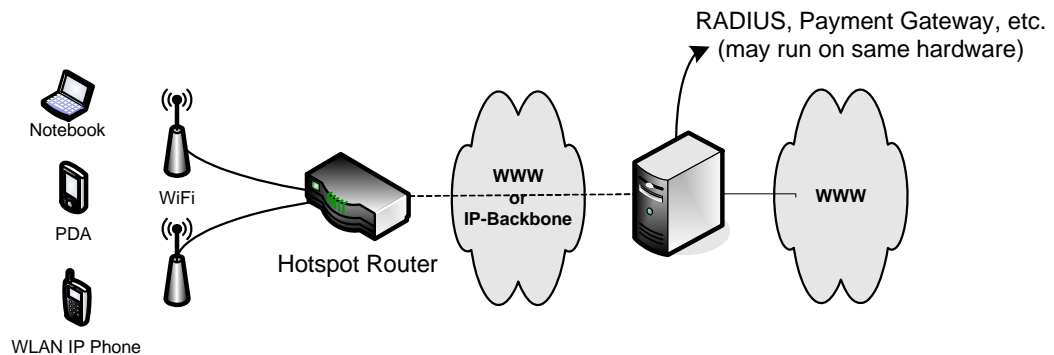


## Product sheet MINAS: Access Server for Broadband Access Networks

**Overview:** MINAS Access Servers act as policy enforcers in Broadband Access Networks. End users connecting through e.g. Wi-Fi® networks and hotspot routers to a MINAS Access Server are granted access to the Internet based on policies determined by their subscription, stored usually on a RADIUS server (e.g. allowed speed, duration of connection, amount of data allowed, restriction to certain hotspot locations, etc.). MINAS enforces such policies for each end user connection and reports usage information back to RADIUS. In addition, MINAS allows network admins to actively monitor sessions in real time and – if required – make real time modifications of session parameters.

**Architecture: (Example)** The following network architecture illustrates a sample network using MINAS:



**Features:** The following features are currently available:

- complies with the Wireless ISP Roaming (WISPr) specification, version 1.0
- standards-compliant RADIUS authentication and accounting
  - supports interim accounting and gigawords
  - spooling and automatic resending of failed accounting requests avoids lost revenue due to dropped accounting messages
- based on the FreeBSD® operating system
- a single MINAS machine can handle many hotspot locations (using GRE tunnels)
- easy-to-use web-based session management
- traffic shaping per session (with RADIUS attributes and/or manually)
- support for RADIUS dynamic authorization extensions (RFC 3576)
- session logging to XML-RPC or SQL server
- MAC address authentication (for RADIUS integrated free-to-air client management)
- walled garden management (IP/port and URL based)
  - including statistics collection for IP based walled garden
- configuration in one single XML file
- XML-RPC interface to landing page
- Telnet console available
- in-place software updates without interruption to running sessions
- manage sessions on multiple MINAS access servers in a single view with MINAS Session Collector (optional)

**Components:** MINAS contains the following building blocks:

- base operating system (FreeBSD®)
- Apache web server
- MINAS core application
- MINAS modules
  - built-in DHCP server
  - ISC-DHCP server connector
  - SQL session/association logger
  - route injector
- web-based management interface
  - view details about associated and logged in users
  - sort and filter sessions by username, location, IP address etc.
  - log users out, change bandwidth limits or modify idle timeouts
  - view current bandwidth usage and history (SVG based graph) per session
  - remotely log users in
  - dynamic HTML and AJAX driven
- MINAS-SC (Session Collector, optional)
  - manage sessions on multiple MINAS access server in a single view

**Prerequisites:** The following prerequisites are required for implementation of MINAS:

**Hardware**

- x86 compatible server-grade machine
- Intel Xeon Dual or Quad-Core CPU recommended
- 1 GB RAM (or more)
- 2 x 73 GB (or more) / RAID 1
- LOM recommended
- two 10/100(/1000) NIC
- redundant power supplies strongly recommended
- CD/DVD drive for installation
- must be compatible with FreeBSD
- recommended models: HP ProLiant DL360, DL380, ML350, ML370

**Software:**

- Operating system: FreeBSD 8.3 (see [www.freebsd.org](http://www.freebsd.org))