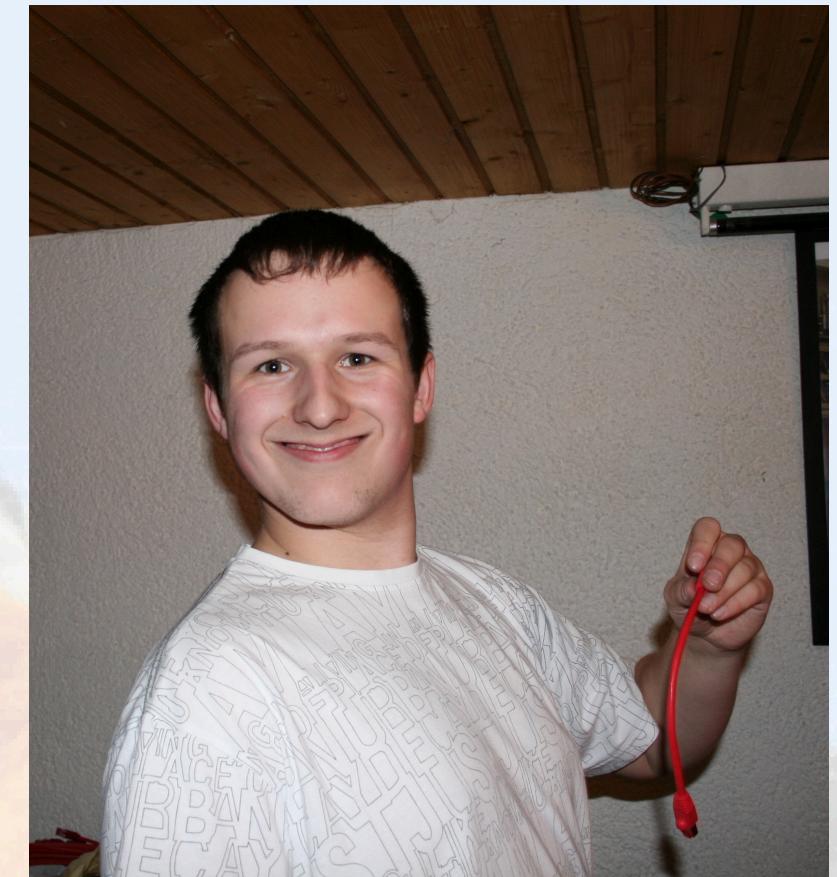


Bringing OpenBolt into Foreman

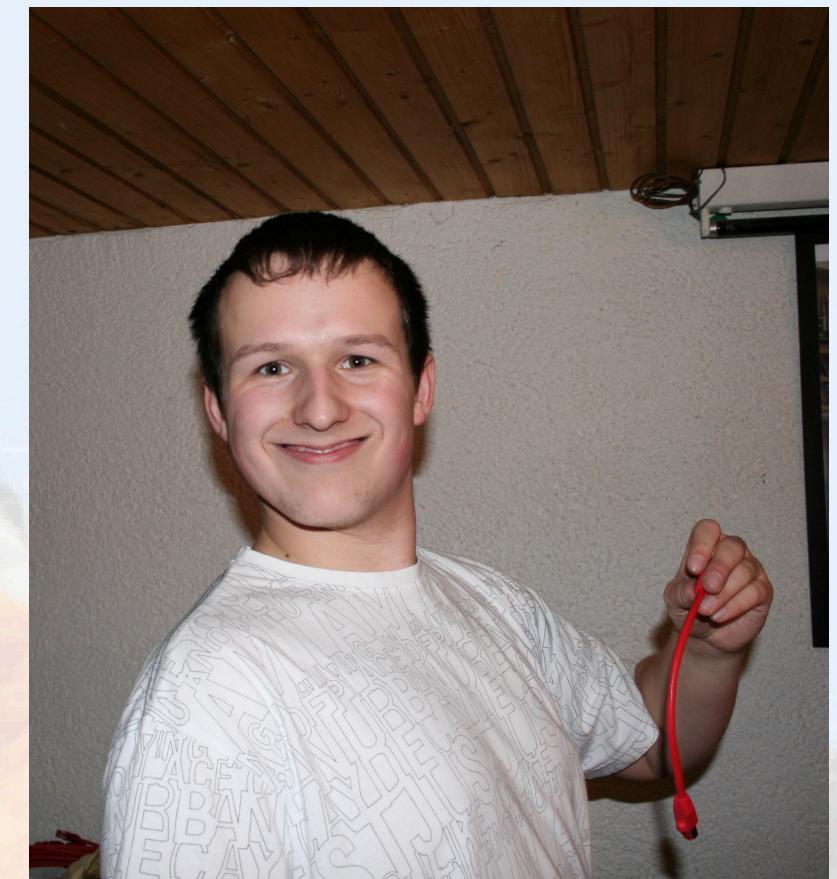
\$ whoami

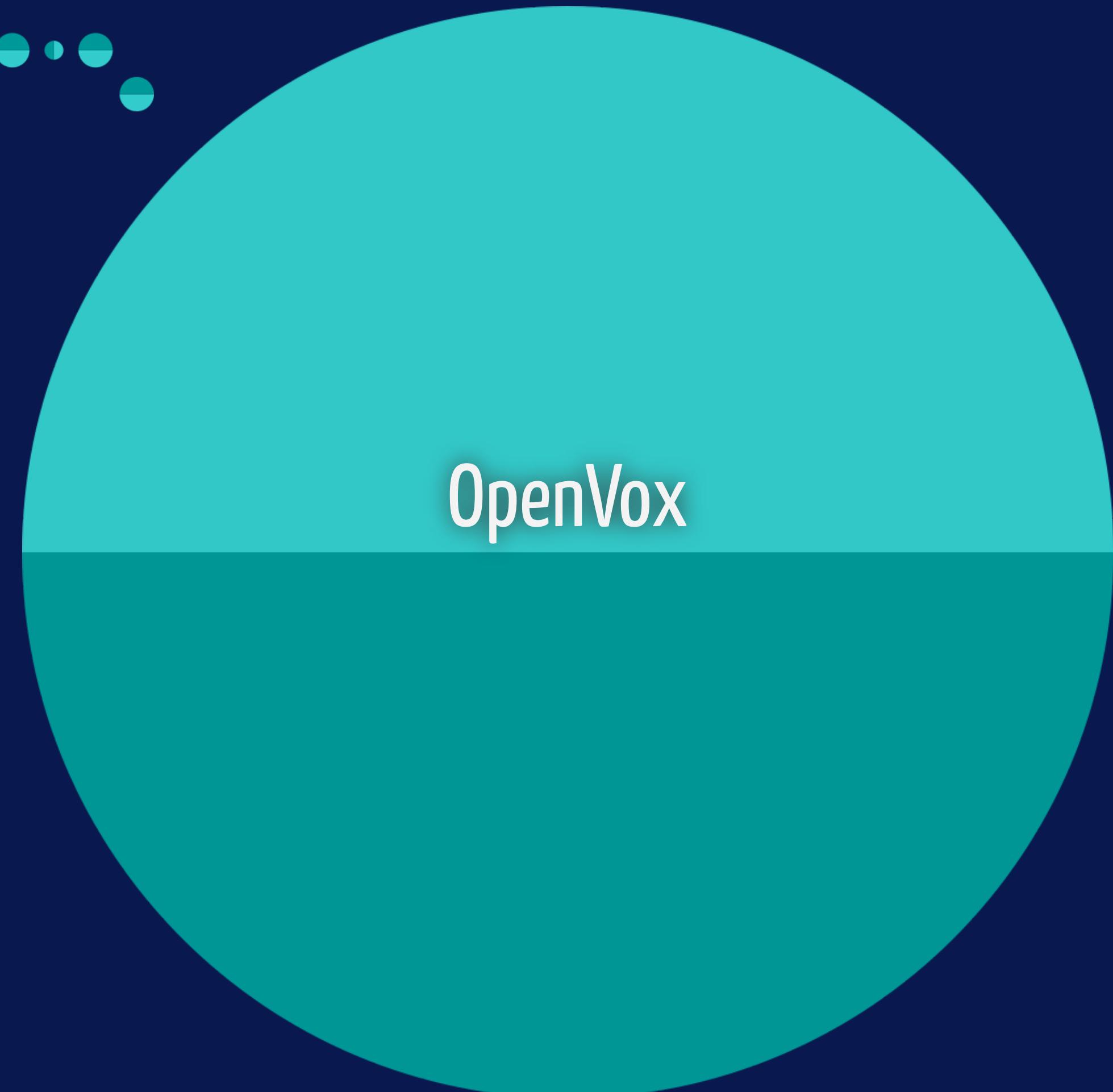
- Tim 'bastelfreak' Meusel
- Puppet Contributor since 2012
- Merging stuff on [Vox Pupuli](#) (Puppet Community) since 2015
- Vox Pupuli Project Management Committee member
- Senior IT Automation Consultant at [betadots](#)
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- New: Clojure & [ezbake](#) expert





OpenVox

OpenVox

What?

