

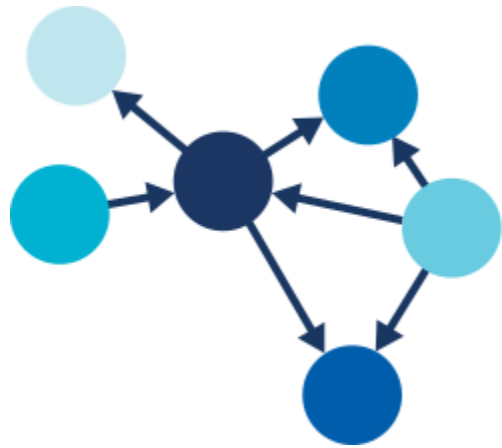
# CONFIG MANAGEMENT FOR THE CLOUD

Felix Frank

OpenStack DACH Day 2016, Berlin

Presenting

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**mgmtconfig**

---

This cat on stage:

Felix Frank

 @felis\_rex  ffrank

old school Linux person

hobbyist programmer

**GREAT TO BE HERE**

It was a long way



2004

[https://upload.wikimedia.org/wikipedia/commons/thumb/d/d8/NASA\\_Mars\\_Rover.jpg/390px-NASA\\_Mars\\_Rover.jpg](https://upload.wikimedia.org/wikipedia/commons/thumb/d/d8/NASA_Mars_Rover.jpg/390px-NASA_Mars_Rover.jpg)



but also





[http://www.desy.de/forschung/anlagen\\_\\_projekte/hera/index\\_ger.html](http://www.desy.de/forschung/anlagen__projekte/hera/index_ger.html)



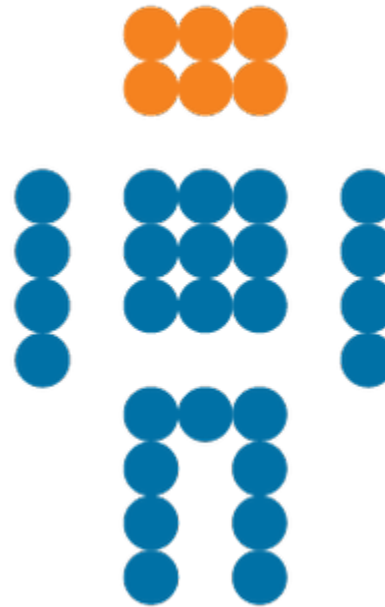
[http://www.desy.de/forschung/anlagen\\_\\_projekte/tier\\_2/index\\_ger.html](http://www.desy.de/forschung/anlagen__projekte/tier_2/index_ger.html)



**Nagios**



<http://www.rccomputers.com/2013/08/06/we-help-you-get-rid-of-that-old-computer-junk/>



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<https://en.wikipedia.org/wiki/Perl>

<https://twitter.com/cfengine>



**botchagalupe**  
@botchagalupe



Following

@KrisBuytaert @roidelapluie @garethr  
Actually now it is "When all you have is a  
hammer everything looks like a Container."

LIKE

1



6:43 PM - 3 Dec 2015



early automation summarized



2009

<http://www.thestate.com/latest-news/article102190417.html>

mpex

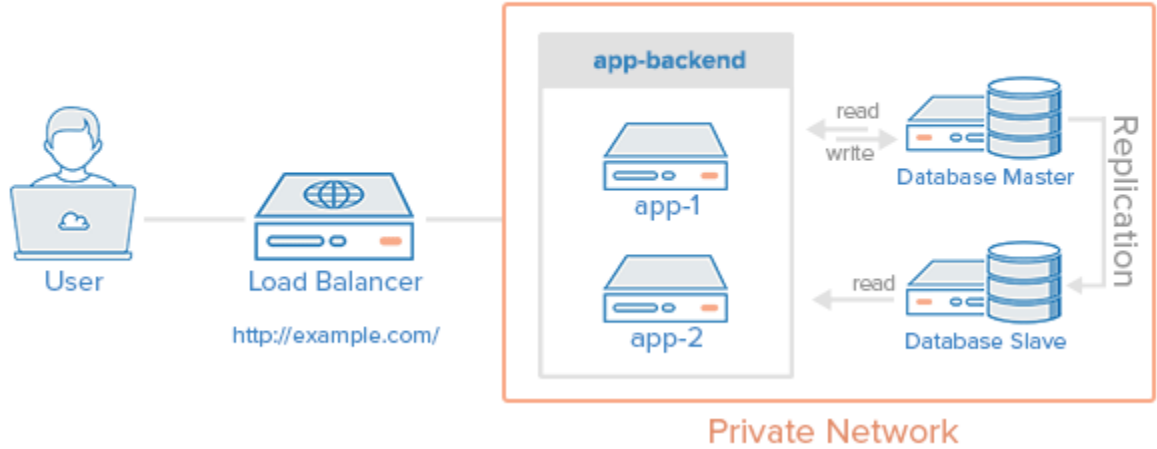


ISP (Berlin)



