

RAHUL KUMAR
AWS CLOUD ADMIN | PLATFORM & DEVOPS ADMIN

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Current Location: Pune, India

Profile Summary

Over 12 years of experience in Information Technology with

2 years of exposure as **AWS Cloud Admin** (AWS DevOps CICD, AWS Databases, AWS Monitoring & Operation),

9 years of proficiency as **Platform & DevOps Admin** (Linux Admin, Shell Scripting, Patch Admin, DBA for Databases Oracle MySQL PostgreSQL, Big Data Hadoop Admin, NoSQL HBase, Web Server Httpd Nginx, App Server Tomcat, CICD Pipeline with Git-GitHub Jenkins Ansible, Monitoring & Automation).

Currently working in Cognizant Technology Solutions, Pune, India.

Skills

AWS Cloud Admin

- **Compute** - EC2, Load Balancer, Auto Scaling Group, Elastic Beanstalk, AWS Lambda
- **Storage** - EBS, EFS Linux, S3, Glacier, Athena
- **Database** - RDS, Aurora, Red Shift, Athena
- **Integration & Messaging** - SQS, SNS
- **IaaS** - Cloud Formation, Ansible
- **CICD** - CodeCommit, CodeBuild, CodeDeploy, CodePipeline, Jenkins on AWS
- **Security** - IAM, STS, KMS & ACM, SSM, Secret Manager, Organization, Inspector for EC2, Trusted Advisor, EC2 Patching
- **Networking** - Route 53, VPC (CIDR, Subnet, Internet GW, NAT GW, Route Table, Network ACL, Security Group), VPC Peering, VPC Endpoint
- **Monitoring** - CloudWatch, CloudTrail, Config

Platform & DevOps Admin

- **Operating System** - Linux (RHEL, CentOS)
- **Virtualization** - Virtual Box, Vagrant, VMware
- **Package Management** - rpm, yum
- **Linux Security** - Linux Patch, Linux User Group Logon, DAC Permission, SELinux, ACL, Firewall-cmd, Resource limits, Disk Quota, Auditd Rules, HA using RAID
- **RDBMS** - MySQL, Oracle, PostgreSQL
- **Hadoop** - Cloudera CDH, Hortonworks HDP
- **Hadoop Services** - HDFS, YARN, Zookeeper, Sqoop, Hive, Impala, Spark, Sentry, Ranger
- **NoSQL Database** - HBase
- **Language** - SQL, Bash Shell Scripting, Ansible
- **Hadoop Security** - Bastion Host, High Availability, LDAP, Kerberos, Sentry, Ranger, SSL Encryption, Auditing with Cloudera Navigator
- **Scheduler** - Autosys, Crontab
- **Web Server** - Apache Httpd, Nginx
- **App Server** - Apache Tomcat
- **Code Version Control** - Git, GitHub, GitLab
- **Configuration/Deployment** - Ansible
- **Continuous Integration** - Jenkins
- **Monitoring** - Linux using commands for cpu memory disk process network, Cockpit, Cloudera Manager, Ambari, Nagios, Kibana, Custom Bash Scripts, Custom Ansible Roles, SNOW

Employment History

Name of the Organization	Role	Duration
Cognizant Technology Solutions	Platform & DevOps Admin, AWS Cloud Admin	2016 July to Present
Teradata India Private Limited	Platform & DevOps Admin	2014 Dec to 2016 July
Tata Consultancy Services	Linux Admin, Database DBA (Oracle, MySQL PostgreSQL)	2010 Jan to 2014 Dec

Professional Work Experience

COGNIZANT TECHNOLOGY SOLUTIONS

Platform & DevOps Admin, AWS Cloud Admin

Project 3: Wholesale Data Banking, ING Bank Netherlands, Banking Domain

AWS Cloud Admin (Hadoop On AWS, AWS RDS Databases, AWS DevOps CICD, Monitoring on AWS)

