RDS PostgreSQL upgradation from 9.6 to 12 version

As per PostgreSQL community the PostgreSQL 9.6 version EOL if scheduled in Nov-2021. Later that no security patches will be released for 9.6 version. AWS recommending upgrading the clients to upgrade the RDS PostgreSQL to 12 or later version. AS per standard it is good to upgrade to one less than latest version so we can upgrade to 12 version. PostgreSQL 12 version EOL is scheduled in Nov-2024 which has 3 years’ time from now.

1. Create the version compatible parameter group:

Create the parameter group for version 12 and copy all the non-default parameters from existing parameter group of the instance to the newly created parameter group, this need to be applied to the instance during the time of upgradation. The parameter group need to be created in both production and DR locations.

1. Stop the application from connecting to the database.
2. Commit or rollback the open prepared transactions before attempting to upgrade. Use below query to find the open transactions.

SELECT count(\*) FROM pg\_catalog.pg\_prepared\_xacts;

1. Remove all uses of the *reg\** data types before attempting an upgrade.

To verify that there are no uses of unsupported *reg\** data types, use the following query for each database.

SELECT count(\*) FROM pg\_catalog.pg\_class c, pg\_catalog.pg\_namespace n, pg\_catalog.pg\_attribute a

WHERE c.oid = a.attrelid

AND NOT a.attisdropped

AND a.atttypid IN ('pg\_catalog.regproc'::pg\_catalog.regtype,

'pg\_catalog.regprocedure'::pg\_catalog.regtype,

'pg\_catalog.regoper'::pg\_catalog.regtype,

'pg\_catalog.regoperator'::pg\_catalog.regtype,

'pg\_catalog.regconfig'::pg\_catalog.regtype,

'pg\_catalog.regdictionary'::pg\_catalog.regtype)

AND c.relnamespace = n.oid

AND n.nspname NOT IN ('pg\_catalog', 'information\_schema');

1. If we are using any of below extensions, upgrade them before the actual upgrade.

|  |
| --- |
| address\_standardizer  address\_standardizer\_data\_us  postGIS  postgis\_tiger\_geocoder  postgis\_topology |

To upgrade the extension, use the below command

Alter extension <name of the extension> update to <new version>;

1. If there are any of the below extensions drop them before actual upgrade.

pgRounting

tsearch2

chkpass

1. Drop if there any unknown data types in the database. Run the below query to know the unknown data types.

SELECT DISTINCT data\_type FROM information\_schema.columns WHERE data\_type ILIKE 'unknown';

1. Proceed with upgradation of the instance by clicking on modify and selecting the new engine version and parameter group created in first step.
2. The upgradation process automatically upgrades the read replica instance. Once the upgradation is completed change the parameter group of the read replica instance with the once created in first step.
3. Once the upgradation is completed, run the analyze command on each database to capture the metrics.

**Note:**

1. It is always recommended to upgrade the instance on test instance created from production instance snapshot. If that is successful, then do the actual production instance upgradation.