2010

Email Reporter: VSTS Load Test Plug-In For Visual Studio Team System 2010

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# Introduction

### About the Tool

Microsoft’s Visual Studio Team System Test Edition provides a powerful platform to perform high volume load testing. It also provides high end flexibilities to write and utilize external plug-in for extended functionalities.

***Email Reporter: VSTS 2010 Load Test Plug-in***enables users to send the load test reports to one or more pre-configured email addresses automatically, once a VSTS Load Test is completed. This open-source load test plug-in also provides supports for customization by which you can customize the reported performance data.

### System Requirements

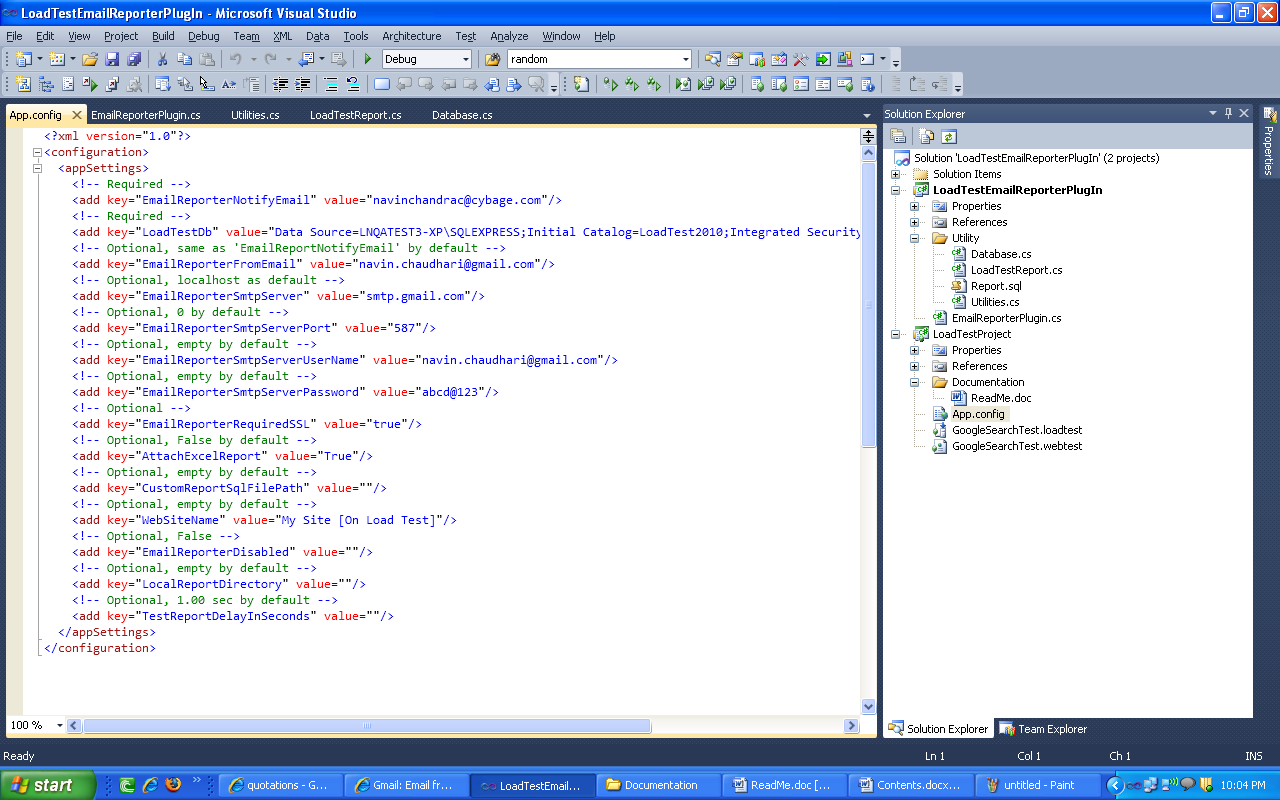
* Visual Studio Team System 2010 or Visual Studio Test Edition 2010
* Sql Server 2005 or higher
* Smtp server account, which will be used to relay the email report
* An email account, where the email report will be sent
* Operating System: any operating system supported by Visual Studio Team System 2010 or Visual Studio Test Edition 2010
* Hardware: any hardware configuration supported by Visual Studio Team System 2010 or Visual Studio Test Edition 2010

# 5 Minutes Introductory Quick Start

The whole installation and configuration for Email Reporter – VSTS 2010 Load Test Plug-in should take about 15 minutes. However, if you are very eager to see in action what this plug-in really does, before moving forward to invest time on it, here is a 5 minutes quick start introductory tutorial for you!

