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Taking Backups Using pgBackRest on a Replication Server



Oz · Following

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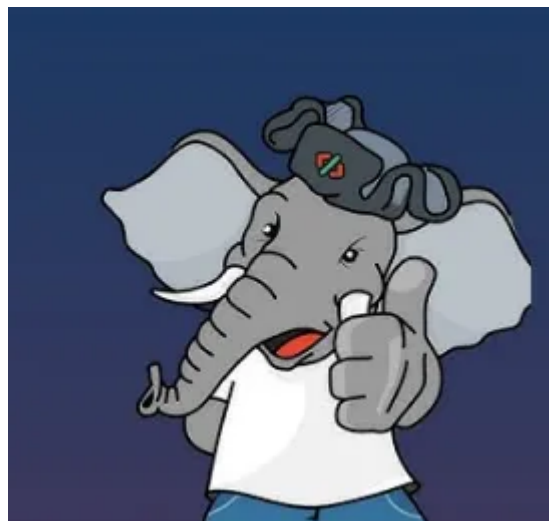


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Backup and disaster recovery are essential components of any database management strategy. With PostgreSQL databases running on replication servers, ensuring data integrity and availability becomes even more critical. One of the tools that can help in achieving this is pgBackRest. This article will guide you through setting up and using pgBackRest for backups on a PostgreSQL replication server.



Installation of pgBackRest

Firstly, install the necessary repositories and pgBackRest package:

```
yum -y install https://download.postgresql.org/pub/repos/yum/reporgms/EL-9-x86\_64/pgbackrest-repo.rpm  
yum -y install https://dl.fedoraproject.org/pub/epel/epel-release-latest-9.noarch.rpm
```

```
yum install -y pgbackrest
```

Configuring PostgreSQL for pgBackRest

Edit the `postgresql.conf` file to enable WAL (Write-Ahead Logging) archiving: ▶

```
vi /var/lib/pgsql/12/data/postgresql.conf
```

Add or modify the following lines:

```
archive_mode = on  
archive_command = 'pgbackrest -stanza=12_data archive-push %p'
```

Restart PostgreSQL:

```
systemctl restart postgresql-12
```

Configuring pgBackRest

On both the Master and Replica servers, edit the `pgbackrest.conf` file:

```
vi /etc/pgbackrest.conf
```

Add the following configurations:

```
[global]  
repo1-host=Backup_Server_IP  
repo1-host-user=postgres
```

```
[12_data]  
pg1-path=/var/lib/pgsql/12/data/
```

Create backup directories and set permissions:

```
mkdir -p /pg_backup/12/data/pgbackrest  
chown postgres:postgres /pg_backup/ /pg_backup/12 /pg_backup/12/data /pg_backup
```

On the Backup Server, configure pgBackRest:

```
vi /etc/pgbackrest.conf
```

Add the following configurations:

```
[global]  
repo1-path=/pg_backup/12/data/pgbackrest  
repo1-retention-full=3  
repo1-retention-diff=2  
process-max=2  
backup-standby=y
```

```
[12_data]  
pg1-host=Master_Server_IP  
pg1-path=/var/lib/pgsql/12/data/  
pg1-user=postgres  
pg2-host=Replica_Server_IP  
pg2-path=/var/lib/pgsql/12/data/  
pg2-user=postgres
```

Set up password-less SSH connections between servers:

```
su postgres  
ssh-keygen -t rsa  
ssh-copy-id -i /var/lib/pgsql/.ssh/id_rsa.pub postgres@Backup_Server_IP  
ssh postgres@Backup_Server_IP
```

Starting Backups

Verify the pgBackRest configurations:

```
pgbackrest --stanza=12_data stanza-create --log-level-console=info  
pgbackrest --stanza=12_data check --log-level-console=info
```

Begin the backup process:

```
pgbackrest --stanza=12_data backup --log-level-console=info
```

