



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

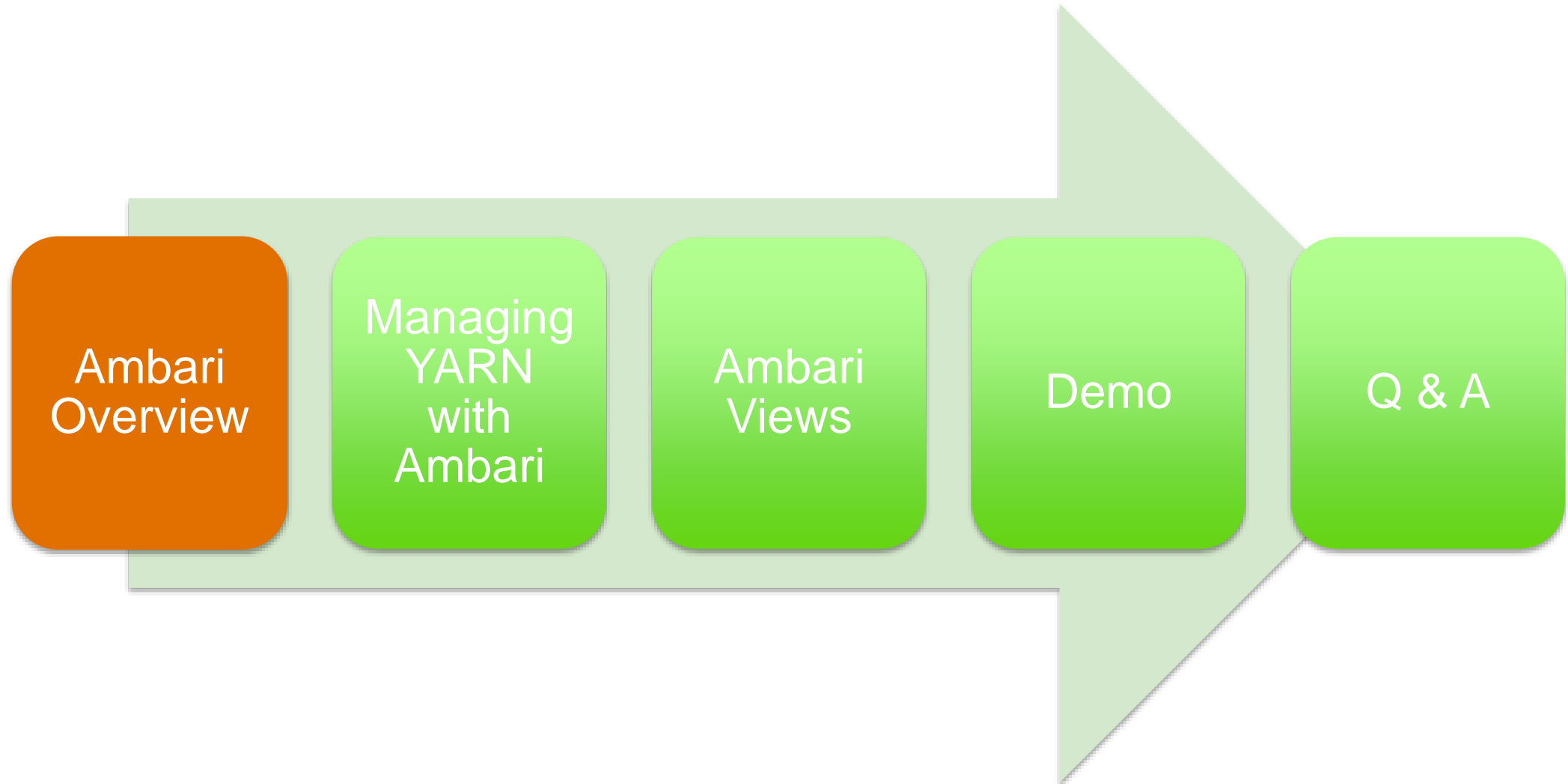
Hortonworks Member Technical Staff

Committer for Apache Ambari

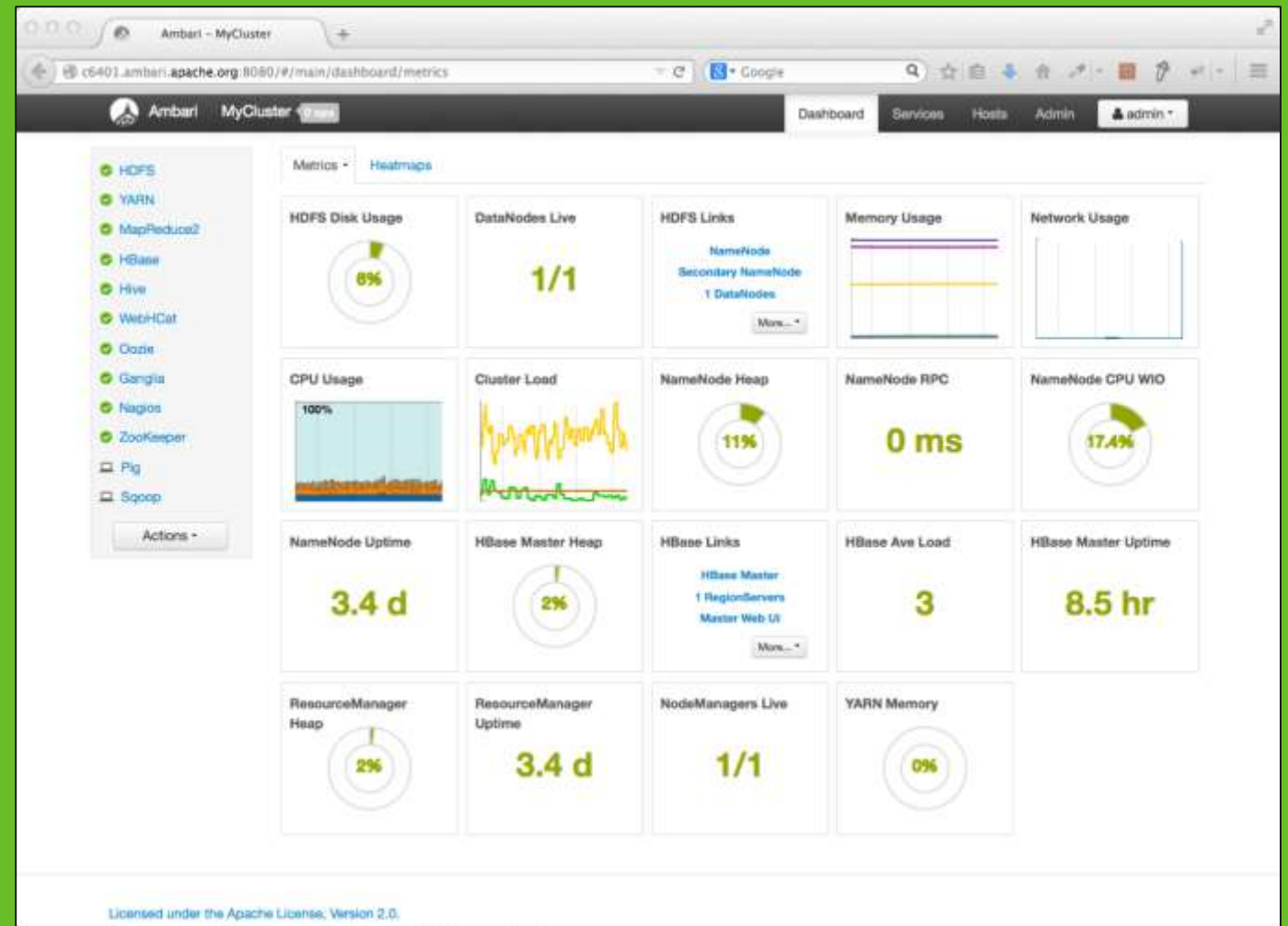
Agenda

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

Agenda



