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Product Information

anynode®
The Software SBC

TE-SYSTEMS
competence in e-communications.

anynode®

## Efficient communication

anynode is a Session Border Controller that is entirely a software based solution. It works as an interface for any number of SIP UAs ie; SIP phones, SIP PBXs, and also SIP providers. It converts port and directory information, provides security, routes session traffic and does manipulation of call numbers.

Performance Features

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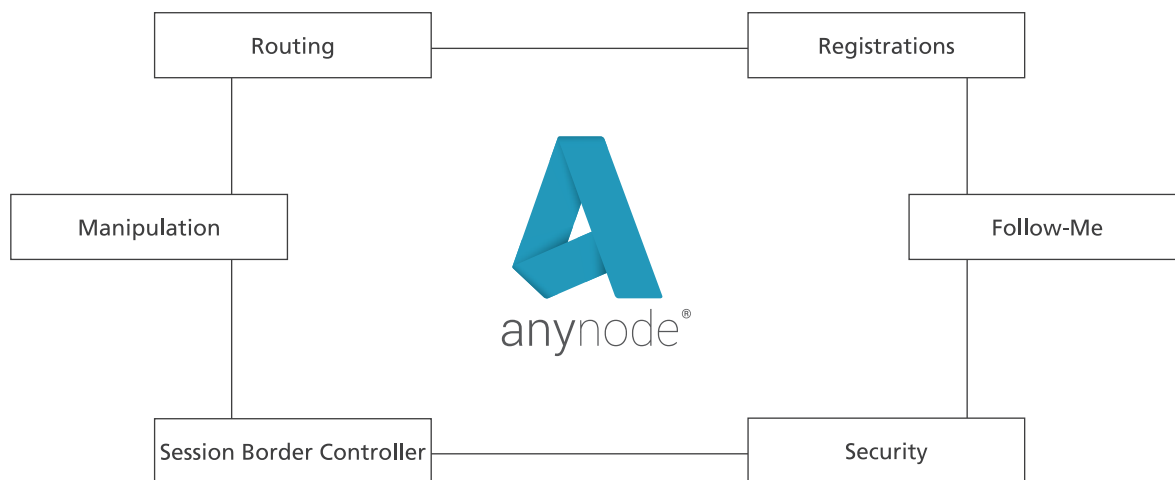
anynode® Overview

SIP-to-SIP User Agent

Using anynode, multiple SIP UAs can be connected virtually making communication between incompatible SIP gateways possible.

Pure Software Solution

anynode is a pure software solution which offers many advantages in comparison to basic hardware solutions like simple and quick access to the user interface.

Virtualization

Virtualization in the context of VoIP? Only a software solution like anynode makes it possible. Cluster scenarios are easier to plan and implement. Operation and maintenance costs are less. Installation and upgrades are performed without having to deal with hardware.

Performance Features

anynode is the ideal solution for connectivity in the SIP-to-SIP world. It supports numerous IP infrastructure features. Absent features can, in a lot of cases, be simulated by anynode making them available to the application as well.

Scalability

anynode is ideal for all applications. Up to 2000 sessions can be used simultaneously. Several codecs or features can be licensed optionally, if needed.

SIP Compatibility

The most important standards on the market are supported. anynode is compatible with the majority of terminal devices from different manufacturers.

Bandwidth Management

Established calls can be adjusted in the codec by anynode so that they will function with existing local conditions. A bandwidth-saving codec, for example, can be selected for a WAN network with generally narrow bandwidth to help assure the quality of the voice data.

Reliability

Outstanding reliability, stability and availability are the key requirements for ideal communication in every company. We maintain technological partnerships with communications companies, and we regularly undergo certifications to remain on the cutting edge for our customers.

Security

anynode can reduce your security risks! By using anynode you will be able to change your non-secure VoIP connections into secure connections to guarantee a secure call. anynode can use TLS and SRTP for voice and fax communications. anynode can secure your environment from attempts of eavesdropping or manipulation.

anynode® Performance Features

The anynode Session Border Controller is designed to provide a complete SBC solution up to 2000 sessions. Built on a decade of experience in VoIP technology, anynode supports all necessary features of an enterprise SBC. anynode includes an easy-to-use centralized, web-based management GUI, ensuring seamless configuration and monitoring.

