WebSwitch 2000

Ericsson's WebSwitch 2000 intelligent gateway bridges traditional circuit-switched telephony and next generation telephony in that it includes a Voice over IP, H.323-compliant gateway with gatekeeper functionality and telephony services - all in one box. The WebSwitch 2000 merges voice, data and wireless communications to offer converged networking solutions for small to mid-sized enterprises.

The WebSwitch product family consists of the WebSwitch 2000 model M2 and M4, the WebSwitch Net Manager management application and the WebSwitch Phone Manager CTI client application. The WebSwitch 2000 connects to a standard datacom environment and supports circuit-switched and IP trunk lines and extensions. This capability makes the WebSwitch 2000 a “symmetric” gateway. The various business applications of the WebSwitch 2000 as a Phone Gateway, Extension Gateway, Trunk Gateway or as an iPBX/NiPBX make it ideal for enterprise customers who want to converge voice, data and wireless communications in one network. Enterprises can also use the WebSwitch 2000 to migrate their legacy PBX onto a future-proof IP platform to enhance existing features and offer new services. Service Providers and IT departments of large enterprises can deploy the WebSwitch 2000 as an enterprise-located service node.

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Converged Enterprise Communications

System Specifications

The WebSwitch 2000 base chassis contains the following components:

- Main CPU board (Motorola CPU, 32 MB Memory, Flash PROM)
- Power supply (100-240 V AC, 50-60 Hz)
- 10Base-T Ethernet network connection (RJ-45) with LED indicators
- Serial communication port (DB-9 connector) for basic set-up
- Audio-in port for music on hold (3.5 mm phone jack)
- Audio-out port for paging system (3.5 mm phone jack)

In the WebSwitch 2000, the main CPU board may be fitted with a Voice Processing Module (VPM), which is a scaleable IP gateway daughter board. The VPM is available in three models to support 4, 8 or 16 concurrent H.323 IP channels. The VPM offers support for IP-based H.323 v2-compliant terminals, such as Symbol Technologies' NetVision wireless LAN telephones, wired Dialog 3413 IP telephones or Microsoft NetMeeting. The VPM is also necessary to network WebSwitches or to connect them to external H.323 gateways and gatekeepers. IP connectivity is obtained through the 10Base-T Ethernet connection.

System Capacity

The WebSwitch 2000 is available in a 2-slot model (M2) and a 4-slot model (M4). A slot may contain an analog extension card, an analog trunk card or a digital trunk card (E1 or T1). Up to 20 WebSwitches may be networked on the same LAN or across a WAN on multiple networks to form a WebSwitch cluster. Furthermore, many more single standing WebSwitches or WebSwitch clusters can be networked via an external gatekeeper.

Maximum Hardware Capacity

WebSwitch 2000 M2
- 2 analog extension boards (32 extensions)
- 2 analog trunk boards (16 trunks)
- 2 E1 digital trunk boards (60 trunks)
- 2 T1 digital trunk boards (48 trunks)
- 16 concurrent VoIP channels

WebSwitch 2000 M4
- 4 analog extension boards (64 extensions)
- 4 analog trunk boards (32 trunks)
- 2 E1 digital trunk boards (60 trunks)
- 2 T1 digital trunk boards (48 trunks)
- 16 concurrent VoIP channels

Maximum Software Capacity per WebSwitch 2000

- 96 extensions (IP and analog ports)
- 76 trunks (IP, analog and digital trunks)

Line Interfaces

Network side

- 8-port analog trunk/CO line card (modular RJ-11)
- T1 digital trunk module (100 Ohm balanced Bantam, 100 Ohm balanced RJ-45) - 1.544 Mbps according to ITU recommendations G.703/G.704/G.733
- E1 digital trunk card (75 Ohm unbalanced BNC, 120 Ohm balanced RJ-45) - 2.048 Mbps according to ITU recommendations G.703/G.704/G.732
- IP trunk support for registered IP end-points (gateways, external gatekeepers) and unregistered IP end-points

User side

- 16-port analog extension card (50-pin telco connector) for analog modems, telephones and fax
- IP extension support for wired/wireless IP telephones, PC-as-phone, etc. (such as Symbol Technologies' wireless NetVision LAN 802.11 IP telephones, Microsoft NetMeeting and WebSwitch Phone Gateway)

Signaling/Protocol

- Loop Start/DTMF
- E1/R2-CAS/DTMF
- E1/R2-CAS/EL7
- T1/RBS/DTMF
- H.323 v2 (TIPHON/iNOW)