### Minute 1: Open the Configuration File

Open the App.Config from the test project, as shown below:



### Minute 2-4: Modify the Configuration File

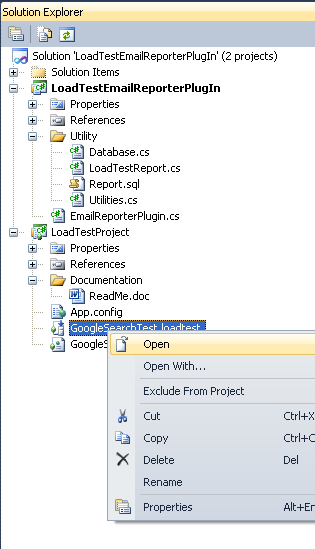
Modify the following keys in App.Config, as mentioned below, with appropriate values.

|  |  |  |  |
| --- | --- | --- | --- |
| **Key Name** | **Required** | **Default Value** | **Description** |
| **EmailReporterNotifyEmail** | Yes |  | Provide the email address where you need the email report to be sent with respect to the load test that you are going to run. |
| **EmailReporterSmtpServer** | No | localhost | Provide the SMTP server address, which will be used to send email report. By default, it is set to “localhost”. If you want to use your machine as the SMTP server, you need to make sure that is configured properly in IIS. |
| **EmailReporterSmtpServerPort** | No | 25 | The user name of your SMTP server account. If no user name is required to send email, leave it blank. |
| **EmailReporterSmtpServerUserName** | No |  | The password of your SMTP server account. If no user name is required to send email, leave it blank. |
| **EmailReporterSmtpServerPassword** | No |  | The database connection string where your VSTS Load Test database in located. |
| **EmailReporterRequiredSSL** | No | False |  |
| **LoadTestDb** | Yes |  | The storage where the load tests data will be stored. You can find the connection string from, “Test -> Administer Test Controller -> Load Test Result Store”. |

### 

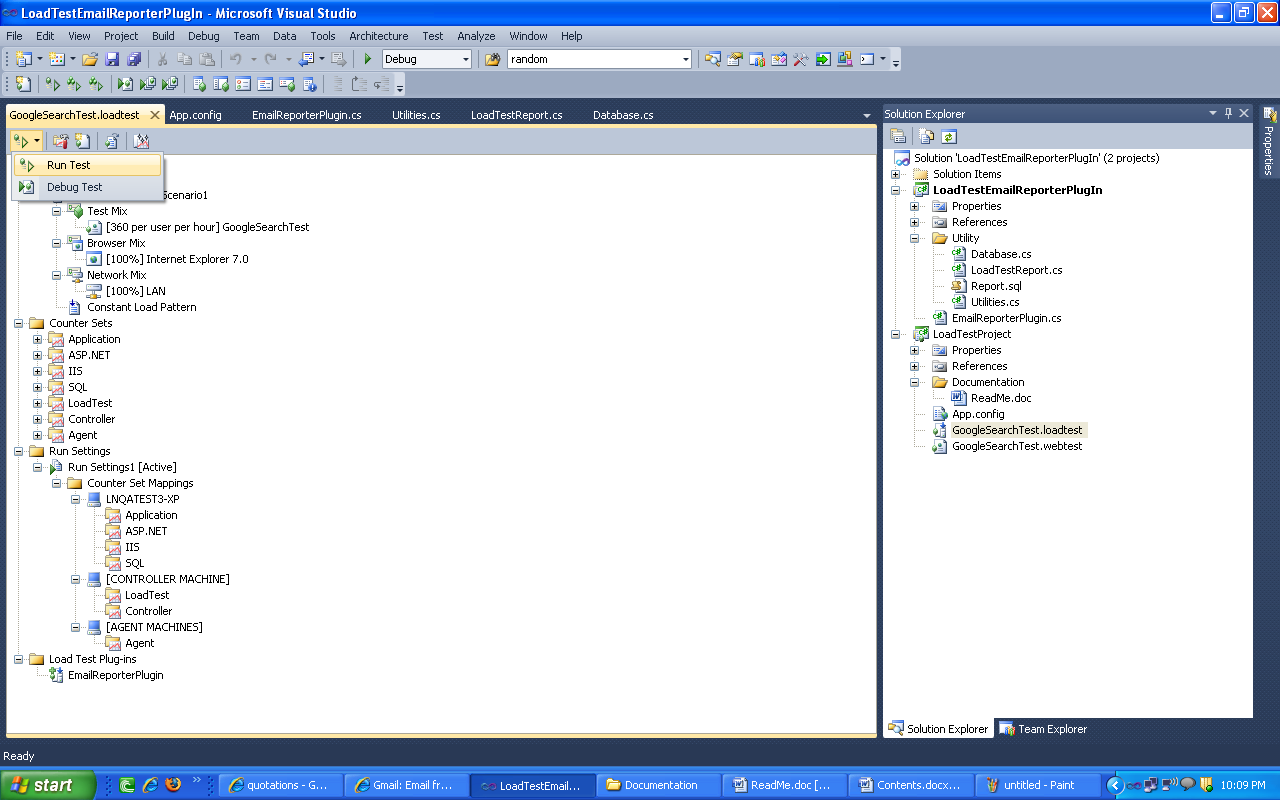
### Minute 3: Open the Load Test

Right click on the load test “LoadTest\_ClickOnButton.loadtest” shown below and select Open.



### Minute 4: Run the Load Test

Click on the “Run” command, located on the upper left of the load test window. The Load Test will run for 15 seconds.



### Minute 5: Get the Email Report!

Once the Load Test is completed, you are done! Check your email inbox, which you mentioned in App.Config! Your Load Test report is there!

