



# Apache Ambari

## Using Apache Ambari to Manage Hadoop and YARN

Hortonworks. We do Hadoop.

# Speakers

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*Committer for Apache Ambari*

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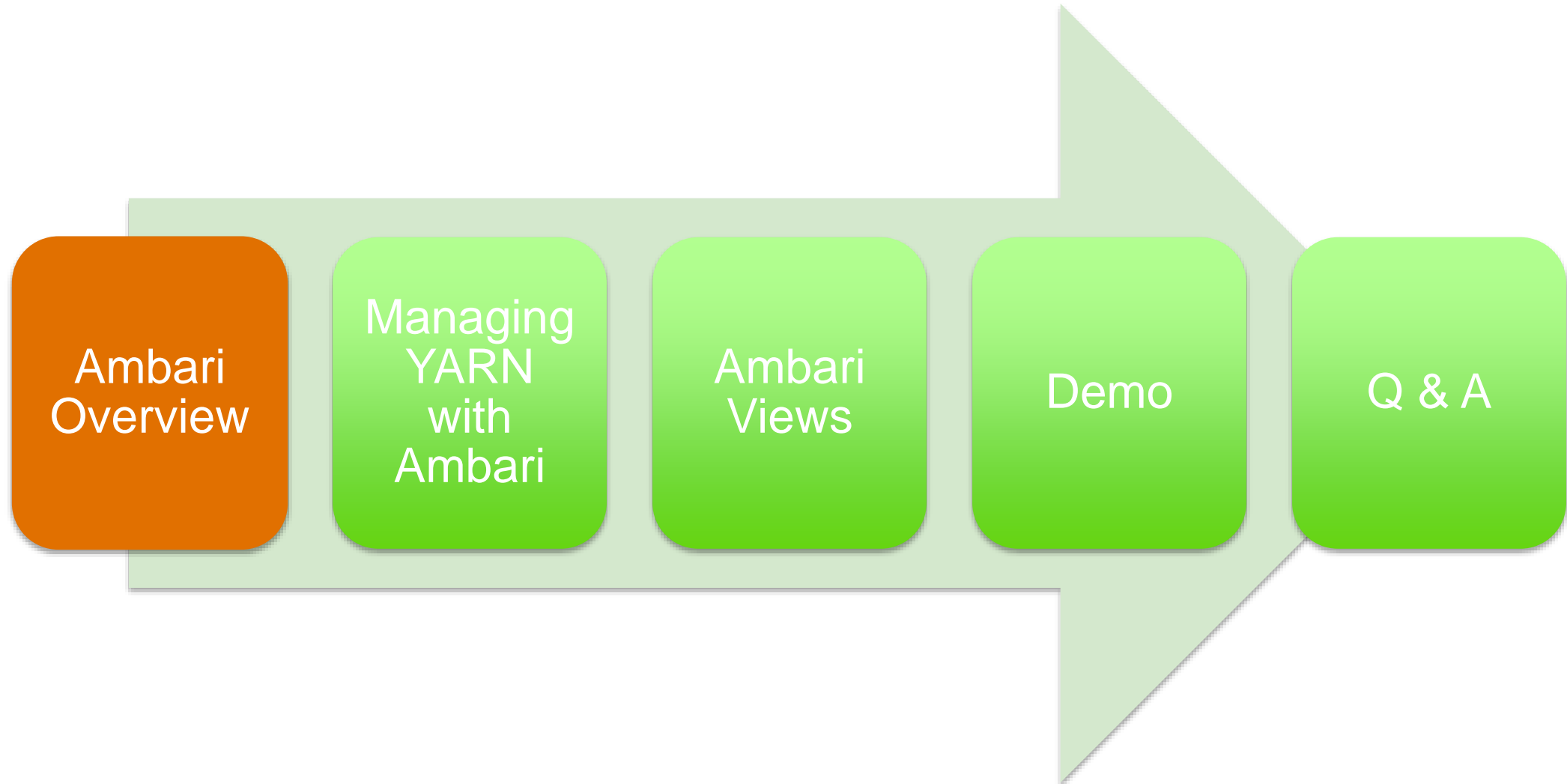
*Hortonworks Member Technical Staff*

