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Convergent Cloud Billing with Tapestry

Billing for the Cloud

- Support for events at all levels—IaaS, PaaS, SaaS and related sophisticated cross-discounting across different cloud offerings from different vendors
- Powerful real-time cloud event rating, where events can be rated on any number of parameters such as but not limited to time-based, data-based, overlaid with SLAs, “cascading” (SaaS combined with IaaS)
- Support for hierarchies—both customer and partner
- Ability to import/export cloud billing events
- Full access to all data generated by the system and configuration of the system through an extensive set of APIs

TAPESTRY—THE MODULAR SOLUTION FOR CONVERGENT CLOUD BILLING

Enterprise and government adoption of cloud continues to increase. The tantalizing promise of cloud computing is carefree IT—honed to enterprise needs and quick to react to changing business circumstances. One of the key attributes of cloud computing is the usage model: customers consume resources as a service and pay only for what they use. Horizontal and vertical cloud convergence is crucial, as cloud providers need to quickly react to the market needs with new offerings. The core attributes of cloud computing such as agility and self-service need to be projected into billing, where new products and services must be rolled out in hours and days, rather than weeks and months.

Tapestry provides billing for the cloud (IaaS, PaaS and SaaS) that can be deployed as both billing from the cloud and off the cloud. Tapestry convergent and real-time capabilities not only support cloud events and cloud convergence but can mix cross-discounting of cloud and non-cloud events to achieve superior billing convergence and provide a powerful platform to support creative product offerings.

IaaS

IaaS events can be generated from a wide variety of systems and solutions such as virtual machines with CPU time, DASD (in MB or GB), and network equipment. Billing attributes for these can go to an even deeper level:

- Price for CPU time will be different with Intel’s blade server vs. a top-of-the-range HP/IBM/Oracle server
- DASD can be low-end or high-end, therefore impacting price
- Operating systems and the tools to maintain and operate them carry different cost structures
- A premium may be added for disaster recovery and fine-tuned depending on the recovery scenario
- Event overlays, such as high availability (HA), where the higher the percentage of HA, the higher the price for services, and SLAs, where penalties for not keeping SLAs are calculated automatically

Tapestry supports all these complex billing scenarios.

PaaS

For PaaS, Tapestry can support convergent billing for usage of different operating systems, various development and application frameworks and solution stacks, and combine these with IaaS usage, overlaid with SLAs and HA.

SaaS and Horizontal Convergence and Real-time Event Processing

Single Cloud

Different modules or services within the same offering may have different license prices. As an example, Unified Communications contains different modules—VoIP, Messaging, TelePresence—and in a licensed deployment, each of these modules is sold for a different price. As SaaS starts being charged per usage, there will be different usage pricing for different modules, as well. Tapestry supports different usage pricing for different modules and services, either separately or combined with IaaS. Tapestry also supports promotions and cross-discounting; for example, buy VoIP and Messaging, and get 15% off TelePresence.

Multiple Clouds

In a multiple cloud environment, Tapestry supports horizontal convergence—cross discounting among different modules of different cloud offerings. As SaaS examples, if a client subscribes to the UC suite, he can get 25% off ERP. Tapestry supports a lower level of granularity— if a client subscribes to TelePresence and VoIP from the UC suite, he can get 10% off the HR module in the ERP offering (horizontal inter-cloud convergence).

Tapestry Cascading Pricing and Vertical Convergence Support

Clients often want usage price for the application to include IaaS. Different modules have different usage price and different billing “units”. They also use a different amount of infrastructure; for example, Messaging will have very different networking IaaS needs than TelePresence. Such cascading pricing calculations need to be done automatically. Furthermore, the cloud or service provider may offer “vertical” convergence — if a client buys \$1M worth of IaaS, he can get 30% discount on the FMC module in UC, or vice versa. SaaS modules may trigger IaaS discounts.

Other Features

Support for Customer Hierarchies

A client could be an enterprise project, business unit or the whole enterprise. Tapestry supports customer hierarchies and roll-ups, for example the CFO may need to know how much an enterprise is spending on different SaaS offerings. Similarly, cloud service providers may have partners—dealers and distributors—who will add value to the cloud offering unique to their company. Tapestry supports such partnership billing. Last but not least, the cloud will have cascading partner offerings. For example, the CSP as the cloud provider partners with a UC product vendor to offer UC as SaaS. As UC has an embedded bill of materials, which contains COTS products and services from third parties, a “partner” hierarchy also needs to be supported. As an example a UC offering will need an RDBMS, supplied by a non-UC product vendor. The solution allows organizations to see all of their costs, where they are, and who owns them by mapping resource utilization data to a company's hierarchical structure. Once mapped, data can be aggregated at any level giving customers the ability to analyze granular data at whatever depth and breadth they require.

Billing from the Cloud

There is a significant difference between billing for the cloud and from the cloud. Billing for the cloud and Tapestry capabilities in cloud billing were illustrated above, where Tapestry handles cloud offerings at IaaS, PaaS and SaaS levels, horizontal and vertical cloud convergence, as well as convergence of cloud and non-cloud events for billing purposes. Billing for the cloud and from the cloud are different capabilities: billing from the cloud doesn't mean billing for the cloud is supported. Tapestry supports both. Its advanced cloud billing capabilities can be implemented as a standalone solution in a client datacenter, or as a cloud billing service for customers who prefer to leave the level of complexity to the experts and consume it as a service.

Usage based billing

Tapestry's cloud billing offering is architected to collect resource usage data across the entire span of a company's infrastructure and supports any measurable unit of billing.

Examples of available usage based consumption include but are not limited to:

- Storage (GB-Month, million I/O requests, etc.)
- Bandwidth (public Internet inbound/outbound, same cloud, regional cloud)
- Computing (CPU Hours, RAM Hours, Service Units, etc.)
- Roaming (Process in-collect roaming usage)
- Product and service usage (installs, events/user/month, etc.)

Time to Market

Tapestry provides high agility combined with low TCO. Convergent products and services are set by a business user through GUIs.

Conclusion

Tapestry's openness, modularity, low TCO, flexibility, agility, real-time capabilities, and cloud horizontal and vertical convergence provide a unique combination of capabilities, giving the cloud service providers an advantage in cloud billing. Tapestry can not only support cloud billing, but also "hybrid cloud billing" mixing usage and license models for cloud providers in the transition period from license- to usage-based billing.

Tapestry convergent capabilities go beyond the cloud, where cross-discounts can be given between cloud and non-cloud events. The abilities to process high volumes in billions of records/month in real-time and support sophisticated hierarchies of both clients and partners gives cloud service providers many cloud billing advantages. These advantages create a unique opportunity for cloud service providers to differentiate themselves in the marketplace and only be bound by their creativity.

FOR MORE INFORMATION

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