Visual Studio .NET Academic Teaching Tools Guide

11/01 Part No. X08-54120

Contents

CHAPTER 1

Getting Started

Microsoft® Visual Studio® .NET is the complete suite of tools for rapidly building Web applications and classic, high-performance desktop applications. This suite includes powerful component-based development tools, such as Microsoft® Visual Basic .NET, Microsoft® Visual C++® .NET, and Microsoft® Visual C#® .NET (pronounced C sharp), as well as a number of additional technologies to simplify team-based design, development, and deployment of solutions. Also included is the Microsoft® MSDN® Library, which contains all the documentation for these development tools.

Microsoft® Visual Studio® .NET Academic includes everything in the Visual Studio Professional Edition with a set of tools designed specifically for faculty, referred to as the Teaching Tools. Using the Teaching Tools, you can automate much of your routine course and assignment work, making it possible for you to spend more time with your students. For more information, see Teaching Tools Features.

In This Section

Teaching Tools Features
: Discusses the Teaching Tools used to publish courses and assignments to a location that your students can access.

Installing Visual Studio .NET Academic
: Provides instructions on how to install Visual Studio .NET Academic Teaching Tools.

Visual Studio .NET Academic Integrated Development Environment
: Discusses some of the development tools that are provided with Visual Studio .NET.

Overview of Teaching Tools
: Includes an overview of the two different options that are included with the Teaching Tools for publishing courses and assignments.

Walkthrough: Using the Assignment Publishing Tools
: Provides instructions on how to use the assignment publishing tools to publish courses and assignments.

Walkthrough: Using Assignment Manager
: Provides instructions on how to use the Assignment Manager to publish courses and assignments. Assignment Manager makes it possible for you to track assignment submission, build student solutions automatically, notify students of assignment grades, and send messages to students.

Related Sections

Visual Studio .NET (MSDN Library)
Introduces Visual Studio and the Visual Basic, Visual C++, and Visual C# languages.

Teaching Tools Features

Visual Studio .NET Academic provides a set of course and assignment tools designed specifically for faculty and collectively referred to as the Teaching Tools. With the Teaching Tools, you can publish courses and assignments easily to a location where students can download new assignments and submit completed assignments using Visual Studio. You also can use the Teaching Tools to modify or remove existing courses and assignments.

The Teaching Tools include the following set of features:

- Assignment publishing tools

  Use to publish courses and assignments for students to download from a Web server, a network share, or an FTP site. The assignment publishing tools is one of two options that the Teaching Tools provide for publishing courses and assignments. For more information, see Using the Assignment Publishing Tools.

- Assignment Manager

  Use to publish courses and assignments for students to download from a Web server. Assignment Manager is the second option that the Teaching Tools provide for publishing courses and assignments. In addition to this functionality, Assignment Manager also makes it possible for you to track assignment submission, build student solutions automatically, notify students of assignment grades, and send messages to students. Students can use Assignment Manager to securely submit their assignments to you. For more information, see Using Assignment Manager.

- Code extraction

  Use to create student starter projects by removing marked code from working solutions. Then, the starter project is published with the assignment and provides the basis for the student to begin coding the assignment. Code extraction can be used with the assignment publishing tools or Assignment Manager. For more information, see Marking Code for Extraction.

- Faculty resources

  Use to stay current with the latest articles and information for computer science faculty from Microsoft. For more information, see Faculty Resources.

For an overview of the assignment publishing tools and Assignment Manager, see Overview of Teaching Tools.

Installing Visual Studio .NET Academic

For general installation issues, refer to the Readme files, located in the root of the installation CD-ROM. The Readme files contain detailed information on installation issues for all of the products in Visual Studio .NET. The Readme files are in HTML format and can be viewed with an Internet browser, such as Microsoft® Internet Explorer version 4.0 or later. For more information, see Locating Readme Files and Installation and Setup in the MSDN Library.

In addition to a single desktop installation, the following methods are available for installing Visual Studio .NET Academic:

- Administrator mode
- Server setup

Administrator Mode

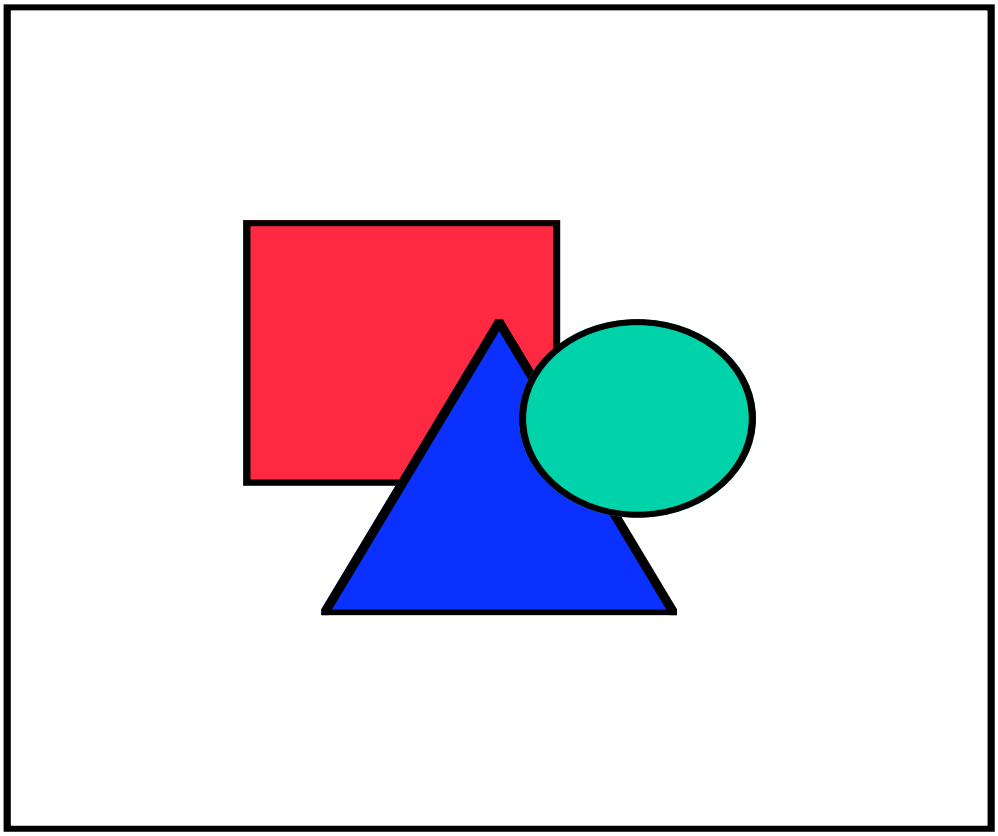
This mode of setup makes it possible for network administrators to create custom installation files that can be used to deploy to client machines. Custom installation files can be made for two sections of setup: Microsoft® Visual Studio® .NET Windows® Component Update and the client installation. For more information, search for Adminreadme.htm on the installation CD-ROM, or see Deploying Visual Studio .NET Academic on the Desktop in Laboratory Deployment Guidelines.

Server Setup

This mode of setup makes it possible for network administrators to deploy Visual Studio .NET Academic with the Student Tools in a computer science laboratory using Microsoft® Windows® 2000 Terminal Services. Terminal Services makes it possible for multiple students to log onto a Microsoft® Windows® 2000 Server or Microsoft® Windows® 2000 Advanced Server simultaneously and run the Student Edition. To facilitate this, you must install Windows 2000 Terminal Services client on each workstation. For more information, see Deploying Visual Studio .NET Academic with Terminal Services in Laboratory Deployment Guidelines.

Visual Studio .NET Academic Integrated Development Environment

When you open Visual Studio .NET Academic for the first time, you will see the Student Window Layout of the Visual Studio integrated development environment (IDE). You can change this profile to suit that of your primary development language (for example, Visual C++ or Visual Basic) using the My Profile link on the Start page. In addition to providing a compiler, editor, and debugger, Visual Studio features a number of new development tools, including Solution Explorer, Dynamic Help window, Class View window, Task List, and Output window, which are shown in the following screen shot.



In This Section

Faculty Resources
Provides instructions on how to access the latest articles and features from Microsoft for faculty.

Related Sections

Solution Explorer (Student Tools Guide)
Discusses Solution Explorer, which is used to display and access the contents of a solution.

Dynamic Help Window (Student Tools Guide)
Discusses the Dynamic Help window, which provides a set of Help links that relate to where you are working in Visual Studio.

Class View Window (Student Tools Guide)
Discusses the Class View window, which displays the list of programming classes in a project.

Task List (Student Tools Guide)
Discusses the Task List, which displays errors, warnings, and specialized user comments in the active file.

Output Window (Student Tools Guide)
Discusses the Output window, which displays status messages for different features in the IDE.

My Profile, Start Page (MSDN Library)
Reviews the different window layouts available in Visual Studio .NET.

Getting Started
Describes the Visual Studio integrated development environment (IDE), and provides instructions on how to install and use the Teaching Tools.

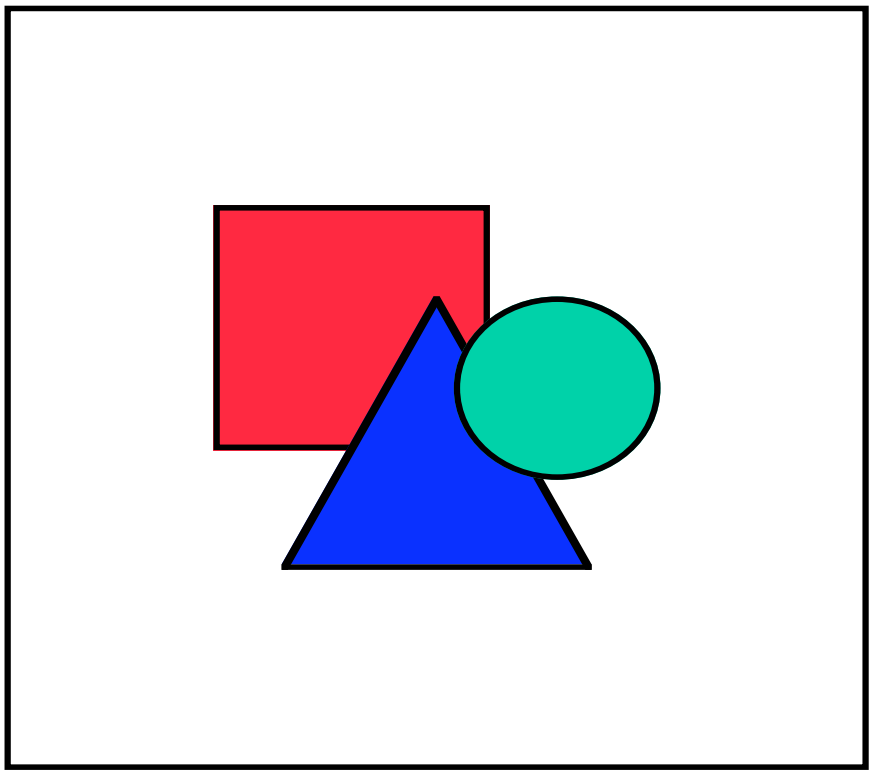
Faculty Resources

The Faculty Resources page provides links to the latest news, technical articles, teaching resources, and newsgroup information for faculty from Microsoft using the tabs described in the following table.

Tab	Content
News	Latest news from Microsoft for faculty, including information from the MSDN Academic Alliance (MSDN AA).
Technical Articles	Current technical articles, including links to case studies and presentations.
Teaching Resources	Web site and other resources for faculty.
Newsgroups	Newsgroups for faculty.