*Committer for Apache Ambari*

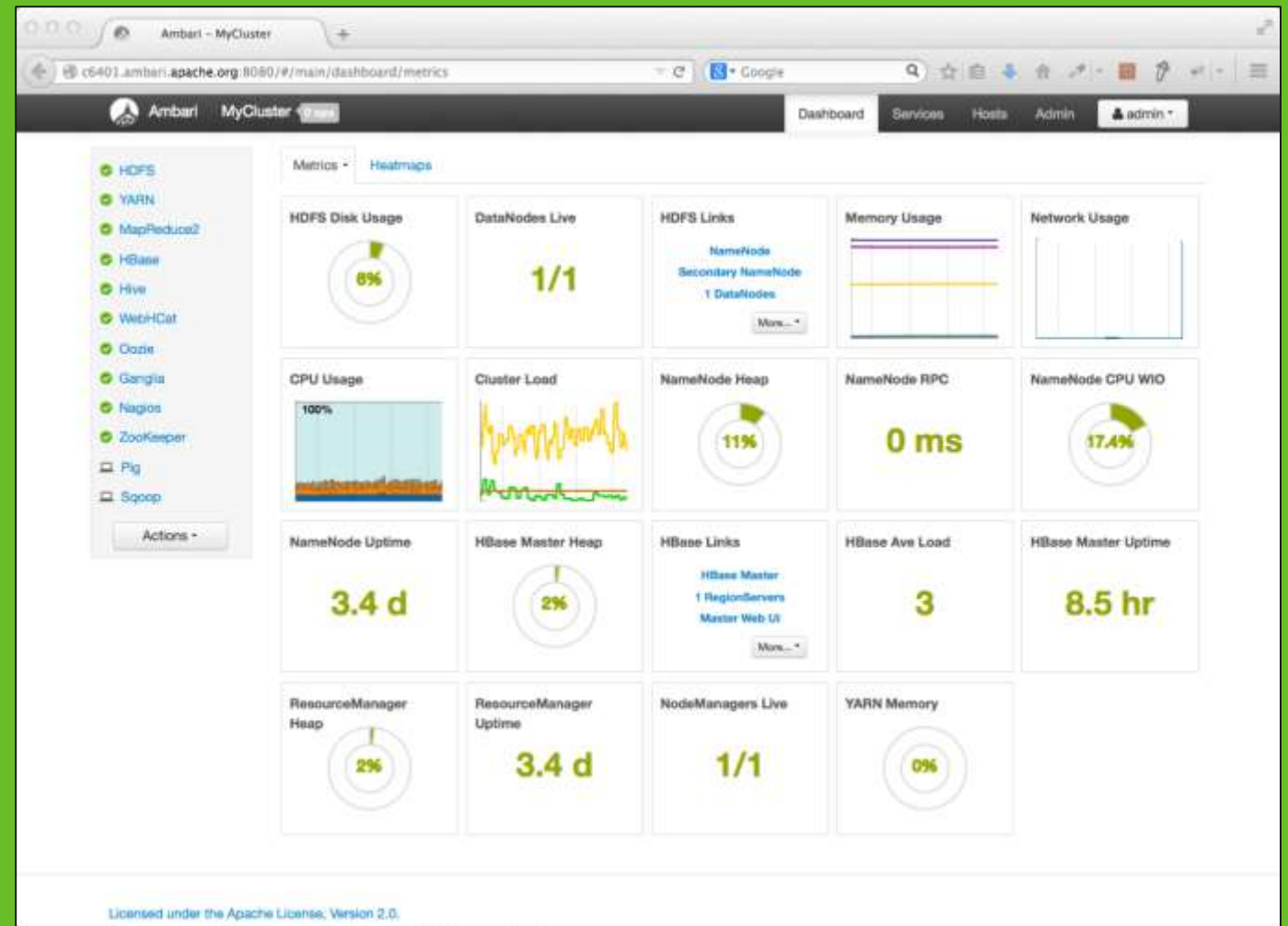
# Agenda

- **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

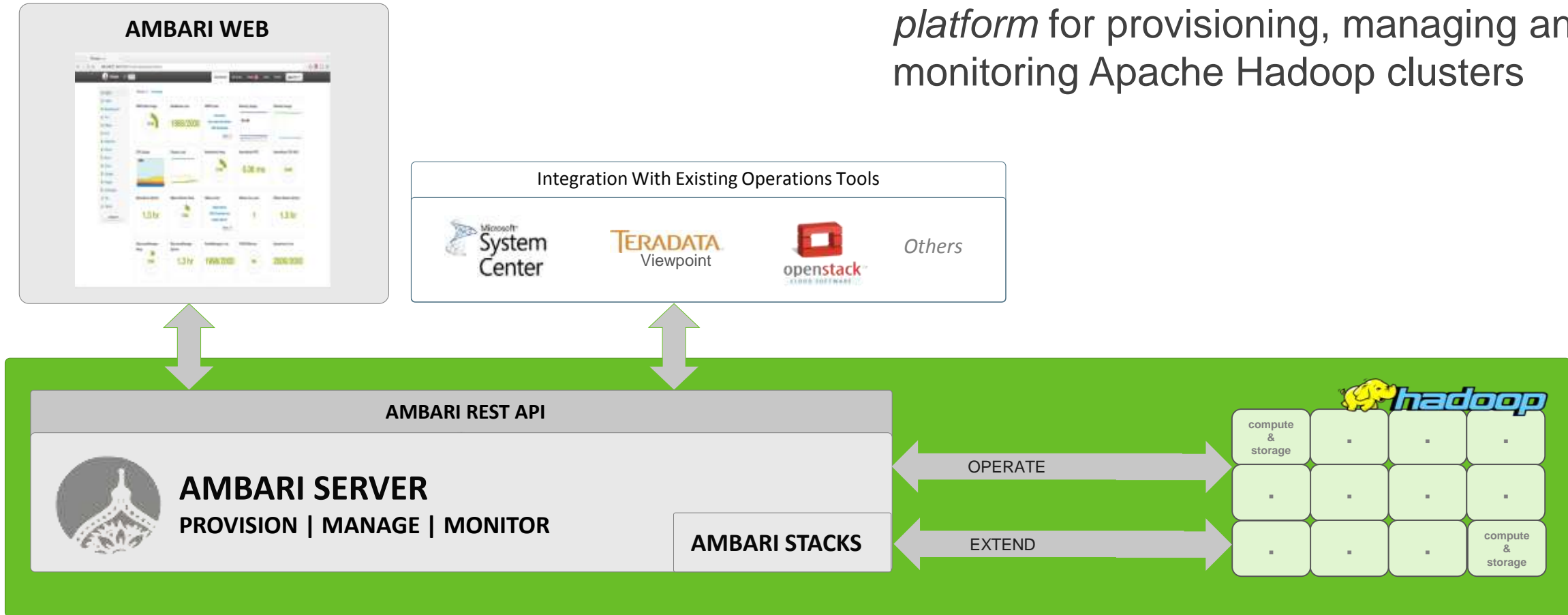
**Operate Hadoop  
at Scale**