System Capabilities

Scalability up to 2000 Sessions

Pure Software Solution

Operating system Linux or Windows

Microsoft Lync 2010 and Lync Server 2013 qualified

Supports Skype for Business

Windows Server 2012 certified

Media Services

Transcoding

T.38 compliant fax relay or G.711 software fax

Dynamic Jitter Buffer

Management Capabilities

Graphical based configuration wizard

Manufacturer templates (e.g. Avaya, Unify, Cisco)

Embedded web-based management GUI

Shared object configuration

Comprehensive traces for the purpose of analysis

Easy Software licensing

Routing/Policy

Routing by different criteria

Manipulation of call numbers

Protocol Support

Support of IPv4 and IPv6

RTP

UDP, TCP

Security

TLS

SRTP

X.509

Redundancy

1:1 Redundant Systems for Service Availability

Failover

This is a quick overview of the anynode features. For detailed information please download the anynode datasheet on www.anynode.de or contact us via e-mail at sales@te-systems.de. The listed features are not supported by all endpoints. You can find more detailed information on compatibility in the Interoperability List, which is updated monthly and available for downloading at www.anynode.de.

Manipulation of Call Numbers and Routing

anynode enables flexible and comprehensive routing functions. Different telephone number formats can be made compatible and normalized to a standard format.

Flexible Manipulation of Call Numbers

anynode provides for a flexible manipulation of the incoming and outgoing source and destination numbers. With anynode's manipulation ability, different call number formats can be made compatible.

Simple yet comprehensive routing functions can be enabled, which can be adapted easily and individually for your needs. For example,

E.164 numbers from an endpoint can be converted into internal extension numbers and vice versa.

For this purpose, complex manipulation varieties are available through placeholders and simplified regular expressions. This enables different number ranges to be normalized to a standard format.

Manipulation of Call Numbers and Routing

Provider — 0049 5353 8195 661 — SIP-Trunk — anynode®

5 661 — PBX / PBX I / e.g. Alcatel, Avaya, Unify, ...

+49 5363 81 95 661 — Skype for Business

Routing Functions

The routing can take place on entire E.164 numbers, prefixes or extension numbers.

If the route is not determined by a rule that is based on a source and destination endpoint, anynode will automatically find the best route for a dialed number.

Session Border Controller

anynode offers all the features that you would expect from a Session Border Controller. This includes key functions like security, transcoding of media, topology masking and session management.

A Session Border Controller is used if signaling and media flows between two separate VoIP-networks need to be established, transmitted or terminated.

anynode has the ability to work in different modes. In the "basic mode", anynode only coordi-

nates the signaling. anynode can also terminate the media streams and therefore communicate with two physically separated networks. anynode can also be used as a secure endpoint in front of a non-secure network.

Session Border Controller

Enterprise Network

SIP PROVIDER

SIP-Provider   Internet   anynode®   Skype for Business
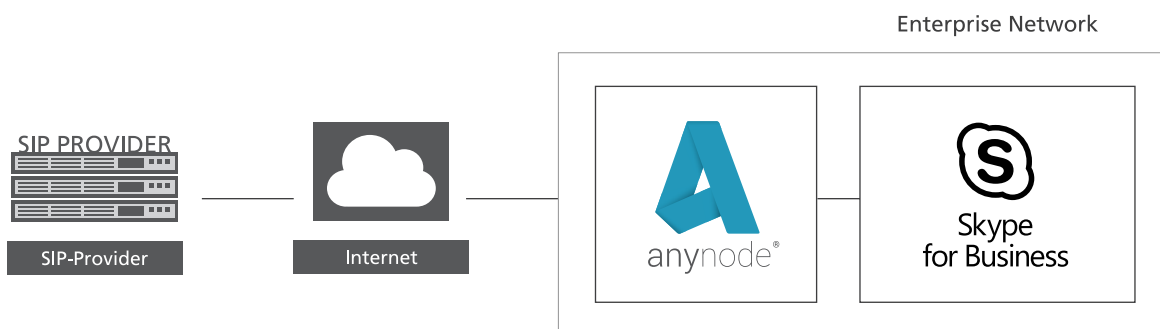
Security

anynode supports TLS and SRTP. If anynode carries out the signaling as well as the termination of media, the network topology will be hidden behind an anynode endpoint. Only the anynode address will be displayed to the other involved endpoints. In doing this, malicious intervention and unwanted activity can be eliminated. Improperly coded SIP messages will be rejected, which also reduces the possibility of malicious attacks.