<https://community.spiceworks.com/topic/517887-how-do-you-stack-your-rack>

# Master-Slave Database Replication



<https://www.digitalocean.com/community/tutorials/5-common-server-setups-for-your-web-application>





puppet

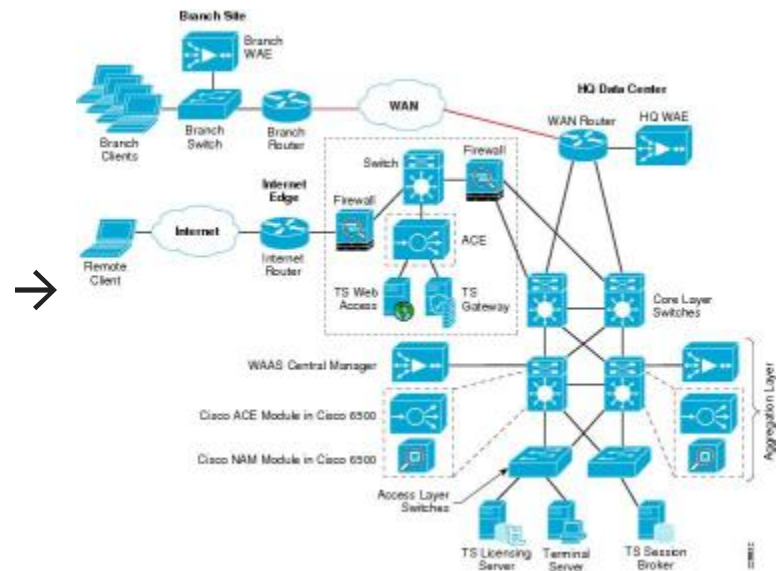


<https://www.ruby-lang.org/en/about/logo/>

<https://github.com/logos>

# Infrastructure as code

```
End Sub  
End Sub  
Private Sub tbToolBar_ButtonClick  
On Error Resume Next  
timTimer.Enabled = True  
Select Case Button.Key  
Case "Back"  
Case "Forward"  
Case "Refresh"  
Case "Home"  
Case "WebBro
```



<http://www.clipartkid.com/stock-photos-programming-source-code-a26erW-clipart/>

[http://www.cisco.com/c/en/us/td/docs/solutions/Enterprise/Data\\_Center/App\\_Networking/MS-windows-TS-DC.html](http://www.cisco.com/c/en/us/td/docs/solutions/Enterprise/Data_Center/App_Networking/MS-windows-TS-DC.html)

# EPISODE IV

*A New Hobby*

And now here we are

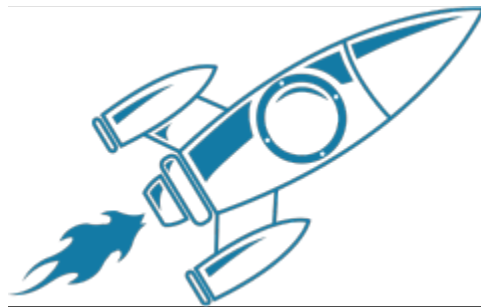




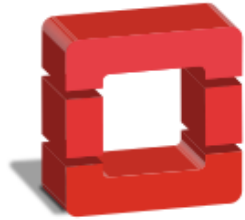
2016

<http://www.esquire.com/news-politics/news/a37221/donald-trump-batman/>

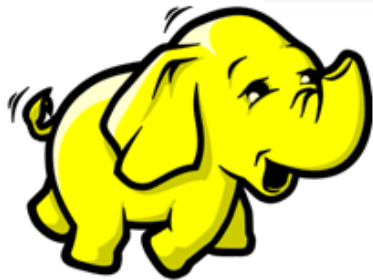
# The unbelievable Machine Company



ISP, data specialists (Berlin)



openstack  
CLOUD SOFTWARE





This story follows the general trends in server operations.

Automation became  
pervasive to  
more and more tasks.

Cloud computing is at  
the apex of this evolution.

When software defines  
everything, almost anything  
becomes possible.

Tooling and technology  
evolve head to head.

Some abstractions are even  
on the way out.

Yet the VM will remain the backbone of any cloud stack for a while.

The cloud paradigm turned  
our pets into cattle.