- Perforce stopped open source development
- Vox Pupuli continues the open source development



OpenVox

What?

- Perforce stopped open source development
- Vox Pupuli continues the open source development
- puppet-agent -> [openvox-agent](#)
- puppetserver -> [openvox-server](#)
- puppetdb -> [openvoxdb](#)
- bolt -> [openbolt](#)



What?

How?

example class for managing nginx

```
# @summary configures nginx in a bad way
# @param content the whole nginx config
class nginx (
  Sensitive[String[1]] $content,
) {
  package { 'nginx':
    ensure => 'installed',
  }
  -> file { '/etc/nginx/nginx.conf':
    ensure  => 'file',
    content => $content,
  }
  ~> service { 'nginx':
    ensure => 'running',
    enable => true,
  }
}
```

OpenBolt

Tasks & Plans

OpenBolt

Tasks?!

- Runs tasks via ssh or WinRM on remote systems
 - CLI only
- A task is a executable binary/script + json file



OpenBolt

Tasks?!

```
{  
    "puppet_task_version": 1,  
    "supports_noop": false,  
    "description": "Rename branch",  
    "parameters": {  
        "control_repo_branch": {  
            "description": "Control-repo branch",  
            "type": "String"  
        }  
    }  
}
```

```
#!/bin/bash  
  
pushd /tmp/control-repo || exit  
git branch -m production old_prod  
git branch -m "$PT_control_repo_branch" production
```



OpenBolt

Tasks?!

- Runs tasks via ssh or WinRM on remote systems
 - CLI only
- A task is a executable binary/script + json file
- Input and output of each task is JSON
 - makes parsing, scripting and concatenating easy



OpenBolt

Tasks?!

Plans?!

- Plans are written in OpenVox DSL (or [YAML](#))
- Plans apply puppet code, execute OpenBolt or OpenVox functions, start tasks or other plans

```
# @summary Conference Demo plan
# @param message the string we want to paste to STDOUT
plan test::foo (
  String[1] $message = 'Hi CfgMgmtCamp 2026!',
) {
  out::message($message)
  run_task('puppet_agent::install', get_targets('all'))
}
```



OpenBolt is the missing part in the ecosystem for imperative workflows and orchestration

It combines scripts and OpenVox code

OpenBolt

Tasks?!

Plans?!

Foreman?!

- OpenBolt is a CLI only application
- Puppet Enterprise has a Web-UI & API
 - closed source & expensive
- Most Puppet/OpenVox users run Foreman anyways and don't want another UI



OpenBolt

Tasks?!

Plans?!

Foreman?!

- OpenBolt is a CLI only application
- Puppet Enterprise has a Web-UI & API
 - closed source & expensive
- Most Puppet/OpenVox users run Foreman anyways and don't want another UI
- Why not add OpenBolt support to Foreman?!

