

R&S®PACE 2

Protocol & Application Classification Engine

R&S®PACE 2 is a software library that uses different technologies – deep packet inspection, behavioral, heuristic and statistical analysis – to reliably detect network protocols and applications, even if they use advanced obfuscation and encryption techniques, and extract metadata in realtime. R&S®PACE 2 is used by network equipment and security vendors to enhance their products with state-of-the-art protocol and application awareness capabilities to deliver full visibility into IP-based network traffic.



R&S®PACE 2

At a glance

Designed by ipoque engineers and developers with years of experience in Layer 7 protocol and application classification, R&S®PACE 2 accelerates time to market and is designed for quick and easy integration. R&S®PACE 2 reduces costs and risks for vendors compared to developing a solution in-house and can be deployed in a variety of use cases, including network security (IDS/IPS, next-generation firewalls, SIEM, UTM), network monitoring and traffic management, policy and charging, application delivery and optimization, analytics and business intelligence, mobile gateways and mobile data offload.

Key facts

- Full visibility of protocol and application detection, including service recognition, e.g. chat, video, voice, file transfer
- Identification of thousands of applications through frequent updates
- Highly accurate realtime detection rate with 100 % reliability
- Best memory utilization efficiency on the market
- High performance for core network links with speeds up to 100 Gbit/s and faster
- Metadata extraction, including session performance data and intelligent correlation of data and signaling
- Flexible and seamless integration in various network products
- Continuous up-to-date support for the latest protocols and applications

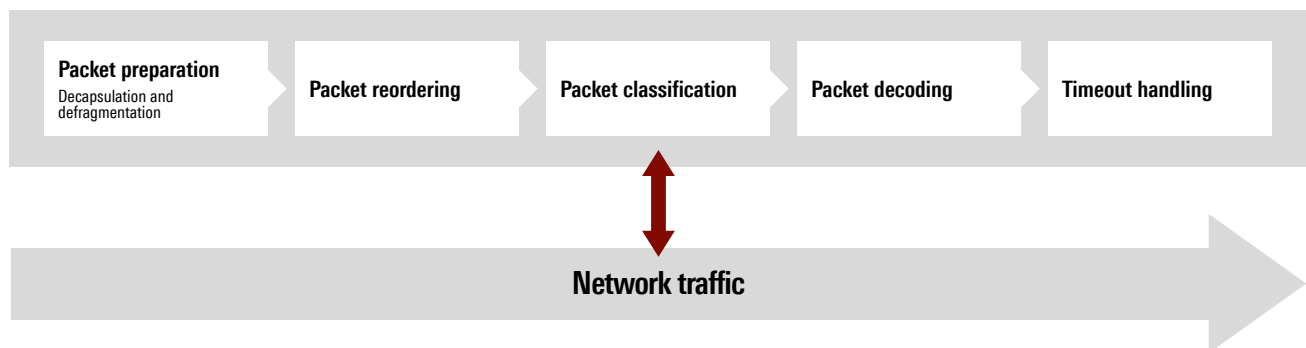
Fast performance

- High performance with speeds of 10 Gbit/s, 40 Gbit/s or 100 Gbit/s and faster
- Optimized code for high-end multicore technology
- Built-in multicore support provides linear scalability
- Fast detection, only 1 to 3 packets needed
- Integrated, highly optimized flow tracking for millions of concurrent connections
- Developed entirely in C code without any external dependencies

Flexible and easy integration

- Independent of hardware platform
- Runs on any Linux, Mac, Solaris or Windows system
- Fully documented APIs, including code samples
- Professional services for all stages of integration
- Native C Interface

R&S®PACE 2 – IP classification & metadata extraction



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Benefits and key features

QoS/QoE Analytics

- ▮ VoIP/VoLTE performance measurements (e.g. call completion rate, jitter and packet loss rate)
- ▮ Volume counter – in total or per subscriber (e.g. throughput, IP packets, IP flows)
- ▮ Statistical traffic measurements (e.g. SYN/ACK to ACK roundtrip time and TCP out-of-order counter)