Puppet and friends can deal,  
but it can feel clunky

Why do we even [Puppet]?

1. Distinct resources which
2. Check their respective state
3. Sync if necessary

Puppet has defined a new  
standard for describing  
infrastructure

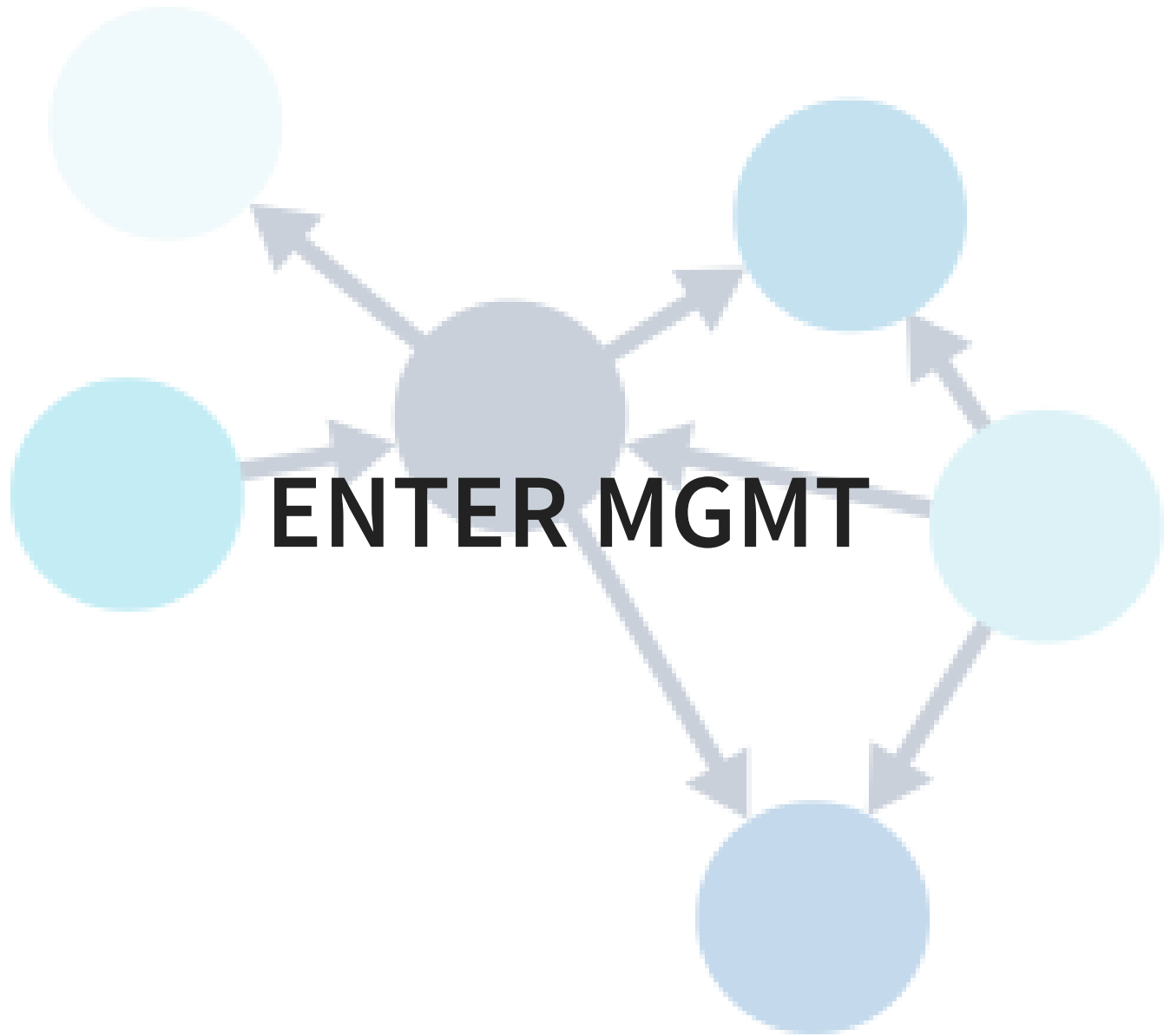
Some caveats, especially in  
distributed contexts

Performance: Resources are  
evaluated one by one

Master / PuppetDB can  
become a hotspot

Larger clusters can take  
a long time to converge







**James**  
purpleidea

Overview

Repositories **67**

Stars **194**

### Popular repositories

[mgmt](#)

A next generation config management prototype!

