If a user needs to make changes within the profile, instead of making a new profile, they simply go into the user definition and make an exception entry to the profile. This greatly simplifies the programming and makes the Sea Softswitch extremely flexible.

The Sea Softswitch provides multiple levels of administration. This empowers users to take advantage of all the features of the Coral Sea Softswitch they are allowed to access.

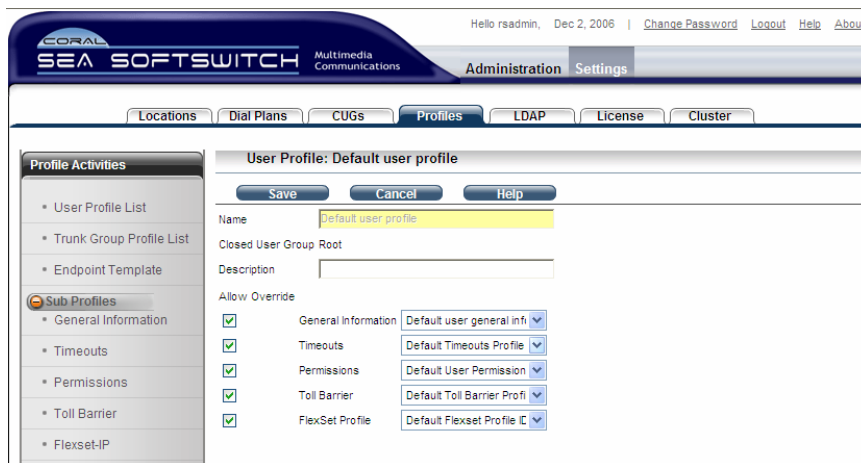
Root or System Admin - this level allows the system administrator(s) to access main system and subsequent Closed User Groups and user functionality. User profiles can be created to allow or restrict access to certain areas of the program.

Closed User Group Admin - This level of administration can program all aspects associated with their Closed User Group. This includes system, application, feature, user, telephony or IP Gateways, as well as performance monitoring and historical event reporting of the Sea Softswitch. This level of admin cannot access any other level of administration that is not associated with their Closed User Group. Profiles for Closed User Groups are available to either allow or restrict access to areas of the Sea Softswitch.

User Admin - this level of administration empowers the end user to control user-centric functionality and applications.



The Coral Sea Softswitch is easy to program and deploy. It allows common profiles to be created that significantly reduce deployment time. These profiles can be assigned system wide, to a group of users in a Closed User Group, or to a single user. Information contained in a profile includes device information, timers, restrictions, scheduling, locations, etc.



Once assigned to a user, if single items need to be changed, an exception of the items can be programmed instead of creating an entirely new profile for the user. For example, User A wants his Call Forward No Answer timer to be 45 seconds instead of the 30 seconds assigned in his existing profile, a single exception of his No Answer timer is allowed.

6. Hardware

Server

The Sea Softswitch applications are shipped pre installed on IBM servers. The Coral Sea Softswitch is developed to use off-the-shelf, commercially available gateways as well as specialised gateways and server manufactured by Tadiran Telecom.

Wave Gateway Office

The Wave Gateway Office allows traditional TDM station and trunk cards to work seamlessly with the Coral Sea Softswitch. The Wave Gateway Office has built-in hardware to support, communicate and work with the Sea Softswitch.



The Wave Gateway Office offers outstanding value in a compact system. Its compact communications platform is based on the full-size Coral IPx family of telephone systems. The Wave Gateway Office is designed to cost-effectively bring the proven performance to businesses needing as few as 4 TDM ports with seamless growth to 228 TDM ports and advanced features and IP connectivity that small businesses need to grow and compete.

The heart of the Wave Gateway Office's modular design and flexible architecture is a powerful 32-bit Intel processor. The Wave Gateway Office provides the same robust feature set as the larger Wave Gateway systems, at a reduced cost.

