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About a device

The basis of every RMM tool is what it can do with a device. Find out what the product offers in this regard.

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Organizing devices

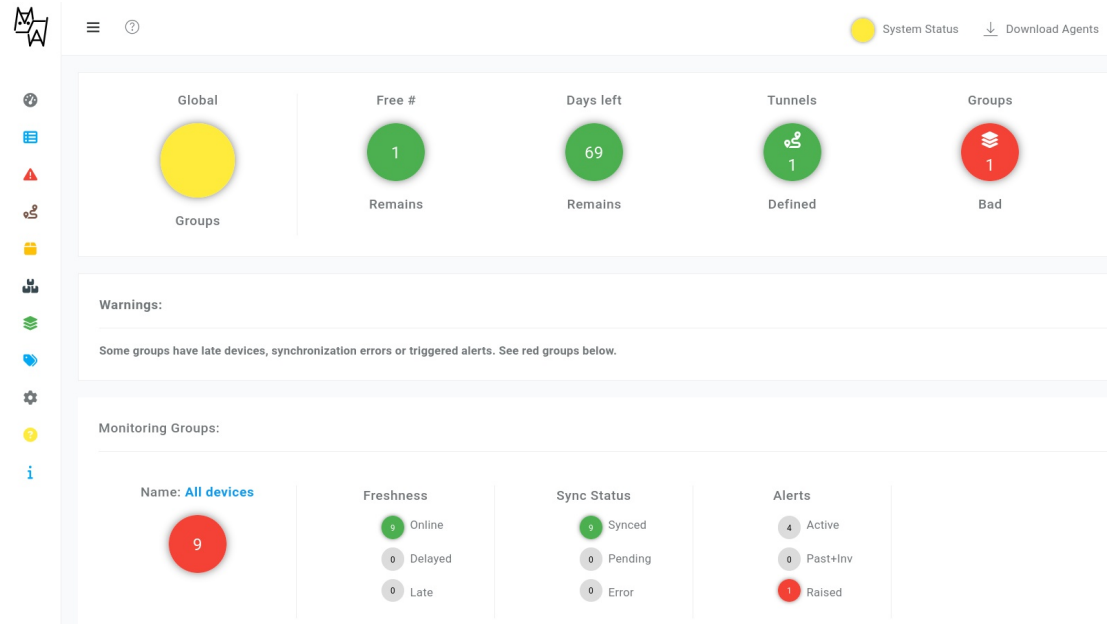
Managing one device is fun. Managing more is a work. When there are multiple heterogeneous device groups and setups it gets trickier. How to handle this?

Page 3

A lot of devices

And sometimes there are a LOT of devices. How many can be processed in on-premise version and on which hardware?

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The Dashboard, showing system status and monitoring groups

MAMAS is:

- Remote Monitoring and Management software
- High-performing application supporting on-premise
- System supporting following device types:
 - Industrial cellular routers (Advantech)
 - Linux servers and desktops
- Addressing many common use-cases like:
 - Quick overview/problem detection
 - Inspection of device data and changes
 - Alert definition and notification
 - Group definition for overview/alerting
 - Devices firmware management
 - Device Web interface remote access
 - Configuration cloning
- Tested to handle tens of thousands devices
- Being actively developed and supported
- Admin friendly - videos, bundled documentation



About a device

Device details

Each device provides its metrics.
Actual values are shown on Device Details

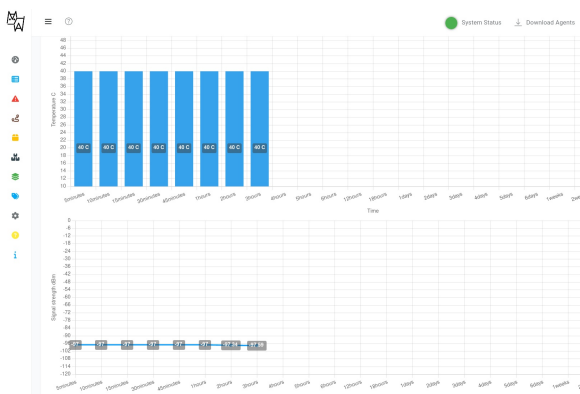
It contains among others:

- MEM, CPU load, # of running processes
- voltage, temperature, signal strength
- uptime, data age class, FW version
- network interface list
- access to FW flashing, labels, hostname

History data

Below metrics, history data are provided:

- Availability, temperature
- In/Out traffic
- Signal strength, reboot counter



Webtunnel

Setting up webtunnel allows accessing device web interface via MAMAS

<https://mamasdemo/webtunnel/ux9bzpebge8d58wb/>

List of Web Tunnels

Id	Device	Name	Status	Operation	Waiting Time	Actions
1	PBXC	i3-flex	Ready	NONE		Download Refresh
2	Not Assigned	None	Free	NONE		Refresh

Data Change Log

Data Change Log

Id	Metric	Device Id	Device Name	Value	Created
1	Agent version	YZSX	gateway	0.9.3	03.03.2023, 09:23:51
2	Firmware version	YZSX	gateway	Firmware Version : 6.2.5 (2020-06-13)	03.03.2023, 09:23:51
3	Temperature	YZSX	gateway	40	03.03.2023, 09:23:51
4	Selected SIM card	YZSX	gateway	1st	03.03.2023, 09:23:51
5	Signal Strength	YZSX	gateway	-98	03.03.2023, 09:23:51
6	Reboot counter	YZSX	gateway	1	03.03.2023, 09:23:51
35	Signal Strength	YZSX	gateway	-97	03.03.2023, 09:45:41
38	Signal Strength	YZSX	gateway	-98	03.03.2023, 09:54:25
39	Signal Strength	YZSX	gateway	-97	03.03.2023, 09:58:47

Changes Tracker

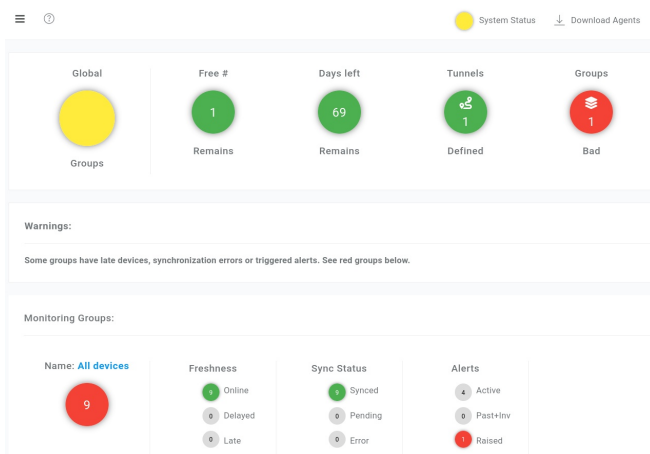
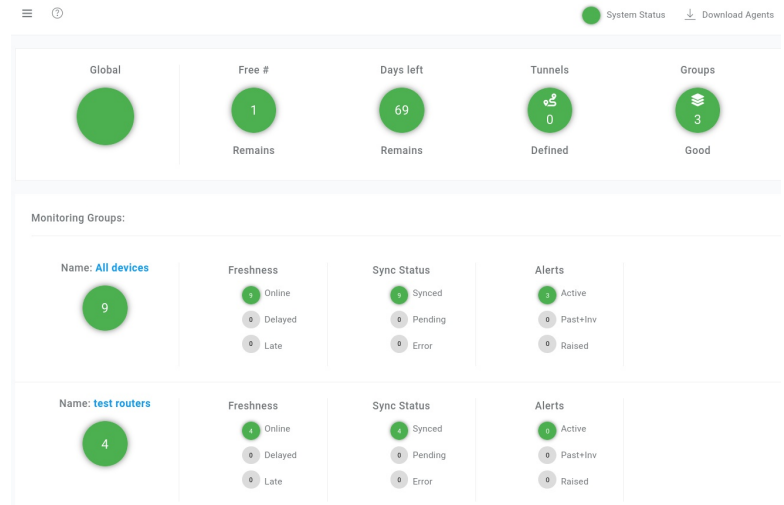
To review device metric changes during a time period, visit Changes Tracker.