[Go](#) [★ 551](#) [🔗 70](#)

[puppet-gluster](#)

written by James (RedHat)

## Conceptually similar to Puppet

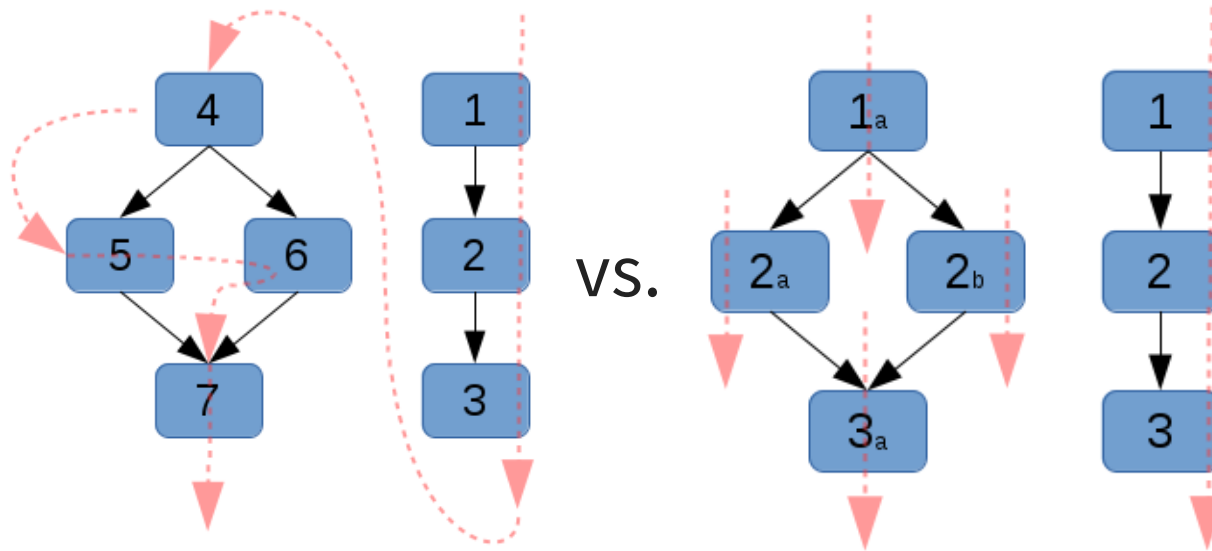
- resource model
- acyclic graph
- import/export of resource data

# UNIQUE KEY FEATURES

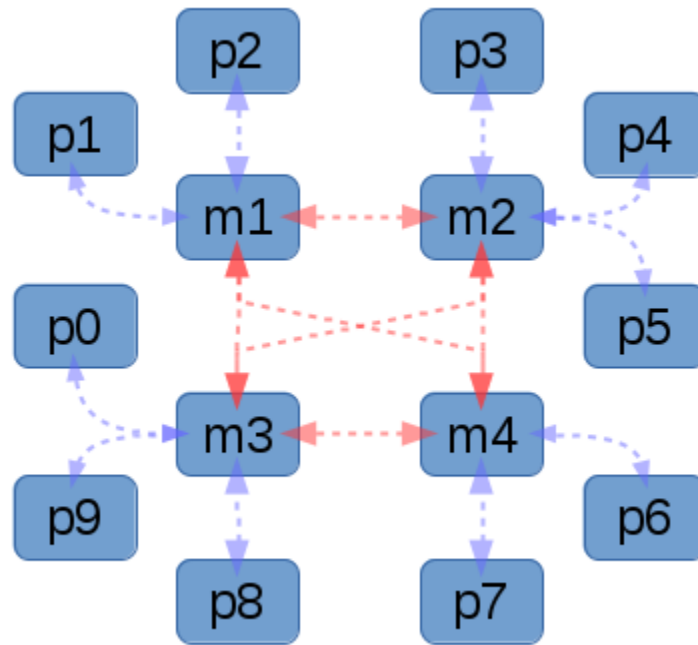
- parallel execution
- event system
- distributed exchange

