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# Server Migration Ontology Compatibility for Hybrid Layer Data Transfer: A Review

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**Abstract -** Data transfer from one server to another requires a great ontology process in which data from one server to another gets migrated through a protocol service in which three layers are minimum required. The first layer will involve the first data centre from where the data has to be migrated, the second layer would be the mediator platform where the data would be first migrated and the third layer would be the layer where the data would be migrated. Every platform has their cross breed architecture system commonly known as CLR which interprets the data from one transform to another. This paper briefs about the hybrid layer data migration through which data from one server can be transferred to another server.

***Keywords* - Server Compatibility, Protocols, CLR.**

## 1. Introduction

Data migration is categorized as storage migration, database migration, application migration and business process migration. The process of translating data from one format to another. Data migration is necessary when an organization decides to use new computing systems.
Data migration is the process of transporting data between computers, storage devices or formats. It is a key consideration for any system implementation, upgrade or consolidation. During data migration, software programs or scripts are used to map system data for automated migration [1].

Automated data migration minimizes human intervention and application downtime and enhances migration speed. Migration documentation facilitates tracking and reduces future migration costs and risks.

These scenarios are routine IT activities, and most organizations migrate data on a quarterly basis [1]. Data migration occurs for a variety of reasons, including:

- Server maintenance
- Server or storage equipment replacements or upgrades
- Data center relocation
- Website consolidation

Server data migration involves the process of migration of the data along with the architecture from one server to another. Server Compatibility has several issues in terms of transmission of the data from one server to another. Cloud computing provides a computer user access to Information Technology (IT) services i.e., applications, servers, data storage, without requiring an understanding of the technology or even ownership of the infrastructure [2].

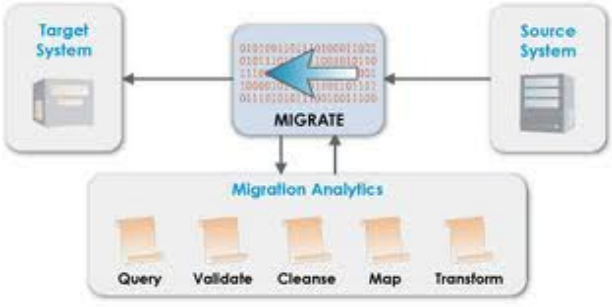


Fig 1 Data Migration Architecture [3]

The general migration architecture in figure 1 the database schema is mapped into the ontology using the mapping process described: - The ontology is computed once and must be recomputed only database schema is changed [4]. Data migration architecture has two files produced: one file containing the ontology and other containing instances that refers to the schema file using XML mechanism.

Server deployment models are: Private, Public, Community, and Hybrid Server [5]. Hybrid Cloud Hosting is a type of cloud hosting model that utilize public and private cloud hosting tools and techniques to provide a cloud hosting environment or solution. It enables user and organization to provision a combination of public and private cloud solutions- in par with their business needs. Such as private and public cloud for critical and less critical needs respectively [6].

## 2. Data Migration

The process of moving data from one storage device to another. In this context, data migration is same as Hierarchical Storage Management (HMS). The migration of the database layer in particular, Microsoft identifies the following migration scenarios where only the database layer is migrated to the Server and the other layers are kept hosted traditionally[5] :

- ✓ Web applications.
- ✓ Applications only used by departments or smaller working groups within a company.
- ✓ Data hubs, where the data is mirrored, e.g., on the laptops of employees, and regularly synchronized with the data store in the Server [5].

To achieve an effective data migration procedure, data on the old system is mapped to the new system providing a design for data extraction and data loading. Programmatic data migration may involved many phases but it minimally include data extraction where data is read from the old system where the data is written to the new system.

### 2.1 Advantages of Migration

The advantages of the cross layer migration is as follows:

a) Data compatibility can be checked on different servers.
b) If the server cost increases then the user can migrate its architecture from one server without any additional cost.
c) The transfer accuracy would decide the effectiveness of the algorithm through which the data is getting migrated.