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



Apache Ambari Driving Themes

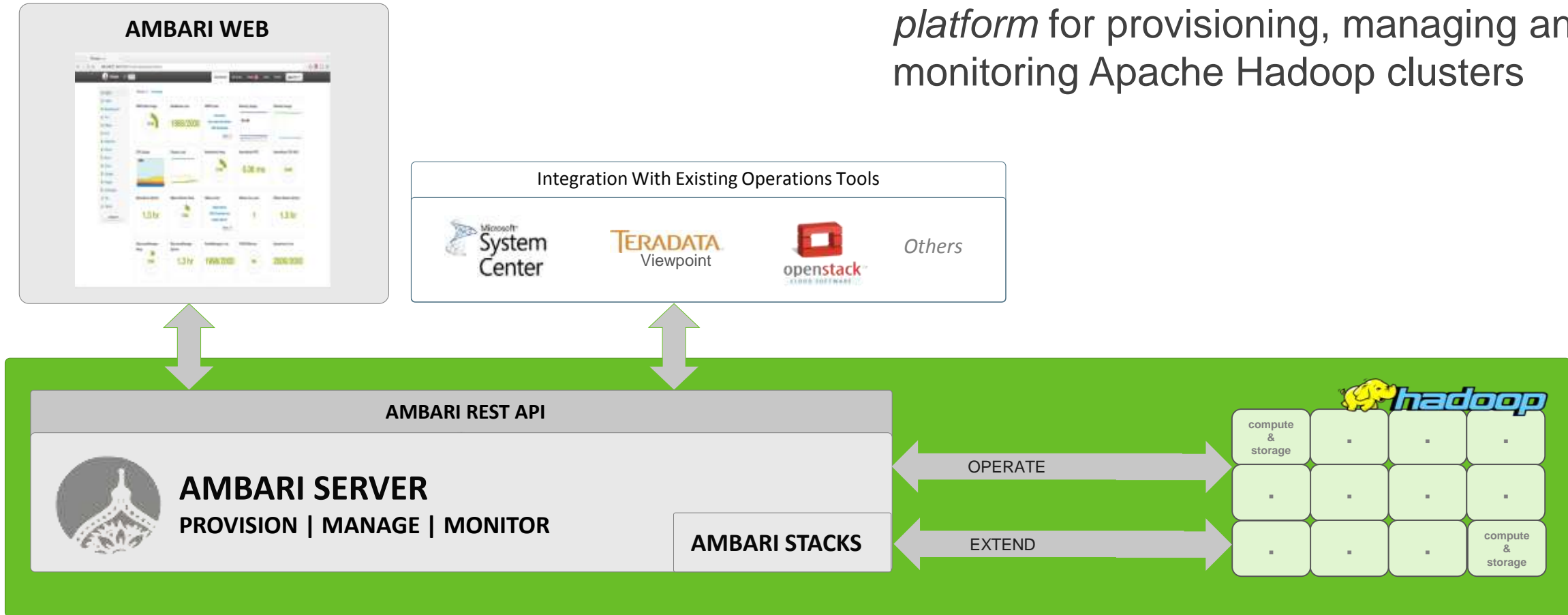
**Operate Hadoop
at Scale**

**Integrate with
the Enterprise**

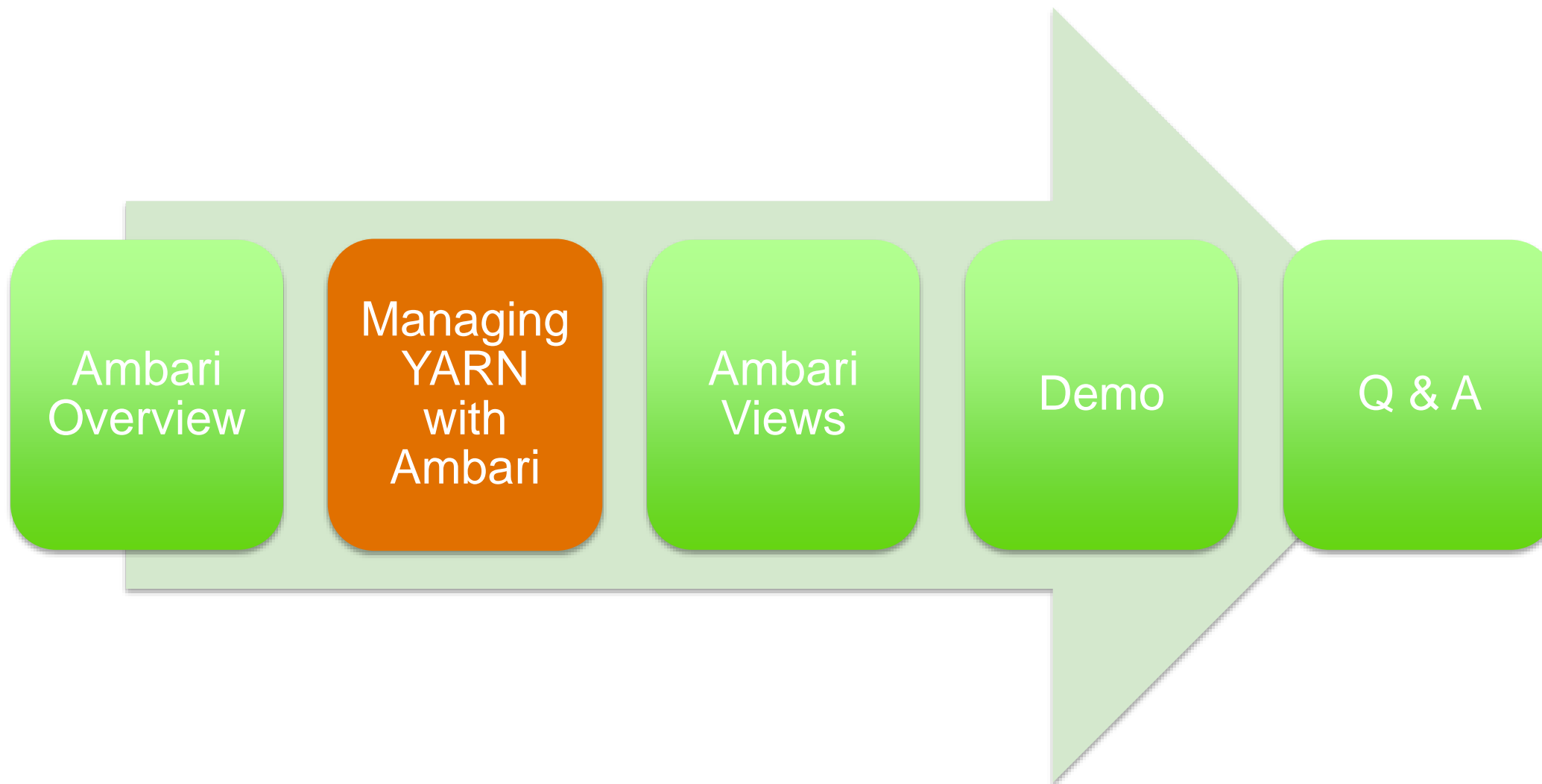
**Extend for the
Ecosystem**

Enterprise Operations, Integration and Extensibility

