

Readme

Windows Azure Toolkit for Social Games

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| |  |  | | --- | --- | | Version: | 1.0.0 | | Last updated: | 9/30/2011 | |  |

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Overview

Building a social game is a tough challenge. From the first iteration developers must plan for and deal with issues like high concurrency, real time interaction, and rapid growth. The Windows Azure Toolkit for Social Games provides you with the tools you need to ramp up your game development quickly on an architecture that will help you face future challenges. The toolkit leverages the power of Windows Azure and game development best practices to handle even the most demanding social games.

This version of the toolkit consists of a generic game play service API, and two sample games that consumes the operations exposed by the game service: “Tic-Tac-Toe” a “Four in a Row”. The game play service is responsible for handling the generic game operations like user authentication, joining multiple players to a game, and persisting the game live state.

This guide will walk you through the steps for running the sample game locally using the Windows Azure emulator.

## Prerequisites

* 1. The following software is required to run this toolkit:
  + [Microsoft Visual Web Developer 2010 Express or Microsoft Visual Studio 2010](http://www.microsoft.com/express/Web/)
  + [Microsoft .NET Framework 4.0](http://www.microsoft.com/downloads/details.aspx?FamilyID=ab99342f-5d1a-413d-8319-81da479ab0d7)
  + Internet Information Services 7 , with ASP.NET Feature enabled
  + [Windows Azure SDK and Tools for Visual Studio (September 2011) version 1.5](http://go.microsoft.com/fwlink/?LinkID=128752)
  + [Microsoft SQL Server 2008 (Express edition or greater)](http://www.microsoft.com/express/Database/InstallOptions.aspx)
  + [Windows Identity Foundation Runtime](http://support.microsoft.com/kb/974405)
  + An HTML 5 capable browser – for example Internet Explorer 9

## Learning more about the Windows Azure Platform

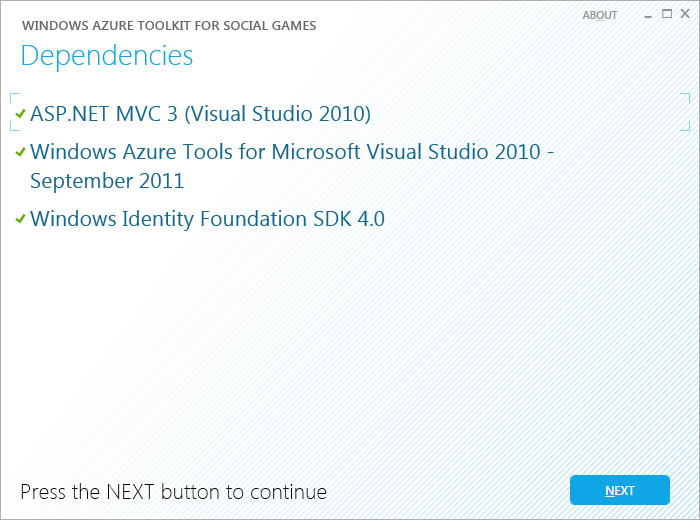
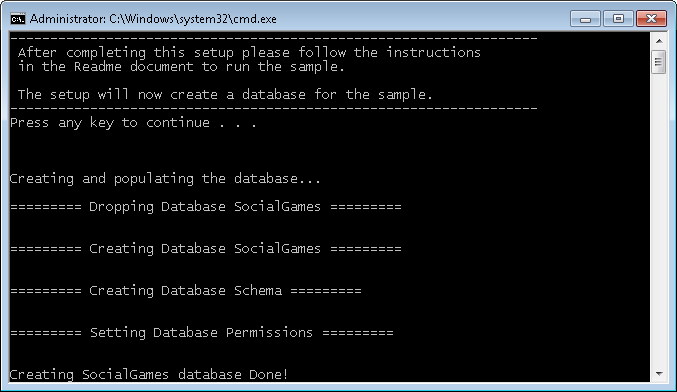
To learn more about the Windows Azure Platform and AppFabric check these resources:

* + Complete the Hands-On Labs in the Windows Azure Platform Training Course online on [MSDN](http://go.microsoft.com/fwlink/?LinkID=207018).
  + Learn how to build applications with the Windows Azure Platform Training Kit you can [Download Here](http://go.microsoft.com/fwlink/?LinkID=130354).

Get Started

To get started with the Windows Azure Toolkit for Social Games you can run it locally using the Windows Azure compute emulator and your local SQL Server.