The Faculty Resources page is updated with new content each time you click on it, if new content is available. A sample of the content provided is shown in the following screen shot.

Faculty Resources page



Overview of Teaching Tools

This section provides an overview of the Teaching Tools for publishing and managing courses and assignments. Using the Teaching Tools, courses can be published to a file server or to a Web server. When the course is created, any number of assignments can be added to the course.

The Teaching Tools provide two options for publishing courses and assignments:

- Assignment publishing tools

  Publish courses and assignments to a Web server, a network share, or an FTP site.

- Assignment Manager

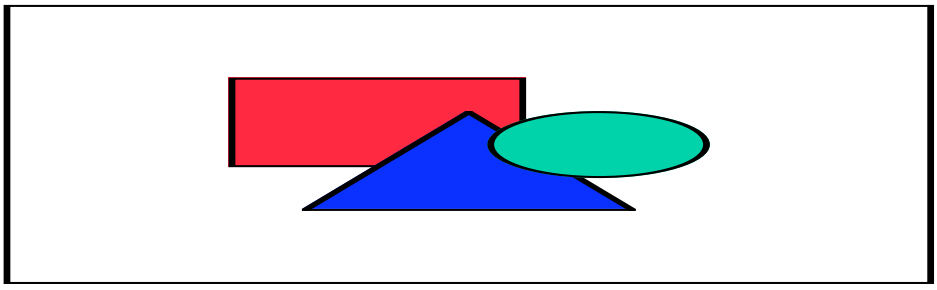
  Publish courses and assignments to an Assignment Manager server, manage student assignment submissions, build student solutions automatically, and provide basic messaging services between students and faculty. Using Assignment Manager requires you to install and configure an Assignment Manager server.

Assignment Publishing Tools

Using the assignment publishing tools, the first step in the process is to create a course on the faculty computer and publish it to a file server or the Web. When the course is created, you then can add assignments to it using the assignment publishing tools user interface (UI). The information for the course and all assignments is stored in the Assignments.xml file.

The following illustration shows the process of using the assignment publishing tools for courses and assignments.

Model of assignment publishing tools



All assignments created using the assignment publishing tools require a project. The project can be blank, or it can contain a partially complete solution to the programming assignment with key functional portions of the code missing. The Teaching Tools provide a utility for extracting code from a working project to create a starter project for use with the assignment publishing tools or Assignment Manager. Starter projects typically include some skeleton code that the students can use to begin their programming assignment.

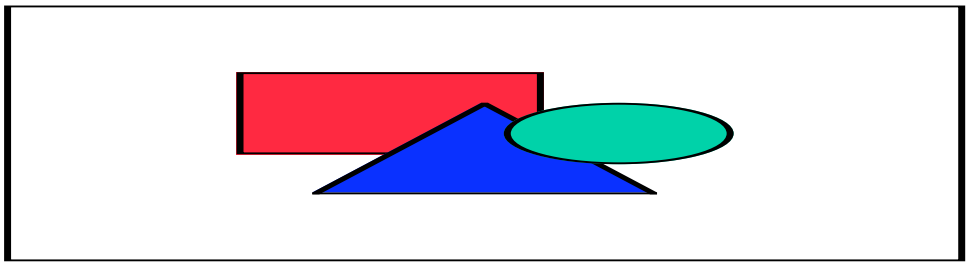
After a course is published, you can inform students of the server path or URL for the course. Students access this location, set up the course and assignments, and download the starter project to their computers. For details, see Walkthrough: Using the Assignment Publishing Tools.

Assignment Manager

To use Assignment Manager, you must first install and configure your Assignment Manager server. Assignment Manager is an Internet Information Service (IIS) with .NET, Microsoft Message Queuing (MSMQ), and SQL. For more information, see Installing Assignment Manager in Using Assignment Manager. Then, you can create a course and add assignments to it using the Assignment Manager UI. All course and assignment information is stored in your Assignment Manager database. Although assignments can include projects, projects are not required for Assignment Manager but are required for the assignment publishing tools. The code extraction utility provided with the Teaching Tools also can be used to create a starter project for Assignment Manager.

The following illustration shows the process of using Assignment Manager for courses and assignments.

Model of Assignment Manager for courses and assignments



For courses that use Assignment Manager, students can submit their completed assignments to the Assignment Manager server. By accessing the URL for the course, students also can receive messages from faculty and see what grade their assignment receives.

Walkthrough: Using the Assignment Publishing Tools

This section guides you through publishing a course and creating a new assignment using the assignment publishing tools.

The walkthrough involves the following steps:

- Create a Course and Publish it to a File Server or a Web Server
- Open a Project in Visual Studio .NET
- Create and Publish an Assignment

Create a Course and Publish it to a File Server or a Web Server

While adding a course, specify a file server path or FTP location that students can use to access your course. Additionally, you can reference a course Web site and course resources (URL, newsgroup, or mail address).

To create a course

1. Create a new folder for your course on your assignment server.
2. Open Visual Studio .NET Academic.
3. From the **Visual Studio Start Page**, choose **Course Management**.
4. Click the **Add Course** link.

   The **Add Course** page appears.
5. Enter a course name and location. These are the only fields on this page that are required to publish a course.

   > Note The location is the address of the server that hosts your course. This address can be either in the form of a UNC path (for example, \\MyServer\), an FTP path (ftp://), or a local path (for example, c:\).
6. Click **OK** to add the new course.

A message is displayed, indicating whether your course has been added successfully. The complete list of added courses is displayed on the Work With Courses page. Courses are listed in the order in which they were created.

Open a Project in Visual Studio .NET

This step is required before you can create an assignment to add to your course. You can either open a blank project or open a project that contains the complete solution to your programming assignment. For more information, see Creating New Solutions and Projects in the MSDN library. You can extract key pieces of code from your complete project and replace the extracted code with instructions for your students using the MarkCode/Extraction features of the Teaching Tools. For more information, see Marking Code for Extraction in Using the Assignment Publishing Tools.

Create and Publish an Assignment

Assignments contain a starter project (with marked code extracted, if applicable), an assignment name, and an assignment description. When students set up your course in the Student Tools, they are provided with the list of assignments that you currently have added to the course. This list is updated automatically each time a student refreshes the page in Visual Studio. Thus, each time a student accesses the Work With Courses page, he or she receives the most current list of assignments for the course.

Use the following procedure to add an assignment to a course.

To add an assignment

1. From the **Course Management** page, click the **Work With Courses** link, and then click **Add Assignment to Course**.

   The **Add Assignment to Course** page appears.

2. Enter an assignment name and an assignment description.

3. In the **Assignment Web Page** text box, enter the URL of the page that opens when the student downloads the starter project. Generally, this is a Web page with instructions for the assignment.

4. In the **Choose Starter Project For Assignment** drop-down list, select a project to use in creating the starter project for this assignment.

   Note The list of projects from which to choose comes from the list of projects in the current solution. If only one project is open in the solution, then that project is the only one shown in this field.

5. Clear or select the **Remove code marked as student code** check box depending on whether you want to extract code from your starter project. This check box is selected by default. For more information, see Marking Code For Extraction in Using the Assignment Publishing Tools.

6. Click **OK** to create the assignment.

Walkthrough: Using Assignment Manager

This section guides you through publishing a course and creating a new assignment using Assignment Manager. To complete this walkthrough, you first must install and configure your Assignment Manager server. For more information, see Installing Assignment Manager.

The walkthrough involves the following steps:

- Publishing an Assignment Manager Course
- Adding an Assignment to an Assignment Manager Course

Publishing an Assignment Manager Course

After you have installed and configured your Assignment Manager server, the first step in using Assignment Manager is to create a course.

Use the following procedure to create a new Assignment Manager course.

To publish a new Assignment Manager course

1. Open Visual Studio .NET Academic.
2. From the Visual Studio .NET start page, choose **Course Management**.
3. Choose **Add Course**.

   The **Add Course** page appears.
4. Select **Use Assignment Manager**.

   The **Add Course** page collapses to show only the **Course Name** and **Location** fields.
5. Enter the course name and location, and click **OK**.

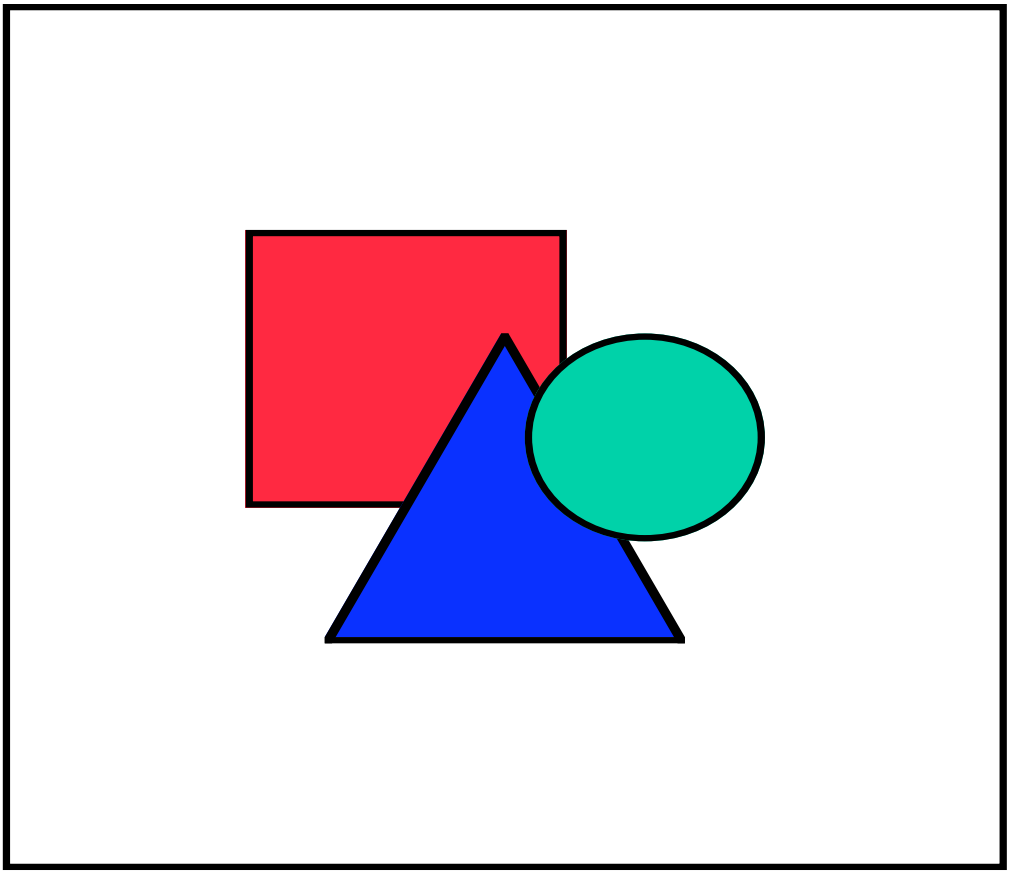
   Note The location is the URL address (http://) of your Assignment Manager server and directory (if applicable).
6. Enter your user name and password, and click **Log on**.

   Note The first time you log on to a newly-installed Assignment Manager server, enter the default user name **amsa** and the default password **pass**. After you log into Assignment Manager for the first time, change your user name and password from the default values to maintain security. For more information, see Accessing User Accounts.

The Course Info page appears with the name of your course shown in the Course Name field, the location of files specified in Storage Path, and the URL for students to access the course specified in Student URL for Course. On this page, you can enter a home page and description for the course, and assign e-mail and Web site resources to the course. For more information, see Modifying Course Information in Using Assignment Manager.

