Synapse database troubleshooting

Room Retention policy enabled causes Synapse database to consume a lot of disk space

1. Run the following command against synapse postgres database : `\d+`. On an installer-managed postgresql, you can access psql command using : `kubectl exec -it -n element-onprem synapse-postgres-0 -- bash -c 'psql "dbname=$POSTGRES_DB user=$POSTGRES_USER password=$POSTGRES_PASSWORD"'`
2. Check the space taken by the table `state_groups_state`. For example, here it's consuming 540 GB : `public | state_groups_state | table | synapse_user | permanent | 244 GB |`
3. If you have Room retention policy enabled, there's a bug which causes some state groups to be orphaned, and as a consequence they are not cleaned up from the database automatically.
4. Follow the instruction from the page synapse-find-unreferenced-state-groups. The tool is available for download in the following link rust-synapse-find-unreferenced-state-groups.
5. On Standalone and Installer-managed postgresql database, you can use the following script to do it automatically. It's going to involve a downtime because Synapse is stopped before cleaning up orphaned state groups. **Please make sure that you have appropriate disk space before running the script because the script generates a backup of the database before cleaning up the tables.**. If you need to restore, the command will be `kubectl exec -it pods/synapse-postgres-0 -n element-onprem -- psql "dbname=synapse user=synapse_user password=$POSTGRES_PASSWORD" < /path/to/dump.sql` :

```
#!/bin/sh
set -e

echo "Stopping Operator..."
kubectl scale deploy/element-operator-controller-manager -n operator-onprem --replicas=0
echo "Stopping Synapse..."
kubectl delete synapse/first-element-deployment -n element-onprem

while kubectl get statefulsets -n element-onprem --no-headers -o custom-
columns=":metadata.labels" | grep -q "matrix-server"; do
  echo "Waiting for synapse StatefulSets to be deleted..."
  sleep 2
done

echo "Forwarding postgresql port..."
kubectl port-forward pods/synapse-postgres-0 -n element-onprem   15432:5432 &
```

```
port_forward_pid=$!
sleep 1s

POSTGRES_PASSWORD=`echo $(kubectl get secrets/first-element-deployment-synapse-secrets -n
element-onprem -o yaml | grep postgresPassword | cut -d ':' -f2) | base64 -d`
POSTGRES_USER=synapse_user
POSTGRES_DB=synapse

echo "Find unreferenced state groups..."
./rust-synapse-find-unreferenced-state-groups -p
postgres://$POSTGRES_USER:$POSTGRES_PASSWORD@localhost:15432/$POSTGRES_DB -o ./sgs.txt
kill -9 $port_forward_pid

echo "Copy unreferenced state groups list to postgres pod..."
kubectl cp ./sgs.txt -n element-onprem synapse-postgres-0:/tmp/sgs.txt

echo "Backing up postgres database..."
kubectl exec -it pods/synapse-postgres-0 -n element-onprem -- bash -c 'pg_dump
"dbname=$POSTGRES_DB user=$POSTGRES_USER password=$POSTGRES_PASSWORD"' > backup-unreferenced-
state-groups-$(date '+%Y-%m-%d-%H:%M:%S').sql

echo "Cleanup postgres database..."
kubectl exec -it pods/synapse-postgres-0 -n element-onprem -- psql "dbname=$POSTGRES_DB
user=$POSTGRES_USER password=$POSTGRES_PASSWORD" -c "CREATE TEMPORARY TABLE unreffed(id BIGINT
PRIMARY KEY); COPY unreffed FROM '/tmp/sgs.txt' WITH (FORMAT 'csv'); DELETE FROM
state_groups_state WHERE state_group IN (SELECT id FROM unreffed); DELETE FROM
state_group_edges WHERE state_group IN (SELECT id FROM unreffed); DELETE FROM state_groups
WHERE id IN (SELECT id FROM unreffed);"
echo "Starting Operator..."
kubectl scale deploy/element-operator-controller-manager -n operator-onprem --replicas=1
```

Running the script should look like this :

```
 bash cleanup-sgs.sh
Stopping Operator...
deployment.apps/element-operator-controller-manager scaled
Stopping Synapse...
synapse.matrix.element.io "first-element-deployment" deleted
Waiting for synapse StatefulSets to be deleted...
```

```
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Waiting for synapse StatefulSets to be deleted...
Forwarding postgresql port...
Forwarding from 127.0.0.1:15432 -> 5432
Forwarding from [::1]:15432 -> 5432
Find unreferenced state groups...
Handling connection for 15432
  [0s] 741 rows retrieved
Fetched 725 state groups from DB
Total state groups: 725
Found 2 unreferenced groups
Copy unreferenced state groups list to postgres pod...
Defaulted container "postgres" out of: postgres, postgres-init-password, postgres-exporter
cleanup-sgs.sh: line 28: 428645 Killed                  kubectl port-forward pods/synapse-
postgres-0 -n element-onprem 15432:5432
Backing up postgres database...
Cleanup postgres database...
Defaulted container "postgres" out of: postgres, postgres-init-password, postgres-exporter
DELETE 2
Starting Operator...
deployment.apps/element-operator-controller-manager scaled
```

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