

The storage usage doesn't correspond with size of the databases

Last updated by | Alicja Kucharczyk | Jul 7, 2022 at 11:29 AM PDT

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Thursday, July 6, 2017
5:50 PM

Customer reported that in the portal the size of the instance in terms of storage usage is 18/19 GB. However, the size of the tables there are not correspond with this size. See the attached documents with info from the portal and size per table.

- The storage size includes:
1. The data files
 2. Log file size

Also:

postgres produces many folders which are not counted in pg_database_size(). If you look here <https://www.postgresql.org/docs/current/storage-file-layout.html> you can see all the folders postgres uses. Pg_xlog just happens to be a place where the file size can grow to a very large size, if not managed properly.

To get their database size the most common query is: `select pg_size_pretty(pg_database_size('<database_name>'));`
pg_database_size() only takes into account files under the following directories:
/pg_tblspc/* (symbolic links to tablespaces and their data)
/base/* (pg_default database data contained here)

Experienced users are aware that this query is limited to just the data in the database, but newer users of PG may perceive this as a discrepancy.

The below troubleshooting steps will help you to find the size of the database directories:

Created with Microsoft OneNote 2016.

1- You can check our telemetry data to see the number of Xlog files:

```
let SERVERNAME_ARG="pg-server-name";
let LIMIT_ARG=1000;
let THRESHOLD_ARG=10;
let STARTTIME_ARG=ago(30d);
let ENDTIME_ARG=now();
MonDmPgsqLXlogFileCount
| where strlen(SERVERNAME_ARG) == 0 or LogicalServerName == SERVERNAME_ARG
| summarize max(toint(file_count)) by bin(TIMESTAMP, 3h), LogicalServerName
```

TIMESTAMP	LogicalServerName	max_file_count
2020-11-12 03:00:00.0000000	3g-global	129
2020-11-12 06:00:00.0000000	3g-global	129
2020-11-10 09:00:00.0000000	3g-global	986
2020-11-12 00:00:00.0000000	3g-global	3539
2020-11-10 12:00:00.0000000	3g-global	3785
2020-11-11 21:00:00.0000000	3g-global	9377
2020-11-11 18:00:00.0000000	3g-global	15415
2020-11-10 15:00:00.0000000	3g-global	16394
2020-11-11 15:00:00.0000000	3g-global	21218
2020-11-10 18:00:00.0000000	3g-global	23302
2020-11-11 00:00:00.0000000	3g-global	26118
2020-11-10 21:00:00.0000000	3g-global	26156
2020-11-11 09:00:00.0000000	3g-global	26441
2020-11-11 12:00:00.0000000	3g-global	26445
2020-11-11 03:00:00.0000000	3g-global	27608

2- And the below query will show you how much the customer database allocated space, in addition to the total size and the size of the Xlog:

```
MonRdmsInstanceAgent | where originalEventTimestamp > ago(2d)
| where LogicalServerName == "pg-server-name"
| where message_systemmetadata !contains 'Fileshare directory' and message_systemmetadata contains '[PostgresStorageMetricsCollector].RefreshMetric:'
| project originalEventTimestamp,
ClusterName, AppName, AppTypeName, LogicalServerName, SourceNamespace, SourceMoniker
```

```
, xlog_gb = tolong(extract(' xlog:([ ])([-0-9]+)', 2, message_systemmetadata, typeof(real)))/(1024*1024*1024)
, temp_gb = tolong(extract(' temp:([ ])([-0-9]+)', 2, message_systemmetadata, typeof(real)))/(1024*1024*1024)
, total_gb = tolong(extract(' total:([ ])([-0-9]+)', 2, message_systemmetadata, typeof(real)))/(1024*1024*1024)
, pgtotal_gb = tolong(extract(' pgtotal:([ ])([-0-9]+)', 2, message_systemmetadata, typeof(real)))/(1024*1024*1024)
, quota_gb = tolong(extract('quota:([ ])([-0-9]+)', 2, message_systemmetadata, typeof(real)))/(1024*1024*1024)
```