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

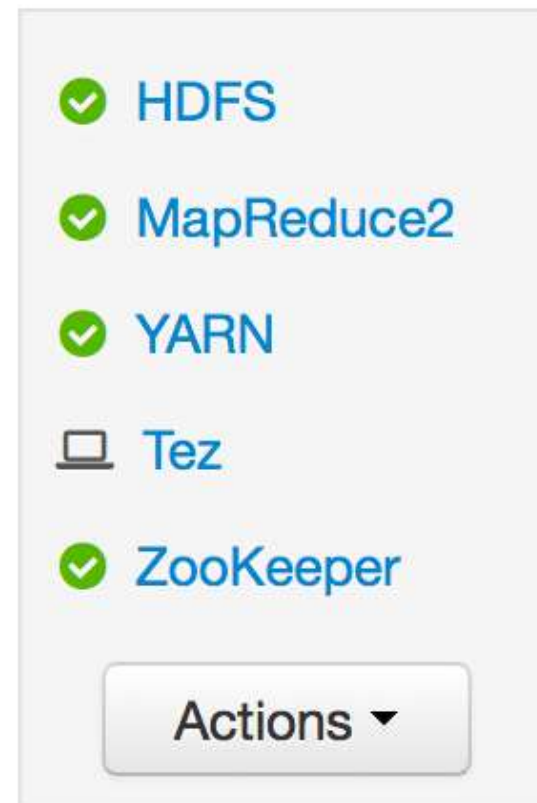


Agenda



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**



Slider

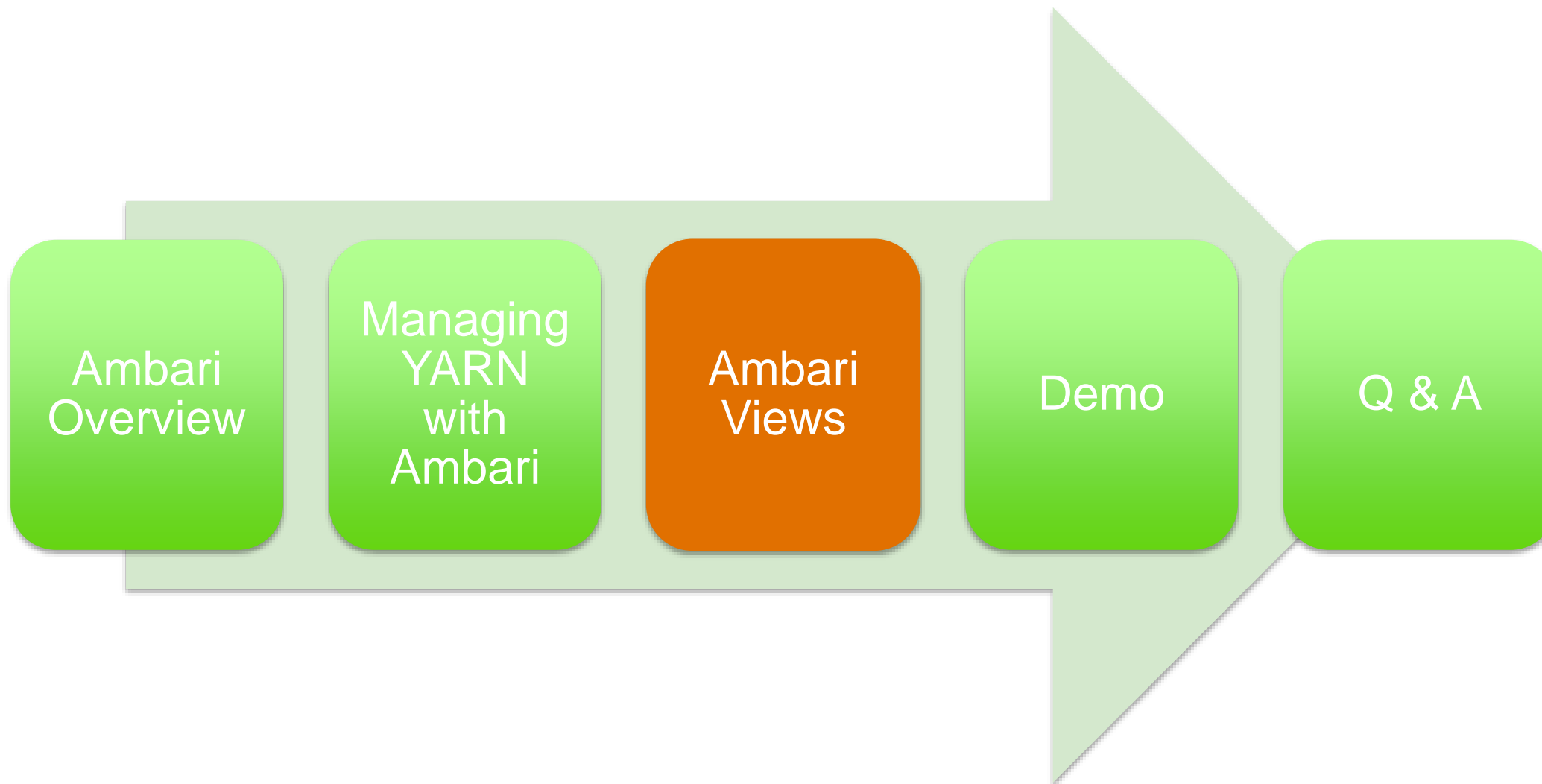
Set of tools to make it easy to package, deploy and manage long running distributed services on YARN

