
JBoss
Community

BoxGrinder

# Marek Goldmann

- Part of **project:odd**
  - Yep, Bob's team
- Polish
  - As you can recognize by my accent...
- **BoxGrinder** lead
- Leading the **JBoss AS** packaging into **Fedora**

# Agenda

- Cloud, cloud, cloud, cloud
  - Cloud, cloud, cloud
    - Even more cloud

# But for real...

- History
- What it is?
- How it works?
- Why we need this tool?

# Some time ago...

- **mid 2008**
  - JBoss Cloud idea
  - JBoss Appliance Support idea
- **end of 2009**
  - CirrAS
  - BoxGrinder
- **2010**
  - Fedora 14

# BoxGrinder

A simple tool to create **appliances** for various cloud and virtualization platforms

Let's start with some

**terminology**

**Appliance** is a preconfigured disk image (think of virtual machine) with operating system and all required applications, ready to run.

Think **IaaS**

# Appliance examples

- Back end
  - JBoss AS
- Front end
  - Apache HTTPD
- Database
  - PostgreSQL

# Different approaches to create appliances

# Offline

- Images are created offline
- (Usually) **not** tied to the destination platform
- Clean

# Snapshot

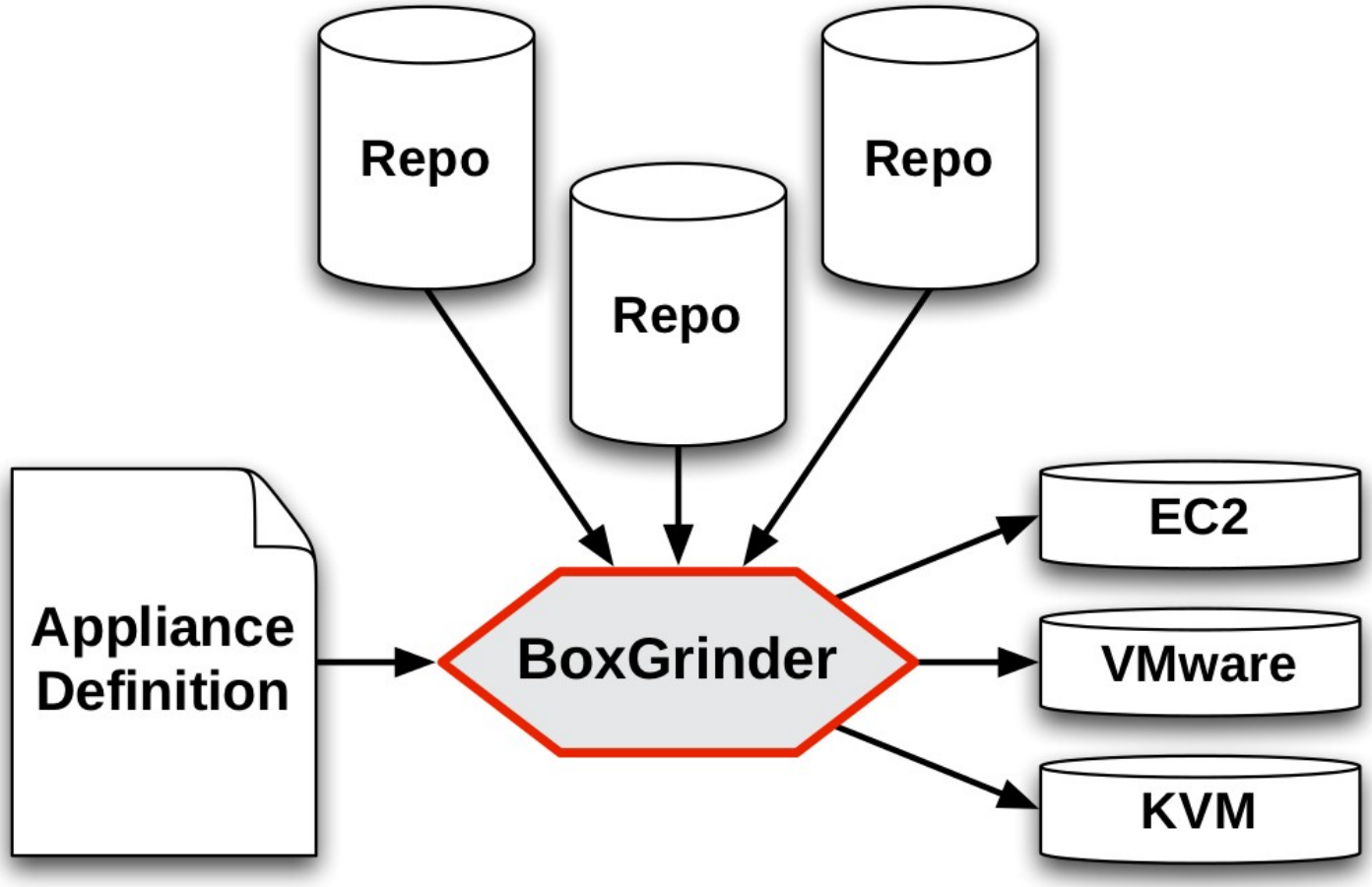
- Images are created online
- Build executed always on the destination platform
- Highly customizable