Changes Tracker offers customised view over the Data Change Log.

Organizing devices

Monitoring groups

- device is part of any # of M.Groups
- every device is part of All devices g.
- groups have counters
- groups are automatically visible
 - on the Dashboard
 - on e.g. alert creation time



Root-cause identification

- Ability to define alert on a group
- Alert when at least X devices in group Y ...
- Easy and fast ID of problem from Dashboard
 - affected group changes color
 - direct link to devices triggering alert

Other organizational techniques

Naming, Labels, Filtering and Search

- name your devices + text search
- define labels and filter using them
- sort OR filter by metric value
- customize Devices table adding metrics

Registered Devices

Refresh

Showing 1 to 9 of 9 entries

Devid	Name	Type	OS	Version	Labels	Cloned from	Sync Status	Freshness	Actions
YZSX	gateway	Advantech router	ICR OS	6.2.5	critical		Synced	0 missed contacts	Details
RZVV	r4 - flex	Advantech router	ICR OS	6.3.5			Synced	0 missed contacts	Details
PVDD	clonedest	Advantech router	ICR OS	6.3.5	critical		Synced	0 missed contacts	Details
PBXC	r3 - flex	Advantech router	ICR OS	6.3.4	critical		Synced	0 missed contacts	Details
OVCB	r2 - start	Advantech router	ICR OS	6.3.4	critical		Synced	0 missed contacts	Details
GCVF	None	Linux box					Synced	0 missed contacts	Details
DOPB	None	Linux box					Synced	0 missed contacts	Details
DABD	None	OpenWRT box					Synced	0 missed contacts	Details
CTPU	server	Linux box			critical		Synced	0 missed contacts	Details

Show 50 entries

[Add to Monitoring group](#)
[Assign Labels](#)
[Assign Pre-Warning](#)
[Assign Config Profile](#)
[Remove Config Profile](#)

Data Change Log

Refresh

Showing 1 to 12 of 12 entries (filtered from 52 total entries)

Id	Metric	Device Id	Device Name	Value	Created
3	Temperature	YZSX	gateway	40	03.03.2023, 09:23:51
9	Temperature	RZVV	r4 - flex	39	03.03.2023, 09:24:10
14	Temperature	PVDD	clonedest	37	03.03.2023, 09:24:35
36	Temperature	PBXC	r3 - flex	37	03.03.2023, 09:48:16
46	Temperature	PBXC	r3 - flex	37	03.03.2023, 10:40:45
50	Temperature	PBXC	r3 - flex	37	03.03.2023, 12:13:02
52	Temperature	PBXC	r3 - flex	37	03.03.2023, 12:21:26
19	Temperature	OVCB	r2 - start	36	03.03.2023, 09:25:44
32	Temperature	PBXC	r3 - flex	36	03.03.2023, 09:35:09

Changes Tracker

- allows searching for peaks/depths
 - e.g. highest reported temperature
- allow comparison on additional metrics
 - e.g. device with highest reboot counter
- helps finding date of value change
 - e.g. show changes for Firmware version
- offers limiting time span of the inspection

A lot of devices

Firmware Management

- Automatic/manual FW download
- Approve versions you want to distribute
- Assign individually or use mass action
- Keeps device on desired version

Showing 1 to 4 of 4 entries (filtered from 8 total entries)

Id	Os Type	Version	Available	Approved	Devices count
4	ICR OS	6.2.0	✓ Yes	NO	0
6	ICR OS	6.2.5	✓ Yes	NO	1
7	ICR OS	6.3.5	✓ Yes	YES	2
8	ICR OS	6.3.4	✓ Yes	YES	2