When you have created a course in Assignment Manager, you can access the course by clicking the course name link on the Work With Courses page, as shown in the following screen shot.

List of courses



Adding an Assignment to an Assignment Manager Course

After you have published a course, you then can add an assignment to the course. Unlike using the assignment publishing tools, using Assignment Manager does not require that you provide a starter project with your assignment. For completeness, however, this walkthrough documents how to provide a starter project.

Use the following procedure to add an assignment to an Assignment Manager course.

To add an assignment

1. Open Visual Studio .NET Academic.
2. From the Visual Studio .NET start page, choose **Course Management**.
3. Click the link for the course name under the **Work With Courses** heading.
4. Click the **Work With Assignment Manager Course** link for the course to which you want to add an assignment.
5. In Assignment Manager, click the **Course Assignments** page.
6. Click the **Add a New Assignment** link.
7. Enter a name and description for the assignment. The **Description** field is optional.
8. In the **Due Date** box, provide the date and time that your assignment is due in MM/DD/YYYY HH:MM format, followed by AM or PM. You can either enter this date directly or use the date control to the right of the box to select the date automatically. Selecting the date with this control automatically assigns a time of midnight. Student can submit assignments past the due date. Each assignment submission will be marked with a date and time stamp.
9. In the **Home Page URL** box, enter the address of a Web page for the assignment. This page is opened for students in Visual Studio when they download the assignment.
10. Select **Multiple Submits** to make it possible for your students to submit assignments more than once before the assignment due date.

    With multiple submissions, students can submit their assignment more than once. Each new submission replaces the previous submission.

11. In the **Starter Project** drop-down list, select a project to use in creating the starter project for this assignment, if desired. Starter projects are optional in Assignment Manager.

    Note The list of projects from which to choose comes from the list of projects in the current solution. If only one project is open in the solution, then that project is the only one shown in this field.

    If your starter project contains marked code, then this code is extracted automatically from your project to create the starter project if the **Remove code marked as student code** box is selected. For more information, see Marking Code for Extraction in Using the Assignment Publishing Tools.

12. Click **Browse** to find additional files to add to the student download location in the **Extra Files** field.

13. Click **Add** to create the assignment.

Your new assignment appears on the Course Assignments page. Students who have installed your course on their computers will see this assignment the next time they open Visual Studio .NET Academic and look at this course.

Learning how to publish a course and add an assignment only exposes you to the most basic functionality of how to use Assignment Manager. For more information, see Using Assignment Manager.

CHAPTER 2

Using the Assignment Publishing Tools

The Teaching Tools provided with Microsoft® Visual Studio® .NET Academic provide two options for publishing courses and assignments. The first and most simple option is to use the assignment publishing tools to publish courses and assignments to a Web server, a network share, or an FTP site. You can access the assignment publishing tools from the Course Management page, which is located on the Visual Studio start page.

The second and more powerful option is to install an Assignment Manager server. Assignment Manager is an Internet Information Server (IIS) with .NET, Microsoft® Message Queuing (MSMQ), and SQL. Like the assignment publishing tools, Assignment Manager makes it possible for you to publish courses and assignments. Additionally, Assignment Manager makes it possible for you to track the submission of student assignments, build student solutions automatically, notify students of assignment grades, and send messages to students. For more information, see Using Assignment Manager.

In This Section

Adding a Course
: Provides instructions on how to publish a course to an assignment server or to the Web.

Working with Courses and Assignments
: Provides instructions on how to add assignments or resources to a course, delete assignments from a course, and edit assignments and course links.

Deleting a Course
: Provides instructions on how to delete a course.

Related Sections

Overview of Teaching Tools
: Presents the two different options that are included with the Teaching Tools for publishing courses and assignments.

Walkthrough: Using the Assignment Publishing Tools
: Provides instructions on how to use the assignment publishing tools to publish courses and assignments.

Using Assignment Manager
: Provides instructions on how to publish courses and assignments using the Assignment Manager. Assignment Manager is an alternative to using the assignment publishing tools.

Walkthrough: Using Assignment Manager
: Provides instructions on how to use the Assignment Manager to publish courses and assignments.

Adding a Course

Before you can publish assignments to your assignment server or to the Web, you must set up a course to contain these assignments. Each course requires a separate folder on your server. For more information, see Overview of Teaching Tools in Getting Started. Use the following procedure to add a new course.

To add a new course

1. On your assignment server, create a new folder for your course.
2. From the Visual Studio start page, choose **Course Management**.
3. Click the **Add Course** link.

   The **Add Course** page appears. On this page, only a course name and location are required to publish a course.
4. If you are using Assignment Manager for this course, select **Use Assignment Manager**. For more information, see Adding an Assignment Manager Course in Using Assignment Manager.
5. In the **Course Name** text box, type the name of your course.

   This name identifies your course to students and can be up to 100 characters in length.
6. In the **Location** text box, enter the address of the server where you are hosting your course.

   This address can be in the form of either a UNC path (for example, \\MyServer\ or C:\MyCourse) or an FTP path (ftp://). For example, for a Web server, you can publish the course to a UNC path, such as c:\InetPub\wwwroot\CS101. Students subsequently can access the course by means of HTTP to the machine on which the course is stored. The corresponding URL that students require to access this course, would be something on the order of http://<facultycomputer>/CS101/. When providing this URL, do not include Assignments.xml in the path.
7. In the **Course Homepage** text box, enter the URL for your course Web site.

   Use a course home page to provide students with information about your course. This field is optional.

8. In the **Course Description** text box, describe your course to students.

   This text is displayed when a student selects this course from the list of available courses and is limited to 4,000 characters in length. If you want to have a longer description of the course, you can provide that description on your course home page.

   Note This field is optional.

9. Next to **Course Links**, click **Add**.

   The **Add Course Link** dialog box appears. In this dialog box, you can add course links (that is, resources for your course) in the form of a URL. For example, you can add a mailto link, a Web link, or a newsgroup link. Course links are optional.

10. In the **Display Name** text box, enter a name or other identifying text for the course link, such as the name of a Web site or newsgroup.

11. From the **Link Information** drop-down list, select the type of course link (for example, mailto:). In the box, enter the remainder of the course link URL (for example, someone@microsoft.com). In the example provided here, the full course link URL would be mailto: someone@microsoft.com.

12. Click **OK** to add a course link.

13. Click **OK** on the **Add Course** page to add the new course.

A message is displayed, indicating whether your course has been added successfully. The complete list of added courses is displayed on the Work With Courses page. Courses are listed in the order in which they were created.

When a course is created, the assignment publishing tools create an Assignments.xml file in the course location directory. This file stores course and assignment information for courses. After you have created your course, provide your students with a URL to access the Assignments.xml file for your course.

Use the following procedure to add an existing course that was created using the assignment publishing tools.

Note Use this procedure to add a course to multiple computers, such as the computers used by teaching assistants for the course.

To add an existing course

1. From the Visual Studio start page, choose **Course Management**.

2. Click the **Add Course** link.

   The **Add Course** page appears.

3. Click the **Connect to Existing Course** link.

   The **Connect to an Existing Course** dialog box appears.

4. In the **Enter existing course URL** box, enter the URL of the Assignments.xml file for an existing course, for example, C:\MyCourses\ExistingCourse\Assignments.xml. In this case, include Assignments.xml in the file path.

   Then, the existing course is added to the list of courses displayed on the **Work With Courses** page.

Working with Courses and Assignments

Under the Work With Courses link on the Course Management page, you can add assignments or resources to a course, delete assignments from a course, and edit assignments and course links.

In This Section

Adding an Assignment
: Provides instructions on how to add an assignment to a course.

Marking Code for Extraction
: Provides instructions on how to mark code that will be extracted from a complete project to create a starter project for students to work from.

Creating Code Extraction Tags
: Provides instructions on how to create new code extraction tags or modify existing code extraction tags for a programming language.

Editing a Course
: Provides instructions on how to edit the course name, Web page, and description.

Editing an Assignment
: Provides instructions on how to edit the assignment name, description, start page, and how to replace or add a starter project to the assignment.

Deleting an Assignment
: Provides instructions on how to delete an assignment from a course.

Editing Course Links
: Provides instructions on how to edit course links, such as e-mail addresses, news groups, Web sites, and so on.

Related Sections

Deleting a Course
: Provides instructions on how to delete a course.

Walkthrough: Using the Assignment Publishing Tools
: Provides instructions on how to use the assignment publishing tools to publish courses and assignments.

Walkthrough: Using Assignment Manager
: Provides instructions on how to use the Assignment Manager to publish courses and assignments.

Adding an Assignment

Before you can add an assignment to a course, you first must open or create a project in Microsoft® Visual Studio® .NET. If you want to extract code from this project to create a starter project for students, you must mark the code for extraction before you add the assignment. For more information, see Marking Code for Extraction.

Use the following procedure to add an assignment to a course.

To add an assignment

1. Open or create a project in Visual Studio.

   This project is used to create a starter project for the assignment. Students download the starter project with the assignment and can use it as the starting point for completing the assignment.

   A starter project can be based on a basic project created by one of the Visual Studio .NET project wizards, or it can be a complete project with key portions of functional code removed. For more information, see Marking Code For Extraction.

2. From the **Course Management** page, click the link for the course to which you want to add an assignment.

   The **Work With Courses** page appears.

3. Click **Add Assignment to Course**.

   The **Add Assignment to Course** page appears.

4. In the **Assignment Name** text box, provide a name for the assignment.

5. In the **Assignment Description** text box, provide a description of your assignment.

   This text is displayed when a student selects this assignment from the list of available assignments and is limited to 4,000 characters in length. If you want to have a longer description of the assignment, you can provide that description at your assignment Web page. This field is optional.

6. In the **Assignment Web Page** text box, enter the address of a Web page for your assignment. This field is optional.

   This Web page is opened in Visual Studio when students download the starter project for the assignment.

7. In the **Choose Starter Project For Assignment** drop-down list, select a project to use in creating the starter project for this assignment.

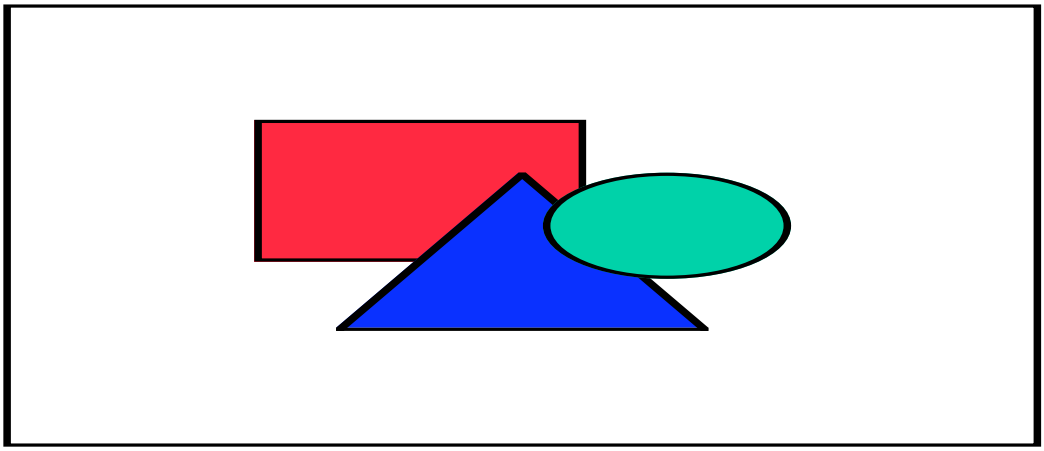
   Note The list of projects from which to choose comes from the list of projects in the current solution. If only one project is open in the solution, then that project is the only one shown in this field.