With BoxGrinder we create images in an **offline** fashion

Snapshot it later if you wish!

# BoxGrinder

## Build


Repo
Repo
Repo
Appliance Definition
BoxGrinder
EC2
VMware
KVM

# Appliance definition file

# simple.appl

```
name: simple
os:
  name: fedora
  version: 16
```

# httpd.appl

```
name: httpd
os:
  name: fedora
  version: 16
hardware:
  memory: 512
  partitions:
    “/”:
      size: 5
packages:
  - httpd
```

# Appliance definition format

- Plain text – YAML
- Very easy to understand, modify
- Powerful!

# A (bit more) detailed look at appliance definition file

# General information

```
name: httpd
version: 1
release: 2
summary: Basic Apache appliance
```

# Hardware

```
hardware:
  memory: 512
  cpus: 2
  partitions:
    “/”:
      size: 5
      type: ext4
    “/var”:
      size: 10
```

# Content

```
packages:
   - httpd
   - mc
   - wget
   - @base
```

# Inheritance

```
appliances:
  - fedora-base
```

# Inheritance

```
name: base


hardware:
  memory: 256
  cpus: 1
  partitions:
    “/”:
      size: 5
packages:
  - mc
```

```
name: big
appliances:
  - base
hardware:
  memory: 512
  cpus: 2
  partitions:
    “/”:
      size: 2
      type: ext4
    “/var”:
      size: 10
packages:
  - wget
```

