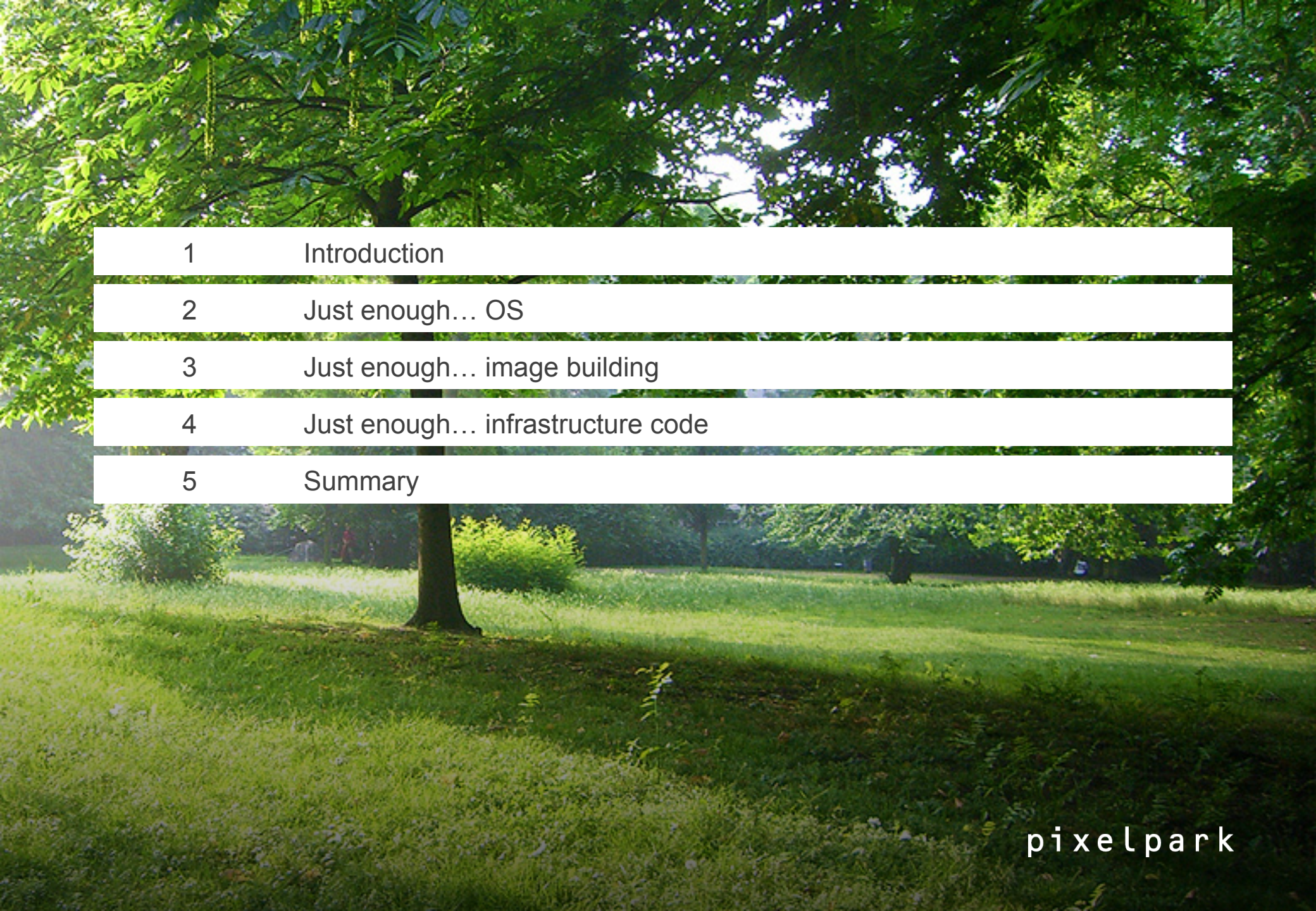
Infrastructure as code

Pixelpark Innovation Lab

Cologne, 8 November 2011

pixelpark

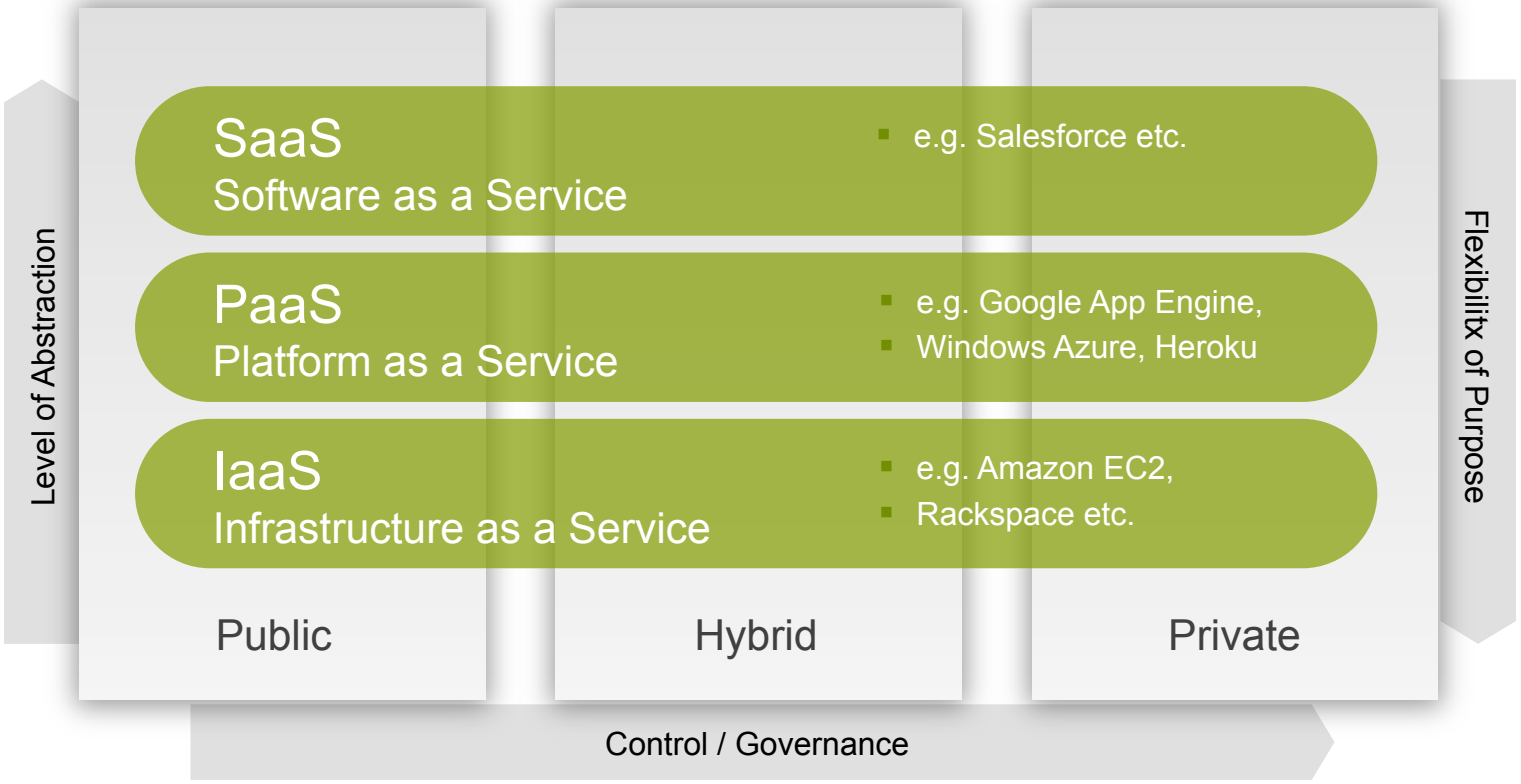


