Hortonworks

Apache Ambari

Using Apache Ambari to Manage Hadoop and YARN

Hortonworks. We do Hadoop.

Speakers

Pramod Thangali

Senior Director, Engineering

Tom Beerbower

Hortonworks Member Technical Staff

Committer for Apache Ambari

Yusaku Sako

Hortonworks Member Technical Staff

Committer for Apache Ambari

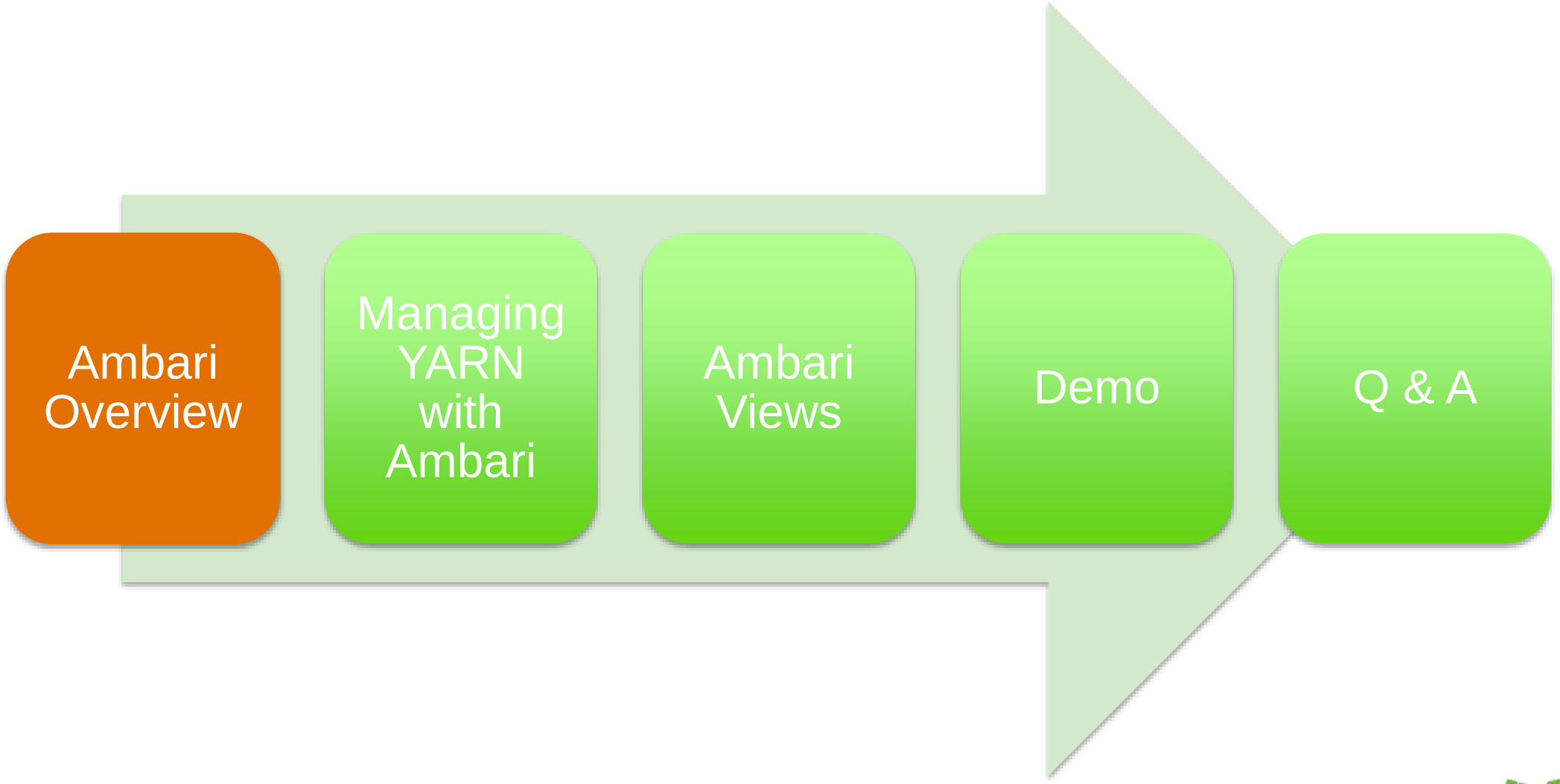
Hortonworks

Agenda

- **Overview of Apache Ambari**
- **Managing YARN with Ambari**
- **Ambari Views**
- **Demo**
- **Q & A**