8. Clear or select the **Remove code marked as student code** check box depending on whether you want to extract code from your starter project. This check box is selected by default. For more information, see Marking Code For Extraction.

9. Click **OK** to create the assignment.

Marking Code for Extraction

The code extraction feature makes it possible for you to take a complete, compilable solution to a programming problem and remove key pieces of functional code from it. Then, these sections of code are replaced with instructions for students working from the starter project, as shown in the following screen shot.



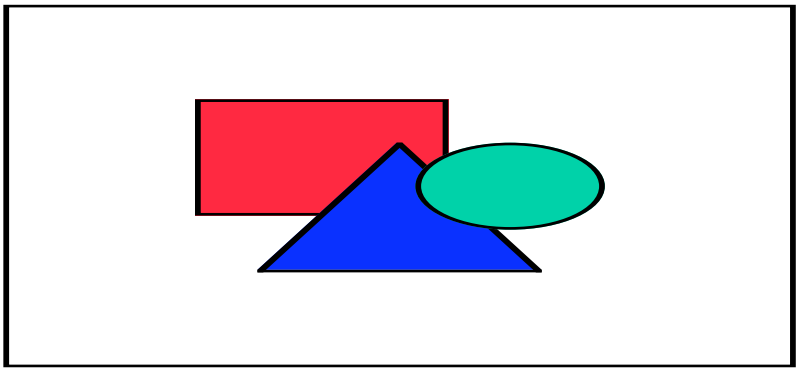
The //TODO tag (pronounced "to do") identifies areas of the starter project from which code is missing. This instruction field is not limited in size. The //BEGIN_STUDENT_CODE and //END_STUDENT_CODE tags identify the code to extract from the starter project. These are the default tags for marking code in C++ (.cpp) files. You can add custom tags for other programming languages or modify the default tags easily. For more information, see Creating Code Extraction Tags.

You can add as many code extraction tags as required to the files in your starter project using the following procedure.

To add code extraction tags to a project

1. Open the course code file from which you want to extract code.
2. Highlight the code you want to extract, right-click, and choose **Mark as Student Code**.

   The **TODO Comment** dialog box appears, as follows.



3. Type a comment in the **TODO Comment** dialog box. This comment replaces the code marked for extraction in the solution when the code extraction is performed.

The TODO Comment dialog box makes it possible for you to replace the code you are extracting with a //TODO comment tag that instructs the student as to what code is missing, what functionality to provide, and so on.

> Note When students open a file from which code has been extracted, the TODO comments in the solution appear in the Task List. Students can access the sections of code containing the comments by double-clicking a comment in the Task List.

This feature can be turned off. For more information, see Code Extractor, Academic, Options Dialog Box.

After you have marked the code in all files within your project, you then are ready to extract code while creating a starter project to publish with your assignment. For more information, see Adding an Assignment.

Creating Code Extraction Tags

Code extraction tags are specific to the type of file to which you are adding extraction mark-up. The following table shows the code extraction tags that are provided by default.

File extension	Language	BEGIN Comment	END Comment
.cpp	C++	//BEGIN_STUDENT_CODE	//END_STUDENT_CODE
.cs	C#	//BEGIN_STUDENT_CODE	//END_STUDENT_CODE
.h	C or C++ (header file)	//BEGIN_STUDENT_CODE	//END_STUDENT_CODE
.c	C	/*BEGIN_STUDENT_CODE*/	/*END_STUDENT_CODE*/
.vb	Visual Basic	'BEGIN_STUDENT_CODE	'END_STUDENT_CODE

You can add new code extraction tags for a specific file type by creating a new code extraction rule using the following procedure.

To add a new rule for code extraction markers

1. From the **Tools** menu, choose **Options**.

   The **Options** dialog box appears.

2. Choose **Academic**, and then choose **Code Extractor**.

3. Click **Add New Rule** to add new BEGIN and END comment tags for a language.

4. A new, blank rule appears at the bottom of the list of existing rules.

5. Type the appropriate file extension(s), BEGIN comments, and END comments in the table, and click **OK**. Separate multiple file extensions that use the same BEGIN and END comments with a comma (,).

   > Note BEGIN and END comments must be different from one another and cannot be blank. Additionally, the BEGIN comment string cannot be a subset of the END comment string. For example, you cannot use //BEGIN and //BEGIN_ENDING for your comment strings.

In addition to creating a new rule, you can modify the default comment tag for a particular file type using the following procedure.

To modify a code extraction rule

1. Click in the **BEGIN Comment** or **END Comment** field.

2. Replace the text in the field with the desired text.

Editing a Course

You can edit the course name, description or Web page. Use the following procedure to edit the course name.

To edit the course name

1. From the **Course Management** page, click the link for the course you want to edit under the **Work With Courses** heading.

   The **Work With Courses** page appears.

2. Click the **Edit** icon to the right of the course name you want to edit, as shown in the following screen shot.

   The **Edit Course Name** dialog box appears.

3. In the **Course Name** box, enter the new course name.

4. Click **OK**.

Use the following procedure to edit a course description.

To edit the course description

1. From the **Course Management** page, click the link for the course you want to edit under the **Work With Courses** heading.

   The **Work With Courses** page appears.

2. Click the **Edit** icon to the right of the course description you want to edit.

   The **Edit Course Description** dialog box appears.

3. In the **Course Description** box, enter the new course description.

4. Click **OK**.

Use the following procedure to edit a course Web page.

To edit the course Web page

1. From the **Course Management** page, click the link for the course you want to edit under the **Work With Courses** heading.

   The **Work With Courses** page appears.

2. Expand the **Course Links** node for the course containing the Web page you want to edit.

3. Click the **Edit** icon to the right of the course Web page you want to edit.

   The **Edit Web Page** dialog box appears.

4. In the **Course Web page** box, enter the new course Web page.

5. Click **OK**.

Editing an Assignment

The following steps are required before you can edit any assignment features.

To access assignment editing features

1. From the **Course Management** page, click the link for the course containing the assignment you want to edit under the **Work With Courses** heading.

   The **Work With Courses** page appears.

2. Expand the **Course Assignments** node for the course containing the assignment you want to edit.

After following this procedure, you can perform any of the following tasks:

- Edit the Assignment Name
- Edit the Assignment Description
- Edit the Start Page
- Edit the Starter Project
- Replace the Starter Project

Edit the Assignment Name

Edit the name of an assignment using the following procedure.

To edit the assignment name

1. Next to the name of the assignment you wish to edit, click the **Edit** icon, as shown in the following screen shot.

   The **Edit Assignment Name** dialog box appears.

2. In the **Assignment Name** text box, type the revised assignment name.

Edit the Assignment Description

Edit the description of an assignment using the following procedure.

To edit the assignment description

1. Next to the description of the assignment you wish to edit, click the **Edit** icon.

   The **Edit Assignment Description** dialog box appears.

2. In the **Assignment Description** text box, type the revised assignment description.

Edit the Start Page

When you create an assignment, you can specify a start page (Web page) where students can find additional information about the assignment. This page is opened automatically in Visual Studio .NET when students download the starter project. Edit the start page for an assignment using the following procedure.

To edit the start page

1. Next to the description of the assignment you wish to edit, click the **Edit** icon.

   The **Edit Assignment Start Page** dialog box appears.

2. In the **Assignment Start Page** text box, type the new path to the start page.

Edit the Starter Project

When you create an assignment using the assignment publishing tools, you publish a project with it. This project, referred to as the starter project, is available to students who download the assignment to use as the basis for their assignment solution. You can either edit the existing starter project or replace the existing starter project with a new one. Edit the contents of the existing starter project provided with the assignment using the following procedure.

To edit the existing starter project

1. Under the name of the assignment you wish to edit, click **Download and open the starter project for this assignment**.

   The starter project is opened in Solution Explorer.

2. Modify the starter project.

   When modifying the starter project, you can add additional code files, modify existing code, and mark code for extraction. Upon republishing the starter project, you will be prompted once again to extract code from the project. For more information, see Marking Code for Extraction.

3. From the **File** menu, choose the **Save** or **Save As** command to save your changes to the project.

4. Click **Upload a new or updated starter project for this assignment**.

   The **Choose Starter Project for Assignment** dialog box appears.

5. Under **Choose Starter Project for Assignment**, select the name of the starter project you modified. By default, this project shows in the drop-down list; however, if you have more than one project open in Visual Studio, all projects appear in the list.

6. Clear or select the **Remove code marked as student code** check box. By default, this box is selected.

Replace the Starter Project

You can replace the existing starter project for the assignment with a new starter project using the following procedure.

To replace the existing starter project

1. Open the replacement project in Visual Studio .NET.

2. Mark code for extraction, if desired. For more information, see Marking Code for Extraction.

3. Under the name of the assignment you wish to edit, click **Upload a new or updated starter project for this assignment**.

   The **Choose Starter Project for Assignment** dialog box appears.

4. Under **Choose Starter Project for Assignment**, select the name of the new starter project. By default, the currently active project shows in the drop-down list, however, if you have more than one project open in Visual Studio, then these additional project also show in the list.

5. Clear or select the **Remove code marked as student code** check box. By default, this box is selected.

6. Click **OK**.

Deleting an Assignment

Deleting an assignment makes that assignment inaccessible to students. Use the following procedure to delete an assignment from a course.

To delete an assignment

1. Under the name of the assignment, click **Delete Assignment from Course**.

   A message box appears, verifying that you want to delete the assignment.

2. Click **OK**.

Editing Course Links

When you add a course, you can include as a course link any URL, such as a mailto link, a hyperlink, or a newsgroup link. For more information, see Adding a Course.

Use the following procedure to edit course links.

To edit course links

1. From the **Course Management** page, click the link for the course containing the course you want to edit under the **Work With Courses** heading.

   The **Work With Courses** page appears.

2. Under **Course Links**, click the **Edit** icon to the right of the course link you want to edit.

   The **Add Course Link** dialog box appears.

3. In the **Display Name** text box, edit the name or other identifying text for the course link, such as the name of a Web site or newsgroup.

4. In the **Link Information** text box, edit the type of course link from the drop-down list (for example, mailto:). In the box, edit the remainder of the course link URL (for example, someone@microsoft.com).

5. Click **OK**.

Deleting a Course

If you are connected to the course server and you want to remove the course from your local machine, then you can choose whether to delete the files on the server or remove the local copy only.

Use the following procedure to delete a course.

To delete a course

1. From the Visual Studio start page, choose **Course Management**.

2. Click the **Delete Course** link.

   The list of currently installed courses is displayed.

3. To mark one or more courses for deletion, select the individual course(s) to delete.

   -or-

   To mark all courses for deletion, click **Select All**.

4. Click **Delete Selected Courses**.

   A message box is displayed, verifying whether you really want to delete the selected courses. If any assignments are associated with the course, you also will be prompted as to whether you want to delete the assignment. Click **OK** to complete the deletion, or click **Cancel** to stop.

BLANK PAGE

IMPORTANT: This text will appear on screen, but will not print on a PostScript printer.

This page should be the last one in this file; it was inserted by running the InsertBlankPage macro.

Do not type any additional text on this page!

CHAPTER 3

Using Assignment Manager

Assignment Manager server is an ASP.NET-based application that makes it possible for you to publish courses and assignments for students to download from a Web server, while also making it possible for you to track assignment submission, build student solutions automatically, notify students of assignment grades, and send messages to students. Students can use Assignment Manager to securely submit their assignments.