Key Responsibilities:

- Used IAM to manage users, groups, roles with policies & to control privilege for AWS resources
- Created Gloden AMI from EC2 to be used as new host to be added in cluster
- Set up Cloudera Hadoop Cluster on AWS using EC2 instance as nodes in custom VPC
- Created VPC, public & private subnets, route tables, Internet GW, NACLs, security groups
- Configured ALB with ASG for load balancing, high availability & auto scaling with custom rules
- Performed EC2 instance change, EBS attach to new EC2, ENI modify, user data to bootstrap AMI
- Used AWS SSM Document & Run Command to install apache httpd on multiple EC2 instances
- Used AWS SSM Inventories & Patch Manager for automated patching of EC2 managed instances
- Used S3 Storage Life Cycle to automatic move objects from one storage class to another
- Enabled S3 MFA delete at bucket level, to safeguard accidental bucket deletion from GUI
- Provisioned AWS RDS databases, enabled multi AZ, read replicas, taken snapshots
- Used AWS Secret Manager to store database secrets in encrypted form using KMS
- Created Red Shift cluster as OLAP data warehousing, Data is loaded from S3 or RDS into Red Shift
- Used Athena to create database/table for s3, to run queries to fetch filtered info directly from S3
- Used AWS KMS to create symmetric CMK Keys & used KMS along with ACM to manage keys
- Set up CICD pipeline on AWS (CodeCommit, CodeBuild, CodeDeploy, CodePipeline, Jenkins On AWS)
- Created DNS records for EC2 instances along with TTL & routing policies
- Enabled VPC peering between PreProd & Prod VPCs
- Used AWS STS to retrieve credentials & impersonate IAM role for limited time say 15 min
- Used CloudWatch to monitor performance metrics, created dashboards, generated events based on rules, alarm notifications to configured target, stored logs in log groups
- Created VPC Flow Log to logs ALL in CloudWatch Log group & in S3 bucket
- Setup unified cloud watch log agent to send logs from EC2 to cloud watch
- Used CloudTrail to monitor internal API calls & to audit changes done by users to aws resources
- Used AWS Config to track & audit resource configuration changes done
- Used AWS Inspector for EC2 instances to check for host vulnerabilities using aws managed rules
- Used AWS Trusted Advisor for cost optimize, performance, security, fault tolerance, service limits
- Automated EC2 launch, EC start stop terminate, using ansible roles
- Automated EC2 instance nodes preparation (cloudera recommendation) using bash shell scripting

Platform & DevOps Admin (Hadoop Admin, Linux, Database, Patch, CICD, Monitoring & Automation)

Key Responsibilities:

- Set up Hadoop cluster (Cloudera & Hortonworks) from scratch on premise & on AWS EC2 instances
- Setup High Availability - NN HA (HDFS), RM HA (YARN), Hive Metastore & Hive Server2, Sentry HA, Impala HA using HA Proxy, HBase HA, Hue HA, Kerberos KDC HA
- Installed & Configured MIT Kerberos as network authentication & authorization protocol
- Configured sentry service and use roles to grant/revoke privileges to users/group
- Set up SSL/TLS in flight encryption using CA signed certificates
- Cross realm setup between PROD & DR cluster so that distcp & HBase migration works
- Upgraded java, Cloudera Cluster for CM & CDH
- Optimized cluster resource allocation with dynamic resource pools for yarn and impala
- Used hdfs posix sudoers chmod acl usage to set file or dir level permissions, special permissions to specific users/groups for specific dir level
- Managed package using rpm or yum commands like install, uninstall, list, history check, undo, redo
- Setup yum server to allow yum command to work & set up local yum repo with & without httpd
- Implemented quota permissions on selected dir by install quota pkg
- Used embedded PostgreSQL database for CM DB, CMS DB, Hive metastore DB, Sentry DB
- Performed database maintenance activities like services check, create database, create tables, manage privileges, bounce DB services, database daily backup
- Monitored CM Health, CM Management Services & Services Health, Hosts Page, Host inspector run results, Yarn Applications, Yarn static & dynamic resource pools, Impala queries
- Monitored Edge Node /hdfs_nfs mounted or not, Drop box, yarn top, autosys workflow scheduler jobs, Autosys backup job for project code, Autosys backup job to backup databases in CM
- Deployed code using CI CD pipeline git-github, jenkins, ansible
- Written bash shell scripts for backup of database used by cloudera manager hive sentry
- Scheduled Autosys jobs, monitored Autosys jobs, resolved issues
- Automated RHEL Linux patching using ansible & bash shell scripting
- Automated cloudera server agent start stop, postgresql service start stop, cloudera cluster services start stop, code deployment, cloudera manager upgrade, kerberos KDC HA using ansible

