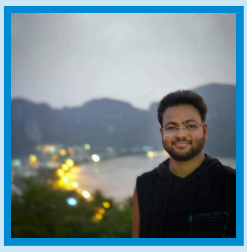

Hritwik Singhal

Site Reliability Engineer and Linux enthusiast.

Bangalore, Karnataka, India
+91 954 8668 234
recruiters@thorin.theoakenshield.com

Site Reliability Engineer with a passion for Python/C++ and **Linux**. I am a **dedicated** and self-driven **geek** with a strong zeal for **open-source development** who is constantly looking to build new systems. I would rather spend 4 hours writing a script to **automate** a task that would take me 40 seconds to do every day.

Profiles

Hritwik

Hritwik

Skills

Linux

SSH, Systemd, ZFS, RAID, LVM, ZLOG, Virtualization

Networking

TCP/IP, DNS, DHCP, VLAN, VPN, Firewalls, Nginx, Wireshark

Hadoop

Hive, NameNode, DataNode, Hue, Zeppelin, Distributed Systems

IaC

Nix, Terraform, CloudInit, NixOS

Automation and Scripting Tools

Ansible, Bash, Python, Git, Jenkins, Proxmox

Orchestration

Kubernetes, Docker, Microservices

Monitoring

Grafana, Loki, Prometheus, ElasticSearch

Soft Skills

Communication, Problem-Solving, Collaboration, Flexibility, Critical Thinking, Eager to learn

Hobbies

Homelab

self hosting, de-google

Reading

Astronomy, Psychology, Physics

Badminton

Gaming

Languages

Python

Bash

Java

C/C++

Experience

Media.net — **July 2022 to July 2024**
Site Reliability Engineer — Bangalore, India

- Proven on call proficiency in debugging live production issues during 24x7 **on-call rotations**.
  - Ensured rapid resolution, minimizing downtimes and enhancing system resilience.
  - Proficiently conducted and authored detailed **RCA** reports.
- Implemented **CI/CD** pipelines on self-managed **Jenkins** slaves.
  - Automated deployment processes of **Conda** virtual environments from custom configuration files within the Hadoop cluster, resulting in a **30% reduction** in deployment time through standardized environment setup.
- Led the company-wide deployment of **Zeppelin** and **Hue** for 1000 developers.
  - Optimized deployment speed, reliability and secret management using **Nix** and **SOPS** through Infrastructure as Code (IaC) methodologies, reducing deployment time by **50%**.
  - Implemented NGINX optimizations, resulting in a reduction of application load times from **~3s to ~500ms**.
- Leveraged **Nix** and **Terraform** to efficiently scale an existing Hadoop cluster on GCP
  - Increased node count from **20 to 70** by revamping monolithic IaC codebase to enhance modularity, inheritance structure, and scalability of individual components, which enabled said scaling with minimal code changes, thus reducing deployment time by **50%**.
- Implemented a streamlined resource pipeline for Hadoop teams, enhancing capacity planning through dynamic data analysis.
  - Integrated automated decision-making systems and analytics dashboards enabling agile response to evolving resource requirements.
  - Optimized cluster settings based on team-specific path size limits, generating granular data for easy reporting and aggregation, thus scaling the cluster by **more than 30%** in capacity.
- Optimized disk read and write latencies from **20ms to sub-millisecond** for **HDFS** and **YARN** applications by tuning operational **ZFS** parameters, thus mitigating more than **80%** frequent latency spikes during operational load.

Media.net — **January 2022 to July 2022**
Site Reliability Engineer Intern — Mumbai, India

- Conducted in-depth analysis of Java garbage collection times by scrutinizing server GC logs from a Hadoop cluster executing MapReduce applications. Utilized findings to fine-tune GC parameters, optimize heap size, and enhance cluster performance, ensuring efficient operation.

Projects

NebulaCrawler

- Engineered a Kubernetes-driven web scraping architecture for a bespoke search engine. Pods are employed as autonomous crawlers, seamlessly pushing scraped webpage data to Elasticsearch and URL data to Redis.
- Integrated Prometheus exporter SDK to seamlessly export pertinent metrics, including scraped URLs and failures, ensuring robust monitoring and analysis capabilities.

DiskDoctor

- Developed a robust solution for comprehensive disk status reporting across a 200-node **Proxmox** cluster, encompassing 800 disks including SSDs, HDDs, and NVMes.
- Leveraged **multithreaded APIs** to ensure high throughput in monitoring disk health and alerting on degradation. Integrated **SSH** access, **Proxmox** API, and **Cloudera** API for seamless monitoring and management of disk infrastructure.

TerraNixLab

Managed **Proxmox**-based homelab infrastructure with **Terraform**, integrating **Nix** for Infrastructure as Code (IaC) principles Adding capabilities for provisioning of **containers**, **VMs** and **CNAME** entries in **Cloudflare**, through said IaC Codebase.

Education

LNM Institute of Information Technology, Jaipur — **August 2018 to May 2022**
B.Tech in Computer Science

Extra Curricular Activites

PADI Open Water Scuba Diver — **Jan 2024**

Qualified to a depth of 18m, can dive anywhere in the world and can assemble and use my scuba gear.

Solo Travelling — **2022 - 2023**

Started Solo travelling, exploring places and meeting new people. This vastly broadened my perspective and completely transformed my life.

Trek to Summit of Mt. Kedarkantha — **Jan 2021**
12,500 ft at -10C

Summit to peak of Mt. Kedarkantha in Uttarakhand on a 6 day trek.