Additional Backup Types

Full Backup:

```
pgbackrest --stanza=12_data --type=full backup
```

Differential Incremental Backup:

```
pgbackrest --stanza=12_data --type=diff backup
```

Cumulative Incremental Backup:

```
pgbackrest --stanza=12_data --type=incr backup
```

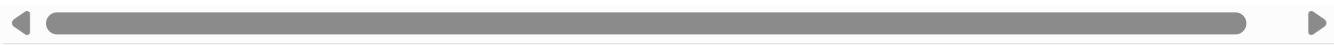
Restoring Data

Restore entire database:

```
pgbackrest --stanza=12_data --type=restore
```

Point-in-Time Recovery:

```
pgbackrest --stanza=12_data --type=time --target='2023-04-29 12:45:00' restore
```



Restore to the same machine:

```
pgbackrest --stanza=12_data --type=restore
```

Restore to a different machine:

```
pgbackrest --stanza=12_data --reset-pg-host --type=restore
```

Conclusion

pgBackRest offers a robust and efficient solution for backing up PostgreSQL databases, especially in replication environments. By following the steps outlined in this article, you can ensure the safety and availability of your data on replication servers. Always remember to test your backup and restore processes regularly to maintain data integrity and readiness for any unforeseen events. For more detailed and technical articles like this, keep following our blog on Medium. If you have any

questions or need further assistance, feel free to reach out in the comments below and directly.



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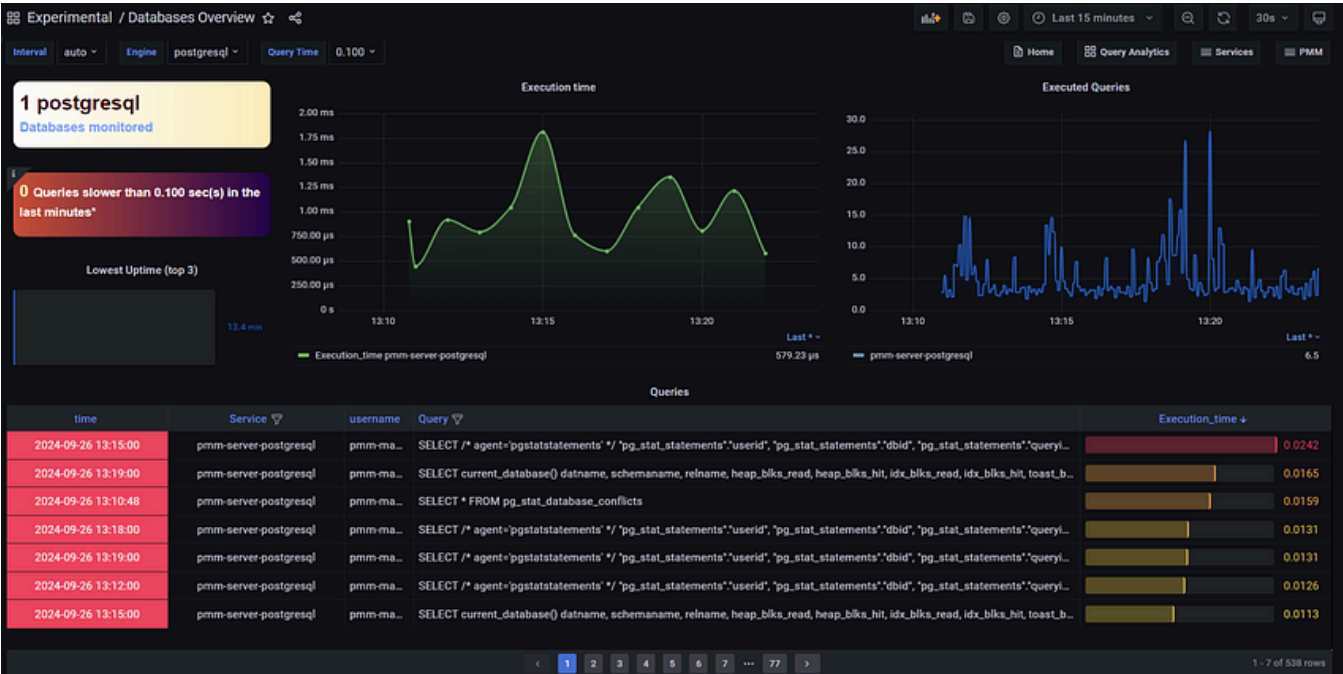
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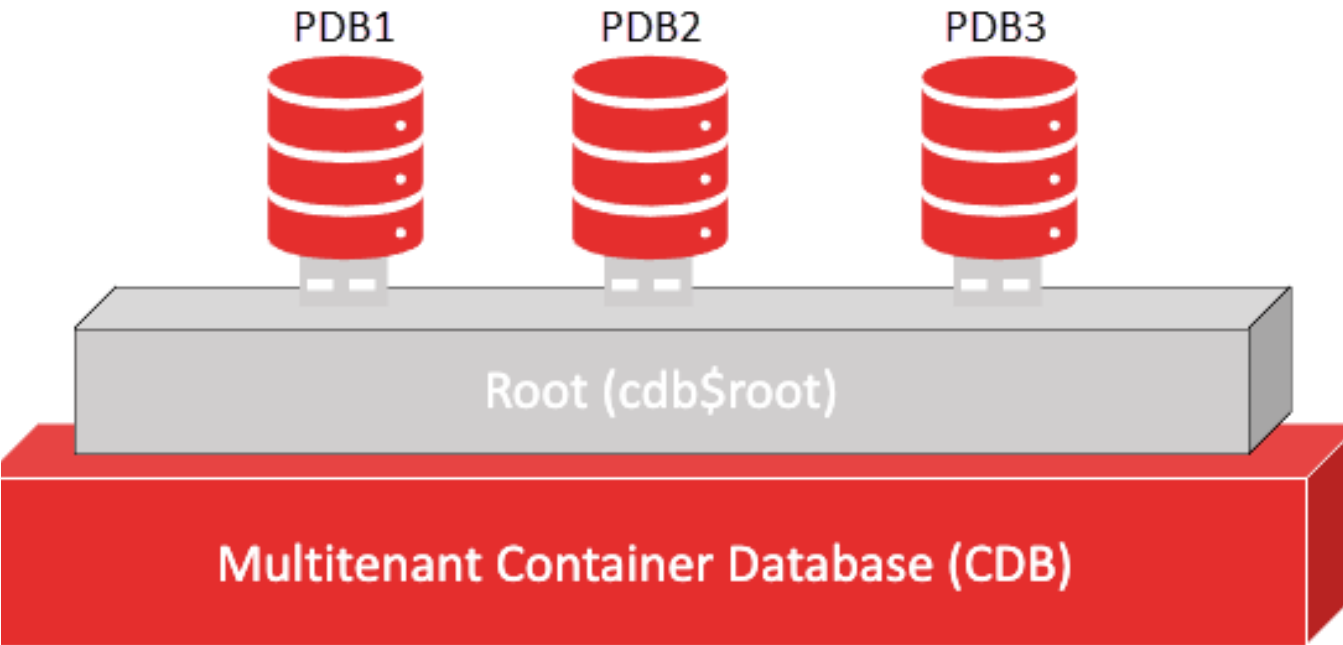


