NSF/IUCRC CAC PROJECT

INTEGRATED VISUALIZING, MONITORING, AND MANAGING HPC SYSTEMS

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CORRELATIONS

InfluxDB measurements	TimeScaleDB
CPUUsage	idrac8.cpuusage
FanSensor	idrac8.rpmreading
Health	(Not exist in telemetry report)
JobsInfo	(Currently not included)
Load	(Currently not included)
MemUsage	slurm.memoryusage
NodeJobs	slurm.node_jobs
Power	idrac8.systempowerconsumption
SwapUsage	(Currently not included)
TempSensor	idrac8.temperaturereading

TABLE STRUCTURE

cpuusage table (as an example):

timestamp	nodeid	source	faqq	value
2021-02-19 19:32:55-06	1	resourcemanager	UGE	78.5

NOTE:

Timestamp filed should be in “timestamptz” type instead of string. Refer to: https://www.postgresql.org/docs/12/datatype-datetime.html

Nodeid: should be “int4” type instead of string; The corresponding id of a node can be found in the “nodes”table.

Source: this is kept to keep consistent with data collected from iDRAC9.

faqq (stands for Fully Qualified Device Descriptor): this corresponds to label in InfluxDB

Value: same as value in InfluxDB

ACCESS TIMESCALEDB

Before using python to interact with TimescaleDB, I suggest learning some basic knowledge about PostgreSQL and using cmd to access the database. A database management tool (such as TablePlus) may help you access the data more easily.

These are important info for accessing the database. I've already create and initialize a database named "demo". If you want to explore some basic operations, you may create another database.

Host: hugo.hpcc.ttu.edu
Port: 5432
User: monster
Password: redraider
Dbname: demo

Use Python with TimescaleDB, refer to: https://docs.timescale.com/latest/tutorials/quickstart-python

I organized all telemetry metrics of nocona and matador under "idrac9" schema in the "demo" database. (PostgreSQL has a different meaning of "schema", which can contain tables, refer to https://www.postgresql.org/docs/12/ddl-schemas.html). For storing Quanah metrics, I would suggest creating an "idrac8" schema and all previous mentioned tables will be saved in this schema.

QUESTIONS?/COMMENTS?