The Wave Gateway Office is made up of small, compact cabinets. The 2U data cabinet is completely self-contained and convection cooled. The main cabinet of the Wave Gateway Office houses the central processor, and peripheral cards. The system can be increased in capacity by adding expansion Wave Gateway Office expansion cabinets. The Wave Gateway Office supports three cabinets: one main and two expansion cabinets.

The Wave Gateway Office houses all hardware components including the power supply unit, control cards, peripheral cards, and the I/O connections to provide a cost-effective gateway to traditional communication components. The cage includes the following:

- Built in voice/data convergence
- Fits 19" and 23"-racks, including racks designed to earthquake area

- requirements
- Provides AC and DC input power supply in every cage
- Enables connection to traditional trunking such as E1, T1, PRI or analog trunks
- Enables connection to traditional stations such as industry-standard telephones and Coral FlexSet digital telephones
- Up to 3 cabinets per system
- Free ventilation without fans
- RFI protection
- Supports the hot insertion of peripheral cards under power conditions

Existing customers

The Coral IPx, manufactured by Tadiran Telecom, has a rich heritage of rock solid telephony communication platforms. Many customers have made substantial investment in hardware and telephones with the Coral. The Sea Softswitch allows customers to take advantage of their previous Coral systems hardware investments. Any Coral system (manufactured since 1989) can be converted to work as a telephony gateway (combining Time Division Multiplex switching and Voice over IP networking) that communicates and works directly with the Sea Softswitch. Three steps are required to turn Coral systems into a Wave Gateway:

1. Compatible central processor – for a Coral to work as a telephony gateway, the central processor in the Coral system must be a MCP-IP2 for Coral SL, 200 or 500 systems, or MEX-IP2 for all other Coral systems (excluding ATS common control).
2. Signaling card – A daughter card called a Management Auxiliary Processor (MAP) is installed on either the MEX-IP2 or MCP-IP2. This is the signaling and control card to the Sea Softswitch call processing engine. A LAN or WAN connection is required between the Sea Softswitch server and the MAP card.
3. Media resources – A PUGW gateway card with an MRC media resources daughter card is required for analog/digital conversion to IP and vice versa.

Network to legacy telephony equipment

The Sea Softswitch, combined with a Wave Gateway Office, has a wide range of standard telephony interfaces and open networking protocol. This telephony gateway can either be a standalone system or a networked node. The Wave Gateway Office can turn any legacy telephone system into an IP-enabled platform or networked node. Customers can take advantage of the Sea Softswitch's features, open architecture and networking ability.

Trunking and Country Type Registration

Combined with the Wave Gateway Office, the Sea Softswitch supports a wide variety of traditional trunk interfaces. These interfaces include:

Analog loop start trunk	Analog ground start trunk	ISDN PRI23	ISDN BRI	ISDN PRI30
Analog 2 or 4 wire Tie Line	Analog DID	Digital 30T	Digital T1	

With type acceptance in over 40 countries around the world, the Wave Gateway Office provides flexibility to connect to traditional networks using standard interface cards. The Sea Softswitch and Wave Gateway Office can be used in multiple countries and across different networks. The Wave Gateway Office provides the physical connection to the local telecom provider circuit. The Sea Softswitch provides the call signaling and processing engine. This allows the Sea Softswitch to provide interfacing and compliance in the following countries:

Canada	United States	Mexico	Brazil	Argentina	Chile
Portugal	Spain	Ireland	United Kingdom	Belgium	Netherlands
Poland	Lithuania	Latvia	Russia	Byelorussia	Ukraine
Moldavia	Romania	Hungry	Italy	Greece	Bulgaria
Germany	Israel	Azerbaijan	Uzbekistan	Kazakhstan	India
Philippines	Thailand	Korea	Taiwan	Macau	Vietnam
Malaysia	Australia	New Zealand	Nigeria	South Africa	

VoIP Gateways

SIP Gateway

One of the benefits of VoIP is the introduction of SIP trunking and providers. This allows companies to have presence in different geographical regions without a physical office. SIP trunk providers can assign a telephone number from any country around the world. This allows people in that area to dial a local telephone number and their call is transported and connected to any office around the world. Companies can also take advantage of these SIP trunks when placing outgoing calls. In most cases, the cost of these outbound telephone calls is considerably less than traditional telephone circuits when dialing long distance or overseas.

