



Network device management and
traffic accounting made simple

developed by www.marsgeneral.com



Network device management and traffic accounting made simple

- ✓ Know what your users are doing in your network
 - ✓ Steer/channel their traffic
 - ✓ Keep your network alive for business-/mission-critical things
 - ✓ Identify and isolate 'misbehaving devices'
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Where Internet access is expensive, e.g. through wireless links (incl. satellites)
Where demand for bandwidth is higher than available, e.g. because of many local devices
Where you want to fully utilize a connection while keeping it functional
Where network equipment from different vendors is present
Where you expect an evolving and growing network, e.g. > 30 concurrent devices

Registry of connected devices (with username/password or by MAC address)

Doesn't require special network equipment,
e.g. runs on all types of devices from low-cost to enterprise-level

Categorization of devices,
e.g. work, guests and private

Per group and per device restrictions for speed levels (bandwidth),
volume limits (data bundles) and Internet access

Exceptions for local network services to bypass restrictions,
e.g. allow local but block Internet access

Distinction between during work and after work restrictions

DNS-based blocking of Internet Domains (includes HTTPS),
e.g. block access to Facebook or Youtube during work

Filter inappropriate (adult) content

Traffic accounting separated by up- and downloads for each device and
as overview for Top 10 devices

Realtime traffic monitoring with overall throughput and throughput for each device

Email notification of important system events,
e.g. scheduled reports, system restarts

Custom hardware options,
Appliance, 'use your own hardware', Low-/DC-power from batteries



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Groups

- Categorize devices (computers, phone, tablets) into custom groups
 - Apply (most of the) restrictions on group level
 - Temporarily (for the rest of the day) bypass restrictions for single devices
 - Optionally create device entries 'on the fly' to ease registration process
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Restrictions per Group (or per device)

- Maximum Download and Upload rates (speed level)
 - Maximum number of concurrent connected devices
 - Daily Download and Upload transfer volumes (data bundles)
 - Daily Download and Upload transfer volumes during working hours
 - Session time
 - Internet/outside network access
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Blocking

- Block any Internet domain during certain times of the day
 - Filter inappropriate (adult) content
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Reports & realtime monitoring

- Top 10 devices for Download and Upload transfer volume
 - Total volume during the day
 - Total volume during working hours
 - Each for end of today, yesterday, last 7 days, and last 30 days
- Device registration
 - Active devices
 - Newly registered
 - Ever registered
 - Each for end of today, yesterday, last 7 days, and last 30 days
- Overview of current group-level restrictions
- Seven day history of traffic volume per device (divided by download and upload, working hours, non-working hours, total)
- Total traffic volume per Interface



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Optional components & services

Transparent caching of Windows Updates

Self-registration by user when device connects for the first time

Monitoring of additional network devices & services

Detailed reports of 'who did what, when, to which site, with how much data'

Semi Automatically discovery of network topology and generated blueprints for network diagrams

VPN gateway and remote access

VLAN capable

Audit of your network design

Complete Layer 3 network topology (could require specific network devices)

Tailored and dedicated trainings available,
covering topics like general IT administration, networking, and wireless



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Technical Information

mars Portal combines several reliable and scalable open source products. It combines them in certain ways and adds specific features wherever these features are missing. Additionally it ties together best practices to address typical problems of networks in developing/emerging countries.

It uses [pfSense](#) built on top of [FreeBSD](#) to also implement a [Captive Portal](#) to grant individual devices access rights and permissions:

- Bandwidth limits
- Data volume limits
- Disconnect device when reaching limits
- Self-registration by users

[Linux](#) is used to host a [freeRADIUS](#) and [daloRADIUS](#) implementation for:

- Authentication and Accounting
- Grouping devices into groups
- Disconnect Message (Packet of Disconnect)
- Custom Directory Attributes

A [MySQL](#) database is used for custom reports and statistics.

Finally a simple, yet powerful router running [EasyTomato](#) can optionally be used as an 'edge router' to provide additional [content filtering](#) and simplified [traffic shaping](#).

