beroNet

Europe's leading manufacturer of VoIP Access Technologies

Welcome to beroNet!

Dear VoIP Hero,

My focus at beroNet is to create VoIP hardware and services
that help you achieve hero status within your company and
among your customers. To accomplish this our development
team creates hardware with an intuitive and easy-to-use
interface. We also hold regular internal trainings and activities
to keep our team up-to-date and able to advise you on your
next project.

When you encounter an installation challenge or a potential
customer that you are uncertain how to help, contact our
team and we will help you overcome the challenge and win
the customer. I am certain that you will be pleased with both
the service and products you receive from beroNet.

If you ever have a bad experience, or are disappointed with
our service – please contact me directly. You can reach me by
email at cr@beronet.com or by phone at +49 (0)30 2593890.

May all your future endeavors be successful.

Sincerely,

Christian Richter (CEO at beroNet)

About beroNet

beroNet is a German company founded in 2002 by
three engineers with many years of experience in VoIP
Access Technologies. The products and technologies
developed by beroNet are suitable for enterprise and
service provider markets and enable reliable and efficient
VoIP, ISDN, Analog & LTE connectivity technologies.
All products are developed and manufactured in Germany.

Our mission is to be the leading manufacturer of innovative
communication technology; focused on solving VoIP market
challenges.

beroNet products are designed to be easy to understand
and configure. We place further emphasis on building
hardware that you can install and forget. For the rare
occasion that a beroNet product requires support, we offer
a variety of support services.

beroNet is emerging as the leading designer and manufacturer
for PSTN & LTE VoIP Access Technologies through high quality
VoIP hardware and services.

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The leading manufacturer of innovative communication technology;
focused on solving VoIP market challenges.

beroNet OS

Beautifully designed to decrease stress and increase success
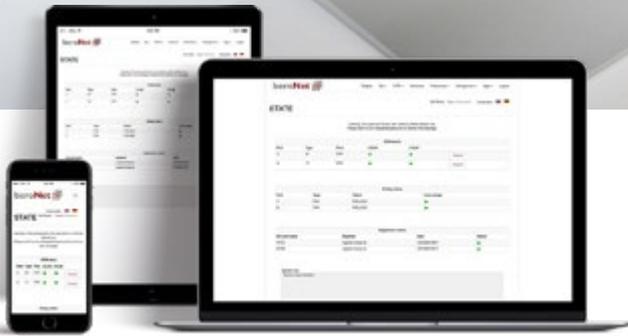
beroNet OS delivers a deep range of intelligent and customizable features

An intuitive interface that is easy to use allowing the entire VoIP Gateway or SBC to be managed using a web browser. Using beroNet OS you can connect your VoIP Gateways or SBCs with the beroNet Cloud, allowing you to monitor and manage them from any device connected to the internet.

✓ **5 Minute Installation**
Save time in dialplan configuration and port grouping by using the automatic configuration wizard.

✓ **Easy to Configure**
Use a responsive web GUI to easily configure your VoIP Gateway or SBC.

✓ **Compatible with any VoIP Provider**
Use your VoIP Gateway or SBC with any VoIP Provider.

✓ **SBC**
Bridge two different IP-PBX systems and create SIP failover systems using the built-in SIP-to-SIP.

✓ **Compatible with any PBX system**
Use your VoIP Gateway or SBC with any PBX or IP-PBX system.

✓ **beroNet Cloud Integration**
With the beroCloud you have complete control of your beroNet VoIP Gateway or SBC.

✓ **Expandable with Apps**
Apps include beroNet's Survival Branch Appliance, OpenVPN and Asterisk.

✓ **Easy Provisioning with XML**
Directly provision beroNet Gateway devices using XML.

Add SIP-to-SIP functionality to any beroNet VoIP devices and meet your customers' requirements with the right SBC license

With beroNet SBC Software Licenses you can connect multiple SIP devices and give each beroNet VoIP Gateway or Card basic SBC functionality. Simplify advanced PBX configurations and make IP PBX systems, VoIP providers and legacy PBX compatible. Benefit from a full security solution with our modular VoIP Session Border Controller for your VoIP network. beroNet OS integrates two concurrent SIP-to-SIP sessions for free and allows mixing of two types of sessions. Sessions where the media is forwarded transparently and sessions in which the media goes through the hardware DSP (transcoding). To add more concurrent sessions licenses are required.

SIP-to-SIP Transparent Sessions	SIP-to-SIP Transcoding Sessions
BNSBC-SESSION-TP-4	BNSBC-SESSION-4
BNSBC-SESSION-TP-8	BNSBC-SESSION-8
BNSBC-SESSION-TP-16	BNSBC-SESSION-16
BNSBC-SESSION-TP-32	BNSBC-SESSION-32
BNSBC-SESSION-TP-64	BNSBC-SESSION-64
BNSBC-SESSION-TP-128	
BNSBC-SESSION-TP-Upgrade-x x stands for the amount of sessions	BNSBC-SESSION-Upgrade-x x stands for the amount of sessions

beroNet Modular Design

Modular Technology for Control and Flexibility

LTE   PRI   FXS   FXO   BRI   Hybrid
2 BRI / 2 FXS

beroNet Modular Design enables reliable VoIP hardware with modern flexibility and management

Fully expandable, modular beroNet VoIP SBCs, Gateways and PCIe Cards can be custom built for any potential need. Depending on the model, they can be equipped with up to three modules, and be configured with any combination of BRI, PRI, FXS, and FXO, which makes them very flexible and highly adaptable to a diverse range of customer requirements. Our modular VoIP technology allows you to simply change the modules instead of the entire device.

- Tough, no moving parts
- Low power consumption
- High quality aluminium housing
- Mounting 1U, optional available: 19" rack brackets
- Hybrid combination of legacy Modules: ISDN (BRI, PRI), Analog (FXS, FXO), 2G/3G/4G
- All products are developed and manufactured in Germany

Made in Germany

beroNet Addon Modules

Interface	Model	Description
Analog	BNMO-4FXO	adds 4 FXO ports
Analog	BNMO-4FXS	adds 4 FXS ports
ISDN / Analog	BNMO-2HYB	adds 2 BRI and 2 FXS ports
ISDN	BNMO-4BRI	adds 4 BRI ports, with High Precision Clock for DECT
ISDN	BNMO-1E1	adds 1 PRI E1 port, with High Precision Clock for DECT
ISDN	BNMO-2E1	adds 2 PRI E1 ports, with High Precision Clock for DECT
ISDN	BNMO-1PRI	adds 1 PRI T1/E1 port, with High Precision Clock for DECT
ISDN	BNMO-2PRI	adds 2 PRI T1/E1 ports, with High Precision Clock for DECT

beroNet Modules for modular beroNet VoIP SBCs, Gateways, PCIe Cards and Telephony appliances with integrated Gateway

Session Border Controller

Innovative Technology Powered by beroNet OS

"In a space that requires constant growth and learning, beroNet has always gone far and beyond to provide us with the latest, compatible and most reliable hardware and services. It is 'this' that makes them indispensable."