Gateway Features

- Supports symmetric configuration of circuit-switched extensions, IP extensions, circuit-switched trunks and IP trunks
- Converts circuit-switched extensions to IP extensions
- Converts IP extension to circuit-switched interfaces
- Configuration of circuit-switched and IP trunk route access using the extensions, hotline or DID[1] software settings
- Transit gateway[1] for interconnection with an external H.323 gateway or interworking with external H.323 gatekeepers
- Terminating gateway for extension access via E.164 or IP address
- Gateway for incoming Web-based callers ("click-and-dial" applications)
- Voice packet prioritization according to Differentiated Services RFC 2474 and RFC 791

[1]See explanations under "Telephony Features"

H.323 Features

- H.323 v2 compliance (including "fast connect", H.225.0 and H.245)
- RTP and RTCP (RFC 1889 and RFC 1890)
- G.711, G.723.1 and G.729AB coding support
- G.168 echo cancellation
- Adaptive Voice Activity Detection (VAD) for silence suppression
- Adaptive Comfort Noise Generation (CNG)

Telephony Features

Audio channel service
Defines information in a sequence to be played to callers who are queued in the automated attendant system

Automated attendant
Plays a greeting to incoming callers and allows the transfer of calls to end users via an Interactive Voice Response function

Automatic Call Distribution (ACD)
Automatically distributes calls to work groups (groups of extensions)

Call conferencing
Conferences up to 8 parties in a single call

Call forward
Forwards calls to an internal or an external number

Call hold
Places a caller on hold

Call pickup
Lets you answer a call to an extension located on the same WebSwitch 2000

Call queuing
Places caller in queue until the extension becomes available

Call transfer
Transfers a call to an internal or an external number

Caller ID
Support for caller ID type 1 according to Bellcore TR-TSY-000030 and TR-TSY-000031

Common dialing plan
Multiple locations share a common dialing plan

DID/Direct Inward Dialing support
Incoming calls have direct access to extensions and trunks without going through the automated attendant

Flexible numbering plan
Supports three or four-digit extension numbers

Initial system configuration settings
Set time and date as well as IP address, subnet mask and default gateway address

Inquiry
Make an inquiry to a second party

Internal/external ringing
Different ring tones depending on the call's origin

Hotline function for extensions and trunks
Trunks may be directly connected to endpoints such as extensions, ring groups and hunt groups, trunks and routes, so that incoming calls are automatically directed towards the endpoint. When a hotlined extension goes off hook, a call is automatically placed to the specified endpoint

Hunt group
Group of extensions to receive incoming calls in a linear distribution pattern (up to 5 hunt groups per system - max. 6 members per hunt group)

Message waiting notification
Stuttered dial tone

Music on hold
Callers on hold or in queue can listen to music (customer-provided music source)

Paging
Page a person using a public address system (via customer-provided public address system)

Remote trunk access
Access a trunk on another WebSwitch 2000 for toll bypass purposes

Ring groups for single node systems
Group of extensions to receive incoming calls simultaneously (up to 5 ring groups per system - max. 6 members per ring group)

Trunk-to-trunk routing
An incoming call on a WebSwitch trunk line can be automatically routed to a trunk on another WebSwitch so that the first WebSwitch behaves as a "transit" switch. The association between the trunks on the two WebSwitches acts as a tie line between the two units

Voice mail
Accessed locally or remotely

Web call
Enables call from a web page to the WebSwitch 2000

Wireless access
Support for Symbol Technologies' NetVision IP terminals

Integrated Voice Mail Features

- 60 hour storage capacity per WebSwitch 2000
- Up to 100 messages may be stored per extension
- Maximum message length of a message is 5 minutes
- 2 personalized greetings per user (user may toggle between greetings)
- Local and remote voice mail access
- Forwarding to voice mail on busy and no answer
- Password protection (user-programmable)

Integrated Automated Attendant Features

Backup destination
A call is redirected to a predetermined number in case an invalid entry or a line error occurs

Breakout to operator
When queued for an extension, users may dial "*" anytime to return to the operator

Dial by name
Enter a name in the automated attendant to reach an extension

Dial by number
Enter a number in automated attendant to reach an extension

Primary and backup destination
If a primary destination, such as an extension or the automated attendant is busy, or if a system error occurs, incoming calls are re-directed to a backup destination, such as the operator's extension

System greeting
Plays standard or customer-provided greetings to caller

CTI features

- TAPI 2.1 interface
- Compliant with TAPI 2.1 conformant applications, such as Microsoft Outlook and Symantec ACT!
- Caller ID support (where available)

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Hardware Specifications

Dimensions
(W x D x H in inches and cm)

WebSwitch 2000 M2:
17.13" x 14.40" x 1.85"
43.5 cm x 36.6 cm x 4.7 cm

WebSwitch 2000 M4:
17.13" x 14.40" x 2.95"
43.5 cm x 36.6 cm x 7.5 cm

Weight

WebSwitch 2000 M2: 9 lbs (4kg)