# Installation and Configuration Guideline

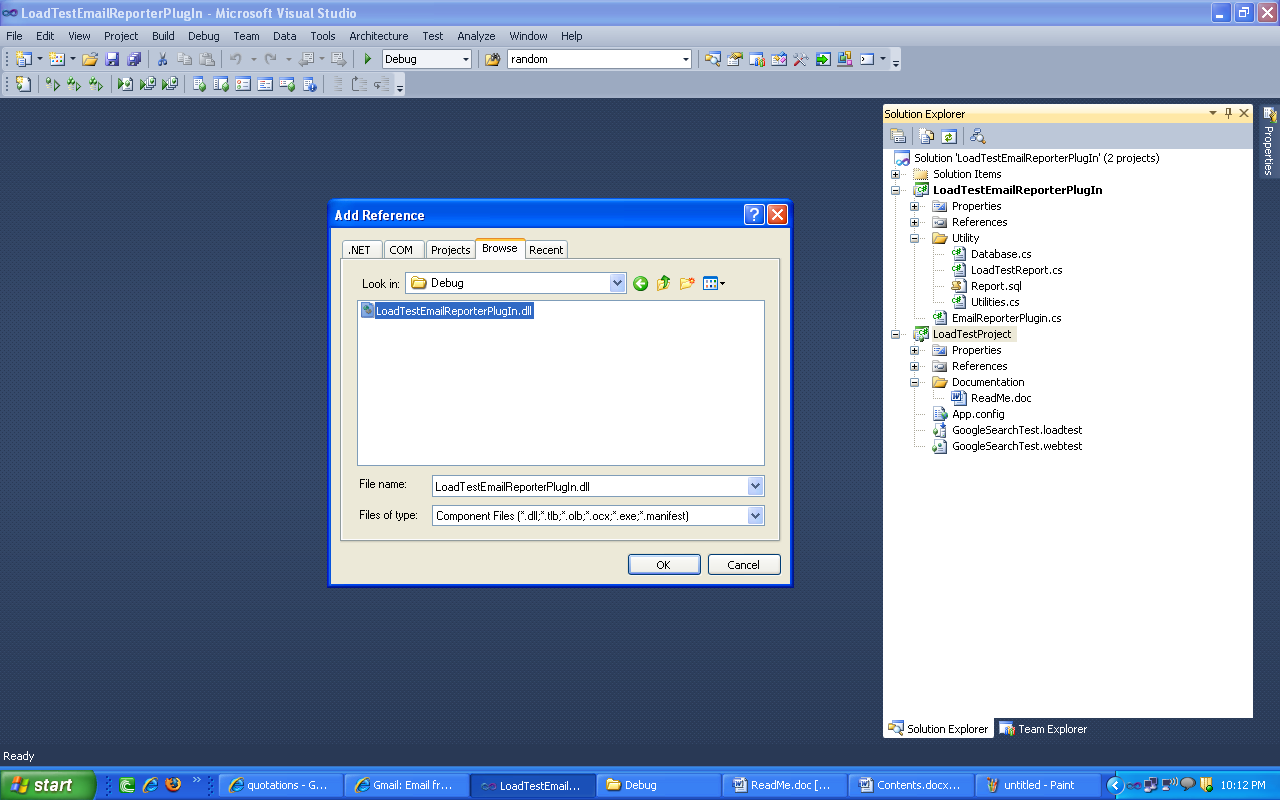
Integrating the Email Reporter – VSTS 2010 Load Test Plug-in to your load test project is pretty straight forward.

### Step 1: Adding the Plug-in Reference

We assume you have at least one Visual Studio 2010 Test Project. From the solution explorer, right click on the test project and select “Add Reference”.

Using the “Browse” tab, locate the Email Reporter – VSTS 2010 Load Test Plug-in binary (dll) file from the following location and add it to the test project.