**Running the Setup**

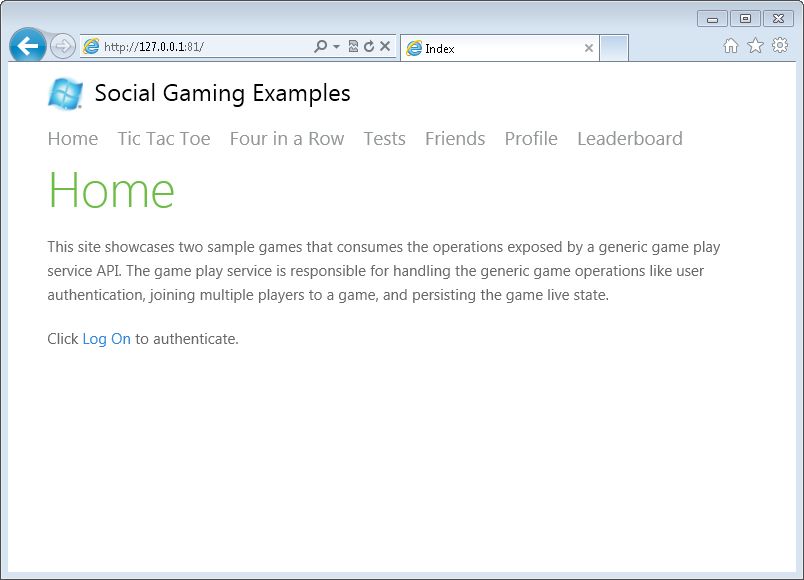
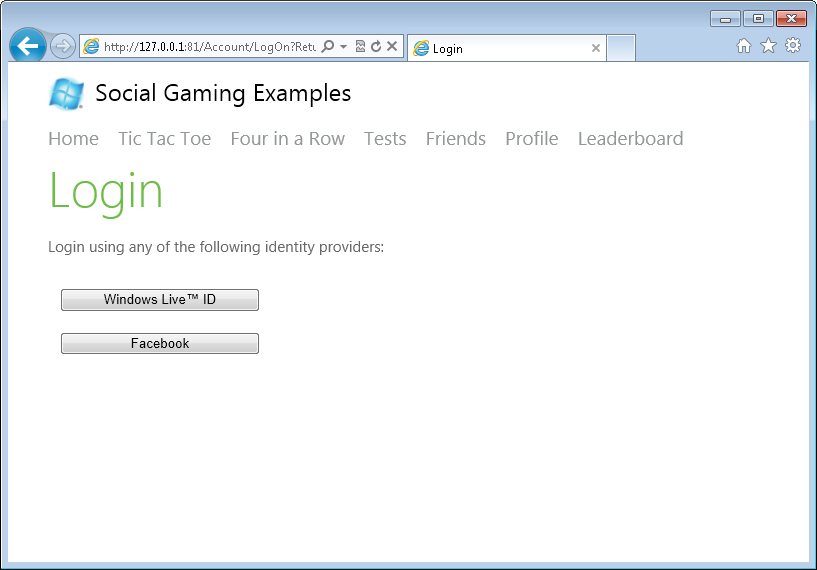
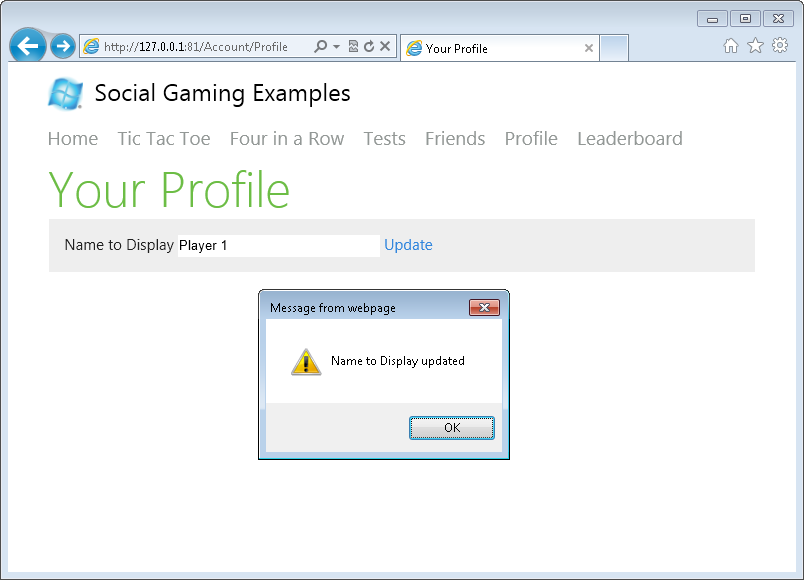
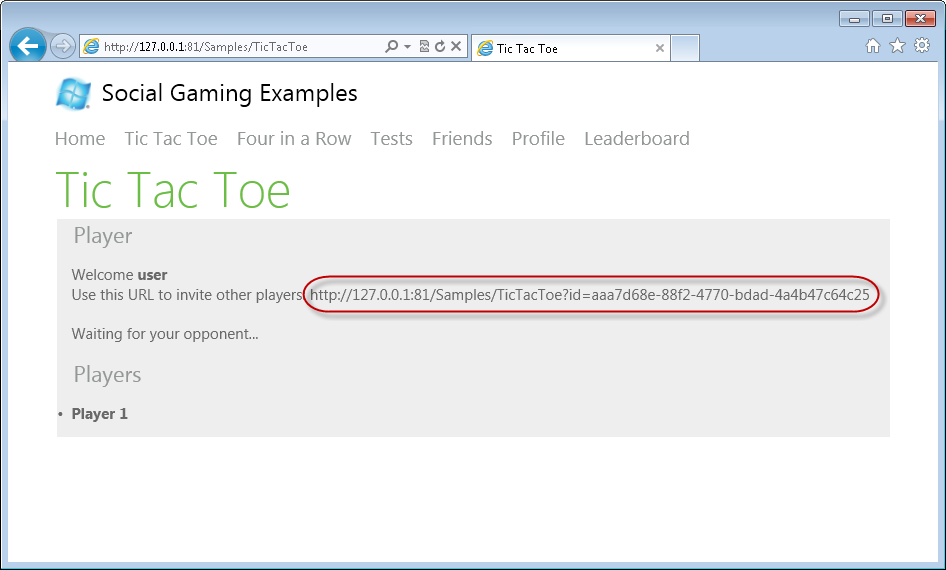
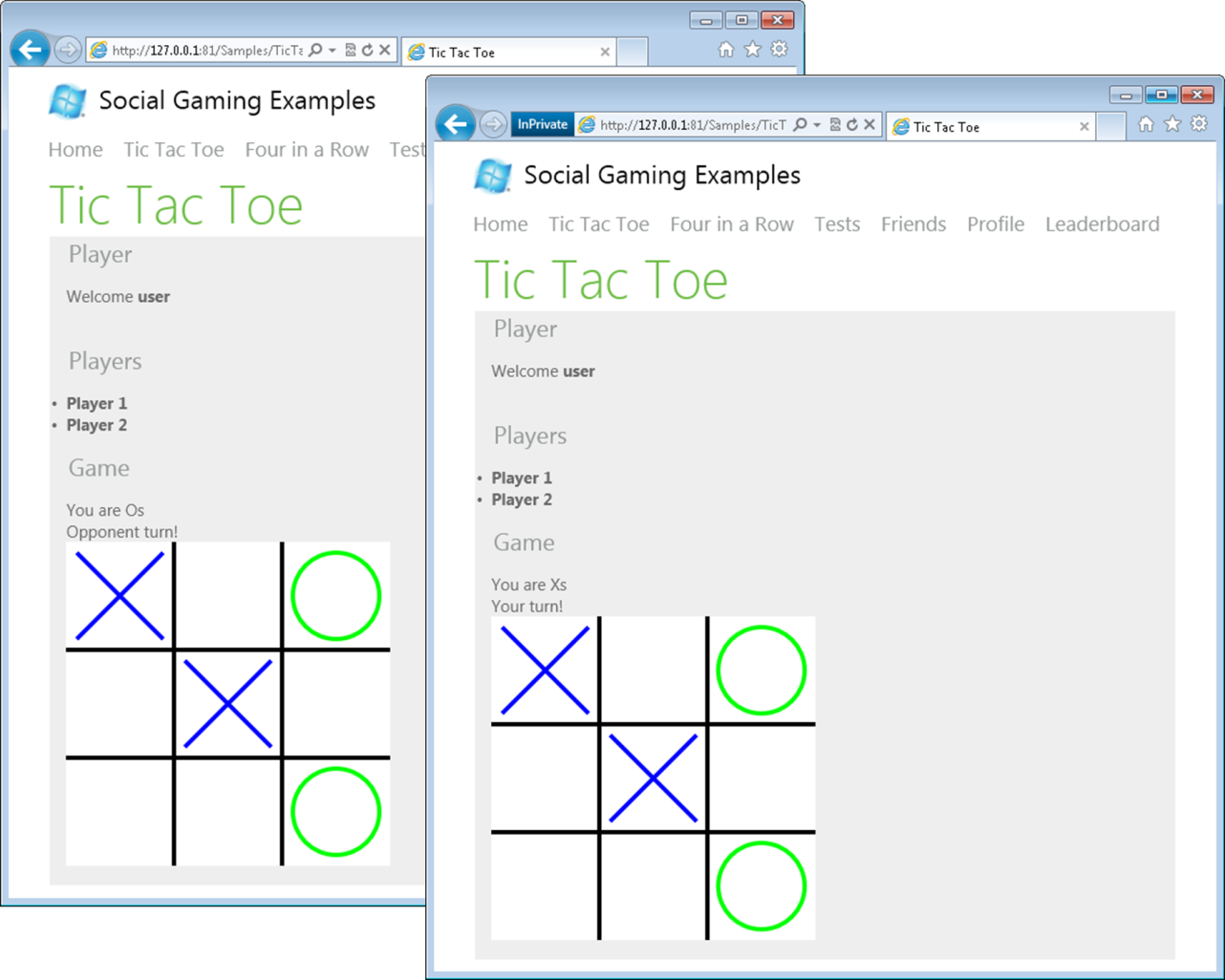
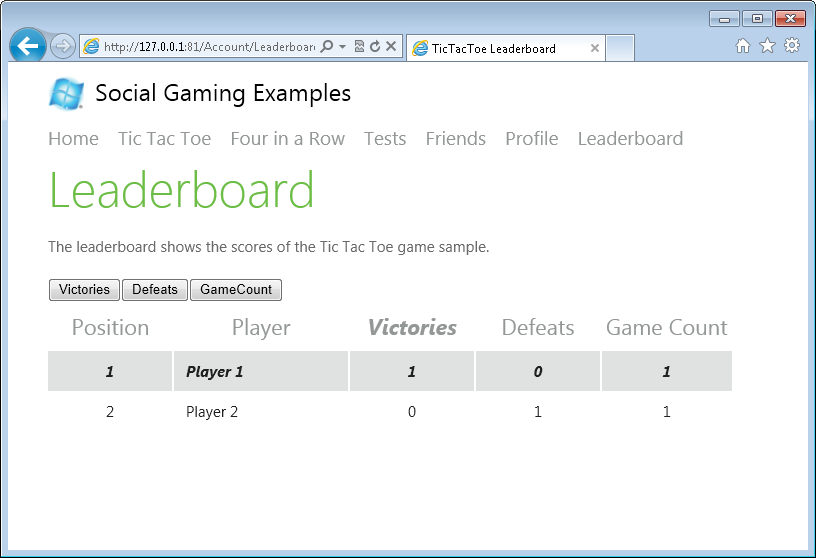
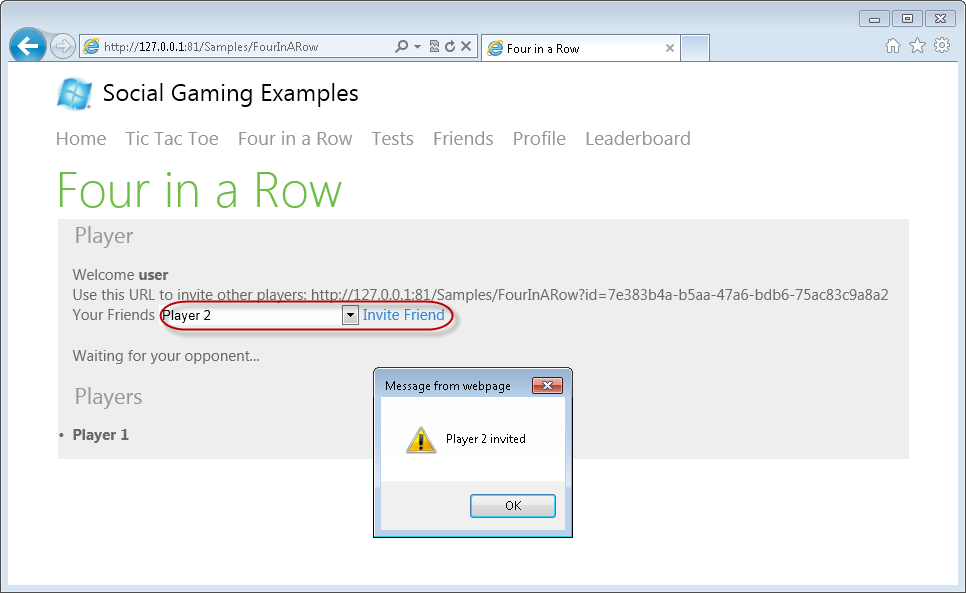
