Ganymede.

Project Charter

Overview

The Ganymede project is designed as a replacement and enhancement to the current data feed process that supplies data from all CaaS Cloud Control databases to Glassbeam.

Business Problems to Be Solved

The ITaaS Infrastructure Team relies on Glassbeam to provide business intelligence around our CaaS MCP capacity. The reporting is used to identify current capacity of storage and compute resources, long term usage trends, as well as help identify sudden spikes or drops in utilization. Disruptions in this data flow can lead to resource exhaustion (clients can no longer provision servers and/or networks on MCPs,) which would be interpreted as outages to clients and can lead to loss of revenue, unrealized revenue, a negative impact to company credibility, and negative standing in the industry.

Project Objectives

The objective of Project Ganymede is to provide a highly reliable data extract, transform, and transfer process of data stored in all CaaS MCP databases, resulting in an hourly data feed consumed by Glassbeam. A secondary objective of the project is to build a centralized data warehouse of CaaS MCP data to satisfy future reporting needs, possibly not suitable for reporting through Glassbeam for either technical or legal reasons or because of the immediacy of the need (Glassbeam cannot provide the necessary reporting in the timeframe it is needed.)

Project Stakeholders

The stakeholders associated with this project include:

- ITaaS Product Engineering
- ITaaS Infrastructure

Additional stakeholders that may be involved in the project for limited duration include:

- ITaaS Engineering

Project Scope

This project's scope will encompass the entirety of:

- The extraction of select data from all identified CaaS MCP databases on an hourly basis.
- The loading of the data into a suitable centralized data storage system for further processing and long-term retention.
- The transformation of the data into an intermediate format supported by Glassbeam.
- The transfer of the intermediate format data from Dimension Data to Glassbeam on an hourly basis.
- All program libraries, code and scripts used in the execution of the above business processes.

Areas that are out-of-scope of this project include:

- Availability of the CaaS MCP databases. If one or more databases are not available during the extraction phase, the data associated with that location for that time period will be considered "lost and unrecoverable" from a Glassbeam standpoint. This has been agreed to by Glassbeam and Dimension Data.
- Availability of the Glassbeam transfer server. If the Glassbeam server used as a transfer destination of data is unavailable for an extended period of time, or fails completely, it will be the responsibility of Glassbeam to resolve the issue.

- 3rd party programs used to provide services or facilitate the business processes. For example, operating system utilities such as scp (secure copy,) ftp (file transfer program,) database software such as MySQL, MongoDB, Redis, 0MQ, etc. These 3rd party programs will be covered by a vendor support agreement, where applicable and appropriate.

Project Success Criteria

This project will be deemed a success if the following criteria are met within a 1 hour timeframe:

1. Data is successfully extracted from all identified CaaS Cloud Control databases, and
2. All data from all locations is successfully loaded into a central data store, and
3. All data from all locations is successfully transformed into the agreed upon intermediate format supported by Glassbeam, and
4. All data from all locations is successfully transferred to Glassbeam.

Project Approach and Lifecycle

This project will require regular software updates. The software will be dependent on the CaaS Project (in particular, the database schema and data model.) This project will employ an iterative software development approach. The software will need to be production-ready and deployed globally prior to CaaS Cloud Control updates. This approach is already employed successfully by the Cloud Manager project.

All network and server resources required for the project will be resources deployed on the global CaaS MCP platform.

"Day 1" Assumptions

During the project's initial software development, all architect, developer, and sys admin resources must be 100% allocated according to the deliverable schedule. Any reallocation of human resources may result in delays to the overall project schedule.

Once the project is launched, architect and developer resources will be employed on an as-needed basis. It is expected that developer resources will be needed at least once a quarter or more, as required, to support changes in the CaaS Cloud Control product. Sys admin resources will continue to be employed in order to maintain the production servers (OS patching, performance management, database management, etc.).

During the lifetime of this project, it is assumed that at least 2 CaaS Cloud Control lab environments will be available for development and testing. At least one of those environments must be using the next release of CaaS Cloud Control, in order for this project to provide production support for the CaaS Cloud Control release prior to its promotion to production.

During the lifetime of this project, it is assumed that project owners will get advance notice of changes to the CaaS Cloud Control database and/or data model, which may affect this project's functionality. Any failures to communicate changes before those changes are made live in production may result in the failure to extract, load, transform, and deliver data sets to Glassbeam.

"Day 1" Dependencies and Constraints

This project depends on the CaaS Cloud Control platform. That platform generates the data this project is responsible for delivering to Glassbeam.

This project depends on access to un-released versions of the CaaS Cloud Control software layer in order to refine its code and provide continued, uninterrupted operation.

This project depends on the availability of a CaaS MCP platform to provide storage and compute resources.

This project depends on advance notice of changes to the CaaS Cloud Control database schema and/or data model.

This project depends on the availability of a ITaaS Engineering CaaS developer to provide answers to database schema and data model questions that may arise.

"Day 1" Risks

Changes to the data set extracted from CaaS and/or delivered to Glassbeam represent a risk. All changes to either the data collected or delivered after go-live must be discussed and approved using formal change management processes.

Changes to the underlying OS, program libraries used, etc. represent a risk to the stability and performance of the project. All changes to the OS, program environment(s), etc. must undergo QA testing and change management approval before moving into production.

Change Management

Change Management will govern all architectural aspects of the project, including additions and/or changes to functionality employed or delivered, and changes to servers used to deliver the service. Changes to code needed to support CaaS Cloud Control database schema and/or data model are not covered under Change Management except when those changes result in a different data representation to Glassbeam. For example, if the reported disk capacity changes from Megabytes to Bytes, this represents a fundamental change in the data representation to Glassbeam and requires Change Management approval.

The Change Management Board should be composed to at least 1 member of each stakeholder group.

Deliverables

This project will deliver:

- Software to accomplish the business objectives outlined in this charter.
- Server build documentation to build servers capable of delivering the service specified.
- Level 1 procedures to allow the support organization to perform alert triage and remediation or escalation (as appropriate.)
- Operations guides to for management of day-to-day tasks as well as capacity and performance management of the service.

About Ganymede

Ganymede /??æn?mi?d/[12] (Jupiter III) is the largest moon of Jupiter and in the Solar System, and the only moon known to have a magnetosphere. It is the seventh satellite outward from Jupiter[13] and third of the Galilean moons, the first group of objects discovered orbiting another planet. Completing an orbit in roughly seven days, Ganymede participates in a 1:2:4 orbital resonance with the moons Europa and Io, respectively. It has a diameter of 5,268 km (3,273 mi), 8% larger than that of the planet Mercury, but has only 45% of the latter's mass.[14] Its diameter is 2% larger than that of Saturn's Titan, the second largest moon. It also has the highest mass of all planetary satellites, with 2.02 times the mass of the Moon.[15] (Source: http://en.wikipedia.org/wiki/Ganymede_%28moon%29)

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