The Coral Sea Softswitch connects to one of several types of trunks:

1. SIP or MGCP analog trunk adapter (commonly known as a foreign exchange originating or FXO). These gateways are used to convert traditional trunks to VoIP protocol. There are a finite number of conversations the hardware can handle and there is a one-to-one relationship with the hardware interface and the traditional trunk.
2. A traditional trunk card interface (ISDN PRI or BRI, analog trunk, analog DID or analog tie line) using a Wave Gateway cabinet.
3. SIP trunk - a company may subscribe to a SIP trunk provider over a broadband Internet connection. The broadband Internet connection requires a static IP address at the company's location. The SIP trunk provider sends and receives voice calls to this Internet IP address. No physical hardware registers to the Sea Softswitch.

The number of simultaneous calls is limited by:

1. Bandwidth of the broadband connection to the Internet.
2. The allotted number of simultaneous calls by the SIP trunk provider.

3. The number of licenses authorised on the Sea Softswitch.

With unregistered trunks, a company subscribes with a SIP trunk provider over a broadband Internet connection. The broadband Internet connection requires a static IP address at the company's location. The SIP trunk provider sends and receives voice calls to this Internet IP address. No physical hardware registers to the Sea Softswitch.

Analog Station and Trunk Adapters

Analog telephony gateways provide cost-effective, cutting-edge technology solutions. These stand-alone analog VoIP Gateway subsystems provide superior voice technology enabling Single Line Telephones (SLT) and analog trunks to connect to the IP world through the Coral Sea Softswitch. The adapters are available in various sizes, enabling the system to be configured to meet requirements.

Six Coral Teleport options are available:

- Coral Teleport MP-102/FXS 2-port (for SLT, fax, etc.)
- Coral Teleport MP-104/FXS 4-port
- Coral Teleport MP-104/FXO 4-port (for trunks)
- Coral Teleport MP-108/FXS 8-port
- Coral Teleport MP-108/FXO 8-port (for trunks)
- Coral Teleport MP-124/FXS 24-port

Gateway Description

Coral Teleport MP-1xx telephony gateways provide excellent voice quality and optimised packet voice streaming over IP networks, enabling voice, fax, and data traffic to be sent over the same IP network.

The Coral Teleport incorporates up to 24 analog ports for connection, either directly to an enterprise PBX (MP-104/108 FXO), or to phones and faxes (MP-102/104/108/124 FXS), supporting up to 24 simultaneous VoIP calls. Additionally, the Coral Teleport is equipped with a 10/100 Base-T Ethernet port for connection to the LAN.

The Coral Teleport MP-1xx gateways are best suited for small to medium-sized businesses, branch offices or for residential telephony gateway solutions.

The gateways enable users to make free local or international telephone/fax calls between distributed company offices, using their existing telephones/faxes. These calls are routed over the existing IP Internet or Intra-net corporate data networks ensuring that voice traffic takes the minimum of space on the data network.

The Coral Teleport MP-1xx gateways are compact devices, designed to be installed either as a desktop unit or installed in a 19-inch rack.

They support SIP, enabling the use of "voice over packet" solutions in environments where each business or residential location is provided with a simple Media Gateway. This provides the enterprise with a telephone connection (e.g. RJ-11), and the ability to transmit voice and telephony signals over a packet network. The Media Gateways

are controlled by the Sea Softswitch (the Call Agent) that performs the routing of the calls.

Sentinel Pro

The Coral Sentinel Pro is a Session Border Control (SBC) solution enabling connection of remote IP phones that sit behind NAT (Network Address Translation) servers or firewalls.

