Chapter 3.

Solid Security

Don’t let the snoops into your data…

Don’t let just anyone get to your good stuff. Alpha Five has solid security that gives access to the right people and keeps the bad guys out.

Security groups and page assignments let you design a system that will meet your requirements. And. as usual, it’s only a few clicks away.

What you'll find here…

Pick & Click Charts…

How the material is organized

Just to wet your whistle, we'll start off with an overview of how Alpha Five handles web security.

But, before we dig into Security configurations, we'll cover a few more basic items. I'm all about saving time and not redoing work unnecessarily, so we will borrow those pages and the web component from the last chapter and, with a few adaptations, put them to good use in a new project.

Then we will set up security for all the files in the project.

Once you understand the Security options and procedure, you'll find it is easy to set-up. In the beginning, it is a bit tricky because, in so many cases, one option is dependent upon another. After you complete the exercises, you may still need to play around get the right settings for your project.

- From now on, we will use the opposite page to give you a directory to the contents of the chapter.

BASIC STEPS This is a checklist that you can come back to later to be sure you have taken all the necessary steps for developing secure web projects.

ADDITIONAL PROCEDURES You can also set security within the component itself and publish changed security data and project files at the same time.

PICK AND CLICK At the end of the chapter, there are three charts (dubbed PICK & CLICK) that detail the options available for Security Configuration, Users and Groups, and the Login web component.

PLEASE TAKE A MOMENT TO READ THIS

Understanding Alpha Five Security

With Alpha Five, you can set up a state of the art web application security system with just a few clicks. And, it's incredibly efficient and SAFE!

The following description of how the system is implemented is from the transcript of an interview of Jerry Brightbill, Senior Developer and Achitect at Alpha Software, Inc., by Alan Ashendorf, host of the *Let's Talk Computers* radio talk show.

FOR OUR PROGRAMMING FRIENDS

"Because it was built into the Server System, every page, every file request—and that includes JavaScript files, CSS (Cascading Style Sheets) files, images—all of them are checked against the Security. When Security is checked, a couple of things are loaded into memory from the server.

- We load a list of all the pages that are available.
- We load in all the Security for those pages.
- We can set Security for each page or we can set Security by File Type. For instance, we can allow all JavaScript files. What happens when a page request comes in, if you have a page that has JavaScript, Style Sheets, or

images, every single one of those components is checked against that Security.

- And because it is built into the Server System, there is no way to get around it.
- So, every File Request that comes in is checked against the Security, automatically, in the background."

FOR THE REST OF US

"The Security System in the server is already built into the server; that's automatic.

- It's turned on and off by [two simple check boxes]. *
- All the supporting code is pre-written so that it doesn't require the user to write anything.

In fact, to apply security is very simple."†

SIMPLE STEPS FOR EVERYONE

The Security Framework is based on establishing Users and Groups, their permissions and passwords. Then each page is defined as Denied, Always Allowed or Login Required. The Framework checks each page for its requirements. When a Login is required, the user is automatically directed to the login page. User ID and password (optional) parameters are entered and the project page is pulled up only by authorized users.

What's that you say? So easy, even a non-programmer can do it—no surprise, you say,

"After all, this is Alpha Five—what did you expect!"

Looking at the "Basic Steps"

NOTE

The order is determined by the system requirements: We need the redirect page in order to save the Security Settings and the settings need to be defined before we can create a Login component.

a. Turn on the Web Security Framework.
b. Create a redirect page for login information.
c. Set up the security preferences.
d. Identify the users and groups.
e. Create a web component for logging in and place it on the redirect page created above.
f. Set up the groups who have access to each page with security.

*. In his transcript, Jerry actually said "It's turned on and off by one simple check box." Technically, that is true—once security is enabled, you only have to check or uncheck Web Projects Control Panel > Web Security > Web Security Configuration > Security Active. But, in order for it to work in the first place, the Security Framework must also be enabled (Top Menu > Web > Application Server).

†. Brightbill, Jerry; http://www.alphasoftware.com/press/letstalkcomputers/alphafivewebsecurity.asp. December 30, 2006. You can also go to alphasoftware.com > Search > Security. Choose *Alpha Five Version 8: Web Security Framework—Right From the Start.* We recommend everyone read the full text of this excellent review of Alpha Five web security.

—Bullets and other formatting added. SHB

g. Add security to the grid.

h. Publish the security files.

THE REALLY GOOD NEWS

- Security can be turned on or off at any time. Your settings will be remembered and you can change them as needed. You can also implement it at a later time.

IMPORTANT STUFF

- The vital fact is that if you put **ANYTHING** on the web, it can be seen by **ANYONE** unless you take the proper steps to protect it.

OK, enough heavy stuff. Have I convinced you that the Alpha Five Web Security Application is sufficiently simple—and necessary? It really is both.

Preparation for the lesson.