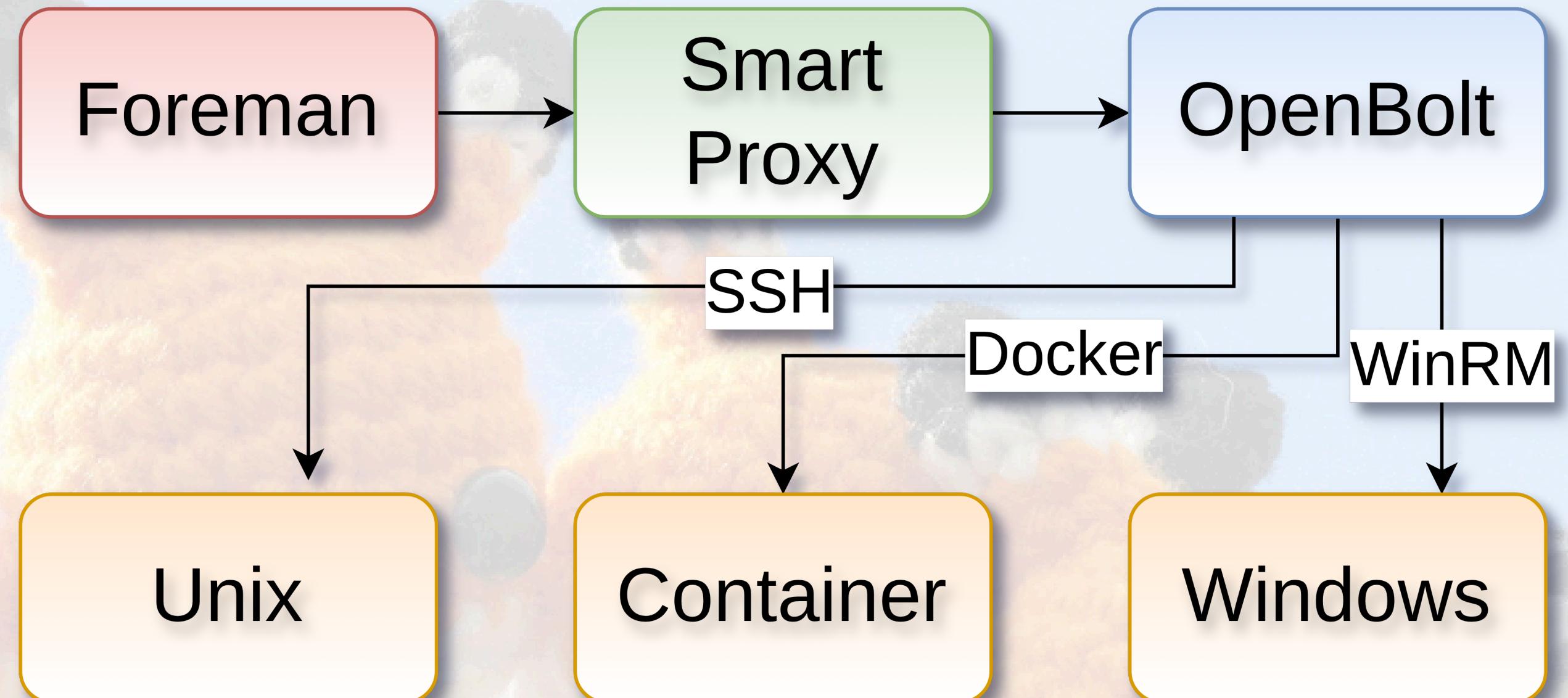


OpenBolt

Tasks?!

Plans?!

Foreman?!



OpenBolt

Tasks?!

Plans?!

Foreman?!

The screenshot shows the Foreman web interface. The top navigation bar includes a menu icon, a yellow hard hat icon, the word "FOREMAN", and dropdown menus for "Default Organization" and "Default Location". The main content area has a search bar labeled "Search and go". On the left is a sidebar with links: "Monitor" (selected), "Hosts", "OpenBolt", "Configure", "Infrastructure", and "Administer". The right side features an "Overview" section with a search bar, a "Latest Jobs" section (showing "No jobs available"), and a "Config Management Camp" logo.

- ≡
- FOREMAN
- Default Organization ▾
- Default Location ▾

Search and go

- Monitor >
- Hosts >
- OpenBolt >
- Configure >
- Infrastructure >
- Administer >

Overview

Search

Latest Jobs

No jobs available



OpenBolt

Tasks?!

Plans?!

Foreman?!



Launch OpenBolt Task

 Launch Task

Smart Proxy Select a Smart Proxy to run the task from.

foreman-smartproxy.local

Hosts Hosts ▾ Filter by hosts

Task Name Select Task ▾

Parameters


Select a task to see parameters

OpenBolt Options	
Name	Value
> transport	ssh
> host-key-check	<input type="checkbox"/>
> noop	<input type="checkbox"/>
> verbose	<input type="checkbox"/>
> log-level	error
> password	
> private-key	
> run-as	
> sudo-password	
> tmpdir	
> user	

OpenBolt

Tasks?!

Plans?!

Foreman?!

Task Name

Parameters

Name	Value
> action *	
> name *	
> force	<input type="checkbox"/>
> provider	



OpenBolt

Tasks?!

Plans?!