In standard operations, a firewall has to expose numerous holes in its defenses - one for each endpoint. The Coral Sentinel addresses that and maintains one defined access point to the firewall or NAT server, through which all incoming VoIP traffic connects. Therefore, many separate IP phones can connect to the Internet via the firewall or NAT server, without the need to open up a separate channel to connect each call, as all incoming traffic is now routed through one firewall-controlled channel to the Coral Sentinel. This also eliminates the need for VPN (Virtual Private Networking) software for VoIP devices connecting to the Sea Softswitch.

The Coral Sentinel enables the connection between external IP phones via the NAT server, and the local IP phones via the Coral Sea Softswitch server and the LAN.

The Coral Sentinel is designed to fit into industry standard 19" data racks.

Embedded Web Server

The Coral Sentinel Pro can be configured and monitored via the LAN/WAN with a standard web browser, simplifying maintenance and supervision.

Technical Description

The Coral Sentinel Pro supports up to 240 endpoints and up to 10, 20, 75 or 150 concurrent RTP sessions at any one time.

VoIP Terminals

T207 VoIP Telephone

The T207 VoIP telephone is a full-featured IP phone, providing the full array of functionality with all of the flexibility of a LAN connection. The T207 enables the user to move the telephone to any LAN jack while preserving its unique identity.

The T207 allows integration of the company-wide data network with voice network features. This IP keyset is ideal for businesses operating a distributed network and remote locations of various sizes and capacities. It provides a flexible solution for utilising the data network as a unified converged network for voice services. The ability to connect via a LAN enables installation of the T207 at any available network port without geographical consideration. The T207 can be used as a remote keyset station, home office phone or remote branch office application phone. Additionally, because the T207 can be used as a full-featured keyset while connecting almost anywhere, it facilitates geographically dispersed ACD and Hunt groups, and fully featured Call Center applications.

The T207 supports two signaling protocols. It can support either industry-based SIP standards or it can support Tadiran Telecom's MGCP protocol, giving the user additional features and functionality beyond the limits of SIP-based protocols.

The T207 IP telephone is a high performance, easy-to-use instrument combining excellent voice QoS (quality of service), comfort, and convenience in a state-of-the-art communications tool. The T207 provides sophisticated features for the remote office, with rugged durability for industrial environments.

A high-resolution LCD screen three-line display with four soft keys let users select entries to be displayed. To facilitate scrolling through soft key options, the T207 is equipped with four navigator keys. The T207 is elegantly styled, with careful attention paid to ergonomics. The set can be desk- or wall- mounted, and the wall mount/elevation bracket can elevate the rear of the set and increase the viewing angle and accessibility. The handset cradle has an integral wall hook.

T207 sets are equipped with four programmable buttons and nine fixed buttons. Additionally, adding a Telephone Expansion Module (or TEM) increases the number of programming buttons to 48 programmable buttons for commonly used features. The keyboard incorporates dial and programmable buttons with positive tactile feedback for fast, sure operation. Each programmable button includes a dual color Light Emitting Diode (LED) indicating the status of the station, trunk, or feature associated with the button. The two volume buttons control speakerphone, handset, and ringer volumes. The message waiting indicator incorporates two alternately flashing LEDs to command attention. The four (up/down, right/left) navigator keys are used to scroll through options listed on the display and to quickly access the T207 features.

Each T207 telephone has a built-in data switch with VLAN (Virtual Local Area Network) support. This allows a single data connection to support not only the T207 telephone, but also a local PC, laptop or other data device. The T207 is a non-PoE telephone that comes with a local AC power supply. AC power must be provided at the local instrument.

T208 VoIP Telephone

The T208 VoIP telephone is a full-featured IP phone, providing the full array of functionality with all of the flexibility of a LAN connection. The T208 enables the user to move the telephone to any LAN jack while preserving its unique identity.

