

ip|engine Hardware Appliances



The Ipanema **Autonomic Networking System, ANS[®]**, uses both software and hardware components. The fully featured Ipanema provided hardware component is called an **ip|engine[®]**.

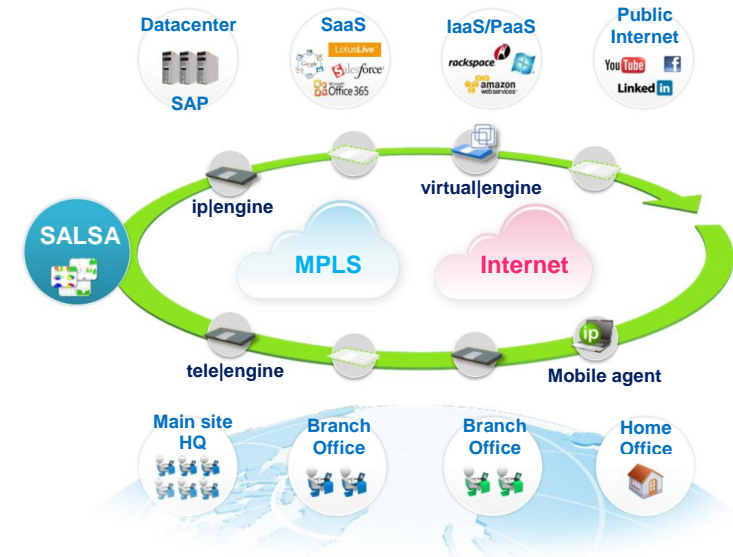
These **ip|engine** devices are installed within the customer VPN at edge locations, typically between a CPE router and the LAN.

Requiring no specific local configuration except an ip address, an **ip|engine** is a self-managed device that operates under the control of the central management software, called **SALSA**.

Acting as the local point of control within **ANS**, and using Application Performance Objectives, **ip|engines** work in real-time to measure the network's performance and usage to build **Application Visibility** views and reports to determine application conformance to SLA.

As part of **ANS**, the **ip|engines** cooperate and tune themselves automatically to the dynamic nature of the traffic and network by globally enforcing the Application Performance Objectives, taking into account meshed flows, different types of congestion, application competition for resources and so on..

ANS enables the **ip|engines** to adapt to longer term changes within the business such as a permanent change in the distribution of users across sites, a newly deployed application or site, the evolution of infrastructure and services into the cloud.



IP|ENGINE FEATURES AND MODELS

The ip|engine model range is tiered according to the capacity of the WAN accesses and the number of users each model can manage. All models support the following services:

- **Application Visibility** which collects Application Performance metrics for reporting, analysis and SLA compliance;
- **QoS & Control** which enforces the Application Performance Objectives and provides TCP protocol acceleration services;
- **WAN Optimization** which delivers Redundancy Elimination and application acceleration services such as CIFS, SSL, and HTTP;
- **Dynamic WAN Selection** which selects in real-time the best available WAN access for each application flow;
- **Network Rightsizing** which reports capacity management information and recommendations for the different WAN accesses.

2 Gbps		ip e 1800ax 10G
1 Gbps		ip e 1800ax
155 Mbps		ip e 1000ax
100 Mbps		ip e 140ax
20Mbps		ip e 20ax



TECHNICAL CHARACTERISTICS

ip|engines support deployment both in-band and out-of-band.

- **in-band** also called **serial mode** supports **all features**. The ip|engine is inserted between the LAN and the WAN access routers. It acts as a multi-port switch towards the WAN. A built-in configurable fail-safe ensures network continuity between the interfaces labeled LAN and WAN in the event of any failure, including power failure;
- **out-of-band** also called **parallel mode** is used **for Application Visibility** only. Traffic to and from the WAN is copied to the ip|engine using a mechanism such as a tap, hub connection or a mirrored port on a switch.

All ip|engines include a dedicated management port and extension ports for advanced system features such as **Dynamic WAN Selection** or Asymmetric Routing support.

ip engine Model	WAN Throughput (1)	WAN Optimization (2)	# Users (3)	LAN Interfaces	Disk size (4)	W x D x H (mm)	Weight	Format	Power supply (5)
ip e 20	20 Mbps	10Mbps	<500	10/100/1000 Base T	N/A	268x146x40	1.5 Kg	Table top / Rack 1U	External <18 W
ip e 20ax	20 Mbps	10Mbps	<500	10/100/1000 Base T	160 GB	268x146x40	1.7 Kg	Table top / Rack 1U	External <18 W
ip e 140ax	100 Mbps	20 Mbps	<5 000	10/100/1000 Base T	200 GB	436x286x44	4.3 Kg	Rack 1U	Single < 50 W
ip e 1000ax-T	155 Mbps	50 Mbps	<20 000	10/100/1000 Base T	2 TB	437x450x89	16.2 Kg	Rack 2U	2 Redundant <450W
ip e 1000ax-Sx	155 Mbps	50 Mbps	<20 000	1000 Base Sx	2 TB	437x450x89	16.2 Kg	Rack 2U	2 Redundant <450W
ip e 1800ax-T	1 Gbps	155 Mbps	<50 000	10/100/1000 Base T	2 TB	437x450x89	16.2 Kg	Rack 2U	2 Redundant <450W
ip e 1800ax-Sx	1 Gbps	155 Mbps	<50 000	1000 Base Sx	2 TB	437x450x89	16.2 Kg	Rack 2U	2 Redundant <450W
ip e 1800ax-SR-10G	2 Gbps	155 Mbps	<50 000	10G Base SR	2 TB	437x450x89	16.2 Kg	Rack 2U	2 Redundant <450W
TWIN cluster (up to 4 x 1800ax)	1Gbps	620Mbps	<200 000						
STACK cluster (up to 8 x 1800ax)	8Gbps	1.4Gbps	<400 000						

(1) Maximum stated throughput is full duplex and achieved using typical mix of traffic within an environment not exceeding the maximum number of supported users.

(2) WAN Optimization capacity is the part of WAN throughput that can be expected to be optimized.

(3) Maximum number of supported users is calculated assuming typical activity.

(4) Disk sizes are the raw capacity of the HDD units supplied.

(5) All power supplies: 100-240V 47-63Hz