In This Section

Related Sections

Walkthrough: Using Assignment Manager
Provides a general process to use Assignment Manager for the first time and publish a course and an assignment.

Using the Assignment Publishing Tools
Provides instructions on how to publish courses and assignment using the assignment publishing tools. These tools are an alternative to using Assignment Manager.

Adding an Assignment Manager Course

In general, you will create one Assignment Manager course for each course you teach. However, if you teach more than one section of the same course, and each section requires different information, then you should create one Assignment Manager course for each section. Use the following procedure to create a new Assignment Manager course.

To add a new Assignment Manager course

1. From the Microsoft® Visual Studio® .NET start page, choose **Course Management**.
2. Click the **Add Course** link.

   The **Add Course** page appears.
3. Check **Use Assignment Manager**.

   The **Add Course** page collapses to show only the **Course Name** and **Location** fields.
4. In the **Course Name** text box, type the name of your course.

   This name identifies your course to students.
5. In the **Location** text box, enter the address of the Assignment Manager server.

   This address consists of both the server name and the Web application name (or virtual directory) selected when Assignment Manager was installed. For example, if the machine name where you installed Assignment Manager is *MyMachine* and you accepted the default Web application name of AMWeb during setup, then the location is http://*MyMachine*/amweb or https://*MyMachine*/amweb/ if you are using SSL.
6. Click **OK** to add a new Assignment Manager course.

   The **Assignment Manager logon** page appears.
7. Enter your user name and password, and click **Log On**.

   Note The first time you log onto a newly-installed Assignment Manager server, enter the default user name **amsa** and the default password **pass**. After you log onto Assignment Manager for the first time, change this user name and password from the default values to

maintain security. For more information, see Accessing User Accounts. When you have changed the default user name and password, other users will not be able to log in to Assignment Manager. As the first user of the Assignment Manager server, you should create accounts for each additional faculty, grader, or teaching assistant user for each course you create and assign to each user the appropriate rights for that course. For more information, see Adding Course Users and Assigning User Roles.

The Course Info page appears if your course was added successfully; otherwise, you will receive an error that indicates why your course could not be added. On the Course Info page, the Course Name field displays the name of your course and the Storage Path field indicates where student assignments are stored. The Student URL for Course field provides the URL that your students can use to access your course and any associated assignments from their computer. For more information about the Course Info page, see Modifying Course Information.

The complete list of courses and the order in which they have been added is displayed under the Work With Courses heading on the Course Management page.

Modifying Course Information

After you create your Assignment Manager course from the Add Course page, the Course Info page is displayed. On the Course Info page, you can edit course information, specify a home page for your course, and determine the URL that students will use to access your course.

Use the following procedure to modify course information.

To modify course information

1. Click **Course Management** in the left pane of Assignment Manager, and then click the **Course Info** tab.

   -or-

   Alternately, this page is displayed automatically when you create a new Assignment Manager course.

2. In the **Course Name** text box, type the modified course name.

   The **Course Name** field displays the name you selected for your course when you created it using **Add Course**.

3. In the **Course Home Page** text box, enter the URL for your course Web site. Use this page to provide general information about your course to students.

   This field is optional.

4. In the **Storage Path** text box, type the modified path for storing student assignments on the Assignment Manager server.

   When you open the **Course Info** page, the **Storage Path** field automatically displays the current location for the student assignments on the Assignment Manager server.

Note If you change the storage path, Assignment Manager does not copy assignments from the old storage path to the new one automatically.

5. The **Student URL for Course** field displays the URL that students use to access your course. Provide this URL to students at the beginning of your course. This field cannot be edited.
6. In the **Description** text box, describe your course to students.

   This text is displayed when a student selects this course from the list of available courses. This field is optional.
7. Click the **Add Resource** link.

   The **Add Resources** dialog box appears. In this dialog box, you can add as a resource any URL, including a mailto link, a Web link, or a newsgroup link. Adding resources is optional.

   a. In the **Display Name** text box, enter a name or other identifying text for the resource, such as the name of a Web site or newsgroup.

   b. In the **Link Information** drop-down list, select the type of resource to add, for example, mailto: or http://.

   c. In the **Link Information** text box, enter the remaining text of the URL for this resource, for example, someone@microsoft.com.

   d. Click **OK**.
8. Click **Update** to update information for the course.

Adding Course Users

You can add student, faculty, grader, or teaching assistant users to your course individually or in bulk using a delimited text file. Use the following procedure to add a single user to your course.

To add course users

1. Click **Course Management** in the left pane of Assignment Manager.
2. Click the **Course Users** tab.
3. Click the **Add User to Course** link.

   The **Add/Look Up Users** page appears.
4. In the **E-mail Address** text box, enter the e-mail address of the new user.
5. In the **ID** text box, enter the ID for the new user.
6. In the **User Name** text box, enter the user name for the new user.

   Note You also can enter the e-mail address, ID, or user name and click **Find** to have Assignment Manager populate all the other fields from the student or faculty database with a record that best matches your criteria.
7. In the **Last Name** text box, enter the new user's last name.

8. In the **First Name** text box, enter the new user's first name.
9. In the **Middle Name** text box, enter the new user's middle name.
10. Click **Add** to add the new user to the course.

After this final step, Assignment Manager creates a password for each user, which it then e-mails to the user. However, if e-mail is not enabled on the Assignment Manager server, then you must assign a password to each user you have added. For more information, see Accessing User Accounts. Students and other users must have this password to log in to Assignment Manager for the first time.

If you want to add multiple users to your course, then you must create a delimited text file that includes all user information. The order of the fields in this file does not matter; valid delimiters are a comma (,), semi-colon (;), or TAB. Required fields are as follows:

- Last name
- First name
- E-mail address
- User name
- A unique identifier, such as a student ID or social security number

The following is an example of an entry in such a file:

- Teresa; Atkinson; someone@microsoft.com; TeresaA; 101

Use the following procedure to add multiple users to a course.

To add multiple course users

1. Click the **Course Users** tab.
2. Click the **Import Users** link.
3. In the **File to Import** box, type the complete path to your delimited file.

   -or-

   Click **Browse** to locate the file.
4. In the **Delimiting Character** text box, enter the character that you used as a delimiter in your text file. You can use a comma (**,**), semi-colon (**;**), or a **TAB** as a delimiter.
5. Click **OK**.

   The **Import Users** page appears. This page displays a series of drop-down list boxes that are used to indicate which field in your text file corresponds to course user fields for last name, user name, e-mail address, and so on.
6. In the **Last Name** drop-down list box, choose the value that corresponds to the surname of the first user in the import file.

7. In the **Middle Name** drop-down list box, choose the value that corresponds to the middle name of the first user in the import file.
8. In the **ID** drop-down list box, choose the value that corresponds to the identifier of the first user in the import file.
9. In the **First Name** drop-down list box, choose the value that corresponds to the forename of the first user in the import file.
10. In the **E-Mail** drop-down list box, choose the value that corresponds to the e-mail address of the first user in the import file.
11. In the **User Name** drop-down list box, choose the value that corresponds to the user name of the first user in the import file.
12. Click **OK**.

    The **Import Results** page appears, displaying information about the total number of users to import, and the total number that will be imported correctly or incorrectly.
13. Click **Cancel Import** to discontinue the import, or click **Commit Successful Users** to import only those records that are identified by Assignment Manager as being imported correctly.

You also can select the permissions granted to each user through the user roles you assign to them. For more information, see Assigning User Roles.

Adding an Assignment Manager Assignment

When you create an assignment in Assignment Manager, you can choose to do the following:

- Allow multiple assignment submissions
- Include a starter project
- Automatically build the student solution
- Automatically check assignment output

After you have created a course in Assignment Manager, you can use the following procedure to create an assignment.

> **Note** Any assignment created in one Assignment Manager course can be used in another Assignment Manager course. For more information, see Adding an Existing Assignment.

To add an Assignment Manager assignment

1. From the **Course Assignments** page, click the **Add a New Assignment** link.

   The **Add Assignment** page appears.
2. In the **Name** text box, provide a name for the assignment.

3. In the **Description** text box, provide a short description of your assignment. This field is optional.
4. Under **Due Date**, select the month, day, year, and time that your assignment is due from the drop-down lists.

   Note Assignment Manager makes it possible for students to submit assignments past the due date.
5. In the **Homepage URL** text box, enter the address of a Web page for the assignment.
6. Select **Multiple Submits** to make it possible for your students to submit assignments more than once.

   Note Each new submission replaces the previous submission.
7. In the **Choose Starter Project for Assignment** drop-down list, select a project to use in creating the starter project for the assignment. This field is optional.

   Note The list of projects from which to choose comes from the list of projects in the current solution. If only one project is open in the solution, then that project is the only one shown in this field.
8. Clear or select the **Remove code marked as student code** check box depending on whether you want to extract code from your project. This check box is selected by default.

   If your starter project contains marked code, then this code is extracted automatically from a copy of your project to create the starter project. For more information, see Marking Code for Extraction in Using the Assignment Publishing Tools.
9. Click **Browse** to find additional files to add to the starter project in the **Extra Files** field, and then click **Add** to include these files in the starter project.

   Examples of extra files include input test files, an executable file for the working assignment, or a text document with use cases.
10. Select **Auto Build On** to enable automatic building of the student assignment.
11. In the **Build Type** drop-down list, the Visual Studio Project file type is selected automatically.
12. Check **Auto Check On** to enable automatic checking of assignments.

    This feature compares the output of your solution to the output of the student solution using the same input file, if applicable.

    Note You do not have to select the **Auto Build** feature to enable the **Auto Check** feature. However, if **Auto Check** is used without **Auto Build**, then students must submit the compiled executable as an additional file with the rest of the project. Assignment Manager determines the name of the executable file to run from the project file submitted by the student.
13. In the **Command Line Arguments** text box, enter any command line arguments that the executable file must have as input during run time. This field is optional.

For example, an application called Calculator.exe that requires three parameters (number1, number2, and operation) would have the following command line arguments:

Calculator.exe /number1:10 /number1:20 /operation:add

These arguments instruct the Calculator.exe application to add the numbers 10 and 20. The string /number1:10 /number1:20 /operation:add would be entered in the **Command Line Arguments** text box.

14. In the **Input File** text box, enter the full path to the input file, or click **Browse** to find the input file.

    This file is used to provide input to the student executable file. Then, the resulting output is compared to the output file specified in the next step.

15. In the **Output File** text box, enter the full path to the output file, or click **Browse** to find the output file.

    This file is compared to the output of the student file.

16. In the **Check Type** drop-down list, the compare expected/actual output type is selected automatically.

17. Add optional notifications. For details, see the following procedure.

    -or-

    If you do not want to add any notifications, click **Add** to create the assignment.

Before adding a new assignment, you can choose to send a variety of notifications to your students, using one of the following methods:

- **Internal**, which sends students mail using the Assignment Manager messaging feature.
- **E-mail**, which sends students mail using a standard e-mail account.

  Note If your Assignment Manager server is not configured for Simple Mail Transfer Protocol (SMTP) support, then the E-mail option is not provided. For more information, see Modifying Server Settings.

To add optional notifications

1. Select **Send Reminder**, and enter the number of days before the assignment is due to send a reminder to students who have not turned in their assignment already.
2. Select **Send Past Due Notice**, and enter the number of days after the assignment is due to send notification to students who have not turned in their assignment already.
3. Select **New Project Notice** to send student notification when a new project is added.
4. Select **Updated Project Notice** to send student notification when an assignment is updated.
5. Click **Add** to create the assignment.

