



EVN TOG 2024, buijs@jive.eu

How do you maintain 100 servers with 2 FTE?



What does the ICT look like @JIVE

-  storage
-  compute
-  network
-  services



42 empty bios batteries



- Backup the bios
- Replace batteries
- While we are at it update the bios as well
- Setup the bios

X42

ansible

- name: Make a backup of the current bios config

delegate_to: localhost

```
shell: sm-sum -i {{inventory_hostname_short}}.ipmi -  
u ADMIN -p {{ ipmi admin_password }} -c  
GetCurrentBiosCfg --file  
/var/bios-conf/{{inventory_hostname_short}}-$(date +%F-  
%H-%M').bios.cfg
```

tags: bios-config



Automated bios upgrades are not for the faint hearted.

- Wybren Buijs -

Ansible

```
- name: update bmc firmware to first intermediate step
```

```
  delegate_to: localhost
```

```
  shell: sm-sum -i {{inventory_hostname_short}}.ipmi -u ADMIN -p -c  
UpdateBmc --file ~/ansible/roles/bios-update/files/first.bin --  
overwrite_cfg
```

```
- name: wait for bmc to reboot
```

```
  wait_for:
```

```
    timeout: 360
```

Ansible

```
- name: get the board type to select the right config
```

```
delegate_to: localhost
```

```
shell: sm-sum -i {{inventory_hostname short}}.ipmi -u ADMIN -p  
{{ ipmi_admin_password }} -c GetBiosInfo |grep "Board ID" | grep -Eo '[0-9]*'
```

```
register: board_id
```

```
- name: push a bios config to the machine
```

```
delegate_to: localhost
```

```
shell: sm-sum -i {{inventory_hostname short}}.ipmi -u ADMIN -p  
{{ ipmi_admin_password }} -c ChangeBiosCfg --file  
~/ansible/roles/bios-set-config/files/{{board_id.stdout}}.cfg
```

New servers

- PXE boot
- Preseed
- Late run script
- Ansible

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Ipmitool fu

```
ipmitool hostname.ipmi chassis  
bootparam set bootflag force_pxe  
  
ipmitool hostname.ipmi chassis  
bootparam set bootflag force_bios
```

Monitoring, analytics and troubleshooting

ZABBIX

zabbix

Search

Dashboards

Monitoring

Problems

Hosts

Latest data

Maps

Discovery

Services

Inventory

Reports

Data collection

Alerts

Users

Administration

Problems

Events updated

ShowRecent problemsProblemsHistory

Host groups

type here to search

Select

Hosts

type here to search

Select

Triggers

type here to search

Select

Problem

Severity☐ Not classified☐ Warning☐ High☐ Information☐ Average☐ Disaster

Age less than

14

 days

Show symptoms☐

Show suppressed problems☐

Show unacknowledged only☐

Host inventory

Type

Remove

Add

Tags

And/OrOr

tagContainsvalue

Add

Show tags

None123

Tag nameFullShortenedNone

Tag display priority

comma-separated list

Show operational data

NoneSeparatelyWith problem name

Compact view☐

Show details☐

Show timeline☒

Highlight whole row☐

Save as

Apply

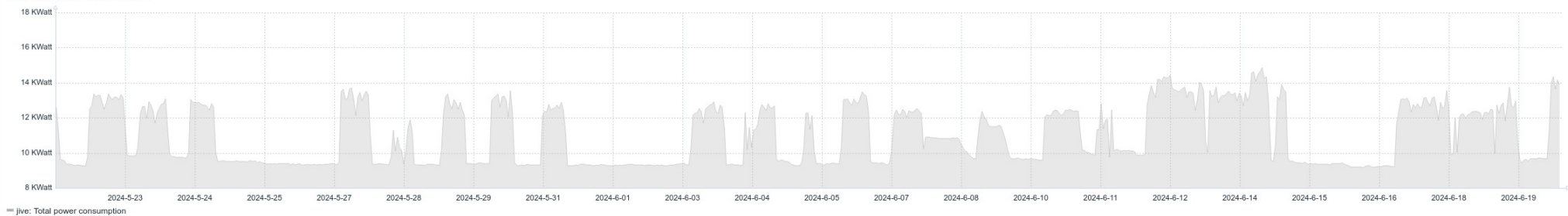
Reset

	Time	Severity	Recovery time	Status	Info	Host	Problem	Duration	Update	Actions	Tags
☐	13:38:59	Average		PROBLEM		Trantor	Zabbix agent is not available (for 3m)	1h 49m 1s	Update	2	Application: Status
☐	13:37:30	High		PROBLEM		Trantor	Unavailable by ICMP ping	1h 50m 30s	Update	2	Application: Status
	13:00										
☐	07:04:09	Average		PROBLEM		backup	High memory utilization (>90% for 5m)	8h 23m 51s	Update	2	Application: Memorymattermost_channelmattermost_channel...
	Today										
☐	2024-06-19 18:51:38	High		PROBLEM		backup	ZFS ARC meta size > 90% meta max size on backup	20h 36m 22s	Update	2	Application: ZFSApplication: ZFS ARCmattermost_channel...
☐	2024-06-19 18:00:42	High		PROBLEM		backup	ZFS ARC rhode size > 90% rhode max size on backup	21h 27m 18s	Update	2	Application: ZFSApplication: ZFS ARCmattermost_channel...
	Yesterday										
☐	2024-06-15 05:41:35	High	15:24:30	RESOLVED	1	flexbuf9	jive5ab disk mount problem	5d 9h 42m	Update	4	mattermost_channelmattermost_channelmattermost_messa...
☐	2024-06-14 14:24:23	High	15:24:30	RESOLVED	1	flexbuf18	jive5ab disk mount problem	6d 1h	Update	4	mattermost_channelmattermost_channelmattermost_messa...
☐	2024-06-13 16:59:14	Average		PROBLEM		HP 8212zd	Interface G7(Mk5C-6): Link down	6d 22h 28m	Update	2	Application: Interfacemattermost_channelmattermost_channel...
	2024										
☐	2023-12-06 09:25:09	Average		PROBLEM		leaf0-r	Interface swp7s0(swp7s0): Link down	6M 17d 5h	Update	2	Application: Interfacemattermost_channelmattermost_channel...
	December										
☐	2023-11-09 09:58:15	Average		PROBLEM		HP 8212zd	Interface F1(): Link down	7M 14d 4h	Update	2	Application: Interfacemattermost_channelmattermost_channel...