originalEventTimestamp	ClusterName	AppName	AppType	LogicalServerName	SourceNameSpace	SourceMoniker	xlog_gb	temp_gb	total_gb	pgtotal_gb	quota_gb
2020-11-11 08:56:14.2549160	tr11283.westeurope1-a.worker.database.windows.net	be29f4620c96	Worker.PALPG	3g-global	WASD2Prod	WASDMonProdWeu1aTR11283	413	0	662	944	1506
2020-11-11 08:57:14.5107742	tr11283.westeurope1-a.worker.database.windows.net	be29f4620c96	Worker.PALPG	3g-global	WASD2Prod	WASDMonProdWeu1aTR11283	411	0	660	942	1506
2020-11-11 08:58:14.7644299	tr11283.westeurope1-a.worker.database.windows.net	be29f4620c96	Worker.PALPG	3g-global	WASD2Prod	WASDMonProdWeu1aTR11283	411	0	661	942	1506
2020-11-11 08:59:15.0111032	tr11283.westeurope1-a.worker.database.windows.net	be29f4620c96	Worker.PALPG	3g-global	WASD2Prod	WASDMonProdWeu1aTR11283	411	0	661	943	1506
2020-11-11 09:00:15.2517109	tr11283.westeurope1-a.worker.database.windows.net	be29f4620c96	Worker.PALPG	3g-global	WASD2Prod	WASDMonProdWeu1aTR11283	412	0	661	943	1506
2020-11-11 09:01:15.5075610	tr11283.westeurope1-a.worker.database.windows.net	be29f4620c96	Worker.PALPG	3g-global	WASD2Prod	WASDMonProdWeu1aTR11283	412	0	661	943	1506
2020-11-11 09:02:15.7467055	tr11283.westeurope1-a.worker.database.windows.net	be29f4620c96	Worker.PALPG	3g-global	WASD2Prod	WASDMonProdWeu1aTR11283	410	0	660	941	1506
2020-11-11 09:03:16.0025828	tr11283.westeurope1-a.worker.database.windows.net	be29f4620c96	Worker.PALPG	3g-global	WASD2Prod	WASDMonProdWeu1aTR11283	410	0	660	942	1506
2020-11-11 09:04:16.3476310	tr11283.westeurope1-a.worker.database.windows.net	be29f4620c96	Worker.PALPG	3g-global	WASD2Prod	WASDMonProdWeu1aTR11283	410	0	660	942	1506
2020-11-11 09:05:16.5963652	tr11283.westeurope1-a.worker.database.windows.net	be29f4620c96	Worker.PALPG	3g-global	WASD2Prod	WASDMonProdWeu1aTR11283	411	0	660	942	1506
2020-11-11 09:06:16.8495176	tr11283.westeurope1-a.worker.database.windows.net	be29f4620c96	Worker.PALPG	3g-global	WASD2Prod	WASDMonProdWeu1aTR11283	411	0	661	943	1506
2020-11-11 09:07:17.1874849	tr11283.westeurope1-a.worker.database.windows.net	be29f4620c96	Worker.PALPG	3g-global	WASD2Prod	WASDMonProdWeu1aTR11283	409	0	659	941	1506
2020-11-11 09:08:17.4192292	tr11283.westeurope1-a.worker.database.windows.net	be29f4620c96	Worker.PALPG	3g-global	WASD2Prod	WASDMonProdWeu1aTR11283	409	0	660	941	1506
2020-11-11 09:09:17.6607770	tr11283.westeurope1-a.worker.database.windows.net	be29f4620c96	Worker.PALPG	3g-global	WASD2Prod	WASDMonProdWeu1aTR11283	409	0	660	942	1506
2020-11-11 09:10:17.9335282	tr11283.westeurope1-a.worker.database.windows.net	be29f4620c96	Worker.PALPG	3g-global	WASD2Prod	WASDMonProdWeu1aTR11283	410	0	659	942	1506
2020-11-11 09:11:18.2264056	tr11283.westeurope1-a.worker.database.windows.net	be29f4620c96	Worker.PALPG	3g-global	WASD2Prod	WASDMonProdWeu1aTR11283	410	0	660	942	1506

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