Adding an Existing Assignment

When you have created an assignment for a particular course, you can reuse that assignment for other courses by means of the Add an Existing Assignment feature of Assignment Manager. Each assignment that you create in a course is added to the list of existing assignments.

To add an existing assignment

1. On the **Course Assignments** page, click the **Add an Existing Assignment** link.
2. Click the link for the assignment from the list shown.

   -or-

   Click the **Add** button to the left of the assignment you want to add.

   The **Edit Assignment** page appears.
3. Edit the assignment information, if applicable, and then click **Update** to add the assignment to the course. For more information, see Adding an Assignment Manager Assignment.

Uploading a Starter Project

After you have created an assignment, you can modify the starter project for that assignment or add a starter project using the Upload Starter feature of Assignment Manager.

To upload a starter project

1. Click the name of the course on the **Course Management** page.
2. Click the **Course Assignments** page.
3. Click the icon in the **Upload Starter** field for the assignment you want to modify.

   The **Upload Starter Project** page appears with the name of the assignment provided in the **Assignment Name** field. This field cannot be edited.
4. In the **Select Project to Upload** drop-down list, choose a project. This list displays the name of each project open in Solution Explorer.
5. Click **Browse** to find additional files to add to the starter project in the **Extra Files** field, and then click **Add** to include these files in the starter project.

   Examples of extra files include input test files, an executable file for the working assignment, or a text document with use cases.

6. Clear or select the **Remove code marked as student code** check box depending on whether you want to extract code from your project. This check box is selected by default.

   If your starter project contains marked code, then this code is extracted automatically from a copy of your project to create the starter project. For more information, see Marking Code for Extraction in Using the Assignment Publishing Tools.

7. Click **Upload Project** to save your new starter project to the assignment.

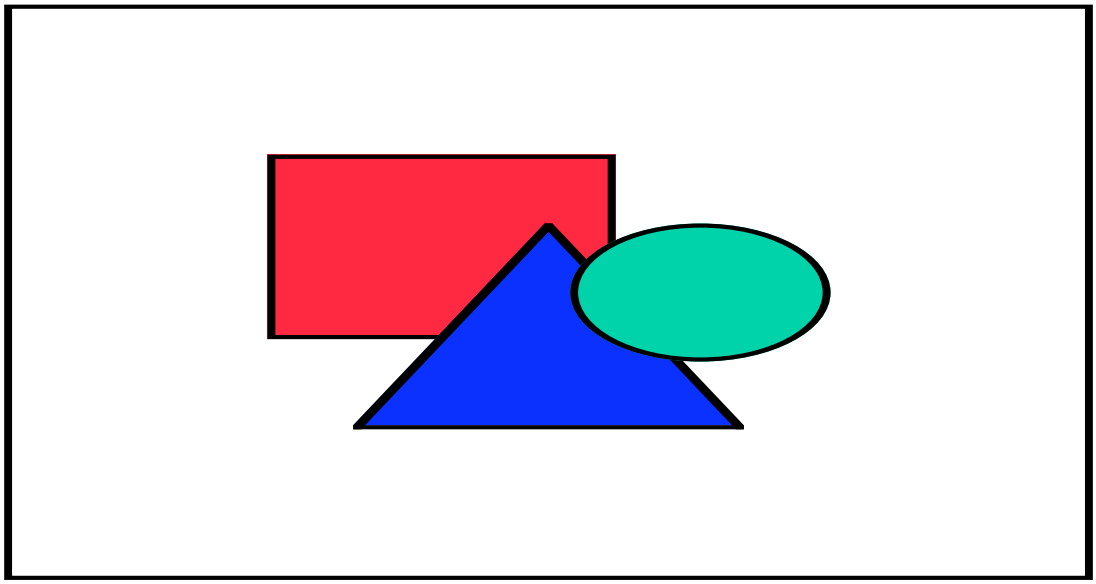
Grading an Assignment

After a student has submitted his or her final assignment, you can publish a grade for it. After you have published the grade, the student can view the grade, any grade details, and the results of auto check and auto build by logging onto Assignment Manager.

To grade an assignment

1. On the **Course Management** page, click the name of the course.
2. Click the **Course Assignments** page.
3. In the **Number Submitting** field, click the value for the assignment you want to grade.

   The **Assignment Submissions** page appears, as shown in the following screen shot.



4. Click **Get Submission** to download the student's completed assignment.

   The **Download Student Submission** page appears.

5. In the **Location to place downloaded files** text box, enter the location to which to download the student submission, and click **Download**.

   The student project is opened in Solution Explorer, and the **Course Assignment** page appears.

6. In the **Grade** text box, enter the grade for the assignment.

7. In the **Comments** text box, enter any comments you have about the grade you have assigned.

Auto build and auto check results also are provided on this page. To rerun these tools, select the assignments for which you want to rerun the actions, and click **Re-run Auto Build** or **Re-run Auto Check**, respectively.

Administering the Assignment Manager Server

On the Server Administration page, you can modify security settings, server settings, and add and edit user information.

In This Section

Modifying Server Settings
: Provides instructions on how to modify Assignment Manager server settings for auto build, auto check, and uploading projects.

Modifying Security Settings
: Provides instructions on how to create a new user role, change existing user roles, or delete an old user role.

Assigning User Roles
: Provides instructions on how to assign roles to a user.

Accessing User Accounts
: Provides instructions on how to modify user information, change a user password, and add or remove user roles.

Related Sections

Using Assignment Manager
: Provides instructions on how to publish courses and assignments using Assignment Manager.

Modifying Server Settings

The Settings page provides access to assignment settings for the Assignment Manager server. Modify server settings using the following procedure.

To modify server settings

1. In the left pane of Assignment Manager, click **Server Administration**.
2. Click the **Settings** tab.
3. Under **Auto Build/Auto Check Service**, select **On** or **Off** to determine whether automatic grading and automatic building of student assignments is enabled.

   Note Auto check and auto build requests still are queued if this setting is **Off** and will run when the setting is set back to **On**.

4. The **Using SMTP for email** field indicates whether Simple Mail Transfer Protocol (SMTP) was enabled or disabled during installation of the Assignment Manager server. This feature is used to send e-mail messages to students.

   If SMTP is enabled, then messages can be delivered using e-mail. Otherwise, messages only can be delivered using the Assignment Manager messaging feature, which is accessed from the **Messages** page. You can choose which mechanism you will use to deliver messages concerning assignments when you create an assignment. Both mechanisms can be used simultaneously. For more information, see Adding an Assignment Manager Assignment.

5. The **Using SSL** field indicates whether **Secure Socket Layers** (**SSL**) was enabled or disabled during installation of the Assignment Manager server. This feature is used for encryption.

   The SSL option is configured initially when the Assignment Manager server is installed. SSL allows for secure transactions, protecting passwords and files from being intercepted as they travel across the network.

6. Under **Maximum Auto Build/Auto Check processing time (ms)**, enter the time in milliseconds (ms) that the Assignment Manager server should attempt to complete an auto build or an auto check action on an individual student assignment. The default value is 600,000 ms (10 minutes).
7. Under **Maximum Project Upload Size (MB)**, enter the maximum file size in megabytes (MB) that students are allowed to submit to the Assignment Manager server for their completed assignments. The default value is 5 MB.
8. Click **Update** to apply server settings.

Modifying Security Settings

The Security page provides access to the list of user roles available in Assignment Manager. Assignment Manager comes with Administrator, Teaching Assistant, Grader, and Faculty roles already defined. Roles are a collection of permissions that each user has. Permissions are a list of

actions that the user can perform, for example, view courses, edit course information, delete assignments, and so on. For more information, see Default Assignment Manager Role Permissions in Reference.

Use the following procedure to add a new role.

To add a new role

1. To access the **Security** page, click **Server Administration** in the left pane, and then click the **Security** tab.
2. Click **Add a New Role**.

   The **Add and Define New Role** page appears.
3. Under **Role**, enter a name for the new role.
4. Under the **Available Rights** text box, select the permissions that you want to include in your role, and click the single right arrow to add these permissions to the **Current Rights** text box.
5. Remove roles from the **Current Rights** text box by selecting the role in the **Current Rights** text box and clicking the single left arrow.
6. Add all roles to the **Current Rights** text box by clicking the double right arrow.
7. Remove all roles from the **Current Rights** text box by clicking the double left arrow.
8. Click **OK**.

You require appropriate permissions to delete a role from the list of available roles. Use the following procedure to delete a role.

To delete a role

1. To mark one or more roles for deletion, select the individual role(s) to delete.
2. Click **Delete Selected Roles**.

   A dialog box appears and asks you whether you really want to delete the selected values. Click **Yes** to complete the deletion, or click **No** to stop.

Assigning User Roles

After you have added users to Assignment Manager, you must assign a role to each non-student user. Roles are a collection of permissions that each user has. Permissions are a list of actions that the user can perform, for example, view courses, edit course information, delete assignments, and so on. By default, roles are not assigned to student users who have basic permissions to view course information, download starter projects, and so on.

When a user creates a new course in Assignment Manager, all existing roles they have assigned to themselves in other courses are automatically mapped to the new course. This behavior only applies to the person creating the course. For example, an instructor creates a course and assigns the Faculty role to herself. When she creates a new course, she is automatically assigned the Faculty role for the new course. However, if another instructor adds her to a course that she did not

create, then the Faculty role is not automatically assigned to her. In addition, if she assigns other roles to herself in the new course, these roles are not automatically assigned back to her in the existing course. Use the following procedure to assign roles to a user.

To assign roles to a user

1. From the **Course Users** page, click the name of the user for whom you want to add a role.

   The **User Details** page appears.

2. Click **Manage User Roles**.
3. Add roles for the user by selecting the role in the **Available Roles** text box and clicking the single right arrow.
4. Remove roles from the **Current Roles** text box by selecting the role and clicking the single left arrow.
5. Add all roles to the **Current Roles** text box by clicking the double right arrow.
6. Remove all roles from the **Current Roles** text box by clicking the double left arrow.
7. Click **OK**.

In addition to the default Administrator, Faculty, Grader, and TA roles provided by Assignment Manager, you can create your own custom roles with a specific set of rights. For more information, see Modifying Security Settings.

Accessing User Accounts

The My Account page makes it possible for you to modify your user information, change your password, and manage user roles. Use the following links to learn how to access your account:

- Modifying User Information
- Changing a User Password
- Managing User Roles

Modifying User Information

User information includes your user name (used at log on) and e-mail address. Use the following procedure to modify your user information.

To modify user information

1. Click the **My Account** tab.
2. In the **E-mail Address** text box, enter your e-mail address.
3. In the **ID** text box, enter a faculty identifier, if applicable.

4. In the **User Name** text box, enter your Assignment Manager user name.

   The user name is the name that you enter when logging into Assignment Manager; it is not case sensitive.

5. In the **Last Name** text box, enter your last name (surname).
6. In the **First Name** text box, enter your first name (forename).
7. In the **Middle Name** text box, enter your middle name or initial.
8. Click **Update** to submit your modifications.

Changing a User Password

Use the following procedure to change your user password. Passwords are case sensitive.

To change a user password

1. On the **My Account** page, click the **Change Password** link.
2. In the **Current Password** text box, enter your current password.
3. In the **Enter a New Password** text box, enter your new password.
4. In the **Confirm New Password** text box, enter your new password again.
5. Click **OK** to submit your password change.

Managing User Roles

User roles are used to define categories of users and the default permissions provided to each user. For more information, see Default Assignment Manager Role Permissions in Reference. Use the following procedure to determine which roles are assigned to you.