Conversion of Media

If necessary, anynode terminates media streams to forward them to another endpoint.

Connectivity

There are quite a number of versions and interpretations of SIP. Because of this different devices from manufacturers can have difficulty communicating, or only partly compatible, with one another. Endpoints of anynode can be adjusted to specific manufacturer characteristics based on predefined profiles to ensure optimum functionality among components. anynode is also able to connect IPv4 and IPv6 networks.

Regulatory Tasks

anynode's central location connecting several-VoIP endpoints allows for legally recording conversations for regulatory purposes.
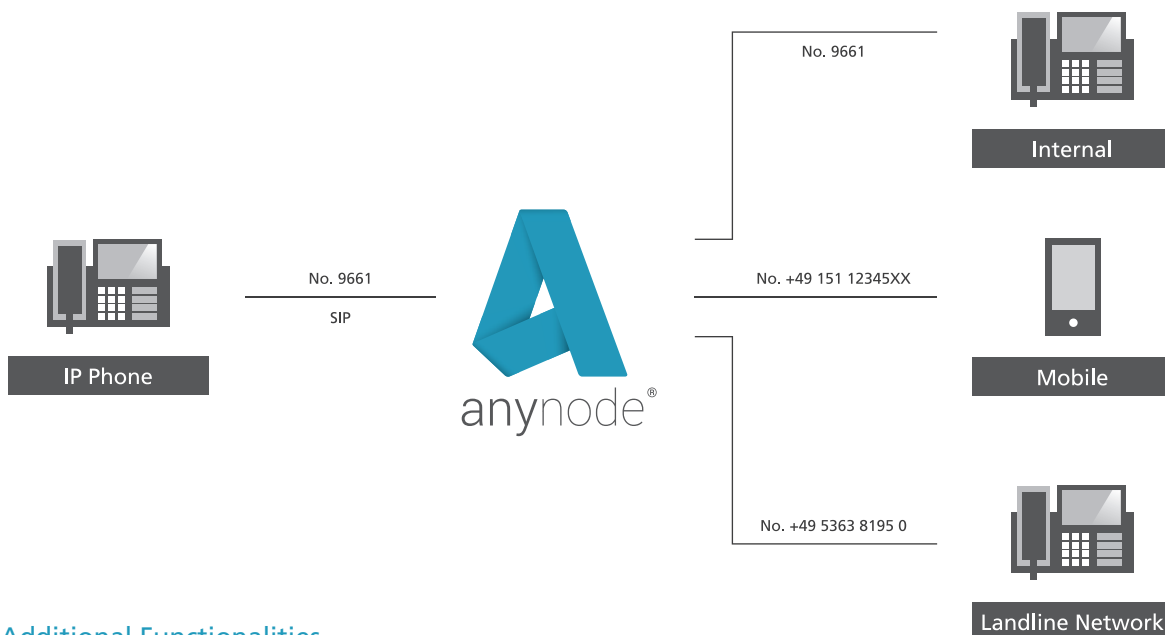
Parallel Call

Flexible communication with anynode – wherever and whenever you want to be reached.

Easily Configurable Routing Rules

Routing rules are configurable via anynode so for an incoming call, several outgoing calls can be established which are time delayed. The destination numbers and destination sessions are defined through the anynode configuration.

This enables fixed phone lines and mobile phones to ring simultaneously. The call can also be routed to a mailbox number (Voice Mail) if the call is not answered in a predefined time.

Parallel Call

No. 9661

Internal

No. 9661

SIP

No. +49 151 12345XX

IP Phone

Mobile

No. +49 5363 8195 0

Landline Network

Additional Functionalities

anynode allows you to simulate functionalities, which are not available or require special knowledge of certain telephone systems. For example: one-number concept, or alarm server.

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anynode® - A Safe Solution

For voice and fax communication, anynode supports TLS and SRTP, thwarting any attempts at eavesdropping or manipulation. Even if the infrastructure does not offer TLS/SRTP, anynode can offer secure communication.

Securing VoIP communications in WLANs, corporate networks or in public hotspots has become a genuine concern with some businesses.

And for good reason, because security is of paramount importance when it comes to your data!

