Hortonwork sandbox installation

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Institute of Management Science

Course Code: Big Data Programming

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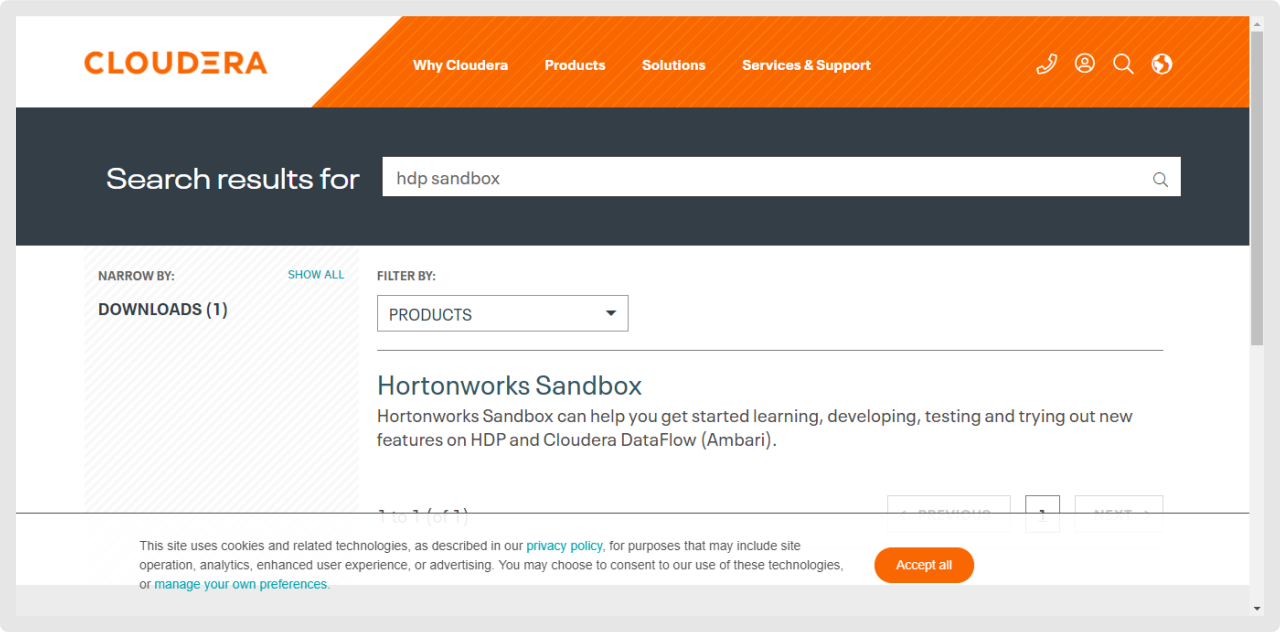
20th October, 2021

Installation of Hortonworks Sandbox

Step-1:



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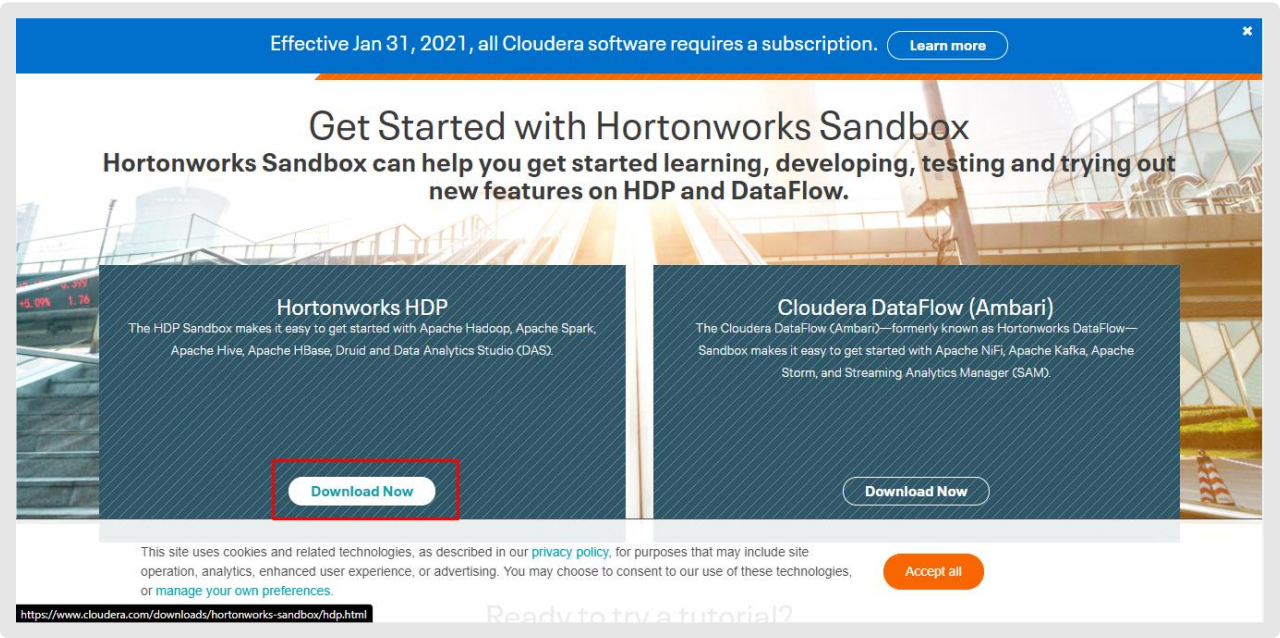

