Handskedukker
og
Hushovmestre

Per Wille <wille@dtic.dtu.dk>
Steffen Godskesen <sego@dtic.dtu.dk>

Infrastruktur

Applikationsmiljø

Applikation

OS på fysisk hardware

Debian preseeding

    pxe boot

    standard Debian install via net

```
d-i debian-installer/locale select  en_DK.UTF-8
d-i localechooser/preferred-locale  select  en_DK.UTF-8
d-i keyboard-configuration/xkb-keymap select dk-latin1
d-i netcfg/choose_interface select auto
d-i netcfg/disable_dhcp boolean true
d-i netcfg/get_hostname seen false
<snip>
in-target wget -O /tmp/postinstall http://www.cvt.dk/preseed/postinstall;
in-target /bin/sh -x /tmp/postinstall
```

OS på virtuel maskine (KVM+Ganeti)

```
wille@fanth:~$ gnt-instance add --disk-template sharedfile  --os-size 50GiB --os-type
debootstrap+default -B memory=2GiB,vcpus=2 --net 0:ip=192.38.67.239 ixth.cvt.dk


Fri Oct 11 10:48:41 2013  - INFO: Selected nodes for instance ixth.cvt.dk via iallocator hail: sith.cvt.
dk
Fri Oct 11 10:48:42 2013 * disk 0, size 50.0G
Fri Oct 11 10:48:42 2013 * creating instance disks...
Fri Oct 11 10:48:42 2013 adding instance ixth.cvt.dk to cluster config
Fri Oct 11 10:48:43 2013  - INFO: Waiting for instance ixth.cvt.dk to sync disks
Fri Oct 11 10:48:43 2013  - INFO: Instance ixth.cvt.dk's disks are in sync
Fri Oct 11 10:48:43 2013 * running the instance OS create scripts…
Fri Oct 11 10:49:22 2013 * starting instance...
```
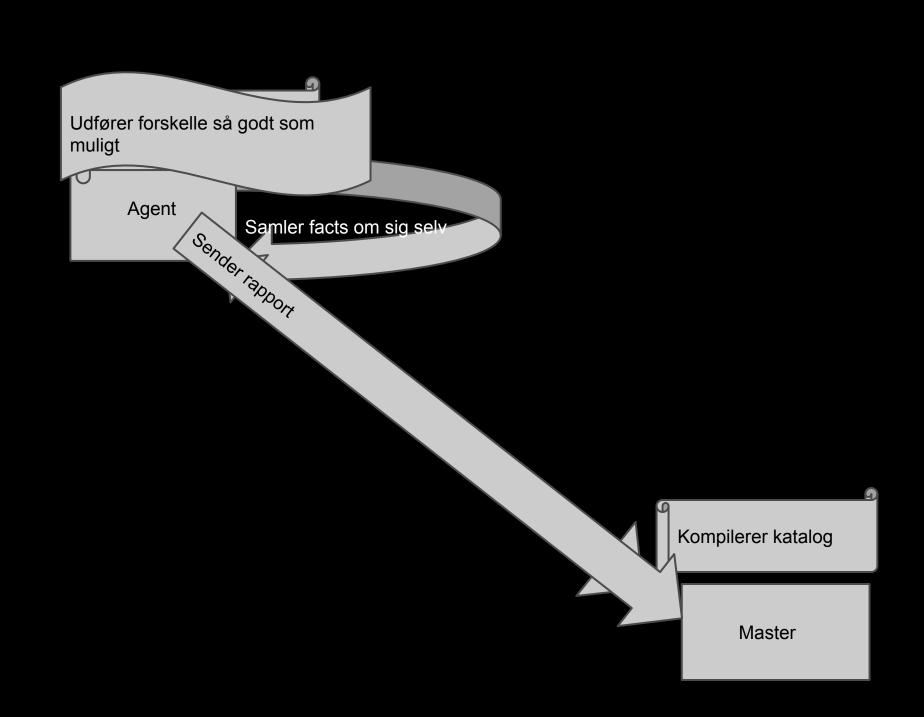
Hvad er Puppet?