Project 2: Wealth Management Analysis, UBS Bank USA, Banking Domain

Platform & DevOps Admin (Hadoop Admin, Linux, Database, Patch, CICD, Monitoring & Automation)

Key Responsibilities:

- Enterprise grade Cloudera CDH cluster setup using parcels
- Commissioned & decommissioned of nodes using Cloudera manager/Ambari
- Backed up - NN metadata, Configuration files, DB backup for CM/Ambari/Hive/Sentry/Ranger, Distcp usage to copy hdfs data from local/hdfs to local/hdfs
- Managed SSL certificates creation, signing, installation, renew for certificate security
- Performed hive data load from one env to another using sftp
- Decreased hive metastore ready to query time from 45 min to 5 min
- Performed HBase table migration from one namespace to another namespace
- Solved issues like CM GUI unable to open, CM Services Down, Instance Down, Host unavailable, Host mount point filled, Host data disk failure, RAM degrade, Checkpoint issue, HDFS balancer tune, Missing and corrupted block search find delete, query hanged with disk filled, hive scratch dir is filled, hive table locks, hive & impala query failed with OOM

- Configured ranger service and used policies to grant/revoke privileges to users/groups/path, Enabled Hive authorization using ranger, Masked Hive table column with ranger policy creation for that table column with access redact
- Solved ranger policy not in sync issue post Hive metastore HA, solve user's permission issue
- Performed RHEL Linux maintenance & PostgreSQL databases backup activities
- Managed package using rpm or yum commands like install, uninstall, list, history check, undo, redo
- Used hdfs posix sudoers chmod to set file or dir level permissions, used ACLs for special permission
- Created new partitions using fdisk (P,E,T,8e,fd), updated partition table using partprobe, formatted partition using mkfs or mkswap, mounted formatted partition on new dir, updated fstab file
- Managed lvm i.e. created pv then scan it, created vg then scan it, created lv then mkfs & mount it, took vg backup, resized vg using vgextend, resized lv using lvextend & resize2fs/xfs_growfs
- Devised POC to set up software RAID10 using mdadm pkg
- Scheduled Autosys jobs, monitored Autosys jobs, resolved issues if any

Project 1: Credit Risk Reporting, KeyBank USA, Banking Domain

Platform & DevOps Admin (Hadoop Admin, Linux, Database, Patch, Monitoring & Automation)

Key Responsibilities:

- Monitored CM Health, CM Management Services & Services Health, Hosts Page, Host inspector run results, Yarn Applications, Yarn static & dynamic resource pools, Impala queries
- Monitored Edge Node /hdfs_nfs mounted or not, Drop box, yarn top, autosys workflow scheduler jobs, Autosys backup job for project code, Autosys backup job to backup databases in CM
- Configured HBase as NOSQL, Tuned performance using snappy compression, rowcol bloom filters, data block encoding FAST_DIFF, IN_MEMORY = true for caching, TTL, MIN_VERSIONS = 1 if we don't want data to be deleted for CF after TTL, Performed HBase minor & major compactions
- Configured Spark in CM, monitored it on yarn applications, Tuned performance of spark like Enabled dynamic resource allocation, Tuned spark2-submit job with driver-cores, driver-memory, executor-cores, executor-memory, spark.yarn.executor.memory.overhead, num-executors
- Performed RHEL Linux maintenance & MySQL databases backup activities
- Managed file/dir permissions using umask, chown chgrp chmod. Set special permissions (setuid on owners use 4, setgid on groupusers use 2, sticky bits on dir use 1, Set acls on dir/file using setfacl)
- Updated ulimit (soft & hard) in /etc/security/limits.conf.
Created custom limits files at /etc/security/limits.d to limit say user max process, group max mem. Created custom systemd service at /etc/systemd/system to define service limit say max open file.
- Selinux usage wrt enable/disable it in /etc/sysconfig/selinux, status check using getenforce or sestatus, what context using Z option), chcon to update context if require
- Enabled passwordless key based ssh authentication among servers, wherever required

TERADATA CORPORATION

Platform & DevOps Admin

Project 1: Loan Recovery Analysis, CBA Australia, Banking Domain

Platform & DevOps Admin (Big Data Hadoop, Linux, Shell Scripting, Patch, Databases MySQL, Web Server Httpd Nginx, App Server Tomcat, Monitoring & Automation)

Key Responsibilities:

- Scripted intra environment hive table data load activity using sftp and bash scripting
- Prepared environment for UAT like table re-partition, duplicate data removal
- Devised POC on cloudera tuning, hive re-partition, file format comparison, compression effect
- Used sqoop to import data from RDBMS (mysql,oracle, postgresql) to HDFS, Hive, Hbase.

Use sqoop to export data from HDFS (not Hive, not Hbase) to RDBMS (mysql,oracle, postgresql).

- Configured hive using CM or Ambari, Created hive tables (Managed/Internal or External or Temporary), Optimized Hive using Partition & Bucketing, used Hive auxiliary jar's dir, Enabled CBO properties in hive configuration to auto gathers stats, Hive metadata update using msck repair table
- Configured impala service using CM or Ambari, Post data load always updated impala metadata, Post data load always gathered stats, Configured multiple random impala coordinators, Optimized query using set mem_limit
- Configured zookeeper as a high performance coordinator service using CM or Ambari, Update config in ZK zoo.cfg like update maxClientConnections (default 60) in case want more concurrent connections, update globalOutstandingLimit (default 1000) to increase more connections in queue
- Set up nagios server with nagios core, nagios core plugins, nagios nrpe plugins on linux server, On nagios server, updated localhost.cfg to add hosts to be monitored, updated localhost.cfg to add services to be monitored, updated contact.cfg to add emailed for notification
- Set up httpd web server installation, implemented name based virtual hosting, installed 2 different versions of httpd on same host, enabled SSL using mod_ssl, restrict access for known clients only, allow deny specific indexes, basic authentication using htpasswd
- Set up nginx web server, configured nginx as proxy server using proxy_pass, configured nginx as load balancer using upstream with weights health checks, restrict access for specific directory from known clients using whitelist file, basic authentication using htpasswd
- Set up tomcat app server, set up SSL using mod_jk with worker.properties file, manage access
- Troubleshoot issues like logon closed due to /bin/false shell, webserver not accessible due to incorrect selinux, firewall-cmd command to add/remove service ports, netstat nc nmap nmcli commands to fetch listen info, yum history to check and undo/redo commands, verified server reach or port allowed or not using telnet & netstat
- Automated alerting for Cloudera manager server agent services status using nagios

TATA CONSULTANCY SERVICES

Linux Admin, Database DBA (Oracle, MySQL, PostgreSQL)

Project 2: Indian Leading Telecom Company, BSNL India, Telecom Domain

Linux Admin & Database DBA (Oracle DBA)

Key Responsibilities:

- Managed Linux user like created user using useradd command, lock/unlock using usermod or passwd command, passwd to set/reset password, set password aging policy using chage
- Managed Linux group like created group with groupadd command, added or removed user to existing group, made user a group admin using gpasswd, modified group using groupmod
- Updated /etc/ssh/sshd_config file to deny root login, to allow only specific users & groups to ssh, changed port from 22 to say 222, updated login grace time, updated ClientAliveInterval to say 600 sec, allowed listen address for specific ips only, updated stricthostkeychecking
- Used PAM to enforce strong password securities like update max retry 3 times inside /etc/pam.d in passwd file, updated minlen maxlen maxsequence maxrepeat in /etc/security/pwquality.conf
- Enabled passwordless key based ssh authentication among servers, wherever required
- Checked logon info using lastlog, last, lastb, whoami, users, who, w, finger commands. Updated syslog.conf & sshd_config file to capture SU & SSH logons info, to update loglevel.
- Created hard links & soft links using ln command.
- Managed package using rpm or yum commands like install, uninstall, list, history check, undo, redo
- Performed DBA activities to manage & maintain RDBMS Oracle
- Created users, profiles for resource limits, assigning roles and privileges

- Multiplexed control files, redo log files and archive log files
- Managed Space: Create, merge and drop tablespaces; Add, rename and resize datafiles; Table partitioning; Creation and rebuilding indexes
- Configured RMAN & EXPORT for database backup and restore purpose
- Refreshed development/test database from production using Export/Import
- Performed Startover - Failover testing of production databases
- Improved Performance: Gather statistics on tables, indexes, columns, tables with no statistics Online re-org (BR Tool, Dbms_redefinition) and Offline re-org (Move, Expdp-Impdp)
- Written bash shell scripts for linux, oracle dba like Capture sar info, Load script, Top 10 cpu, Top 10 memory, Mount point > 90%, Information about logged users/boot logs/failure boot, Find specified files for = sysdate - 10, Mount point space check, Tablespace size check, Database growth, Gather stats, DB down mail, Listener down mail, Complete health check over mail

Project 1: Indian State Electricity Board, MPEB India, Energy Utility Domain

Linux Admin & Database DBA (Oracle, MySQL, PostgreSQL)

Key Responsibilities:

- Monitored resources using sysstat package sar commands (current & historical both).
Monitored cpu using lscpu, top, vmstat, uptime for avg load.
Monitored blocks info using lsblk, search for badblocks, no of disks using fdisk.
Monitored disk using vmstat for disk ip (tps info ie rps & wps info), iostat commands.
Monitored process using ps, pstree, pmap, top, ps with sort commands, process kill if require, use of nice & renice to increase priority of process if require.
Monitored memory using dmesg, top, ps with sort, machinfo, free, mpstat commands.
Monitored NW using ping, tracer, tcpdump, netstat, netcat, dmesg, ifconfig, nmcli, dig, nslookup, firewall-cmd, semanage commands.
- In case of disk failures, hardware check using dmidecode, hdparm, badblocks, dmesg commands
- In case of events check, used journalctl commands, used logs to check errors
- Backed up & restored of linux filesystem using tar command options
- Performed Linux patching & server reboot as monthly activity
- Performed DBA activities to manage & maintain RDBMS like Oracle, PostgreSQL, MySQL

Academia

Qualification	Year	Institution	Board/University	Marks (%)
BE (Electrical & Electronics)	2009	Lakshmi Narain College of Technology (LNCT), Bhopal, Madhya Pradesh	Rajiv Gandhi Prodyugiki Vishwavidyalaya (RGPV), Bhopal, Mahdya Pradesh	76 (Hons.)
12th	2004	Saint Josephs' School Deeptinagar, Bhagalpur	CBSE	80
10th	2002	Kendriya Vidyalaya School Deeptinagar, Bhagalpur	CBSE	75