



ERwin[®] in the Cloud:

How Data Modeling Supports Database as a Service (DaaS) Implementations

Nuccio Piscopo

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Abstract

Cloud Computing is an emerging market, and there exist an increasing number of companies that are implementing the cloud model, products and services. However, despite the popularity of large scale decision support systems, data analysis tasks and, applications data marts, the majority of these applications have not yet embraced the Cloud Computing paradigm. Support to dynamic scalability, heterogeneous environments or interfaces to business intelligence products ask for class of solutions to satisfy the paradigm. In this scenario, Data Modeling supports cloud computing since interaction among the Cloud Service Provider, Cloud Administration and Customer needs to include a well thought out data architecture before a DBMS designed offering in cloud computing is deployed.

Introduction

Cloud Computing benefits are a great appeal for aligning IT and Business. Specialization, economics of scale, shifting CapEx to OpEx, for example, dramatically cut costs in data and application development and maintenance. Database as a Service (DaaS) applications allow companies to host their databases in the cloud as a cost-effective way to manage their data. Although many companies are interested in moving to this approach for business reasons, the pay-as-you-use cloud computing model also creates additional complexity, driving the need for increased database analysis. Together with data violation, this complexity is the most important pain when company moves data to the cloud.

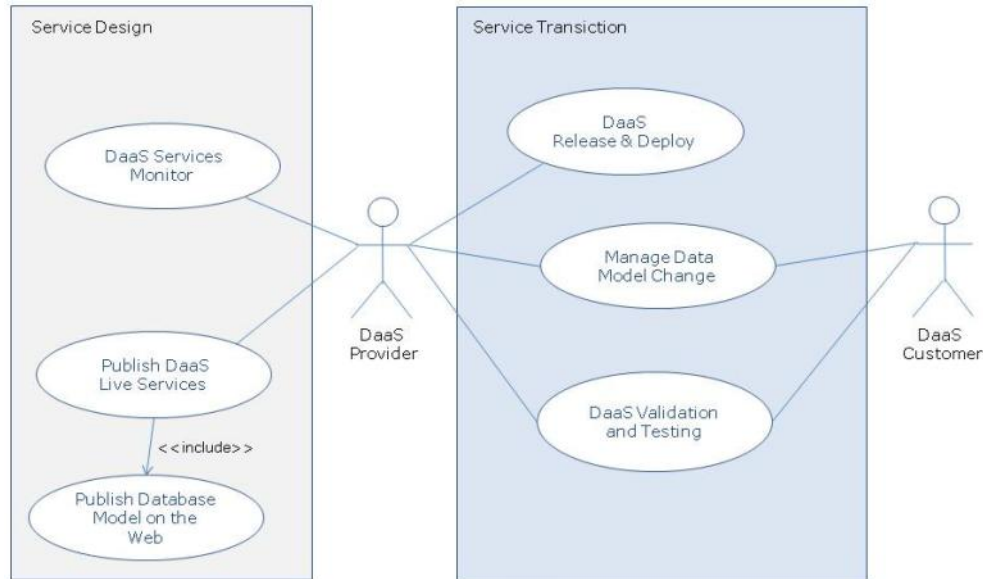
Data modeling meets the ever-increasing need for analysis and provides a solution to satisfy customer continuity in the form of cloud database activities, Cloud Provider reliability and, overall, Cloud Administrator confidence in supplying service conformity. DaaS changes the interaction among actors with respect to SaaS, PaaS and IaaS. Data modeling supports DaaS in that it provides a clear roadmap of the deployed data structures, as well as the core business concepts. This helps in choosing the architecture and the possible evolution and changes it can have. Designing a database model before deploying a cloud solution sets the technical and contractual policies for both Customer and Provider, as well as Administrator.