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

Slider View

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

Agenda



Ambari Views

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

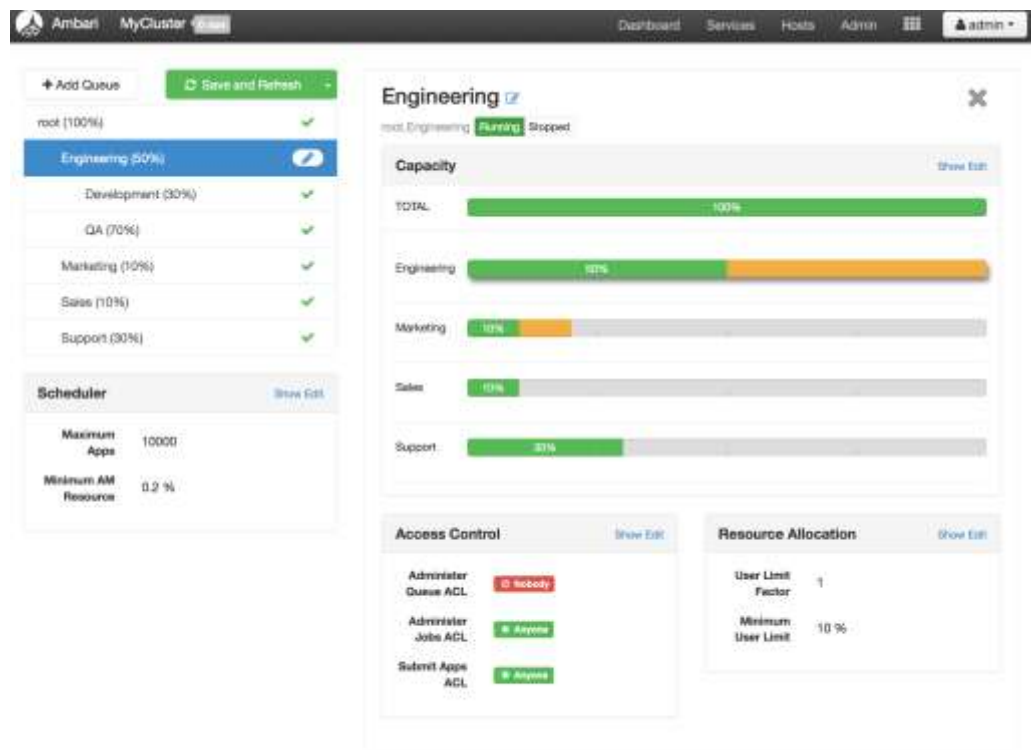
Developers can extend the Ambari Web interface

- Views expose custom UI features for Hadoop Services

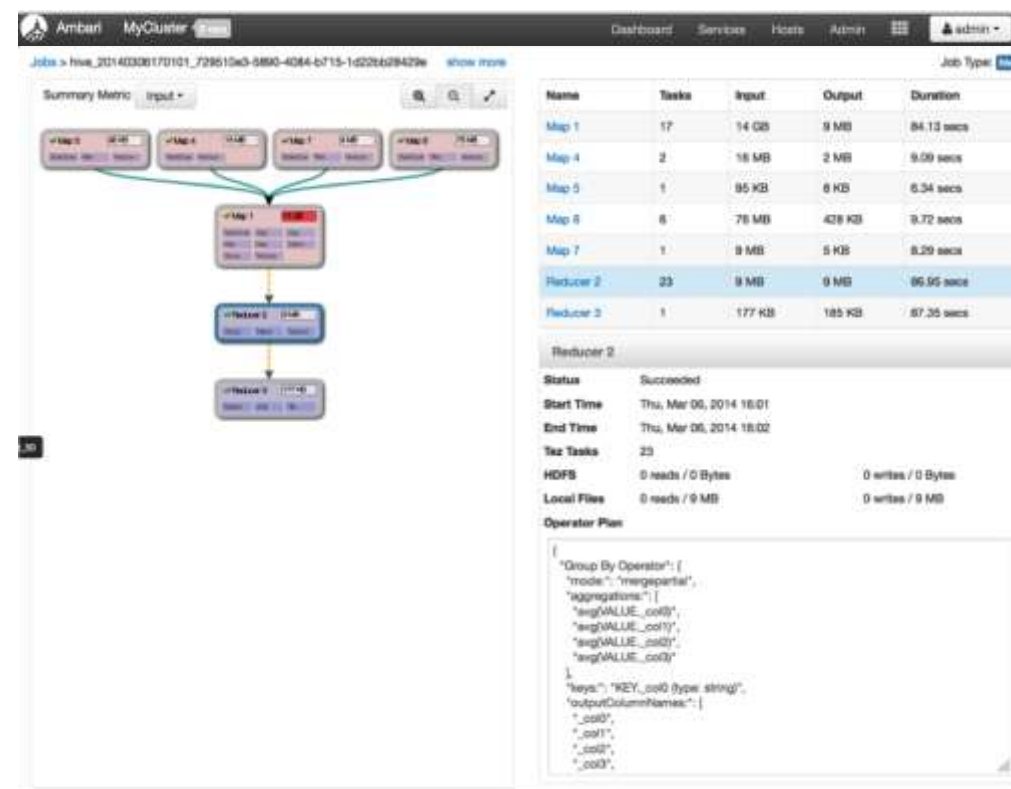
Ambari Admins can entitle Views to Ambari Web users

