1. Download and import HDP into your virtual box and explain how Ambari is useful and the features of Ambari

The Apache’s Ambari is a [Hadoop management](https://acadgild.com/big-data/big-data-development-training-certification) tool aimed at making Hadoop management simpler by developing software for provisioning, managing, and monitoring Apache Hadoop clusters.

Ambari provides an intuitive, easy-to-use [Hadoop](https://acadgild.com/big-data/big-data-hadoop-administration-training-certification) management web UI backed by its restful APIs (Definition given by Apache Ambari)

How it works?

* Ambari server will be running on one machine in the cluster.
* Ambari agent will be running on all machines in the cluster.
* Ambari agent sends data collected from all machines such as resource utilization (Memory, storage, CPU etc.)
* Data will be stored in a relational database which will act as repository
* Ambari server consolidates this information and provides capabilities such ASN alerts, dashboards etc.

Features:

Ambari makes Hadoop management simpler by providing a consistent, secure platform for operational control. Ambari provides an intuitive Web UI as well as a robust REST API, which is particularly useful for automating cluster operations. With Ambari, Hadoop operators get the following core benefits:

* **Simplified Installation, Configuration and Management.** Easily and efficiently create, manage and monitor clusters at scale. Takes the guesswork out of configuration with [Smart Configs](https://cwiki.apache.org/confluence/display/AMBARI/Enhanced+Configs) and Cluster Recommendations.  Enables repeatable, automated cluster creation with [Ambari Blueprints](https://cwiki.apache.org/confluence/display/AMBARI/Blueprints" \t "_blank).
* **Centralized Security Setup.** Reduce the complexity to administer and configure cluster security across the entire platform. Helps automate the setup and configuration of advanced cluster security capabilities such as Kerberos and [Apache Ranger](https://hortonworks.com/apache/ranger/).
* **Full Visibility into Cluster Health.** Ensure your cluster is healthy and available with a holistic approach to monitoring. Configures predefined alerts — based on operational best practices — for cluster monitoring. Captures and visualizes critical operational metrics — using [Grafana](http://grafana.org/) — for analysis and troubleshooting. Integrated with[Hortonworks SmartSense](https://hortonworks.com/products/subscriptions/smartsense/) for proactive issue prevention and resolution.
* **Highly Extensible and Customizable.** Fit Hadoop seamlessly into your enterprise environment. Highly extensible with[Ambari Stacks](https://cwiki.apache.org/confluence/pages/viewpage.action?pageId=38571133) for bringing custom services under management, and with[Ambari Views](https://cwiki.apache.org/confluence/display/AMBARI/Views) for customizing the Ambari Web UI.









