External Data Access

This chapter describes external data access techniques. They include using REST-based URLs via WCF Data Services. This is a common way to read and write data provided by SharePoint from remote locations where the API is not available.

The opposite scenario allows SharePoint to gather data from external systems—principally line-of-business (LOB) applications or native databases. Business Connectivity Services (BCS) smoothly integrates with SharePoint, making external data available as if it were a regular SharePoint list.

This chapter covers the following:

- Querying data using WCF Data Services
- Accessing external data using Business Connectivity Services
- Highly efficient data access using the SharePoint database

The basic protocols and techniques used to access data are also examined in this chapter.

Introducing External Data Access

Accessing SharePoint via its object model API is widely covered in this book. However, there are often requirements to access SharePoint data from other platforms, through Internet connections, or simply from a remote location. In all those instances, you cannot use the API directly, because the necessary assemblies are either not available or not applicable. The new client object model, while advantageous for developers who are fluent with the programming style and object model hierarchy, is not always a viable alternative, either. (We cover this model in depth in Chapter 12.) Since it is limited to platforms and technologies explicitly supported by the current client object model, eventually you encounter situations that need other ways to access SharePoint data. A powerful, easy, standardized approach is needed. There are several options, as shown in Figure 5–1.
The SharePoint Representational State Transfer (REST) interface plays an outstanding role in this picture. Some readers may recall the period when Internet protocols arose and gained wide acceptance. The secret behind their amazing success was their simplicity. Indeed, today they still have few architectural weaknesses, while a full-blown architecture, as perfect as it might have been at the time, would not have had such an enduring achievement. A simple architecture is fast to implement, it’s cheap to create applications, and it’s easy to understand. REST is repeating history and makes data access as simple and straightforward as possible. It’s not fully defined, and anything superfluous to establishing a connection has been jettisoned. However, it is powerful enough for most daily tasks.

For a more structured alternative, SharePoint still supports web services using Simple Object Access Protocol (SOAP) to transmit and receive data. This is a much more comprehensive standard compared with REST.

Whichever data access strategy you choose, external data access is the key to opening up SharePoint to other worlds and keeping it at the heart of an enterprise infrastructure.

Query Data Using Data Services

WCF Data Services enables REST-based access to data stored on a SharePoint server. REST-based access uses a simple URL-based API to fetch data from lists using HTTP GET requests. The simple access opens up the server as a data source to a wide range of clients from all platforms. The technical foundation is provided by the WCF Data Services Framework.

The WCF Data Services Framework

WCF Data Services (formerly known as ADO.NET Data Services) is a platform that is actually a combination of a runtime service and a web service. The final version appeared with .NET 3.5 Service