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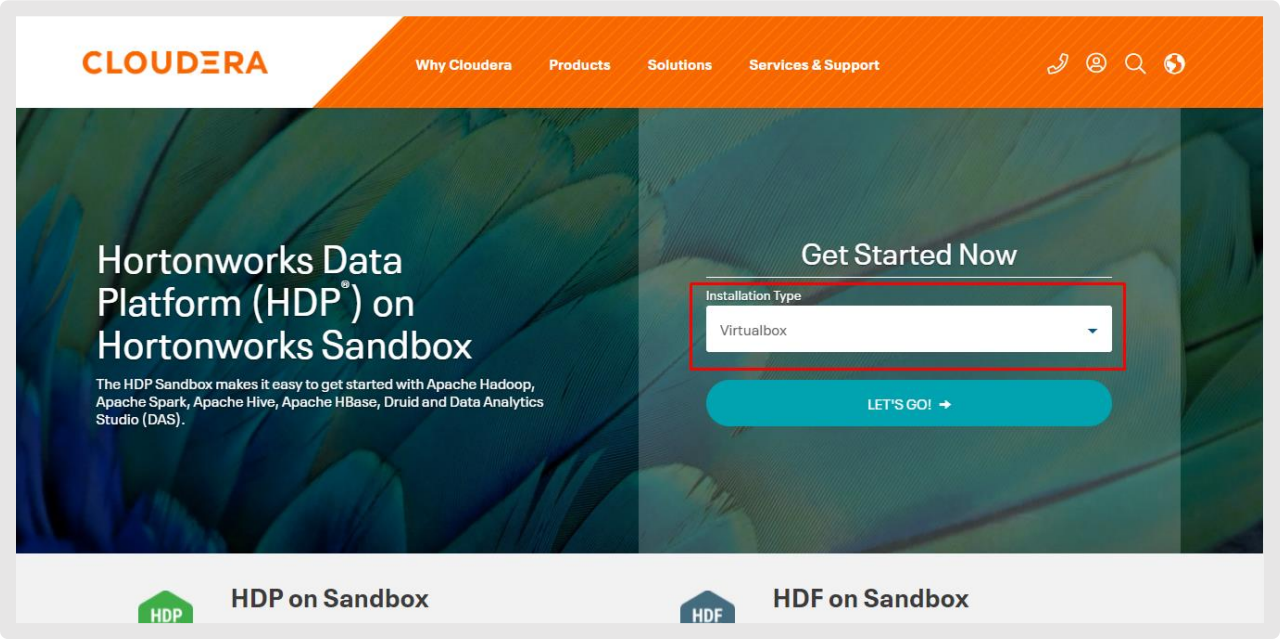
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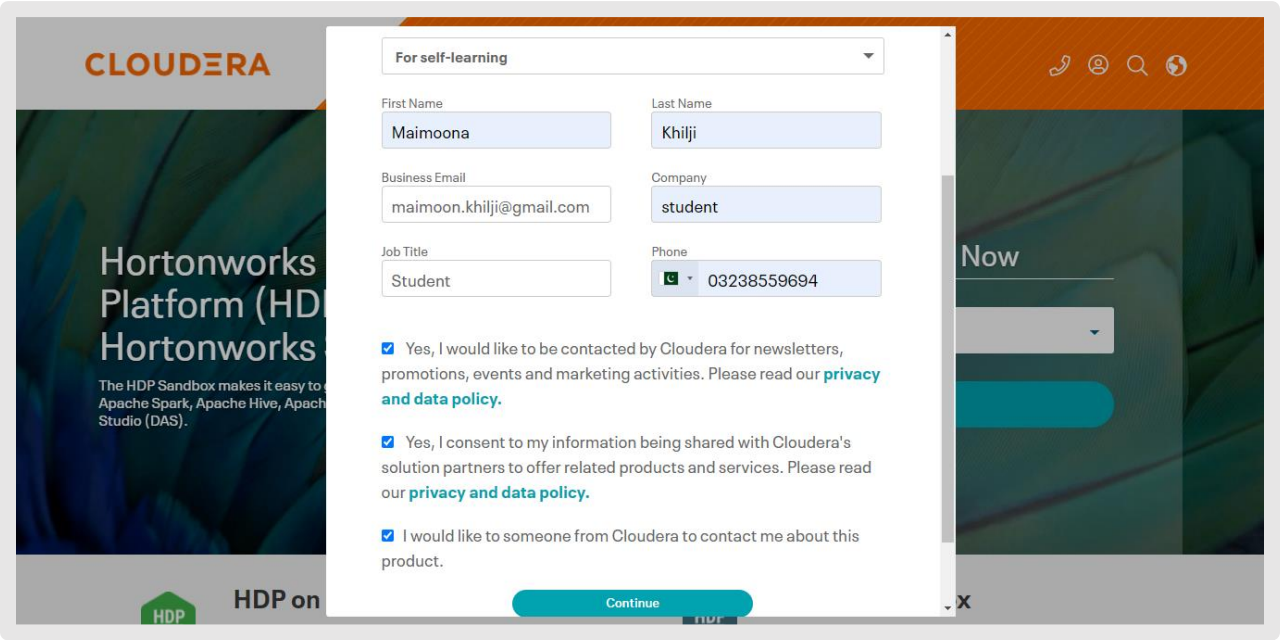
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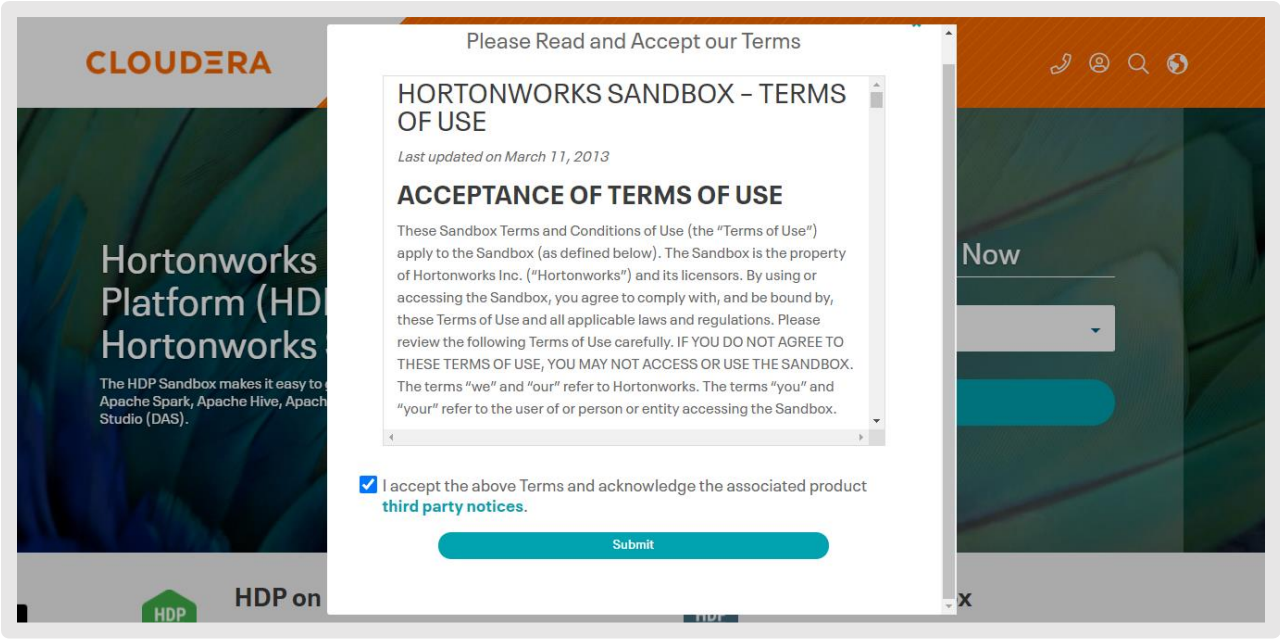
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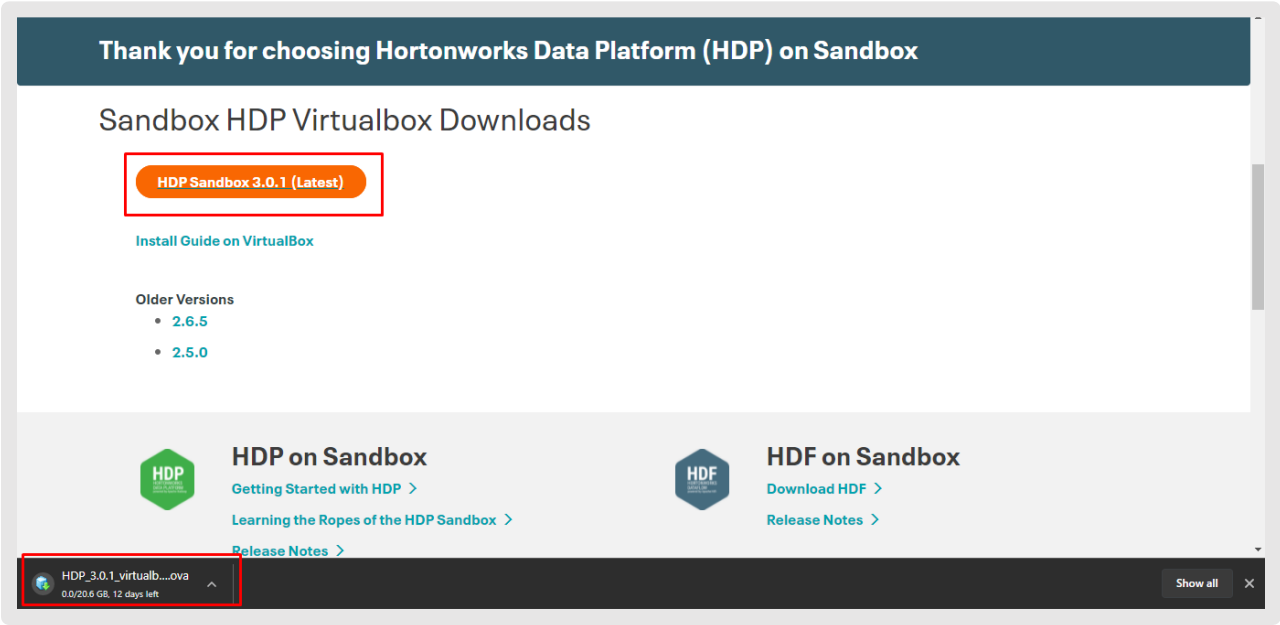
Step-6: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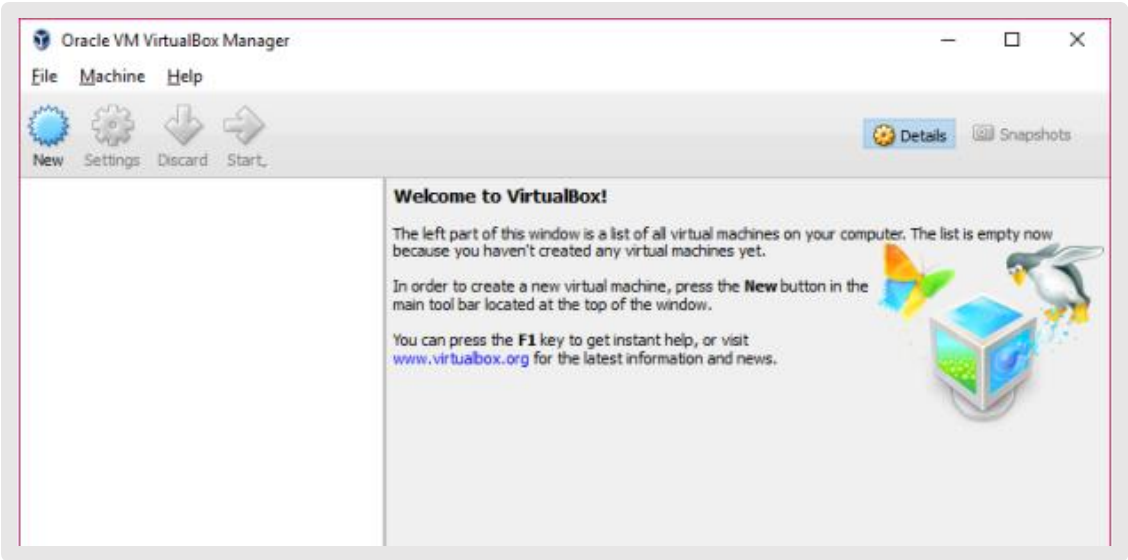
Step-7:

After downloading the sandbox, install it on Oracle Virtual Box.



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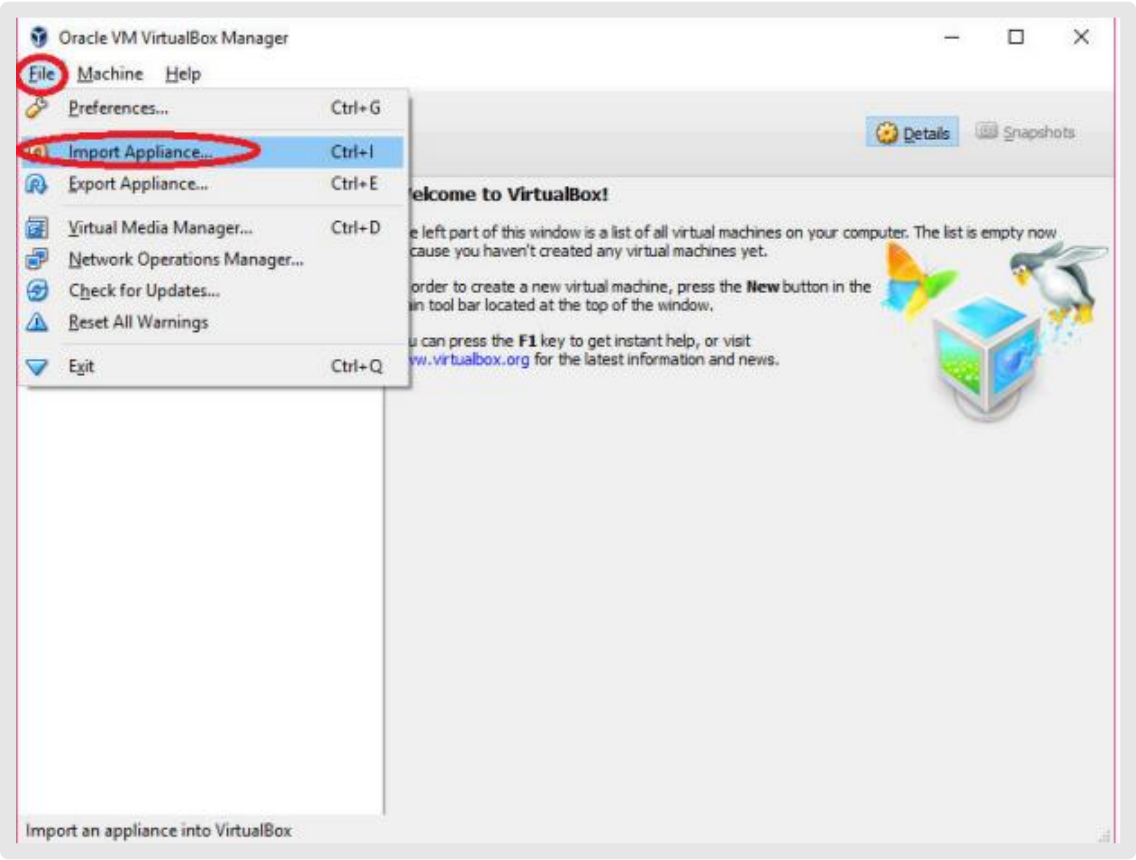