Model T-208 with 24-button module



The T208 allows integration of the company-wide data network with voice network features. This IP keyset is ideal for businesses operating a distributed network and remote locations of various sizes and capacities. It provides a flexible solution for utilising the data network as a unified converged network for voice services. The ability to connect via a LAN enables installation of the T208 at any available network port without geographical consideration. The T208 can be used as a remote keyset station, home office phone or remote branch office application phone. Additionally, because the T208 can be used as a fully featured keyset while connected almost anywhere, it facilitates geographically dispersed ACD and Hunt groups, and fully featured Call-Center applications.

The T208 supports two signaling protocols. It can support either industry based SIP standards or it can support Tadiran Telecom's MGCP protocol, giving the user additional features and functionality beyond the limits of SIP based protocol.

The T208 also has additional processing power and memory over the T207 telephone. This additional functionality allows the T208 to support encryption of the signaling and voice packets, along with 802.1x protocol and standards.

The T208 IP telephone is a high performance, easy-to-use instrument; combining excellent voice QoS (quality of service), comfort, and convenience in a state-of-the-art communications tool. The T208 provides sophisticated features for the remote office, with rugged durability for industrial environments.

A high-resolution LCD screen six-line display with four soft keys let users select entries to be displayed. To facilitate scrolling through soft key options, the T208 is equipped with four navigator keys. The T208 is elegantly styled, with careful attention paid to ergonomics. The set can be desk- or wall-mounted, and the wall mount/elevation bracket can be elevated at the rear of the set to increase the viewing angle and accessibility. The handset cradle has an integral wall hook.

T208 sets are equipped with four programmable buttons and nine fixed buttons. Additionally, adding a Telephone Expansion Module (or TEM) increases the number of programming buttons to 48 programmable buttons for commonly used features. The keyboard incorporates dial and programmable buttons with positive tactile feedback for fast, sure operation. Each programmable button includes a dual color Light Emitting Diode (LED) indicating the status of the station, trunk, or feature associated with the button. The two volume buttons control speakerphone, handset, and ringer volumes. The message waiting indicator incorporates two alternately flashing LEDs to command attention. The four (up/down, right/left) navigator keys are used to scroll through options listed on the display and to quickly access the T208 features.

Each T208 telephone has a built in data switch with VLAN support. This allows a single data connection to support not on the T208 telephone, but also a local PC, laptop or other data device. The LAN connection of this data switch can either support Power over Ethernet (PoE) or non-PoE. The T208 with PoE supports the 802.1af standard for Power over Ethernet.

The T208 also has additional processing power and memory over the T207 telephone. This additional functionality allows the T208 to support encryption of the signaling and voice packets, along with 802.1x protocol and standards.

TEM

The T207 and T208 telephones can support more programmable buttons with the addition of Tadiran's Telephone Expansion Module (TEM). The TEM attaches to the right side of the T207 and T208 telephone.

7. Applications

Unified Messaging

One application that is taking advantage of SIP is voice messaging. Voicemail systems that use SIP no longer have hardware constraints. Analog or digital voice boards are not required with SIP-based voicemail systems. Also, SIP-based voicemail systems do not have to be physically located at remote offices. They can be located anywhere in the company's data infrastructure.

The Coral Sea Softswitch has an internal SIP-based voicemail application. This application can support basic voice messaging, as well as unified messaging, automated attendant, faxes, automatic log in, Caller Identification and Message Notification (Lamp Indication as well as SMS or Text notification to cellular telephones or PDAs), as well as on-demand call recording.

Additionally, the Sea Softswitch supports standard SIP protocols for companies that have existing SIP-based voice messaging applications. The features supported by this include automated attendant, call forwarding and call transfer to voicemail, message lamp, etc.

SIP Video

The Sea Softswitch supports SIP-based desktop video.

Desktop video is becoming more commonplace.

Companies are taking advantage of this to reduce travel costs and boost productivity. In the past, dedicated desktop video units used special protocols (H.323) to set up video calls. This is being replaced by SIP.



SIP allows on-demand video transmission to be activated during a call. SIP also is expanding the equipment choices used for video calls. Desktop or laptop PCs equipped with USB video cameras are providing companies with a wider array and a less expensive selection of video equipment.