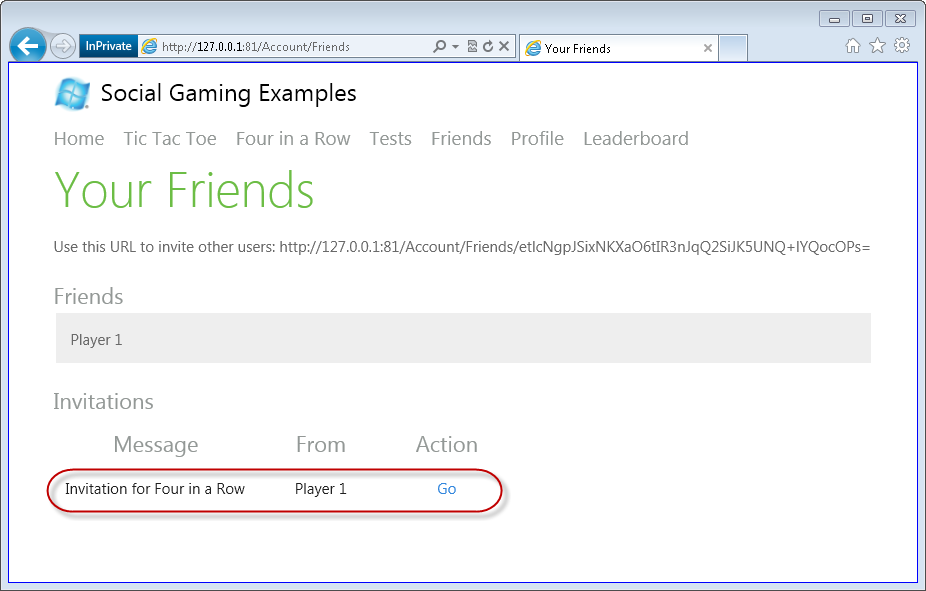
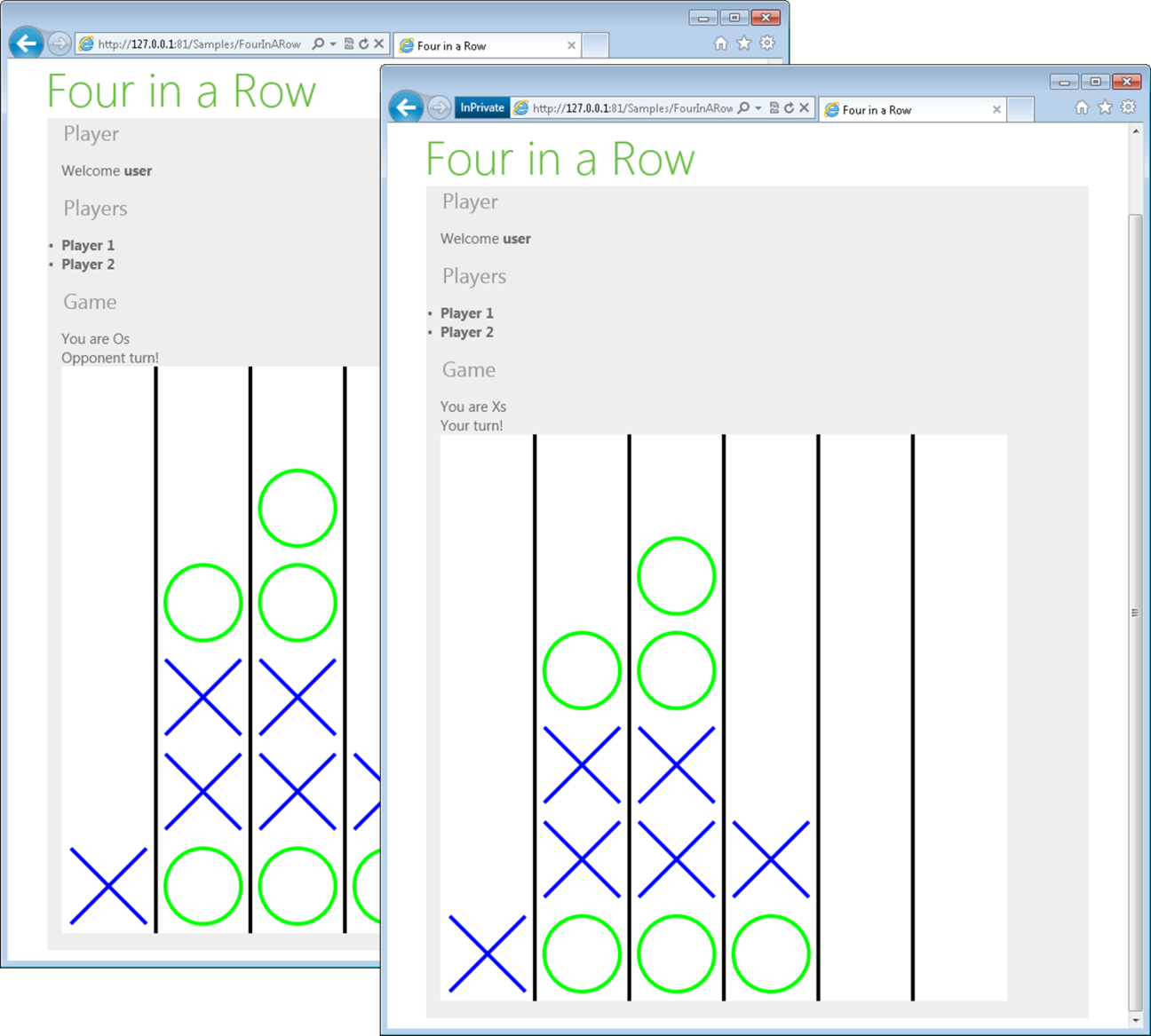
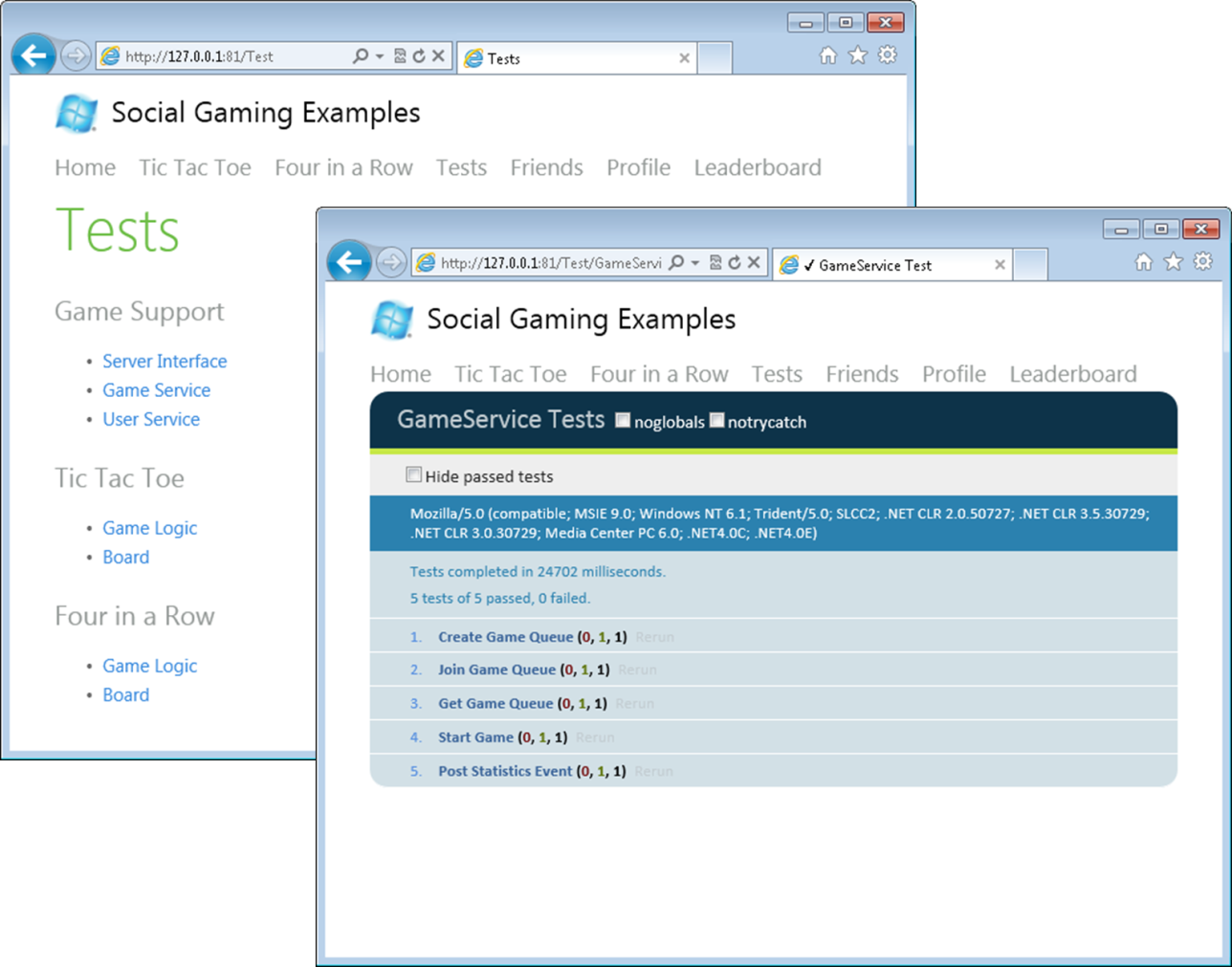
* 1. Run the **Setup.exe** file located in the root folder where you extracted the Toolkit package. Notice that this script requires administrator privileges.
  2. The setup will launch the Content Installer. The Content Installer is designed to check your system to ensure that it is properly configured with all of the dependencies to build and use the sample.
  3. The next step involves checking your machine for the required software and configuration. If you don’t have the required configuration or dependencies, then in some of the cases you will be provided with a link to download them, in other cases the Web Platform Installer will install them. After installing a missing prerequisite, click **Refresh** to initiate the detection process again. Once the detection process is complete and you have verified every prerequisite, click **Next** to continue.
     1. 
     2. Figure 1
     3. Checking Dependencies
  4. Next, a setup process will be executed to create a database in your local SQL Server.
     1. 
     2. Figure 2
     3. Setup scripts