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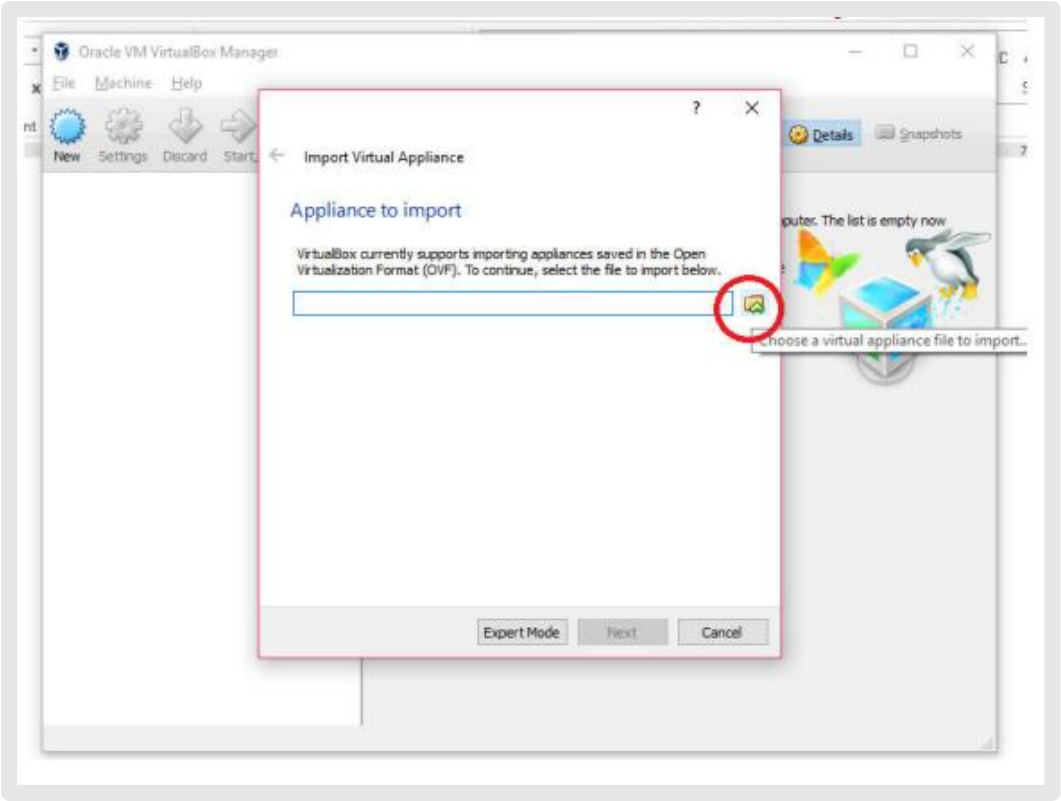

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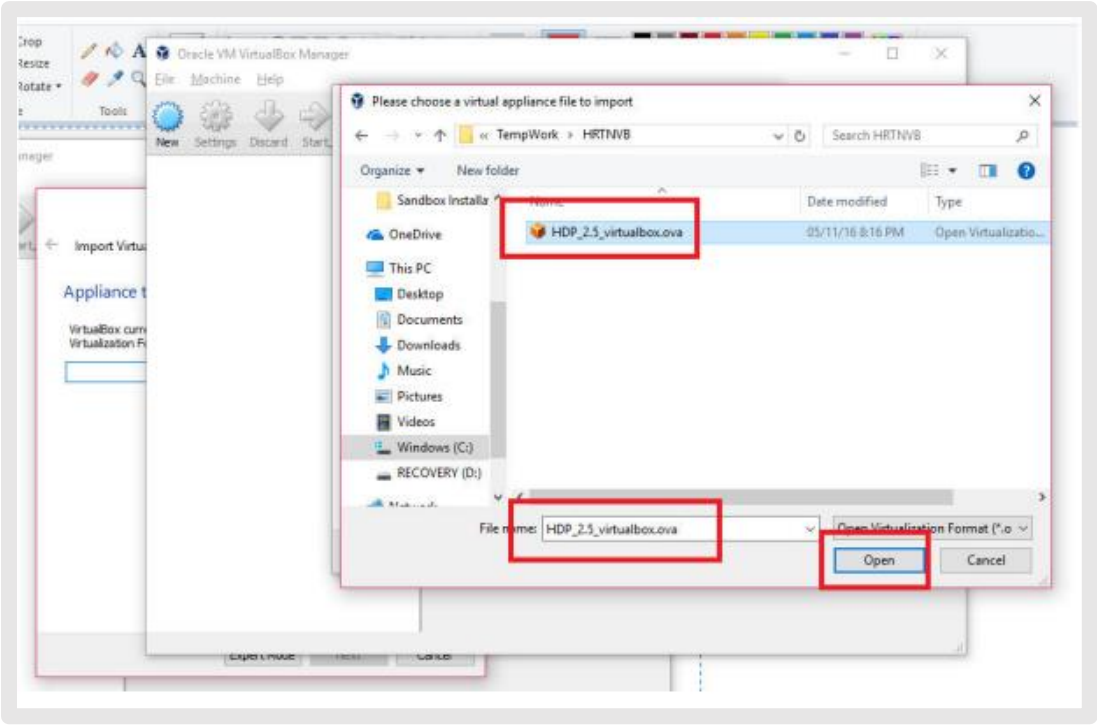