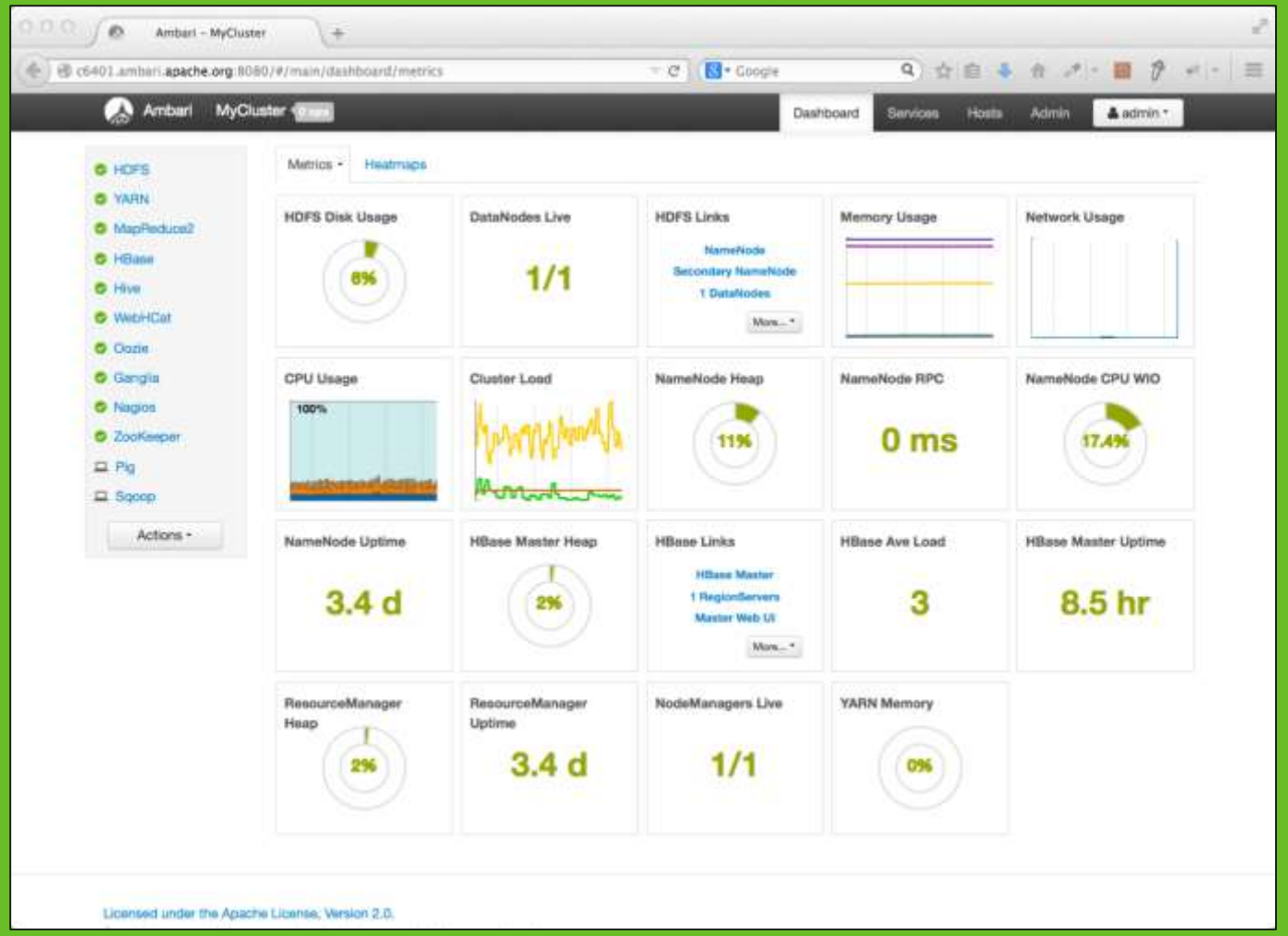
Hortonworks

Agenda



Hortonworks

Apache Ambari is a platform to provision, manage and monitor Hadoop clusters



Hortonworks

Apache Ambari Driving Themes

Operate Hadoop at Scale

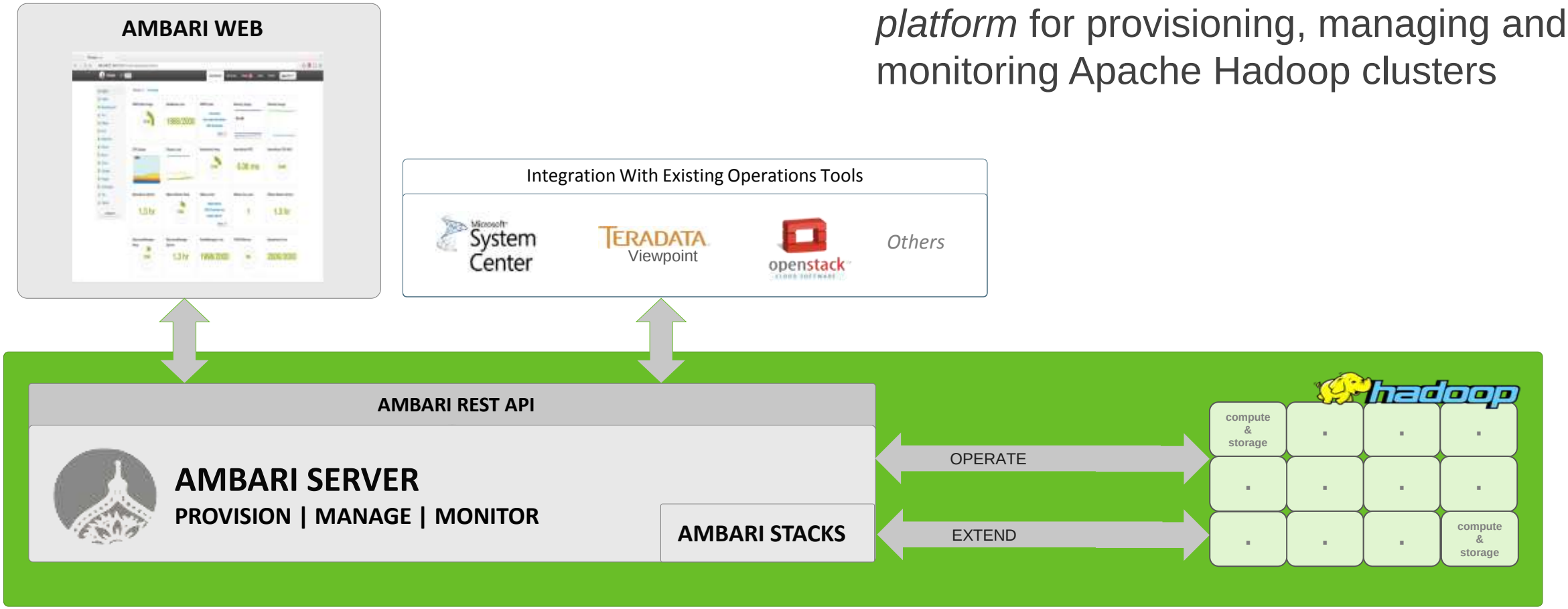
Integrate with the Enterprise

Extend for the Ecosystem

Hortonworks

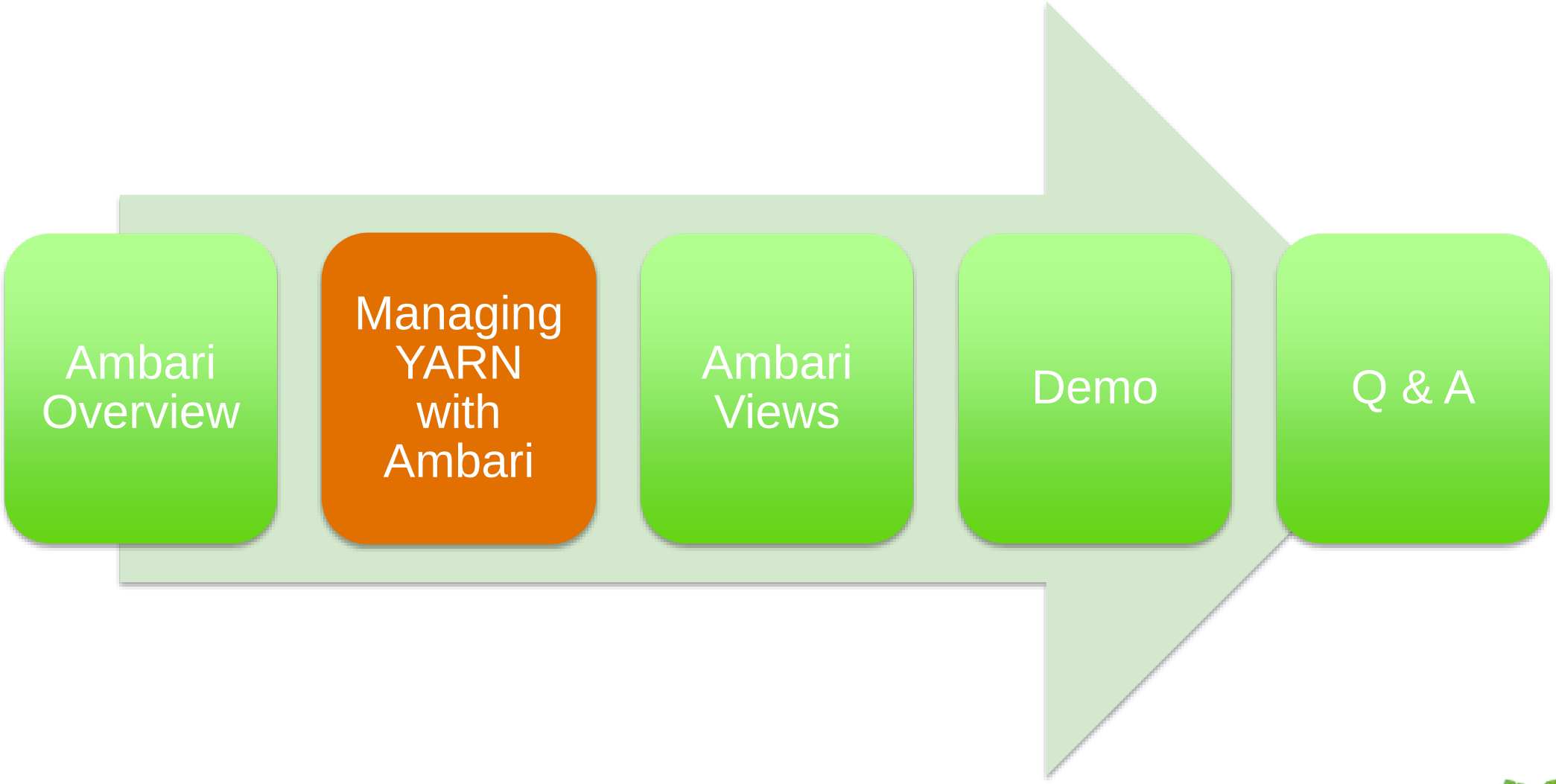
Enterprise Operations, Integration and Extensibility

Apache Ambari is a 100% open source *platform* for provisioning, managing and monitoring Apache Hadoop clusters



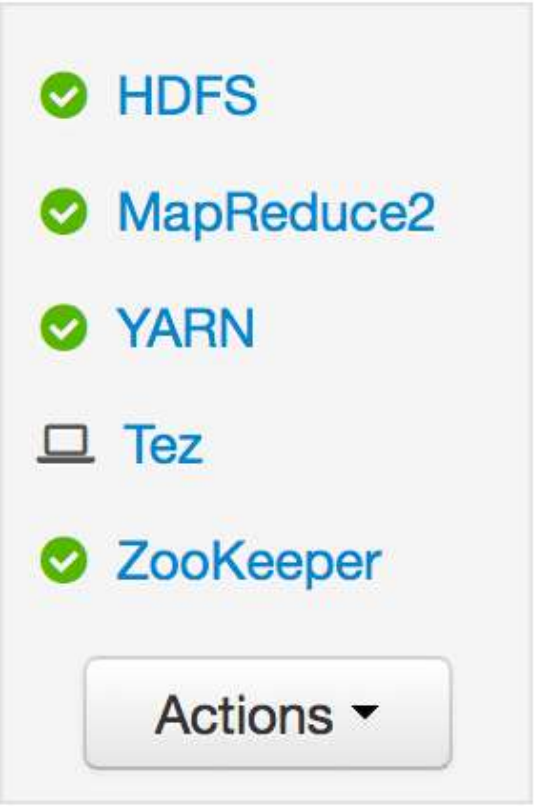
Hortonworks

Agenda



Managing YARN with Ambari

- **Deploy Hadoop and YARN including MapReduce2 and Tez data processing engines**
- **Control service lifecycle operations of YARN including start, stop, restart and refresh**
- **Manage configurations of YARN including configuration of Capacity Scheduler**
- **Monitor health of key YARN components such as Resource Manager and Node Managers**



Hortonworks

Slider

Set of tools to make it easy to package, deploy and manage long running distributed services on YARN

- Avoids having to write custom application masters
- Provides built-in management capabilities via Ambari