The setup scripts will create a SocialGames database using your local SQL Express server instance (.\SQLExpress), and Windows Authentication to connect. If you want to use other SQL Server instance for the sample, you can edit the **Configuration.xml** file, located under the root folder of this package, with Visual Studio.

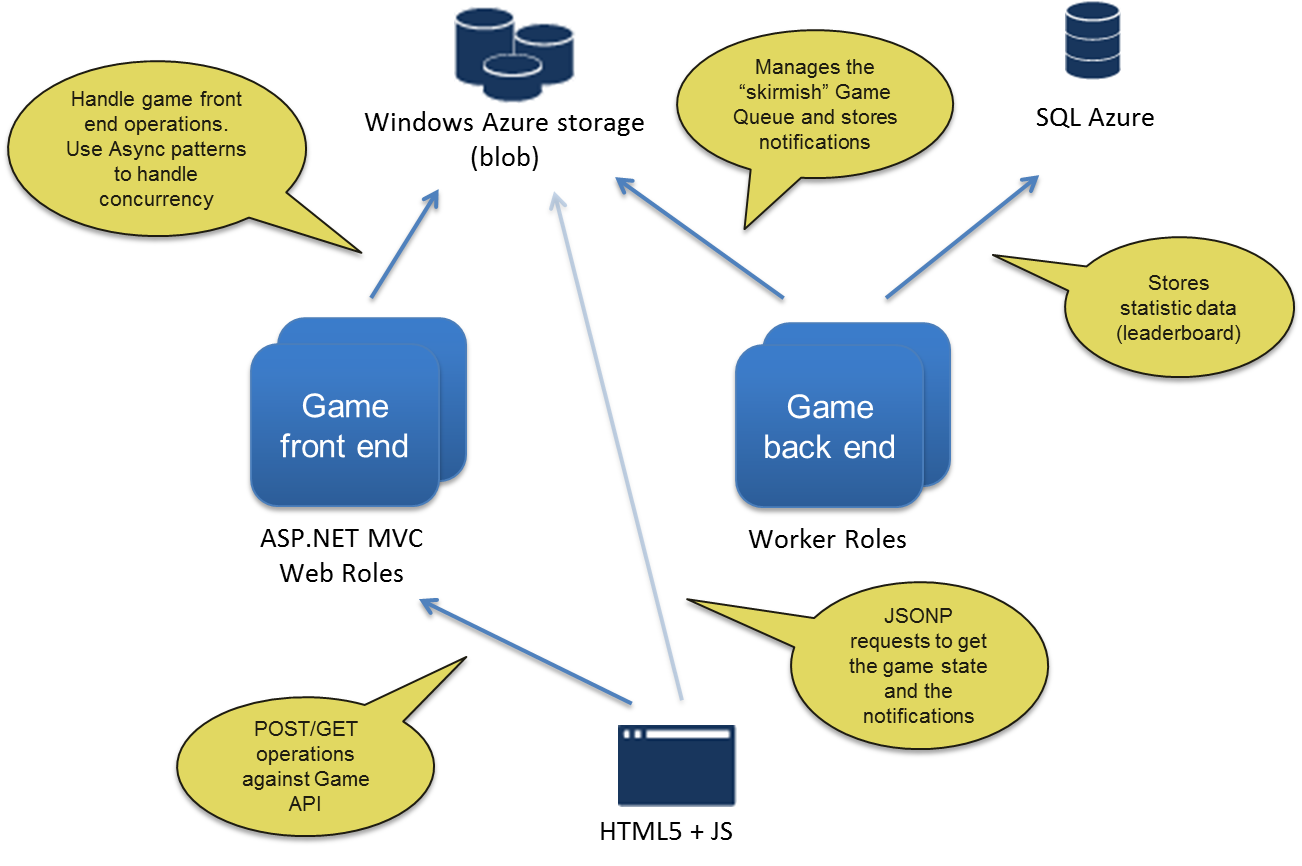
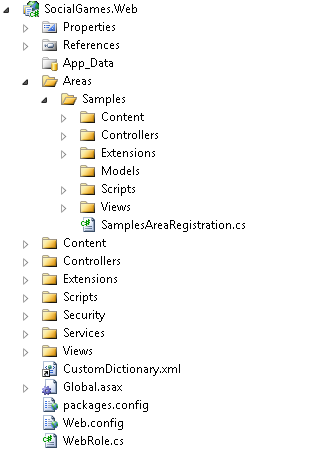
Additionally, the setup scripts will configure the sample to use the local Windows Azure Storage emulator. If you want to use a storage account, you can configure the account name and account key of the **WindowsAzureStorage** setting, in the Configuration.xml file, located under the root folder of this package, with Visual Studio.