# Inheritance

```
name: base
hardware:
  memory: 256
  cpus: 2
  partitions:
    “/”:
      size: 5
packages:
  - mc
```

```
name: big
appliances:
  - base
hardware:
  memory: 512
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  partitions:
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      size: 2
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      size: 10
packages:
  - wget
```
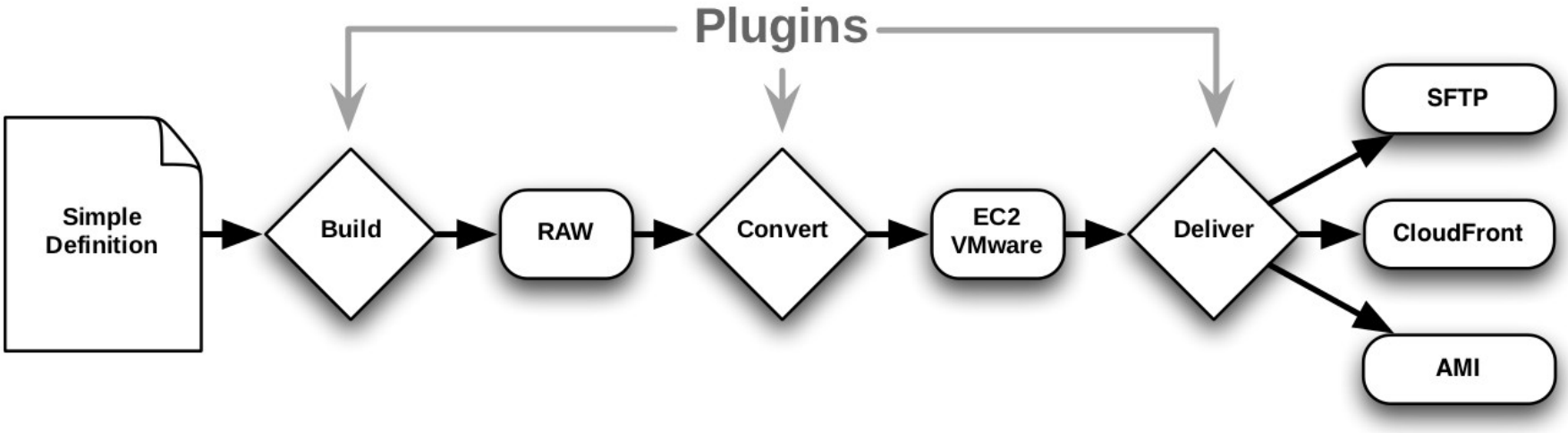

```
name: big
hardware:
  memory: 512
  cpus: 2
  partitions:
    “/”:
      size: 5
      type: ext4
    “/var”:
      size: 10
packages:
  - mc
  - wget
```

# There's more!

- **Additional repositories**
  - Ephemeral too
- **Files section**
  - Inject your files!
- **Post section**
  - Different commands for different platforms
- Yes, even more!

# BoxGrinder Build
# architecture

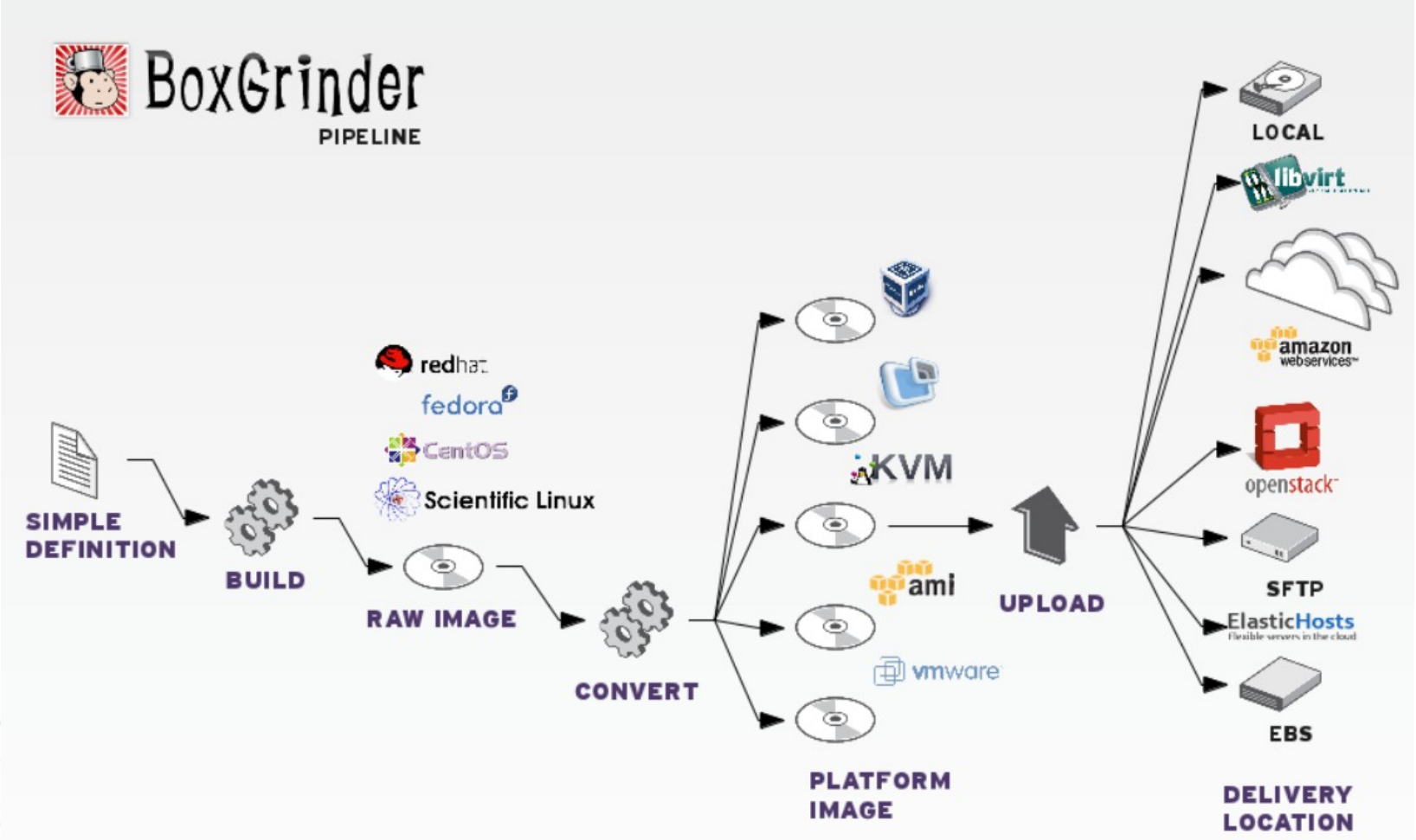



operating system

platform

delivery

# Pipeline


BoxGrinder
PIPELINE
SIMPLE DEFINITION
BUILD
redhat
fedora
CentOS
Scientific Linux
RAW IMAGE
CONVERT
KVM
ami
vmware
PLATFORM IMAGE
UPLOAD
LOCAL
libvirt
amazon webservices
openstack
SFTP
ElasticHosts
EBS
DELIVERY LOCATION

# Write your plugin!

```
require 'boxgrinder-build/plugins/base-plugin'

class YourPlugin < BoxGrinder::BasePlugin
    plugin :type => :platform,
           :name => :mycloud,
           :full_name => "MyCloud"

    def execute
        # PLACE YOUR CODE HERE
    end
end
```

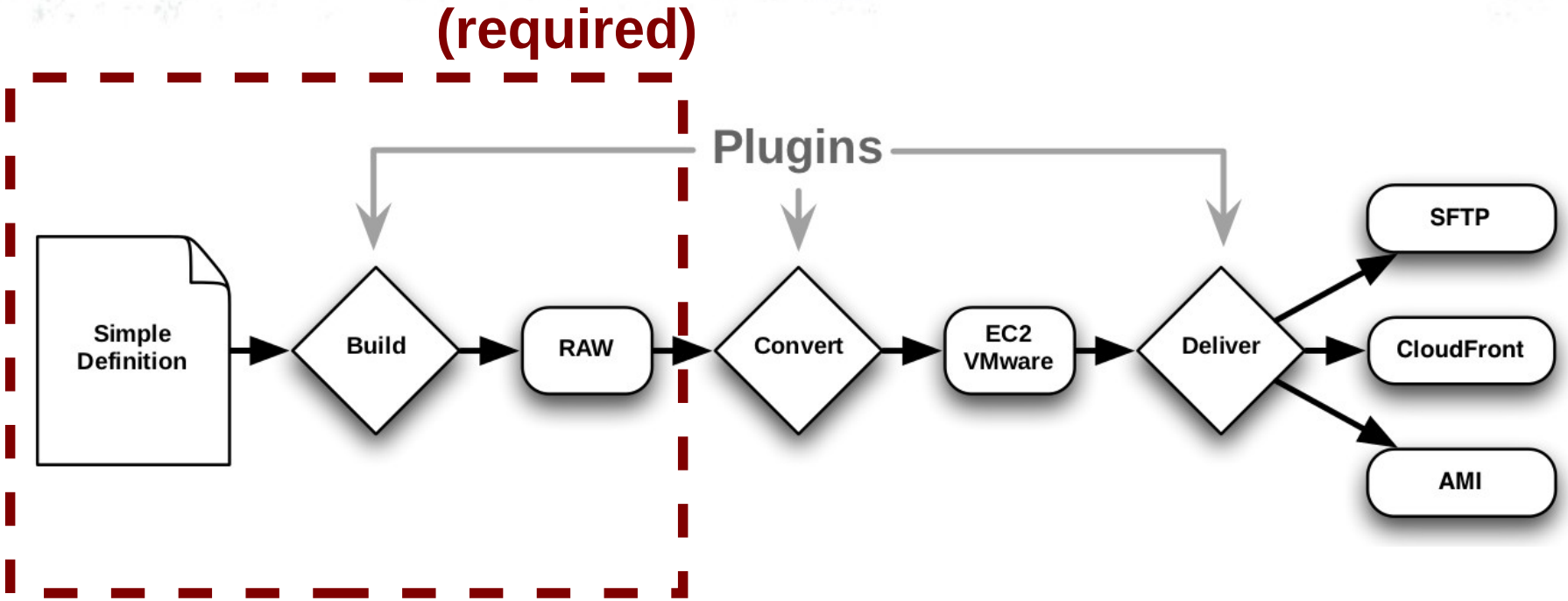
# Get started!


```
yum install rubygem-boxgrinder-build
```

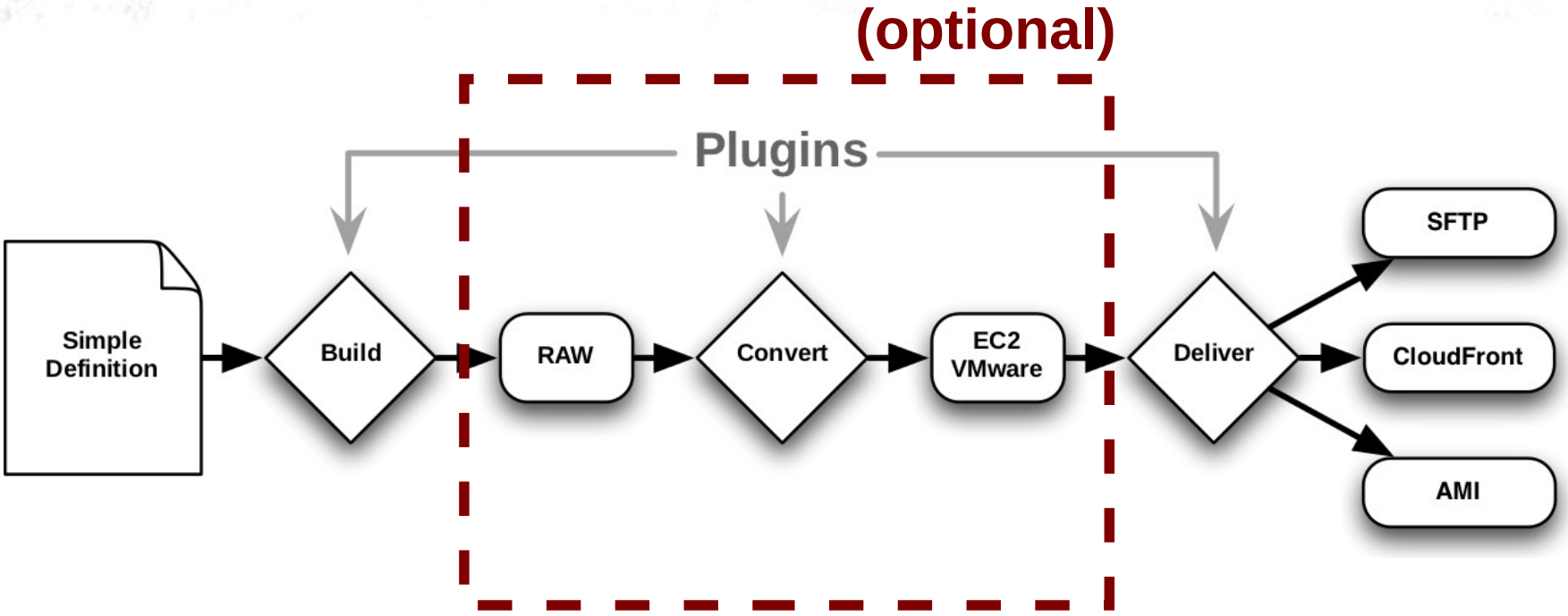
# ...if you have a Mac

- ...use Meta appliance!
- Appliance with BoxGrinder installed ready to build other appliances
- Delivered in different formats:
  - EC2, KVM, VMware
- Best way to build AMI's