OpenSource configuration management tool

Manifester beskriver systemets ønskede tilstand

Puppet læser manifester og omsætter til aktion

Udfører forskelle så godt som muligt

Agent

Samler facts om sig selv

Sender rapport

Kompilerer katalog

Master

Puppet (Infrastruktur)

moduler til OS

typisk et modul pr debian pakke

ntp, sudo, system-users, postfix, amanda, apt, nagios, ldap, syslog, ssh, ...

giver standard konfigureret OS

Puppet (Infrastruktur)

```
class base {
  include adduser, sudo, ssh, postfix, ntp, nagios_nrpe_server,
      amanda_client, cron_apt, sysstat, etckeeper, ganglia_monitor, ssh_keys, puppet,
      rsyslog, aliases, resolver, rsyslog, nslcd, root_user, screen, binutils, group
}
```

```
node 'warth.cvt.dk' {
  include base
  include logstash
  include logstash::indexer
  include logstash::kibana3
}
```

Moduler

```
class ssh {
 package { 'openssh-server':
        ensure        => installed,
 }
 service { 'ssh':
        ensure        => running,
        enable            => true,
        require       => Package['openssh-server'],
 }
}
```

Puppet (applications)

Moduler til applikationsmiljø

Moduler med generisk og modulær konfiguration til inkludering i andre moduler:
    apache, rails_stack, postgresql, tomcat7,..

Samles i metamoduler:
    bunsho, datastore, gazo, haitatsu, toshokan,..

Puppet (Applikationsmiljøer)

Konfigurere en host til en given applikation i nodes.pp

```
node 'ilith.cvt.dk' {
  include base
  include automysqlbackup
  include autopostgresqlbackup
  include apache2

 class {'toshokan':
     rails_env  => 'production',
     conf_set   => 'production',
     vhost_name => 'production.toshokan.cvt.dk',
  }

  class { 'toshokan::logger':
     conf_set   => 'production'
  }
}
```

Puppet (Applikationsmiljøer)

toshokan modul

```puppet
class toshokan($rails_env, $conf_set, $vhost_name) {
  include capistrano
  case $conf_set {
      'staging': {
            $db_password = 'zzz'
      }
      'production': {
            $db_password = 'qqq'
            $server_aliases = ['findit.dtu.dk']
      }
      default: {}
  }
  rails_stack { $vhost_name:
      rails_env    => $rails_env,
      server_aliases => $server_aliases,
  }
  file {"/var/www/${vhost_name}/shared/config/database.yml":
      ensure  => present,
      owner   => 'capistrano',
      group   => 'www-data',
      mode    => '0664',
      content => template("toshokan/database.yml.erb"),
      notify  => Exec["restart vhost ${vhost_name}"],
  }
```

Puppet (Applikationsmiljøer)

rails_stack modul

```
define rails_stack ($rails_env, $vhost_name = $title, $server_aliases = [], $ssl =
false, ){

  include rails_stack::install, rails_stack::config

apache2::vhost { $vhost_name:
    type    => 'standard',
    content => template('rails_stack/vhost.erb'),
  }
}
```

```
class rails_stack::install {
  package { ['libapache2-mod-passenger','git', 'build-essential', 'ruby-dev',
             'bundler', 'libxslt1-dev', 'libxml2-dev',
             'libpq-dev', 'libmysqlclient-dev', 'libv8-dev',
             'memcached']:
    ensure => installed,
  }
}
```

Capistrano

Capistrano

```
require 'bundler/capistrano'

set :rails_env, ENV['RAILS_ENV']
set :application, ENV['HOST']

set :deploy_to, "/var/www/#{application}"
role :web, "#{application}"
role :app, "#{application}"
role :db, "#{application}", :primary => true

set :user, 'capistrano'
set :use_sudo, false

set :deploy_via, :remote_cache
set :copy_exclude, %w(.git jetty feature spec)
set :scm, :git
set :scm_username, ENV['CAP_USER']
set :repository, ENV['SCM']
if variables.include?(:branch_name)
  set :branch, "#{branch_name}"
else
  set :branch, 'master'
end
```

