



## TRAINING OFFERING

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# IBM Open Platform with Apache Hadoop (BigInsights V4.0) - SPVC

CODE:	LENGTH:	PRICE:
ZL1_2W606	2 days	£480.00

## Description

IBM Open Platform (IOP) with Apache Hadoop is the first premiere collaborative platform to enable Big Data solutions to be developed on the common set of Apache Hadoop technologies. The Open Data Platform initiative (ODP) is a shared industry effort focused on promoting and advancing the state of Apache Hadoop and Big Data technologies for the enterprise. The current ecosystem is challenged and slowed by fragmented and duplicated efforts between different groups. The ODP Core will take the guesswork out of the process and accelerate many use cases by running on a common platform. It allows enterprises to focus on building business driven applications.

This module provides an in-depth introduction to the main components of the ODP core --namely Apache Hadoop (inclusive of HDFS, YARN, and MapReduce) and Apache Ambari -- as well as providing a treatment of the main open-source components that are generally made available with the ODP core in a production Hadoop cluster.

If you are enrolling in a Self Paced Virtual Classroom or Web Based Training course, before you enroll, please review the **Self-Paced Virtual Classes and Web-Based Training Classes** on our Terms and Conditions page, as well as the system requirements, to ensure that your system meets the minimum requirements for this course.

<http://www.ibm.com/training/terms>

## Objectives

- List and describe the major components of the open-source Apache Hadoop stack and the approach taken by the Open Data Foundation.
- Manage and monitor Hadoop clusters with Apache Ambari and related components
- Explore the Hadoop Distributed File System (HDFS) by running Hadoop commands.
- Understand the differences between Hadoop 1 (with MapReduce 1) and Hadoop 2 (with YARN and MapReduce 2).
- Create and run basic MapReduce jobs using command line.
- Explain how Spark integrates into the Hadoop ecosystem.
- Execute iterative algorithms using Spark's RDD.
- Explain the role of coordination, management, and governance in the Hadoop ecosystem using Apache Zookeeper, Apache Slider, and Apache Knox.
- Explore common methods for performing data movement
  - Configure Flume for data loading of log files
  - Move data into the HDFS from relational databases using Sqoop
- Understand when to use various data storage formats (flat files, CSV/delimited, Avro/Sequence files, Parquet, etc.).
- Review the differences between the available open-source programming languages typically used with Hadoop (Pig, Hive) and for Data Science (Python, R)
- Query data from Hive.
- Perform random access on data stored in HBase.
- Explore advanced concepts, including Oozie and Solr

## Audience

This intermediate training course is for those who want a foundation of IBM BigInsights. This includes: Big data engineers, data scientist, developers or programmers, administrators who are interested in learning about IBM's Open Platform with Apache Hadoop.

## Prerequisites

None, however, knowledge of Linux would be beneficial.

## Programme

### Unit 1: IBM Open Platform with Apache Hadoop

- Exercise 1: Exploring the HDFS

### Unit 2: Apache Ambari

- Exercise 2: Managing Hadoop clusters with Apache Ambari

### Unit 3: Hadoop Distributed File System

- Exercise 3: File access and basic commands with HDFS

### Unit 4: MapReduce and Yarn

- Topic 1: Introduction to MapReduce based on MR1
- Topic 2: Limitations of MR1
- Topic 3: YARN and MR2
- Exercise 4: Creating and coding a simple MapReduce job
- Possibly a more complex second Exercise

### Unit 5: Apache Spark

- Exercise 5: Working with Spark's RDD to a Spark job

### Unit 6: Coordination, management, and governance

- Exercise 6: Apache ZooKeeper, Apache Slider, Apache Knox

### Unit 7: Data Movement

- Exercise 7: Moving data into Hadoop with Flume and Sqoop

### Unit 8: Storing and Accessing Data

- Topic 1: Representing Data: CSV, XML, JSON, and YAML
- Topic 2: Open Source Programming Languages: Pig, Hive, and Other [R, Python, etc]
- Topic 3: NoSQL Concepts
- Topic 4: Accessing Hadoop data using Hive
- Exercise 8: Performing CRUD operations using the HBase shell
- Topic 5: Querying Hadoop data using Hive
- Exercise 9: Using Hive to Access Hadoop / HBase Data

### Unit 9: Advanced Topics

- Topic 1: Controlling job workflows with Oozie
- Topic 2: Search using Apache Solr
- No lab exercises

## Further Information

Prior to enrolling, IBM Employees must follow their Division/Department processes to obtain approval to attend this public training class. Failure to follow Division/Department approval processes may result in the IBM Employee being personally responsible for the class charges.

GBS practitioners that use the EViTA system for requesting external training should use that same process for this course. Go to the EViTA site to start this process:

<http://w3.ibm.com/services/gbs/evita/BCSVTEurl.nsf>

Once you enroll in a GTP class, you will receive a confirmation letter that should show:

- The current GTP list price
- The 20% discounted price available to IBMers. This is the price you will be invoiced for the class.

## Session Dates

On request. Please [contact us](#)

## **Additional Information**

This training is also available as onsite training. Please contact us to find out more.