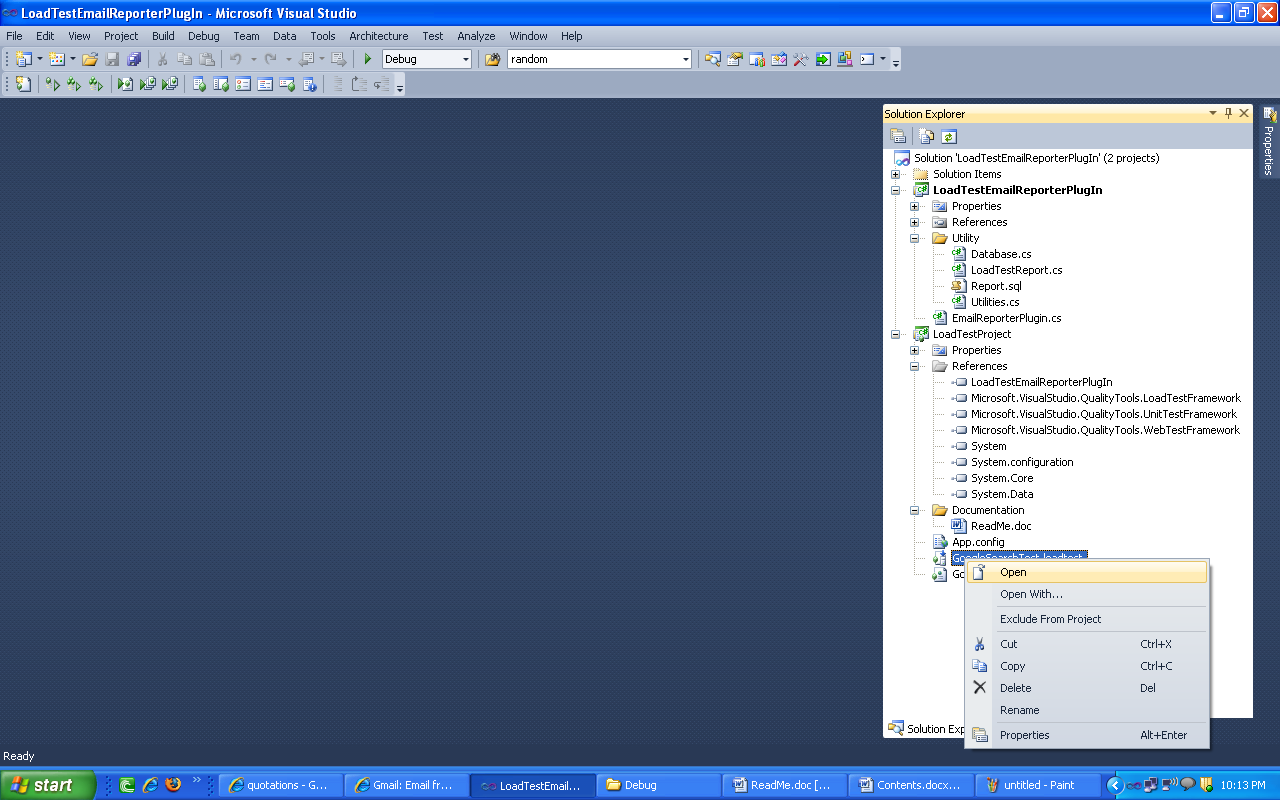
<extraction-location>\ LoadTestEmailReporter\LoadTestEmailReporterPlugIn\LoadTestEmailReporterPlugIn\bin\Debug\ LoadTestEmailReporterPlugIn.dll



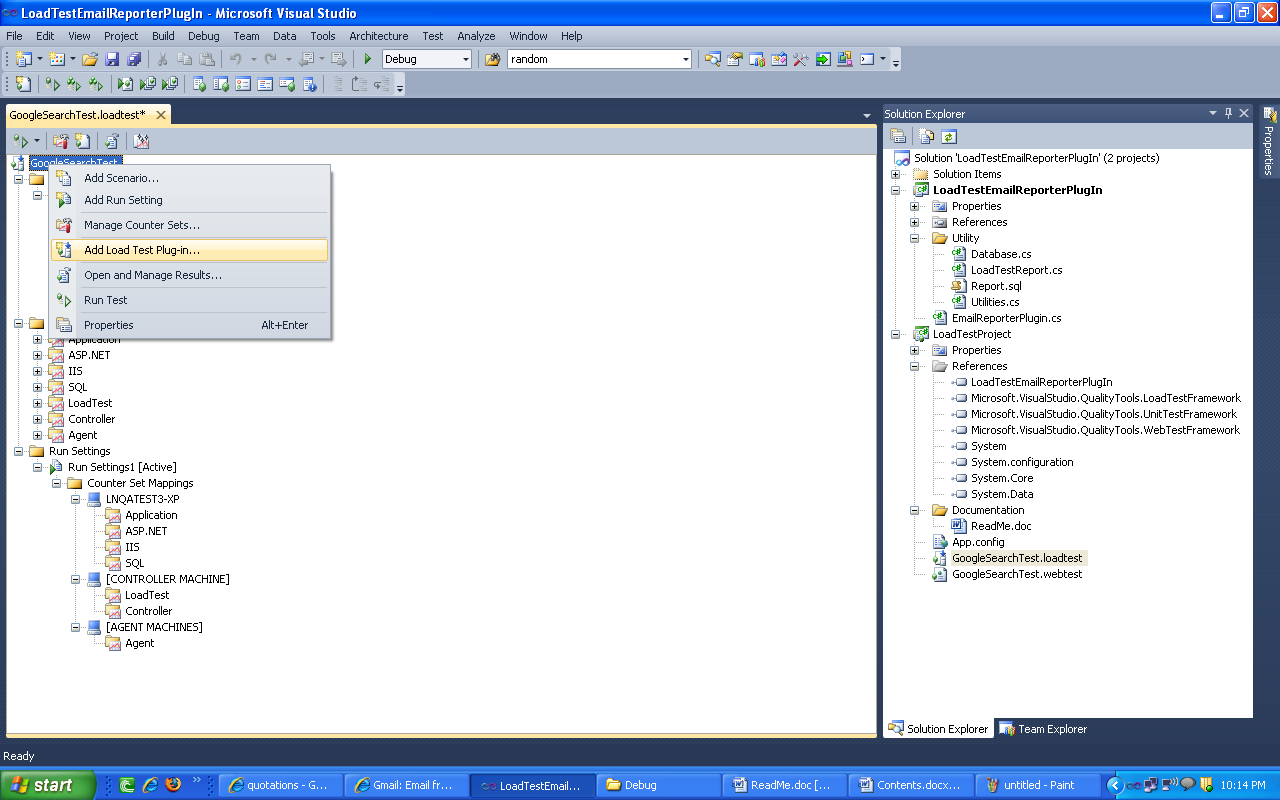
### Step 2: Adding the Plug-in To Load Test

We assume you have at least one web test as well the corresponding load test created on your VSTS 2010 Test project. If you have not created already, please create now. Check the useful references as provided later of this document to learn how to create Web and Load Test in Visual Studio.