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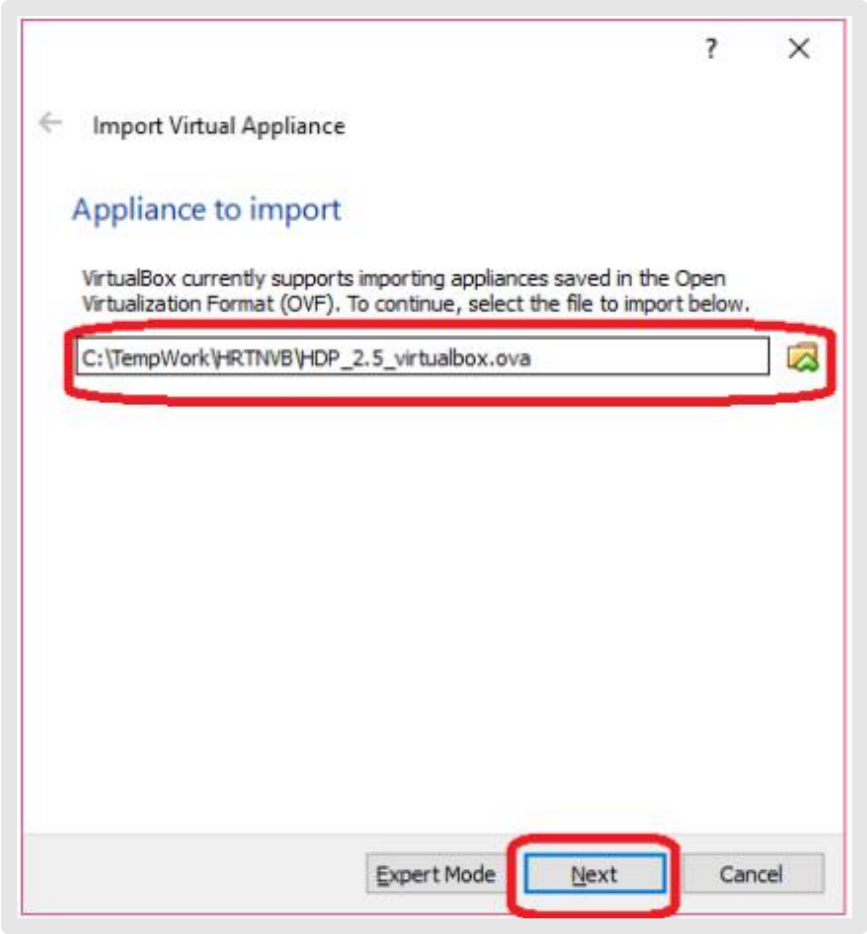

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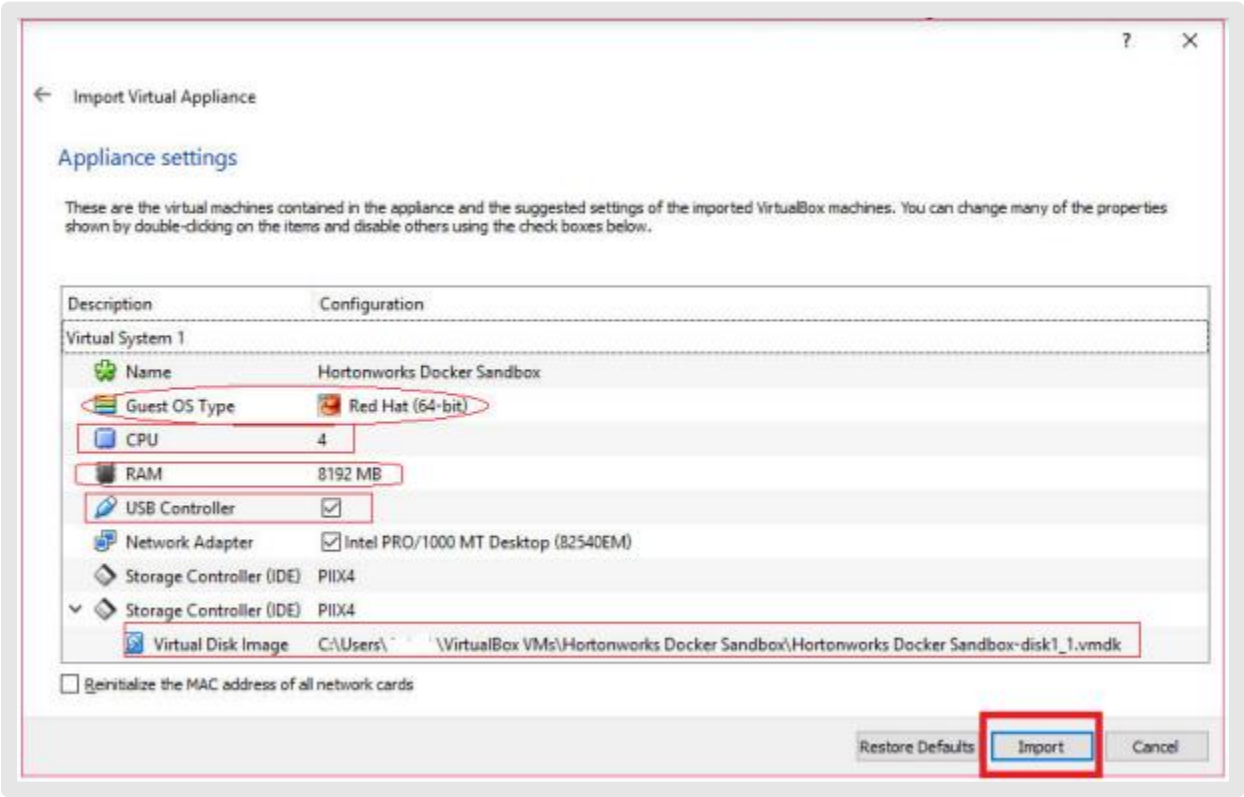

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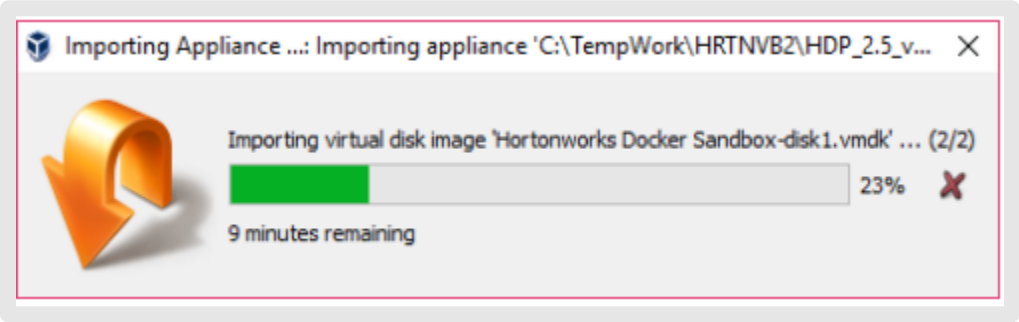