Foreman?!

Task Name

Parameters

Name	Value
action *	
Type:	Enum[start, stop, restart, enable, disable, status]
This field is required	
The operation (start, stop, restart, enable, disable, status) to perform on the service.	
name *	
Type:	String[1]
This field is required	
The name of the service to operate on.	
force	<input type="checkbox"/>
Type:	Optional[Boolean]
Force a Windows service to restart even if it has dependent services. This parameter is passed for Windows services only.	
provider	
Type:	Optional[String[1]]
The provider to use to manage or inspect the service, defaults to the system service manager. Only used when the 'puppet-agent' feature is available on the target so we can leverage Puppet.	



OpenBolt

Tasks?!

Plans?!

Foreman?!

Task Execution

[Run Another Task](#)

 Execution Details

 Task Details

Smart Proxy [foreman-smartproxy.local](#)

Job ID [4db2e7c2-ad22-404c-942f-458ec594c7b1](#)

Hosts [2](#)

Status  [Running](#) Updating every 5 seconds...

Execution Time [10s](#)



OpenBolt

Tasks?!

Plans?!

Foreman?!

Task Execution

[Run Another Task](#)

Execution Details Task Details

Smart Proxy foreman-smartproxy.local

Job ID 6d74c10b-f5a4-47d3-92dc-781620c299c5

Hosts 1

Status ! Failed

Execution Time 5s

Result Log Output

```
{  
  "items": [  
    {  
      "value": {  
        "_error": {  
          "msg": "Host key verification failed for testnode.local: fingerprint SHA256:dIVGoRGJUxLrsoj+pdqpXvnE5Li7YRfsRV4i3SEGavY is unknown for \\\"foreman-smartproxy.local,127.0.1.1\\\"",  
          "kind": "puppetlabs.tasks/connect-error",  
          "details": {},  
          "issue_code": "HOST_KEY_ERROR"  
        }  
      },  
      "action": "task",  
      "object": null,  
      "status": "failure",  
      "target": "foreman-smartproxy.local"  
    }  
  ],  
  "elapsed_time": 0,  
  "target_count": 1  
}
```