Hvortil

Hvorfra

Capistrano

```
$ cap deploy
  * 2013-10-25 20:47:47 executing `deploy:update_code
  ...
  * sftp upload complete
  * 2013-10-25 20:48:41 executing `deploy:finalize_update'
    triggering before callbacks for `deploy:finalize_update'
  * 2013-10-25 20:48:41 executing `deploy:assets:symlink'
  ...
  * 2013-10-25 20:48:41 executing `bundle:install'
  * executing "cd /var/www/toshokan.vagrant.vm/releases/20131025184747 && bundle
install --gemfile /var/www/toshokan.vagrant.vm/releases/20131025184747/Gemfile --path
 /var/www/toshokan.vagrant.vm/shared/bundle --deployment --quiet --without development
test"
  ...
  * 2013-10-25 20:52:24 executing `deploy:migrate'
 ** [out :: toshokan.vagrant.vm] -- change_column(:order_events, :data, :text, {:
limit=>nil})
  ...
  ...
  ...
  * 2013-10-25 21:36:49 executing `deploy:restart'
  * executing "touch /var/www/toshokan.vagrant.vm/current/tmp/restart.txt"
    servers: ["toshokan.vagrant.vm"]
    [toshokan.vagrant.vm] executing command
    command finished in 56ms
```

New Job

People

Build History

Project Relationship

Check File Fingerprint

Manage Jenkins

My Views

Disk usage

Build Queue

No builds in the queue.

Build Executor Status

#	Status
1	Idle
2	Idle

All | Sorbit Pipeline | bunsho pipeline | dlib pipeline | gazo pipeline | haitatsu pipeline | keikoku pipeline | kyandi pipeline | metastore pipeline | primoproxy pipeline | pureproxy pipeline | riyosha pipeline | shohisha pipeline | toshokan pipeline | tsushin pipeline

S	W	Name ↓	Last Success	Last Failure	Last Duration	Last Success Version
	☀	alert	8 mo 5 days (#171)	2 yr 4 mo (#121)	22 sec	Feb 20, 2013 9:58:36 PM (171)
	⛅	bunsho	23 hr (#7)	1 mo 17 days (#3)	44 sec	Oct 23, 2013 9:50:41 AM (7)
	☀	bunsho deploy production	40 min (#2)	N/A	1 min 10 sec	Oct 24, 2013 9:04:32 AM (2)
	☀	bunsho deploy staging	23 hr (#4)	N/A	1 min 12 sec	Oct 23, 2013 9:51:29 AM (4)
	☀	ci-deploy	4 mo 5 days (#13)	1 yr 11 mo (#2)	1.1 sec	Jun 20, 2013 11:11:36 AM (13)
	☀	datastore2	29 days (#7)	N/A	14 sec	Sep 24, 2013 3:23:10 PM (7)
	⛅	DDF	2 mo 8 days (#30)	5 mo 20 days (#26)	21 sec	Aug 16, 2013 2:01:20 PM (30)
	☀	DDF_Commons_clean_install_default	1 yr 1 mo (#1)	N/A	10 sec	Aug 29, 2012 1:09:17 PM (1)
	☀	DDF_Commons_release	1 yr 1 mo (#1)	N/A	11 sec	Aug 29, 2012 1:14:22 PM (1)
	☀	DDF_Communication_default	1 yr 1 mo (#1)	N/A	12 sec	Aug 29, 2012 1:22:08 PM (1)
	☀	DDF_RedirectToLatest	2 mo 8 days (#24)	1 yr 1 mo (#1)	5.4 sec	Aug 16, 2013 2:01:45 PM (24)
	🐾	dlib	2 days 17 hr (#432)	1 yr 4 mo (#344)	4 min 19 sec	Oct 21, 2013 4:16:40 PM (432)
	☀	dlib deploy to devel	2 days 17 hr (#334)	6 mo 12 days (#316)	2 min 10 sec	Oct 21, 2013 4:21:02 PM (334)
	☀	dlib deploy to production	2 days 17 hr (#55)	N/A	1 min 30 sec	Oct 21, 2013 4:30:27 PM (55)
	☀	dlib deploy to production 2	2 days 17 hr (#48)	N/A	1 min 2 sec	Oct 21, 2013 4:32:34 PM (48)
	☀	dlib deploy to production 3	2 days 17 hr (#49)	N/A	0.15 sec	Oct 21, 2013 4:33:47 PM (49)
	☀	dlib deploy to test	2 days 17 hr (#158)	7 mo 27 days (#142)	2 min 12 sec	Oct 21, 2013 4:24:30 PM (158)
	☀	DS2	42 min (#167)	N/A	0.56 sec	Oct 24, 2013 9:01:54 AM (167)

