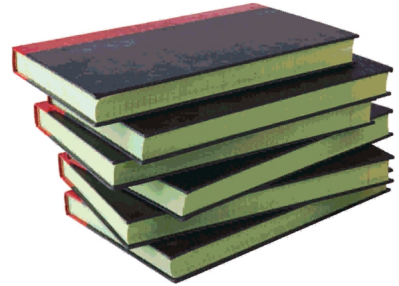


# Building Multi-tiered Applications with OS/390 and VSE



## Multi-tiered Architectures and Mainframes

Application architects ask — and answer — questions like the following:

- ▼ Where will the data reside?
- ▼ Where is the storage most available?
- ▼ Where will the business logic reside?
- ▼ Where are the CPU cycles most available?
- ▼ Where are the CPU cycles most cost-effective?
- ▼ How will the application be initiated?

Unfortunately, the difficulty of achieving inter-platform connectivity between LAN-based platforms and OS/390 or VSE has often ruled out optimal solutions.

Now, with ViaSQL, advanced enterprise-wide applications that incorporate the mainframe are practical for the first time.

## Sophisticated Application Design with ViaSQL

The most basic ViaSQL architecture locates the user interface and business logic on a PC client, and data on OS/390 or VSE. With the addition of a ViaSQL Remote Stored Procedure (RSP), any or all of the business logic can be located on the mainframe.

ViaSQL supports on-the-fly integration of heterogeneous OS/390 or VSE data sources, either programmatically via the RSP or language-based via the Legacy Data Server. Using the SQL Server Remote Procedure Call (RPC) feature, mainframe data can be integrated with LAN-based data. And data can be moved from platform to platform using ViaSQL's transfer feature.

The client function can be located in several places: in a PC or Web browser, in a CICS program (a ViaSQL Client Services Application, or CSA), or in SQL Server (Sybase or Microsoft). ViaSQL's CSAs allow CICS programs to access, retrieve, and update data and execute procedures in LAN-based DBMSs.

Finally, applications can be run manually, started from a CICS scheduler or other program, or executed as SQL Server triggers. For transfer applications, Viaserv supplies a scheduler.

In fact, with ViaSQL just about anything is possible.

# ViaSQL in Multi-tiered Applications

## Scenario I

You're responsible for integrating a new department's data store into your VSE-based application and allowing users to execute distributed queries. Unfortunately, the new data is in Sybase on a UNIX platform. You write a Sybase stored procedure that transfers data from VSE into a temporary Sybase table, then joins the Sybase data to that table and returns the merged result to the user. The transfer is customized for each execution using variables supplied to the stored procedure.

## Scenario II

Every night, sales data from eight regional databases must be merged, processed, and the results made available to the regions. You write a ViaSQL CSA which executes automatically at midnight, transfers regional data to OS/390, and then calls your business processes. Upon return, the CSA initiates transfers in the reverse direction and populates each regional server with the latest information.

## ViaSQL Q&A

*How can I integrate non-relational OS/390 or VSE data into the relational world of LAN DBMSs?*

ViaSQL supports the "relationalization" of non-relational data, and gives you two methods to choose from. You can write a ViaSQL RSP and use the API to describe the data relationally, or you can use Legacy Data Server and Legacy Data Manager to define "virtual tables" which are relational maps of the non-relational data. In this second case, you can execute SQL against the non-relational data.

*How does ViaSQL handle data format differences?*

Comprehensively and flexibly. EBCDIC-ASCII conversion is automatic and customizable. Conversions between S/390 and client datatypes are also automatic and customizable.

During data retrieval, mainframe date and time values can be expanded to datetime or maintained as character, while timestamp values can be truncated to datetime or kept intact as character. Out-of-range values can be defaulted to user-specified values.

And, with ViaSQL's Sliding Century Year feature, mainframe two-digit year values can be expanded to four digits on the fly, increasing the interoperability of your OS/390 or VSE data.



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