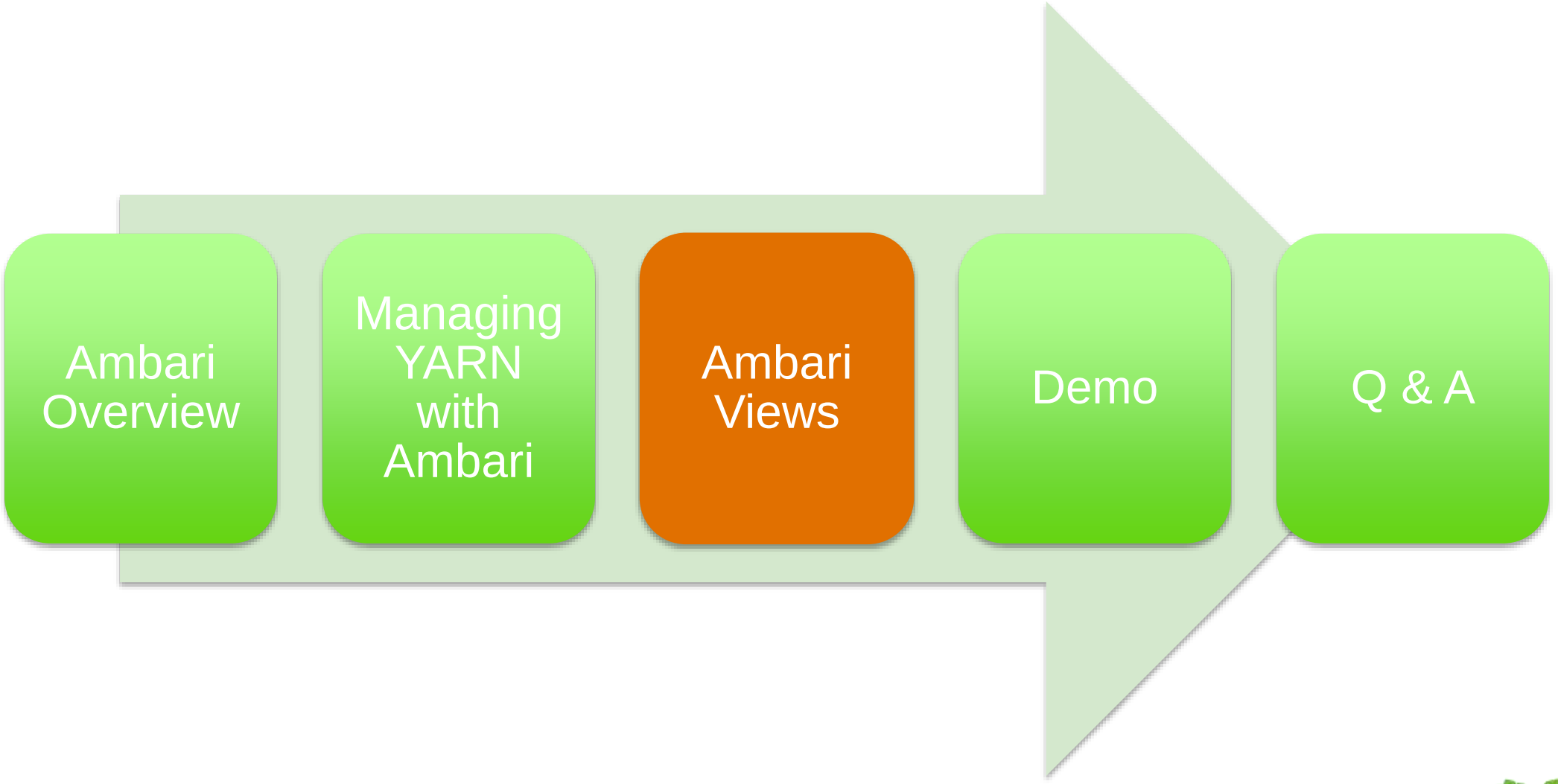
Hortonworks

Slider View

- **Ambari View that manages the life cycle of “Slider”ized apps**
- **Built using Ambari Views capability**

Hortonworks

Agenda



Hortonworks

Ambari Views

Goal: enable the delivery of custom UI experiences in Ambari Web

Developers can extend the Ambari Web interface

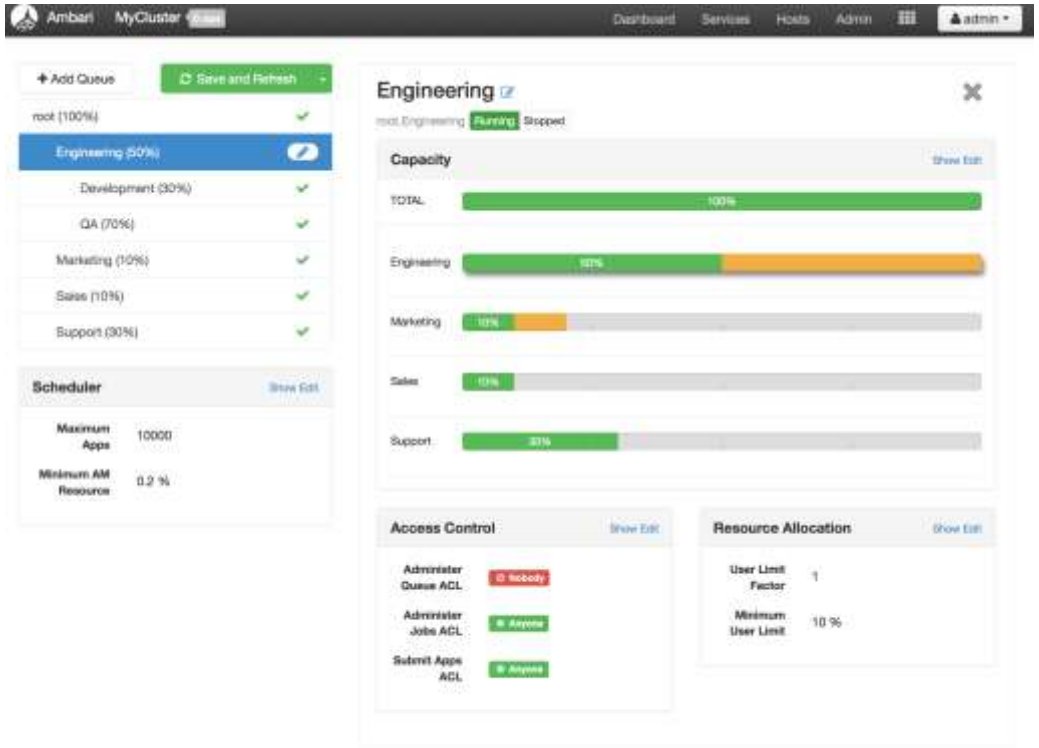
- Views expose custom UI features for Hadoop Services

Ambari Admins can entitle Views to Ambari Web users

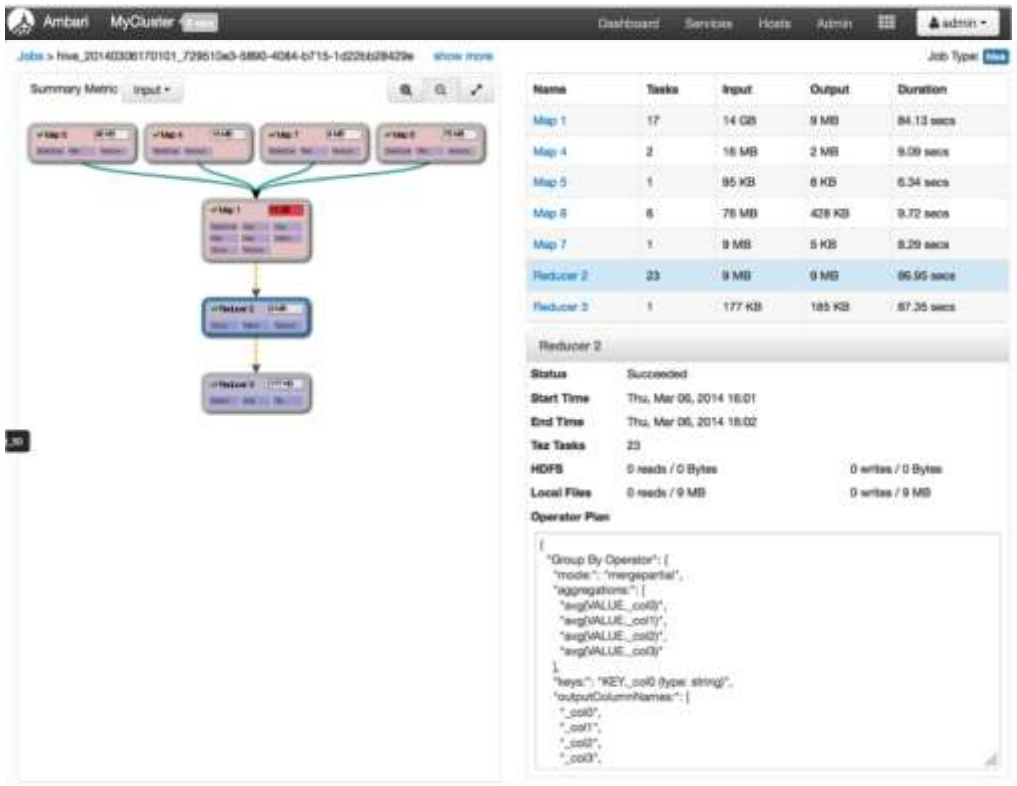
- Entitlements framework for controlling access to Views