The Coral Sea Softswitch, together with SIP, is simplifying the user interface as well as providing a common switching platform to make video calls. Users can press a video button on their desktop application and send video along with their audio through the Sea Softswitch to a caller.

SIP Wireless

Wireless communication is another area where the Sea Softswitch can reduce investment cost and expand applications. Previously, companies with in-building wireless solutions had to deploy a dedicated network and handsets to communicate to their customers and employees. If a company already had a wireless LAN infrastructure in place they could not take advantage of this for wireless voice communications.

SIP and 802.11 protocols allow companies to deploy wireless handsets and use wireless data access points for voice communications. Since the Sea Softswitch supports SIP, these wireless handsets can support voice communications. Companies deploying wireless SIP communications can also use SIP PDA/hand held clients to communicate through the Sea Softswitch.

The Sea Softswitch also allows users to program automatic searches between traditional, wired IP and wireless IP devices ensuring that users never miss an incoming call.

Conferencing

Each Sea Softswitch server supports multi-party conferences with up to 60 participants at G.711 compression. Dynamically, the Sea Softswitch can simultaneously support a large 60-party conference or 20 three-party conferences or any combination in between. If more that 60 simultaneous conference parties are required, an additional Sea Softswitch server can be added.

Distributed ACD

The Sea Softswitch supports a very scalable and flexible call center. Whether the call center is a small, single call center with eight agents or a multi-site call center with hundreds of agents, the Sea Softswitch can provide industry leading call center support.

The Sea Softswitch can support an unlimited number of ACD hunt groups. Each hunt group has independent vectoring and call processing timers, as well as independent call processing announcements played to the caller. When multiple Sea Softswitch servers are connected, they form a single distributed call center. When an agent in one center becomes available, the Sea Softswitch forwards the caller to the next idle agent automatically, regardless of location. This distributed call processing also gives the call center a higher level of fault tolerance and automatic disaster recovery.

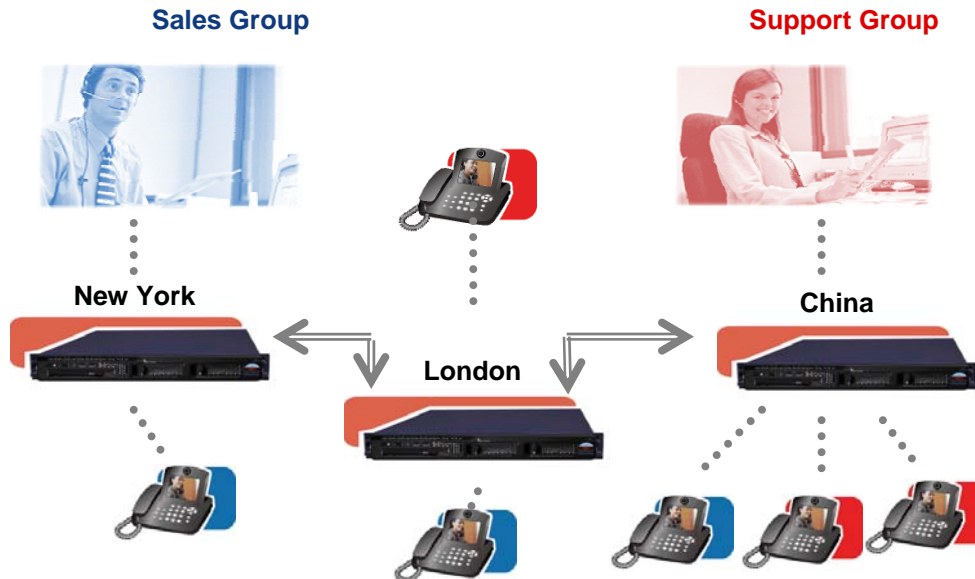


In the future, supervisors will have insight into all events in the call center via LAN/WAN connections. With release 4.0 of the Sea Softswitch, the Composit Contact Pro will supply supervisors with real-time information on campaign, agent and event activities. They can create views and graphics that show information based on their needs, whether it is a single site or a distributed call center. Historical information is stored in the Composit Contact Pro and can be retrieved by using industry-standard Business Objects or Crystal Reports.