- Entitlements framework for controlling access to Views

Example Views



Capacity Scheduler
Queue Manager



Hive Tez
Query Analyzer

Choice of Deployment Model

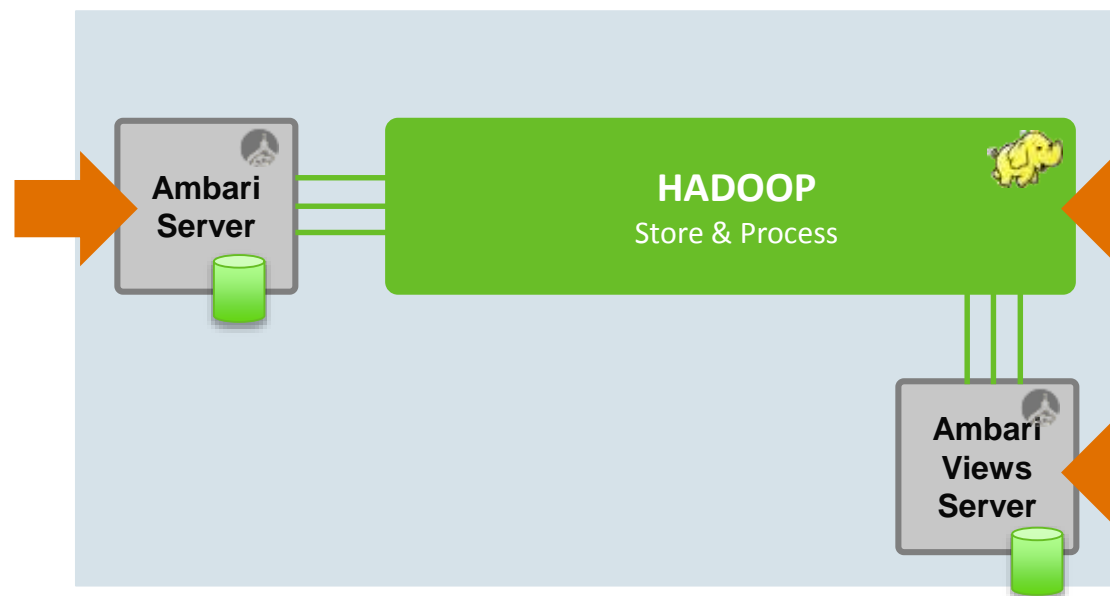
- **For Hadoop Operators:**

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

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

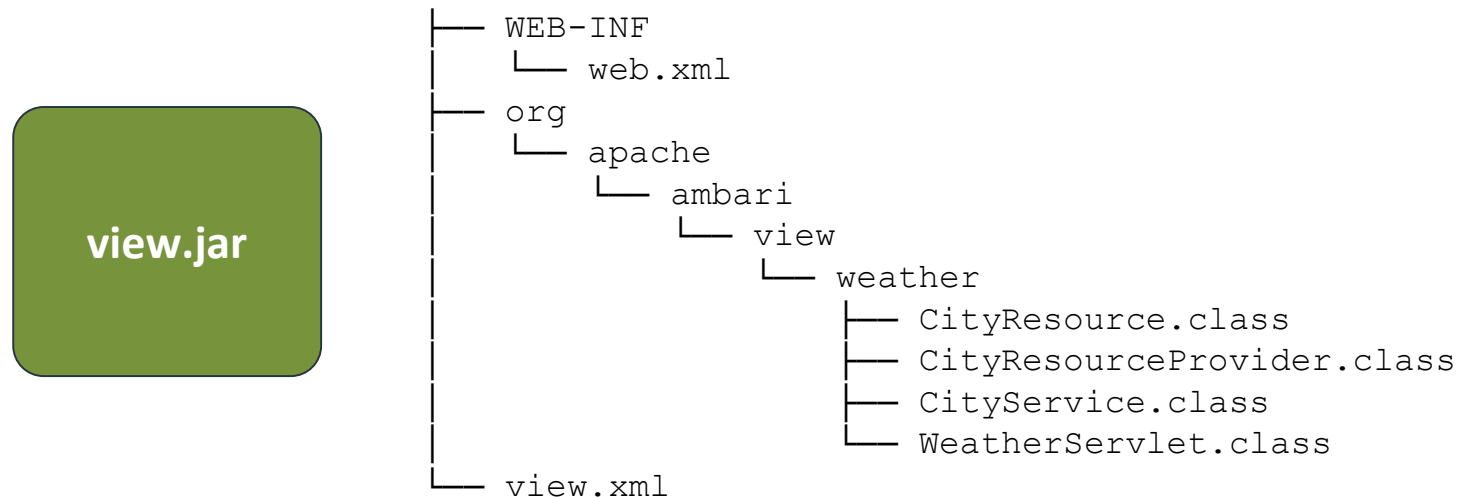