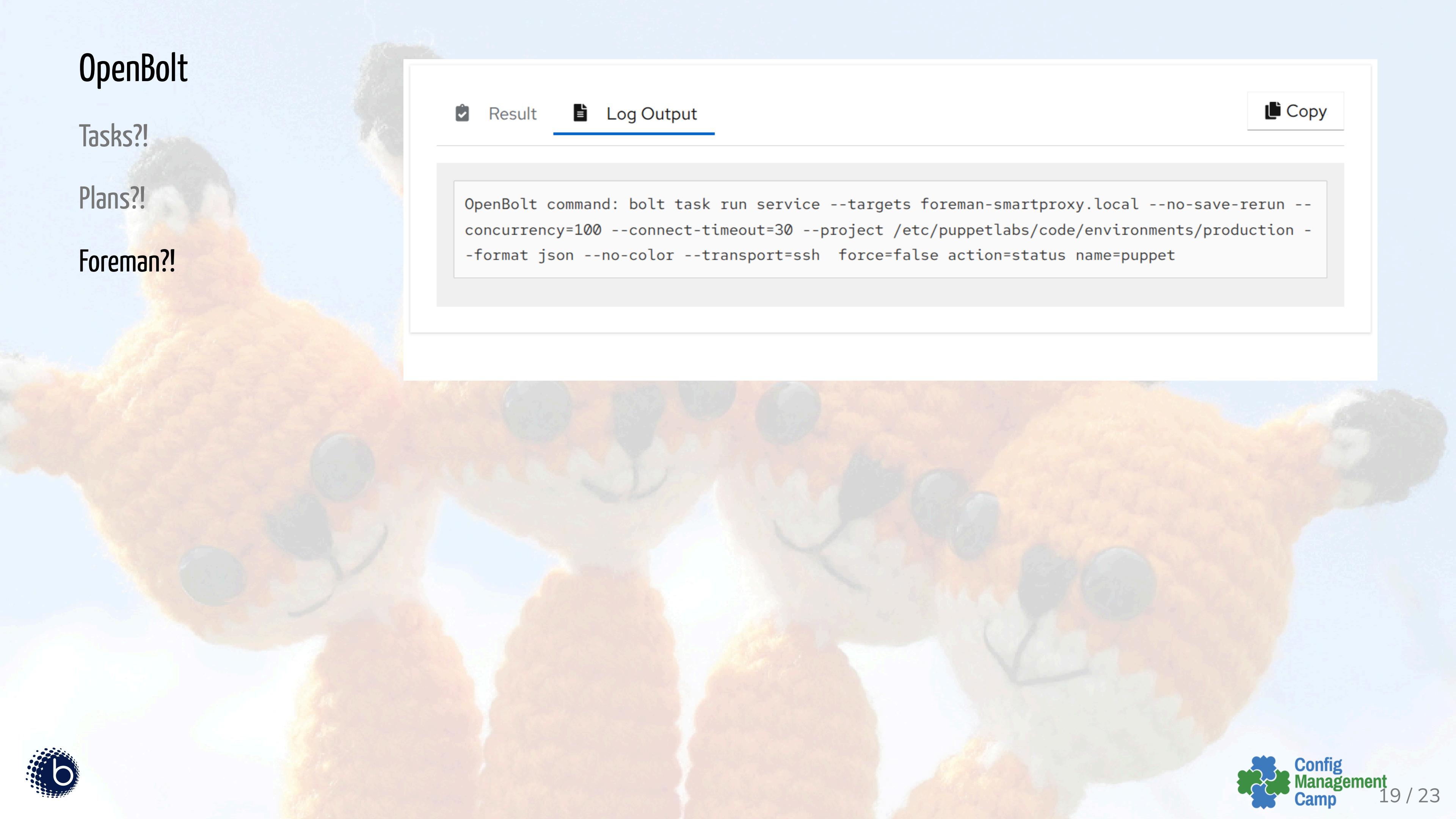


OpenBolt

Tasks?!

Plans?!

Foreman?!



The slide features a large, semi-transparent orange and white fluffy dog in the background, looking slightly to the right.

Result Log Output Copy

```
OpenBolt command: bolt task run service --targets foreman-smartproxy.local --no-save-rerun --concurrency=100 --connect-timeout=30 --project /etc/puppetlabs/code/environments/production -format json --no-color --transport=ssh force=false action=status name=puppet
```