Hortonworks

Example Views



Capacity Scheduler
Queue Manager



Hive Tez
Query Analyzer

Hortonworks

Choice of Deployment Model

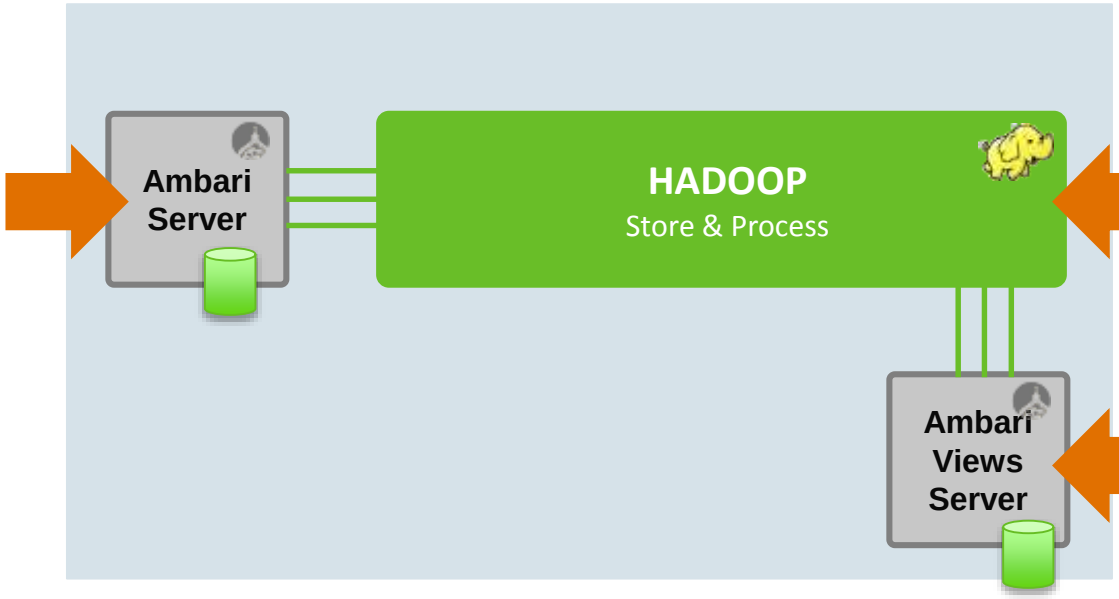
- **For Hadoop Operators:**

  Deploy Views in an Ambari Server that is managing a Hadoop cluster

- **For Data Workers:**

  Run Views in a dedicated “standalone” Ambari Server

Operators manage the cluster, **may have Views** deployed



Data Workers use the cluster and use the Ambari Views Server **for Views**

Hortonworks

Terminology

Term	Description
View Definition	Describes the view resources and core view properties such as name, version and any necessary configuration properties.
View Package	Packages the view client and server assets (and dependencies)
View Deployment	Deploying a view into Ambari
View Version	A specific version of a view
View Instance	An instantiation of a specific view version
Framework Services	View context, instance data, configuration properties and events

View Packaging

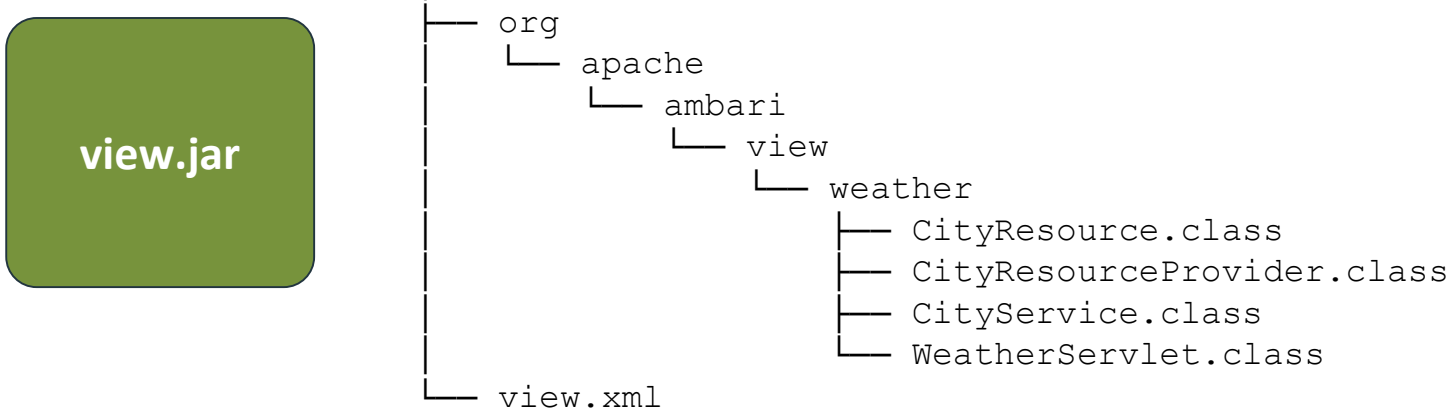
View Definition: view.xml

Resource / Service classes : JAX-RS annotated

UI classes : html, Servlets deployed as web app (WEB-INF/web.xml).