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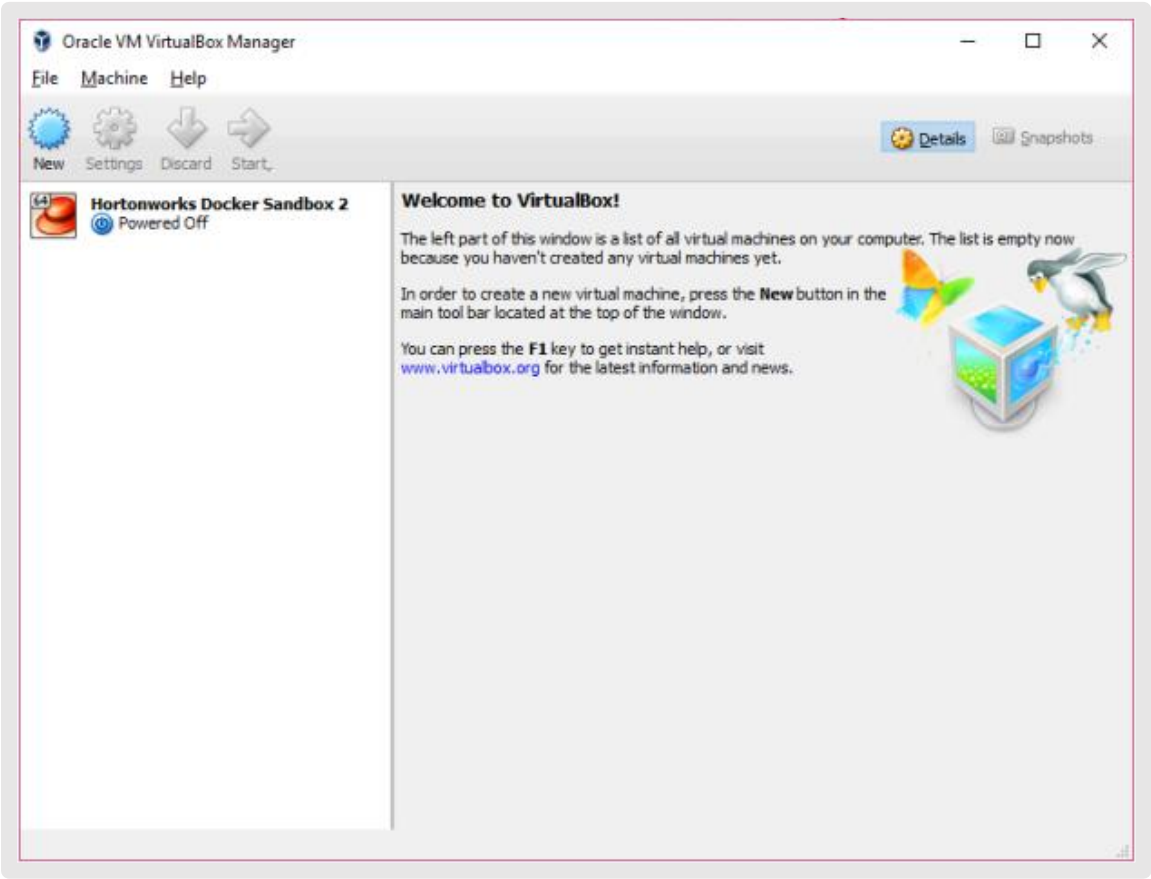

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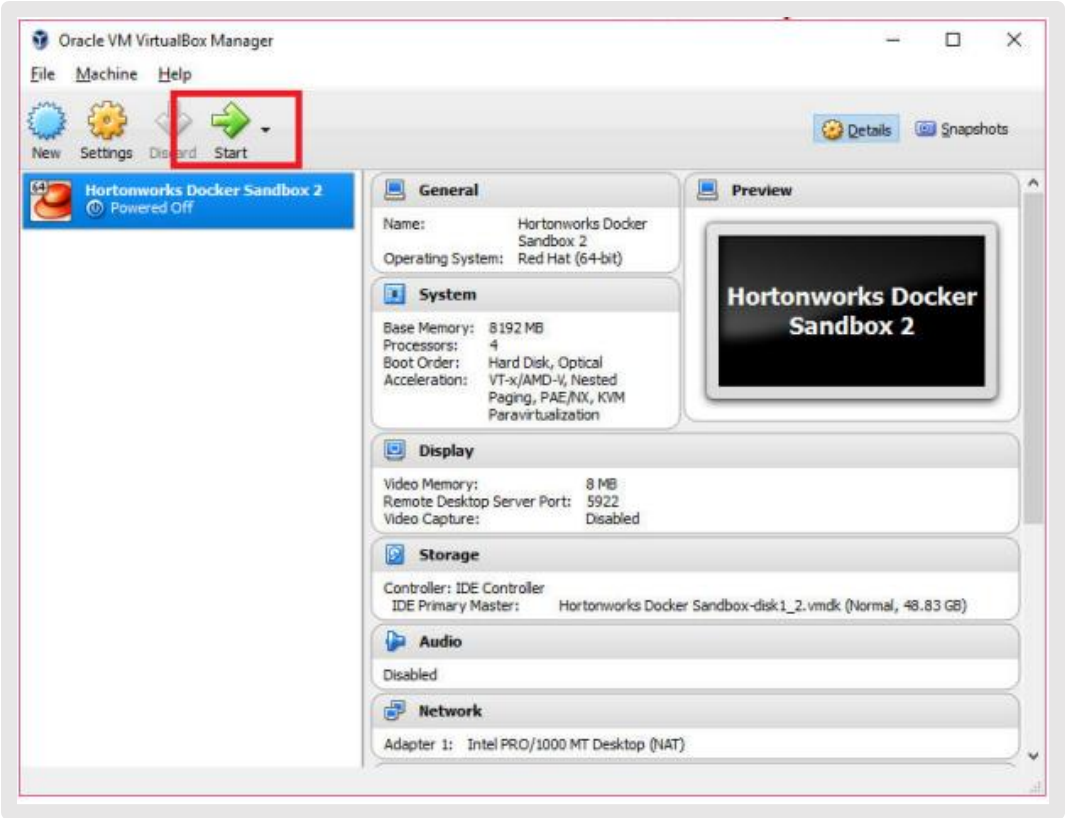