**Integrate with  
the Enterprise**

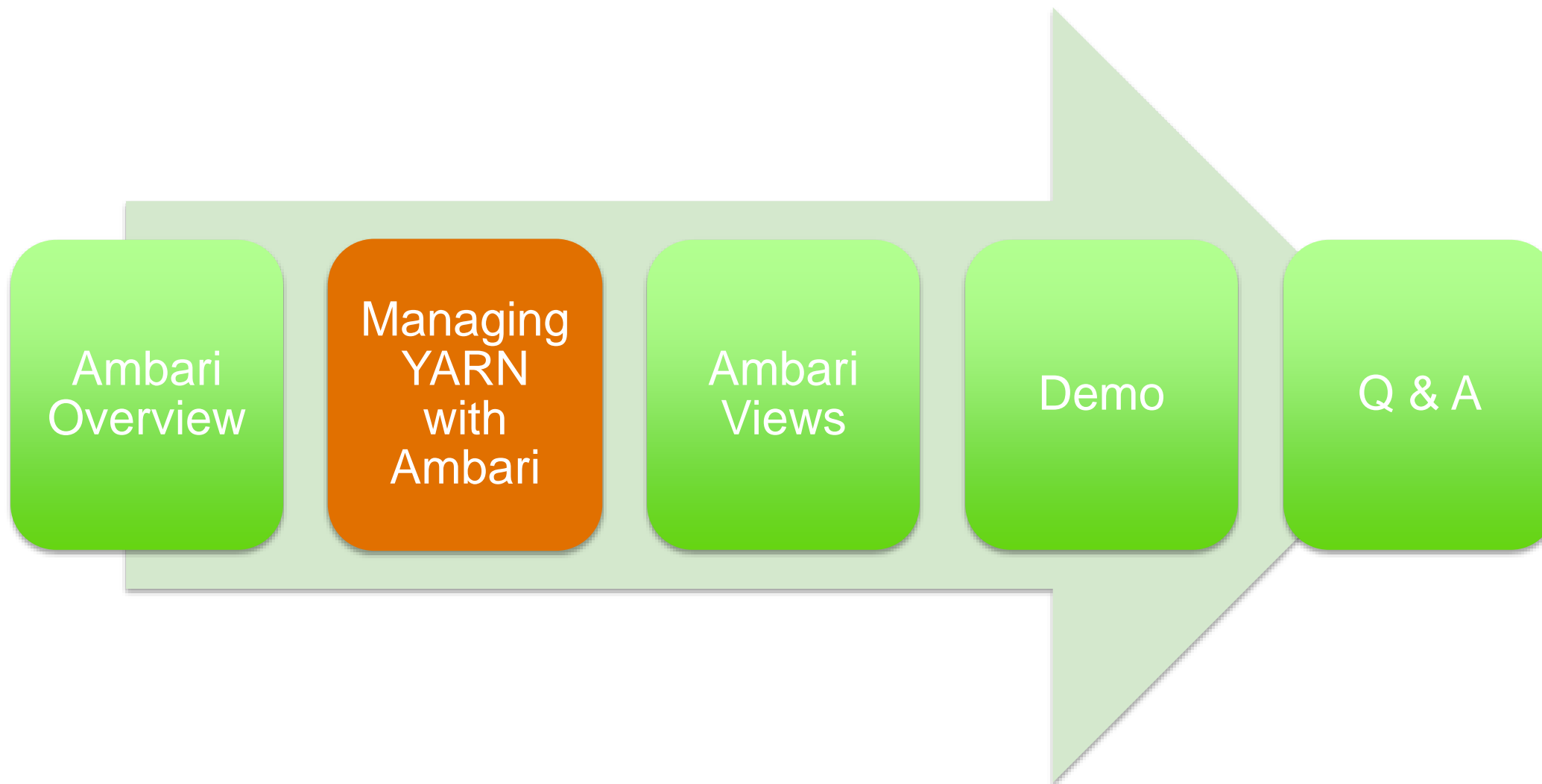
**Extend for the  
Ecosystem**

# Enterprise Operations, Integration and Extensibility

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



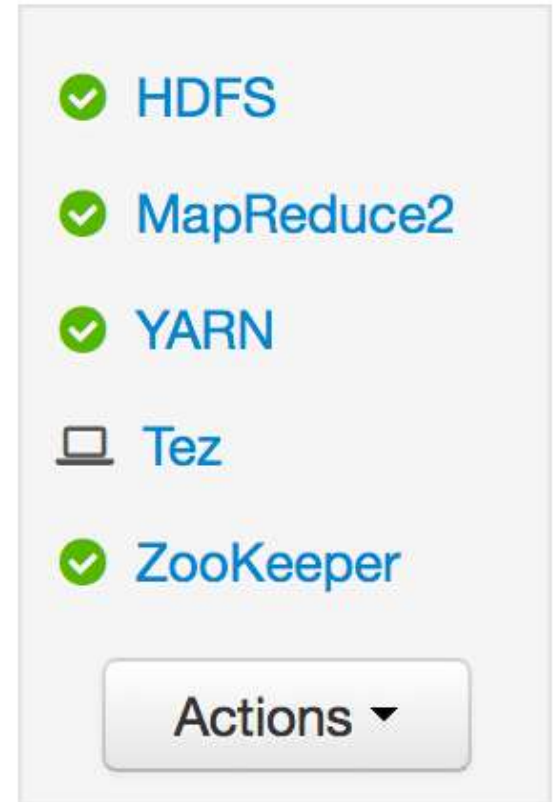
