Linux

* host , terminal , shells , and linux console.
* linux commands
* Linux boot , directory structure
* Worked on basic linux commands including whoami , sudo , su , tty , ps , man etc
* Worked on basic commands of linux file system
* vi editor with commands
* chown, chgrp, and chmod
* What are file owners?
* Soft/Hard Link creation
* Worked on commands of Topic 3:  linux file system
* vi editor :
* Create or update files using vi
* Basic vi commands(copy,paste,delete,set line number)
* Grep , Awk , sed, Cat along with the various options .
* Worked on package creation
* Creation of SPEC files , tar files  , extraction and untar
* Wget and df
* Apt command and its options
* Introduction to YUM and RPM
* Worked on RPM and YUM
* Redirection
* Package creation and installation
* RPM utility.
* Creating file system
* Mount and unmount , Create a mount on Linux FS
* Commands : lscpu, /proc/cpuinfo , /proc/meminfo  , /proc/version , fsdsk, lscpi , lsusb , lsblk etc
* Using top command
* Using vmstat
* Using mpstat
* Using psrstat
* Using ps and its options
* telnet command usage
* ipconfig, traceroute, ping, ping6, dig, nslookup, lsof, iptables
* open and close ports
* Using  Netstat
* Using Free
* network files
* Routes in Linux
* loopback
* Curl command
* System Services overview start, restart
* Service , systemctl  , chkconfig
* Creation of local and remote repo
* network files
* Routes in Linux
* Loopback
* Iptables : types , blocking , forwarding , logging  , searching , flush ,restore etc.
* Nc command
* Types of network configuration file
* Routing : persistent static routing , reject routing
* Curl command : download , redirection , s3ending emails
* Using ps and its options
* Tcpdump
* Netstat
* sar
* free

USER AND GROUP MANAGEMENT :

* Start and stop apache httpd services
* check status of services
* run levels

SERVICES :

* Introduction to Users and Group
* Add/ delete User and group.
* Ssh Protocol
* to shell scripting
* Crontab
* Passing arguments
* Array , comparison
* String operations
* Shell scripting : practical’s
* Install Java- JDK and JRE on Linux
* Setup the system variables
* Set up a Cron Job for a periodic backup
* Log monitoring: Search single key word in apache/nginx or any application log file, and generate a new file with time stamp when the key work occurred in the file.
* Monitoring of Port:shell script to find the process (pid, pname) listening on a given port
* shell script for log rotate , i.e. if log of a file size go beyond a limit, create an archive file with time stamp and reduce the log size
* cron job to run the scripts on daily basis
* shell script find 0 sized files and delete.
* shell script to avoid Ctrl + C key input to abort shell script.
* additional script on daily and weekly job scheduling
* shell script find 0 sized files and delete.
* script to capture CPU utilization of entire system and a specific process.  Inline parameters for scripts are process id and monitoring interval in seconds
* shell script to avoid Ctrl + C key input to abort shell script.
* Using cURL command write a shell  script to verify  pivot.impetus.co.in up and running.
* Create a script which search files which are larger than X MB (inline input) and search in a path (inline input) recursively and prompt for deletion.
* shell script which copy file(s) from a directory SRC to DST and then validate both the destination are sync in then delete files from SRC folder. Also add this script in cron job for to run on 1300 hrs every day.
* shell script which takes read list of services name from file and for each service it checks the status & if they are down/not running, then try to start the service, if it fails, then logs the time and service name in a file.
* script to upload and retrieve files from a remote directory using FTP. (I don’t have credentials for any other machine to check)
* script for facilitate a user to access a Linux box without any password (auto-ssh), After running script user can access host without password. On running script ask input of hostname and user.
* script which starts multiple rsync sessions in background. And monitor all the rsycn session in every 5 seconds, when all rsycn session completed then prompt a message Rsync Processes completed.