Application logic : Supporting classes

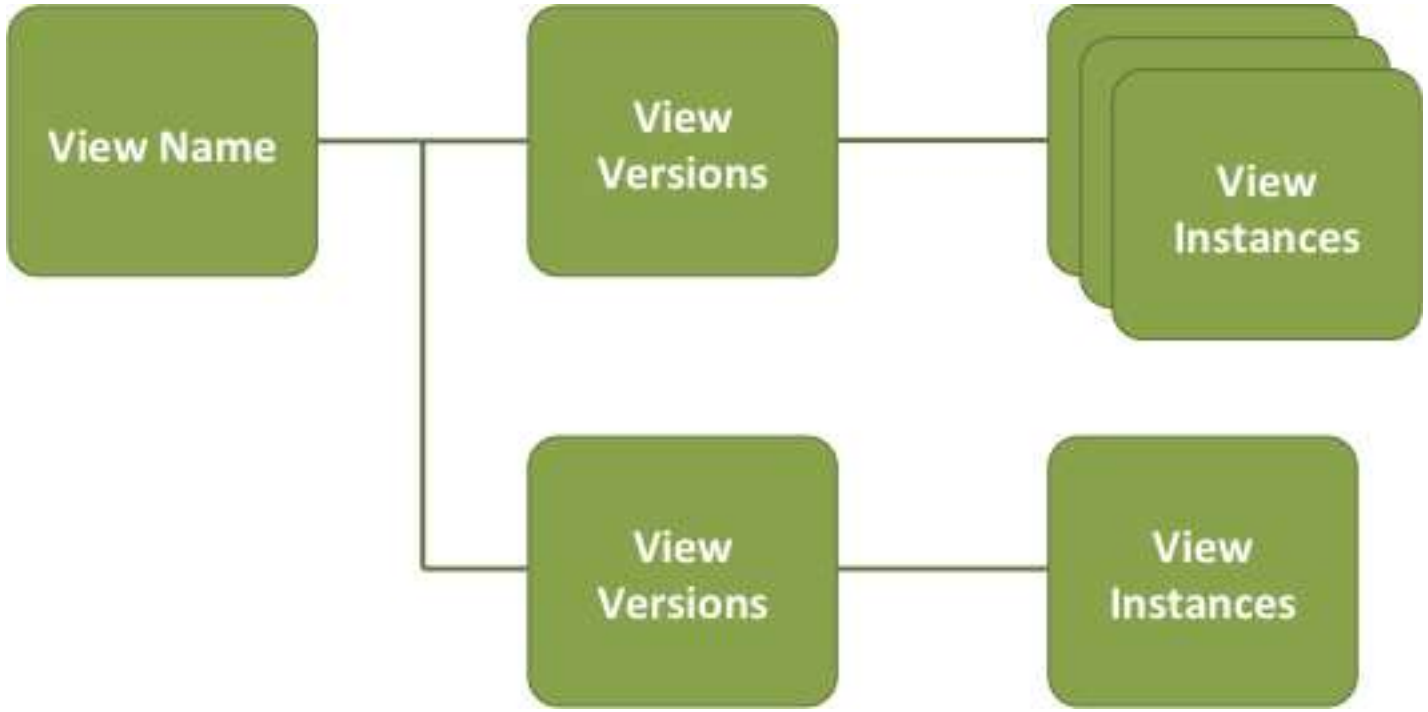
Dependencies : 3rd party jars or classes



Hortonworks

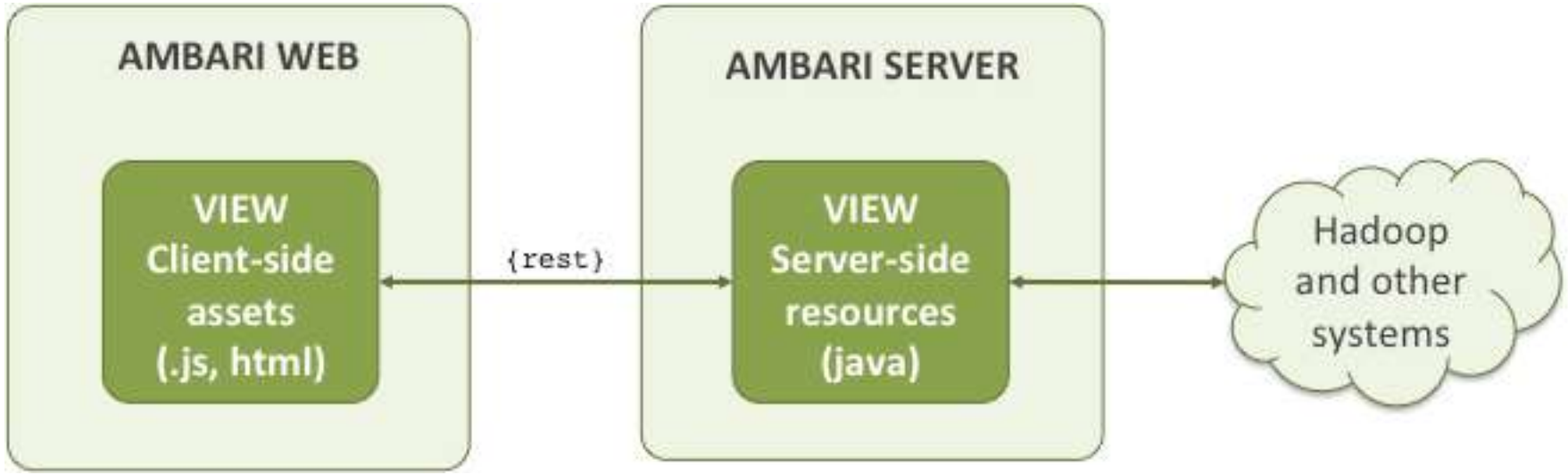
View Versions and Instances

- **Deploy multiple versions and create multiple instances of a view**
- **Manage accessibility and usage**



View Components

- **Deploy client-side assets (such as HTML + JavaScript)**
- **Expose server-side resources (such as REST endpoints)**



Hortonworks

Views Server Side Resources

- **Servlets**
  - Available at URL patterns as defined in standard web.xml
- **REST Endpoints**