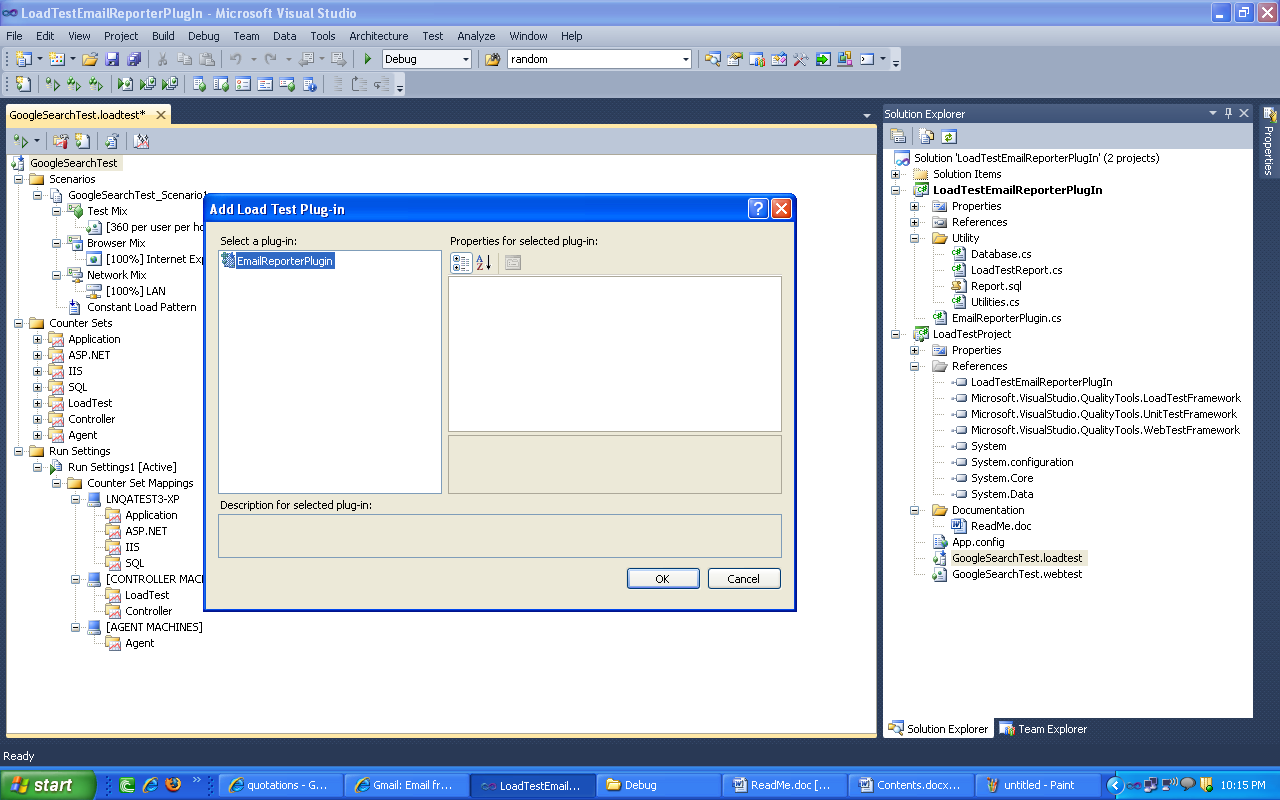
Right click on the load test you want to run from the solution explorer and select open, as shown below:



Once the Load Test opens, right click the Load Test in the Load Test window and select “Set Load Test Plug in”.