Explained in James's blog

# PARALLEL EXECUTION



# DISTRIBUTED EXCHANGE

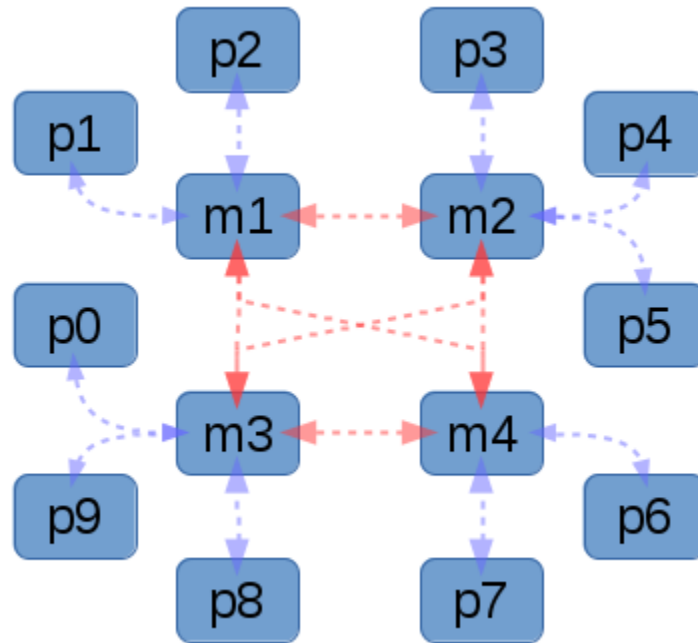


As for the  
**EVENT SYSTEM**

...

Let's see a demo!

Looking at the topology once more...







Many innovative features  
apart from the core

Looking at some commodity  
features

There is support for Puppet  
manifests!

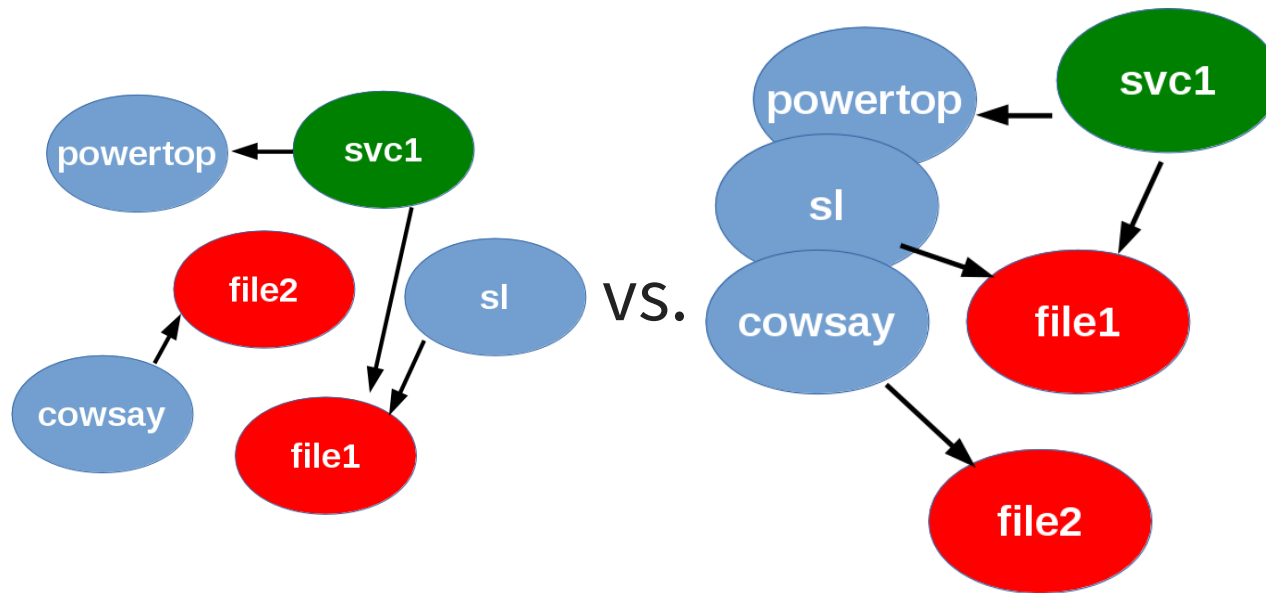
built by your's truly

# AUTOMATIC EDGES

- e.g. find systemd units in package file listings
- find config file locations in packages
- ...

# AUTOMATIC GROUPING

E.g. handle independent package resources in one go



# **AUTOMATIC CLUSTERING**

etcd is bundled right into mgmt

mgmt creates ad hoc etcd clusters for you

# **AGENT-LESS MODE**

a.k.a. that Ansible thing

We'd love to have you get  
involved!

<https://github.com/purpleidea>



Still on the slate:

The language

Still on the slate:

**More resources**

Still on the slate:

APIs (?)

Still on the slate:

Early vetting

Incentive:

**Write in Go**

Incentive:

Interface with `systemd` et al

**SUMMARIZING**



## Summarizing

- mgmt runs with the core strengths of Puppet-like tools
- its focus on the big Linux distros allows tight integration
- events and a distributed message bus allow fast cluster convergence
- provides new management approaches
- currently pre-alpha, any contributions welcome



# QUESTIONS