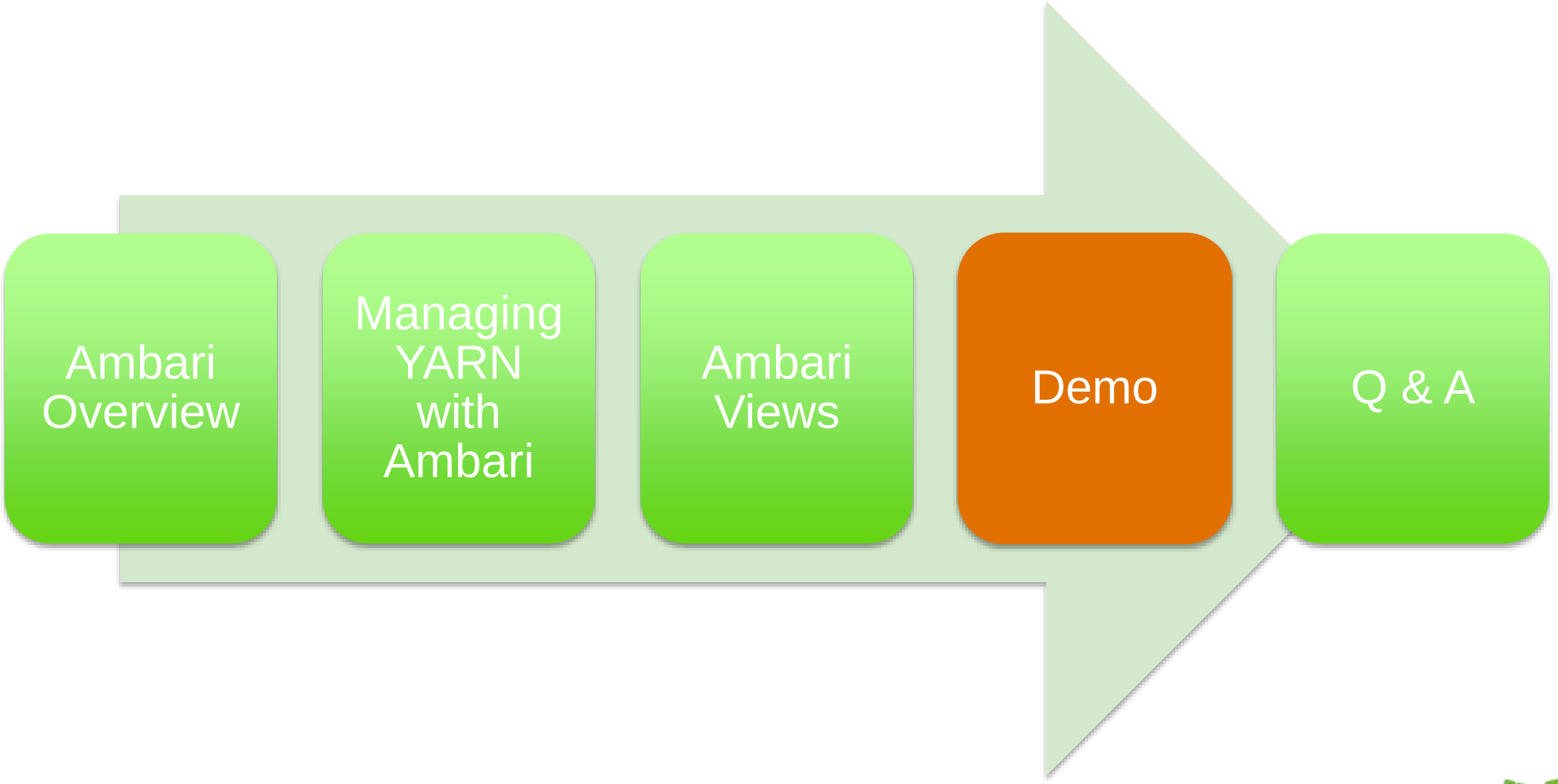
```
<resource>
    <name>files</name>
    <service-class>org.apache.ambari.view.filebrowser.FileBrowserService</service-class>
</resource>
```

- **Ambari Spec Managed resources which provide enhanced API services**

```
<resource>
  <name>script</name>
  <plural-name>scripts</plural-name>
  <id-property>id</id-property>
  <resource-class>org.apache.ambari.view.pig.resources.scripts.models.PigScript</resource-class>
  <provider-class>org.apache.ambari.view.pig.resources.scripts.ScriptResourceProvider</provider-class>
  <service-class>org.apache.ambari.view.pig.resources.scripts.ScriptService</service-class>
</resource>
```