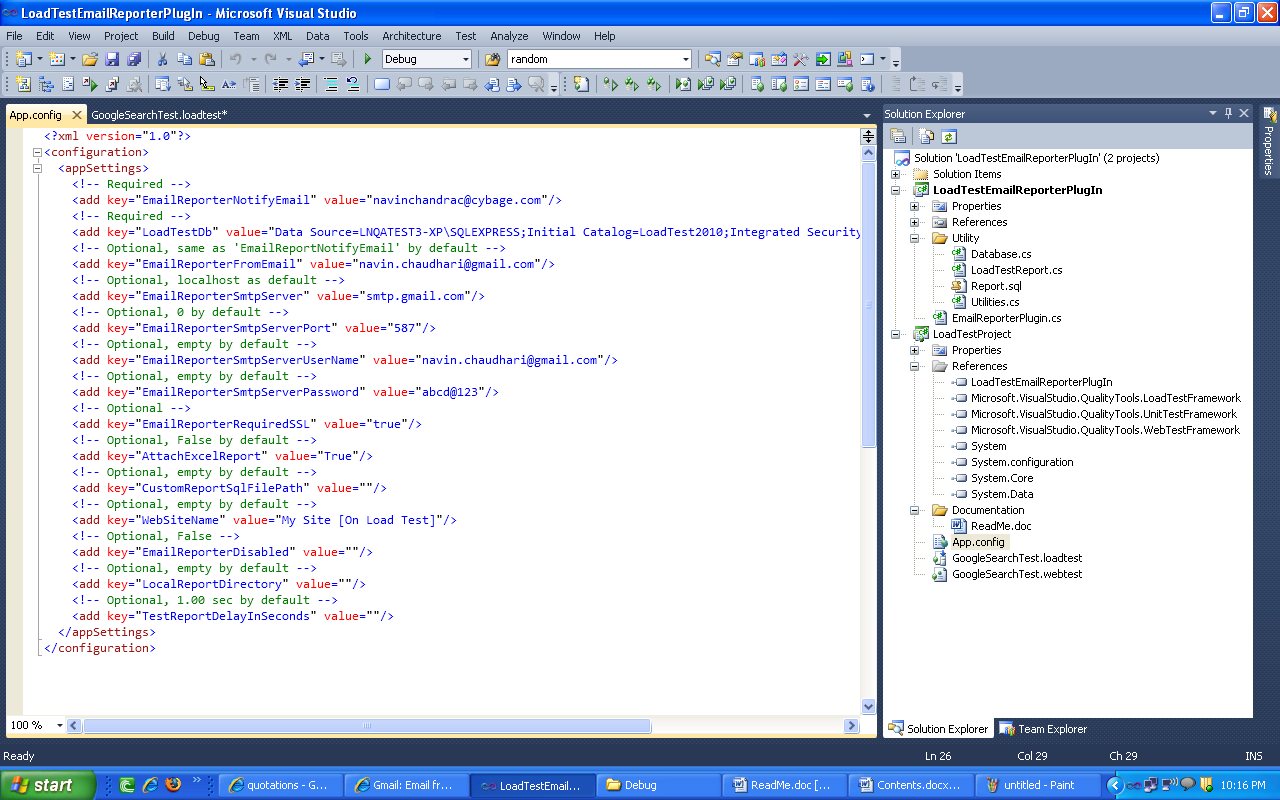
On the pop-up window you will see list of all Load Test plug-in’s that are available to your project. Select Email Reporter – VSTS 2010 Load Test Plug-in, as shown below:



### Step 4: Update App.Config

The App.Config file in your test project should contain the required configuration data to run Email Reporter – VSTS 2010 Load Test Plug-in properly. Modify the following keys in App.Config, under “configuration/appSettings” section, as mentioned below, with appropriate values.

|  |  |  |  |
| --- | --- | --- | --- |
| **Key Name** | **Required** | **Default Value** | **Description** |
| **EmailReporterNotifyEmail** | Yes |  | Provide the email address where you need the email report to be sent with respect to the load test that you are going to run. |
| **EmailReporterSmtpServer** | No | localhost | Provide the SMTP server address, which will be used to send email report. By default, it is set to “localhost”. If you want to use your machine as the SMTP server, you need to make sure that is configured properly in IIS. |
| **EmailReporterSmtpServerPort** | No | 25 | The user name of your SMTP server account. If no user name is required to send email, leave it blank. |
| **EmailReporterSmtpServerUserName** | No |  | The password of your SMTP server account. If no user name is required to send email, leave it blank. |
| **EmailReporterSmtpServerPassword** | No |  | The database connection string where your VSTS Load Test database in located. |
| **EmailReporterRequiredSSL** | No | False |  |
| **LoadTestDb** | Yes |  | The storage where the load tests data will be stored. You can find the connection string from, “Test -> Administer Test Controller -> Load Test Result Store”. |



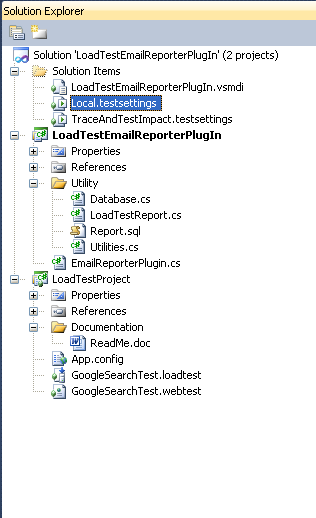
You can get a sample App.Config, from the following location:

<extraction-location>\LoadTestEmailReporter\LoadTestEmailReporterPlugIn\LoadTestProject\App.config