MANIKANDAN CHOCKALINGAM, CEO OF CAL4CARE PTE LTD

Overview

beroNet modular VoIP SBCs are a security solution for VoIP networks and can be extended with addon modules that enable any combination of interfaces: FXS, FXO, BRI and PRI. With a range of SIP-to-SIP licenses, it is possible to make up to 128 simultaneous transparent sessions on all models, and combine them with up to 64 transcoded sessions on some models. beroNet OS provides compatibility between various IP PBX and VoIP operators and an easy configuration with a web interface. All models include two network interfaces and can be managed and monitored via the beroNet Cloud.
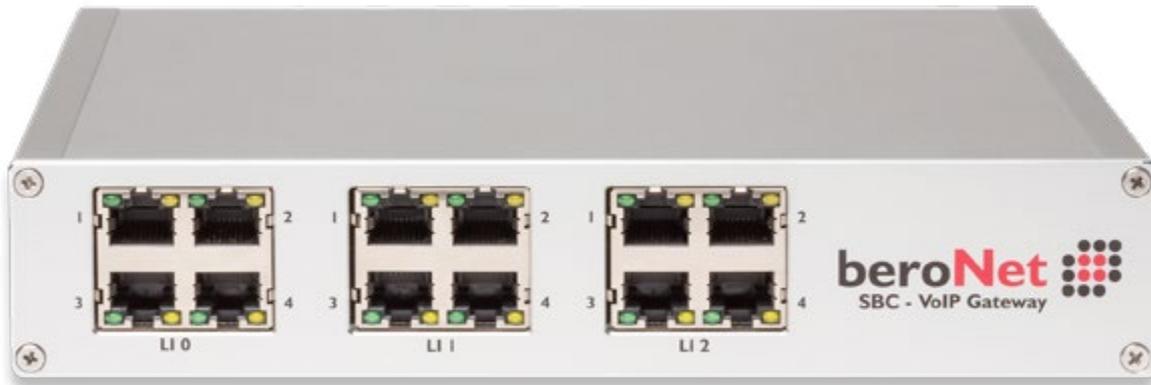
Secure and Simplify your VoIP Network

- Make IP PBX systems, VoIP providers and legacy PBX compatible

- Secure SIP communication separating internal and external SIP networks

- Secure the IP PBX with topology hiding

- SIP-DDoS Detection / Protection

- Firewall Access Control List

- Adjust SIP headers

- Convert from TCP to UDP, RTP to SRTP, varying codecs

- Hybrid, legacy Modules available: ISDN (BRI, PRI), Analog (FXS, FXO), 2G/3G/4G

- Voice Failover options via PSTN or LTE, Survival Branch PBX App available

- Cloud managed
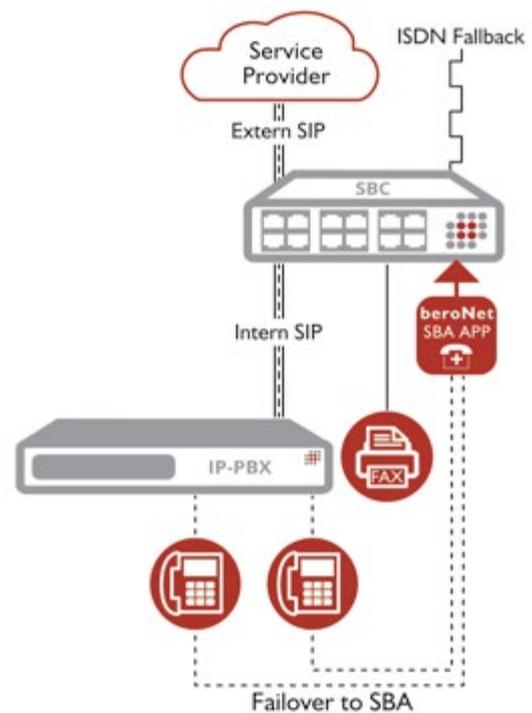
| Cloud Managed | Compatible with any IPBX | Fast Installation | Tough, no moving parts | Energy Efficient | Modular & Flexible | 100% Silent | Easy Expandable |
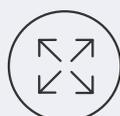
Base Models

EXPANDABLE WITH ADDON MODULES

Model	NIC	Module Slots Available	Channels	Max Concurrent Sessions Transparent / Transcoding
BNSBC-M	2	2	16	128 / 8
BNSBC-L	2	3	64	128 / 32
BNSBC-XL	2	3	128	128 / 64

Standard Configurations

EXPANDABLE WITH ADDON MODULES

Model	Interface	Description	Max Concurrent PSTN Channels	Max Concurrent Sessions Transparent / Transcoding
BNSBC-M-4FXO	Analog	4 FXO modular VoIP Session Border Controller	16	128 / 8
BNSBC-L-4FXO	Analog	4 FXO modular VoIP Session Border Controller	64	128 / 32
BNSBC-M-4FXS	Analog	4 FXS modular VoIP Session Border Controller	16	128 / 8
BNSBC-M-2HYB	Analog / ISDN	2 BRI and 2 FXS modular VoIP Session Border Controller	16	128 / 8
BNSBC-M-4BRI	ISDN	4 BRI HPC modular VoIP Session Border Controller	16	128 / 8
BNSBC-L-4BRI	ISDN	4 BRI HPC modular VoIP Session Border Controller	64	128 / 32
BNSBC-L-1E1	ISDN	1 PRI E1 HPC modular VoIP Session Border Controller	64	128 / 32
BNSBC-L-2E1	ISDN	2 PRI E1 HPC modular VoIP Session Border Controller	64	128 / 32
BNSBC-XL-2E1	ISDN	2 PRI E1 HPC modular VoIP Session Border Controller	128	128 / 64

NOT EXPANDABLE WITH ADDON MODULES

Model	Interface	Description	Max Concurrent PSTN Channels	Max Concurrent Sessions Transparent / Transcoding
BNSBC-L-24FXS	Analog	24 FXS non modular VoIP Session Border Controller	64	128 / 32

General Specifications

- Two or three module slots depending on the specific model (PRI, BRI, FXO, FXS, hybrid)

- Two 100Mbit network ports (LAN / WAN)

- G.711 including echo cancellation (G.168/G.165, 128ms)

- Voice activity detection / comfort noise generation

- DTMF digit detection and generation

- T.38 Fax Relay (V.27, V.29 and V.17)

- SIP user agent IETF RFC3261 compatible

- SIP via UDP/TCP with optional TLS 1.2 support, SRTP

- "TDM Bridging" of two beroNet devices via PCM Bus

- Power supply: 110 – 230V, operating 12V DC at 2A

- Average power consumption: 6 Watts (24W max.)

- CE, FCC and ACMA compliant

- Storage temperature: −20° to 70°C / Operating temperature: 0° to 70°C

- Humidity: up to 90%, non-condensing

- Dimensions: M – 168 × 170 × 42 mm

- Dimensions: L & XL – 218 × 170 × 42 mm

- Weight: 800 g

- Mounting 1U, optional available: 19″ rack brackets

beroNet Session Border Controller Software Licenses

All SBC Models come with 2 free SIP-to-SIP concurrent calls. To add more concurrent sessions, licenses are required. There are two types of sessions. Sessions where the media is forwarded transparently and sessions in which the media goes through the hardware DSP (transcoding). The beroNet OS allows mixing of both session types, depending on the customer requirements.

SIP-to-SIP Transparent Sessions	Which SBC fits?	SIP-to-SIP Transcoding Sessions	Which SBC fits?
BNSBC-SESSION-TP-4	BNSBC-M, L and XL	BNSBC-SESSION-4	BNSBC-M, L and XL
BNSBC-SESSION-TP-8	BNSBC-M, L and XL	BNSBC-SESSION-8	BNSBC-M, L and XL
BNSBC-SESSION-TP-16	BNSBC-M, L and XL	BNSBC-SESSION-16	BNSBC-L and XL
BNSBC-SESSION-TP-32	BNSBC-M, L and XL	BNSBC-SESSION-32	BNSBC-L and XL
BNSBC-SESSION-TP-64	BNSBC-M, L and XL	BNSBC-SESSION-64	BNSBC-XL
BNSBC-SESSION-TP-128	BNSBC-M, L and XL		
BNSBC-SESSION-TP-Upgrade-x x stands for the amount of sessions	BNSBC-M, L and XL	BNSBC-SESSION-Upgrade-x x stands for the amount of sessions	Depending on model capacity

LTE SBC

beroNet LTE SBC

The beroNet LTE SBC includes 2, 4 or 6 LTE ports and connects SIP with LTE and supports voice as well as SMS transmission. It is an ideal solution for voice failover via LTE. With two network interfaces, beroNet VoIP SBCs are the security solution for VoIP networks. They simplify configurations and make IP PBX systems and VoIP providers compatible. Two concurrent SIP-to-SIP sessions are already active. To add more concurrent sessions licenses are required. Cloud managed with beroCloud.

LTE Models

Model	Description	Max Concurrent Sessions Transparent / Transcoding
BNSBC-M-2LTE	SBC with 2 LTE ports, Dual NIC and 2 sessions free – non-modular	128 / 8
BNSBC-M-4LTE	SBC with 4 LTE ports, Dual NIC and 2 sessions free – non-modular	128 / 8
BNSBC-L-6LTE	SBC with 6 LTE ports, Dual NIC and 2 sessions free – non-modular	128 / 32

Technical Specifications

- 2,4 or 6 LTE ports (2,4 or 6 SIM cards)
- 2G (GSM) / 3G (UMTS) / 4G (VoLTE)
- 2G Bands: B3(1800), B8(900)
- 3G Bands: B1(2100), B8(900)
- 4G Bands: B3(1800), B7(2600), B20(800), B1(2100), B8(900)
- SMS service (Text and PDU)
- Supplementary LTE services (CLIP, CLIR)
- Codecs: G.723.1 and Annex A, G.729 a/b, G.726, (up to 4 channels)
- G.711 including echo cancellation (G.168/G.165, 128ms)
- Voice activity detection / comfort noise generation
- DTMF digit detection and generation

- SIP user agent IETF RFC3261 compatible
- SIP over UDP/TCP with optional TLS 1.2 support, SRTP
- Two 100Mbit LAN Ports (LAN / WAN)
- Power supply: 110-230V, operating 12V DC at 2A
- Average power consumption: 6 Watts (24 Watt maximum)
- CE, FCC and ACMA compliant
- Dimensions: M – 168 × 170 × 42 mm, L – 218 × 170 × 42 mm
- Weight: 800 g
- Mounting: 1U, optional available: 19″ rack brackets
- Storage temperature: −20° to 70°C
- Operating temperature: 0° to 70°C
- Humidity: up to 90%, non-condensing

24 FXS SBC

beroNet 24 FXS SBC

The beroNet 24 FXS SBC has been designed to allow an easy integration of older telephone systems into IP infrastructures. It can connect up to 24 analog devices (telephone or fax) to an IP PBX. With two network interfaces and a choice of SBC software licenses, beroNet VoIP SBCs are the security solution for VoIP networks. They simplify configurations and make IP PBX systems and VoIP providers compatible. Cloud managed with beroCloud.

Model	Description	Max Concurrent Sessions Transparent / Transcoding
BNSBC-L-24FXS	SBC with 24 FXS ports, Dual NIC and 2 sessions free – non-modular	128 / 32

Technical Specifications

- 24 separate Analog FXS Ports
- Supports 0V to -94.5V
- FXS supports 3-5 REN (depending on line length of the line)
- Has current feed 20-41 mA
- Ringing frequency, amplitude, waveshape and cadences programmable (by country setting)
- G.168/G.165 echo cancellation with echo path change detection up to 128ms
- Codecs: G.711, G.726, G.723, G.729
- T.38 Fax Relay (V.27, V.29 and V.17)
- SIP user agent IETF RFC3261 compatible

- SIP over UDP/TCP with optional TLS 1.2 support, SRTP
- Two 100Mbit LAN Ports (LAN / WAN)
- Power supply: 110-230V, operating 12V DC
- CE, FCC and ACMA compliant
- Dimensions: 340 × 170 × 42 mm
- Weight: 800 g
- Mounting: 1U, optional available: 19″ rack brackets
- Storage temperature: −20° to 70°C
- Operating temperature: 0° to 70°C
- Humidity: 20% – 90%, non-condensing

Ideal for hospitals, Student Residences, Hotels and Fax Service Providers.

VoIP Gateways

VoIP Gateways that fit any need

"The beroNet Gateway proved itself to be a robust
and fail-proof carrier grade system from day one,
handling up to 5000 calls per day."

ERCAN YAPALAK, IT DEPARTMENT ZEHNDER GMBH

Overview

beroNet Modular VoIP Gateways hold up to two modules. Fully expandable, the devices can be custom
built for any potential need. Powered by beroNet OS you can add SBC software licenses to turn your
modular VoIP Gateway into a Session Border Controller. With Apps you can transform a Modular VoIP
Gateway into a Survival Branch Appliance or Mini-Appliance.

Modular VoIP Gateways

Overview

The beroNet Gateways are modular and can be equipped with up to two modules. Digital ISDN (BRI/PRI) and analog (FXS/FXO) are available and can be combined as desired.

Thanks to their flexibility the beroNet VoIP Gateways always offer right solution for different customer requirements.

Modular Technology for Control and Flexibility

beroNet Gateway's modular design enables this device to meet any unique need. Modular VoIP technology increases adaptability and flexibility by allowing you to change the modules instead of the entire device if it is needed for a different VoIP installation.
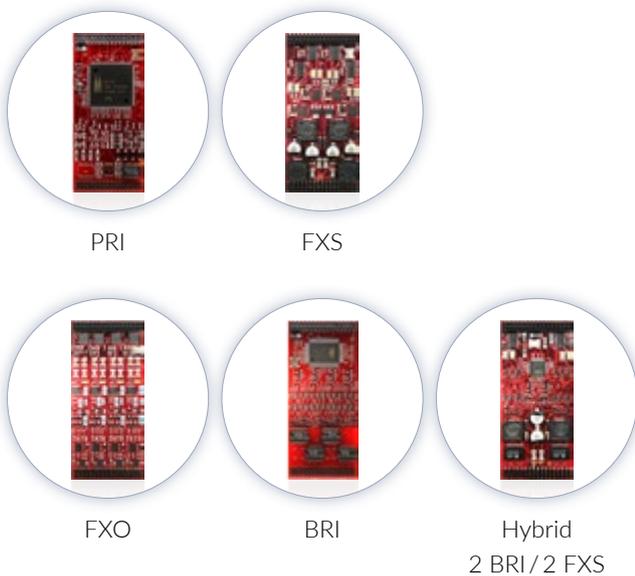
PRI

FXS

FXO

BRI

Hybrid
2 BRI / 2 FXS

| Cloud Managed | Compatible with any IPBX | Fast Installation | Tough, no moving parts | Energy Efficient | Modular & Flexible | 100% Silent | Easy Expandable |

Base Models

EXPANDABLE WITH ADDON MODULES

Model	Max Concurrent Channels	Module Slots Available
BF400Box	16	2
BF1600Box	64	2
BF6400Box	128	2

Standard Configurations

ISDN INTERFACE

Model	Description	Module Slots Available
BF4002S02FXSBox	2 BRI and 2 FXS modular Gateway	1
BF4004S0Box	4 BRI HPC modular Gateway	1
BF4008S0Box	8 BRI HPC modular Gateway	0
BF4001E1Box	1 PRI E1 HPC modular Gateway – fractional E1 (16 concurrent channels)	1
BF16001E1Box	1 PRI E1 HPC modular Gateway	1
BF16002E1Box	2 PRI E1 HPC modular Gateway	1
BF16001PRIBox	1 PRI E1/T1 HPC modular Gateway	1
BF16002PRIBox	2 PRI E1/T1 HPC modular Gateway	1

ANALOG INTERFACE

Model	Description	Module Slots Available
BF4004FXOBox	4 FXO modular Gateway	1
BF4004FXSBox	4 FXS modular Gateway	1
BF4008FXSBox	8 FXS modular Gateway	0
BNSBC-L-24FXS	24 FXS SBC VoIP Gateway - non-modular	0

Note: To connect up to 8 BRI or analog lines on the four RJ45 of a beroNet Gateway please use accessory BFTAdapter. Not necessary on SBC.

General Specifications

- 2 module slots (PRI, BRI, FXO, FXS, hybrid)

- Codecs: G.723.1 and Annex A, G.729 a/b, G.726, (up to: 4 channels with BF400, 16 channels with BF1600, 64 channels with BF6400)

- G.711 and Echo Cancellation, (up to: 16 channels with BF400, 64 channels with BF1600, 128 channels with BF6400)

- T.38 Fax Relay (V.27, V.29 and V.17) (up to: 4 channels with BF400, 16 channels with BF1600, 32 channels with BF6400)

- Voice activity detection /comfort noise generation

- DTMF digit detection and generation

- SIP user agent IETF RFC3261 compliant

- SIP over UDP/TCP with optional TLS 1.2 support

- "TDM Bridging" of two beroNet devices via PCM Bus

- Optional CAPI 2.0 available (Fax, voice)

- Power supply: 110-230V, operating 12V DC at 2A

- Compliance: CE (EN55022, EN55024, EN60950)

- High quality aluminium housing

- Dimensions: 168 × 168 × 42 mm, weight: 800 g

- Mounting: 1U industry wall-mountable chassis with optional 19″ brackets

- Storage temperature: −20° to 70°C

- Operating temperature: 0° to 70°C, humidity: up to 90 %, non-condensing

ISDN

- Connects SIP with ISDN

- Each port is configurable in NT or TE Mode with PIN interchanging

- Termination resistors (100 Ohm) for every port separately configurable

- TE / NT and Termination per port switchable in Software (Jumperfree)

- Layer 2 is Q.921 and Layer 3 is Q.931 (EuroISDN DSS1) compatible

- DSS1 Feature Set: CLIP/No-Screening, CLIR, COLP, UUS, MCID, CD, CNIP AOC-D

- Q.SIG Feature Set: CNIP

Analog FXS

- Extends analog devices to SIP (Telephone, Fax, alarm system, EC Cash)

- Hold, Retrieve, Transfer / MWI (Stutter, FSK)

- CLIP, CNIP

Analog FXO

- Connects SIP to analog (FXO), for connection to the public telephone network or to an internal analog port of the PBX

- Flashhook

- CLIP, CNIP

Small Business Line

Overview

The beroNet Small Business Line was developed especially for the VoIP Gateway demands of small and medium sized companies. It is available as digital (ISDN), analog (FXS/FXO), or hybrid (BRI/FXS) version. The Small Business Line is the ideal entry-level device (not expandable).

Powered by beroNet OS

beroNet OS allows you to manage your VoIP Gateway using your web browser, register to manage and monitor the device in the beroNet Cloud, and take advantage of SBC functionality by adding a SBC software license. Using the beroNet App Market you can expand the functionality of your VoIP Gateway with apps like the beroNet Survival Branch Appliance (SBA) App, OpenVPN, and OpenPBX.

Cloud Managed	Compatible with any IPBX	Fast Installation	Tough, no moving parts	Energy Efficient	100% Silent	Easy Expandable
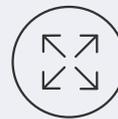
A VoIP Gateway for small and medium-sized companies

Standard Models

ISDN GATEWAYS

Model	Description
BFSB1S0	1 BRI Small Business Line Gateway
BFSB2S0	2 BRI Small Business Line Gateway
BFSB2HY	2 BRI and 2 FXS Small Business Line Gateway
BFSB2S02XO	2 BRI and 2 FXO Small Business Line Gateway

ANALOG GATEWAYS

Model	Description
BFSB4XO	4 FXO Small Business Line Gateway
BFSB4XO4XS	4 FXO and 4 FXS Small Business Line Gateway
BFSB4XS	4 FXS Small Business Line Gateway

Technical Specifications

- G.168/G.165 echo cancellation with echo path change detection, up to 128ms

- Voice activity detection / comfort noise generation

- DTMF digit detection and generation

- T.38 fax relay (V.27, V.29 and V.17)

- SIP user agent IETF RFC3261 compliant

- SIP over UDP/TCP with optional TLS 1.2 support (SIP signaling only)

- TDM bridging over 2 beroNet Gateways through PCM bus, 8.192 kB/s

- Codecs: G.723.1 and Annex A, G.729 a/b, G.726, G.711 u/a

- Layer 2 is Q.921 and layer 3 is Q.931 (EuroISDN DSS1) compatible

- DSS1 feature set: CLIP/ No-Screening, CLIR, COLP, UUS, MCID, CD. CNIP

- Q.SIG feature set: CNIP

- 10/100 Mbit LAN port

- Power supply: 12 V

- Dimensions: 168 × 168 × 42 mm

- Weight: 500 g

- Storage temperature: −20° to 70°C. Operating temperature: 0° to 70°C

- Humidity: up to 90%, non-condensing

- Compliance: CE (EN55022, EN55024, EN60950)

Modular PCIe VoIP Cards

VoIP Gateway in the form factor PCI Express

The beroNet PCIe VoIP cards are full-fledged VoIP Media Gateways in the form factor PCI Express. They are modular and can be equipped with up to two modules. Digital ISDN (BRI / PRI) and analog (FXS / FXO) modules are available for beroNet's modular technologies. An optional PCM-Bus connection between two Gateways or beroNet VoIP cards ensures real hardware bridging for transparent audio transmission of sensitive voice, video, data and Fax services. Due to their driver free design, the beroNet PCI(e) VoIP cards are ideal for manufacturers of PBX, telephony, fax or unified communication appliances, as well as hybrid systems.

Features

- Interface for the card is SIP

- Technology independent

- Large interface variety: VoIP, ISDN and/or Analog

- Hybrid: up to 2 Modules on one card

- No drivers or API needed: System detects card as Realtek Network Card

- Expandable with a supplementary beroNet VoIP Card
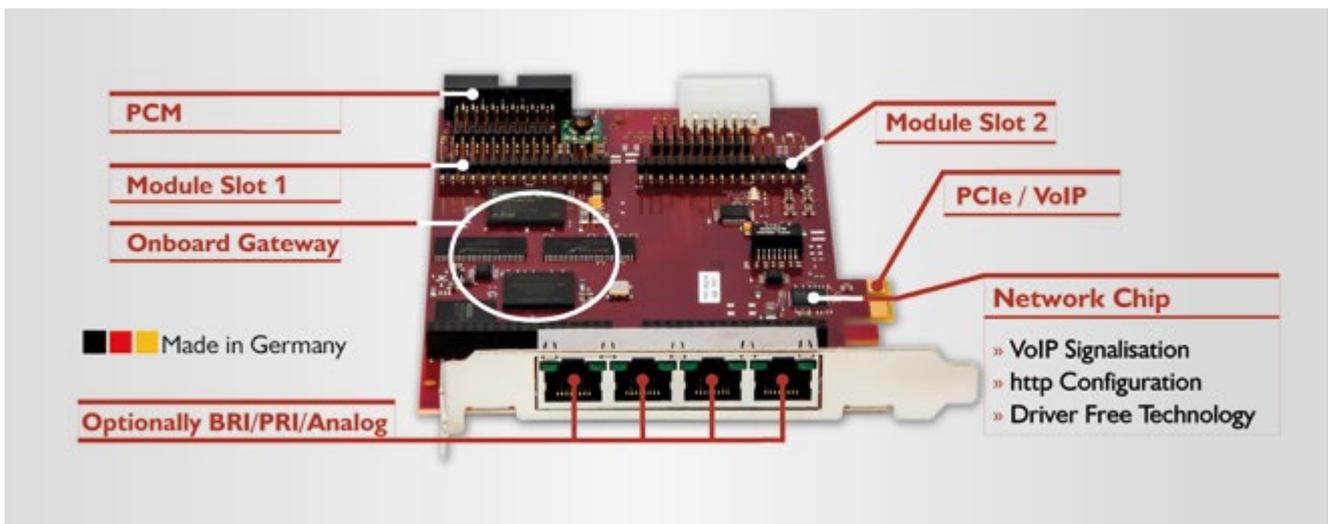
Cloud Managed	Compatible with any IPBX	Fast Installation	Tough, no moving parts	Energy Efficient	Modular & Flexible	100% Silent	Easy Expandable

