

Internship Report

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Internship Period	Date of Joining: 02/06/2025, Last Working Day: 25/07/2025
Company Department	PMD PETRO – IT
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1. Acknowledgment

I would like to express my deepest gratitude to my mentor, Mr. Gaurav Sharma, for his invaluable guidance, support, and encouragement throughout my internship at Reliance Industries Limited. His expertise and insights were instrumental in enhancing my skills across various IT domains. I am also thankful to Mr. Sanjay Shukla (HOD-IT) and the entire PMD IT team for their constant support and for making this learning experience possible.

2. Purpose of Internship

The purpose of this internship at Reliance Industries Limited was to gain practical experience and enhance technical skills in domains including programming, database management, networking, and server administration. Through hands-on projects and mentorship, this internship aimed to bridge the gap between theoretical knowledge and practical implementation, preparing me for a career in the IT industry.

3. Overview of Reliance Industries Limited

Reliance Industries Limited (RIL) Patalganga is a major manufacturing unit of RIL, located in Maharashtra. The facility is a cornerstone of RIL's industrial operations, known for its significant contributions to the petrochemical and textile sectors. Equipped with state-of-the-art technology, automation, and infrastructure, the Patalganga complex emphasizes efficiency, sustainability, and innovation. It is also committed to sustainable practices, focusing on minimizing environmental impact and engaging in community development initiatives.

4. Internship Activities and Technical Learnings

The internship began with comprehensive safety training, covering essential workplace protocols and emergency procedures. This was followed by a deep dive into the IT department's services and infrastructure.

- **Server Administration:** Gained hands-on experience with HPE ProLiant servers (Gen8-11). Performed server setup, including RAID configuration, OS installation (Windows Server 2012, 2016, 2019), and configuration of static IPs, DNS, and DHCP.
- **Virtualization:** Utilized both VMware ESXi/Workstation and Microsoft HYPER-V to create and manage virtual machines (VMs). Handled resource allocation, snapshots, and learned concepts like live migration.
- **Networking Fundamentals:** Configured IP addresses and managed core services, including Active Directory, DNS, and DHCP, on Windows Server. Understood network teaming for high availability and used tools like ipconfig, ping, and tracert for troubleshooting.
- **Cybersecurity & Maintenance:** Implemented security practices including endpoint protection with antivirus, regular system patching, and performing backups and snapshots for disaster recovery planning.
- **Industrial Visit:** Participated in plant visits to observe manufacturing processes and the use of robotics in the manufacturing of Polyester, gaining practical insights into industrial IT applications.
- **Self-Directed Learning:** To complement practical project work, completed external certification courses, including "Power BI" by IBM on Coursera, to enhance data visualization and business intelligence skills.

5. Projects Undertaken

The primary projects included PrintDesk, FailureEvents Portal, Syslogs Tracker, and a Remote Deployment Tool.

- **Project 1: PrintDesk**
 - **Technology Stack:** Python (Flask), HTML, CSS, JavaScript, MSSQL.
 - **Features:** Implemented SSO-based role management, created an Excel upload page that skips duplicates, developed a data viewer with search/filter functions, and designed a dashboard to visualize printer usage.
 - **Deployment:** The application was deployed on a Windows Server 2019 VM using IIS as a reverse proxy for the waitress WSGI server.
- **Project 2: FailureEvents Portal**
 - **Technology Stack:** C#, ASP.NET, MSSQL.
 - **Features:** Implemented a role-based system with SSO, an Excel upload feature, and a view page with search and export options.
 - **Deployment:** Deployed on a Windows Server 2019 VM using IIS, with a dedicated application pool.
- **Project 3: Syslogs Tracker**
 - **Technology Stack:** C#, ASP.NET.
 - **Features:** A dashboard was created to display and filter syslog alerts by severity (Notice, Alert, Critical, etc.) and generate graphs to visualize log frequency.
- **Project 4: Remote Deployment Tool**
 - **Description:** A Windows desktop application developed to automate the deployment of executables to multiple remote machines.
 - **Core Functionality:** The tool uses a GUI to manage the entire deployment workflow, leveraging PsExec for remote service management and Robocopy for reliable file transfer.

6. Skills Acquired

- **Server Management:** Experience with the HPE DL380 series.
- **Application Deployment:** Deploying Python (Flask) and ASP.NET applications on Windows Server 2019 using IIS.
- **Network Configuration:** IP, DNS, DHCP, and Active Directory configuration.
- **Operating Systems:** Windows Server installation & configuration.
- **Virtualization:** VMware and Hyper-V virtualization and live migration.
- **Web Development:** Web development using Flask and ASP.NET.
- **Database Management:** SQL-based data handling and reporting.
- **Security:** Secure coding practices (SSO, role-based access) and cybersecurity basics.
- **Troubleshooting:** Network troubleshooting.

7. Conclusion

This internship provided a well-rounded understanding of the full IT lifecycle, from infrastructure management to application development and deployment. The experience of working with enterprise servers, combined with developing and deploying secure, data-driven web applications, has provided practical and theoretical knowledge that will be invaluable in my professional journey.