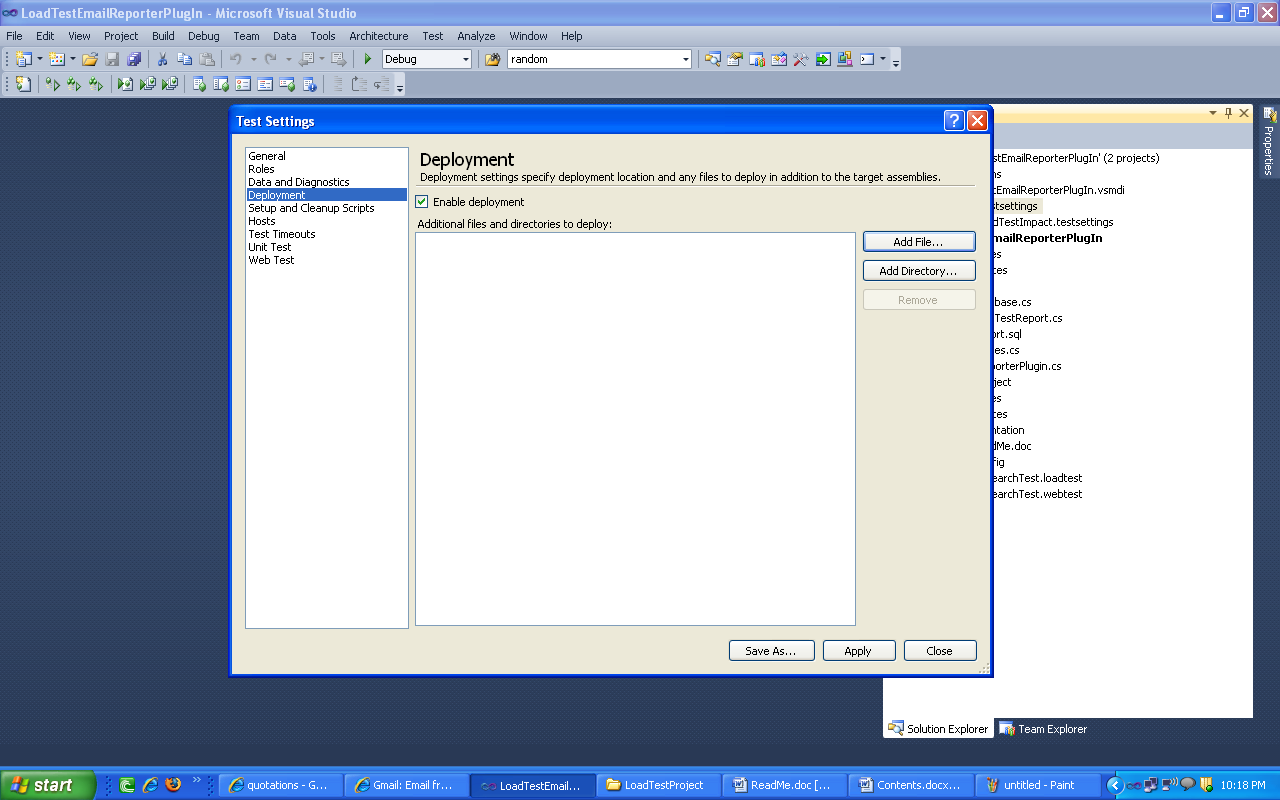
### Step 5: Deploying App.Config on Test Run

As mentioned earlier, the App.Config file contains the required configuration data to run Email Reporter – VSTS 2010 Load Test Plug-in properly. However, since for a load testing, the “App.Config” on the corresponding test project doesn’t get deployed to the Test Run output directory, we have to add it explicitly.

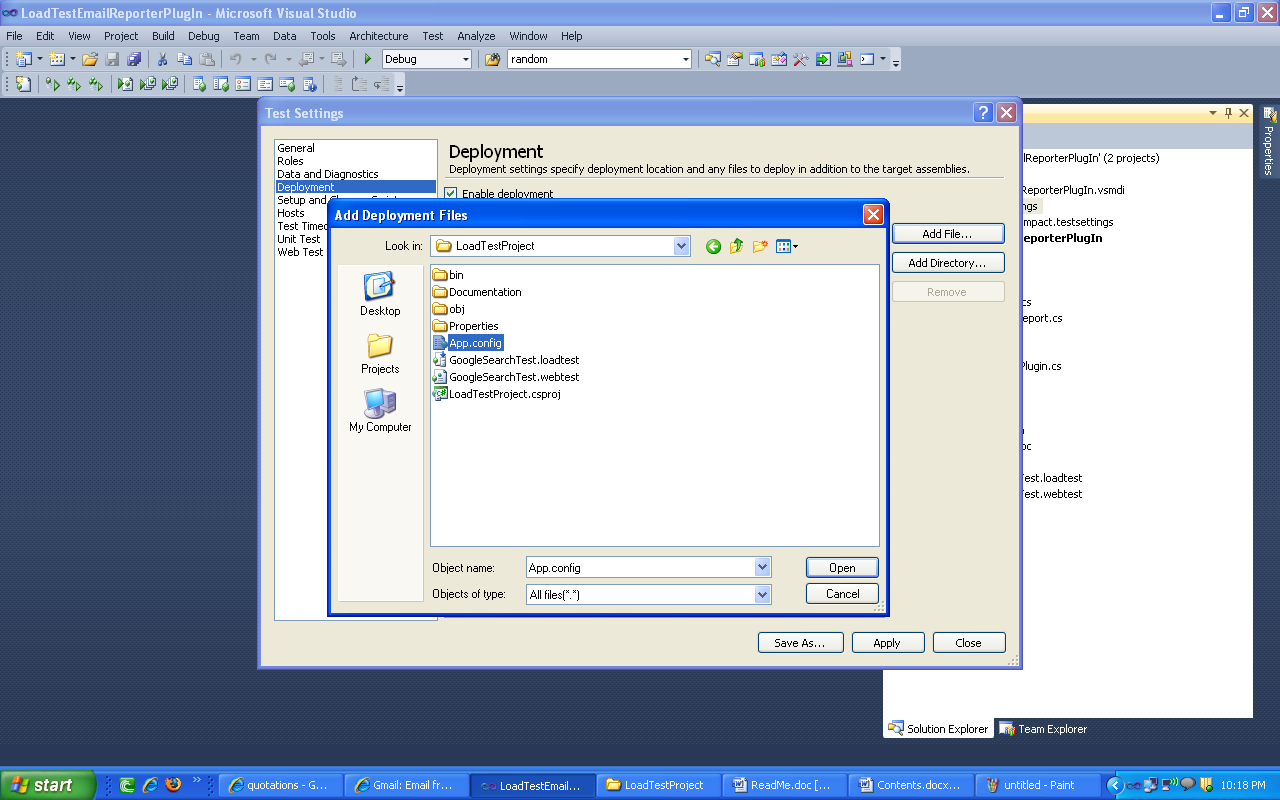
In that regard, double click on the test run file from the solution explorer and select open, as shown below:



Select the “Deployment” pane from the left bar in the configuration window:



Click “Add File” and add it by locating the “App.Config” of your test project.