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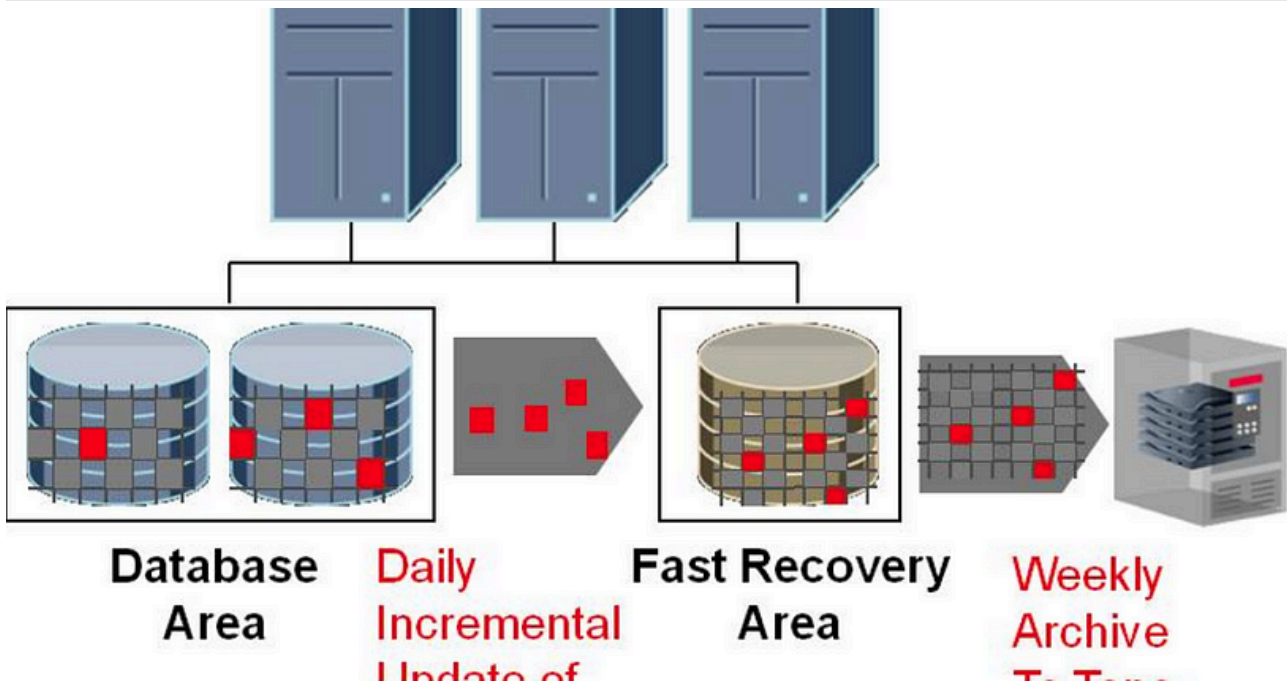


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Pluggable Database Command

----- - create pluggable database pdb1 admin user root identified by test123; alter pluggable database...