An optional contact center package is available called the Composit Contact Center Pro. This package has the same reporting functionality for voice calls, as well as supporting incoming and outgoing faxes and emails. This package, combined with the Coral Sea Softswitch, gives the call center supervisor the ultimate control and reliability needed to handle voice, fax and email traffic.

Closed User Groups

Multiple companies and departments can coexist within single or multiple platforms. Many times, customers or departments in the same system require the same dial numbers.



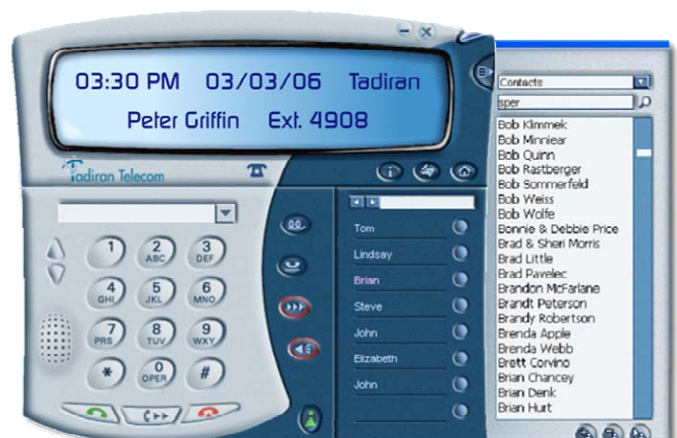
Closed User Groups allow separation and duplication of dial numbers within the Coral Sea Softswitch. Using Closed User Groups, companies can also take advantage of features such as allow or deny Inter-Group dialing, main caller ID for the group, SMDR per group, and more.

Each TEM unit supports two rows of 11 programmable buttons. At the bottom of each row of buttons is a shift button. This shifts the button to a second set of buttons, giving the TEM module the ability to support up to 44 programmable buttons.

FlexIP Softphone

For employees who travel or work from home, access to the corporate telecommunications network is essential. The FlexIP™ Softphone is an advanced software application that transforms any PC into a full-featured IP communications device for voice and data. Now, telecommuters and road warriors have the flexibility to establish a virtual office in any location, receiving and sending calls through an easy-to-use interface displayed on a desktop or laptop PC.

- Users enjoy familiar LCD display and message waiting.
- Softphone can be downloaded or installed from CD.
- Saves cost by eliminating other phones and phone lines.
- Turns PC into a full-featured telephone.
- Use PC speaker/mic or any standard USB handset/headset.
- Make and receive calls from hotel room or home office.
- Use the company network for toll savings.
- Displays the office phone number as your CID.
- Integrates with Microsoft Outlook Contacts for easy dialing.
- Reduces cell phone usage.



Outlook Integration

The Coral FlexIP softphone communicates directly with your Microsoft Outlook client. There's no need to spend time managing contact names and telephone numbers in two places. Simply use your Outlook contacts as the source for dialing with your softphone. Clicking the directory button (just to the right of the display) provides access to Outlook and includes a quick search field.

Online Help

Need some help using your new Tadiran FlexIP softphone? It is just a click away. Clicking the button labeled "i" links to interactive and searchable help. The straightforward design of the softphone application and the help resource provides everything you need to comfortably get users up and running.