Mass Actions

- Assign Labels or groups
- Set desired FW version (Advantech)
- Clone configuration (Advantech)

1st step: select devices

Showing 1 to 5 of 5 entries (filtered from 9 total entries)

Devid	Name	Type	OS	Version	Labels	Cloned from	Sync Status	Freshness	Actions
<input checked="" type="checkbox"/>	YZSX	gateway	Advantech router	ICR OS	6.2.5	critical	Synced	1 missed contact	Details
<input checked="" type="checkbox"/>	RZVV	r4 - flex	Advantech router	ICR OS	6.3.5	critical	Synced	0 missed contacts	Details
<input checked="" type="checkbox"/>	PVOD	clonedest	Advantech router	ICR OS	6.3.5	clone src	Synced	0 missed contacts	Details
<input checked="" type="checkbox"/>	PBXC	r3 - flex	Advantech router	ICR OS	6.3.4	clone src	Synced	1 missed contact	Details
<input checked="" type="checkbox"/>	OVCB	r2 - start	Advantech router	ICR OS	6.3.4	clone src	Synced	1 missed contact	Details

2nd step: choose action

- Add to Monitoring group
- Assign Labels
- Assign Fw Version
- Assign Config Profile
- Remove Config Profile

3rd step: see notification for success/failed devices

Showing 1 to 9 of 9 entries

Devid	Name	Type	OS	Version	Labels	Cloned from	Sync Status	Freshness	Actions
<input type="checkbox"/>	YZSX	gateway	Advantech router	ICR OS	6.2.5	critical	Processing	0 missed contacts	Details
<input type="checkbox"/>	RZVV	r4 - flex	Advantech router	ICR OS	6.3.5	critical	Processing	0 missed contacts	Details
<input type="checkbox"/>	PVOD	clonedest	Advantech router	ICR OS	6.3.5	clone src	Processing	0 missed contacts	Details
<input type="checkbox"/>	PBXC	r3 - flex	Advantech router	ICR OS	6.3.4	clone src	Processing	0 missed contacts	Details
<input type="checkbox"/>	OVCB	r2 - start	Advantech router	ICR OS	6.3.4	clone src	Processing	0 missed contacts	Details
<input type="checkbox"/>	GCVF	None	Linux box				Synced	0 missed contacts	Details
<input type="checkbox"/>	DOPB	None	Linux box				Synced	0 missed contacts	Details
<input type="checkbox"/>	DABD	None	OpenWRT box				Synced	0 missed contacts	Details
<input type="checkbox"/>	CTPU	server	Linux box				Synced	0 missed contacts	Details

Success: Fw version successfully assigned to the devices: YZSX,RZVV,PVOD,PBXC,OVCB

Error: Fw version cannot be set for devices: GCVF,DOPB,DABD,CTPU

Mass deploy 1000+

- since 0.7.3 via script
- just prepare addresses and pwds/keys
- can reach behind firewall (may execute from a NB)
- possible for
 - on-premise
 - hosted (support)
 - SaaS (support)

Availability

SaaS

- Partners
- Dwarf Technologies
- limited

Partner/DT Hosted

- on request

Cloud

- Customer owned
- Amazon EC2
- on-request

On-premise reqs

- Debian GNU/Linux 11
- 1 GiB disk space
- 512 MiB RAM (min)
- 1 CPU-core (min)
- See perftest protocols
- Tested for 30000 devices
- no Internet: possible

Distributors

Smart-Con s.r.o.

- web: smart-con.cz

MAMAS Resources

MAMAS Resources compendium

Below is a list of various frequently used topics and links to other resources relevant to MAMAS and effective handling of your devices.