CA ERwin® Data Modeling's Role in Cloud Computing

Many companies manage their database structures and evolution by data models. Before the Cloud Computing era, companies have for many years used data models to help implement quality and compliance procedures, preserve their data heritage by designing and mapping data by models, implement data warehousing systems, or manage company data model changes. Companies normally have several DBMSs in place (MS SQL Server, Oracle, Sybase, DB2, etc) so they require solutions running in heterogeneous environments, having the ability to read database cross-properties (from Oracle to SQL Server, for example, and vice versa) and the capacity to interface with business intelligence products. Those companies were preparing to meet economy of scale, to support scalability and diverse platforms, faster management approval and shifting from CapEx to OpEx. Even before the emergence of Cloud Computing, they were ready to open to the Cloud paradigm.

Working initially by virtualizing their servers into a limited infrastructure (using virtual technology such as VMware), these companies today understand that Cloud Computing is not delivered "from a celestial location" but it is a service with

tremendous opportunities to be wisely driven and managed. Looking at databases, the path to “order” has been not easy and it is not simple now, going through the Cloud. A database is historically the safe of the company knowledge. Before virtualizing anything database-related, companies have to know the real status of their data and so, normally, the first step to pursue should be “know yourself”. This means document and order the company heritage stored in the databases. This goal has been and still is a primary objective for CA ERwin Data Modeler and CA ERwin Model Manager.



DaaS Provider and Customer by UML modeling ITIL V3

This solution in the last 20 years has satisfied customer requirements by supplying technology to model databases and properties through libraries that document by models the history of changes, upgrades, migrations and the evolution of a company’s database in one central repository.

Before moving to a DaaS model, the CA ERwin Modeling solution is a powerful system to negotiate database structures that are to be deployed and/or used as a service. This is a must because moving off the company heritage creates uncertainty and risk. Changes, upgrade, access and structure evolution are not under the Customer’s or Administrator’s direct control, so confidence in the Cloud Provider must be managed with realism and pragmatism. CA ERwin Data Modeler and CA ERwin Model Manager work to keep aligned the company models and databases used as a service by providing the following:

1. Ability to create models in heterogeneous database environments;
2. Ability to interface with business intelligence products;
3. Support of diverse cloud architectures (shared-nothing, shared-disk, hybrid);
4. Functioning irrespective of replication over large geographic distance or database parallelization or time they are executed.

The CA ERwin Modeling solution is ready for businesses seeking to deploy on distributed groups. CA ERwin Model Manager administers this starting from the model/sub-model by a user/group approach. This opens up another option supplied by CA ERwin Modeling: managing changes along the DaaS life cycle.

The latter aspect is one of the most important differentiators of the CA ERwin solution: focusing on the modeling of data services. CA ERwin Data Modeler supports potentially complex data models by modeling databases that are hosted on the web. As a result, design, volumetric, stored procedures, rules, and model templates, etc. can be promoted by the Cloud Provider by way of value-added features. So, CA ERwin Data Modeler and CA ERwin Model Manager are not only a way for the Customer to track DaaS forward Provider interaction, but they are also a comprehensive approach for the delivery of

information to SaaS use and development.

Conclusion

CA ERwin Modeling users should keep in mind that the DaaS concept is evolutionary. CA ERwin Modeling gives continuity through service deployment in terms of DaaS aspects of Cloud Computing. Although the CA ERwin Modeling is still growing its presence in the Cloud market, the cloud paradigm makes CA ERwin a privileged solution to support the key requirements of data services, incremental database deployment and progressive data structure provisioning. Cloud also provides to CA ERwin the great opportunity to offer a unique utility-style model life cycle to accelerate cloud database optimization and performance in the paradigm. Companies need a cloud-compatible database and CA ERwin is the right way to understand both company's database architecture and business requirements using data models as they relate to the database as data store and the database as a service.

Brief Glossary

CapEx: Capital Expenditure;

DaaS: Database as a Service;

IaaS: Infrastructure as a Service;

OpEx: Operational Expenditure;

PaaS: Platform as a Service;

SaaS: Software as a Service.

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