PLEASE NOTE

The process of creating Alpha Five web applications is the same for all users, with a few minor exceptions. For consistency in teaching and learning, the text in this book refers to the Alpha Five DBF files provided with the companion databases. The lessons begin at the Web Projects Control Panel.*

LOOKING AHEAD†

A Web Project named **MailListSecure** has finished examples of the security system outlined in this chapter. You will be able to view the examples and security settings, but you will not be able to see the project in action until you **Publish** the files. See “Viewing and using the Web Project” on page 43.

SCREEN SHOTS

Some of the screen shots in this section were created using the files in the MailListSecure project (see above). The only difference between that file and the one we direct you to create here is that yours will entitled MyMailListSecure. The same is true for the pages, web components, etc. For example MainMenu for you will be MyMainMenu.

Borrowing files for a new project

LESSON SET-UP

We have a bit of work to do to get ready for the Security exercises. The steps in this section could be considered a continuation of the previous chapter because they deal with the basic skills of reusing existing pages and components in a new project.

Here, we will copy the files created in the previous chapter and insert them into an new web project.

- First, we will create a new web project and then add the pages and web component we made in the last chapter.

*. See “Open Web Projects Control Panel” on page 20.

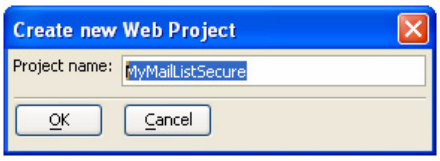
†. For experienced or returning users. May be helpful to beginners who want to see the results of the exercise.

- Then, we will duplicate one of the pages and the web component and save them with new names.
- Next, we will change the link on the MainMenu page.
- Lastly, we will remove one of the pages and the component from the new project.

Needless to say, this has nothing to do with security. **BUT,** it is an exercise we think you'll find useful.

Creating a new web project

1. *Web Projects Control Panel*: click **New Project**.
   - The Create new Web Project dialog opens.



2. Enter **MyMailListSecure**. (Click OK)

Adding existing pages to a web project

3. *Web Projects Control Panel* > A5W Pages: click **Add File**.
4. Navigate to
   - c:\A5_V8+9_WebBook\WebAppLessons\AbcSeminars.Web-Projects\MyMailListUnsecure.WebProject\MyMailListUnse-curePge.a5w
5. Click **Open**.
   - The page is added to the project.
6. Repeat above for **MyMainMenuPg.a5w** to add it to the project.

Adding an existing web component to a project

7. *Web Projects Control Panel* > Web Components: click **Add File**.
   - You should already be at the proper folder.
   - Alpha Five know what type of file you are looking for, so, this time, you will see the **.a5wcmp** file.
   - You can also choose the file type from the standard windows *Files of type* drop down list at the bottom of the window.
8. Choose **MyMailListUnsecureWC.a5wcmp**. (Click Open)

- Your project should have three files.
  a. *A5W Pages*: 2 files.
  b. *Web Components:* 1 file.
  c. *All Files*: 3 files.

Duplicating pages and components

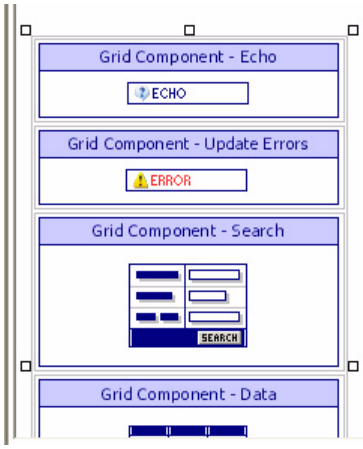
The procedure for duplicating pages and components is the same for both.

9. Right click on the file, choose Duplicate for the following.
   a. *Source Filename:* MyMailListUnsecureWC.
   b. *Destination Filename:* **MyMailListSecureWC**.
   c. *Source Filename:* MyMailListUnsecurePge.
   d. *Destination Filename:* **MyMailListSecurePge**.

Removing a web component from a page

Next, we need to replace the old (MyMailListUnsecureWC) web component with the new one.

10. Open **MyMailListSecurePge** in Edit mode.
11. Click on a corner of the web component to select it (handles appear around the edges.)
    • Be sure go get the whole thing, not just one of the sections.



12. Press DELETE.
13. Click **Save** or press CTRL+S.
    • An information box comes up offering to automatically remove left over code.

14. Click **Yes**.

15. Click **Save** again to be sure the code is gone.
    - This little extra step assures you are working with a clean slate.
16. Place the **cursor at the end** of the "Welcome to ABC Seminars" text.
17. Press **ENTER** twice.
18. Click **Insert Component** on the toolbar: choose **MyMailListSecureWC**.
    - We made this component in step 9 b on page 57.
19. Click **Save** again and **Close** the page.