View Definition: view.xml

Resource / Service classes : JAX-RS annotated

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

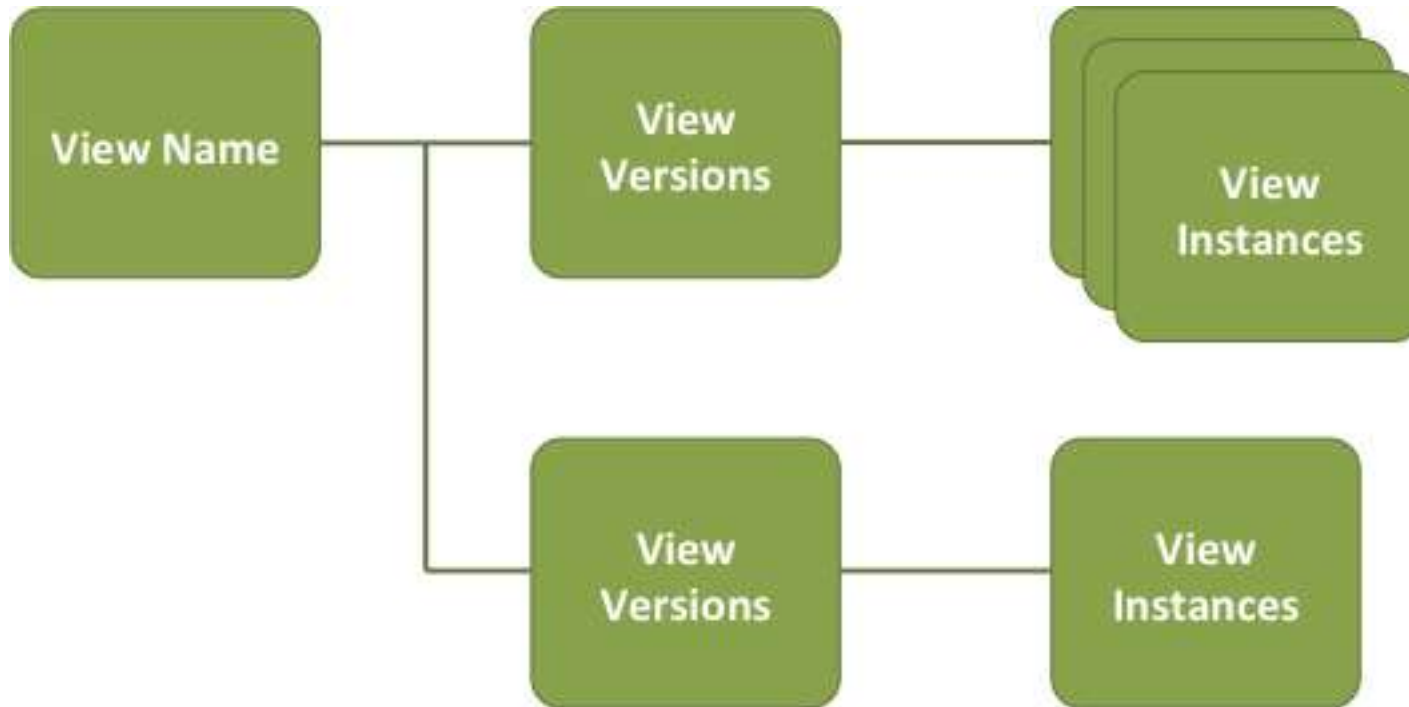
Application logic : Supporting classes

Dependencies : 3rd party jars or classes



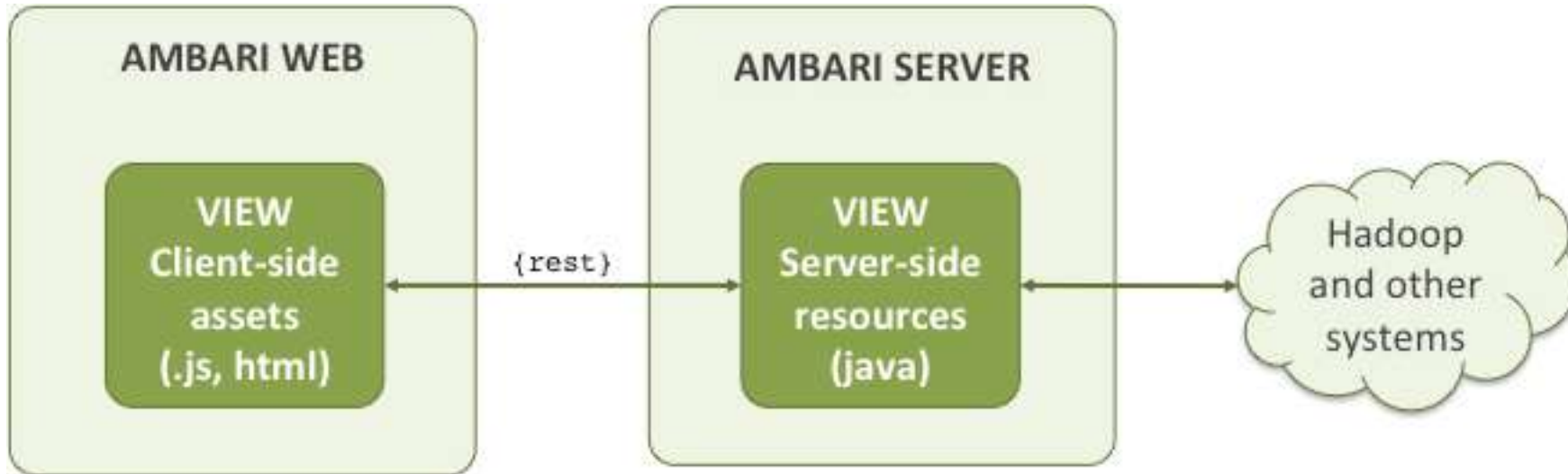
View Versions and Instances

- **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)



