Report of Internship Training

at

R Systems International Limited

Submitted By

UMANG UTKARSH

in partial fulfilment for the award of the degree

of

BACHELOR OF TECHNOLOGY

in

MINING ENGINEERING

NATIONAL INSTITUTE OF TECHNOLOGY, KARNATAKA

DECLARATION

I, Umang Utkarsh, hereby declare that this report is being submitted in fulfilment of the **Internship Programme** with **R Systems International Limited.**

I further declare that to my knowledge; the structure and the content of this report are original and have not been submitted before any purpose.

Company Address – C-1 & C-40, C Block, Sector 59, Noida, Uttar Pradesh - 201307

Team Aligned – Application Support Cell

Duration – 1 Month (30^{th} May 2022 – 30^{th} June 2022)

Umang Utkarsh

B.Tech 3^{rd} year – Sixth Semester

Department of Mining Engineering

National Institute of Technology, Karnataka

ACKNOWLEDGEMENT

The internship opportunity I had with **R Systems International Limited** was a great chance for learning and professional development. Therefore, I consider myself as a very lucky individual as I was provided with an opportunity to be a part of it. I am also grateful for having a chance to meet so many wonderful people and professionals who led me though this internship period.

I express my deepest thanks to my internship training mentor **Rohit Michael**, for taking part in useful decision & giving necessary advices and guidance. I choose this moment to acknowledge his contribution gratefully.

I would also like to thank Cell Leader **Dheeraj Gupta** as well as the other team members – **Sashikant Behura, Shubham Thakur, Tanubhav Kumar, Subhasmita Jena, Aditi Gautam,** who gave me the golden opportunity to get an experience through this internship opportunity at **R Systems International Limited**, which provided me the opportunity to explore the new horizons within this industry. I sincerely express my gratitude towards **R Systems International Limited** for providing me with this opportunity.

I perceive as this opportunity as a big milestone in my career development. I will strive to use gained skills and knowledge in the best possible way, and I will continue to work on their improvement, in order to attain desired career objectives. Hope to continue cooperation with all of you in the future.

COMPANY PROFILE

About R Systems International Limited:

R Systems is a global **technology** and **analytics** services company. We help our clients achieve speed-to-market, overcome digital barriers, and create business value with out specialized service offerings and consultative business approach. We speak the language of business as fluently as we do the language of **technology** Our goal: accelerate our clients' digital leadership.

We believe in enhancing business value of our clients by delivering path-breaking and sustainable solutions. We are constantly helping organizations explore and implement new business ideas by augmenting the power of technology, data and analytics.

Our methodology focuses on enhancing efficiency by implementing technology to come up with customer-centric and practical and merit-based solution. Our foresighted vision to envisage future enables us to help clients implement new customer-centric service models and leverage big data to plan and implement suitable strategies for desired business outcome.

Client with which the Cloud Ops team worked – 'Deltek'

The main work of the cloud ops team is to maintain the Databases, and handle the requests from clients.

Products – VantagePoint, Vision, Ajera

Inventories - VantagePoint (4.5), Vision Flex, Vision (7.4), Product

Types of Clients handled – Essential client, Enterprise client

What is an IT ticket and why are they important?

IT tickets is the generalized term used to refer to a record of work performed (or needing to be performed) by the IT support organization to operate the company's technology environment, fix issues and resolve user requests. Tickets may represent many different types of tasks or activities depending on the nature of the IT environment and the focus of the support team. They may go by other names like "service requests", "trouble tickets" or "support cases".

IT tickets are important to the company because they keep a record of each of the operations and support activities that take place to keep the IT environment up and running, adding value to the business. Tickets are typically captured in an IT Service Management where they are stored, managed and updated as the issue or activity is resolved. IT helpdesks use tickets as a means of capturing and recording interactions with users. Operations teams use tickets to track technical issues that need to be addressed. IT management uses ticket data to understand the workload of their teams, make resourcing decisions and facilitate vendor partnerships.

Managing IT tickets effectively is an important part of ensuring that the business receives the full value of the company's IT investments. This is an important concept at the core of IT operations and leveraging IT ticketing best practices is a good way to help the IT function manage costs, provide better systems and services to users and mitigate the impact of business disrupting events.

IT Tickets and ITIL

ITIL (formerly known as IT Infrastructure Library) represents the collective industry best practices and standards for how IT service management should be performed. ITIL does not discuss IT tickets directly but instead discusses IT Incidents and IT Service Requests which are types of IT tickets. Although ITIL uses different terminology, it contains valuable IT ticketing best practices in the Service Operations volume that should be reviewed and understood.

Ticket Types

The term IT tickets can be used to refer to a lot of different types of support requests and activities that the IT function performs. The benefit of using tickets as a general record for these things instead of treating each independently is that they all involve similar data, follow similar lifecycle/workflows, and are often addressed by the same people. Treating them all as tickets helps drive staff productivity, gives users fewer touchpoints into IT, and enables easier data analysis and reporting.

Naming Conventions followed –

POD/Server – Region + Group + Database Server category + POD number.