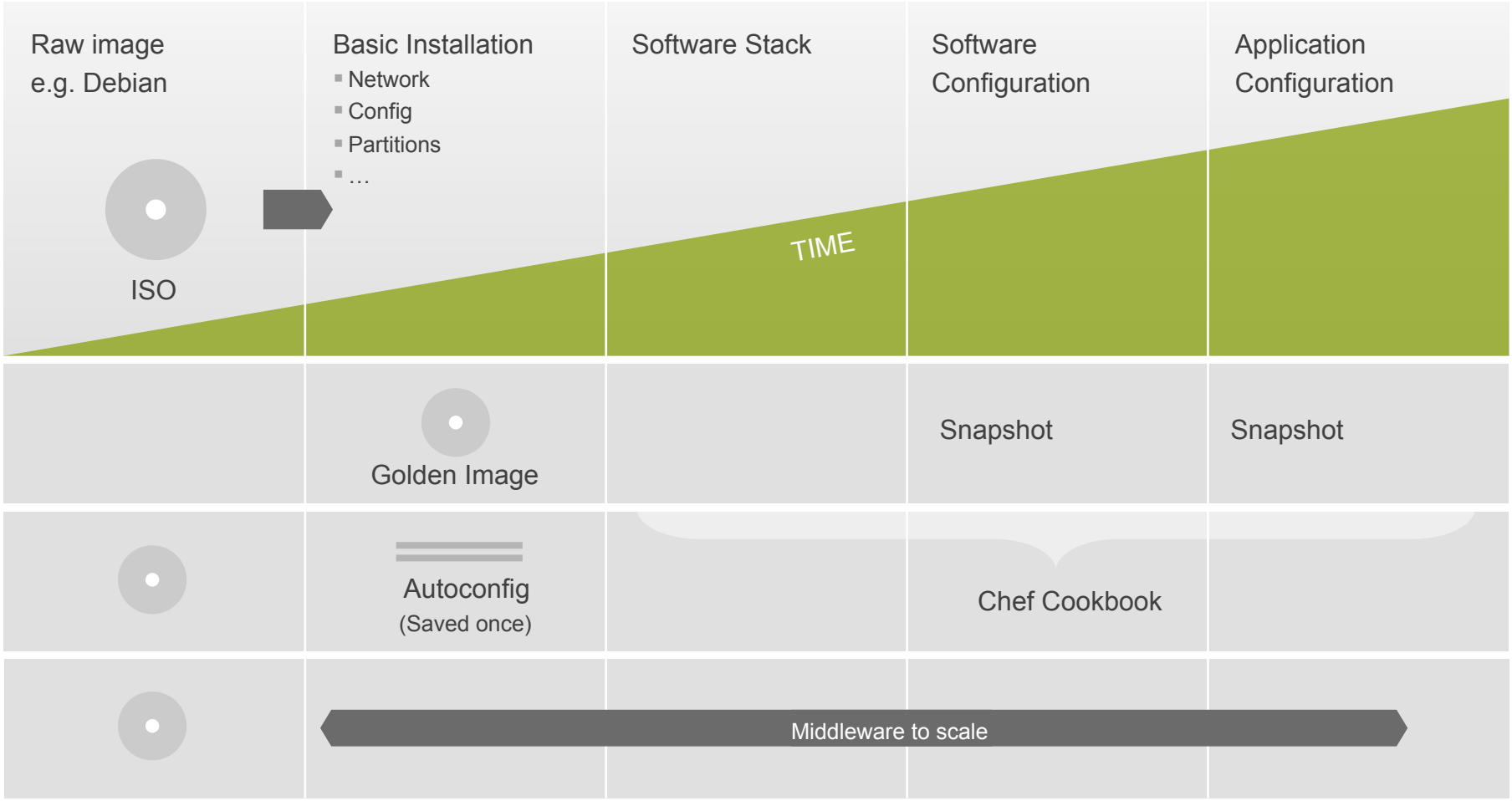
1	Introduction
2	Just enough… OS
3	Just enough… image building
4	Just enough… infrastructure code
5	Summary