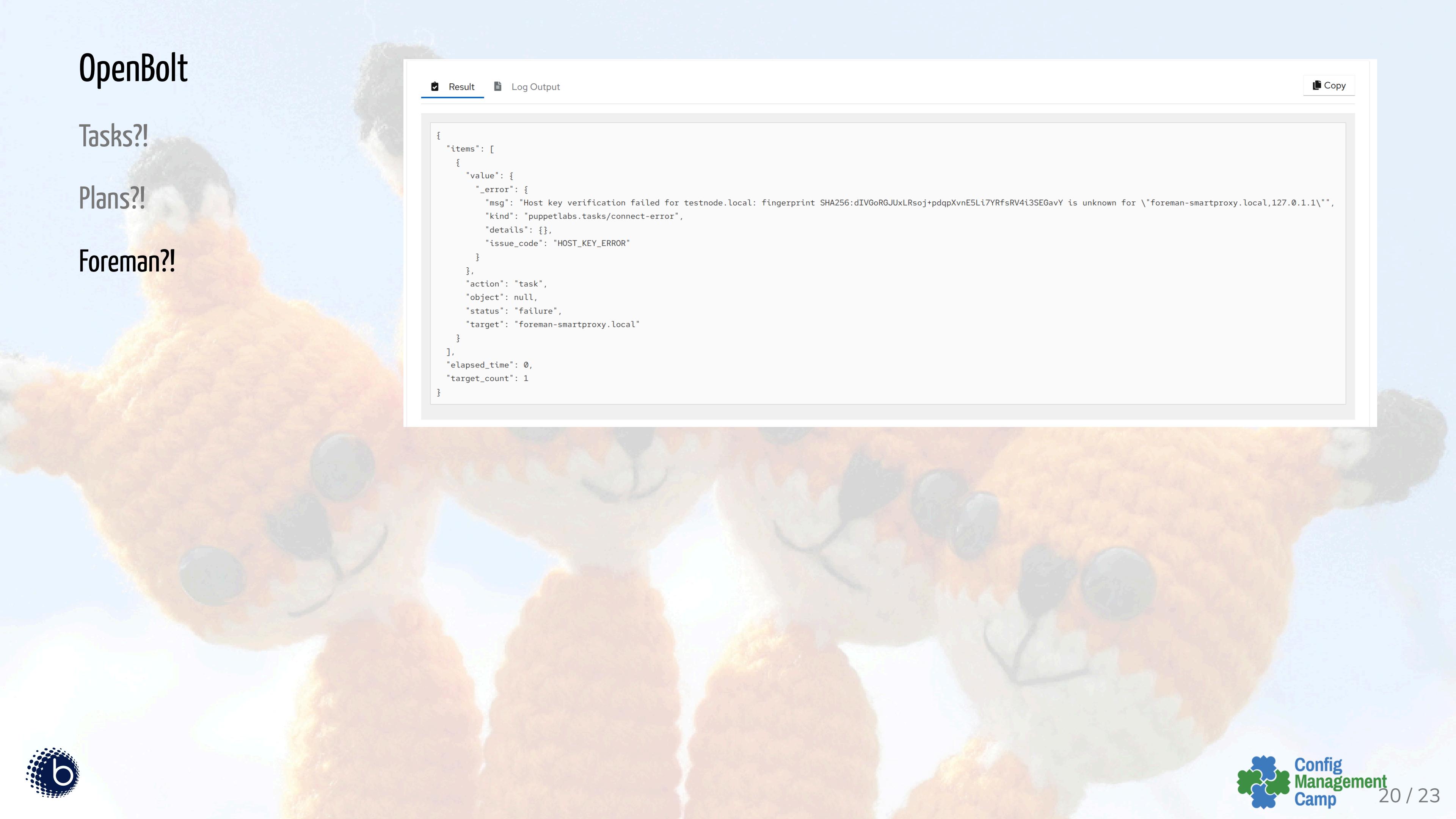


OpenBolt

Tasks?!

Plans?!

Foreman?!



The background of the slide features a large, semi-transparent illustration of a cartoon bear. The bear is orange with white patches and is wearing a hard hat and safety glasses. It appears to be looking towards the right side of the slide.

Result Log Output Copy

```
{  
  "items": [  
    {  
      "value": {  
        "_error": {  
          "msg": "Host key verification failed for testnode.local: fingerprint SHA256:dIVGoRGJUxLRsoj+pdqpXvnE5Li7YRfsRV4i3SEGavY is unknown for \"foreman-smartproxy.local,127.0.1.1\"",  
          "kind": "puppetlabs.tasks/connect-error",  
          "details": {},  
          "issue_code": "HOST_KEY_ERROR"  
        }  
      },  
      "action": "task",  
      "object": null,  
      "status": "failure",  
      "target": "foreman-smartproxy.local"  
    }  
  ],  
  "elapsed_time": 0,  
  "target_count": 1  
}
```



OpenBolt

Tasks?!

Plans?!

Foreman?!



Execution Details Task Details

Smart Proxy foreman-smartproxy.local

Job ID 4db2e7c2-ad22-404c-942f-458ec594c7b1

Hosts 2

Status Success

Execution Time 1m6s

Result Log Output

```
{  
  "items": [  
    {  
      "value": {  
        "status": "MainPID=20148,LoadState=loaded,ActiveState=active",  
        "enabled": "enabled"  
      },  
      "action": "task",  
      "object": "service",  
      "status": "success",  
      "target": "foreman.local"  
    },  
    {  
      "value": {  
        "status": "MainPID=103902,LoadState=loaded,ActiveState=active",  
        "enabled": "enabled"  
      },  
      "action": "task",  
      "object": "service",  
      "status": "success",  
      "target": "puppet.local"  
    }  
  ],  
  "elapsed_time": 61,  
  "target_count": 2  
}
```

OpenBolt

Tasks?!

Plans?!

Foreman?!