Server – Region(4 letters) + Environment(2 letters) + (Product Group)(2 letters) + Server Number + Database number

Database – ClientID (Starts with C00000) + Environment (1 letter – P/S/E/D) (Production/Sandbox/Engagement Phase/Preview), Development

Types of tickets handled by the team –

1. Service Request – These are routine activities such as requesting access, resetting passwords, updating data or provisioning services that your IT support team performs on your operational systems and services. They don't indicate that something is broken, only that something needs to be done.

2. Incidents - Incidents are unplanned interruptions or reductions in quality of an IT service or failure of a component in your IT environment that has not yet affected service. Examples of incidents are outages, errors and performance issues. Incidents have a defined start and end that correspond to some sort of event.

These two types of tickets mainly consisted of tickets such as Administrator Password reset, SQL scripts, Database Backup, Support POD

These tickets are handled on the basis of their priority assigned.

The Ticket mainly consists of – RNT number, SCTASK number

In case of Vantagepoint – ClientID: Database name

In case of Vision – POD Prefix: Server Name

Instance Name: Production Database Name

Types of Cases handled

1. SQL Scripts –

Process followed:

i) The Script is run in the development environment, or the production environment
ii) The request is acknowledged
iii) The RNT state is set to 'Research with CloudOps'
iv) The inventories are checked in which the client lies – this is done through the ClientID provided.
v) The Database is approved
vi) The backup is created which can be done through query, or it can be created manually also.
vii) The naming format is checked - <DBName_ClientID_SCTASK_B4SQLScript_date>
viii) The location is chosen to place the backup, parsing of the script is done before executing it to check for any errors (if it exists, then DCO is raised)

2. Backup Request –

Process followed:

i) The information is filled out in the checklist, the user is then acknowledged.
ii) The script is run always in the ISE PowerShell, whether it is vision or vantagepoint.
iii) The backup files are uploaded on the client – end

iv) After connecting to an SFTP site, the correct name of the file stream and the transactional database is verified, and also the processing files are ensured.

3. Backup cases (Up to a specific date) –

Process followed:

i) The cloud infrastructure SRE (Site Reliability Engineering) team holds the backup of a specific date. Request is sent to get the approval for the backup from the SRE team, so this can be provided to the client.
ii) The backup is provided to the client after decrypting it.
iii) (Backup for the file stream database is also provided if demanded)
iv) Folders are created for which the backup has to be created after collecting the details, following the naming convention – (SCTASK number)
v) The main database is not needed and no file transfer is needed, since the restoration will be directly completed
vi) Further the transaction log files are restored, and the filename is provided where it needs to be restored. **–This is the process of merging the transaction and the restoration files—**
vii) Finally, the file is decrypted (After decryption, the encryption_state is set to 1). This process is same as in the case of FileStream.
viii) Query is executed to identify the which ODBC users exist in the database.
ix) After the **'DROP DATABASE ENCRYPTION KEY'** is removed, file zipping is done and the file is shared to the client through SFTP (Safe File Transfer Protocol)

4. Data Local Restore (Internal Request) –

Process followed:

i) The process to be carried out for a Data Local Restore is the same as Database backup request, the main difference being is that the backup request is from customer, and the data local restore case is an internal request handled by the team.

ii) The copy of the Database is provided through SFTP (Secure File Transfer Protocol), also the data authorization is necessary for this.
iii) After decrypting, the file location is provided
iv) (4 database backup can be provided in 1 year)
v) **If the case is an Incident case –** Contact is done through the customer care, and the client is not acknowledged.
vi) **If the client is an 'Enterprise client'** – The backup is taken manually/**If the client is an 'Essential client' –** The backup is taken through Query.
vii) Before providing the backup, DCO (Data centre outsourcing) is raised then tracked through the SCTASK number provided. This is done through the password and the primary key.
viii) After the Backup is created, a Backup file zip is created the customer care is contacted.

5. Database Refresh Case –

Process followed:

i) The Production database is restored into the Sandbox database.
ii) The script is executed to check if the file is restored or not.
iii) The refresh can be done as a service request or in development
iv) The main purpose is to maintain database, take backup and create a new database.
v) The client is further notified about the about the request.
vi) The file Stream is created if needed to provide for Sandbox databases.
vii) Weblink is created and the source database is restored to the destination database after recovery and shrinking is done through the script.
viii) Further Smoke testing is carried out for testing purposes.
ix) The Sandbox creation is done from a copy of production database before the case is closed.

THANK YOU

*Thank you for the exciting opportunity at **R Systems International Limited**. It was an excellent learning experience and it allowed me to confirm my interest in pursuing a career in this industry.*

*Over the course of this internship, I was able to spend many hours with professionals—planning, and developing. I would also like to express my gratitude to my mentor **Rohit Michael,** and Cell Leader **Dheeraj Gupta** for the supervision and guidance during my internship.*

Your advice and experience have been truly invaluable and helpful throughout the tenure of this internship. I am extremely thankful that you instilled a sense of confidence and responsibility in me. Your leadership made my internship a positive and rewarding experience.

I truly learned the importance of teamwork in the success of a project by following your wonderful leadership. You and the entire team were helpful, supportive and welcoming throughout my internship.

I wish you and the entire team continued success.