WebSwitch 2000 M4: 11lbs (5kg)

Power

Input 100-240 V AC (+/-10%)

Frequency 50-60 Hz (+/-10%)

Max. power consumption:

- WebSwitch 2000 M2: 80 VA
- WebSwitch 2000 M4: 130 VA

Operating Requirements

Operating temperature
41 - 120° F (5 - 49° C)

Storage temperature
32 - 158° F (0 - 70° C)

Humidity
10 - 90% (non-condensing)

Regulatory Approvals

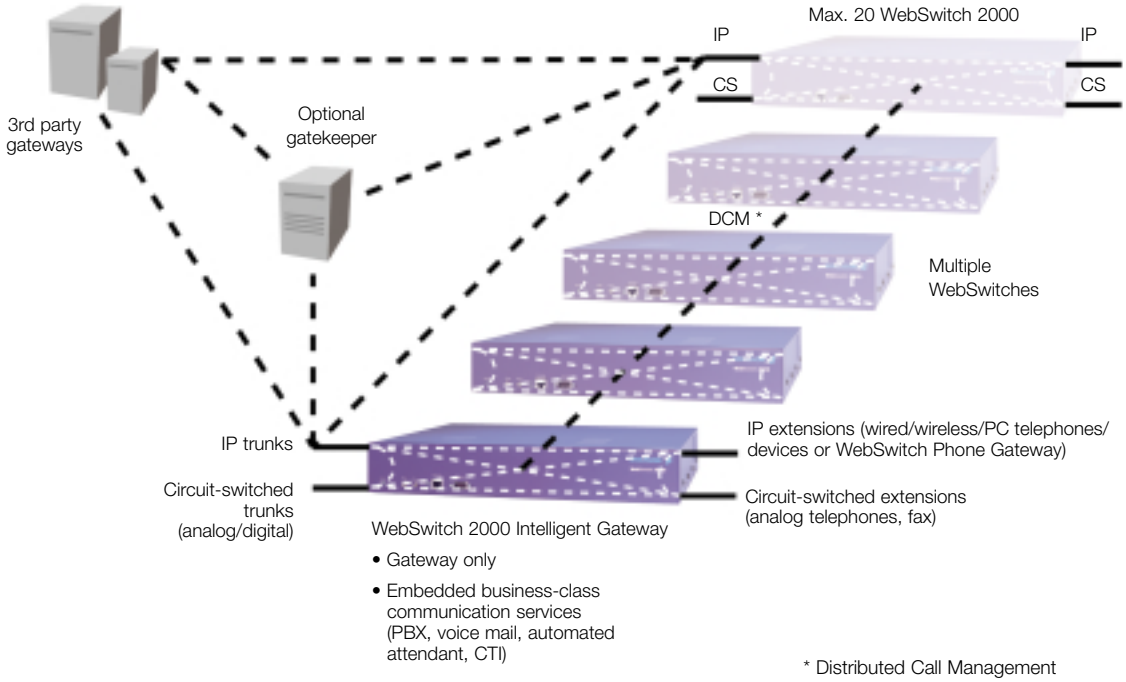
Product safety
CE (EN60950) and ETL listing
(UL standard 1950 and CSA
standard C22.2 #950)

Emissions
CE (CISPR22/EN55022) and
FCC class B part 15

Network attachment
FCC class B part 68, CTR-21
and JATE

Immunity
CE (EN55024)

WebSwitch 2000 Symmetric Gateway



Region Asia Pacific
Ericsson Enterprise Systems
Jalan SS7/19, Kelana Jaya
47301 Petaling Jaya
Selangor
MALAYSIA
Phone: +60 3 708 7711
Fax: +60 3 708 7709

Region Latin America
Ericsson Enterprise Systems
2385 Executive Center Drive
Suite 400
Boca Raton, FL 33431
USA
Phone: +1 561 999-4860
Fax: +1 561 999-4777

Region Western Europe
Ericsson Enterprise Systems
Rue de la Fusée, 40
1130 Brussels
BELGIUM
Phone: +32 2 745 12 11
Fax: +32 2 745 12 19

Region Central Europe
Middle East, Africa
Ericsson Enterprise Systems
Pottendorferstr. 25-27
A-1120 Wien
AUSTRIA
Phone: +43 1 81 10 00
Fax: +43 1 81 100 699

Region North America & Japan
Ericsson Enterprise Systems
1555 Adams Drive
Menlo Park, CA 94025
USA
Phone: +1 650 324-6100
Fax: +1 650 463-6848

Region Nordic
Ericsson Enterprise Systems
Lindhagensgatan 80
126 25 Stockholm
SWEDEN
Phone: +46 8 579 18 000
Fax: +46 8 579 18 034

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