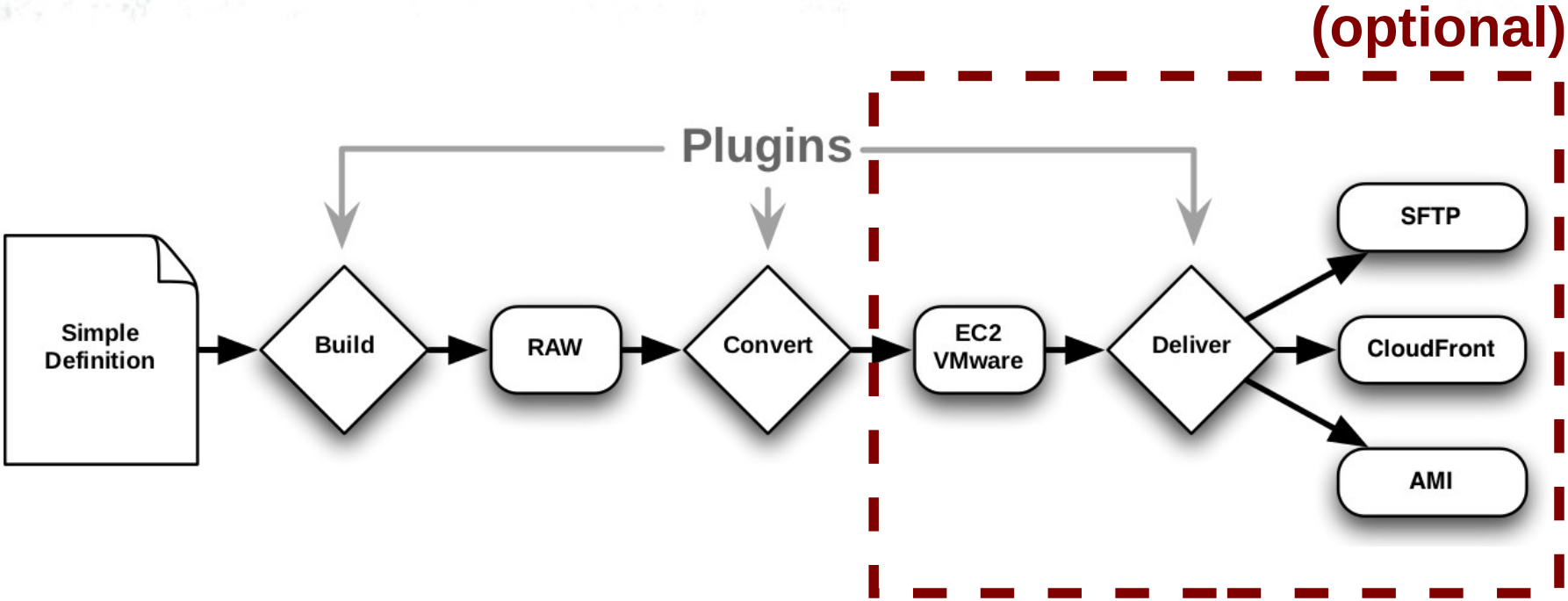
# Build process in details



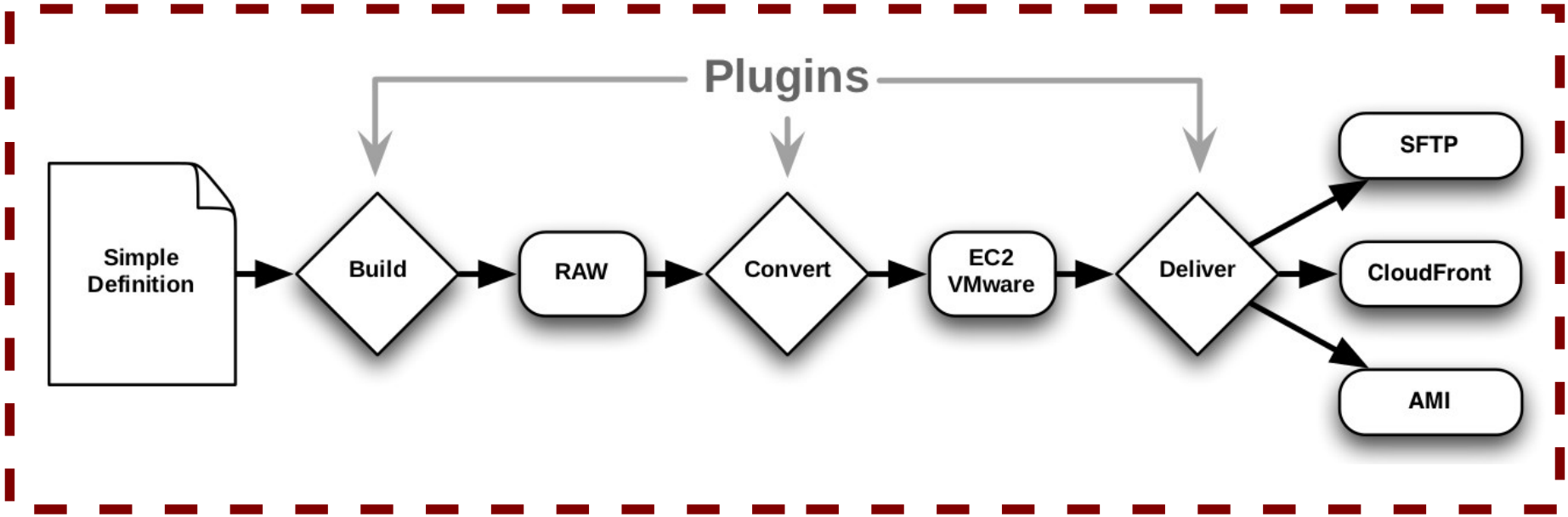

```
boxgrinder-build definition.appl
```




```
boxgrinder-build definition.appl -p ec2
```




```
boxgrinder-build definition.appl -p ec2 -d ami
```




```
boxgrinder-build definition.appl -p ec2 -d ami
```

# Features

# Features (1/2)

- **Supported operating systems**
  - Fedora (15-16, 17 soon), CentOS (5-6), Scientfic Linux (5-6), RHEL (5-6)
- **Supported platforms**
  - EC2 (both, S3 and EBS-based), KVM, VMware, VirtualBox, VirtualPC
- **Delivery options**
  - local, SFTP, S3, CloudFront, AMI, OpenStack, libvirt, ElsasticHosts...

# Features (2/2)

- Direct **injection** of files
- Cross-arch builds
  - Create 32 bit image on 64 bit host
- Caching downloaded resources (RPM)
- F*%$^& fast
  - from .appl to registered AMI – **20 minutes**

# BoxGrinder at **JBoss**

# If you are... project leader

- Project demo after every major release
  - Plug in to your CI build
    - like we do
- Isn't nice to have a presence in the Cloud?
  - Tell people; go, launch it and do your personal test drive, without installing anything

# If you are... SA or sales

- Have a handy demo of the product always with you
  - Tested environment
  - Different formats; KVM, VMware...
    - ...or in the *Cloud*!

# Thanks! Questions?

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#boxgrinder