Agenda

1. Introduction

Cloud Stack

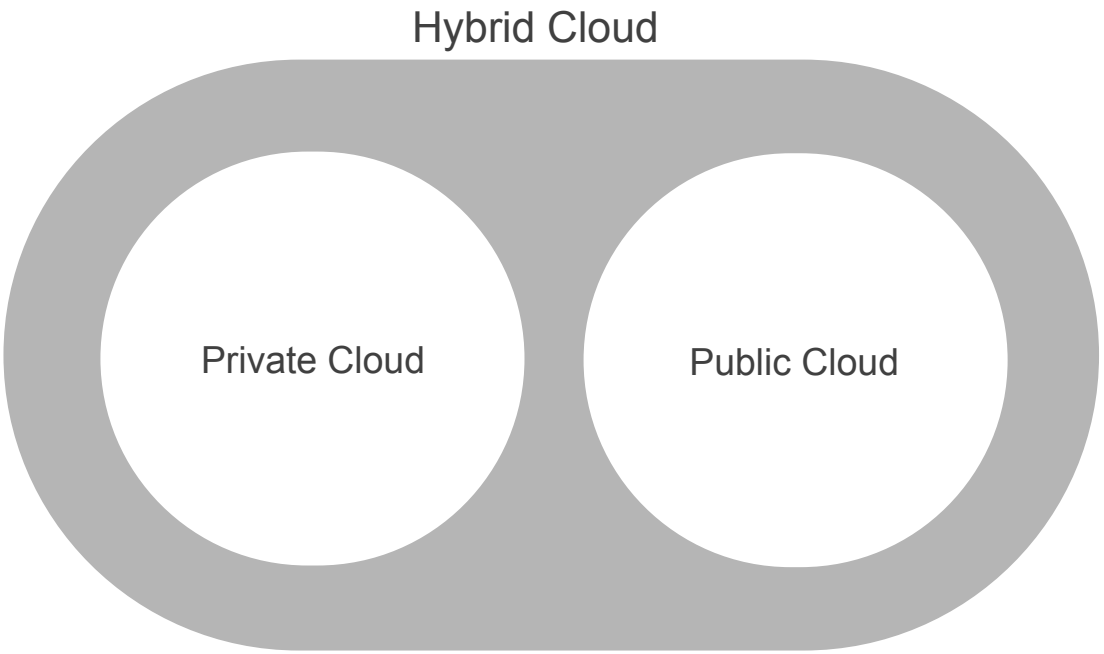

SaaS
Software as a Service
e.g. Salesforce etc.
PaaS
Platform as a Service
e.g. Google App Engine,
Windows Azure, Heroku
IaaS
Infrastructure as a Service
e.g. Amazon EC2,
Rackspace etc.
Public
Hybrid
Private
Level of Abstraction
Flexibilitx of Purpose
Control / Governance


Raw image
e.g. Debian
ISO
Basic Installation
Network
Config
Partitions
…
Software Stack
Software
Configuration
Application
Configuration
TIME
Golden Image
Snapshot
Snapshot
Autoconfig
(Saved once)
Chef Cookbook
Middleware to scale

Agenda

2. Just enough… OS

Deployment models



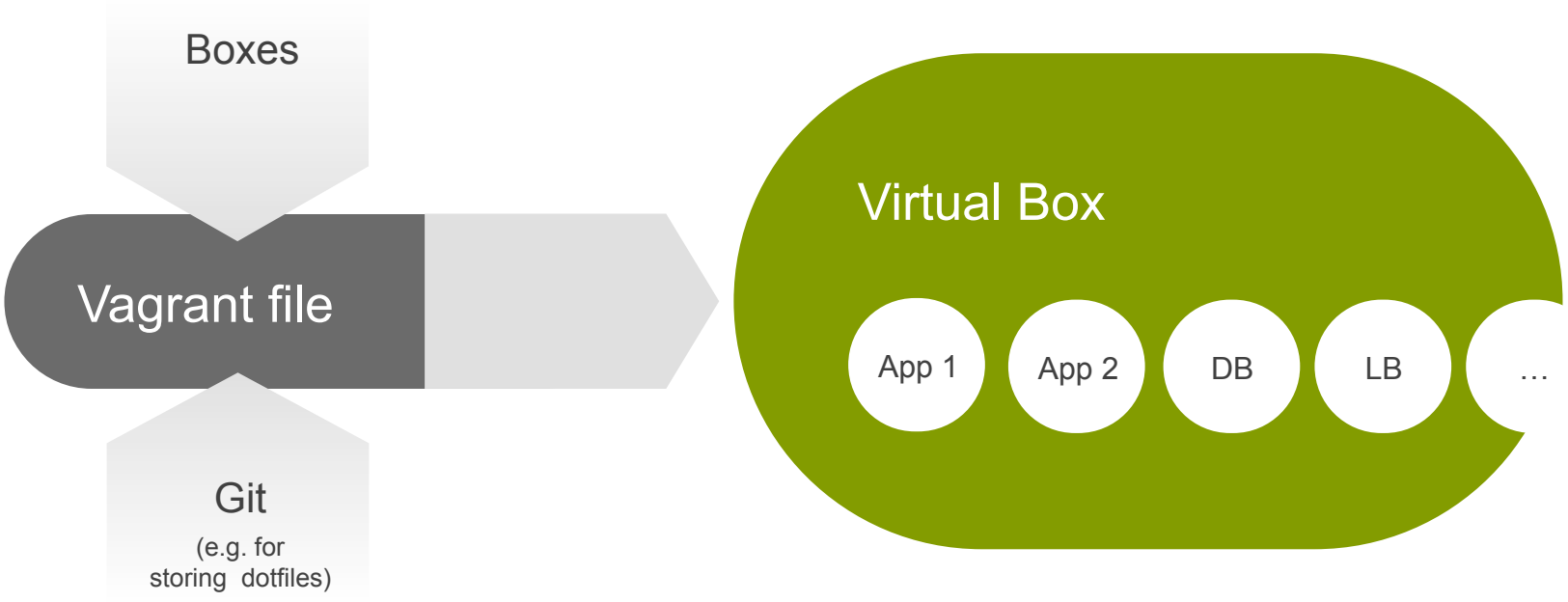
- Eucalyptus
- OpenStack
- Crowbar
- OpenNebula
- …