### Step 6: Run the Load Test and Get Your Load Test Report

Click on the “Run” command, located on the upper left of the load test window. Let the load test to be completed. Once the Load Test is completed, you are done!

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Check your email inbox, which you mentioned in App.Config! Your Load Test report is there!

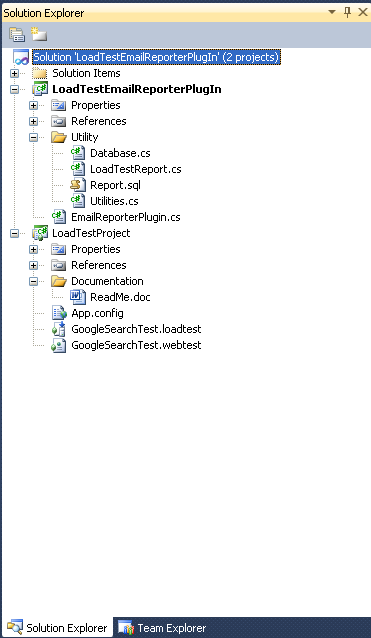
# ScreenHunter_26 MarSource Project Architecture and Customization

### Source Project

Go to the following location and click on the solution file.

<extraction-location>\LoadTestEmailReporter\LoadTestEmailReporterPlugIn\LoadTestEmailReporterPlugIn.sln

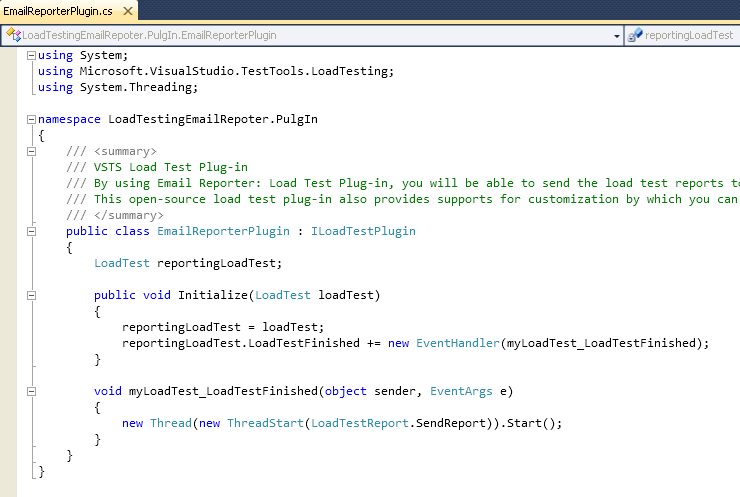
Clicking on the solution file, Visual Studio will load 2 C# projects:



#### Project: email-reporter-plug-in

This is the load test plug-in project, which includes the following files:

**EmailReporterPlugin.cs:** Contains the class EmailReporterPlugin, having interface ILoadTestPlugin, which is the actual **entry point** of the plug-in. When Visual Studio runs the load testing, using this plug-in, it initializes the load test by “public void Initialize” method of this class, with a LoadTest argument, which contains an instance of the running load test. Using this instance, we can create several event handler methods for events, such as LoadTestStarting, LoadTestFinished, TestSelected, TestStarting, LoadTestAborted, Heartbeat etc. In our sample, we have created an event handler method for LoadTestFinished event, which sends the load test report, once the load test is completed.



**utils\** **Utilities.cs:** Contains the basic utility classes used by plug-in.

**utils\** **LoadTestReport.cs:** Contains the class LoadTestReport that encapsulates reporting functionality, used by plug-in.

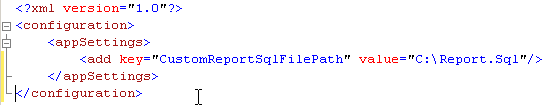
**utils\** **Database.cs:** Contains the database related utility classes used by plug-in.

**utils\Rreport.sql:** Contains the default Sql file, which contains the required SQL queries with respect the LoadTest database. In the project, this will be included as the embedded resource (i.e. will be included implicitly with the compiled dll of the plug-in project).

### Customizing the Performance Counter by Sql Script

Email Reporter Load Testing plug-in considers 10 performance counters to be reported by default. However you can customize the number and type of counters by updating the corresponding Sql Script, without touching the source code of the plug-in.

You can override the Sql file to be used by the plug-in, by providing a path in the “CustomReportSqlFilePath” key of “configuration - appSettings” section in App.config file of your test project.



However, while providing the Sql script, please make sure that you maintain the overall structure of the Sql (i.e. update only the query provided in the “Performance Counter” region), as being shown below:

