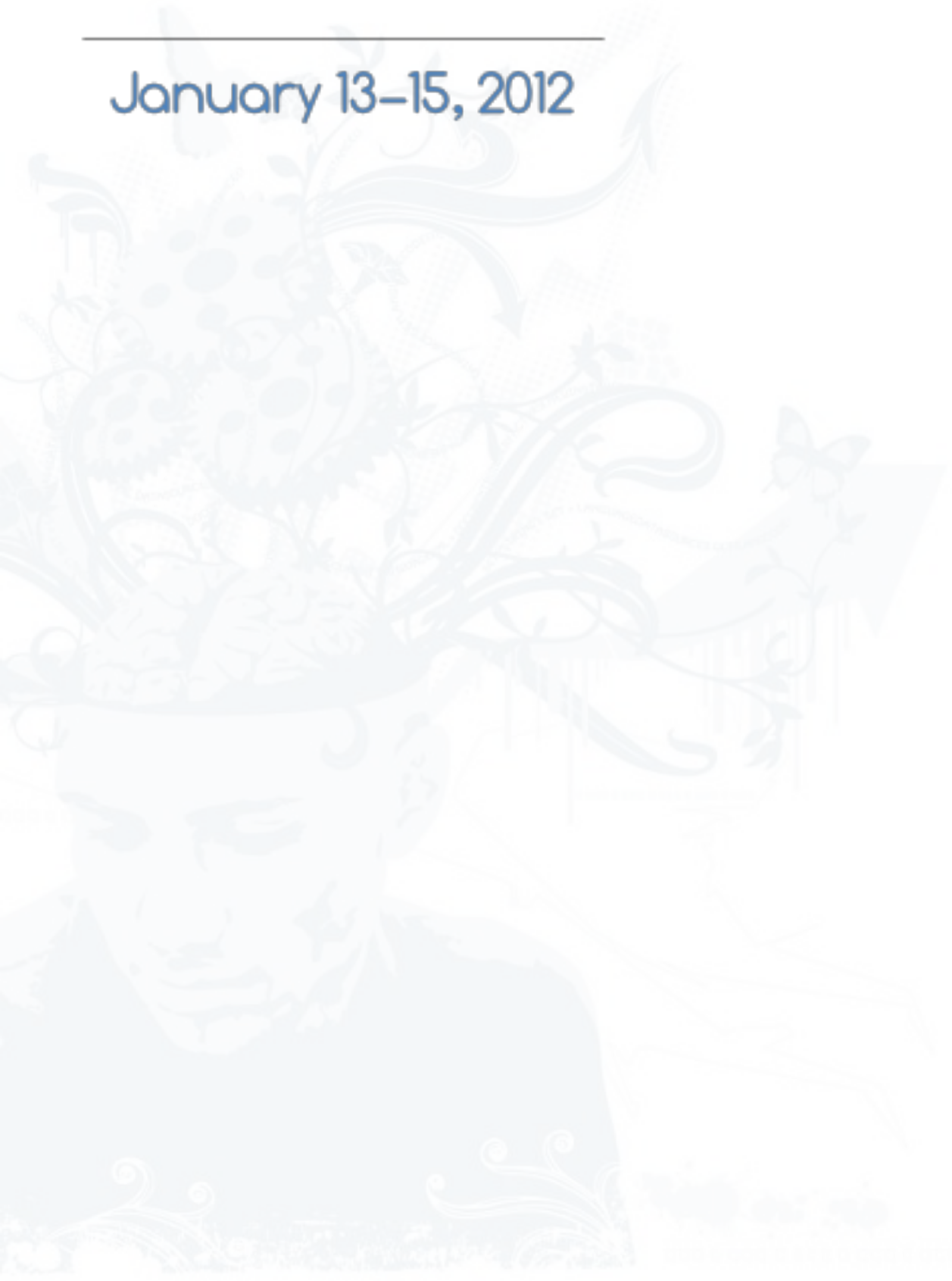
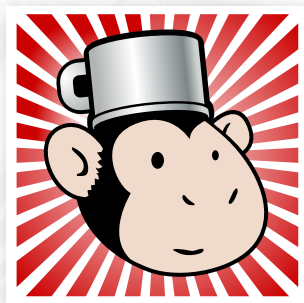




January 13–15, 2012





BoxGrinder

Who's Marek?

- 
- JBoss Developer
 - Lead of  BoxGrinder
 - JBoss AS in Fedora
- Part of **project:odd**
- Electronic music lover



Agenda

- Some background and terminology
- BoxGrinder
 - Appliance definition files
 - Architecture overview
 - Build process
 - Writing a plugin
- Small demo



Some terminology



Appliance is a preconfigured disk image (virtual machine) with operating system and all required applications to do specific job



Appliance examples with tasks

- **Database**
 - Storing data
- **Front-end**
 - Load balancing
- **Back-end**
 - Actual servers



Bake vs. Fry

Bake: Produce a complete virtual machine offline, before first use.

Fry: Produce a complete virtual machine by booting a basic VM and then applying configuration.



Bake!

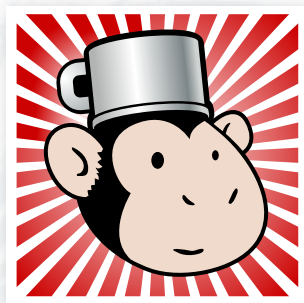
We think **baking** is The Right Way,
especially for developers simply
looking for reliable platforms.



Bake, then fry

If you **bake** an image you can **fry** it then later too! Baked image can be your **start point**.





BoxGrinder



BoxGrinder is a family of tools
to grind out **appliances** for
various **platforms**





BoxGrinder

Build



BoxGrinder

REST



BoxGrinder

Studio



Current status



BoxGrinder
Build



stable



BoxGrinder
REST



slow
development

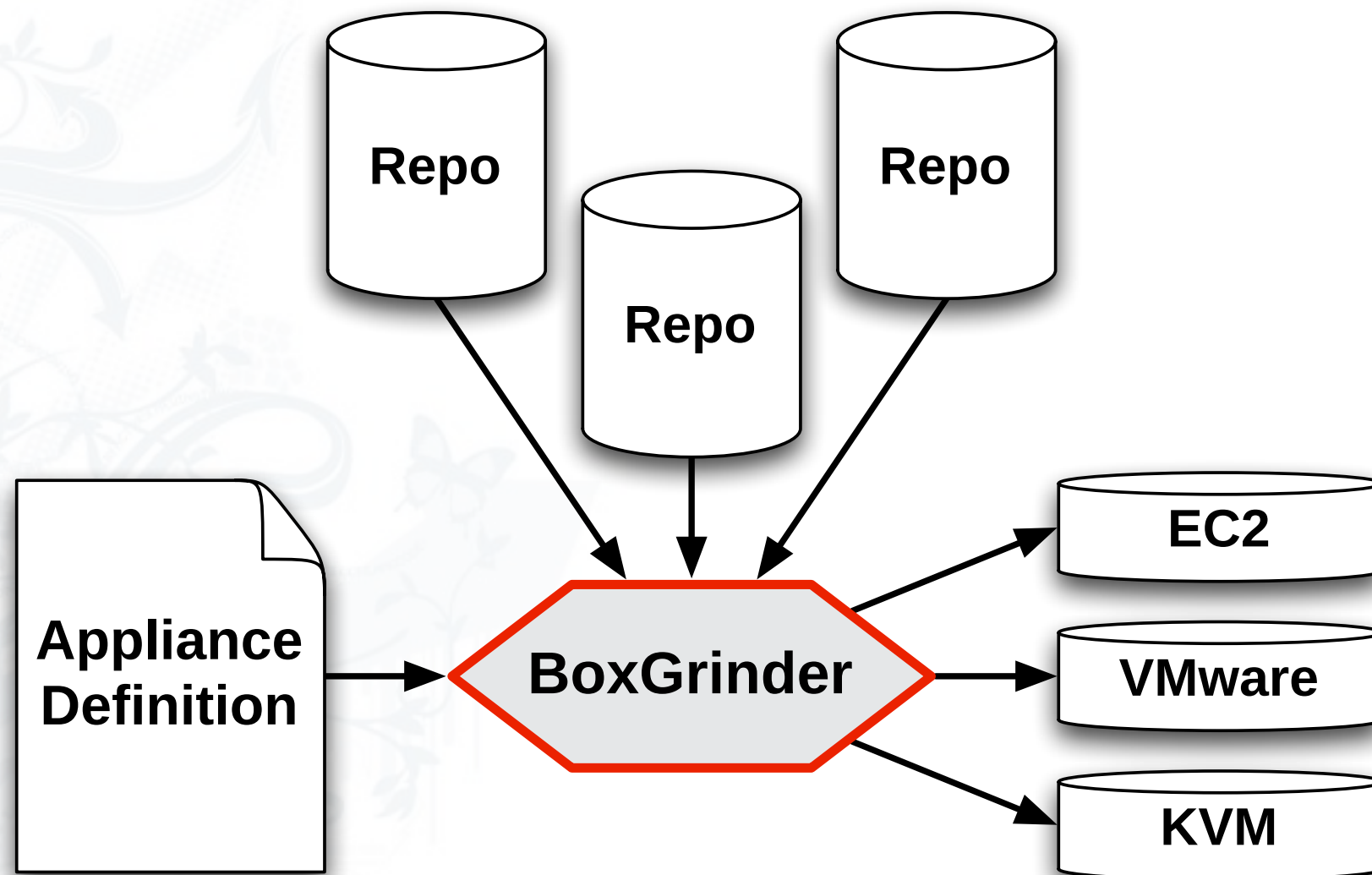


BoxGrinder
Studio



planning





Closer look at **appliance** **definition file**



Appliance definition, huh?

- Plain text file – **YAML** format
- Very easy to understand, modify
- Inheritance (mixins)
- More and more powerful



Appliance example

```
name: back-end
version: 1
release: 1
summary: back-end appliance with JBoss AS 6
hardware:
  memory: 512
  partitions:
    "/":
      size: 2
appliances:
  - fedora-base
packages:
  - jboss-as6
  - jboss-as6-cloud-profiles
  - java-1.6.0-openjdk
...
```



General information

should match the filename: back-end.appl



```
name: back-end  
version: 1  
release: 1  
summary: back-end appliance with  
JBoss AS 6
```



Hardware

hardware:

memory: 512

partitions:

"/":

size: 2

512MB

2GB



Appliance Mix-ins

Mixing in **fedora-base.app1**

appliances:
- fedora-base



back-end.appl

```
name: back-end
version: 1
release: 1
summary: back-end appliance with JBoss AS 6
hardware:
  memory: 512
  partitions:
    "/":
      size: 2
appliances:
  - fedora-base
packages:
  - jboss-as6
  - jboss-as6-cloud-profiles
  - java-1.6.0-openjdk
...
```



fedora-base.appl

```
name: fedora-base
summary: Basic Fedora OS
os:
  name: fedora
  version: 14
hardware:
  memory: 256
  partitions:
    "/":
      size: 1
packages:
  - @core
  - openssh-server
  - openssh-clients
  - wget
```



Appliance Mix-ins

back-end.app1

fedora-base.app1

overrides



```
hardware:  
  memory: 512  
  partitions:  
    "/":  
      size: 2
```

```
hardware:  
  memory: 256  
  partitions:  
    "/":  
      size: 1
```



Appliance content

packages:

- jboss-as6
- jboss-as6-cloud-profiles
- java-1.6.0-openjdk



Appliance content

packages:

- jboss-as6
- jboss-as6-cloud-profiles
- java-1.6.0-openjdk

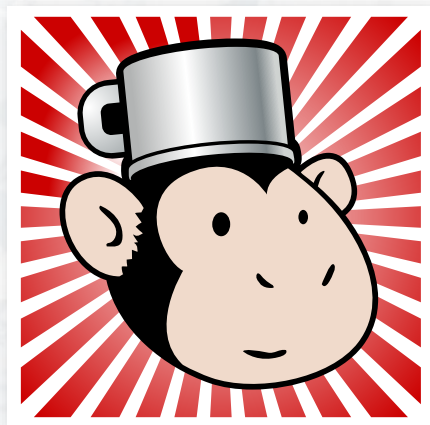
Plus everything from
fedora-base.app1



There is a lot more!

- Additional sections
 - **repos**
 - ephemeral repos
 - **files**
 - **post**
 - What should be done **after** you build you appliance
 - Different commands for different platform
 - Using **libguestfs**
- Learn more!



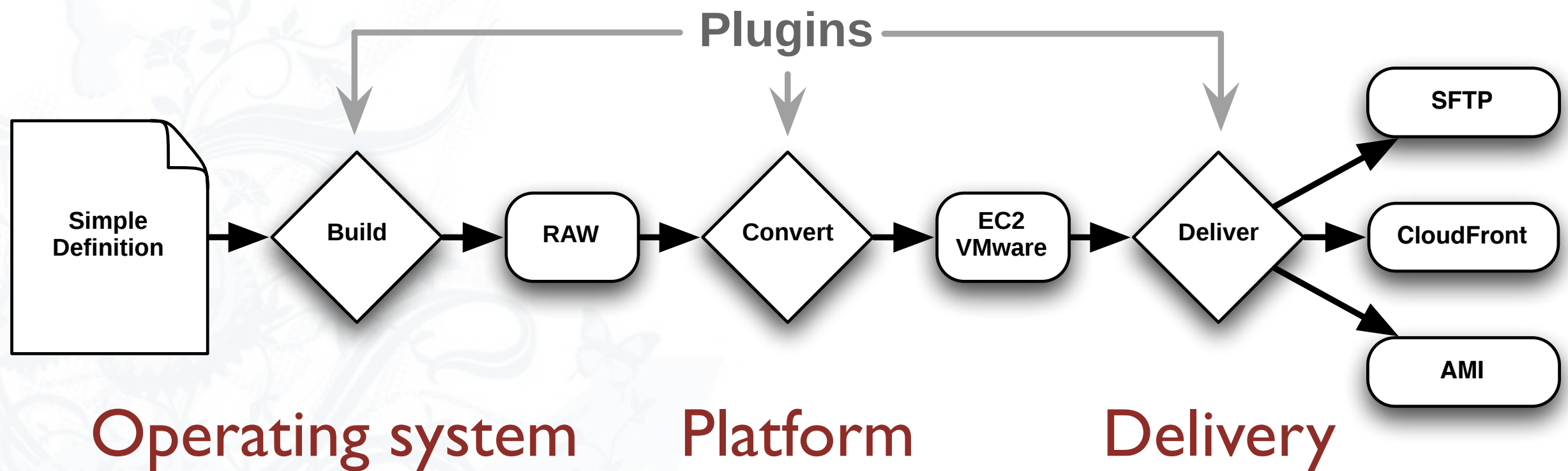


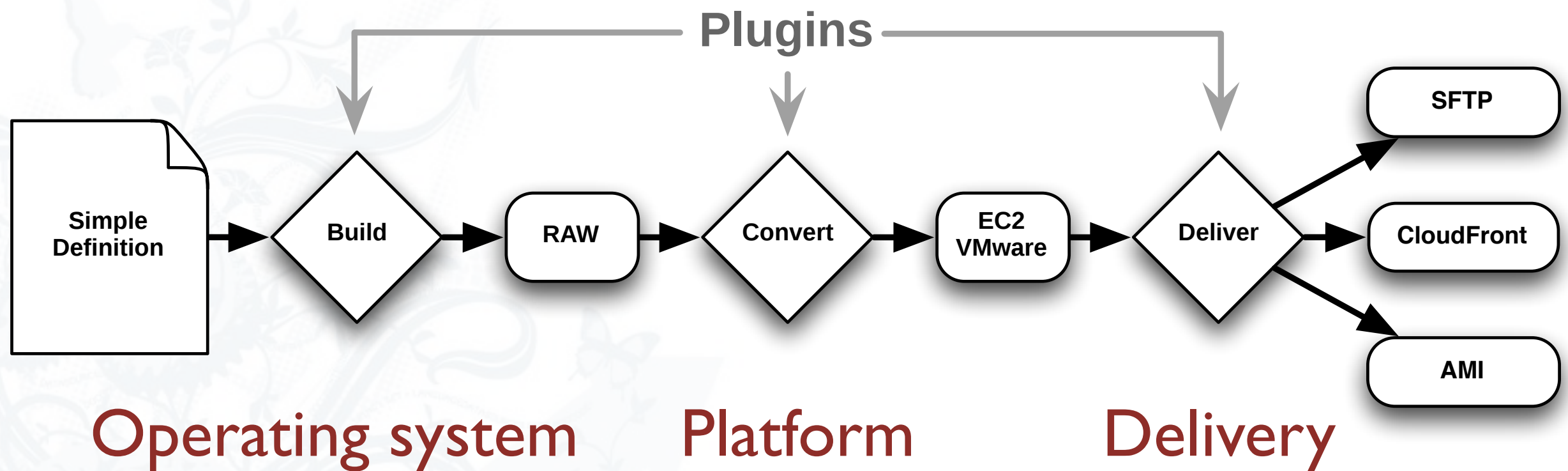
BoxGrinder

Build

BoxGrinder Build **architecture**







Write your **own** plugins, it's easy!

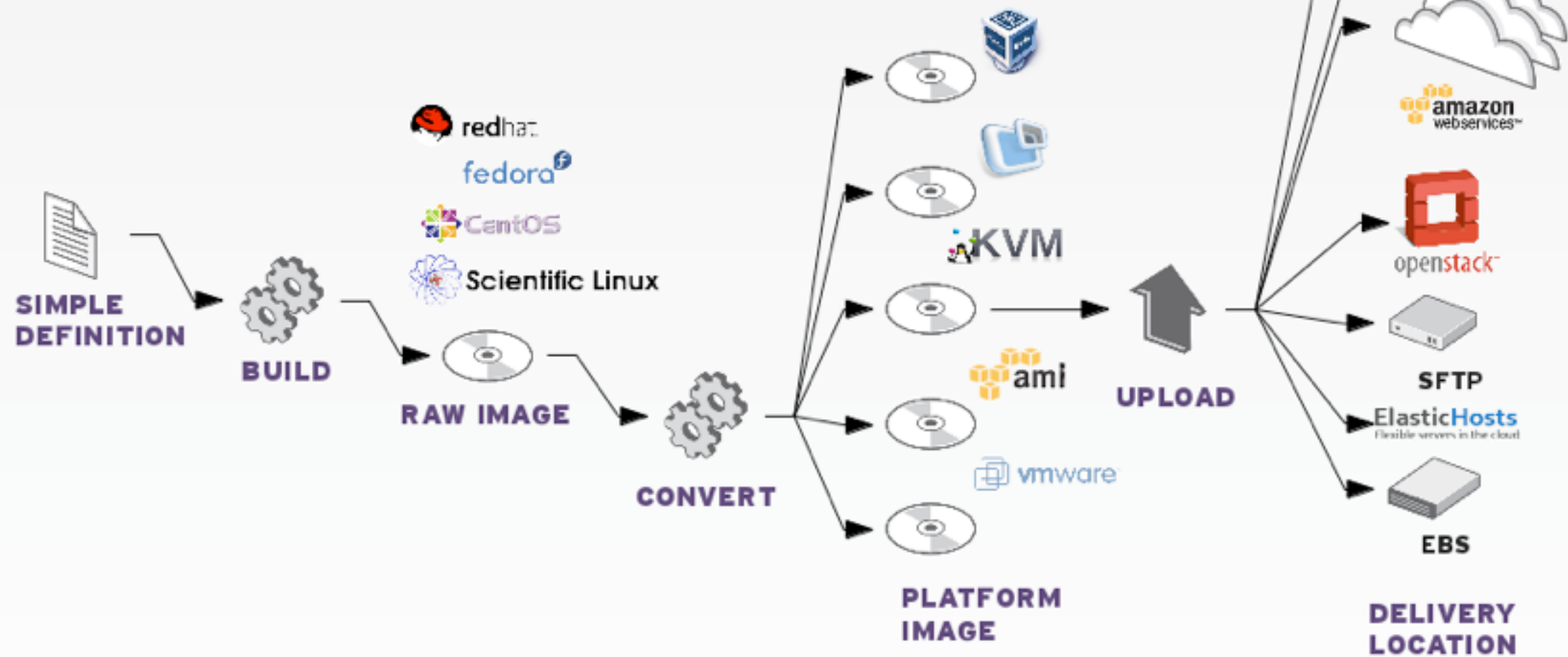
<http://boxgrinder.org/tutorials/how-to-write-a-plugin-for-boxgrinder-build/>





BoxGrinder

PIPELINE



JBoss
Community



Plugin skeleton

```
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
```



How to **install** BoxGrinder Build





fedora



FUDCon Blacksburg 2012



BoxGrinder Build installation

yum install rubygem-boxgrinder-build



Meta appliance

- A preconfigured appliance to **build other appliances** using BoxGrinder
- Easy to jump in
 - Available for different platforms: Xen, KVM, EC2, VMware
- **Best way** to build EC2 appliances
- <http://boxgrinder.org/download/boxgrinder-build-meta-appliance/>