Docker

* Docker ,Why Docker?
* Docker vs VM.
* Install Docker on the Machine.
* Docker components
* Commands:  Run , Pull , inspect , rmi , ps , history , top, stop , rm , stats , attach , pause , unpause , Kill
* Lifecycle of docker
* Docker Architecture and major components.
* Docker image and container
* Docker commands
* Creating docker images : Build an image from your Dockerfile and Run it.
* Docker files: Best practices for writing docker file.
* Docker commands
* Docker repository
* Docker files: Best practices for writing docker file.
* Docker commands
* Docker hub , docker port mapping
* Docker layers
* Docker/whalesay
* Docker compose installation
* Basics of docker compose
* Worked on Alpine : pull , run , ls
* Docker container instances : instance creation
* Container isolation : start , listing , exec
* Tagging of images and image creation
* Created a dockerfile for understanding of concepts : FROM , RUN , COPY , WORKDIR .
* Docker build and run
* Worked on environment variables of a docker file, created a dockerfile to implement the same : ADD
* COPY
* ENV
* EXPOSE
* FROM
* LABEL
* USER
* VOLUME
* WORKDIR
* Worked on dockerfiles : webserver docker file
* Jenkins with docker
* Instruction commands : cmd , entrypoint , env , workdir
* Docker compose
* Working with NGNIX docker container
* Dockerfile to copy the contents from local
* Dockerfile to add the local files into docker image
* Various build options in dockerfile
* Apache Services up and Running
* Worked on port expose and mapping for better understanding
* Working with mysql docker container
* Docker compose installation
* Dockerfile to install mysql
* Defined services in a compose file
* Docker-compose.yml for mysql and ngnix
* Clarity on ports , expose
* Storage drivers
* User defined bridges
* Connect /disconnect a container to/from a user defined bridge
* Introduction to overlay
* Docker-compose file for mysql
* Implemented volume using the same compose file
* Created a bridge network and attached a container on it .
* Worked on docker networking – CNM model
* Created multiple networks and tried to bind multiple containers with them –connect , create, disconnect , inspect , ls , rm .
* Communication between containers
* Introduction to overlay and docker swarm
* Introduction to overlay and docker swarm
* Worked on overly network
* Created a image for mysql , and working on its installation
* Worked on multi host networking
* Data volumes : Creating an Independent Volume
* Creating a Volume that Persists when the Container is Removed
* Creating a Volume from an Existing Directory with Data
* Sharing Data Between Multiple Docker Containers
* Worked on –v and –mount
* Create and manage volumes
* Start a container or a service with volume
* Volume driver
* Backup, restore, or migrate data volumes
* Remove volume
* Jenkins installation and dockerize Jenkins
* Tried to dockerize Jenkins
* Jenkins and virtualbox installation
* Docker swarm
* Swarm nodes
* Creating swarm clusters
* Docker swarm : init , join-token , join , leave , unlock , unlock-key update and their options
* Create a swarm , add nodes to swarm
* Deploy a service , inspect a service,
* Scale a service, delete the service .
* Swarm mode , join nodes to a swarm
* Swarm mode key concepts
* How it works
* Run docker in swarm mode
* Join nodes to swarm
* Manage nodes in swarm
* Revised docker a bit
* Prune unused docker objects
* Logging : view a container log , logging drivers
* Logging driver details
* Worked on the understanding part , just to understand the script better : automation.sh
* Updated the README , on the basis of understanding .
* Created cluster once and make the services up and running
* Worked on issues related to oozie service installation (pending)
* Worked on mysql installation on centos
* Learned about attaching volume on a running container
* Investigated on error : failed to get dbus  connection , while installing mysql
* Tried to attach volume on running container using nsenter
* Tried to open ports on running container   , documented the same
* Worked on hdp bridge 2.6
* creating private registry on docker
* Hdp\_bridge \_2.5 cluster setup on 23 Machine . Services are up and running
* Tested hdp bridge 3.0  with changes on 23 machine

Hadoop

* Hadoop cluster setup for ee , documentation
* VNC and Influxdb installation
* Kerberos setup for ee
* Kerberos keytab creation
* Kerberos configuration on cluster
* Hadoop ecosystem and components
* Hadoop architecture
* HDFS
* HADOOP installation
* Name Node,Data Node,Job Tracker,Task-tracker,Map Reduce
* Installation of Hadoop on box, successfully starting all above entities.
* BasicConcepts(WhatisHDFS,HDFSUseCases,BlockStructure)
* Daemons,theirfunctioningandcommunicationbetweenthem(Namenode,Datanode,Secondary
* XML files (core-site.xml,hdfs-site.xml,mapred-site.xml)
* Hadoop and jdk installation.
* Configfiles and parameters
* Basic fs Commands
* Configuring Hadoop daemons
* Web HDFS rest API : File and directory operations including create , read, open , rename , delete
* HDFS Commands : fsck , ls, mkdir , touchz, du ,cat, text , put , get .
* Bashrc  , bash\_profile  configuration for Hadoop and java
* I’ve configured HIVE and SPARK properly on 172.26.72.212 , kindly check .
* Namenode/Datanode Web Interface
* Start/Stop Various Daemons
* Re-Installed and configured Hadoop on 60 and 212 ,
* Configured hive on 212 as hive-schema-2.1.0.derby.sql was not properly initialized .
* HDFS Replication
* Blocks and significance of block size.
* Name node and data node communication
* Understanding HDFS web interface
* Reading and writing data on HDFS , and the related commands
* Hadoop ecosystem
* Hadoop encryption and security management
* Distribution of files splits/Replication.
* Documented the major issues
* Basic Concepts (KeyValue type Programming, basic flow of data/logic in MapReduce)
* Hadoop cluster : masters (namenode , resource manager ) and slaves (datanode and node manager)
* Hadoop high availability : failover , zookeeper , zkfc
* Job Scheduler Basics : fifo , fair , capacity
* Eclipse Setup for MR Jobs , still facing some challenge.
* understand difference phases in a Map reduce execution (Map,Sort,Shuffle and reduce) .
* Type of mappers and reducers
* Trying to write a map reduce job , facing issue with java program compilation .
* Word count job ,
* How read recorder , mapper , reducer work together
* Master and slave services
* Data locality
* Custom Partitioner and Combiner
* Custom Comparators
* Daemons,theirfunctioningandcommunicationbetweenthem(Namenode,Datanode,Secondary)
* Name node and data node communication
* XML files (core-site.xml,hdfs-site.xml,mapred-site.xml)
* Hadoop and jdk installation.
* Configfiles and parameters
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* Configuring Hadoop daemons
* Web HDFS rest API : File and directory operations including create , read, open , rename , delete
* Bashrc  , bash\_profile  configuration for Hadoop and java
* configured HIVE and SPARK.
* Namenode/Datanode Web Interface
* HDFS Replication
* Blocks and significance of block size.
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* Job Tracker/ Task Tracker Web Interface
* Type of mappers and reducers
* Word count job , wordcount program , and it’s execution
* Data locality
* Partitioner , Comparators and Combiner
* sonarqube with Jenkins

<http://172.26.41.85/HDP_3.0/HDP/centos7/3.0.1.0-187/> : hdp

<http://172.26.41.85/HDP_3.0/HDP-GPL/centos7/3.0.1.0-187/> hdp gpl

<http://172.26.41.85/HDP_3.0/HDP-UTILS/centos7/1.1.0.22/> : hdp utils

<http://172.26.41.85/ambari/3.0/ambari/centos7/2.7.1.0-169/> : ambari

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