Multi Secure Gateway
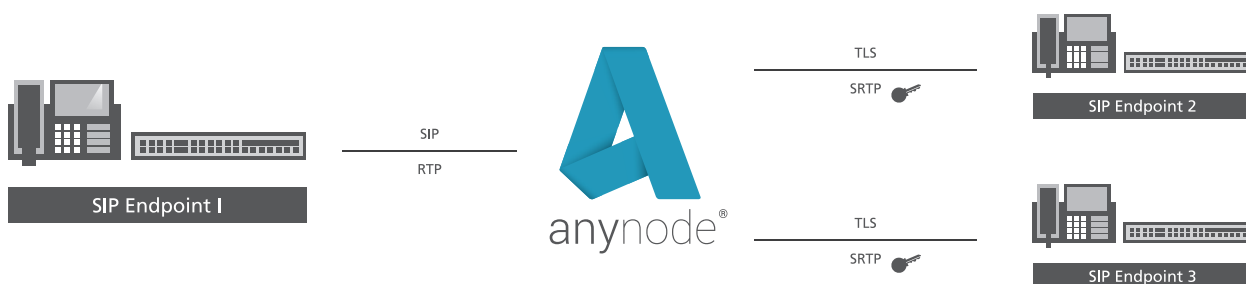
Non Secure to Secure Gateway

anynode enables telephones, telephone systems or providers to connect to remote stations.

anynode is able to change your non-secure VoIP connections into secure connections!

anynode Security Protocols

- TLS (Transport Layer Security)
  Signaling encryption
  to specification RFC2246, RFC4346 and RFC5246

- SRTP (Secure RTP Protocol)
  Encryption and authentication of RTP data in SIP
  to specification RFC3711

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High Availability

A high degree of availability is essential for good communication. When considering VoIP, virtualization offers more flexibility, redundancy and increased security while reducing costs.
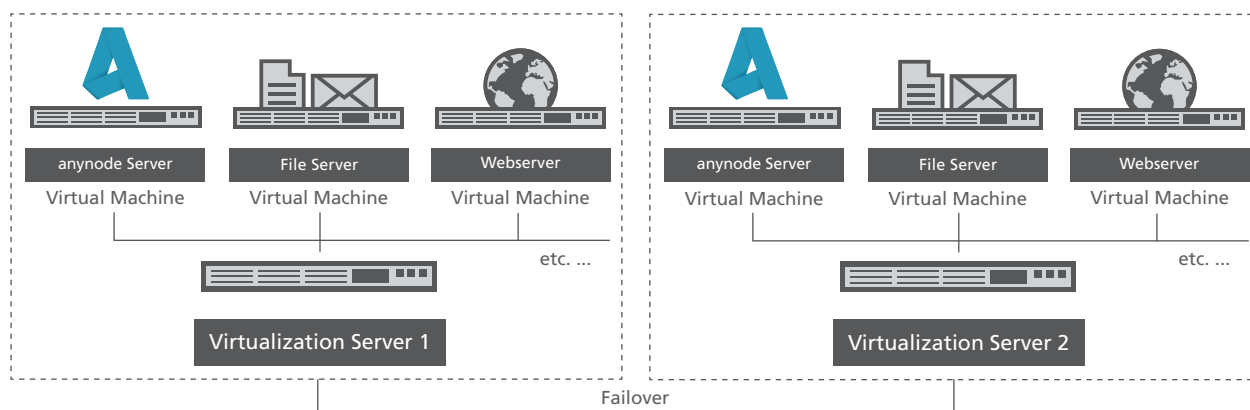
Advantages

It takes a software solution such as anynode to virtualize your VoIP solution. The advantages over pure hardware gateways become particularly evident when you are trying to save on both resources and costs:

- Only one physical server needed to run several virtual machines

- Straightforward and fast restoration of the working environment after hardware failures by simply reverting to the latest backup of the virtual machines

- Since anynode is a pure software solution,

hardware defects and the associated replacement costs and waiting times are avoided

- The solution can be configured quickly and flexibly: when changing to different virtualization hardware, the virtual machine can simply be migrated

- anynode offers absolute flexibility regarding the number of sessions, since the licenses can be upgraded as required

- Fast adjustment of the number of sessions through an online request for the license file, which is then simply imported

anynode in Virtual Cluster Solution

| anynode Server | File Server | Webserver |
| Virtual Machine | Virtual Machine | Virtual Machine |

etc. ...

Virtualization Server 1

| anynode Server | File Server | Webserver |
| Virtual Machine | Virtual Machine | Virtual Machine |

etc. ...