Changing the link on a page

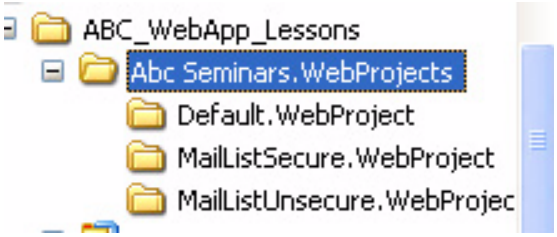
Before we can get a new link for the **MyMailListSecurePge,** we need to Publish the files.

20. Click **Publish** (all files) and open to the **MyMailListSecurePge.**
21. **Copy** the URL.
    http://localhost/MyMailListSecurePge.a5w
22. Open the **MyMainMenu** web page for editing.
23. Overwrite here with the new URL.
24. Type here over the new URL.
25. **Save** the page and **close** the HTML editor.
26. **Republish**, this time opening the **MainMenu** page.
27. **Test** the link—inspect the URLs to be sure the correct pages are displaying.

Remove files from the project

Only one thing left to do in order to clean up the project: delete the "Unsecure" page and component. The procedure for removing both is the same and permanently deletes the files.

The original files will still remain in the "Unsecure" project because the two projects reside in different folders.

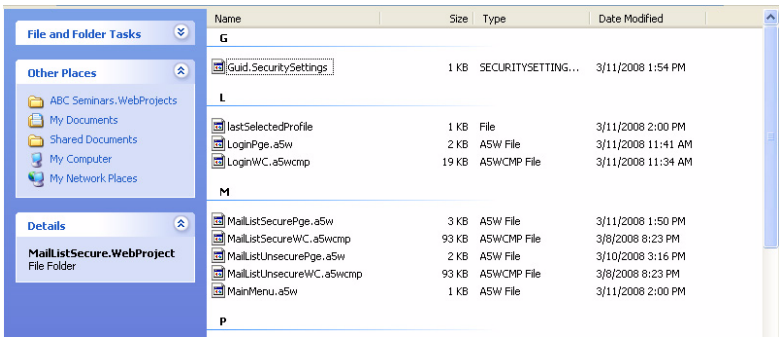


28. Open Windows Explorer and navigate to the lesson files:
    c:\A5_V8+9_WebAppLessons\ABC_WebAppLessons\Abc.WebProjects.

- This screen shot shows the finished projects that are part of the companion files.
- In your case, you will also have the ones you have created, MyMailListUnsecure and MyMailListSecure.
- If you open these folders, you will see that each has the "Unsecure" pages and web component.
- This means we can safely delete files from one project and not damage the contents of the other.

There is another way to see the files in the current project.

29. *Web Projects Control Panel* > Top Menu > Edit > **Open Project in Explorer**.*



30. **Close** Explorer.

- Ok, now its finally time to delete those files.

31. *Web Project Control Panel*: **Right click > Delete** the following files:
    - **MyMailListUnsecureWC**.
    - **MyMailListUnsecurePge**.

- Next, we will re-publish the project so the Application Server knows what we've been up to.

32. Click **Publish**.

- You now have a new, clean project with most of the elements borrowed from another.

- Now, on to Security—bet you thought I'd forgotten all about it! No way. I just keep thinking of all these thing you need to know in order to be a wild and wonderful (and maybe, wacky, like me) web designer.

*. This screen shot was added after I had already done some work on security, so it displays some extra files.

Implementing security

Turning security on

REMEMBER THIS

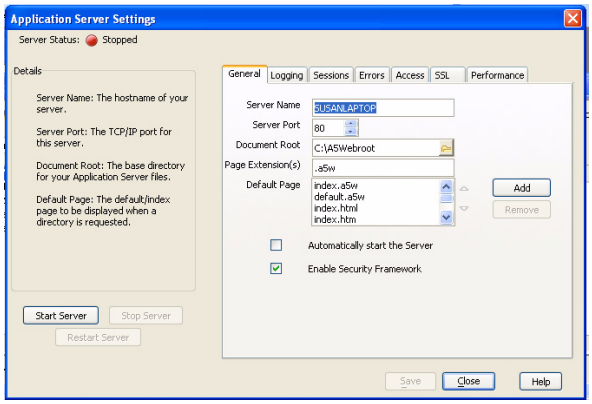
There are **two** checkboxes that control Security. They must **BOTH** be checked to have it applied.

- The first enables the **Web Security Framework** (see below).
- The second enables the **Web Security Configuration** (see page 62).

Security files will also need to be **re-Published** each time changes are made.

ENABLING THE WEB SECURITY FRAMEWORK

1. *Web Projects Control Panel* > *Top Menu* > Choose **Web > Application Server**.
   - The **Application Server Settings** dialog opens.



2. *General Tab: Enable Security Framework*: **Yes.** (Click Save)
   - You are advised that your settings have been saved.
3. Click **OK**.