# Agenda





# 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

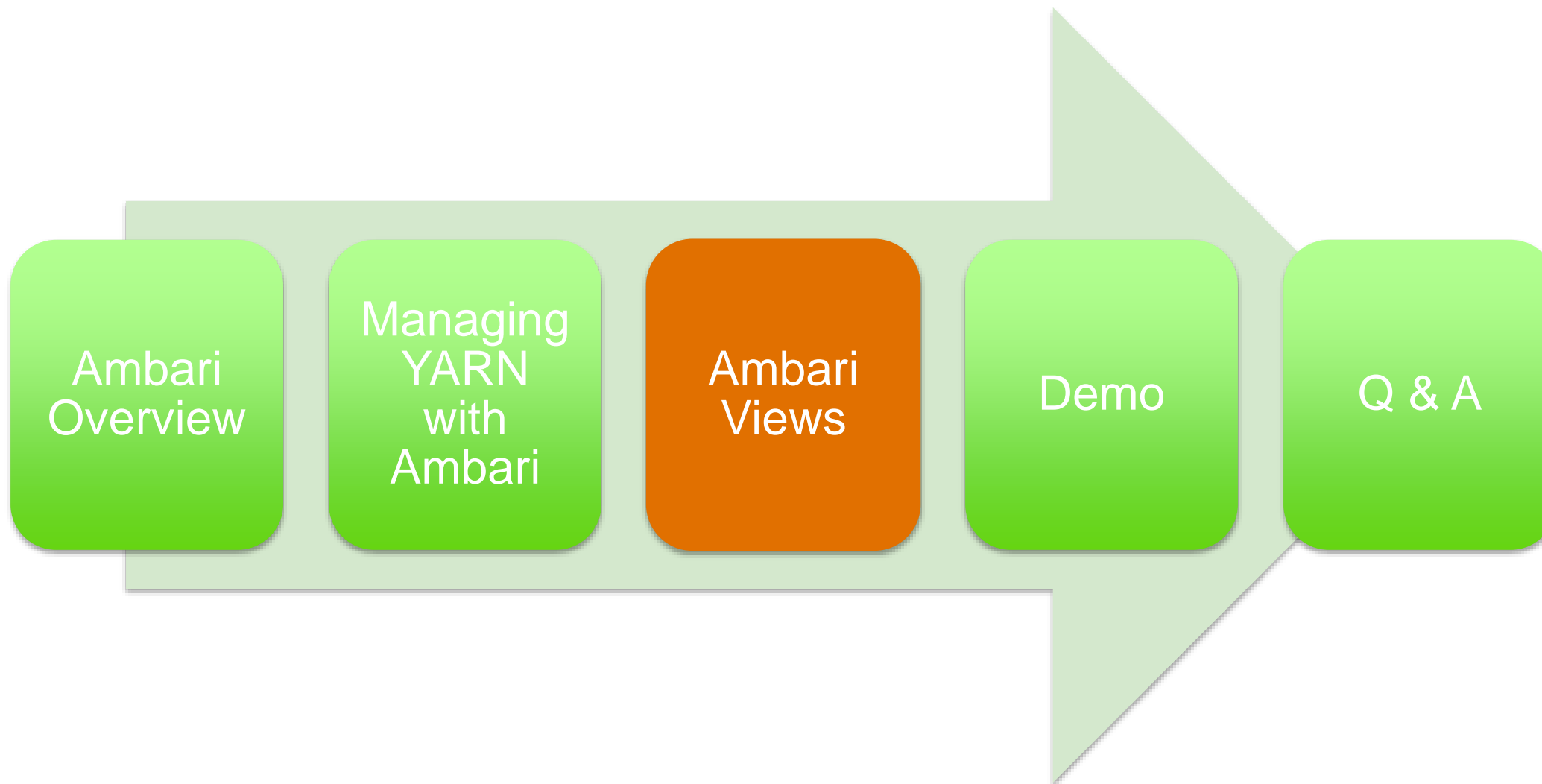
Set of tools to make it easy to package, deploy and manage long running distributed services on YARN