8. Coral Sea Softswitch Highlighted Feature List

Applications

- Automated Attendant
- AA Dial By Name (English)
- Distributed Integrated ACD
- Fax T.38*
- Integrated Unified Messaging
- Integrated Voice Mail
- Text to Speech (English)
- VM Call Screening
- VM Reports
- VM Scripts

Web Admin

- Centralised Web Admin
- Cluster status
- Real Time Phone registration status
- User Status

Infrastructure

- Automatic Database Backup
- Announcers
- Automatic Rout Selection
- CDR for Call Accounting
- Debug tools
- Distributed System
- DTMF Detection / Generation
- Import Users From Excel
- Languages support *
- Licensing
- MCU
- Multi Server Cluster with redundancy
- Music On Hold
- Operating System – Linux
- Redundancy
- Session Border Controller (SBC), (External Sentinel Box)

Closed User Group

- CDR per CUG
- DID
- Distinct CLI
- Inter Group Provisioning
- Inter Group Restrictions
- Numbering Plan per CUG
- Use of common resource

IP-Net

- Call Establish / Disconnect
- Call Forwarding
- Call Transfer
- Call Waiting
- Camp On
- Device Name
- Message Waiting, Centralised Voice Mail

IP Station Features

- SIP
 - Auto Answer (Phone feature)
 - Busy / Idle DSS (Presence)(T20XS)
 - Call Invite / Disconnect
 - Call Log
 - Conference
 - Consultation
 - Directory (Phone feature)
 - DND
 - Hold / Retrieve
 - Multi Appearance
 - Presence / Notify
 - Redial
 - Register
 - SIP Chat (terminal dependant)
 - SIP MWI (Voice Mail)
 - SIP Trunks
 - SIP Video
 - Transfer

- MGCP (Tadiran IP Phones: T200M, FlexSet-IP)
 - Ad-Hock N-Way conference
 - Alternative Proxy Registration
 - Audio Level
 - Auto Answer
 - Blind (One Step) Transfer
 - Busy / Idle DSS (Presence)
 - Call Log
 - Call Waiting
 - Caller ID
 - Camp on Ring (T20XM)
 - Consult (Two Step) Transfer
 - Deflect
 - DND
 - Internal and External DSS
 - Last Number Redial
 - Line
 - Message Waiting Indication
 - Mute
 - Personal Ring (FlexSet-IP)
 - Phone Idle Time Display (based on location and user preferences)
 - Program Key + System Keys
 - Register
 - Softkeys
 - Speaker On / Off
 - Speaker Toggle
 - Speakerphone and Ring Mute

General Business & Features (SIP and MGCP)

- ACD Login / Out code
- ACD Release / Resume code
- Call Forward (Internal, External) All, No-Answer, Busy, Logged-Out
- Call Forward upon ANI
- Call Forward upon scheduling
- Camp On Busy
- Camp On Idle
- Day / Night (scheduling)

- DID
- Direct Pickup
- Endpoints Group (Trunk Group)
- Group Call (simultaneous ringing)
- Group Pickup
- Hold / Retrieve
- Holidays (scheduling)
- Hold Recall
- Hot Station
- Incoming routing based on ANI - System
- Incoming routing based on ANI - User
- Automatic route selection (location based)
- Incoming routing based on scheduling - User
- Incoming routing based on User's Presence
- Speed Dial
- Outgoing DNIS filters - User
- Park / Pickup
- Presence
- Profile programming
- Scheduling
- Secured Multi User Meet-Me Conference
- Toll Restriction
- User Location

Interfaces

- Analog E&M (by WG)
- BRI (by WG)
- Coral Wave Gateway -Stations
- Coral Wave Gateway -Trunks
- E1 CAS R2, E&M(by WG)
- LS / GS (by WG)
- MGCP analog station adapters
- PRI (by WG)
- SIP analog station adapters - FXS
- SIP analog trunk adapters - FXO
- SIP Trunks
- T1 CAS FGD, E&M, Loop Start, Ground Start (by WG)

Endpoints

- Analog Phones (by WG)
- FlexSet, DKT, EKT (by WG)
- FlexSet-IP
- SIP phones and softphones (3rd party) including Video, Presence
- T207M (MGCP)
- T207S (SIP)
- T208M (MGCP)
- T208S (SIP)
- Tadiran Softphone (FLIPS)

API

- CSTA 3 (ECMA / ISO)
- CSTA 3 API Toolkit

* Please check availability with Tadiran