To manage user roles

1. On the **My Account** page, click the **Manage User Roles** link.
2. Add roles to the **Current Rights** text box by selecting the role in the **Available Rights** text box and clicking the single right arrow.
3. Remove roles from the **Current Rights** text box by selecting the role in the **Current Rights** text box and clicking the single left arrow.
4. Add all roles to the **Current Rights** text box by clicking the double right arrow.
5. Remove all roles from the **Current Rights** text box by clicking the double left arrow.
6. Click **OK**.

Reading and Composing Messages

In Assignment Manager, you can send messages to students in your course using Assignment Manager's internal messaging feature or e-mail using a Simple Mail Transfer Protocol (SMTP) server. You also can send messages using both methods at once.

Use the following procedure to send a message.

To send a message

1. In the left pane of Assignment Manager, click **Messages**.
2. Click the **Compose** tab.
3. Under **Delivery Mechanism**, select the following:
   - **Internal,** which sends students mail using the Assignment Manager messaging feature.
   - **E-mail**, which sends students mail using a standard e-mail account.
   - **Internal** and **E-mail** to send messages by both means.

     Note If your Assignment Manager server is not configured for SMTP support, then the **E-mail** option is not provided.
4. Select the message recipient or group of recipients from a list by clicking the **To** link.
5. In the **Subject** text box, type the subject for your message.
6. In the **Body** text box, type the content of your message.
7. Under **Expiration Date**, select the month, day, and year that the message sent using Assignment Manager should expire from the drop-down lists. The expiration date determines when messages are deleted automatically from the Assignment Manager server. If no expiration date is set, then messages are not deleted from the Assignment Manager server.
8. Click **Send Message** to send the message.

Use the following procedure to read a message.

To read a message

1. In the left pane of Assignment Manager, click **Messages**.
2. Click the **Read** tab.
3. Click the subject of the message you want to read.

   The message is displayed in a new window.

Installing Assignment Manager

For general installation issues, refer to the Readme files, located in the root of the installation CD-ROM. The Readme files contain detailed information on installation issues for all of the products in Visual Studio .NET. The Readme files are in HTML format and can be viewed with an Internet browser, such as Microsoft® Internet Explorer version 4.0 or later. For more information, see Locating Readme Files in the Microsoft® MSDN® Library and Installing Visual Studio .NET Academic in Getting Started.

In This Section

Assignment Manager System Requirements
: Discusses the basic system requirements for an Assignment Manager server.

Related Sections

Laboratory Deployment Guidelines
: Provides the information needed to deploy the Microsoft® Visual Studio® .NET Academic Tools in a computer science laboratory.

Installing Visual Studio .NET Academic
: Provides installation information for Assignment Manager.

Assignment Manager System Requirements

The scalability of an Assignment Manager server is dependent on a number of factors that you should test. The minimum system requirements for an Assignment Manager server are those required for deploying Visual Studio .NET Academic. For more information, see Desktop Installation Requirements in the Laboratory Deployment Guide.

The following software is required to run an Assignment Manager server:

- Microsoft® Windows® 2000 or higher
- Internet Information Services (IIS) version 5.0 and later
- Visual Studio .NET
- Microsoft® Message Queuing (MSMQ)
- SQL Server™ or Microsoft® Data Engine (MSDE), which is available on the Teaching Tools CD-ROM.

The Assignment Manager server also will require sufficient disk space to store student assignments, which is dependent entirely on the number of students and the size of their assignments.

To send e-mail messages from courses on your Assignment Manager server, you must have a working SMTP service installed and configured on the server before installing Assignment Manager. If the SMTP service can process mail correctly, it will be able to process Assignment Manager e-mail messages.

CHAPTER 4

Laboratory Deployment Guidelines

This section provides information needed to successfully deploy the Microsoft® Visual Studio® .NET Academic Student Tools in a computer science laboratory. The Student Tools incorporate everything included in Visual Studio .NET Academic with a set of tools specifically designed for students. For more information, see Student Tools Features in the Student Tools Guide.

In This Section

Deploying Visual Studio .NET Academic on the Desktop
: Provides instructions on how to install and configure Visual Studio .NET Academic on Microsoft® Windows® 2000, Microsoft® Windows Millennium (ME), Microsoft® Windows NT® version 4.0 or later, or Microsoft® Windows® XP desktop computers.

Deploying Visual Studio .NET Academic with Terminal Services
: Provides instructions on how to install and configure Visual Studio .NET Academic on a Microsoft® Windows® 2000 Server or Microsoft® Windows® 2000 Advanced Server. Students can access this installation across the network using Microsoft® Windows® 2000 Terminal Services.

Minimum Permissions Required
: Provides the minimum write permissions that are required for student users.

Academic File Locations
: Lists the paths to which Academic files are saved.

Managed Code Projects on a Network Share
: Discusses errors that can occur while using managed code on a network share.

Backup Locations
: Provides locations from which to retrieve backup data for courses and assignments.

Further Resources
: Provides links to articles about Microsoft® Windows® 2000 Professional Edition, Windows 2000 Server, and case studies of Windows 2000 deployment in high schools and universities.

Related Sections

Installing Assignment Manager
: Provides instructions on how to install and configure an Assignments Manager server.

Installing Visual Studio .NET Academic
Provides instructions on how to install Visual Studio .NET Academic.

Deploying Visual Studio .NET Academic on the Desktop

You can deploy Visual Studio .NET Academic and the Student Tools on Windows 2000, Windows ME, Windows NT version 4.0 or later, and Windows XP desktop installations.

In This Section

Desktop Installation Requirements
Provides the system requirements for running the Student Tools on a desktop computer.

Running Administrative Setup for Baseline Components
Provides instructions on how to configure multiple installations of the Microsoft® Visual Studio® baseline components at once using an initialization (.ini) file. Installation of the baseline components is the first step in the installation of the Student Tools.

Running Administrative Setup for Visual Studio .NET
Provides instructions on how to configure multiple installations of Visual Studio .NET Academic at once using an .ini file. This is the final step in installing the Student Tools.

Related Sections

Deploying Visual Studio .NET Academic with Terminal Services
Provides instructions on how to install and configure Visual Studio .NET Academic on a Windows 2000 Server or Windows 2000 Advanced Server. Students can access this installation across the network using Windows 2000 Terminal Services.

Desktop Installation Requirements

When installing the Visual Studio .NET Academic Student Tools on a desktop, you must have full administrative privileges to the installation point. For a list of hardware requirements, see Visual Studio .NET Hardware Requirements.

Running Administrative Setup for Baseline Components

Microsoft® Visual Studio® .NET Windows® Component Update offers an administrator mode setup, which you can use to facilitate deployment in a computer science laboratory. As an administrator, you first must run setup to select which components will be deployed. An initialization (.ini) file is created based on this selection and is then deployed by running setup in

unattend mode, pointing to the generated .ini file. When run in unattend mode, setup runs silently, installing the designated options. If there are any errors, setup exits silently with failure. Administrative setup makes it possible for you to deploy the baseline components through Microsoft Systems Management Server.

The following guidelines for running administrative setup of baseline components are provided in this topic:

- Running Administrator Mode Setup
- Creating a Network Image
- Required Baseline Components
- Known Installation Issue

Running Administrator Mode Setup

The first step in running administrative mode setup is to create the .ini file that you will use to deploy the baseline components on computers in your laboratory. Use the following procedure to create this file.

To create the deployment .ini file

1. Insert the Windows Component Update CD-ROM, ignoring the autorun message.
2. From the **Start** menu, choose **Run**.

   The **Run** dialog box appears.
3. Type the following code in the **Open** drop-down list box:

   n:\Setup.exe /createunattend <*path to .ini file*>

   For example:

   D:\setup.exe /createunattend c:\bsln_deployment.ini

Before running in createunattend mode on Windows NT version 4.0, you must first install Service Pack 6a for Windows NT version 4.0. The Service Pack setup is available from the NTSP6a folder found on the Windows Component Update CD or the wcu\NTSP6a folder found on the Visual Studio .NET DVD.

> Note When running in createunattend mode you have the option to store your password for automatic log on. For administrator mode setup, it is recommended that you do not use this feature. The password will be stored in the .ini file as plain text. This feature will be disabled in the final version of Windows Component Update for administrator mode setup.

To run setup with the deployment .ini file

1. Verify that the Windows Component Update is available on the network. For more information, see Creating a Network Image.
2. From the **Start** menu, choose **Run**.

3. Type the following code in the **Open** drop-down list box:

   \...\Setup.exe /unattendfile *<path to .ini file>*

   For example:

   \\computer\share\setup.exe /unattendfile \\computer\share\bsln_deployment.ini

Creating a Network Image

Administrator mode setup is designed to run from a network image, rather than from a CD. Use the following procedure to prepare a network image.

To prepare a network image of the Windows Components Update CDs

1. Insert Windows Component Update CD 1 or Microsoft® Visual Studio® .NET DVD into your CD-ROM or DVD drive.
2. Open the CD or DVD drive in Windows Explorer.
3. Press **CTRL**+**A** to select all files and folders, and then copy the selection to a folder of your choice.

   Note When installing, setup fails if any path and file name combination exceeds 260 characters. Visual Studio uses paths up to 190 characters long; accordingly, you should copy files to a path with less than 70 characters. If you create a network share for a network image, the UNC path to the root install location should also be under 70 characters. For example: Not valid: \\products\corporate\licenses\DeveloperTools\Visual Studio\Visual Studio .NET\NetSetup. Valid: \\products\DeveloperTools\Visual Studio .NET\NetSetup\.

Required Baseline Components

The following is a list of components that are required to install the Visual Studio .NET Academic Student Tools on various operating systems.

- Windows NT version 4.0 Service Pack 6a
- Windows 2000 Service Pack 2
- Microsoft® Windows® Installer 2.0
- Microsoft® Windows® Management Infrastructure
- Microsoft® FrontPage® 2000 Web Extensions Client
- Microsoft® FrontPage® 2000 Server Extensions Service Release 1.2
- Setup Runtime Files
- Microsoft® Internet Explorer 6.0 and Internet Tools

- Microsoft® Data Access Components 2.7
- Microsoft® Jet 4.0 Service Pack 3
- Microsoft® .NET Framework

When installing baseline components for your operating system, choose the default list of components during administrator mode setup. The default list includes those components that are required to run the Visual Studio .NET setup on your operating system.

Baseline components in the list are optional however, as you might want to deploy some components using alternative methods. When you run setup in createunattend mode, it will only show you the list of components required for the operating system you are currently running. If you want to deploy Windows Component Update to multiple operating systems, you must run createunattend for each operating system.

> Note When installing on an operating system with a different language from Visual Studio .NET, some components must be installed in the same language version as the operating system. These components are not available for installation on this disk and must be downloaded. For more information, see local.htm on the Visual Studio .NET Academic CD.

Known Installation Issue

- **Data file cannot be created**

  When running setup in createunattend mode with a file that already exists, you will receive the error "The data file <*filename*> cannot be created. Setup cannot continue." To work around this error, either delete the existing file or provide a unique file name.

Running Administrative Setup for Visual Studio .NET

Microsoft Visual Studio .NET offers an administrator mode setup, which you can use to facilitate deployment in a computer science laboratory. As an administrator, you first must run setup to select which features will be deployed. An initialization (.ini) file is created based on this selection and then deployed by running setup in unattend mode pointing to the generated .ini file. When run in unattend mode, setup runs silently installing the designated options. If there are any errors, setup exits silently with failure. Administrative setup makes it possible for you to deploy Visual Studio .NET through Windows 2000 or Microsoft Systems Management Server.

