EDOARDO SPADONI

COCKPIT: A MODERN ADMIN INTERFACE FOR NETHERSERVER
WHO AM I

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SCHEDULE

- What is NethServer and how to use it
- Targets
- Solutions
- Changes (UI and APIs)
- NethServer modules structure
- Contributions
WHAT IS NETHSERVER

- Open Source OS
- Based on CentOS
- Wide range of products / modules
  - Firewall / Web Filter / VPNs
  - Mail Server / Web Mail
  - VoIP PBX
  - Etc...
HOW TO USE NETHSERVER

- Web Interface
- Terminal

- Properties similar to ansible `host_vars`
- Templates similar to ansible `jinja templates`
- Events similar to ansible `handlers`
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TARGETS

- Better UI and UX for the user/sysadmin
- Unprivileged user access delegation to NethServer apps
- Easier system management
COCKPIT
**SOLUTIONS**

- Attractive UI/UX based on Patternfly
- Native delegation based on user permissions
- Each click of a button runs a command
- Running a command is like pressing a button
- Easy to script actions
- Native support to modules
CHANGES TO UI AND UX
CHANGES TO UI/UX – OLD SERVER MANAGER

- More than 50 items in a typical configuration
- Hard to find settings
- Scattered information
CHANGES TO UI/UX - NEW SERVER MANAGER

- 5 fixed elements
- Customisable apps shortcuts
- Less than 10 items in a typical configuration
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CHANGES TO UI/UX - NEW SERVER MANAGER

- 5 fixed elements
- Customisable apps ...
- Less than 10 items ...
- Responsive
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CHANGES TO UI/UX - NEW SERVER MANAGER

- 5 fixed elements
- Customisable apps ...
- Less than 10 items ...
- Responsive
- Page design
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CHANGES TO UI/UX – NEW SERVER MANAGER

- 5 fixed elements
- Customisable apps ...
- Less than 10 items ...
- Responsive
- Page design
- Wizards
CHANGES TO UI/UX - NEW SERVER MANAGER

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- Wizards
- Hints

Settings

⚠️ Please, review the following settings:
- **Server Manager**: Limit access to server manager specifying the allowed IP addresses
CHANGES TO UI/UX - NEW SERVER MANAGER

- 5 fixed elements
- Customisable apps ...
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- Responsive
- Page design
- Wizards
- Hints
- Web Terminal

Terminal

```
root@wt5dev:~
```

Appearance: Black
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CHANGES TO UI/UX - NEW SERVER MANAGER

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- Wizards
- Hints
- Web Terminal
- Software Center

Software Center

Updates

Updates available: 0  Details

Applications (18 found)

Search applications

Installed packages  Install 0 applications

Base system

NethService

NethSecurity

NethVoice

Bandwidth monitor

Configure and manage Ntopng

Basic firewall

Configure network adapters and basic firewall
# CHANGES TO UI/UX - APPLICATIONS

- List of installed apps
- Configure or delete

## Applications

<table>
<thead>
<tr>
<th>Logo</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>💌</td>
<td>Email</td>
<td>Provides SMTP, IMAP and POP3 services with antispam and antivirus filters</td>
</tr>
<tr>
<td>🛡️</td>
<td>Fail2ban</td>
<td>Nethserver integration of Fail2ban</td>
</tr>
<tr>
<td>🚨</td>
<td>File server</td>
<td>Share files with your working group</td>
</tr>
<tr>
<td>🕵️‍♀️</td>
<td>NextCloud</td>
<td>Provides NextCloud for NethServer</td>
</tr>
<tr>
<td>🌿</td>
<td>Report</td>
<td>Nethserver integration of nethesisdante project</td>
</tr>
</tbody>
</table>
CHANGES TO UI/UX - APPLICATIONS

- Shortcuts

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CHANGES TO UI/UX - APPLICATIONS

- Standard menu items for each application
API
API - STRUCTURE

- `/usr/libexec/nethserver/api/nethserver-<module_name>/`
  - create
  - read
  - update
  - delete
  - validate
  - execute (for raw outputs)
  - hints
API - INPUT AND OUTPUT

- Input format JSON

```
{ "action": <action>, "field1": "value1"
```

- Output format JSON

```
{ "field1": "value1", "field2": "value2", "field3": "value3" }
```

- Output format (raw)

```
[root@wt5dev ~]# df -h
Filesystem            Size  Used Avail Use% Mounted on
devtmpfs              1.4G   0  1.4G   0% /dev
```

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API - EXECUTION

- Init process (`cockpit.spawn(...)`)

```javascript
nethserver.exec("system-users/read", {"action":"list-users"}, success, error);
```

- Execute command

```bash
$ echo '{"action":"list-users"}' \ 
| /usr/libexec/nethserver/api/system-users/read
```

- Get response

```json
{ "admin": {...}, "foo": {...}, "bar":{...} }
```
API - CORE AND MODULES

- `nethserver-cockpit` provides core APIs:
  - `system-users`
  - `system-certificate`
  - `system-dns`
  - `etc...`

- `nethserver-<module_name>` provides its own APIs:
  - `read`
  - `update`
  - `etc...`
API - RECAP

- Each API can be used by other modules
- Each API call has a matching `sudo` user permission
- Input / Output in JSON format or RAW format
- Process output streamed to the UI
NETHSERVER
MODULE STRUCTURE
$ rpm -ql nethserver-<module_name>

Automation layer (props, events, templates)
/etc/e-smith/db/configuration/...
/etc/e-smith/events/...
/etc/e-smith/templates/...

Configurations for sudo
/etc/sudoers.d/50_nsapi_nethserver-<module_name>

APIs
/usr/libexec/nethserver/api/nethserver-<module_name>/

UI
/usr/share/cockpit/nethserver-<module_name>/

Manifest
/usr/share/cockpit/nethserver/applications/nethserver-<module_name>.json

License
/usr/share/doc/nethserver-<module_name>/COPYING
$ tree -L 1 nethserver-<module_name>

.  
├── .tx          ->  transfex i18n configuration
├── api          ->  APIs for the module
├── root         ->  installed on /
├── ui           ->  static frontend files (js,html,css)
├── .travis.yml  ->  travis CI configuration
├── COPYING      ->  licence
├── README.rst   ->  developer instructions
├── createlinks  ->  create NethServer events
├── prep-sources ->  build UI static files
├── nethserver-<module>.json -> application manifest for cockpit
└── nethserver-<module>.spec  ->  specfile to build the RPM package

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CONTRIBUTIONS

- GitHub: https://github.com/NethServer
- Issue tracker: https://github.com/NethServer/dev
- Community: https://community.nethserver.org
- Website: https://www.nethserver.org
- Dev guidelines: https://nethserver.github.io
QUESTIONS?
THANKS

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