- 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**

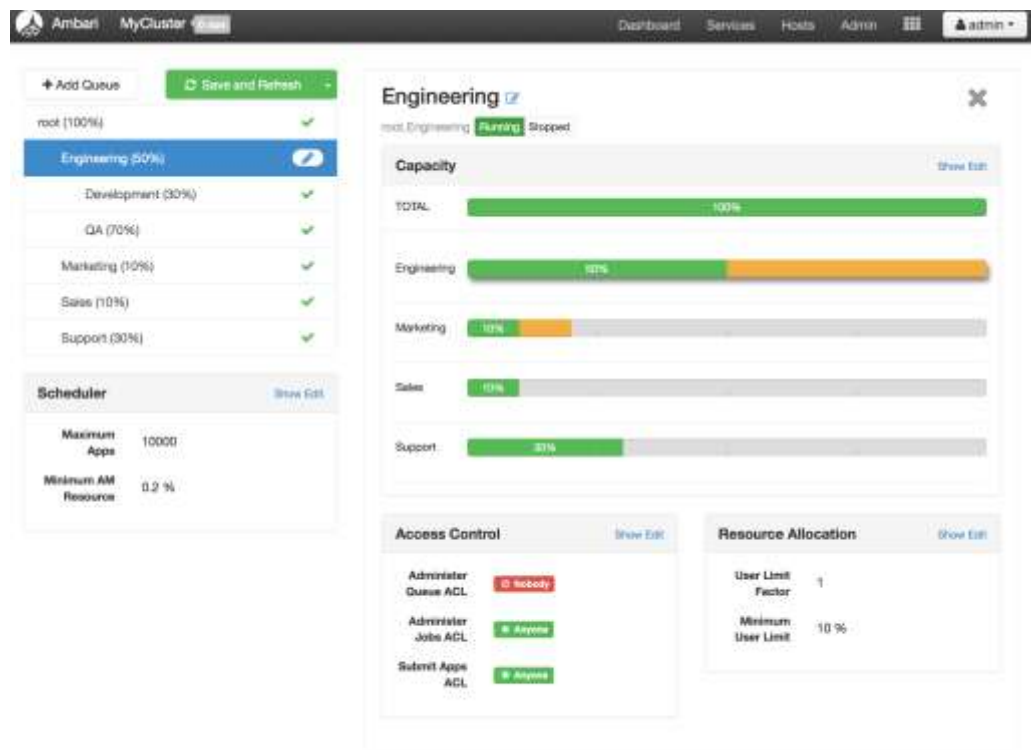
## **Developers can extend the Ambari Web interface**

- Views expose custom UI features for Hadoop Services

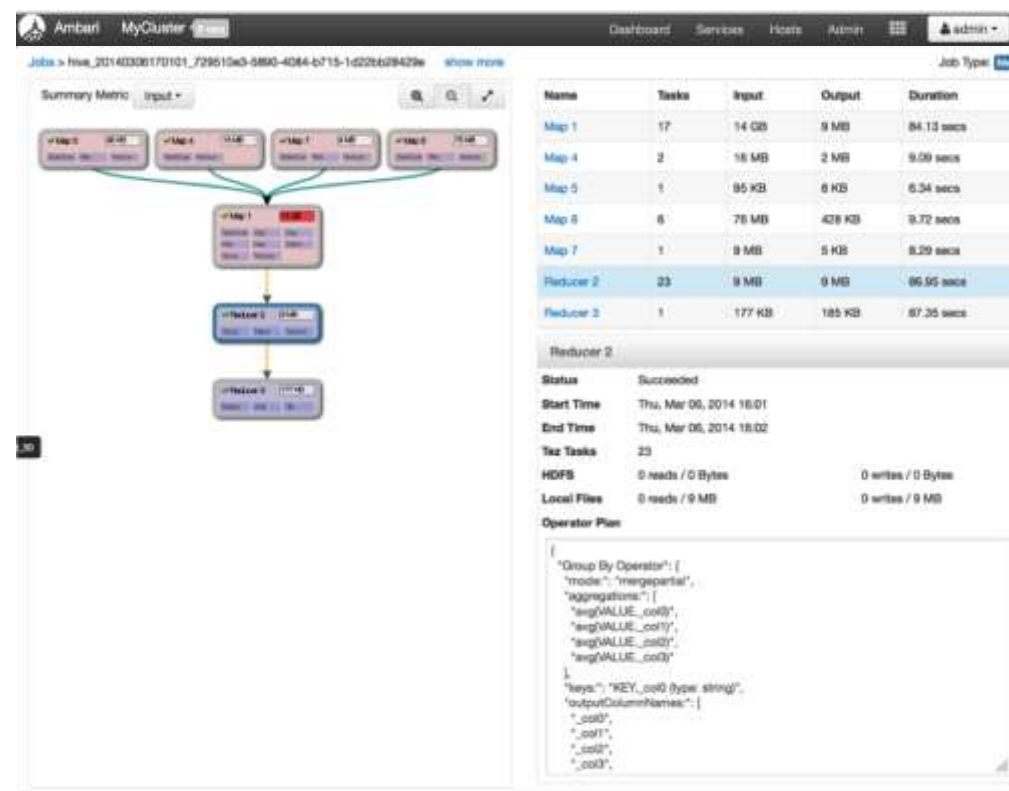
## **Ambari Admins can entitle Views to Ambari Web users**