- Amazon Web Services
- Rackspace
- Google App Engine
- vCloud
- …

Eucalyptus, Deltacloud

„A cloud in your Pocket“

Vagrant


Boxes
Vagrant file
Git
(e.g. for
storing dotfiles)
Virtual Box
App 1
App 2
DB
LB
…

You want to get more boxes?

Try Vagrantbox.es.

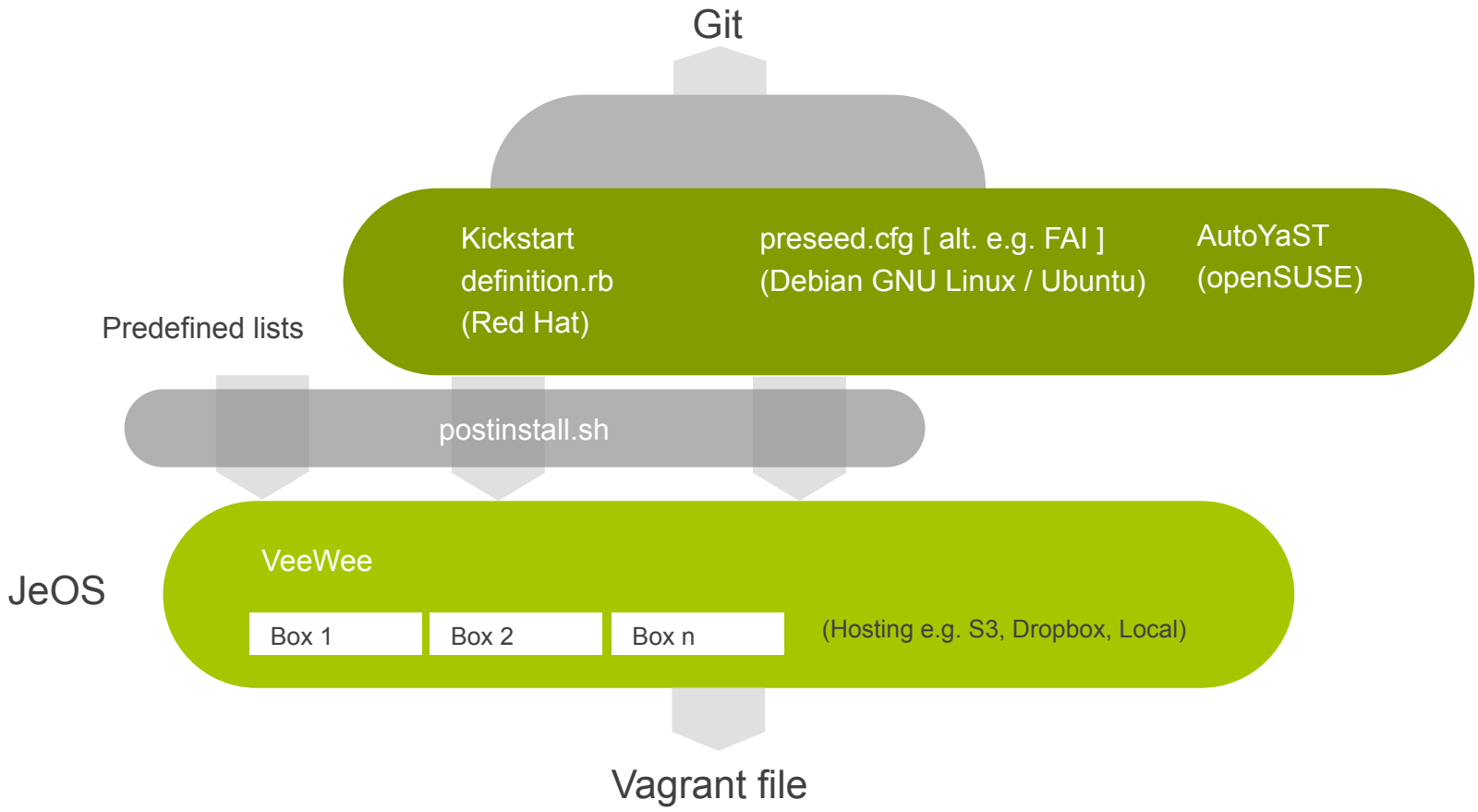
But…

Paranoid? Do you trust these boxes?