Back to Dashboard

Status

Changes

Workspace

Build Now

Delete Project

Configure

GitHub

Annotations report

Rails stats report

Rcov report

Git Polling Log

Build History (trend)

	#602	Oct 24, 2013 9:51:59 AM	958KB
	#601	Oct 23, 2013 3:03:42 PM	2MB
	#600	Oct 23, 2013 2:41:42 PM	2MB
	#599	Oct 23, 2013 11:56:42 AM	2MB
	#598	Oct 17, 2013 9:05:42 AM	2MB
	#597	Oct 10, 2013 1:55:42 PM	2MB
	#596	Oct 9, 2013 1:22:42 PM	2MB
	#595	Oct 8, 2013 2:53:47 PM	2MB
	#594	Oct 7, 2013 10:00:42 AM	2MB
	#593	Oct 7, 2013 8:31:42 AM	2MB
	#592	Oct 3, 2013 4:14:36 PM	2MB
	#591	Oct 2, 2013 12:14:35 PM	2MB
	#590	Sep 30, 2013 10:56:35 AM	2MB
	#589	Sep 30, 2013 10:39:58 AM	14KB
	#588	Sep 30, 2013 9:27:32 AM	2MB
	#587	Sep 26, 2013 9:05:32 PM	2MB
	#586	Sep 26, 2013 2:06:32 PM	2MB
	#585	Sep 26, 2013 11:49:32 AM	2MB

Project toshokan

Run tests and create git tag for Toshokan

edit description

Disable Project

Disk Usage: Workspace -, Builds 447MB

Annotations report

Rails stats report

Rcov report

Workspace

Last Successful Artifacts
toshokan.tag   54

Recent Changes

Downstream Projects

toshokan deploy unstable

Permalinks

- Last build (#602), 33 min ago
- Last stable build (#602), 33 min ago
- Last successful build (#602), 33 min ago
- Last failed build (#589), 23 days ago
- Last unsuccessful build (#589), 23 days ago

Annotations (Rails notes)

FIXME
OPTIMIZE
TODO

Rails stats

LOC/M
Lines/LOC
M/C
Test/Code

Rcov coverage

code coverage
total coverage

Build Pipeline View:

🔧 Configure View

▶️ Start Build of Pipeline for toshokan

❓ View/Hide Build Pipeline Icon Legend

toshokan		toshokan deploy unstable		toshokan deploy staging		toshokan deploy production
No Revision	➡️	**toshokan #601** Oct 23, 2013 3:03:42 PM CEST Duration: 4 min 22 sec	➡️ **toshokan deploy unstable #428** Oct 23, 2013 3:08:08 PM CEST Duration: 1 min 6 sec	➡️ **toshokan deploy staging #219** Oct 23, 2013 3:10:36 PM CEST Duration: 1 min 7 sec	➡️ **toshokan deploy production #35** Oct 24, 2013 9:02:30 AM CEST Duration: 1 min 5 sec
No Revision	➡️	**toshokan #600** Oct 23, 2013 2:41:42 PM CEST Duration: 4 min 15 sec	➡️ **toshokan deploy unstable #427** Oct 23, 2013 2:46:01 PM CEST Duration: 1 min 6 sec	➡️ **toshokan deploy staging #218** Oct 23, 2013 2:54:39 PM CEST Duration: 1 min 7 sec	➡️ **Pending build of project: toshokan deploy production** 🔄 Trigger
No Revision	➡️	**toshokan #599** Oct 23, 2013 11:56:42 AM CEST Duration: 4 min 41 sec	➡️ **toshokan deploy unstable #426** Oct 23, 2013 12:01:27 PM CEST Duration: 1 min 15 sec	➡️ **toshokan deploy staging #217** Oct 23, 2013 12:08:55 PM CEST Duration: 1 min 13 sec	➡️ **toshokan deploy production #34** Oct 24, 2013 9:00:15 AM CEST Duration: 1 min 35 sec
No Revision	➡️	**toshokan #598** Oct 17, 2013 9:05:42 AM CEST Duration: 4 min 0 sec	➡️ **toshokan deploy unstable #425** Oct 17, 2013 9:09:46 AM CEST Duration: 1 min 14 sec	➡️ **toshokan deploy staging #216** Oct 17, 2013 9:35:24 AM CEST Duration: 1 min 16 sec	➡️ **Pending build of project: toshokan deploy production** 🔄 Trigger
No Revision	➡️	**toshokan #597** Oct 10, 2013 1:55:42 PM CEST Duration: 3 min 40 sec	➡️ **toshokan deploy unstable #424** Oct 10, 2013 1:59:25 PM CEST Duration: 1 min 6 sec	➡️ **toshokan deploy staging #215** Oct 10, 2013 2:02:41 PM CEST Duration: 1 min 8 sec	➡️ **Pending build of project: toshokan deploy production** 🔄 Trigger
No Revision	➡️	**toshokan #596** Oct 9, 2013 1:22:42 PM CEST Duration: 3 min 39 sec	➡️ **toshokan deploy unstable #423** Oct 9, 2013 1:26:24 PM CEST Duration: 1 min 7 sec	➡️ **Pending build of project: toshokan deploy staging** 🔄 Trigger	➡️ **Pending build of project: toshokan deploy production**
No Revision	➡️	**toshokan #595** Oct 8, 2013	➡️ **toshokan deploy unstable #422** Oct 8, 2013	➡️ **Pending build of project: toshokan deploy staging**	➡️ **Pending build of project: toshokan**

Debian

https://wiki.debian.org/DebianInstaller/Preseed

Ganeti

http://code.google.com/p/ganeti/

Puppet

http://puppetlabs.com/

Capistrano
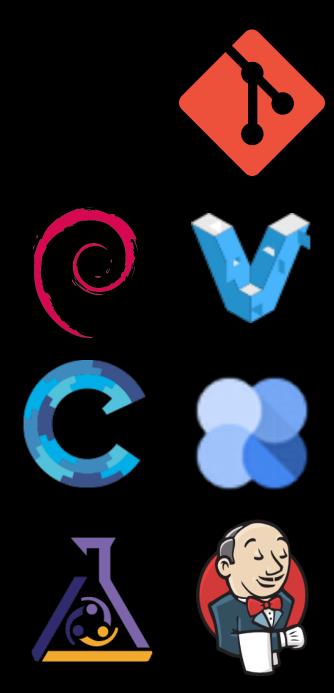
http://www.capistranorb.com/

Jenkins

http://jenkins-ci.org/

https://github.com/jenkinsci/build-pipeline-plugin

Vagrant

http://www.vagrantup.com/

Devops means giving a shit about your job enough to not pass the buck. Devops means giving a shit about your job enough to want to learn all the parts and not just your little world.

Developers need to understand infrastructure. Operations people need to understand code. People need to fucking work with each other and not just occupy space next to each other.

- John E. Vincent
http://blog.lusis.org/blog/2013/06/04/devops-the-title-match/