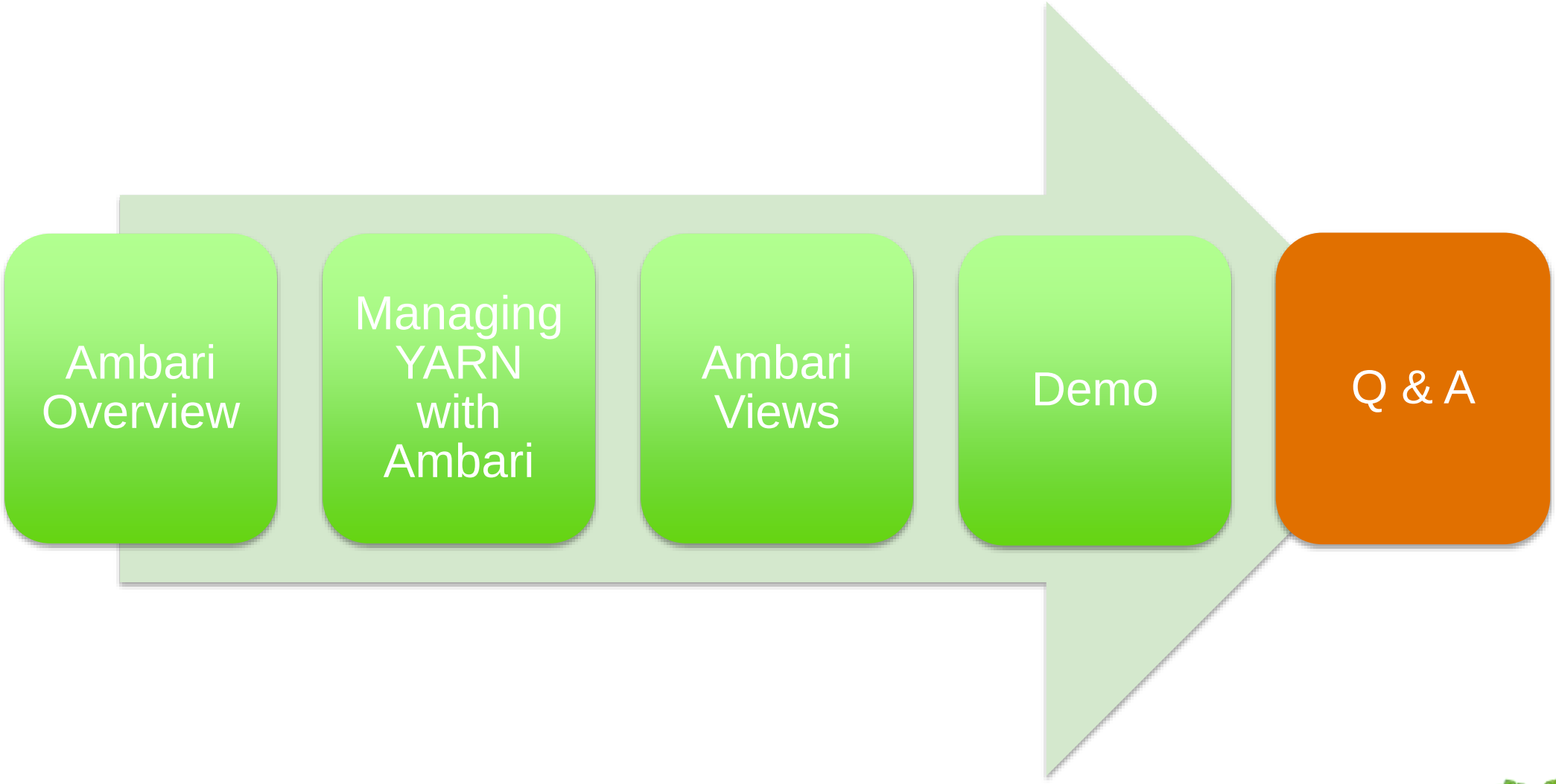

Hortonworks

Agenda



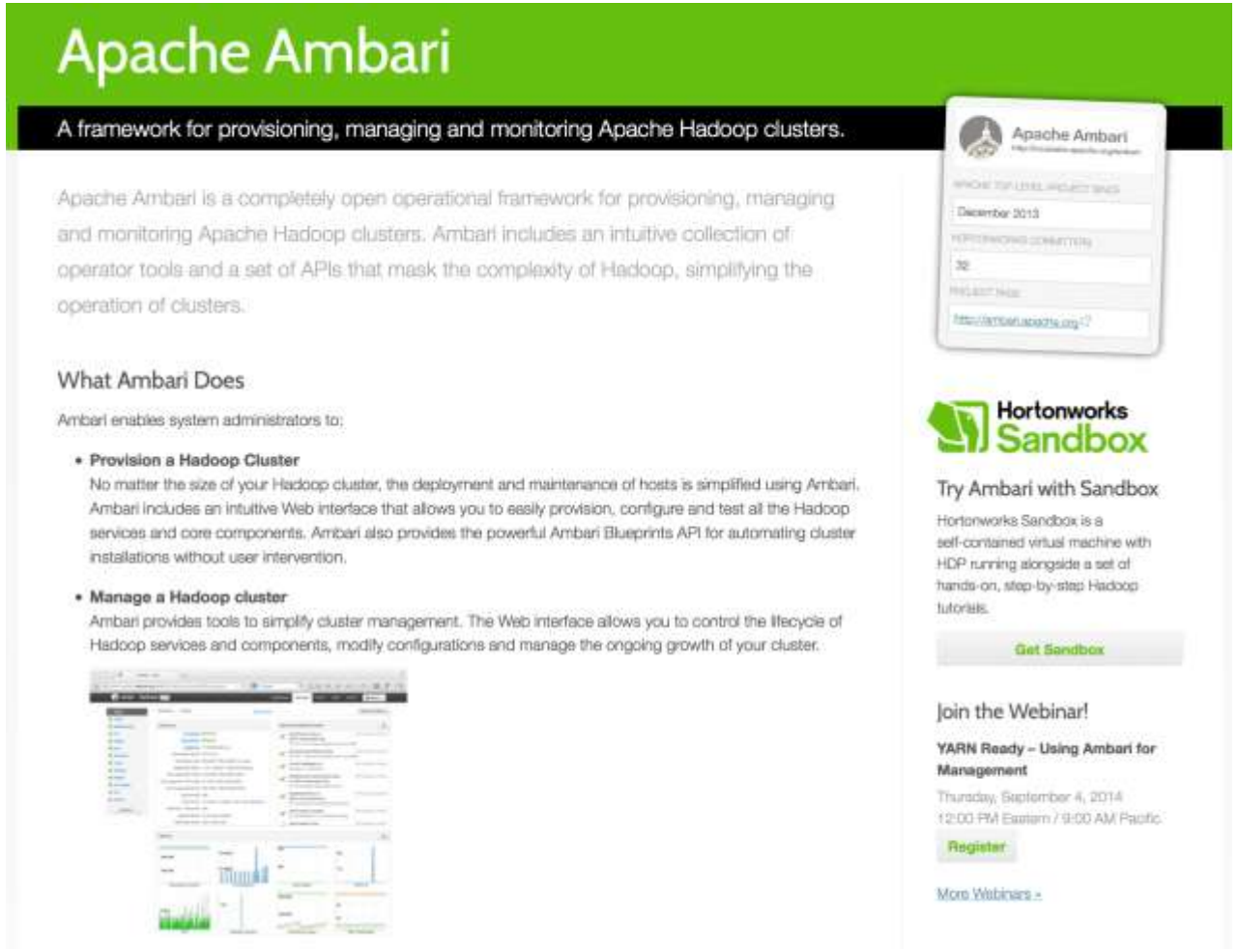
Hortonworks

Agenda



Learn More About Ambari and Views

http://hortonworks.com/hadoop/ambari/



- **Ambari Views Framework**
  https://github.com/apache/ambari/tree/trunk/ambari-views

  https://github.com/apache/ambari/blob/trunk/ambari-views/docs/index.md

- **View Examples + Contribs**
  https://github.com/apache/ambari/tree/trunk/ambari-views/examples

  https://github.com/apache/ambari/tree/trunk/contrib/views

Hortonworks

Thank you!

Hortonworks

Next Steps

Hortonworks

Next Steps

1. **Review Resources**
2. **Review past recordings**
3. **Attend Office Hours**
4. **Attend the next webinar**

Hortonworks

Resources

Setup HDP 2.1 environment

- Leverage Sandbox: Hortonworks.com/Sandbox

Get Started with YARN

- http://hortonworks.com/get-started/YARN

Ambari Info

- http://hortonworks.com/hadoop/ambari

Past Recordings

- http://hortonworks.com/webinars/#library

Hortonworks Office Hours

YARN Office Hours

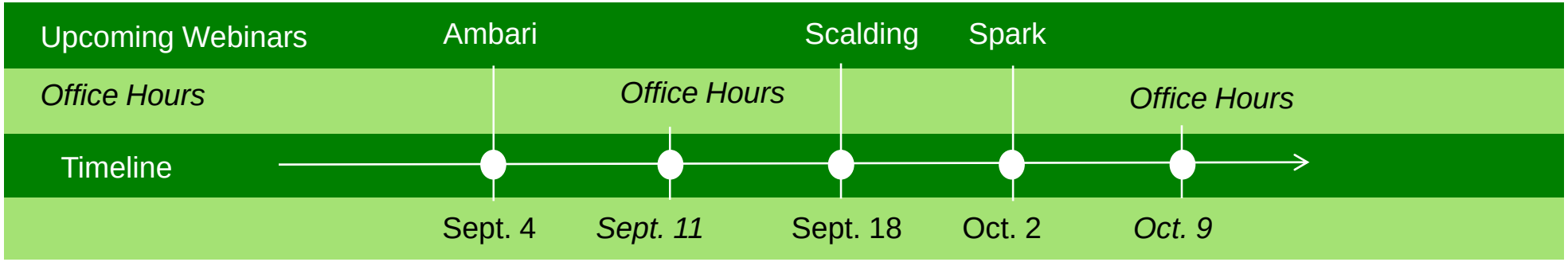
Dial in and chat with YARN experts

We plan Office Hours for September 11th @ 10am PT

Invitations will go out to those that attended or reviewed YARN webinars

These will also be posted to hortonworks.com/webinars

YARN Ready Webinar Schedule



Recorded Webinars: Introduction to YARN Ready | Native Integration | Slider | Tez

Visit: Hortonworks.com/webinars/#library

Series: http://info.hortonworks.com/YarnReady-BigData-Webcast-Series.html

Or sign up for an individual webinar or office hours at the same URL

Hortonworks