Third-party network I/O support

- ▮ Unique easy-to-use packet processing engine provides a complete software solution to build custom applications
- ▮ Functionality abstraction of packet processing and engine analysis
- ▮ Optimized to support different network interfaces, e.g. Intel, Napatech, PCAP, etc.
- ▮ Includes multithread support for high-performance use cases
- ▮ Autodetection of interface types plus easy configuration (SPAN vs. management vs. capture)
- ▮ Includes a wide variety of different analyzing modules for deeper insight into protocols, applications and flows
- ▮ Comes with a programmable API that enables input and output modules to easily extend the analytics capabilities
- ▮ Ready for SDN/NFV

Beyond protocol and application visibility

- ▮ Full TCP reassembly to handle fragmented, duplicated and out-of-order packets
- ▮ Decapsulation support for tunneled traffic
- ▮ Suitable for bidirectional and unidirectional network traffic
- ▮ In-house developed, 100% proprietary code provides clean licensing without GPL compliance issues

Easy upgrade to advanced packet processing

- ▮ Easy upgrade phase from packet classification to advanced metadata extraction, including decoding events
- ▮ Detail of data extraction configurable to fit customer needs while reducing integration effort
- ▮ Universal API (UPI) for flexible integration into different applications for direct and consistent use of all R&S[®]PACE 2 features
- ▮ Component API for using single components separately to build special applications not covered by the UPI

Custom defined protocols

- ▮ Ready-to-use R&S[®]PACE 2 extension for defining your own protocols and applications, independent of existing signature database
- ▮ Customization of existing protocol and application

Always up to date

- ▮ Frequent updates of protocol and application detection lists ensure market-leading detection accuracy
- ▮ Active monitoring of ever-changing apps speeds up protocol and application maintenance cycle

Specifications in brief	
Operating systems/distributions	Linux Standard Base, Windows, FreeBSD, Solaris, Android
CPU architectures	x86: x86_32, x86_64, PowerPC, MIPS, e.g. Cavium Octeon, ARM
Applications and protocols	VoIP/messaging: Skype, Oscar (ICQ & AIM), SIP, Skinny, H323, WhatsApp, WeChat, LINE, etc. Social networking: Facebook, Twitter, MySpace, LinkedIn, Sina Weibo, Instagram, Tumblr, RenRen, etc. P2P/filessharing: BitTorrent, eDonkey, Rapidshare, Uploaded.to, Xunlei, 4shared, etc. Streaming: YouTube, Netflix, Hulu, Deezer, MyVideo, Vimeo, QQLive, Youku, iTunes Radio, etc. Enterprise: Citrix, Blackberry, SAP, MS Lync, MS Exchange, Lotus Notes, WebEx, etc.
Examples of metadata	Traffic volume: per user, per protocol, per application, etc. QoS KPIs: jitter, throughput, latency, roundtrip time, packet loss rate (per direction), Packet direction, etc. User ID: MSIDN, diameter/RADIUS login, email address, callee, caller, sender, receiver, etc. User info: call state, used operating system, tethering status, clicked URL, etc. Client/server indication: per subscriber

About ipoque

ipoque GmbH, a Rohde & Schwarz company, is a leading supplier of network traffic analytics and IP classification solutions to network operators and infrastructure vendors. Over 200 customers in more than 60 countries across the globe rely on ipoque to maximize network efficiency, improve the quality of experience for their subscribers and develop the intelligent communications networks of the future.

About Rohde & Schwarz

The Rohde & Schwarz electronics group is a leading supplier of solutions in the fields of test and measurement, broadcast and media, secure communications, cybersecurity, and radiomonitoring and radiolocation. Founded more than 80 years ago, this independent global company has an extensive sales network and is present in more than 70 countries. The company is headquartered in Munich, Germany.

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ISO 9001

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PD 3607.2778.12 | Version 01.00 | August 2015

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