Virtualization Server 2

Failover

High Availability Cluster (HA-Cluster)

If you need to guarantee high availability (e.g. 24/7 operation) and wish to ensure this via a HA cluster, the anynode cost model offers a significant savings potential compared to traditional hardware solutions, in particular where larger numbers of sessions are involved.

Supported Virtualization Solutions

- VMware vSphere/ESXi
- Citrix XenServer
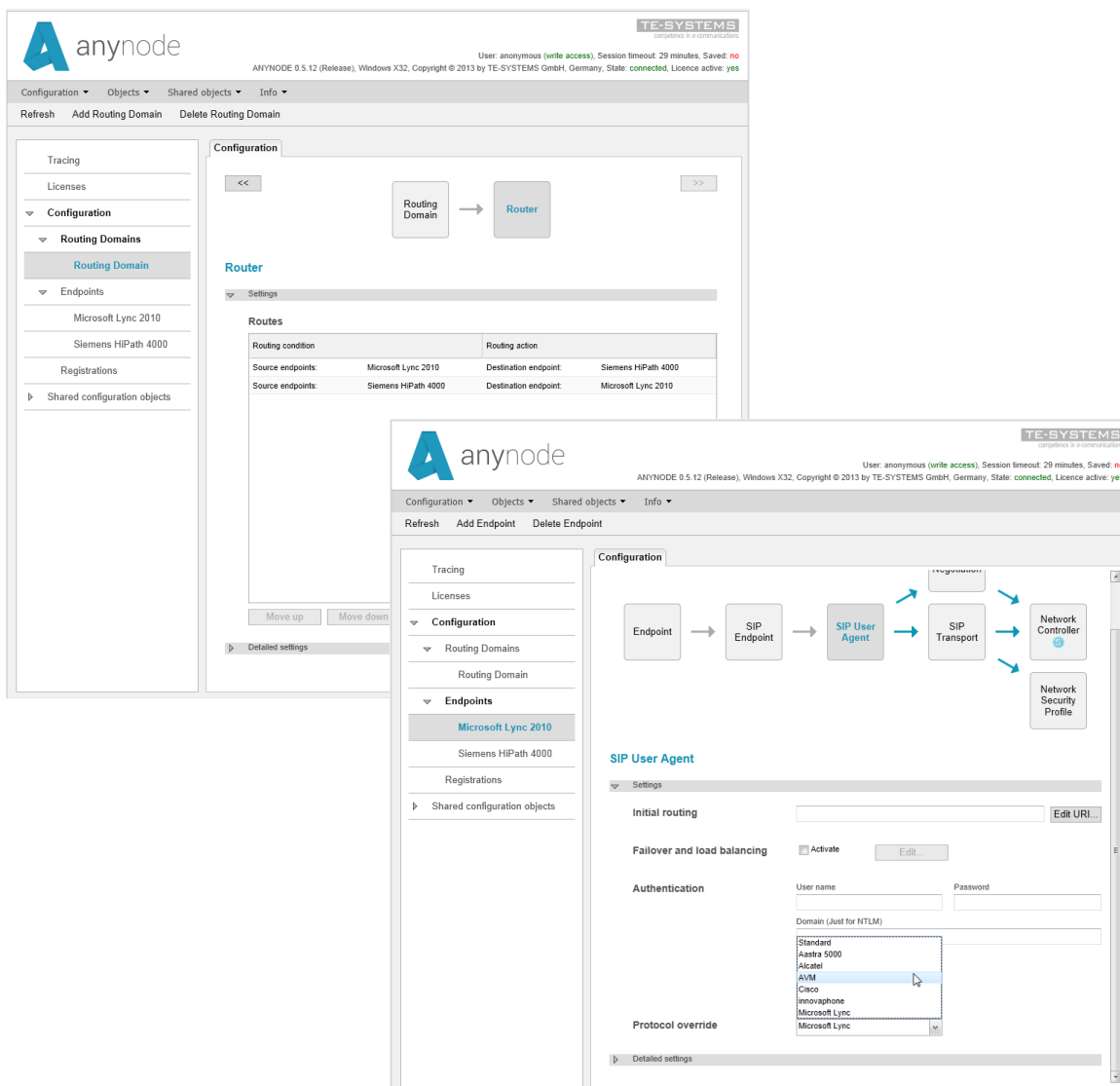- Microsoft Hyper-V