Base Models

EXPANDABLE WITH ADDON MODULES

Model	Max Concurrent Channels	Module Slots Available
BF400e	16	2
BF1600e	64	2
BF6400e	128	2

Standard Configurations

ISDN INTERFACE

Model	Description	Additional Module Slots Available
BF4002S02FXSe	2 BRI and 2 FXS modular PCIe Card	1
BF4004S0e	4 BRI HPC modular PCIe Card	1
BF16001E1e	1 PRI E1 HPC modular PCIe Card	1

ANALOG INTERFACE

Model	Description	Additional Module Slots Available
BF4004FXOe	4 FXO modular PCIe Card	1
BF4004FXSe	4 FXS modular PCIe Card	1

General Specifications

- Codecs: G.723.1 and Annex A, G.729 a/b, G.726 (up to 32 channels), G.711 u/a (up to 128 channels)

- G.168/G.165 echo cancellation with echo path change detection, up to 128ms

- Voice activity detection / comfort noise generation

- DTMF digit detection and generation

- T.38 Fax Relais (V.27, V.29 and V.17)

- SIP User Agent IETF RFC3261 conform

- SIP via UDP/TCP with optional TLS 1.2 support

- TDM bridging over 2 beroNet PCIe cards through PCM bus interconnection, 8.192 kB/s

- PCI 2.2 conform 3,3V (Realtek 8139CL Chipsatz), 5V Slot compatible, min. 3,3V

- PCI express 1.1 compliant (chipset Realtek 8111C)

- Compliance: CE (EN55022, EN55024, EN60950)

Dimensions & Weight

- Dimensions: 167 × 98.5 × 15mm

- Weight: 110 g

- PCIe full profile

Environment

- Storage temperature: -20° to 70°C

- Operating temperature: 0° to 70°C

- Humidity: up to 90%, without condensation

Telephony Appliance

Powered by the beroNet Hypervisor

"Our customers have come to rely on the beroNet Appliance's reliability and the flexibility provided by its unique modular design when implementing our software based IP phone system."

MATHIAS PASQUAY, CEO AT PASCOM NETZWERKTECHNIK

Overview

Designed to last, the beroNet Telephony Appliance is award winning telecommunication hardware designed to run your IP PBX and telecommunication systems in a single device. Pick from two base models built for small to medium-sized businesses. Virtualize different operating systems with the preinstalled beroNet Hypervisor.

Overview

beroNet Telephony Appliance is the complete solution for your VoIP and UC needs. Use our silent and energy efficient Appliance to run your IP PBX system. Powered by less than 20 watts, with no moving parts, the beroNet Telephony Appliance is designed to run 24/7 without interruption. The Appliance is available as VoIP only or hybrid version which offers you the opportunity to house your IP PBX and VoIP Gateway in one device.

Virtualize your systems and manage them using the beroNet Cloud

The preinstalled beroNet Hypervisor allows multiple virtualized systems to run on the device at the same time. This flexible and scalable platform operates as the communications hub of an organization, with the ability to hold systems such as an IP PBX, router, firewall and CRM. You can register your appliance in the beroNet Cloud for remote management and monitoring of your virtual machines.

Integrated VDSL2 Card

Use the VoIP-Only-Appliance with an integrated VDSL2 card to combine a router and your IP PBX in one single device without additional hardware. Get the fastest VDSL2 connection with „Vectoring". ADSL2+ fallback is also supported.

Integrated VoIP Gateway for ISDN and Analog Connections

Choose the device with an integrated VoIP Gateway to meet your telephony needs and gain all the benefits of beroNet OS and beroNet VoIP Gateway modularity. Choose any of our ISDN or analog modules to ensure compatibility with your current provider or connect analog devices to your IP PBX.

Appliance Version VoIP Only
WITHOUT INTEGRATED GATEWAY

Model	Description	RAM / SSD
BNTA30-VO-M	Appliance VoIP Only Model "M" with Dual NIC	8GB DDR4 / 250GB M.2
BNTA30-VO-L	Appliance VoIP Only Model "L" with Dual NIC	16GB DDR4 / 500GB M.2
BNTA30-VO-M-DSL	Appliance VoIP Only Model "M" with Dual NIC and VDSL Card	8GB DDR4 / 250GB M.2
BNTA30-VO-L-DSL	Appliance VoIP Only Model "L" with Dual NIC and VDSL Card	16GB DDR4 / 500GB M.2

Appliance with Integrated VoIP Gateway
EXPANDABLE WITH ADDON MODULES

Base Models	Description	RAM / SSD
BNTA30-M	Appliance Model "M" with Dual NIC and BF400e	8GB DDR4 / 250GB M.2
BNTA30-L	Appliance Model "L" with Dual NIC and BF1600e	16GB DDR4 / 500GB M.2

ISDN Models	Description	RAM / SSD
BNTA30-2S02FXS-M	Appliance "M" with BF400e plus 2 BRI / 2 FXS Module	8GB DDR4 / 250GB M.2
BNTA30-2S02FXS-L	Appliance "L" with BF1600e plus 2 BRI / 2 FXS Module	16GB DDR4 / 500GB M.2
BNTA30-4S0-M	Appliance "M" with BF400e plus 4 BRI HPC Module	8GB DDR4 / 250GB M.2
BNTA30-4S0-L	Appliance "L" with BF1600e plus 4 BRI HPC Module	16GB DDR4 / 500GB M.2
BNTA30-1E1-L	Appliance "L" with BF1600e plus 1 PRI E1 HPC Module	16GB DDR4 / 500GB M.2

Each ISDN or analog standard model can be equipped with one additional module.
Don't forget the accessory BFTAdapter to connect up to eight BRI or analog lines on the four RJ45 ports of the Gateway

Analog Models	Description	RAM / SSD
BNTA30-4FXO-M	Appliance "M" with BF400e plus 4 FXO Module	8GB DDR4 / 250GB M.2
BNTA30-4FXO-L	Appliance "L" with BF1600e plus 4 FXO Module	16GB DDR4 / 500GB M.2
BNTA30-4FXS-M	Appliance "M" with BF400e plus 4 FXS Module	8GB DDR4 / 250GB M.2
BNTA30-4FXS-L	Appliance "L" with BF1600e plus 4 FXS Module	16GB DDR4 / 500GB M.2

