After completing this chapter, you will be able to

- Understand the Business Connectivity Services architecture
- Understand how BCS integrates both inside and outside SharePoint 2010
- Create BCS solutions of simple and medium complexities
- Create custom .NET connectors using Visual Studio 2010
- Configure the Secure Store Service for use by Business Connectivity Services
- Add basic security trimming using Visual Studio 2010
- Understand the potential that BCS exposes for your organization

Business Connectivity Services (BCS) makes it possible to integrate external data sources—typically line-of-business data—with SharePoint 2010. The most exciting features in BCS for SharePoint 2010 are the SharePoint Designer 2010 (SPD 2010) integration, its search capabilities, and Microsoft Office 2010 integration (which is outside the scope of this book).

The new BCS offers similar functionality to the Business Data Catalog (BDC) in SharePoint 2007. In contrast to the BDC, the BCS is accessible to a much wider audience due to its integration with SharePoint Designer 2010. This was not the case with the BDC in SPD 2007. Also, accessing and manipulating LOB data is now easy. With BDC it was relatively easy to read external data, but manipulating external data presented a number of complexities. The new BCS interface in SPD 2010 makes it easy to both define CRUD operations and even aggregate data between different content types across multiple data sources.

Now BCS is available in SharePoint Foundation 2010, which means it is free. This allows for creating complex business-driven solutions at a low cost.

This chapter describes the high-level architecture, capabilities, and components of BCS, with a special focus on search-related topics. Examples will be given of how to use SPD 2010 to create declarative solutions and Visual Studio 2010 to create custom content types using C# and enable searching of these content types.
BCS Architecture

The architecture of BCS is comprehensive but still makes it easy to use. Considering that BCS can be used for both SharePoint and the MS Office clients, it offers an excellent framework that enables administrators to easily understand and set up BCS solutions that integrate content types from most typical content sources all the way through the pipeline of BCS, finally presenting a data interface in an intuitive way to the end user. Furthermore it allows developers to create new, reusable components as either .NET connectors or custom connectors. BCS can be divided into three layers: presentation, core components, and content sources, as shown in Figure 9-1.

![BCS Architecture Diagram]

**Figure 9-1. BCS architecture**

Presentation

BCS presents data that can be consumed or manipulated by SharePoint 2010 and MS Office clients. SharePoint 2010 contains three primary consumers of data exposed through BCS.

- External lists
- Out-of-the-box Web Parts
- Search