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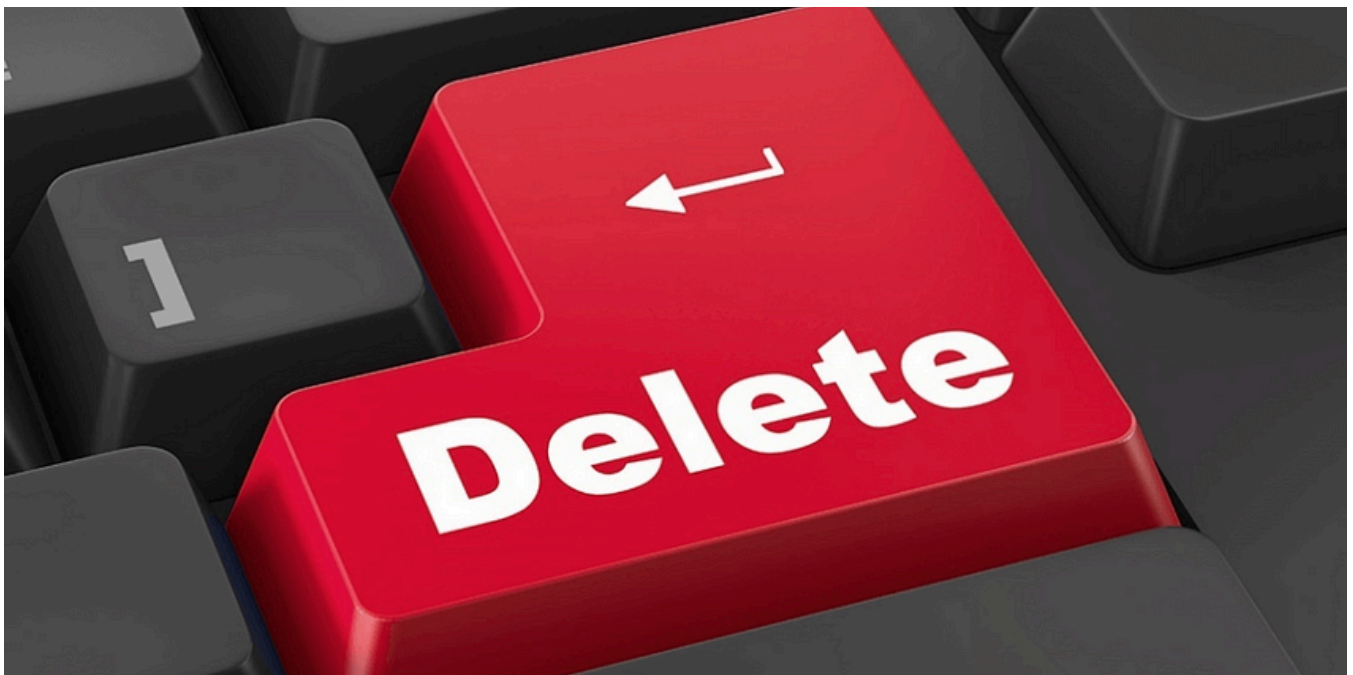


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RMAN Backup Basic Commands

```
rman target / rman target sys/password@YDKTST; backup database; backup database format '/backup/path/%d_%t_%s.rman'; backup tablespace...
```

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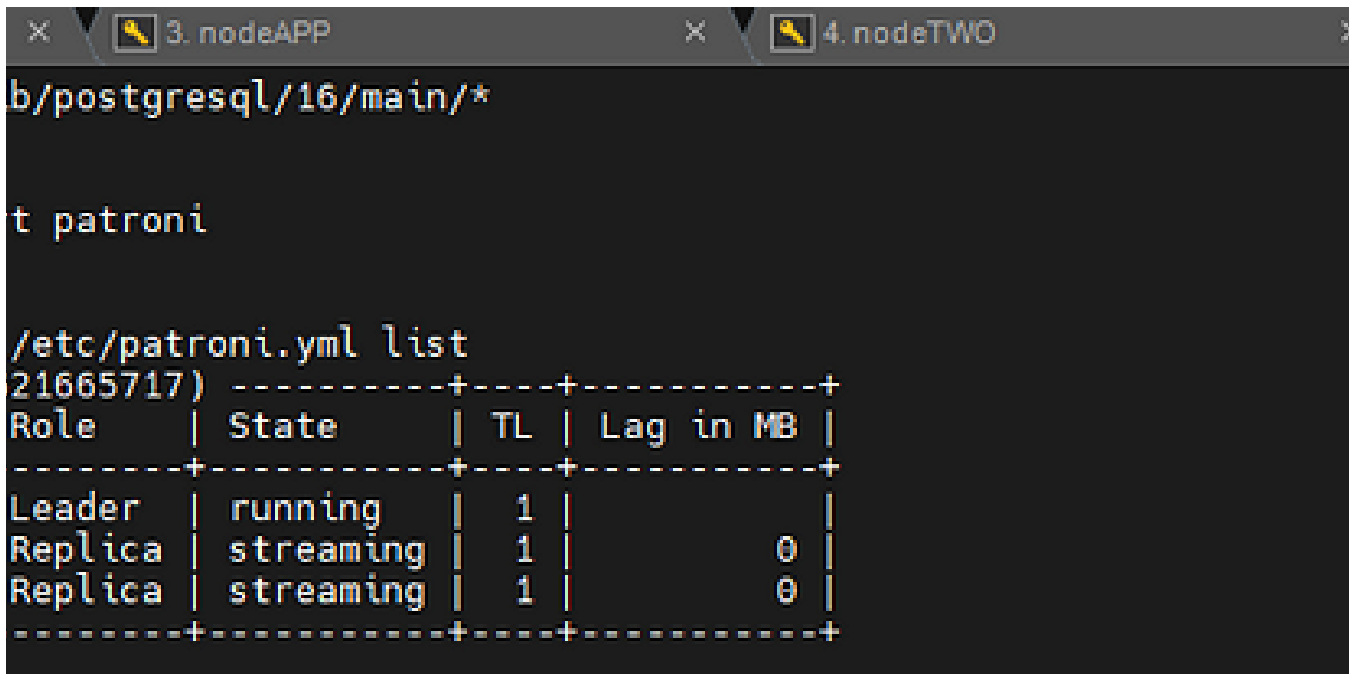
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```
3. nodeAPP 4. nodeTWO
b/postgresql/16/main/*