Software Features

- Type-1 Hypervisor (Xen) for maximum VM performance
- Easy to use beroNet Hypervisor web GUI
- Market with pre-built VM-Apps and ISO Files
- Managed via beroNet Cloud
- Automated Backup Scheduler
- Compatible with any IP PBX

Hardware Features

- No moving parts, fanless cooling
- Intel Celeron – Quadcore (N4100) Gemini Lake with 1.1 GHz, 2.4 GHz Burst Frequency
- 8GB DDR4 RAM, 250GB M.2 SSD in Model "M"
- 16GB DDR4 RAM, 500GB M.2 SSD in Model "L"
- VT-x and VT-x/EPT for virtualization
- Two network interfaces (1 GbE)
- VGA, DisplayPort, four USB 3.0 ports, models with DSL Card
- VDSL Card (Anex-J, VDSL, Vectoring, ADSL2+)

- 12V power, less than 20W power consumption
- Dimensions: 340 × 255 × 42 mm
- Weight: 500 g (dependent on config.)
- High quality aluminium housing
- Mounting: 1U, optional available: 19″ rack brackets, wall-mountable
- Storage temperature: −20° to 70°C
- Operating temperature: 0° to 70°C
- Humidity: up to 90%, non-condensing

Failover Switch

A solution device for PBX Clustering and failover scenarios

"The beroNet Failover Switch is a high quality ISDN switch, that allows us to generate a secure Hardware Backup for our cluster. Its reliability and robustness plays a crucial role for our VoIP Solutions."

LAURENT DEMANGE, HEAD OF PRODUCT & SALES AVENCALL SAS

Overview

The beroNet Failover Switch is a reliable hardware solution for telephone system clustering as well as Failover scenarios. When unexpected events or undesirable changes are detected, it enables a physical reconnection of analog, BRI or PRI connections. It can be used in two scenarios: the Failover Mode or the Bypass Mode.

Failover Scenario

The failover scenario grants the smooth and reliable operation of two PBXs side by side, where the second one will be switched to active only after the failure of the first one in order to reduce downtime to a minimum (see figure). This scenario is not only interesting in failure situations, it could also be used in cases of maintenance, repair or upgrade of your telecommunications equipment.
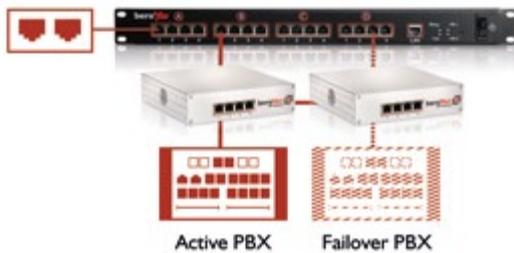
Bypass Scenario

The bypass scenario is interesting for customers who want to keep their old telephone system and add new functionalities by adding a new PBX in front of the old one. With the bypass scenario you have the opportunity to add a new PBX between the PSTN Lines and the outgoing Lines of the old PBX system. In the case of a failover, the PSTN Lines will transparently reconnected to the existing old PBX (see figure).

Active PBX   Failover PBX

VoIP PBX   Gateway   classic PBX
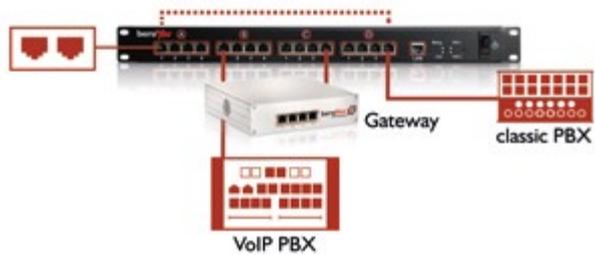
Features

- PSTN Failover device

- 2 switchable current connections

- 4BRI / 4PRI switchable

- Compatible with any PBX

- Technology independent (Analog, ISDN)

- Failover and Bypass Scenario

- Long-lasting and reliable – no moving parts

- Automated Failover via Watchdog

- Administrable via easy to use Web GUI

- Alarm function: visual, audio & via mail/mailing

Technical Specifications

- 4 × 4RJ45 ports to switch to 4 BRI, 4 PRI, 4 FXO or 4 FXS

- All 8 pins of RJ45 can be switched

- Failover and Bypass scenario selectable

- Administration via the self-explanatory web GUI

- Completely controllable via API for custom applications

- Syslog generation in order to monitor devices by individual custom applications

- Onboard Watchdog for automatic switching in case of a Failover

- Onboard E-Mail notification in case of a Failover

- 2 switchable connections for power supply on the backside of the device e.g. for "remote restart"

- Compliance: CE (EN55022, EN55024, EN60950)

- Dimensions: 440 × 150 × 42 mm

- Weight: approx. 2,3 kg

- Mounting: 1U, 19″ rack brackets

- Storage temperature: −20° to 70°C

- Operating temperature: 0° to 70°C

- Humidity: up to 90%, non-condensing

beroNet Cloud

Device Management Software as a Service

"With the beroNet Cloud I can remote manage all the Gateways of my clients and don't need to worry for my own administration system. This solution saves us time and gives my clients the secure feeling, that we can react fast in case of an outfall of the PBX System."

MATHIAS PASQUAY, CEO AT PASCOM NETZWERKTECHNIK

Overview

The beroNet Cloud allows to easy manage, update and configurate all registered beroNet devices from any web browser. The devices communicate from inside the firewall with the cloud, without compromising security, since no signal from the outside reaches the inside. Update, Remote Manage beroNet devices in multiple locations simultaneously, manage projects and many more. Easy, handy, safe.

Cloud advantages

User Friendly Solution:
beroCloud can be easily controlled through the intuitive web browser interface.

Remote Management:
Accessible anywhere and on any device. Monitoring, configuration and update of all devices at multiple locations via beroCloud.

Alarm Notification:
You will be instantly notified of the device status, changes, errors and registrations.

Absolute Security:
beroNet devices communicate through the firewall to the beroCloud with a secure tunnel in both directions.