Agenda

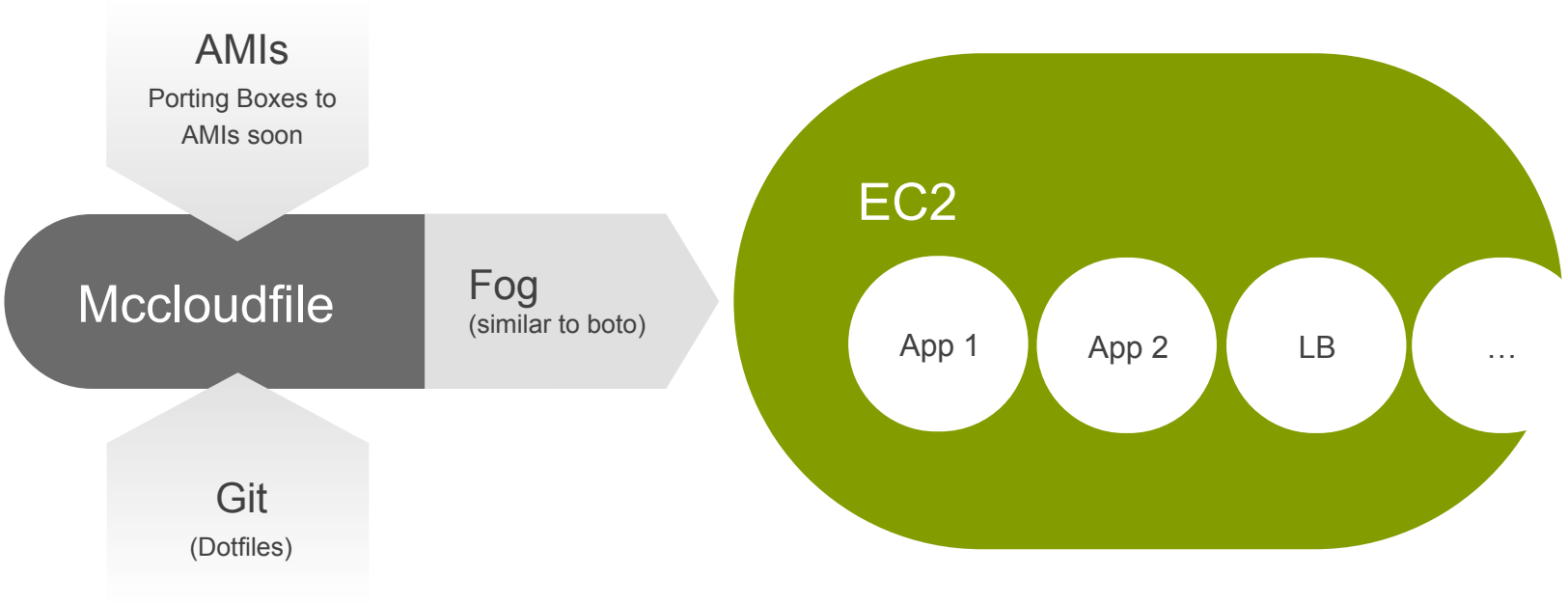
3. Just enough… image building

VeeWee


Git
Kickstart
definition.rb
(Red Hat)
preseed.cfg [alt. e.g. FAI]
(Debian GNU Linux / Ubuntu)
AutoYaST
(openSUSE)
Predefined lists
postinstall.sh
JeOS
VeeWee
Box 1
Box 2
Box n
(Hosting e.g. S3, Dropbox, Local)
Vagrant file

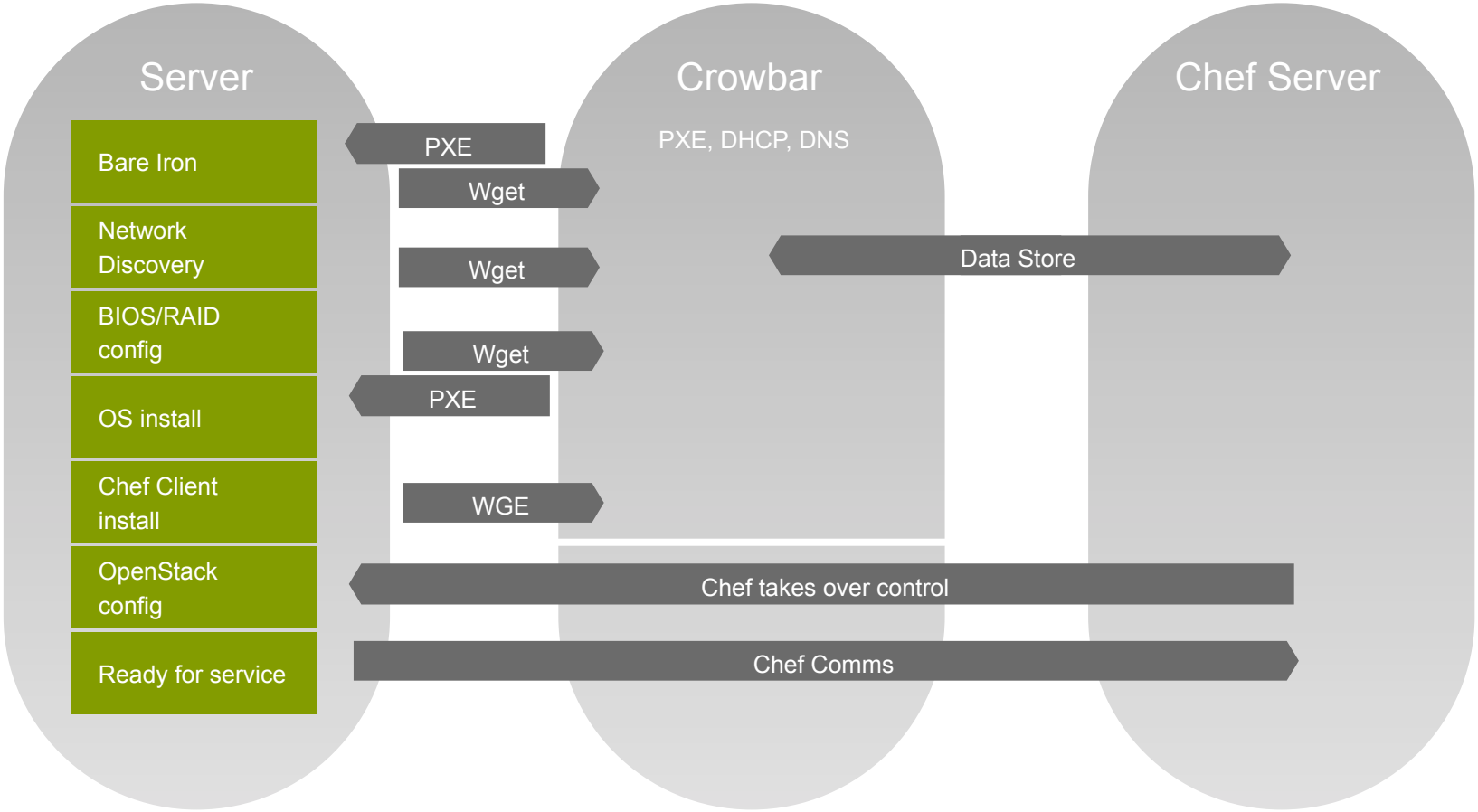
What about Public Clouds?