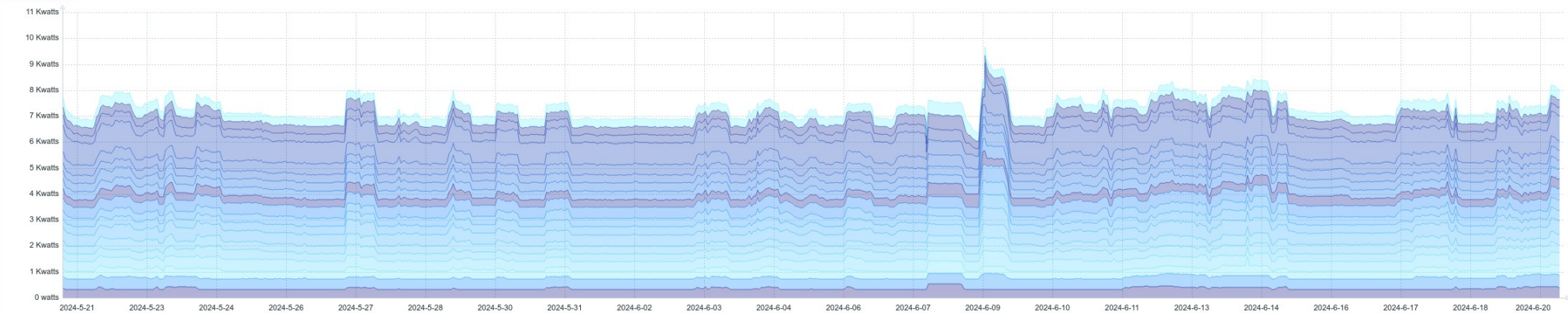
Displaying 10 of 10 found

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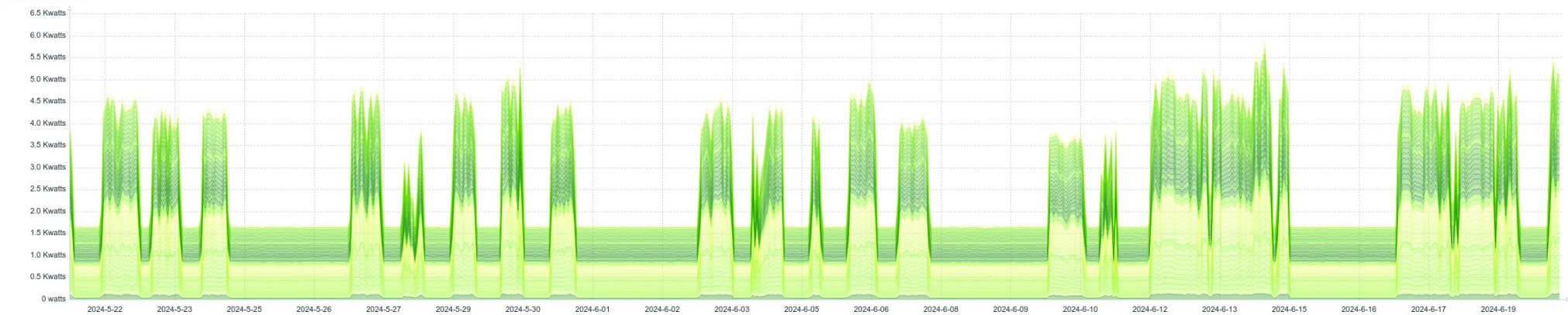
Total power consumption JIVE



power flexbufs



sfxc-micro-blades



Divide it in to smaller bits

Services Service Portal Page

EVN goods and services

- [EVN Experiment Schedule](#)
- [EVN Experiment Feedback \(login required\)](#)
- [Live EVN fringes](#)
- [FTP Fringe Tests](#)
- [EVN-Calculator](#)
- [Feedbackplots](#)

Papers

- [Papers from annual report for 2023](#)
(but other years available by [editing the url](#))
- [ADS bibcodes for EVN Papers by category](#)
- [Papers for station Ef for 2019 \(edit year and station abbreviation to taste!\)](#)
- [EVN Papers \(login required\)](#)

Miscellaneous

- [JIVE Leave Overview \(login required\)](#)

So how do you maintain a 100 servers with 2 FTE

- Automate with ansible
- Do proper monitoring
- Try to keep things simple

Questions?

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