- Entitlements framework for controlling access to Views

# Example Views



Capacity Scheduler  
Queue Manager



Hive Tez  
Query Analyzer

# Choice of Deployment Model

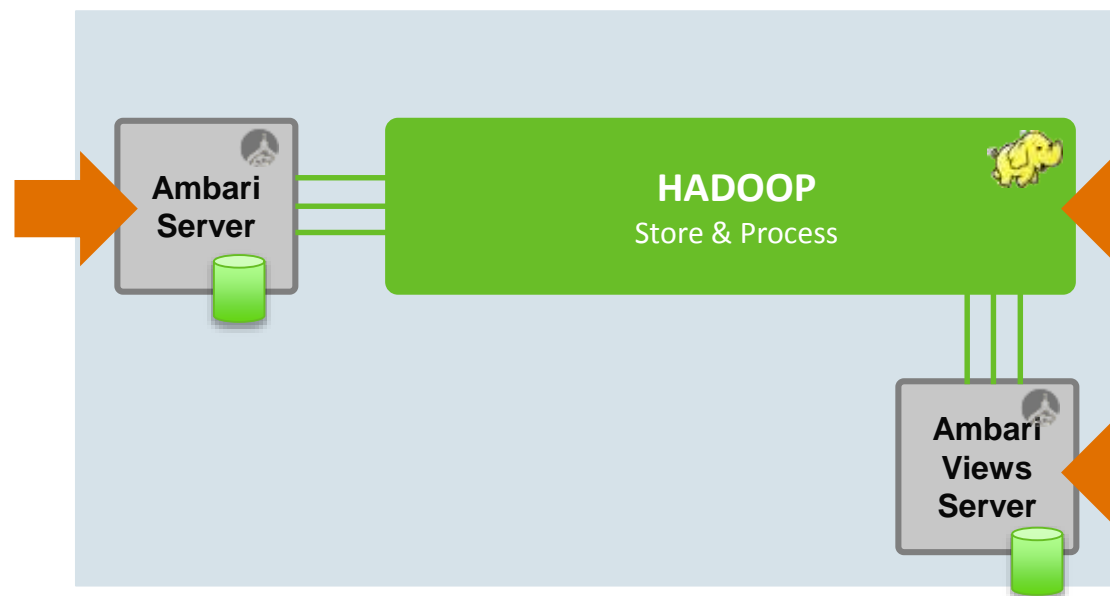
- **For Hadoop Operators:**

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

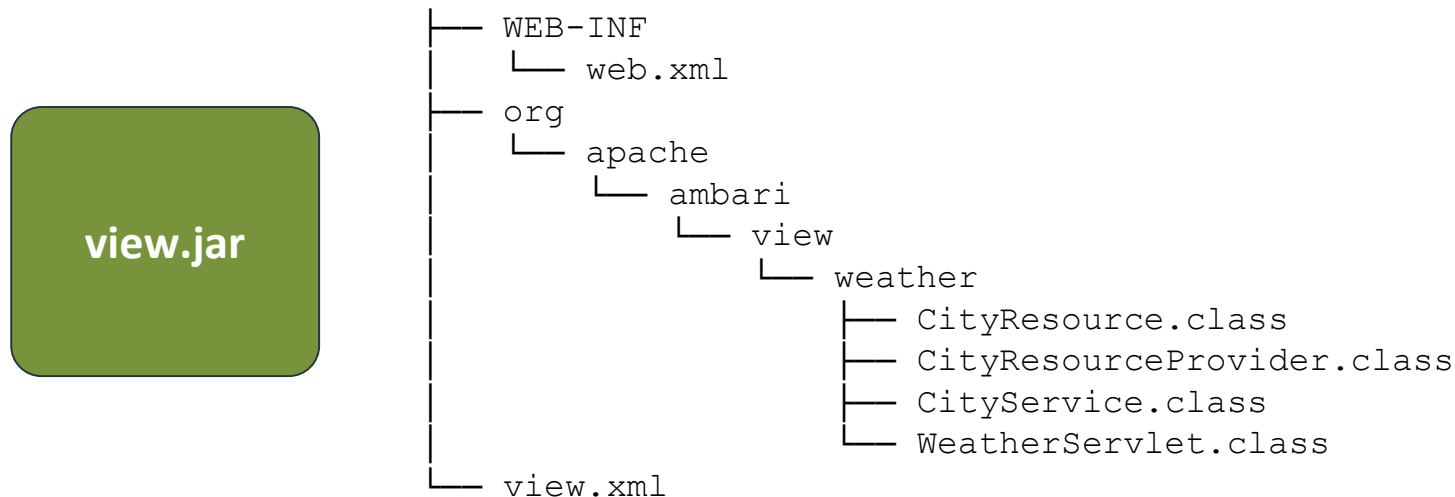
**View Definition: view.xml**

**Resource / Service classes : JAX-RS annotated**

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

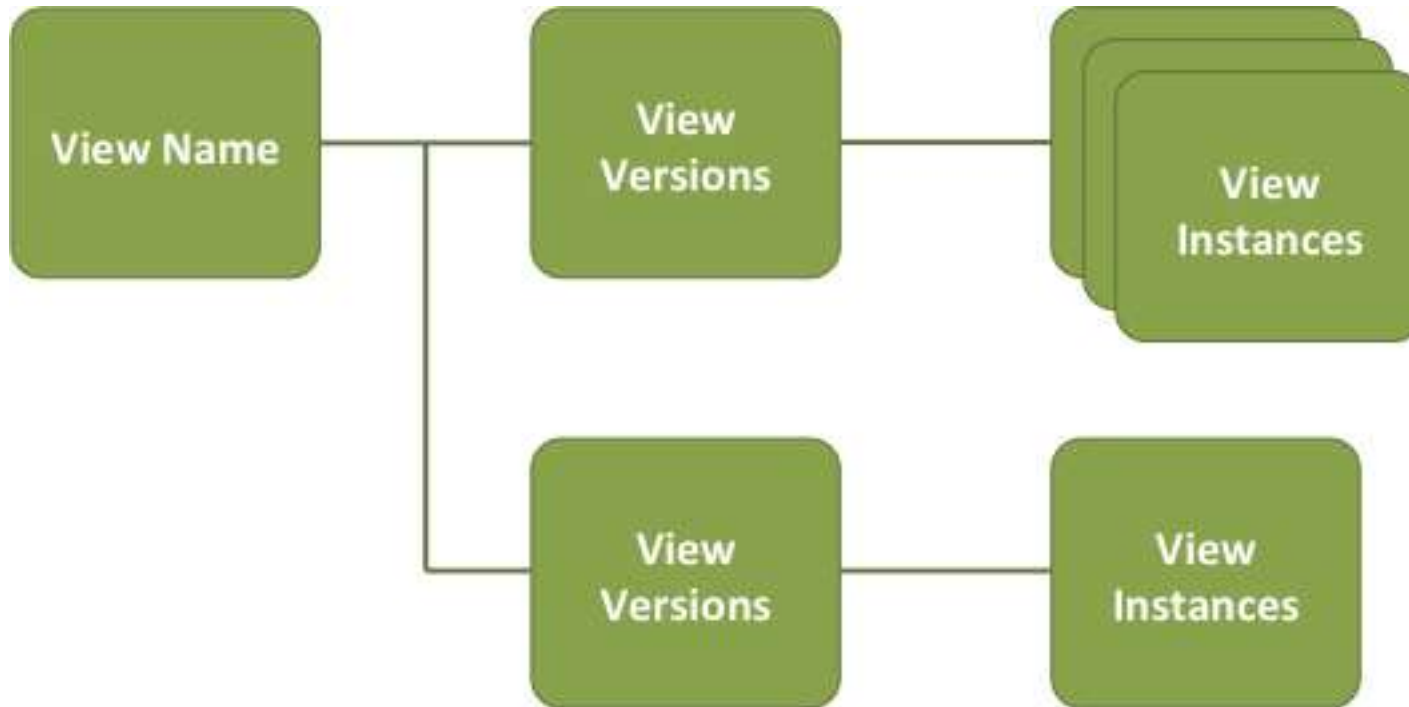
**Application logic : Supporting classes**