Remote Management of

- beroNet VoIP devices
- Clients
- Projects
- Remote Monitoring of several devices in the field simultaneously
- Task Management with a timeplanner (e.g. automatic Updates)
- Dashboard with Status of all devices in the field
- Notification in case of breakdown
- Backup and Restoring of the configuration

Functions

- Devices send periodically https pings to the beroNet Cloud, no NAT necessary
- Tasks are requested and performed
- Overall situation of the devices
- Connection and status changes
- CRC Error Counter
- SIP and LTE registration
- Firmware update
- Saving and restoring of configurations
- Activation and reboot
- App installation
- Zero Touch Provisioning (Only Partner and Professional accounts)

The world's first SaaS based Cloud solution for VoIP technologies

With the beroNet Cloud all beroNet devices in the field can be safely managed, updated and configured. Thanks to the Remote Monitoring a high effieciency and cost savings can be achieved. Many cases can be resolved via Remote Monitoring.

Easy handling with the beroNet Cloud

With the easy to use Web GUI of the beroNet Cloud, beroNet VoIP SBCs, Gateways, Appliances and PCI(e) Cards can be easy and safe administrated.

Survival Branch Appliance (SBA)

Overview

When an office loses connection with an off-site telephone system, local telephones are unable to communicate with each other or the outside world.

beroNet's SBA-App transforms a beroNet VoIP device, Session Border Controller, modular Gateways and Cards, or Small Business Line Gateways, into a Survival Branch Appliance, enabling the beroNet device to function as a local backup telephone system.

Local backup system

With the SBA-App installed, local phones will continue to function when:

• the main telephone system fails

• the VPN/Internet connection to the main office is lost

• the Internet connection to the hosted PBX is lost

In these situations, local phones are registered directly with the beroNet device, allowing them to continue communicating with each other and the outside world.

Easy to configure using a CSV file

Users, call groups and SIP trunks are easily configured using a CSV file. The structure of the CSV file is very simple, allowing it to be created and edited using a spreadsheet program such as Microsoft Excel. Alternatively, users can be exported from the main system as a CSV file and then imported into the SBA-App. This import can be done using the interface of the App.

Technical Specifications

• Users can call each other

• Hold / Transferring Calls

• Outgoing calls using SIP trunks or Gateway ports

• Installation of call groups

beroNet CAPI

Overview

beroNet CAPI (BNCAPI_SOHO, BNCAPI_Business, BNCAPI_extraChannel) is a simple and powerful software solution, which enables you to connect your beroNet VoIP devices with the existing CAPI applications. You can choose to run beroNet CAPI either directly on the beroNet Gateway or Card, or directly on the SIP trunk of your VoIP provider.

Virtualize your Applications

With the help of the beroNet CAPI you will finally be able to virtualize your applications in order to decouple them from ISDN connections.

beroNet CAPI and the beroNet CAPI FSC will be available as a software download and are licensed per channel (between 2-60 channels) and per beroNet device.

Technical Specifications

- Call control: SIP / RTP (standalone unicast)
- Call Deflection
- Caller, called, connected, redirection ID's and names
- Calling line idendification restriction

- Overlap Signalling
- User-User Signalling
- DTMF: Inband (RTP-NTE rfc2833), Outband (SIP-INFO)
- Audio: G.711 (A-Law, u-Law) , G.729 (optional)

beroNet Accessories

Model Name	Image	Description
BF19Bracket		The 19" brackets made from high quality aluminum have been created specifically for beroNet VoIP Gateways and SBCs BNSBC-M.
BF19BracketDBL		19" bracket for 2 beroNet Gateways or SBCs BNSBC-M on 1U for the installation in server racks.
BNSBC19BracketL		19" rack mount bracket for beroNet VoIP SBC BNSBC-L and BNSBC-XL.
BNTA19Bracket		19" Rack Bracket created specifically for the beroNet Telephony Appliance.
BFBridge		beroNet Bridge is used to access all 4 PSTN ports over the external 4 RJ45 ports of the beroNet Gateway or PCIe card baseboard.
BF1E1Cross		The beroNet E1 Cross-Over Cable is a about 1.8m E1/ T1 "cross-over" cable. The Cable uses the 1,2,4,5 pinout to connect beroNet E1 ports to equipment where Tx/Rx has to be interchanged.
BFTAdapter		The beroNet T-Adapter divides an external RJ45 port of a gateway or card into 2 RJ45 ports indicated by "A" and "B". To connect up to eight BRI or analog lines on the 4 RJ45 ports of a gateway you need 4 T-Adapters.
BFFXXCable		The RJ45 zu RJ11 cable allows the utilisation of all analog modules used in a beroNet device.
BFPCM		PCM cable to interconnect beroNet Gateways; enabling hardware bridging across devices.
BFANTLTES		Small 17cm LTE antenna for beroNet LTE modules, allowing the reception of LTE signals.
BFANTLTE		LTE antenna with magnetic foot (27cm high) for beroNet VoIP SBC LTE. It comes with a 3m long cable and provides a frictionless LTE reception.
BFPower		12V power supply for beroNet Gateways and SBCs.
BNTA_Power		12V power supply for beroNet Telephony Appliance.

beroNet Services

Support Services	Description
Ticket System	✔ Support via the beroNet Support Desk ✔ Basic assistance for your beroNet VoIP Hardware ✔ Response within 48 hours on business days ✔ Free Support during the warranty period
Scheduled Telephone Support	✔ 1 hour dedicated, planned On-Demand Support ✔ Next free slot (2 weeks maximum) ✔ Basic help with 3rd party technology and applications
On-Site Support	✔ Full day dedicated on-site support ✔ Written report on what our support team did ✔ Help with 3rd party technology and applications

Consulting Services	Description
VoIP Expert Remote Consulting	✔ Senior VoIP expert consultant ✔ Review of request and research of a solution ✔ Documentation of proposed solution ✔ Phone Conference / Webmeeting with discussion ✔ Meeting notes ✔ Connect with beroNet Partner to integrate proposed solution
VoIP Expert On-Site Consulting	✔ Senior VoIP expert consultant ✔ Local workshop to create solution ✔ Meeting notes ✔ Connect with beroNet Parter to integrate proposed solution

Development Services	Description
Custom beroNet OS	Modify the beroNet OS with a custom feature to connect the Gateway or the SBC with unique devices
App Development	Have beroNet develop a custom app for your VoIP installations
Development Maintenance	Maintain your customization by porting it to the latest stable firmware one time per year

Extended Warranty	Description
Warranty Extension	Extend your beroNet product warranty to 5 years.

beroNet

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