Views Server Side Resources

- **Servlets**

- Available at URL patterns as defined in standard web.xml

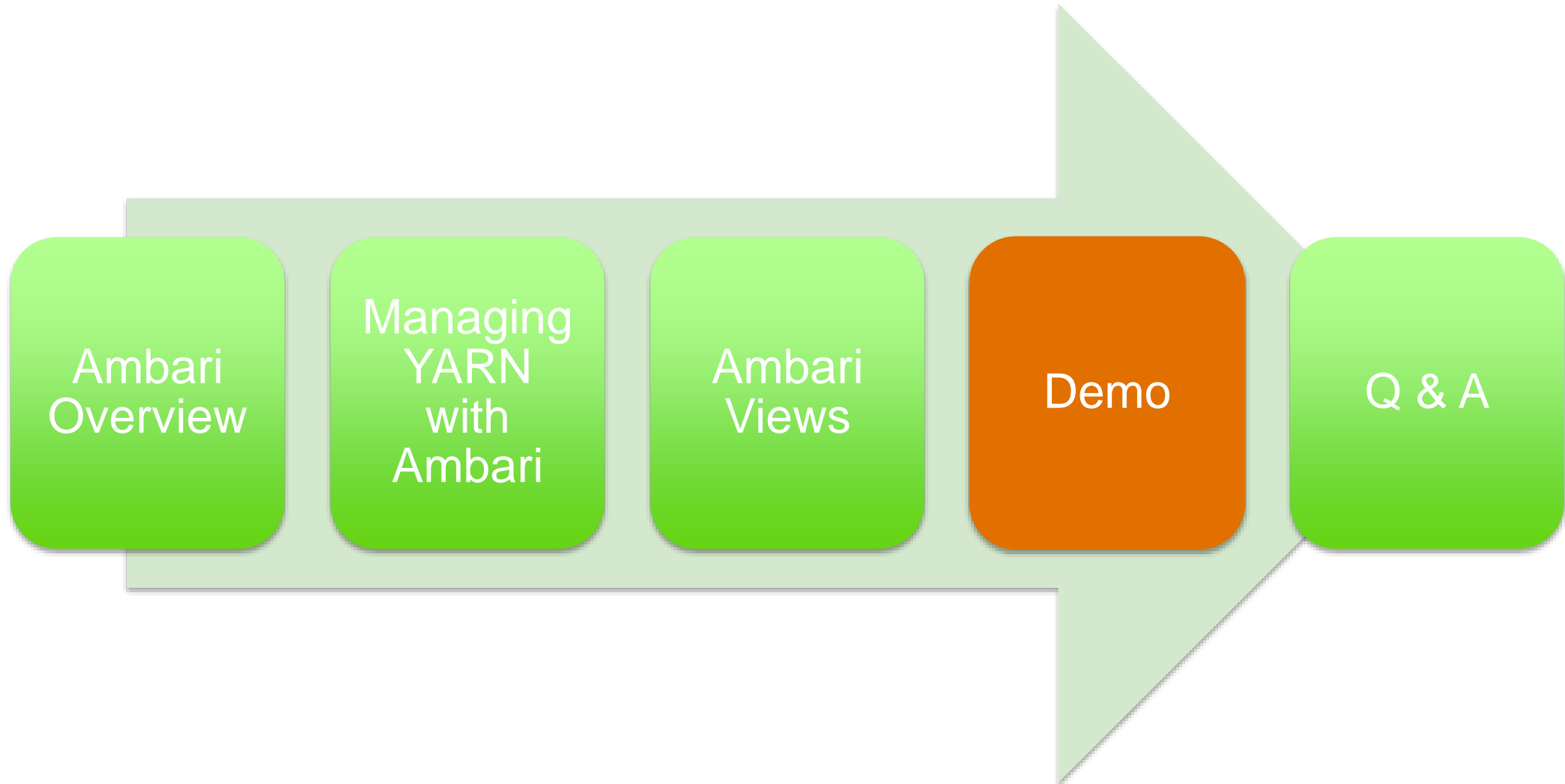
- **REST Endpoints**

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

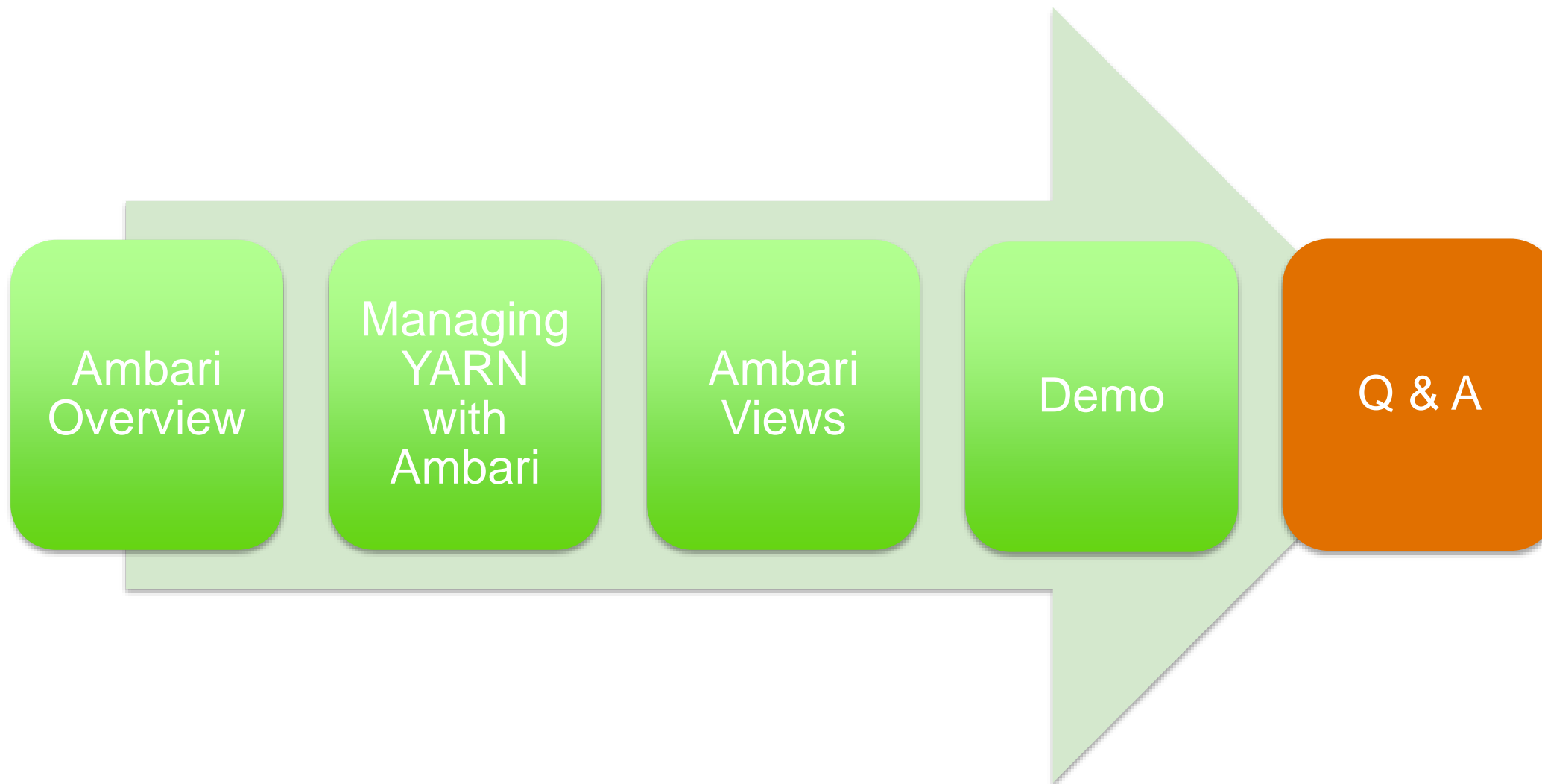
- **Ambari Spec Managed resources which provide enhanced API services**

```
<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>
```