FRAMEWORK SETTING

The Framework may be turned off and on at will, but you will need to stop the Application Server first (see “Stop Server first” on page 419). The best procedure for turning security off is discussed below.

4. Click the **Application Server** button to start the Application Server (if it is not already running).

Turning security off

The important thing to remember about security is that once it is turned on, rules are enforced, even while testing. If you create a new page, you must move it out of the default *Always Denied* classification. You must know user names and passwords to test the entire web project. (We’ll cover all of this later).

You may wish to turn security off while you are testing so that you don’t get unnecessarily delayed. (See also “Quick test” on page 61.)

- To turn it off, see step 10 on page 62: *Check:* **No**

When you turn it back on, your settings will be remembered.

QUICK TEST

- **Pages:** You can also quick test pages by clicking **Execute** at the HTML Editor. Security is not enforced at "Live Preview," so you can test without moving the page out of Always Denied.
- **Web Components > Edit mode**: If you run a component that has security included at the *Live Preview tab* or click **Browser**, you are prompted to select a sample group. This is added to the temporary page that shows the component, so security is simulated.

Creating a redirect page

HANG IN, PLEASE!

I know you're probably going to be confused by the following, but if you just read it over and then follow the steps, the light will dawn.

The temptation is to jump straight to defining web security, but, before you can save your definitions, you will need to identify a login page where the user will be taken when he/she requests the protected page, so we will make that first.

This is the "go to first" page when security is set for a web project. It will contain a Login Web Component asking for user id and password.*

NOTE

The file name of this page (called a redirect page) will be entered in the Security Settings. A **redirect page** is required to save those settings.

CHICKEN OR EGG?

- We will first create the page, and later create a Login web component to place on it, because
  - We need the page to save the Security Configuration.
  - The Security Configuration must be saved before the Login component can be created.

5. *Web Projects Control Panel:* **A5W Pages.** (Click **New** and then OK)
6. Type: **Welcome to ABC Seminars. Please login.**
7. **Save** the page as **MyLoginPage**.
   - You may leave the page open as we will return to it after the following steps.

Defining the security settings

There are so many options here that it's hard to believe that even the choosiest of designers couldn't be satisfied with a few simple clicks, but, as in the rest of Alpha Five, customization via programming is also available. At this time, we will confine ourselves to looking over the options and changing only a few defaults. A full listing is at the end of the chapter.

*. Passwords are optional.

NOTE TO NON-PROGRAMMERS

This is the most involved step in the security process. The terms in the following sections will be more familiar, so hang in there!

8. *Web Projects Control Panel:* Click the **Web Security** button.

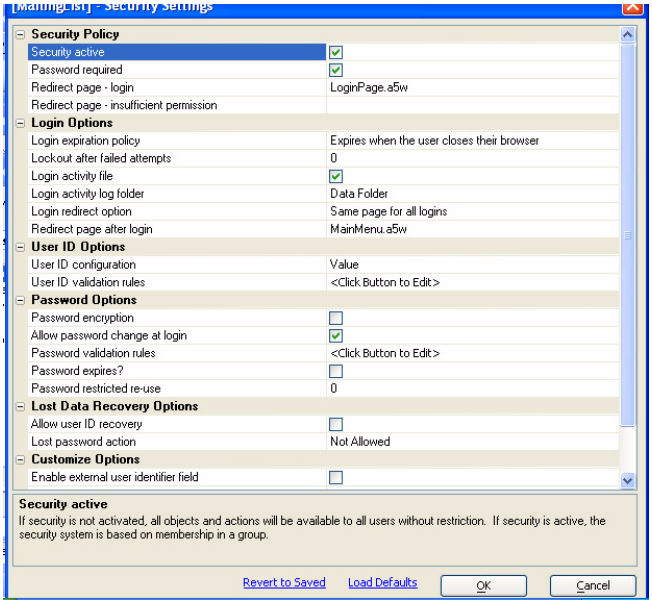
WEB SECURITY CONFIGURATION

9. Choose **Web Security Configuration** (Click OK)
10. *Security Policy > Security active*: Click the checkbox **Yes**.

IMPORTANT NOTE

Without taking this step, there can be no security.* You can unclick it at any time to turn off security and your settings will be remembered.

- The **Security Settings** window opens.



- As you click in each selection, an information window at the bottom defines its action.

11. Set up the following parameters:

SECURITY POLICY

a. *Security active:* **Yes**

b. *Password required:* **Yes**

Login go to page

c. *Redirect page - login:* Choose **MyLoginPage.a5w** (Created in above steps.)

- **Go to this page** for user login **(Required)**

Login fails go to page

d. *Redirect page - insufficient permission:* **Leave blank**

- **Go to this page** if the user does not have permission (optional)

*. See also “Turning security on” on page 60.