

## Microsoft SSIS and SQL Server 2012, 2014 for Data Virtualization

Microsoft has a broad range of tools and capabilities, some overlapping Enterprise Enabler, although data virtualization, and bi-directional data virtualization across multiple disparate systems are not among them. Advances in SSIS and SQL Server are improving the abilities for data integration with these tools, however, the ease of use for complex integrations, particularly data virtualization fall short of Enterprise Enabler's (EE's) scope and time to production.

### Data Virtualization

Data Virtualization (DV) is an architecture for on-demand data interaction across multiple disparate sources. Full CREATE, READ, UPDATE, DELETE, and QUERY (CRUDQ) are available. An explicit or implicit data model represents the federated data and is subject to those functions.

### Adapters versus AppComms™

Classic adapters inherently carry overhead in performance and ability to support the needs of live federation across multiple sources. They bring data from the source to a predefined common intermediate format and they have no way of interacting with the data mapping and transformation utilities. Most are not reusable across all instances of the application type, and require custom coding to adapt to the specific instance of the application. Ongoing maintenance of Adapters incurs large out-of-pocket expense. Microsoft offers some adapters, and relies on third parties to provide a larger range of connectivity.

Because EE's AppComm™ technology is part of the run time and IDE (Integrated Development Environment), each AppComm knows how to communicate not only with the backend system, but how to take coordinated instructions from EE's native-to-native transformation engine. It is the transformation engine that orchestrates data access and alignment across multiple sources simultaneously and bi-directionally, aligning and transforming the data *en route*. When building federations, it is simple to visually create federations amongst disparate data sources without additional tools to write and compile code, deliver data as an XML or a standardized feed to an XSLT or third party transformation engine. Additionally, eliminating the need for third party tooling results in EE's much faster and lower risk set-up and development effort, eliminating the need to first integrate components in the middleware layer before even beginning the project.

### Creating a virtualization layer

SSIS and SQL Server do not allow exposing a database table or integration returning data as an OData or web service. SSIS does allow returning an ADO.Net data reader for read requests, but still the services layer (OData or web services) must be developed to call the SSIS package to return the data. SSIS does not have an ADO.net data writer for submitting update data. EE, on the other hand, does not require the user to develop any services layer; auto-generation of these is built-in.

**Exposing virtualized data**

EE also supports data virtualization in a “define once, consume anywhere” manner, providing single click packaging as SOAP or REST web services, OData, JDBC, ODBC, ADO.Net, and SharePoint CustomConnector. In contrast, a full project cannot be completed using SSIS and SQL Server, as there would need to be significant custom development services to wrap READ requests, and still there would be no ability to do write-backs. SSIS does not have an ADO.net data writer for submitting update data.

**Learning Curve**

The fact that Enterprise Enabler handles much of the work behind the scenes, means that it is not necessary to know any other tools or scripting languages. The IDE is a single interface for design, development, testing, and deployment of integrations, whether DV, ETL, SOA, or EAI, without ever leaving the product. The intuitive nature of Enterprise Enabler means that you are productive and building integrations the first day.

**Microsoft Development Shops**

While EE is used in many non-Microsoft development environments, it is particularly useful in a MS-centric environment. Because of the time, difficulty, and in some cases, near impossibility of constructing complex integrations using SSIS, SQL Server, and perhaps Biztalk, many Microsoft shops are standardizing on .Net based Enterprise Enabler for integration because of its tight compatibility and extensibility with the MS tools. Changes to integrations can be applied, tested, and deployed in a matter of minutes, dramatically reducing the cost of maintenance over time.

**As far as ETL**

ETL can be done using SSIS in SQL Server 2012 and 2014, but it will require significantly more time and effort by the developer than EE, as well as more maintenance overhead for making changes. The SSIS packages are developed in Visual Studio and transformations require work and inspection in the solution to “see” what transformation is being done for each field. Federating data within the ETL is done by staging the data as opposed to EE’s federation as the transformation engine accesses the sources live, and Sources are not restricted to XML or relational databases. Configuring an integration in EE is through a drag-and-drop visual picture that is much easier to “read” and implement, than the requisite programming. The IDE features a built in function manager that allows logic reuse, including a central location for storing the logic. SSIS developers attest that EE is dramatically easier and quicker to implement projects than using SSIS.

**Bottom line:**

SSIS can NOT do what EE does as a virtualization layer, and even with a custom application wrapped around it, it is not possible to do write-back. Implementation of any data federation integration project will take no less than twice the time to develop as in Enterprise Enabler. Enterprise Enabler provides the fastest, richest and most agile Data Virtualization on the market with SharePoint or any other application, dashboard, or Business Analytics tool. The same IDE just as easily generates ETL, EAI, ESB, and offers the ability to create complex integration patterns across all forms.