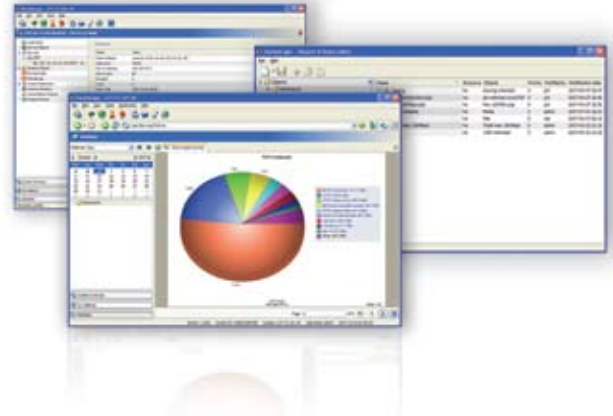


PacketLogic Software Modules



PacketLogic is an Evolved DPI platform. Actually, it is several platforms ranging from the 4 Mbps PL5600 to the 80 Gbps PL10000 running the same PacketLogic codebase and thereby offering the same extensive feature-set. This means that PacketLogic's intelligence is found in the common firmware that enables the different platforms to co-exist in the same network.

DRDL™

The core component in PacketLogic is Procera's own identification engine DRDL – Datastream Recognition Definition Language. DRDL facilitates a broad range of criteria to properly identify the application of each individual datastream, a.k.a. flow, session or connection. The identification relies on bi-directional information like the packet sequence in a handshake, header information, protocol, actual payload, and other distinguishing characteristics of an application. This way DRDL can properly identify even encrypted applications.

The standard-syntax language of DRDL enables rapid development of new signatures. Procera Networks has a designated team that on a weekly, sometimes daily basis, releases new signatures. The rapid development enables quick support for local applications like Korean P2P applications. The DRDL database currently consists of more than 900 signatures (Jul-08). The scripting

language also facilitates trained partners and customers to develop own signatures, e.g. for proprietary applications.

Some applications create multiple flows. DRDL interconnects control and data sessions of protocols like FTP, and has five different signatures for SIP connections like SIP RTP and SIP Hang-Up. This identification process requires DRDL to look far into new datastreams. During this process it aggregates detailed properties like mime-type, filename, chat channel and SIP caller ID. This granularity enables you not only to see the Xbox Live traffic, but rather the Xbox Live users who are playing Halo 3.

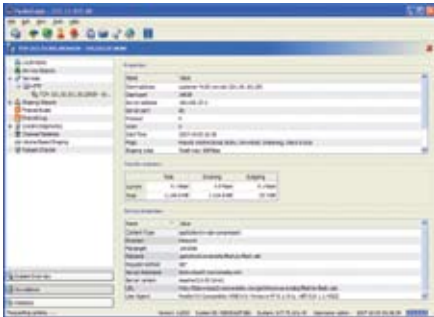
Another unique capability of DRDL is classification. Connection flags classify the traffic based on its behavior. Typical classifications are "interactive", "streaming", "random-looking" and "bulky". This way you can set preferences on traffic that can not be identified or when you are required to be application agnostic.

LiveView

The DRDL data is presented in the PacketLogic module LiveView. This is the first view that meets the PacketLogic administrator. LiveView shows all traffic going through the PacketLogic system, from overview down to a specific connection – in real-time. This enables you to support your users on the fly and resolve issues when they actually occur.

Key Features

- **Common codebase** for all PacketLogic platforms
- **Extensive functionality** for service creation, traffic control and network protection
- **Real-time** traffic view, reporting tool, traffic shaping and filtering
- **DRDL** provides accurate traffic identification to all software modules
- **Complete integration** between software modules, with shared objects for ubiquitous administration
- **Intuitive user interface** (GUI) plus integration capabilities through Python API



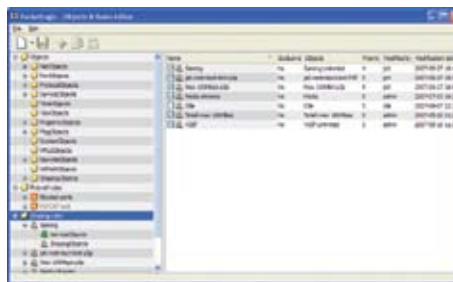
Single Session of an Active User

The traffic is presented per local host (IP address) or per application. Users (local hosts) and applications can be grouped in objects and sub-objects to provide a great overview. This way you can instantly see the amount of Entertainment traffic in your network. The objects are used by all PacketLogic modules, which means that a change, like an addition to an object, immediately applies to all modules. The objects, like a NetObject for an individual customer, can be generated dynamically through integration with the provisioning system or snooping of Radius/DHCP traffic.

Traffic Shaping and Filtering

Policies are enforced in the Traffic Shaping and Filtering PacketLogic modules. Traffic Shaping can force certain traffic to a defined level. It can also be used to secure that it does not exceed a set threshold. This way capacity can be designated to critical or sensitive traffic. The Traffic Shaping module also contains prioritization where traffic based on labeling is forwarded in a certain order in case of congestion. PacketLogic uses a pure non-disruptive queuing mechanism and offers a unique Volume Based Shaping (VBS) feature. PacketLogic VBS has a "sliding window" to avoid simultaneous reset of users, and can be set to bring the rate down in several steps as quotas are filled.

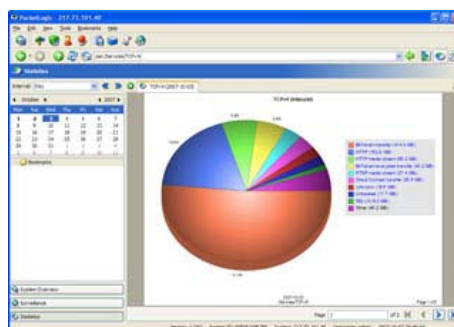
The Filtering module is a capable Layer 7 firewall. Traffic can be filtered or allowed based on all granular properties provided by DRDL. This enables forensic control of unwanted and hazardous traffic. The Filtering module also provides rewrite functionality that can redirect traffic and change the QoS label DSCP (DiffServ) and automated DoS/DDoS protection.



Objects and Rules Editor

Statistics

The data presented in real-time in the LiveView module is aggregated in the PacketLogic Statistics module. Statistics validates that the policies provide the intended results. This is valuable information for Marketing and Product Management to explore what the users do online, for Abuse Management to track malicious behavior, and for Company Management to get weekly reports.



Statistics Viewer

Reports can be defined using bookmarks for recurring reports. The reports can be line charts, bar charts and pie charts. The Connection Search uses criteria to find for example who connected to a certain host at a specific occasion. PacketLogic also offers a web extension called WebStatistics that presents data in a clickable web-GUI. WebStatistics can be configured to only show selected data. This can be used to give the user access to his own statistics.

Administration and Integration

All PacketLogic modules are fully integrated, managed and monitored through the GUI admin client, the Python-based API (application programming interface), SNMP and Syslog. A CLI (command line interface) is available for system configuration. Administration is done over an encrypted connection to an out-of-band physical interface. Multiple PacketLogic systems can be administrated remotely in the same administration client. PacketLogic also offers centralized management where the same settings and firmware editions are set to multiple systems.