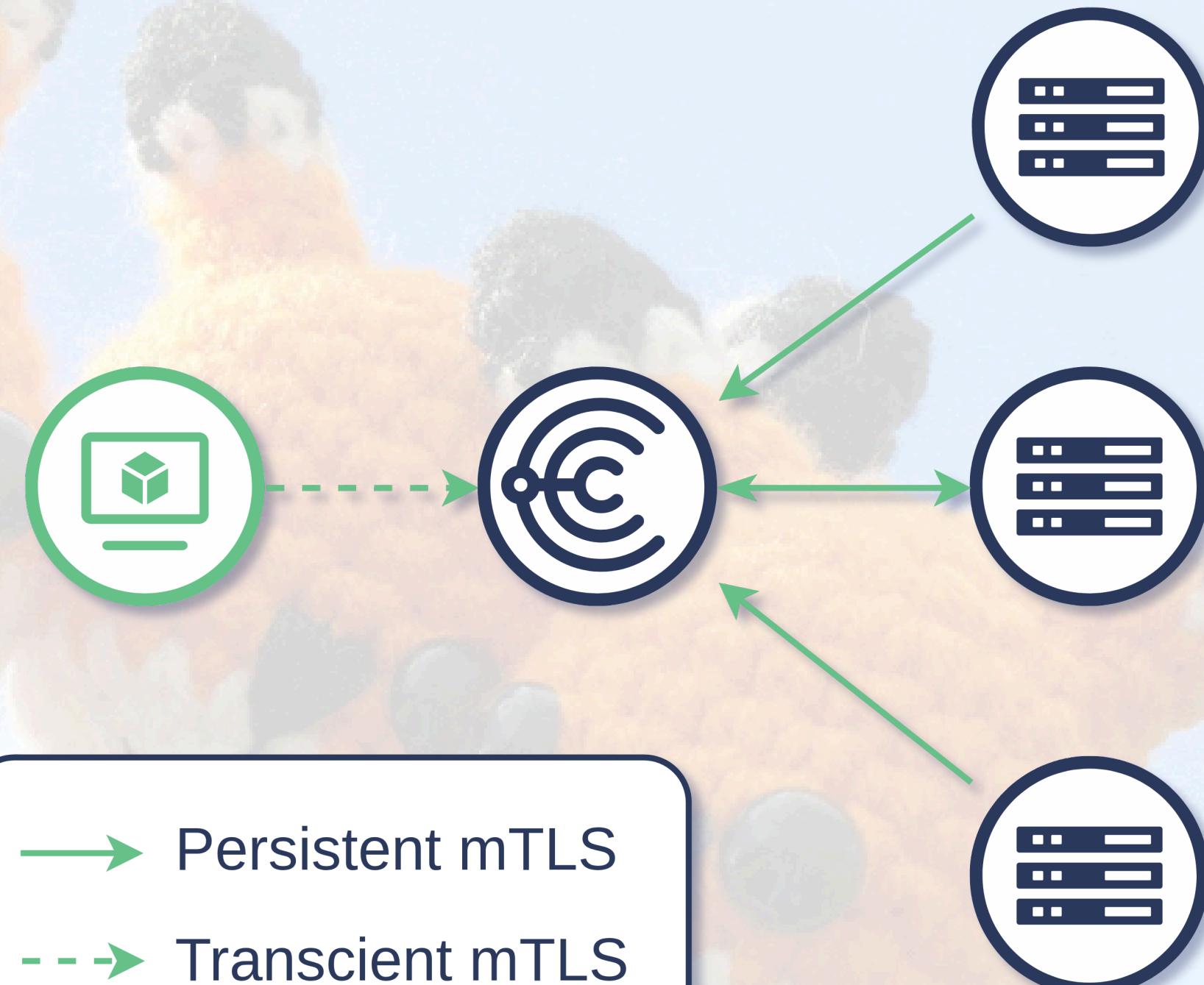
Choria?!

- Choria Orchestration System

Client

Broker

Server



OpenBolt

Tasks?!

Plans?!

Foreman?!

Choria?!

Client

Broker

Server



- Persistent mTLS
- Transient mTLS

- Choria Orchestration System



Conclusion

- OpenBolt is a great addition to the Foreman ecosystem
 - Makes it easy to reuse existing Tasks (and soon Plans)



Conclusion

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 - Makes it easy to reuse existing Tasks (and soon Plans)
- Choria provides almost infinite scaling and opposite firewalling



Conclusion

- OpenBolt is a great addition to the Foreman ecosystem
 - Makes it easy to reuse existing Tasks (and soon Plans)
- Choria provides almost infinite scaling and opposite firewalling
- Please join our [IRC/Slack](#) to provide feedback
- For feedback: [bastelfreak](#) on IRC/ Slack or tim@bastelfreak.de
- This talk and previous ones: github.com/bastelfreak/talks

Thanks for your attention!