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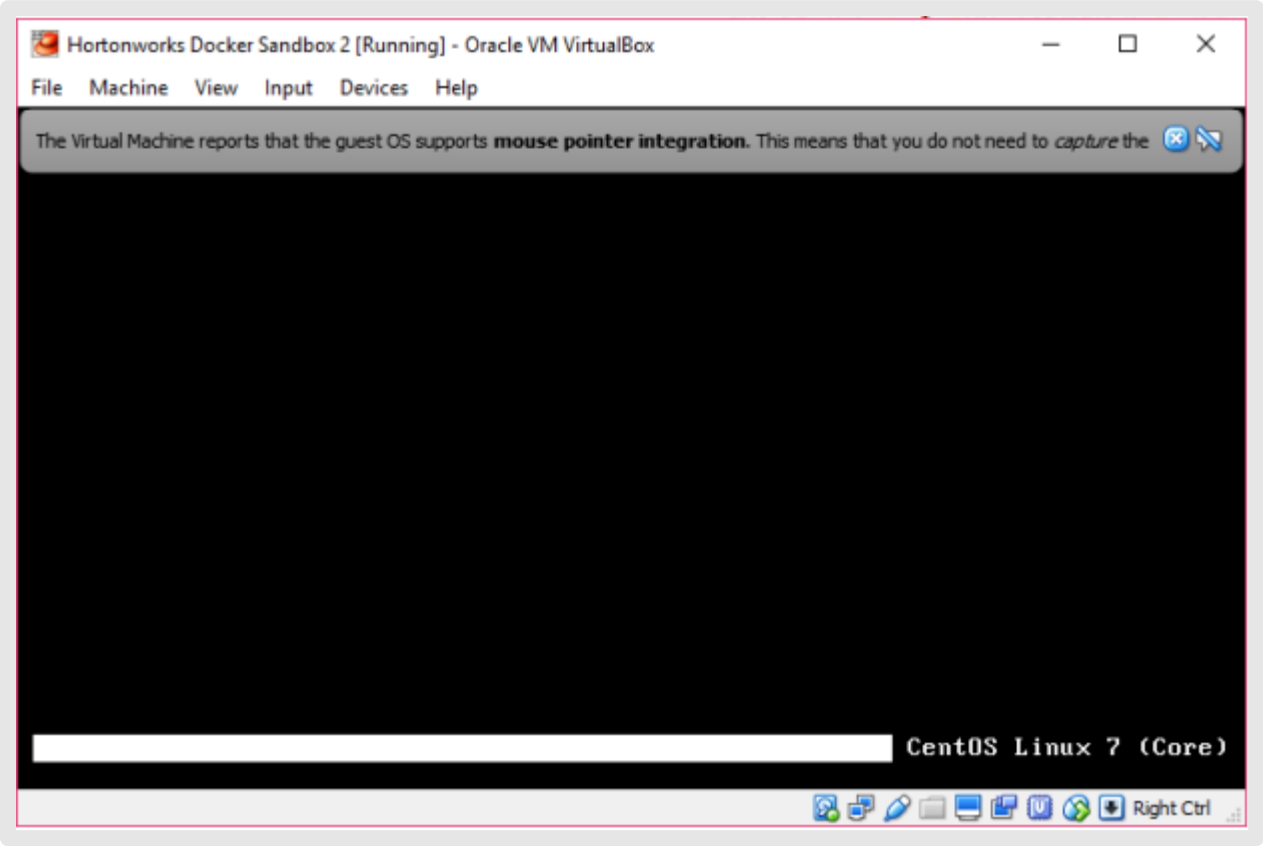

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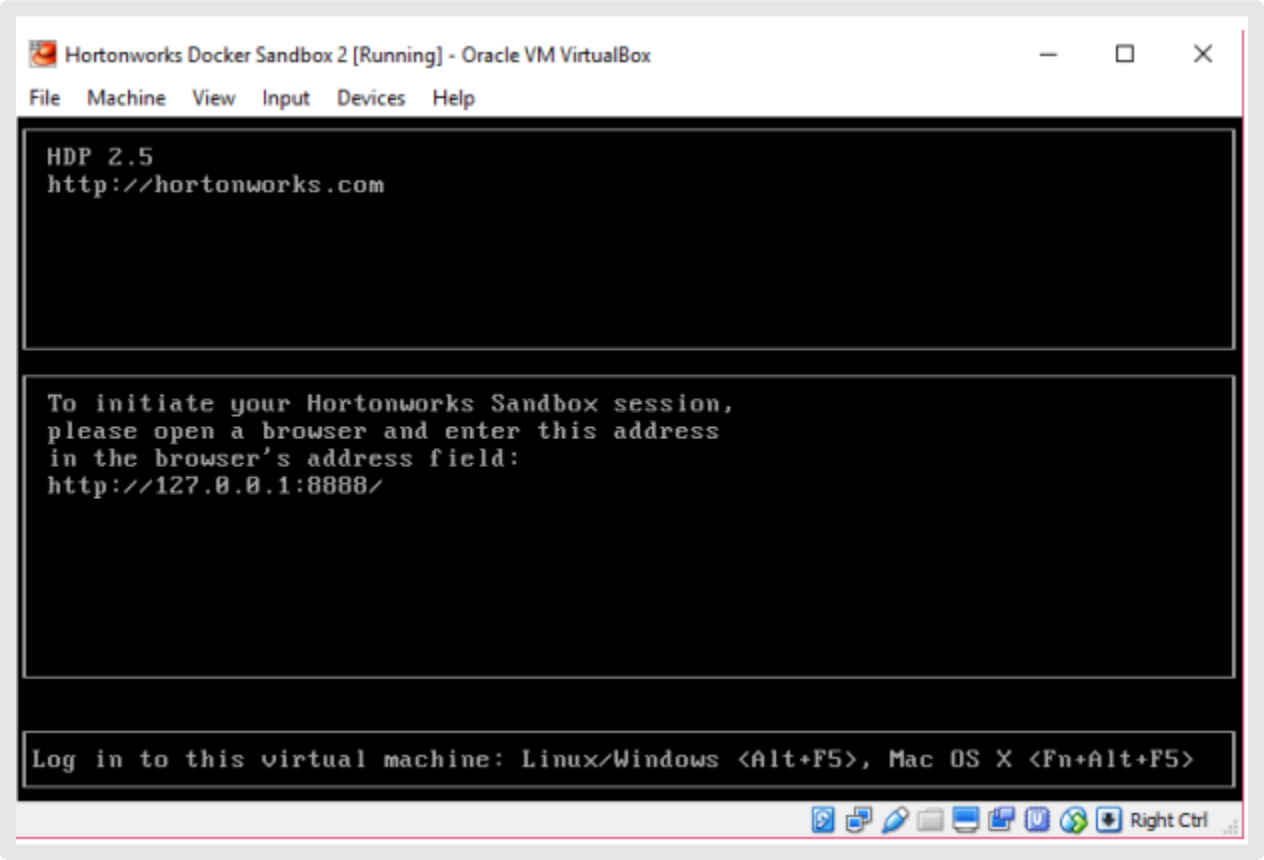
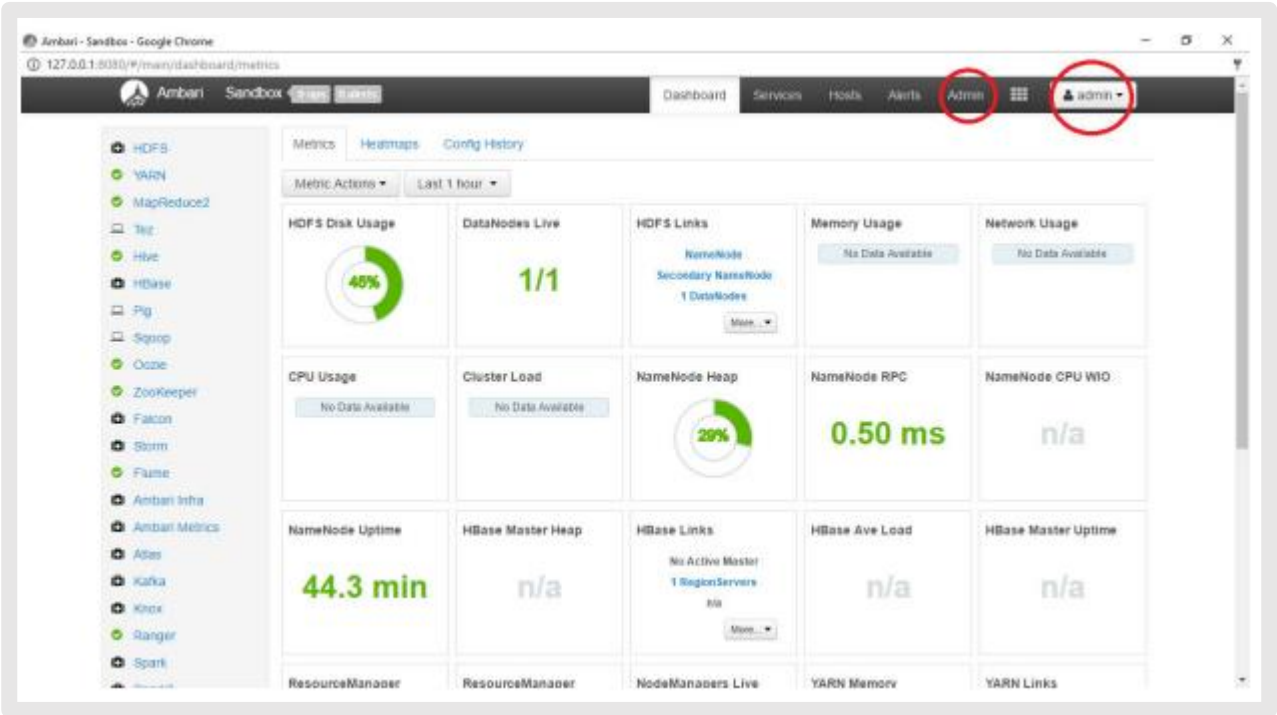


