



ip|engine[®] Hardware appliances

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The Ipanema **Autonomic Networking System™ (ANS™)** uses both software and hardware components. The fully featured hardware components are called **ip|engines**. These 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 and cooperative device that operates under the control of the **ANS** central management software, called **SALSA®**.

Each ip|engine acts as a local point of control within ANS. ip|engines work collectively in real-time to discover the applications and measure the network's performance and usage ip|engine.

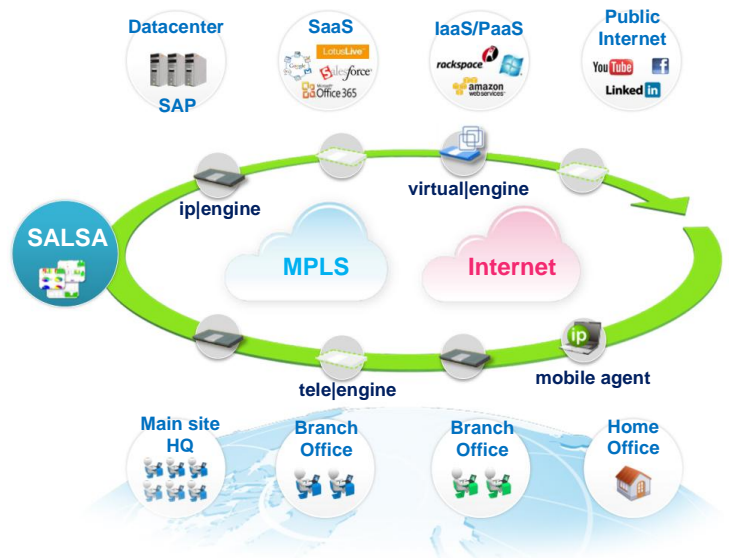
As part of **ANS**, the **ip|engines** cooperate and tune themselves automatically to the dynamic nature of the application traffic, globally enforcing the Application SLAs. They take into account meshed flows, different types of congestion, application competition for resources and so on.

The **ip|engines** adapt to longer term changes within the business, such as a change in the distribution of users across sites, a newly deployed application or a new site, as well as 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 WAN accesses and the number of users each model can manage. All models support the following services:

- **Application Visibility**, which discovers the applications and 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 and is the key feature to provide Hybrid Network Unification™;
- **Network Rightsizing**, which reports Capacity Management 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 120ax
20Mbps		ip e 20ax

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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 and 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	10 Mbps	<300	10/100/1000 Base T	N/A	268x146x40	1.5 Kg	Table top / Rack 1U	External <18W
ip e 20ax	20 Mbps	10 Mbps	<300	10/100/1000 Base T	160 GB	268x146x40	1.7 Kg	Table top / Rack 1U	External <18W
ip e 120ax	20 Mbps	10 Mbps	<2 000	10/100/100 Base T	200 GB	436x286x44	4.3 Kg	Rack 1U	Single <50W
ip e 140ax	100 Mbps	20 Mbps	<5 000	10/100/1000 Base T	200 GB	436x286x44	4.3 Kg	Rack 1U	Single <50W
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)	1 Gbps	620 Mbps	<200 000						
STACK cluster (up to 8 x 1800ax)	8 Gbps	1.4 Gbps	<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