### 2.2 Disadvantages of Migration

a) The migration completely depends upon the protocol which we are using. Hence if the protocol is not effective, it would result into a less amount of data transfer and lack in accuracy.
b) It has been seen often that the protocols consumes a lot of time in terms of migrating the system architecture from one end to another.

This is due to the lack of knowledge area of the cross architecture protocol. Hence the services must know the cross platform architecture to migrate.

## 3. Application Migration

The application migration is done in two steps: selection of the go daddy server, and migration of the data. Application migration is the process of moving an application program from one environment to another. Examples include migration from an on-premises enterprise server to a cloud provider's environment or from one cloud environment to another [7].
Some of the moving an application from one environment to another i.e;

- Data movement and encryption, both in transit and when it reaches the target environment.
- Setting up networking to maintain certain relationships in the source environment and preparing to connect into different network options provided by the target environment.
- The application itself, which lives in an ecosystem surrounded by tools and processes. When the application is moved to a target cloud, you may have to re-architect is based on the components/resources that the target cloud provides [8].

The following types of applications to be considered for migration to the Cloud:

1.Business intelligence and data warehouse applications

2. Highly-scalable Web sites

3. Enterprise applications

4. SaaS applications

5. PaaS applications

6. LaaS applications

7. Social or customer-oriented applications

8. Social (online) games

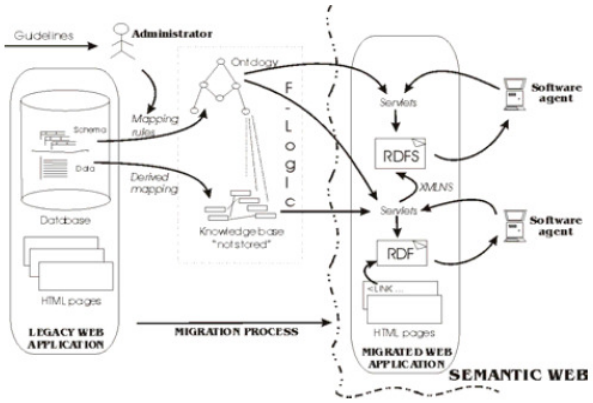


Figure 2 represents the general migration [4]

The above figure shows; the xml schema is generated against the go daddy server data. Go daddy server is an online development and storage portal termed as cloud server of Microsoft where the data is to be migrated.

## 4. Related Work

- Consiglio Nazionale delle Ricerche et.al (2012) explain the working over the cloud platforms for the last few decades. According to him the general migration issue raises when your data is not secure at the one platform. Now the issue comes that whether we can transfer the data with the architecture from one end to another. He proposed that if we can use the TCP/IP technique to find out at which server the data is going to be migrated and if we can configure it to the server from where the data has to be migrated can make a difference into the migration but he did not talk about how an existing architecture allows the second server to be configured into itself [9].

- Chaim Fershtman and Neil Gandal et.al (2012) talked about the eco friendly migration of data through the advanced scripting system. If we see for an example of SQL SERVER 08 it can encrypt the data along with the architecture and it consumes a less amount of energy also if we can run the advanced script over the cloud. For this proposal to take place , other cloud services started working on it and as a result we can see different cloud servers using run a script method into their architecture as software as a service parameter [10].

- Vipul Snehadeep Chawathe (2012) The migration work from the local server to a server which is desired, different platforms has been used for the migration like .NET, JAVA etc but till now it has not been tried to migrate a bulk amount of data from a cloud server to another cloud server. The reason behind this is all the cloud servers use different type of protocol architecture. Now it is not compulsion for a cloud server to use the same type of protocol architecture [11].

## 5. Conclusion

This paper concludes that there can be two cases of migration Application and Data Migration and for any case the compatibility of the servers is compulsory. To transmit the data or to make the compatibility of two servers to transfer the files from one server to another server, there are several tools which help the local server to migrate but there is no such tool till now is available which can migrate the architecture as well. In future works tools can be developed in which the architecture compatibility can be also highlighted.

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