In this chapter, we will discuss a tool which will make it clear why ALM is an important process for organizations engaged in IT development. A good implementation of ALM will help the organization deliver better business value to fulfill its business needs. Automating tasks by using tools such as Visual Studio 2012 and TFS 2012 can support this process.

In this chapter, you will learn how TFS can be used to fulfill the three main pillars of ALM and the issues addressed by ALM 2.0+, which we covered in Chapter 2. You will start with an overview of ALM and of TFS and then move on to the specifics of using TFS for ALM.

**Application Lifecycle Management Overview**

As you may recall from Chapter 2, there are three main pillars of an ALM process:

- **Traceability of relationships between artifacts.** The lack of traceability can be a major cost driver in any enterprise. There must be a way of tracing the requirements all the way to delivered code and back again—through architect models, design models, build scripts, unit tests, test cases, and so on. Practices such as test-driven development and configuration management can help, and these can be automated and supported by TFS.

- **Automation of high-level processes.** There are approval processes to control handoffs between analysis and design. There are other handoffs among build, deployment, testing, and so on. Much of this is done manually in many projects, and ALM stresses the importance of automating these tasks for a more effective and less time-consuming process.

- **Visibility into the progress of development efforts.** Many managers and stakeholders have limited visibility into the progress of development projects. Their visibility often comes from steering group meetings during which the project manager goes over the current situation. Other interest groups such as project members may also have limited visibility of the whole project even though they are part of it. This often occurs because reporting is hard to do and can involve a lot of manual work. Daily status reports can quite simply take too much time and effort to produce, for example, especially when we have information in many repositories.

Other important topics that ALM 2.0+ addresses are as follows:

- **Improving collaboration.** Collaboration is needed between teams, team members, stakeholders, and users, just to mention a few relationships. When development is spread around the world in different locations, collaboration can be hard to manage without the help of a proper tool.
• *Closing the gap between IT and business.* The big gap between IT and the business side of an organization is a serious problem for organizations, preventing us from delivering the greatest business value we can achieve in our projects.

• *Using one tool.* The complexity of using several tools for solving project issues as a team member can be tough and costly as well. Switching between tools can be a cost driver. Using one tool enabling us to add plug-ins and use more features directly in our ordinary GUI instead of switching between applications is preferable. So, if you have several roles in a project, you can still use one tool to get the job done.

• *Enhancing role switching.* ALM also addresses the potential to use one tool when switching among different roles in a project. In many cases, project members play several roles in projects. A developer, for instance, might also work with tests or databases. If that person can use the same GUI for all tasks, there will be minimal overhead for switching between these roles.

**Team Foundation Server Overview**

TFS has come a long way toward fulfilling the ALM vision, but it does not cover everything. TFS is an open and extensible product that will let us adjust its features to our needs and add the things it might lack at this point to support our specific needs. It is also important to know that Microsoft is spending a lot of time, energy, and money on developing this product further. It is not a toolset that will go away quickly (although one never knows); it is one of the most important toolsets in the Microsoft ecosystem.

**Team Foundation Server**

You can see that the heart of ALM in the Visual Studio 2012 world is TFS 2012, as shown in Figure 5-1.

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**Figure 5-1. Visual Studio 2012 Suite—an overview**

TFS exposes different functions and services for developers, project managers, version control, reporting, and build and work item tracking (see Figure 5-2). You will soon take a look at all of these in more detail. Not shown in this picture is that TFS uses Microsoft SQL Server as its data repository.