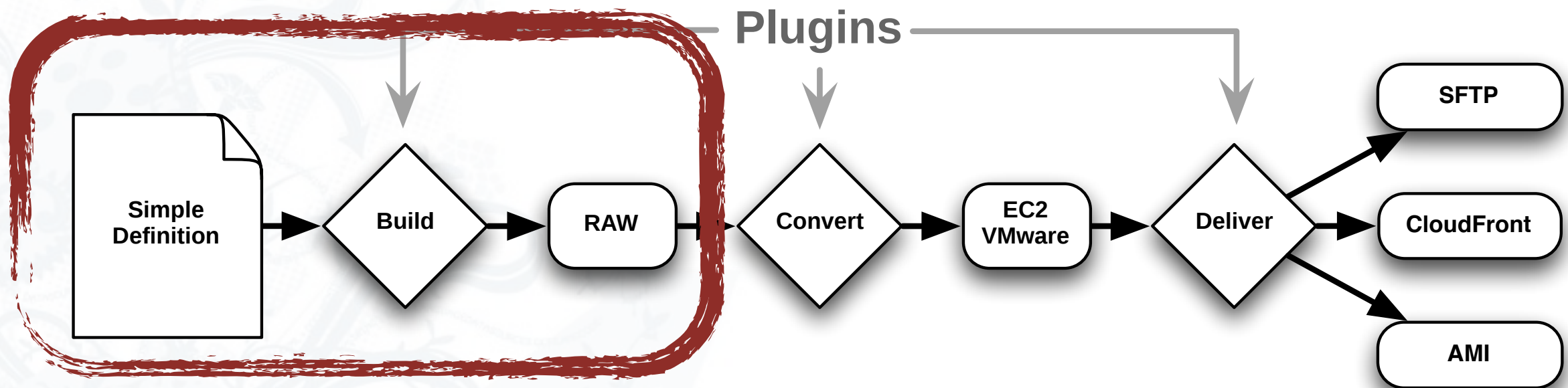
Demo: build a simple appliance



convert and deliver
Demo: ~~build~~ a simple
appliance



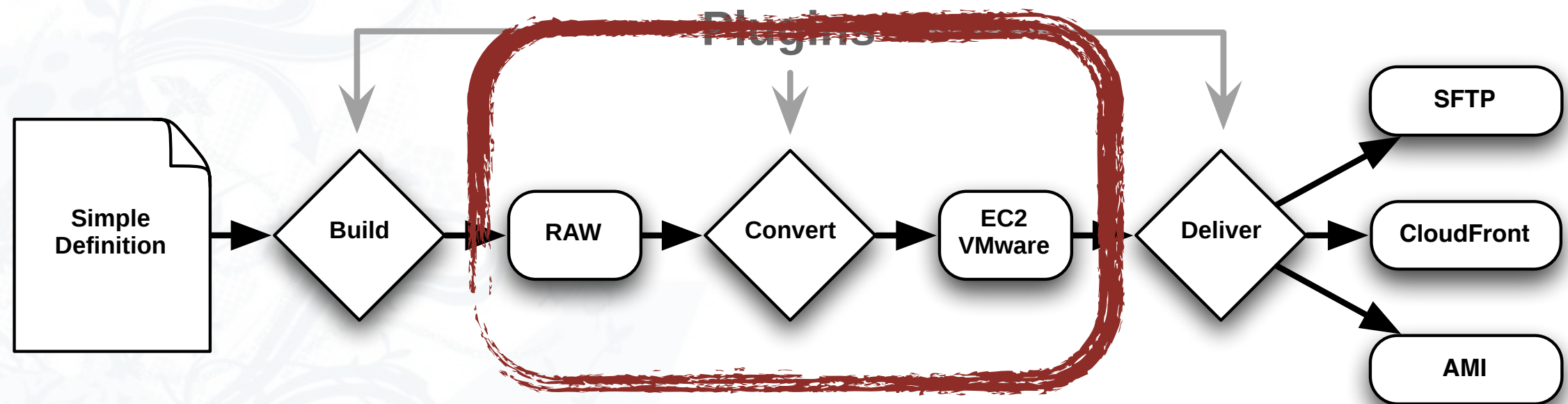
Step 1: create base image



`boxgrinder-build f14-jeos.app1`



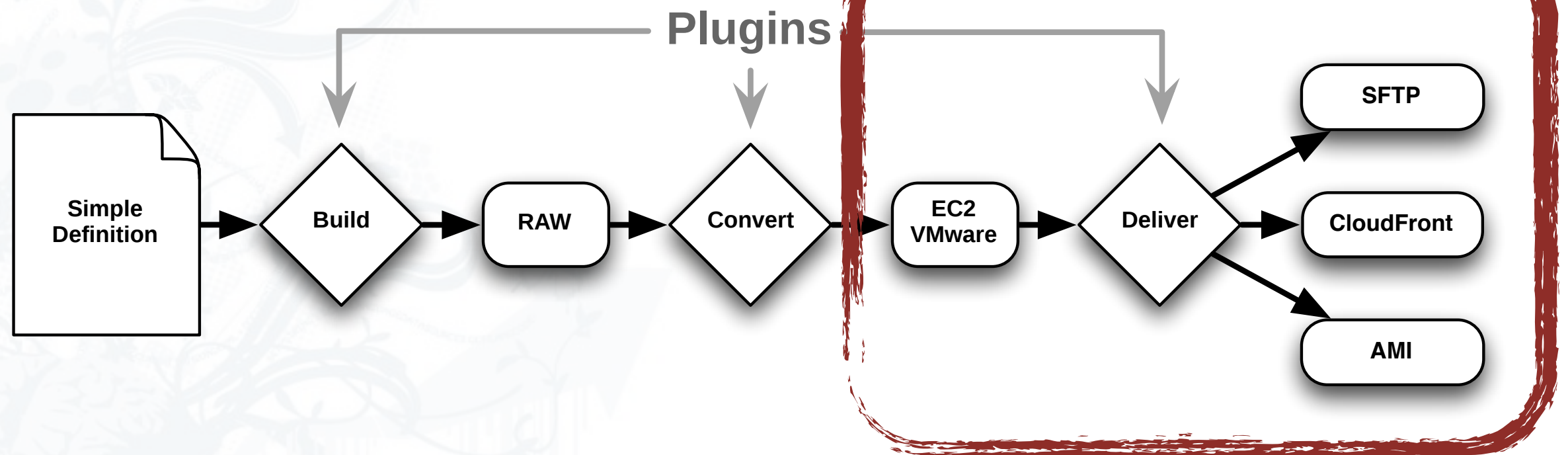
Step 2: convert it to VMware type



```
boxgrinder-build f14-jeos.app1 -p vmware  
                                -p ec2  
                                . . .
```



Step 3: deliver it to a SFTP server



```
boxgrinder-build f14-jeos.app1 -p vmware -d sftp  
-d ebs  
-d s3
```



Of course you can run the
command just **once** with
same result!

```
boxgrinder-build f14-jeos.app1 -p vmware -d sftp
```



What's **hot**?



BoxGrinder Build features

- **Supported OSes:** Fedora (14-16), CentOS (5), Scientific Linux (5-6), RHEL (5-6)
- **Supported platforms:** EC2 (S3-based and EBS-based too!), KVM, VMware, VirtualBox, VirtualPC
- **Many delivery options:** local, SFTP, S3 or CloudFront as tarred image, AMI, OpenStack, libvirt



BoxGrinder Build features

- **Direct injection of files**
- **Cross-arch builds:** producing i386 images on x86_64 hosts
- Caching downloaded resources (RPM's)
- **Pretty fast** – from .appl to registered AMI: **15 minutes** (on EC2, using meta-appliance)



Notes

- If you're building AMI's – **do it on EC2** – this will save your time (uploading to S3 from your local machine isn't fun...)
- Building **EBS-based AMI's** requires to run BoxGrinder on EC2



Questions?

<http://github.com/boxgrinder/> # Code
<http://boxgrinder.org/> # Home page
<http://boxgrinder.org/blog/> # Blog

#boxgrinder

IRC



@boxgrinder
@marekgoldmann
@marcsavy

A faint, light blue background illustration on the left side of the slide. It features a woman's face with her eyes closed, wearing a large, ornate floral crown. The crown is decorated with various flowers, leaves, and a small butterfly. The overall style is soft and artistic.

one more thing...

JBoss AS 7

+

fedora^f

=



A faint, light blue background illustration on the left side of the slide. It features a woman's face, possibly a classical or religious figure, looking downwards. Above her head is a large, ornate floral and foliate arrangement, including leaves, berries, and a small bird-like figure. The overall style is reminiscent of a woodcut or a detailed engraving.

Thanks!