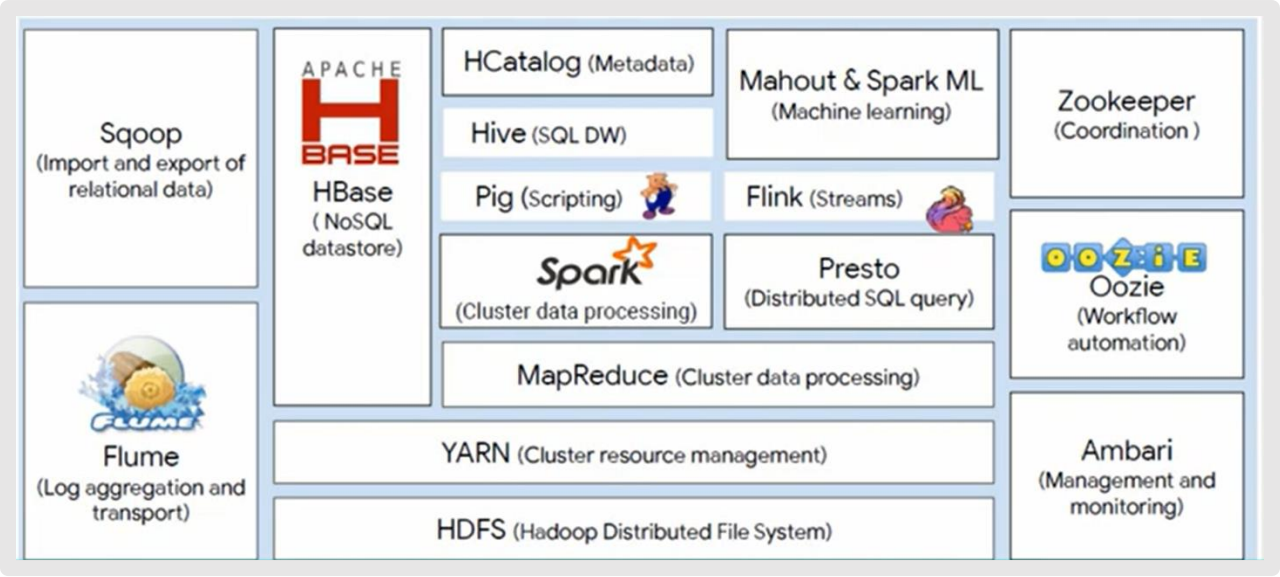
Step-18:

Now open the browser and start working on ambary after signing in.



Hadoop Ecosystem

Hadoop ecosystem is a platform that provides different services to deal big data. It consists of storage, processing, management, access /injection of big data and many more services.



The utilities of Hadoop ecosystem can be explained in basic three layers:

1. Data injection

Modules used for data injection are:

- **Flume:**
  Flume is used for data collection from different resources and then transfer it to one centralized repository. It is used to capture stream of moving data.

- **Sqoop:**
  Sqoop is used for transferring data between relational database and Hadoop.

2. Data storage and processing

Modules used for data storage, management and processing are:

- **HDFS:**
  HDFS is a Hadoop distributed file system. It is a primary data storage system. It is used to scale single cluster to hundreds or thousands of nodes.

- **YARN:**
  YARN stands for Yet Another Resource Negotiator. It is used to manage the resources and job scheduling in Hadoop.

- **Apache HBase:**
  Apache HBase is NoSQL, distributed big data store. It gives the random real-time access to petabytes of data.

- **Apache spark:**

  Apache spark provides an interface for programming the entire clusters.

  (Cluster Data Processing)

- **HCatalog:**
  HCatalog is table storage management tool. It enables users with different data processing tools to easily write data onto a grid.

- **Hive:**
  Hive facilitates users to alter, read, and manage the petabytes of data using SQL.

- **Pig:**
  Pig is a high-level scripting language that enables users to write complex data transformations without knowing high level languages (Like Java).

- **Mahout & Spark ML:**
  Mahout & Spark ML is used for creating scalable machine learning algorithms.

- **Flink:**
  Flink is a stream processing engine which is faster then Spark and Hadoop on the basis of Speed.

- **Presto:**
  Presto is a distributed SQL query engine designed for fast, interactive queries on data on HDFS.

- **MapReduce:**
  MapReduce is used for writing applications that can process huge amount of data on large clusers.

3. Interface

Modules used for interface are:

- **Zookeeper:**
  Zookeeper provides a centralized service for providing configuration information, naming, synchronization and group services over large clusters in distributed systems.

- **Oozie:**
  Oozie is a java web application used to schedule Hadoop jobs. It combines multiple jobs sequentially into one logical unit of work.

- **Ambari:**
  Ambari is an administration tool that is used to manage, monitor the health of Hadoop clusters.

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