t patroni

/etc/patroni.yml list
21665717) -----+-----+-----+
Role      | State      | TL | Lag in MB |
-----+-----+-----+
Leader    | running    | 1  |           |
Replica   | streaming  | 1  | 0         |
Replica   | streaming  | 1  | 0         |
-----+-----+-----+
```

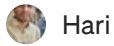
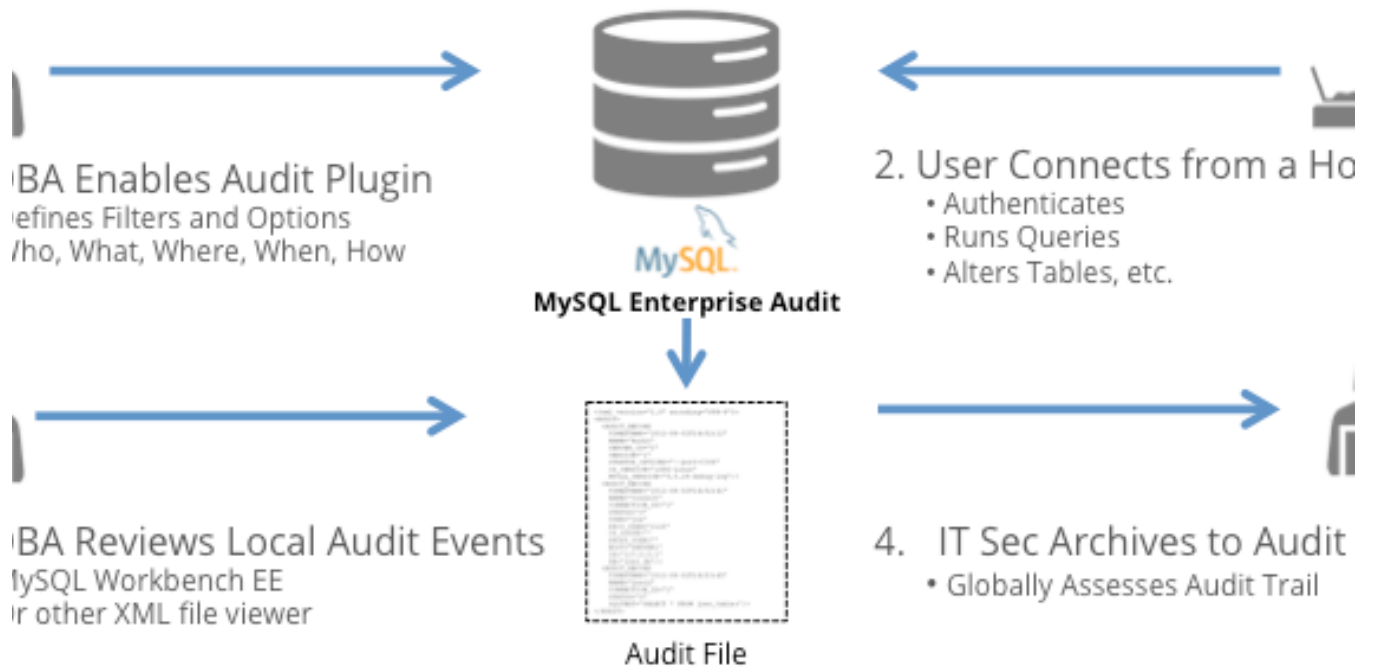
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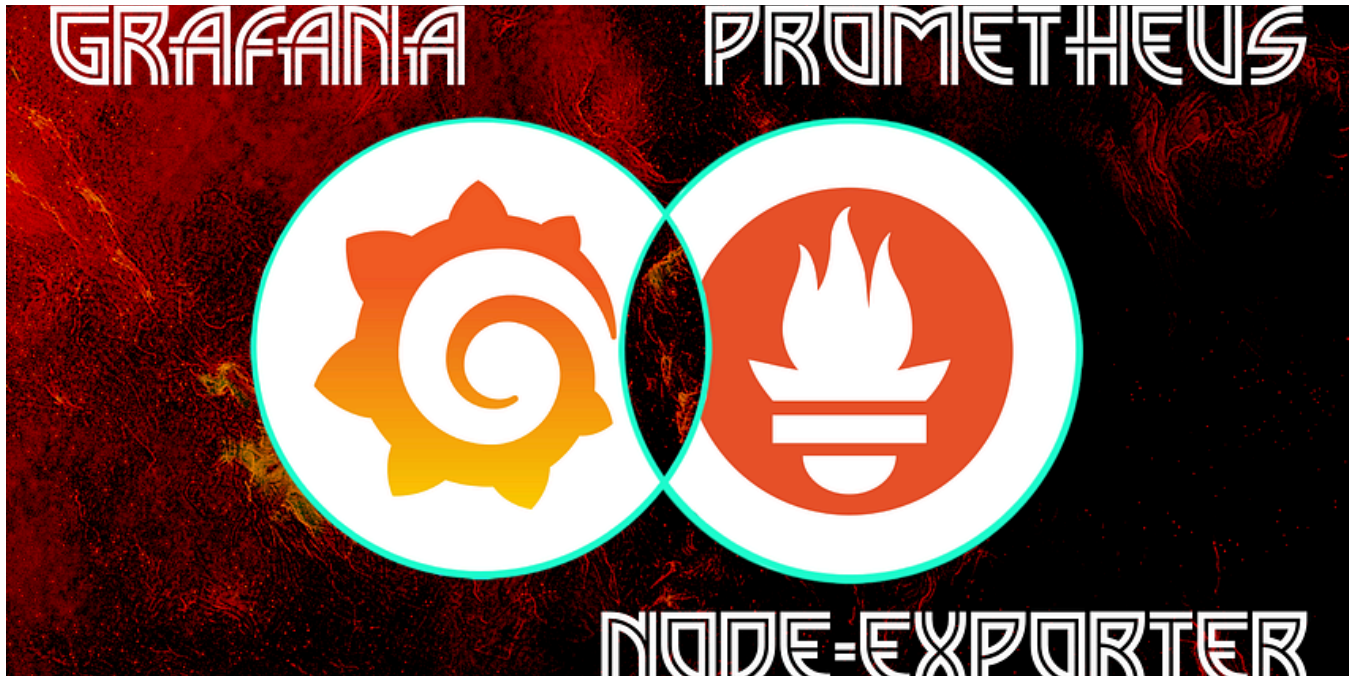
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