Agenda

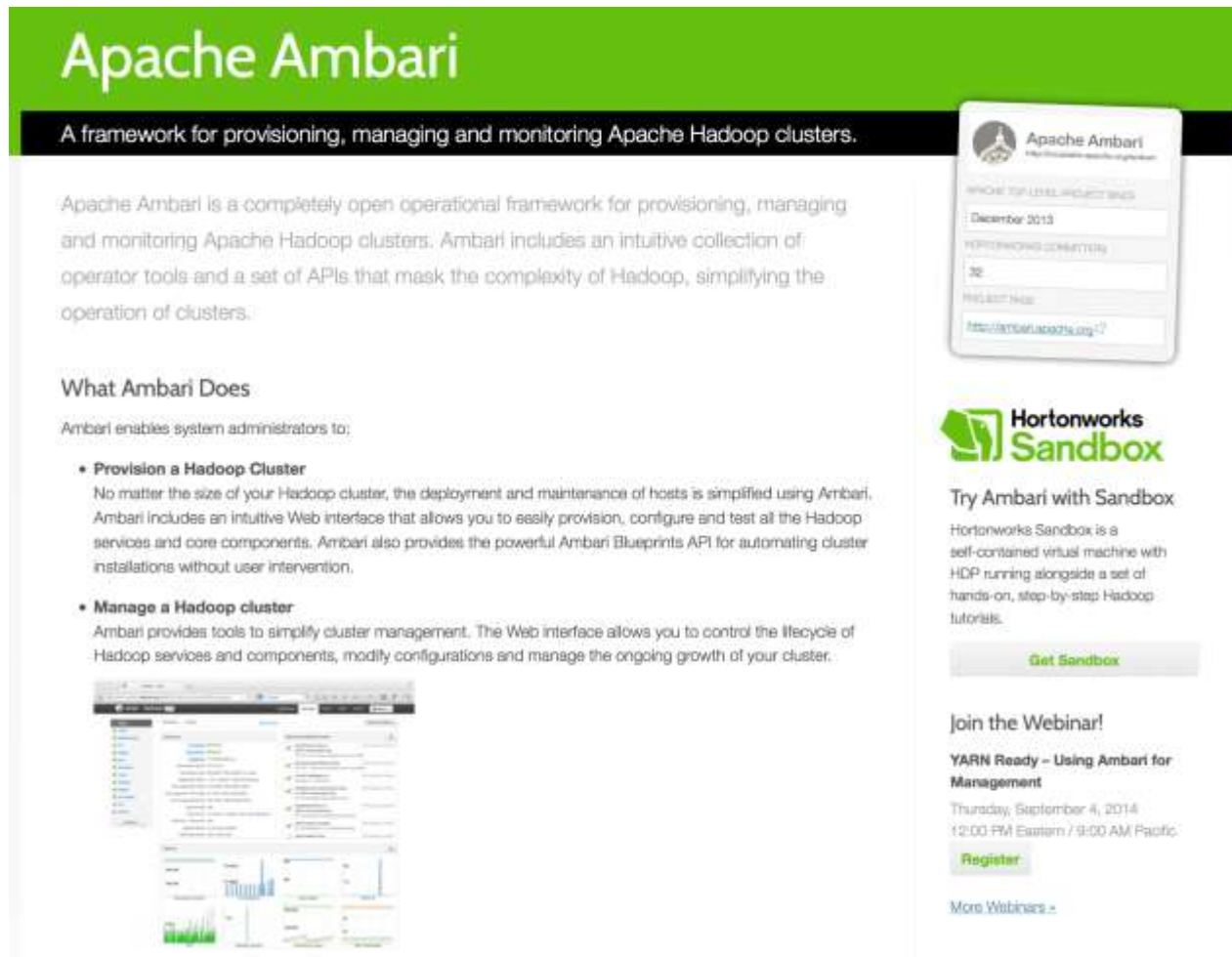


Agenda



Learn More About Ambari and Views

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



The screenshot shows the Apache Ambari website. At the top is a green header with the text "Apache Ambari" and a subtitle "A framework for provisioning, managing and monitoring Apache Hadoop clusters." Below this, there's a section titled "What Ambari Does" which lists two main capabilities: "Provision a Hadoop Cluster" and "Manage a Hadoop cluster". To the right of the text is a graphic of a smartphone displaying the Ambari interface. Below the text is a screenshot of the Ambari web UI, showing various charts and data. At the bottom right, there's a section for "Try Ambari with Sandbox" and a "Join the Webinar!" section with a "Register" button.

- **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>

Thank you!

Next Steps

Next Steps

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



Resources

Setup HDP 2.1 environment

- Leverage Sandbox: [Hortonworks.com/Sandbox](http://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

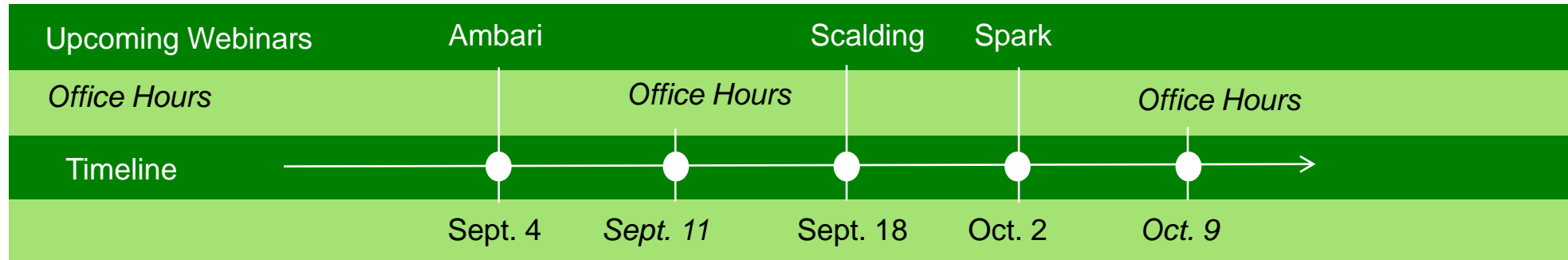
Dial in and chat with YARN experts

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