14.10.xC6 Features, an Overview

Today is a 10,000 foot view

Carlton Doe will be presenting details:
- Kernel, ER, SQL -- June 22nd at 11am EDT
- HQ and Backup on RSS -- June 29th at 11am EDT

Backup on RSS

Archives and log backups may now be taken on an RSS node.

- ontape and onbar supported
- Best used for rebuilding the RSS node if needed
- May also be used to recover the primary in an emergency

ER Performance Improvements

Should improve ER throughput and latency across the board, including ER sync.

- Optimizations of existing design reduced overhead
- Areas redesigned to eliminate choke points
- More parallelism – SMX protocol

cdr check catalog

Checks consistency of metadata across servers and replicates

Reference catalog can be specified. Defaults to master server's metadata.

Audit to Syslog (ASL)

Sparked by PCI/PA-DSS requirement

Uses Posix-compliant calls

All messages contain a server identifier

Activated and configured using several new onaudit command line options

SEC_NONBLOCKING_CKPT

RSS_NONBLOCKING_CKPT still supported but will be deprecated. Use the new param for either HDR or RSS.

When set, a non-blocking checkpoint on primary will result in a non-blocking checkpoint on secondary.

Log staging not needed for these checkpoints.

onstat -g laq improvements

laq == log apply queues

The log apply code for secondaries and normal logical recovery was largely rewritten in 2020.

onstat -g laq has now been enhanced to provide more details on what is happening in the apply queues.

New TEMPTAB_NOLOG mode

When TEMPTAB_NOLOG == 0 (the default), logged temp tables can be created, assuming they go into a logged DBspace.

TEMPTAB_NOLOG == 1 means all temp tables are unlogged regardless of syntax used.

Typically primaries use 0 and secondaries use 1. This poses a problem for node promotion during failover.

TEMPTAB_NOLOG == 2 is interpreted as 0 on a primary and 1 on a secondary.

DBSPACETEMP Supports a Mix of Page Sizes

```
onmode -wf DBSPACETEMP="tdbs_2k,tdbs_8k,tdbs_12k"
```

Prudent to keep at least one temp DBspace at base page size for warm restores

sysmaster view for temp space usage

syssessiontempspaceusage

Queries from sysptnhdr. Returns session id and
allocated pages for each partition.

Query Timeout

onstat –g sql/ses now show elapsed clock time for queries

Set QUERY_TIMEOUT session env variable to automatically interrupt query after X seconds

Parallel Smartblob Cleaning

SBSPACE_CLEANERS <number>

IFX_LOCLEAN_OFF was removed

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RR Fragment auto balance

Inserts favor the fragment with the fewest rows.

Formerly only available with AUTOLOCATE.

RR row migration on update

If a round-robin fragment has no free space, an update that increases the size of a row now triggers a migration.

Prior versions returned -131 (No free space) or -136 (No more extents).

Large Segment Aliasing on AIX

Shared memory segments will be aligned on 1TB boundaries.

Significantly reduces the cost of memory access.

AIX_LSA (0,1,2)

"Last Modified" time for partitions

"Last Lookup/Scan" is already a thing with index fragments.

Same element in partition header displayed for data partitions as "Last DML time".

ifx_row_id improvement

Every table has this pseudo column.

```
select * from jctab where ifx_row_id = "20971999:179978";
```

HQ Improvements

Create and drop tables in schema manager

Customize event logging behavior for agent and HQ server (log4j 2.x)

TLS 1.3 support

TLS_VERSION 1.3

- ISI_GSK_FIPS_MODE=OFF for gskit clients
- 1.2 is still the default

Automatic sysmaster rebuild

We will now be able to change sysmaster schema in any new version including fixpacks.

Upgrading to 14.10.xC6 does involve conversion

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