Mccloud


AMIs
Porting Boxes to AMIs soon
Mccloudfile
Fog
(similar to boto)
Git
(Dotfiles)
EC2
App 1
App 2
LB
…

What about Private Clouds?

Crowbar



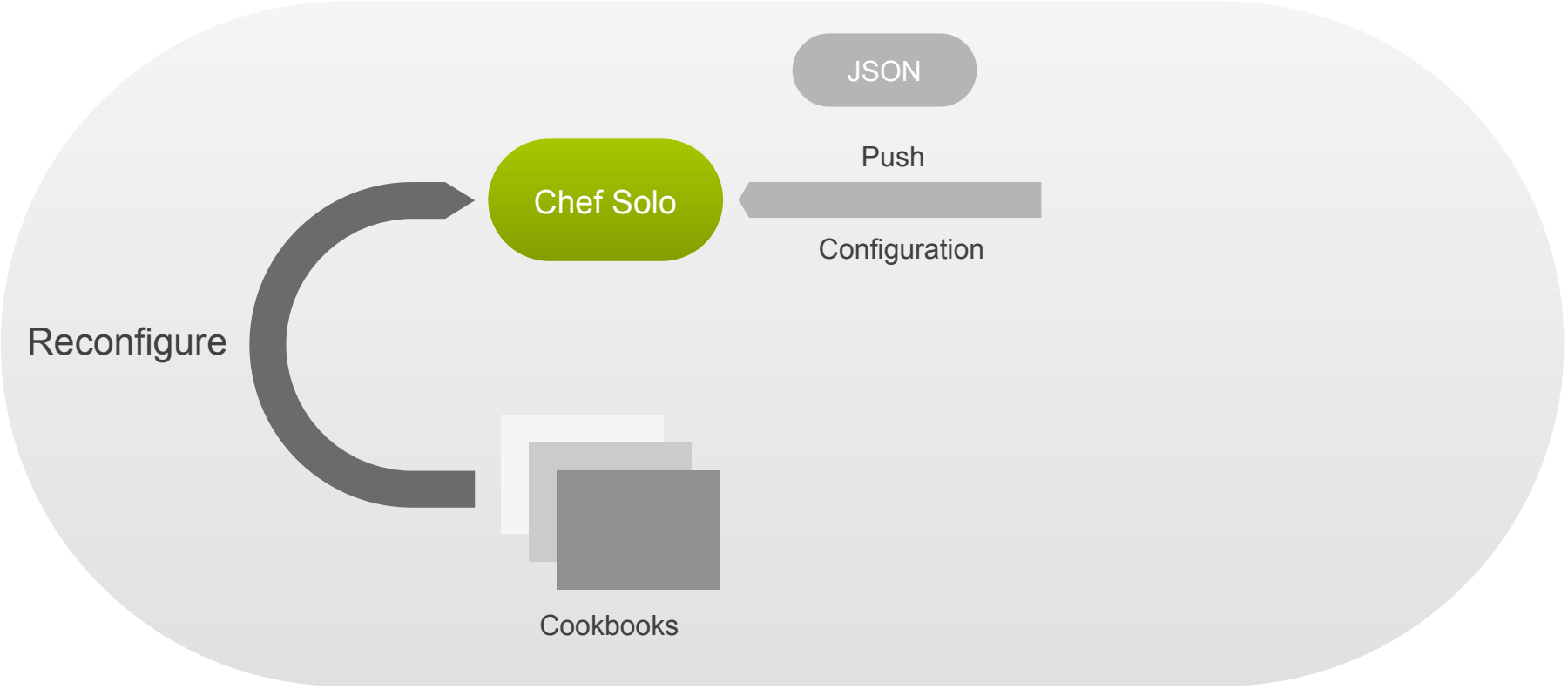
Source: Rob Hirschfeld

Agenda

4. Just enough… infrastructure code

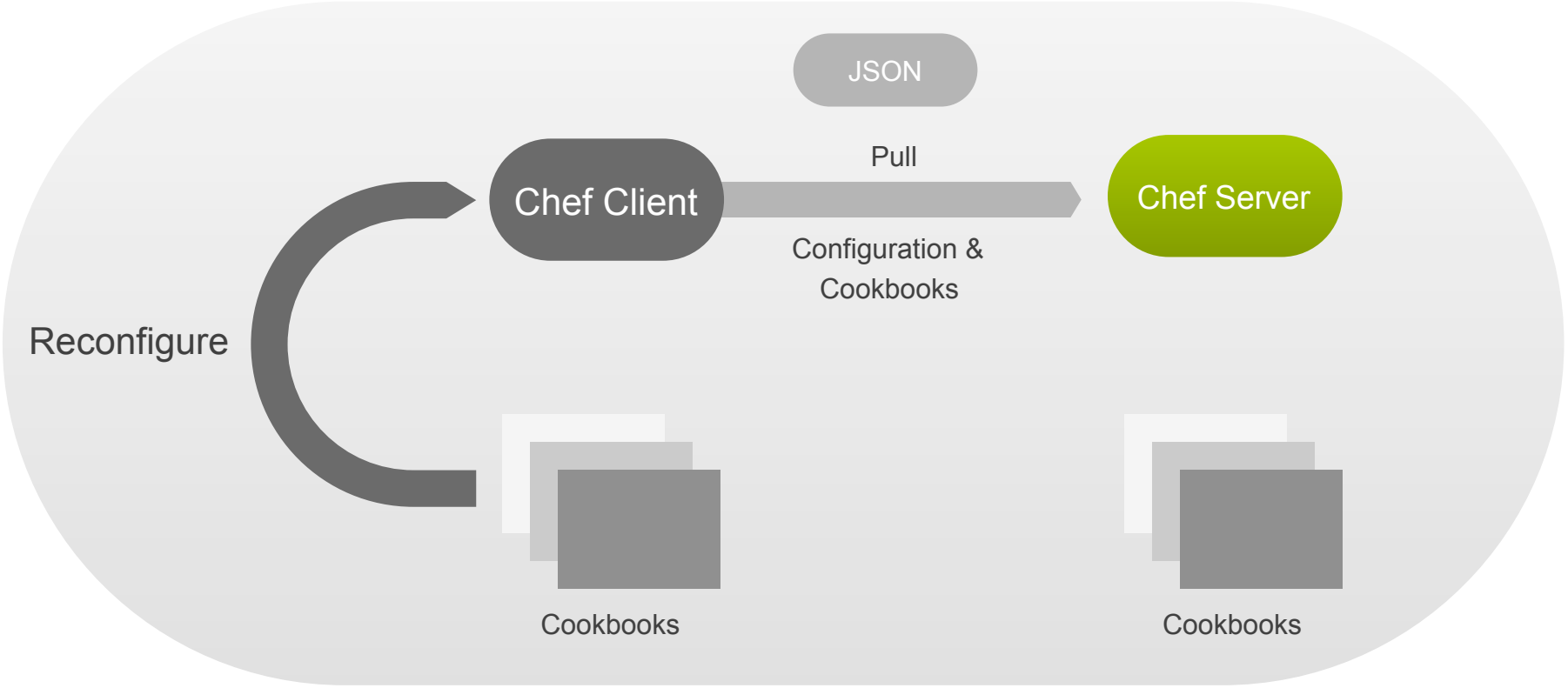
OPSCODE

Chef Solo



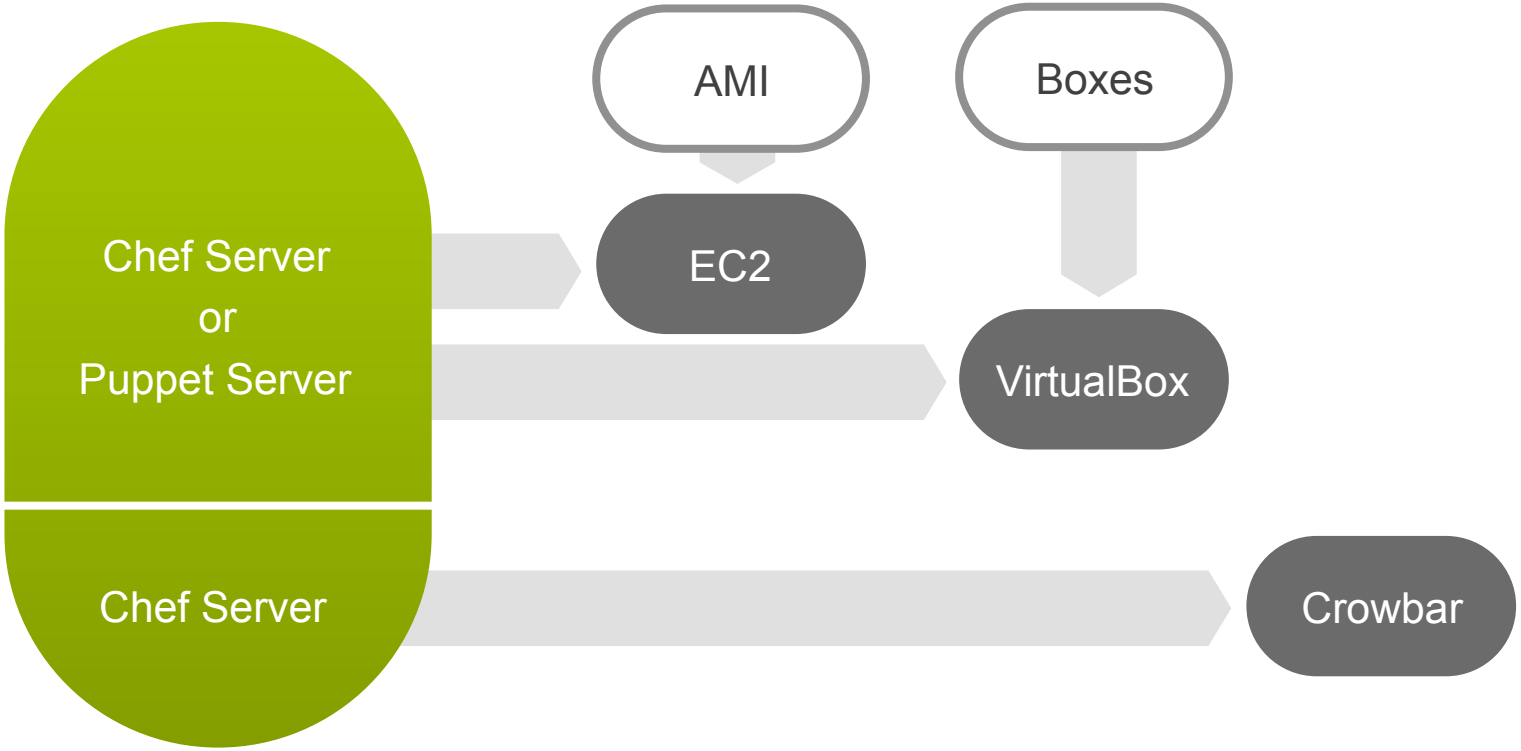
Source: peritor

Chef Server



Source: peritor