If you are looking for the MAMAS introduction to guide you during first steps of setting up and using MAMAS, please follow to the [MAMAS Overview](#)

How to ... **bundled documentation**

- Setup slack/e-mail notification
- Attach a device to MAMAS
- Define an alert
- Do basic device operations - details, naming, searching
- Update device OS/Firmware
- Access a device via webtunnel
- Configure device and setup cloning

How to ... **online video links**

- MAMAS version 0.6 showcase video - a tour showing what can MAMAS do
- What's new in MAMAS version 0.7
- Adding devices to MAMAS
- Defining a custom alert
- Managing firmware versions and flashing firmware on a router device
- Organizing devices
- Using WebTunnels to access device local web interface via MAMAS

In-App Help

- Covers all main topics
- Howtos on common use-cases
- Accessible without Internet
- With Internet - further pointers

Further Pointers

- Top-level technical pages
- Video Guides
- Administrator's Notes (for On-Prem, Cloud)
- Troubleshooting

MAMAS Guides

Wiki NewPage Admin

Edit Help History

Guides and Howtos

MAMAS comes with proper in-app documentation. Also, the documentation shipped with MAMAS is always running while on the web, you would be looking at the documentation for last released MAMAS version MAMAS you are using. Simply clicking on the help icon in MAMAS will get you to the in-app help.

MAMAS video howtos - actual

- Adding devices to MAMAS
- Defining a custom alert
- Managing firmware versions and flashing firmware on a router device
- Organizing devices
- Setting up notifications (Slack)
- Using WebTunnels to access device local web interface via MAMAS
- Uploading new license
- Cloning configuration

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Stability tests

ID / Environment ...		Stab-2-2 / C1	Stab-4-2 / C2	Stab-8-2 C3	Stab-16-2 C4	Stab-16-2 H1	Stab-4-48 H1
Test specs	Devices	1000	3000	10000	30000	30000	
	Emulator threads	2	4	8	16	16	
	Set. Time / minutes	120	120	120	120	120	
	Set loop time / sec	200	200	200	200	200	
HW specs	CPU cores	1	2	4	8	8	
	RAM / MiB	512	1024	2048	4096	32768	
Resources	Pre-test	Available MiB OS	275.00	804.00	1600.00	2900.00	28000.00
		Used MiB OS	236	219	451	1100	2000
	Post-test	mamasd RSS (MiB)	37	37	37	37	40
		Available MiB OS	237	633	1100	1800	28000
		Used MiB OS	274	390	870	2200	2600
		mamasd RSS (MiB)	57	95	271	665	491
		machine load/uptime	1.24	1.69	2.33	2.53	1.37
		machine load per CPU	1.24	0.85	0.58	0.32	0.17
		Processed loops	31	30	28	28	29
		Total time			7336	7311	7345
Test numbers	Loop time / sec	0	0	262	261	253	
	Data-pushes	31000	90000	280000	840000	870000	
Results	Data ERR/retries	0	0	0	0	0	
	Crashes	0	0	0	0	0	
	Reboots	0	0	0	0	0	
	Log entries	0	1	1	0	1	
	Log analysis		1	1	0	1	
Calculations	RSS increase MiB	20	58	234	628	451	
	RSS increase %	54.05	156.76	632.43	1697.30	1127.50	
	MiB per device	0.020	0.019	0.023	0.021	0.015	
	RAM utilization %	53.52	38.09	22.02	26.86	6.10	
	Max safe # of devs	1869	7877	45410	111709	491520	
Summary	RAM utilization note	significant	reasonable	ok	ok	perfect (low)	
	CPU utilization note	significant	utilized	utilized	reasonable	perfect (low)	
Verdict		PASSED	PASSED	PASSED	PASSED	PASSED	

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Performance

- Minor + Major versions
- Stability + perf test
- Test protocol available
- v0.7.0
 - tested for 30000 devices
 - Xeon E-2250 / 8c8t+4G RAM
 - CPU 1core load: 32%
 - RAM used: 27 %
 - Core-i7 / 8c16t 32G RAM
 - CPU 1core load: 17%
 - RAM used: 6%

Coming Soon

- Server and agent central configuration
- Additional device types
- Device SW package management (Advantech)
- PUSH agent device installation
- Further Dashboard improvements

