

Combining SQL Server Management Studio And ArcMap to Recur Flood Using ODM Database

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Introduction

Structured Query Language (SQL) is a widely used database language, providing means of data manipulation (store, retrieve, update, delete) and database creation. SQL Server Management Studio is an integrated environment for accessing, configuring, managing, administering, and developing all components of SQL Server. SQL Server Management Studio combines the features of Enterprise Manager, Query Analyzer, and Analysis Manager, included in previous releases of SQL Server, into a single environment. In addition, SQL Server Management Studio works with all components of SQL Server such as Reporting Services, Integration Services, and SQL Server Compact 3.5 SP2.

The Observations Data Model (ODM) is designed to store hydrologic observations and sufficient ancillary information (metadata) about the data values to provide traceable heritage from raw measurements to usable information allowing them to be unambiguously interpreted and used. So we combine SQL an ODM 1.1 database loaded with data create a time-enabled feature layer for ArcGIS from the DataValues table in ODM.

The goal of this project is to create Time-Enabled Feature Layers in ArcMap with ODM flood data which will be executed from the view of SQL Server Management Studio. Then we can recur flood happened in different places in Time-Enabled Feature Layers.

The approach to achieve this goal for this project is proposed as following:

- (1) SQL Server Management Studio. Part of the work will be done in this studio which will create view to represent data from ODM. The tables generated in the view:
 - DataValue
 - VariableName
 - LocalTime
 - Latitude
 - Longitude
- (2) ArcMap. Query layer generated in ArcMap will honor SQL query no matter how complex the query is. This is the new functionality in ArcGIS 10. Then create a time-enabled event layer from the query layer which will animate data through time.

References

- (1) Tim Whiteaker
Creating Time-Enabled Feature Layers from ODM Data (Instruction)
- (2) David G. Tarboton, Jeffery S. Horsburgh, David R. Maidment
CUAHSI Community Observations Data Model Version 1.1
<http://his.cuahsi.org/odmdatabases.html>
- (3) Jeffery S. Horsburgh
Getting Started with ODM for MySQL