Supported Cluster Technologies

- Microsoft Cluster Server
- EMC AutoStart

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anynode® Tools

Configuration

anynode offers an easy and intuitive web interface to handle configuration. Endpoint and routing definitions, as well as registration and security profiles, can be created, modified, deleted and displayed. Support is provided by generating the endpoint through predefined manufacturer profiles which enables easy, efficient interoperability.

anynode® Tools

Trace Analyzer

The anynode Trace Analyzer is now one single tool that will be used by on-site engineers all the way to the core developers of anynode. It integrates an overview of all traced sessions, a concise presentation of the SIP message flow of individual sessions and an RTP stream view which shows details for combined or individual media-flow directions.
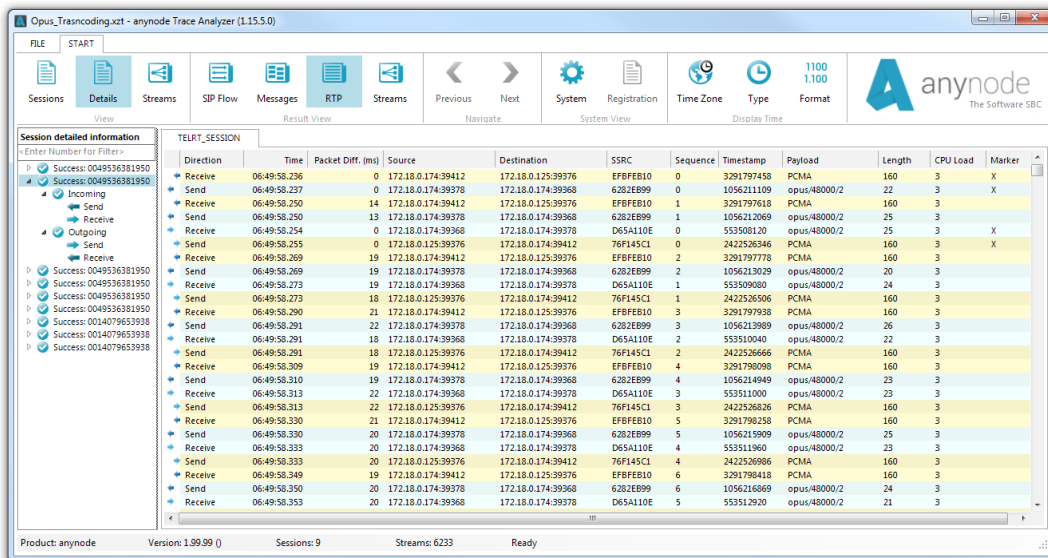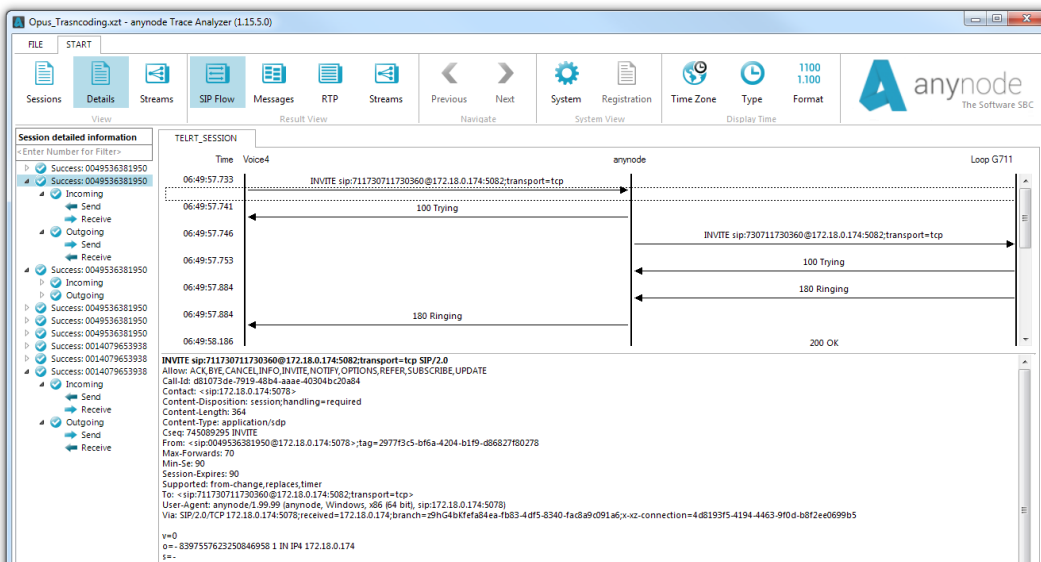
System Requirements

anynode is a 'plug and play' solution that is simple and fast to install. This enables instant availability for VoIP use at the highest quality level.