The following guidelines for running Visual Studio .NET administrative setup are provided in this topic:

- Running Administrator Mode Setup
- Creating a Network Image
- Installation Maintenance

- Required Baseline Components
- Known Installation Issue

Running Administrator Mode Setup

Before running this phase of administrator setup, you must first run Windows Component Update setup on your machine. Some of the components installed by the update are required for Visual Studio .NET setup to function.

The first step in running administrative mode setup is to create the .ini file you will use to deploy Visual Studio .NET Academic on computers in your laboratory.

> Note You must run the setup.exe found in the \setup subdirectory to create an .ini file. The setup.exe file found at the root of the CD or DVD does not support administrator setup.

Use the following procedure to create this file.

To create the deployment .ini file

1. Insert the Visual Studio .NET Academic CD 1, ignoring the autorun message.
2. From the **Start** menu, choose **Run**.
3. Type the following code in the **Open** drop-down list box:

   n:\setup\Setup.exe /createunattend *<path to .ini file>*

   For example:

   D:\setup\setup.exe /createunattend c:\vs7_deployment.ini

To run setup with the generated file on a client

1. Verify that Visual Studio .NET is available on the network. For more information, see Creating a Network Image.
2. From the **Start** menu, choose **Run**.
3. Type the following code in the **Open** drop-down list box:

   \\<computer>\<share>\...\setup\Setup.exe /unattendfile <path to .ini file>

   For example:

   \\<computer>\<share>\setup\setup.exe /unattendfile \\<computer>\<share>\vs7_deployment.ini

Creating a Network Image

Administrator mode setup is designed to run from a network image, rather than from CD or DVD. By creating a network image, the contents of multiple CDs or DVDs can be consolidated in a single folder. Use the following procedure to prepare a network image.

To prepare a network image of the Visual Studio .NET Academic CD

1. Insert the Visual Studio .NET Academic CD into your CD-ROM or DVD drive.
2. Open the CD drive in Windows Explorer.
3. Press **CTRL**+**A** to select all files and folders, and then copy the selection to a folder of your choosing.
4. You will receive a message about folders already existing on the location to which you are copying. Choose **Yes to All** to continue with the copy.
5. Open the folder containing the copied files, and then open the **Setup** folder.
6. Open the file "setup.sdb" in a text editor, such as Notepad.
7. At the end of the file, add the following:

   [Product Key]

   <25 digit Product Key>

   Note The Product Key is found on the CD packaging.
8. Save the changes and close the file.

   Note When installing, setup fails if any path and file name combination exceeds 260 characters. Visual Studio uses paths up to 190 characters long; accordingly, you should copy files to a path with less than 70 characters. If you create a network share for a network image, the UNC path to the root install location should also be under 70 characters. For example: Not valid: \\products\corporate\licenses\DeveloperTools\Visual Studio\Visual Studio .Net\NetSetup. Valid: \\products\DeveloperTools\Visual Studio .NET\NetSetup\.

Installation Maintenance

Setup can be run more than once on a machine with an existing installation. To do this, you should run administrator mode setup on a master machine with the same installation as the student client machines to create a new .ini file. Then, you can deploy the new .ini file to the student machines.

Students should not run setup from Add/Remove Programs in Control Panel (or by any other means). Doing so will cause a discontinuity in the feature state on various machines. All changes should come from setup being run with an unattendfile switch.

Required Baseline Components

The following is a list of components required for Visual Studio .NET.

Note Unattended setup will fail if any component is not installed.

- Windows NT version 4.0 Service Pack 6a
- Windows 2000 Service Pack 2

- Microsoft Windows Installer 2.0
- Microsoft Windows Management Infrastructure
- Microsoft FrontPage 2000 Web Extensions Client
- Microsoft FrontPage 2000 Server Extensions Service Release 1.2
- Setup Runtime Files
- Microsoft Internet Explorer 6.0 and Internet Tools
- Microsoft Data Access Components 2.7
- Microsoft Jet 4.0 Service Pack 3
- Microsoft .NET Framework

Known Installation Issue

- **Data file cannot be created**

  When running setup in createunattend mode with a file that already exists, you will receive the error "The data file <filename> cannot be created. Setup cannot continue." To work around this error, either delete the existing file or provide a unique file name.

Deploying Visual Studio .NET Academic with Terminal Services

You can deploy Visual Studio .NET Academic with the Student Tools in a computer science laboratory using Windows 2000 Terminal Services. Terminal Services makes it possible for multiple students to log on to a Windows 2000 Server or Windows 2000 Advanced Server simultaneously and run the Student Tools. To facilitate this, you must install Windows 2000 Terminal Services client on each workstation. Terminal Services client works with a variety of Windows operating systems.

In This Section

Terminal Services Overview
: Explains how to use Windows 2000 Terminal Services.

Windows 2000 Server Installation Requirements
: Provides the system requirements for installing a Windows 2000 Server or Windows 2000 Advanced Server.

Related Sections

Deploying Visual Studio .NET Academic on the Desktop
Provides instructions on how to install and configure Visual Studio .NET Academic on Windows 2000, Windows Millennium (ME), Windows NT version 4.0 or later, or Windows XP desktop computers.

Terminal Services Overview

Terminal Services is a technology that makes it possible for users to remotely execute applications on a Windows 2000 operating system-based server from a wide range of devices over virtually any type of network connection. For example, Terminal Services can be enabled to make it possible for multiple students to simultaneously log on to a Windows 2000-based server and run client applications, such as the Visual Studio .NET Academic Student Tools.

With Terminal Services running on a Windows 2000-based server, all client application execution, data processing, and data storage occur on the server. Applications and user desktops are transmitted over the network and displayed by means of terminal emulation software. Similarly, print streams, keyboard input, and mouse clicks also are transmitted over the network between the server and the terminal emulation software. Each user logs on and sees only his or her individual session, which is managed transparently by the server operating system and is independent of any other client session.

Terminal Services client software is available for different client hardware devices, including PCs, Windows-based terminals (Windows 95, Windows 98, Windows ME, Windows NT version 4.0 or later, and Windows 2000), and non-Windows-based devices, such as a Macintosh or UNIX workstation. (Non-Windows-based platforms require additional third-party software, such as Citrix MetaFrame.) Terminal Services also has a separate remote administration mode that can be used to administer any Windows 2000-based server remotely, including domain controllers and member servers.

Terminal Services client is installed with Windows 2000 or is available for download at Terminal Services Full Client Windows Installer (MSI) installation package (http://www.microsoft.com/WINDOWS2000/downloads/recommended/TSAC/tsmsi.asp).

> **Note** You also can use Windows XP Remote Desktop to access a Windows 2000 Server from machines running Windows XP.

Windows 2000 Server Installation Requirements

The following table shows the system requirements for installing Windows 2000 Server or Windows 2000 Advanced Server.

Component	Requirement
Processor	133 MHz or higher Pentium-compatible CPU
RAM	256 megabytes (MB) of RAM recommended minimum [128 MB minimum supported; 4 gigabytes (GB) maximum]
Available hard disk space	2 GB hard disk with a minimum of 1.0 GB free space (An additional free hard disk space is required if you are installing over a network.)
Other	Windows 2000 Server supports up to four CPUs on one machine

The performance of Visual Studio on any system is impacted by the action that the student user is performing.

> Note On a Windows 2000 Server or Windows 2000 Advanced Server installation, Web servers can be debugged by only one student user at a time.

Minimum Permissions Required

Certain minimum system permissions are required for students to run Visual Studio .NET Academic with the Student Tools on the desktop or through terminal services. Student users should be able to write to the following locations:

- Their portion of the registry (HKEY_CURRENT_USER), excluding the \Software Policies and \Software\Microsoft\Windows\CurrentVersion\Policies subkeys
- Their user profile directory
- A shared documents location

In general, student users require a level of access equivalent to that of the Users group in Windows 2000 and Windows NT version 4.0. In Windows 2000, users are prevented from making system-wide changes, but it is possible for them to run certain certified applications. These users cannot debug and register COM components in Visual Studio .NET.

The following table shows a list of directories that students must be able to access for each operation system. These are default locations.

Operating System	Directory
Windows 2000 Professional	<system partition>\Documents and Settings*UserName* For example, C:\Documents and Settings\StudentUser
Windows NT version 4.0	<system partition>\WinNT\Profiles*UserName* For example, C:\WinNT\Profiles\StudentUser
Windows XP	<system partition>\Documents and Settings*UserName* For example, C:\Documents and Settings\StudentUser

If students do not have write access to these directories, then Visual Studio components that use managed code, including the assignment tools and Assignment Manager, are unable to run. For more information, see Academic File Locations.

Academic File Locations

The Teaching Tools and Student Tools included with Visual Studio .NET Academic write files to the locations shown in the following table.

File	Location	Description
Managedcourses.xml	Faculty user's application data folder. For example, by default in Windows 2000, this is "..\Documents and Settings*Faculty User Name*\Application Data."	List of courses that are managed by the faculty user.
Courses.xml	Student user's application data folder. For example, by default in Windows 2000, this is "..\Documents and Settings*Student User Name*\Application Data."	List of courses that the student user has installed to their local drive.
Coursename.xml (*Coursename* is a placeholder for the actual name of the course. For example, CS 101.xml.)	Student user's application data folder. For example, by default in Windows 2000, this is "..\Documents and Settings*Student User Name*\Application Data."	Local cache of course information. One *Coursename*.xml file exists for each course the student has installed.

For the Teaching and Student Tools to function correctly, student and faculty users must have write access to the applicable locations. Furthermore, the content of these locations cannot be deleted when the user logs off.

Managed Code Projects on a Network Share

If the user creates application projects that use managed code on a network share (that is, not on the local drive), they will receive a warning when they create the project and when they run the application. The warning states that the project location is not fully trusted by the .NET runtime

and includes other information. This same type of error also is generated when the application is run. The user can continue when this error message occurs.

Some applications might not work if run remotely due to code security issues. For more information, see Overview of the Code Access Security Model in the .NET Framework Developer Specifications.

Backup Locations

The following table shows the locations from which to retrieve backup data for your courses and assignments.

Tool	Location to backup
Assignment Manager	AMDB database in SQL.
Assignment Manager	Data in the storage path for each course. The storage path is listed on the Course Info page for each course.
Assignment publishing tools	Data in the course storage location, which is shown under the course name on the Work With Courses page.
Assignment Manager Assignment publishing tools	Contents of <root>\Documents and Settings\<username>\Application Data\Microsoft\VisualStudio\7.0\Academic (substitute as appropriate for the path and username).

Further Resources

The following table shows further resources that you can refer to regarding how to deploy Windows 2000 in a computer science laboratory.

Site	URL	Description
TechNet	http://www.microsoft.com/technet/win2000/win2kpro/default.asp	Windows 2000 Professional
	http://www.microsoft.com/technet/win2000/win2ksrv/default.asp	Windows 2000 Server
	http://www.microsoft.com/technet/security/default.asp	Security
	http://www.microsoft.com/technet/deploy/default.asp	Deployment Guides
TechNet for Education	http://www.microsoft.com/education/?ID=TechNet	TechNet for Education site
	http://www.microsoft.com/technet/education/morcofl.asp	Case study of Windows 2000 deployment and Terminal Services in a Florida school district
	http://www.microsoft.com/technet/education/mosumg.asp	Case study of Windows 2000 deployment and Terminal Services at the Oregon State University Business School
	http://www.microsoft.com/technet/education/mrobeco.asp	Case study of Windows 2000 deployment and Terminal Services in a public school (Robeson County)
	http://www.microsoft.com/technet/education/mubourn.asp	Windows 2000 deployment at the University of Bournemouth