**Dependencies : 3rd party jars or classes**



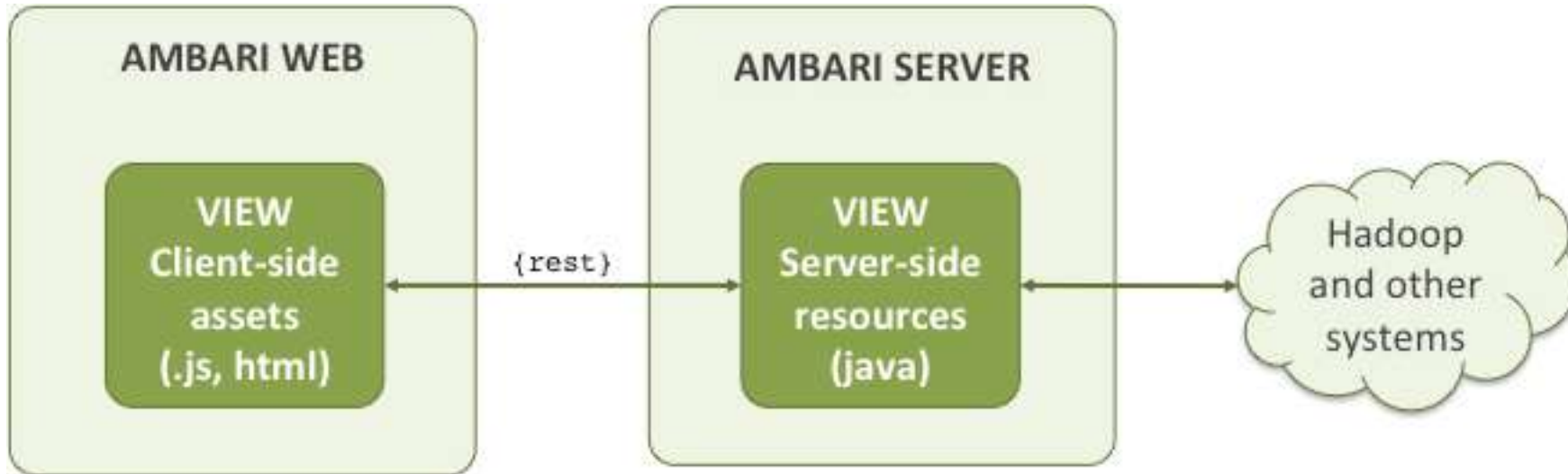
# View Versions and Instances

- **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

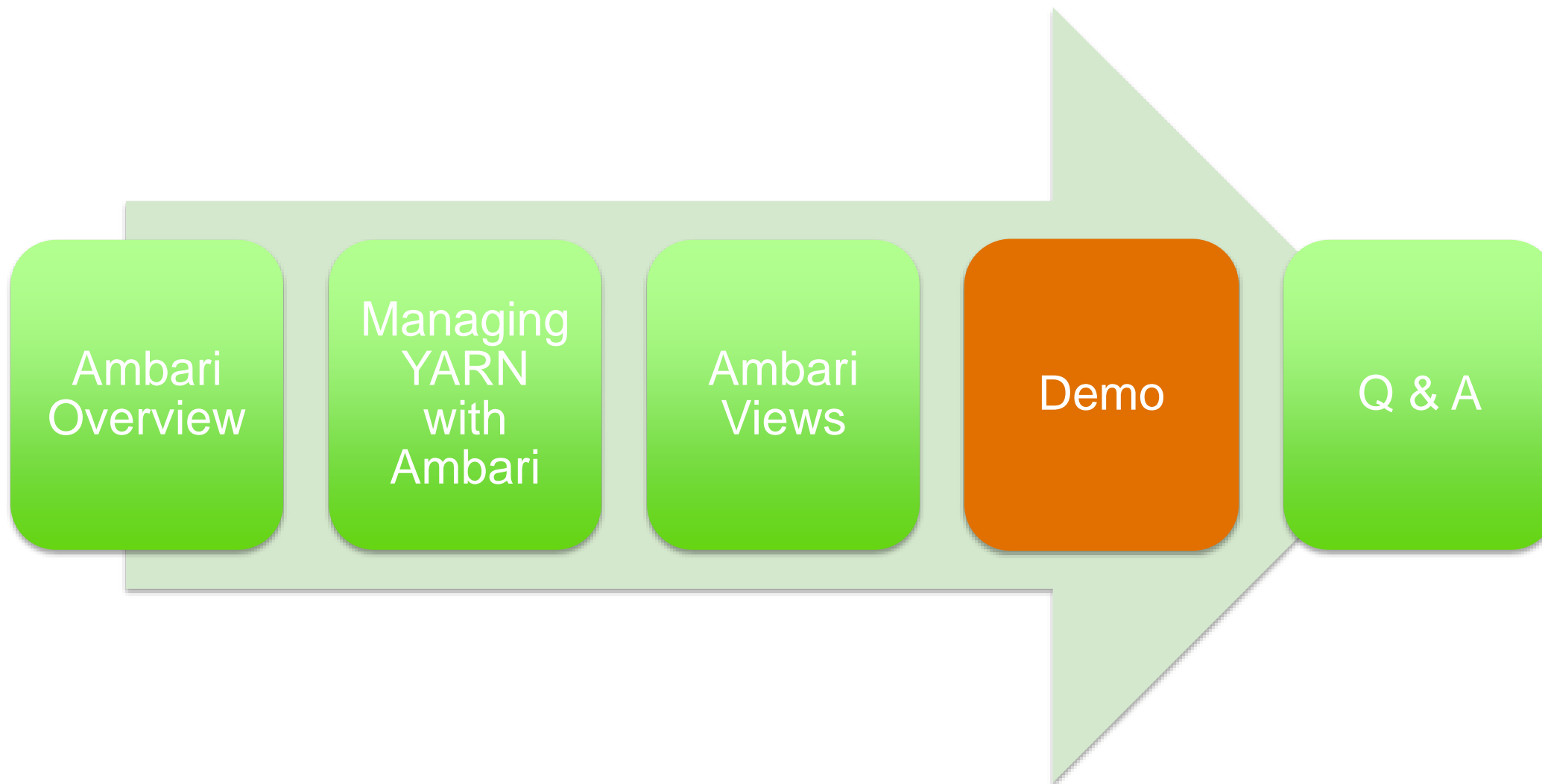
- **REST Endpoints**

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

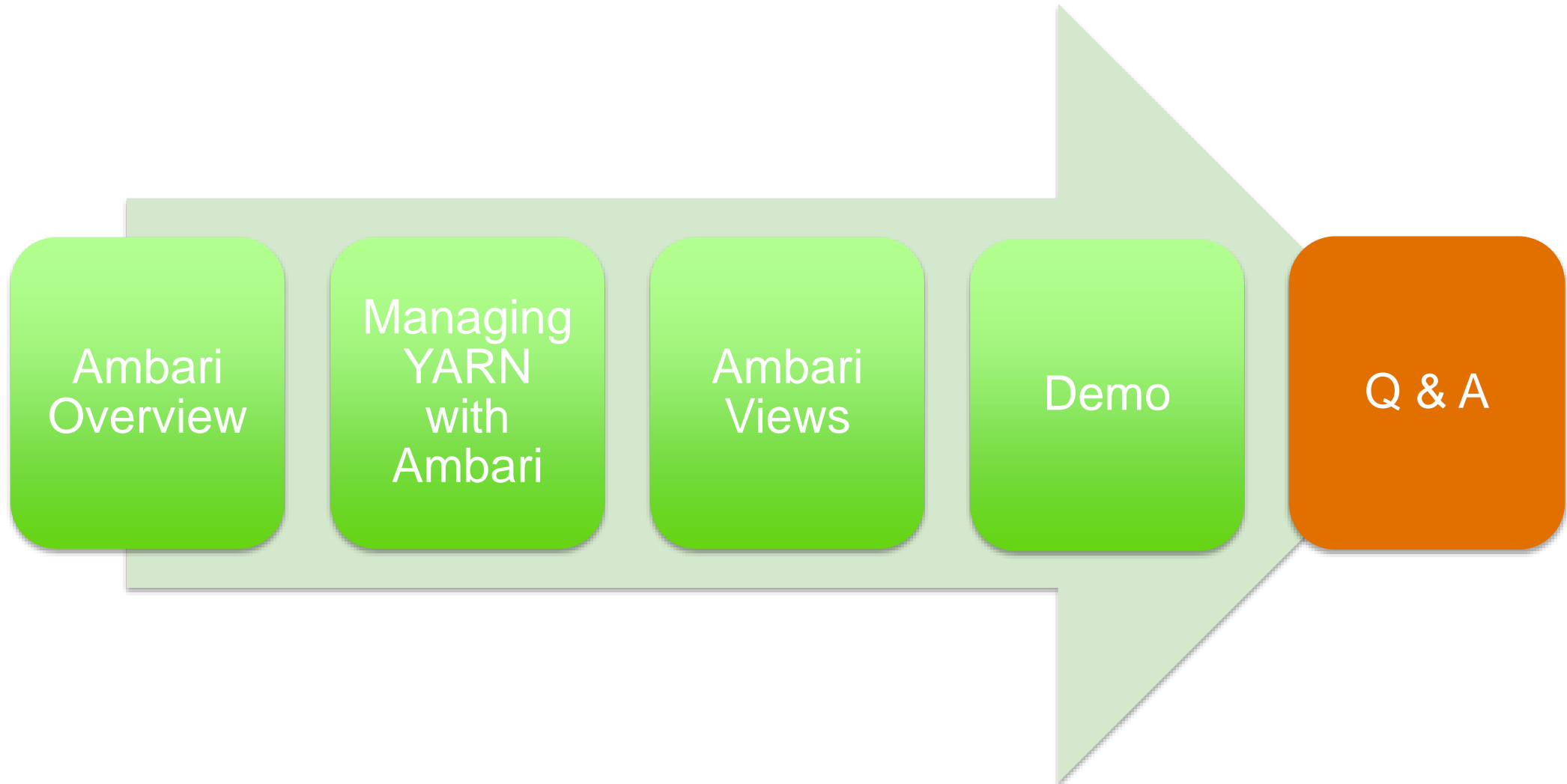
- **Ambari Spec Managed resources which provide enhanced API services**

```
<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

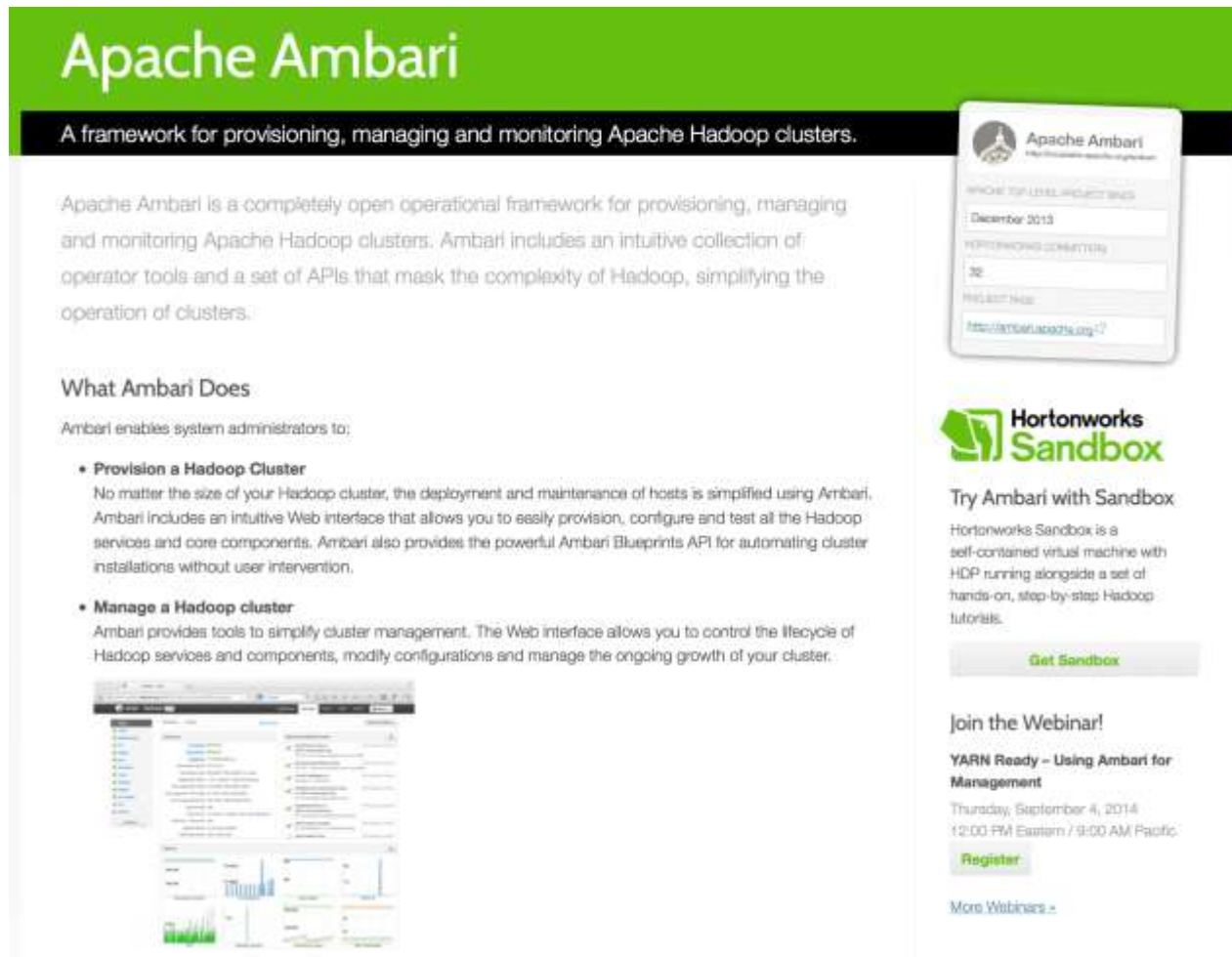


# Agenda



# 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, the main content area is white. On the left, there's a section titled "What Ambari Does" with two bullet points: "Provision a Hadoop Cluster" and "Manage a Hadoop cluster". To the right of this text is a vertical sidebar. It contains a "Hortonworks Sandbox" section with a "Get Sandbox" button, and a "Join the Webinar!" section with a "Register" button. At the bottom of the main content area, there's a screenshot of the Ambari web interface showing various charts and data.

- **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

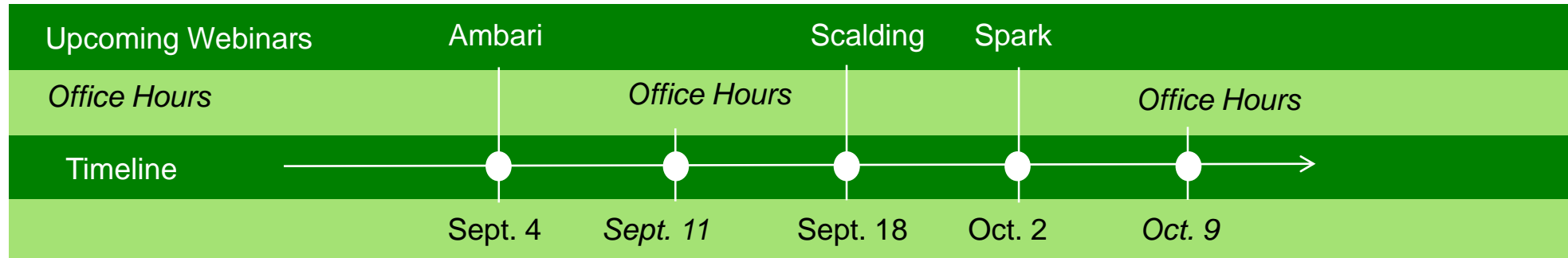
Dial in and chat with YARN experts

**We plan Office Hours for September 11<sup>th</sup> @ 10am PT**

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

***These will also be posted to [hortonworks.com/webinars](http://hortonworks.com/webinars)***

# YARN Ready Webinar Schedule



Recorded Webinars: [Introduction to YARN Ready](#) [Native Integration](#) [Slider](#) [Tez](#)

Visit: [Hortonworks.com/webinars/#library](http://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**