Scenarios


AMI
Boxes
Chef Server
or
Puppet Server
EC2
VirtualBox
Chef Server
Crowbar

Agenda

5. Summary

Rundeck

Pie

Deployinator

Just enough…
coordination

Cfengine

Puppet

Chef

Just enough…
infrastructure code

Mccloud

Cloud Abstraction Library

- Fog (Ruby)
- Boto (Python)
- jclouds (Java)

APIs
CLIs

Public Cloud

- AWS
- Rackspace
- vCloud

Just enough…
Operating System

Crowbar

Private Cloud Abstraction Library

- libvirt

APIs
CLIs

Private Cloud

- Xen
- KVM
- lxc
- vSphere

Vagrant

„Cloud in your Pocket“

- VMware Player
- VMware fusion
- VirtualBox

VeeWee

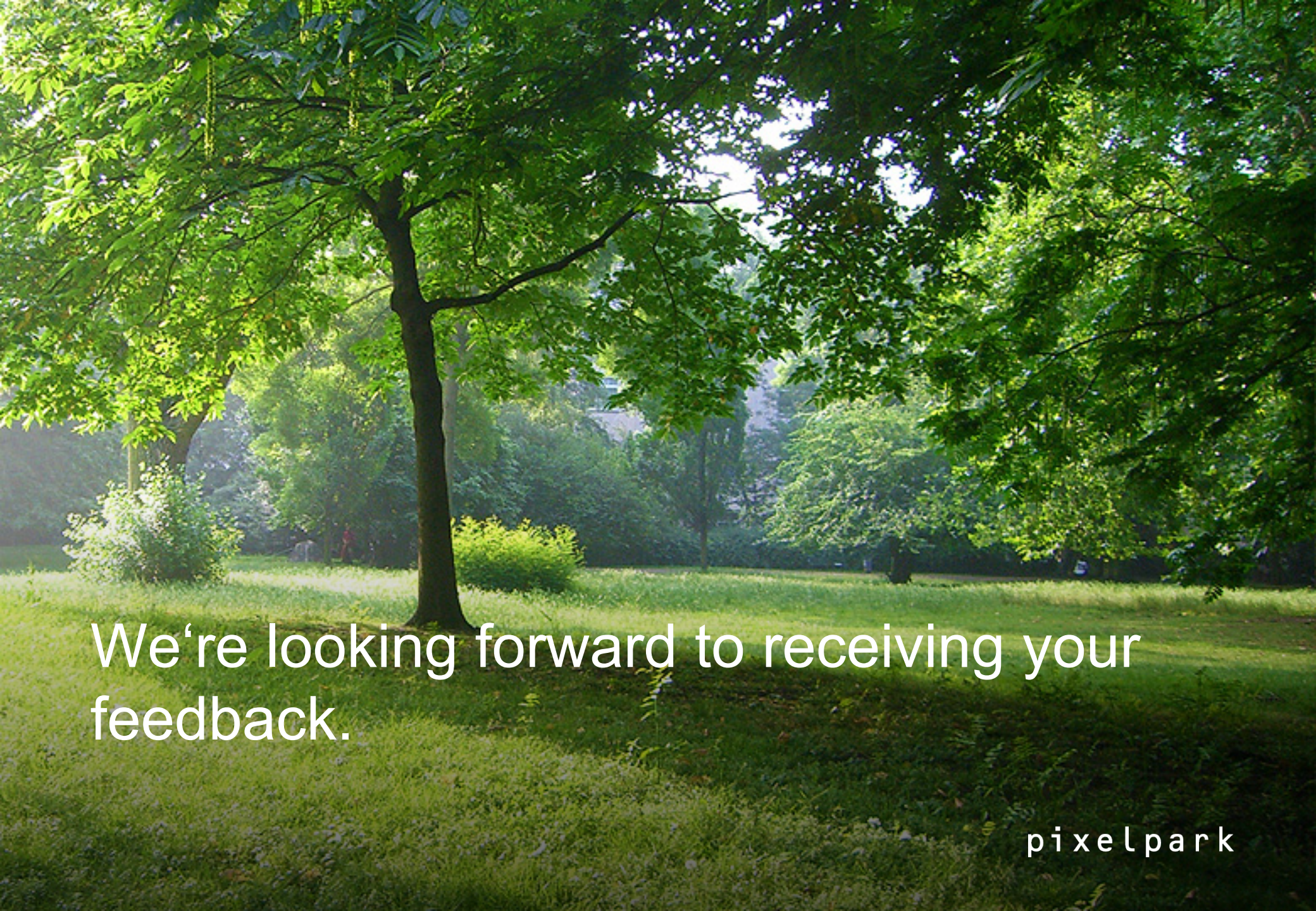
Just enough…
image building

Source: Patrick Debois

DevOps.

Dev to all Ops

Ops is a Black Box


We‘re looking forward to receiving your feedback.
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