Your IT equipment will be as unique as your company. anynode will adapt to anything! Facts to keep in mind are:

- your infrastructure
- the number of sessions to be used simultaneously and
- the performance features that you will need

Very special configurations and the specifics involved are dealt with in our TechNotes which are constantly being updated. You will find these at www.anynode.de. If you do not find suitable information covering your specific problem, please feel free to contact us: Individual custom solutions are part of our service!

System Requirements - at a glance

MICROSOFT WINDOWS

Operating System

- Windows Server 2016
- Windows Server 2012 R2
- Windows Server 2012
- Windows 10
- Windows 8 / 8.1
- Windows Server 2008 R2
- Windows 7

Administrator rights are needed for the installation process. It is recommended best practice to back-up your system and data before you remove or install software.

For certain features of the software, Java may need to be installed.

LINUX

- Debian 9
- Debian 8
- Debian 7
- Ubuntu 14.04
- other Linux platforms available on request

Supported virtualization solutions

- VMware vSphere/ESXi
- Citrix XenServer
- Microsoft Hyper-V

TE-SYSTEMS GmbH

We have made it our mission to support partners in the area of Unified Communications with anynode in a way that they can operate in the market more effectively.

Technology Partners

To ensure that the integration between anynode and the involved products is of the highest quality, we maintain technology partnerships and undergo regular certification.

This is the only way to ensure that our complete solutions provide optimum functionality to our joint customers.

About Us

TE-SYSTEMS, based in Wolfsburg, Germany was founded in 1990. The company currently has a workforce of more than 20 employees, most of whom work in development.

Unified Communication solutions using XCAPI have been successfully implemented worldwide since 2001.

Innovation is the future. This is why we have extended our product portfolio with the session border controller (SBC) anynode. This pure software solution acts as an interface for incompatible SIP endpoints and transforms port

and address information. Anynode also enables security, makes routing decisions and performs manipulation of call numbers.

Since the beginning of 2013 TE-SYSTEMS is a "Microsoft Gold Certified Partner". This gives us greater access to Microsoft technologies in early stages in order to adapt quickly to new technological developments on the Windows platform and other Microsoft products. This enables TE-SYSTEMS products to enjoy seamless interoperability with Microsoft's product offerings.

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Third Party Disclaimer and Limitations

„Web Toolkit", developed by Google (http://code.google.com/webtoolkit/).

„Smart GWT", developed by Isomorphic Software, Inc. (http://www.smartclient.com/).

„Jetty", developed by Mort Bay Consulting Pty Ltd (http://mortbay.com/).

„Java Native Access", developed at github.com (https://github.com/twall/jna).

„Apache Commons IO", developed by the Apache Software Foundation (http://www.apache.org/).

„Guava Libraries", developed by Google (http://code.google.com/p/guava-libraries/).

„LDAP SDK", developed by Unbound ID (https://www.unboundid.com/products/ldap-sdk/).

„Freemarker", developed at freemarker.org (http://freemarker.org/).

„jsoup", developed by Jonathan Hedley (http://jsoup.org/).

„OpenSSL", developed by the OpenSSL Project for use in the OpenSSL Toolkit (http://www.openssl.org/), written by Eric Young (eay@cryptsoft.com) and written by Tim Hudson (tjh@cryptsoft.com). [Windows only]

„Opus codec", developed by the Xiph Foundation (http://www.opus-codec.org/license/).

„SQLite", developed at sqlite.org (https://sqlite.org/).

„Java Runtime", developed by Oracle Corporation (JRE License Terms). [Windows only]

anynode-Frontend

This product includes software developed by Google (http://code.google.com/webtoolkit/)

This product includes software developed by Isomorphic Software, Inc. (http://www.smartclient.com/)

This product includes software developed by Mort Bay Consulting Pty Ltd (http://mortbay.com/)

This product includes software (JNA) developed at github.com (https://github.com/twall/jna)

This product includes software developed by the Apache Software Foundation (http://www.apache.org/)