1. After changing the settings, please run the setup again.
   * 1. XML
     2. <Configuration>
     3. <Database>
     4. <!-- e.g. '.\SQLEXPRESS' or 'yourserver.database.windows.net' -->
     5. <ServerName>.\SQLEXPRESS</ServerName>
     6. <DatabaseName>SocialGames</DatabaseName>
     7. <Username></Username>
     8. <Password></Password>
     9. </Database>
     10. <WindowsAzureStorage>
     11. <!-- use empty values for local storage emulator -->
     12. <AccountName></AccountName>
     13. <AccountKey></AccountKey>
     14. </WindowsAzureStorage>
     15. </Configuration>

**Running the Samples**

* 1. Open Visual Studio as administrator from **Start** | **All Programs** | **Microsoft Visual Studio 2010** by right clicking the Microsoft Visual Studio 2010 shortcut and choosing **Run as administrator**.
  2. Using Visual Studio, open the **SocialGames.sln** solution located under the **code** folder of the Toolkit package.
  3. Make sure that the **SocialGames.Cloud** project is selected as the StartUp project (shown in **bold**).
     1. 
     2. Figure 3
     3. The SocialGames solution
  4. Press **CTRL+F5** to build and deploy the application to the compute emulator. Your default Web browser should open pointing to <http://127.0.0.1:81/> and showing the Social Gaming Examples home page.
     1. **Note:** By default, the application is configured to use port 81, so you should make sure this port is free before running the application.
     2. 
     3. Figure 4
     4. Social Gaming Examples home page
  5. Click on **Log On** to authenticate. You will be redirected to the login page.
  6. Login with Windows Live Id or Facebook:
     1. 
     2. Figure 5
     3. Login page
     4. **Note:** This sample uses a pre-configured AppFabric Access Control Service for managing user identity and access control. If you have a Windows Azure account and you want to use your own service you can do so, by updating the settings in the Web.config file of the SocialGames.Web project and the ServiceConfiguration.cscfg file in SocialGames.Cloud.
  7. Click on the **Profile** menu option. Change your display name to something else.
     1. 
     2. Figure 6
     3. Profile page
     4. **Note:** For Live ID users, the display name shown by default is empty the first time they authenticate. This is because there is no claim associated to the Live ID user name in the ACS namespace configuration. You should update the display name manually in the Profile page.
  8. The browser is redirected back to the Tic Tac Toe invite page. Copy the invite URL provided in the screen.
     1. 
     2. Figure 7
     3. Invite page
  9. Open another browser window using InPrivate mode (Ctrl+Shift+P in Internet Explorer) and browse to the invite url. Login using a different account. Wait until the board is displayed and start playing in turns with the two different windows.
     1. 
     2. Figure 8
     3. Online multiplayer Tic Tac Toe game
     4. **Note:** For Live ID users, the display name shown by default is empty the first time they authenticate. This is because there is no claim associated to the Live ID user name in the ACS namespace configuration. You should update the display name manually in the Profile page.
  10. Once the game finishes, click on the **Leaderboard** menu option. A board is shown, listing the players and their current scores.
      1. 
      2. Figure 9
      3. Leaderboard page
  11. Now, click on the **Four in a Row** menu option to play a different game. Make sure to select the player to invite from the combo box, and click on **Invite Friend**.
      1. 
      2. Figure 10
      3. Inviting a friend
      4. **Note:** After accepting an invitation, the game sets a friend relation between the players of an invited game.
  12. Switch to the browser of the invited player, and click on the **Friends** menu option. The invitation to the game should be displayed in the Invitations section. Click on **Go** to start the game.
      1. 
      2. Figure 11
      3. Invite notifications
  13. Wait until the board is displayed and start playing in turns with the two different windows.
      1. 
      2. Figure 12
      3. Online multiplayer Four in a Row game
  14. The sample web site also provides a set of tests for the different client components of the game. To execute the tests, click the **Tests** menu option and select the test fixture to run.
      1. 
      2. Figure 13
      3. Running the tests

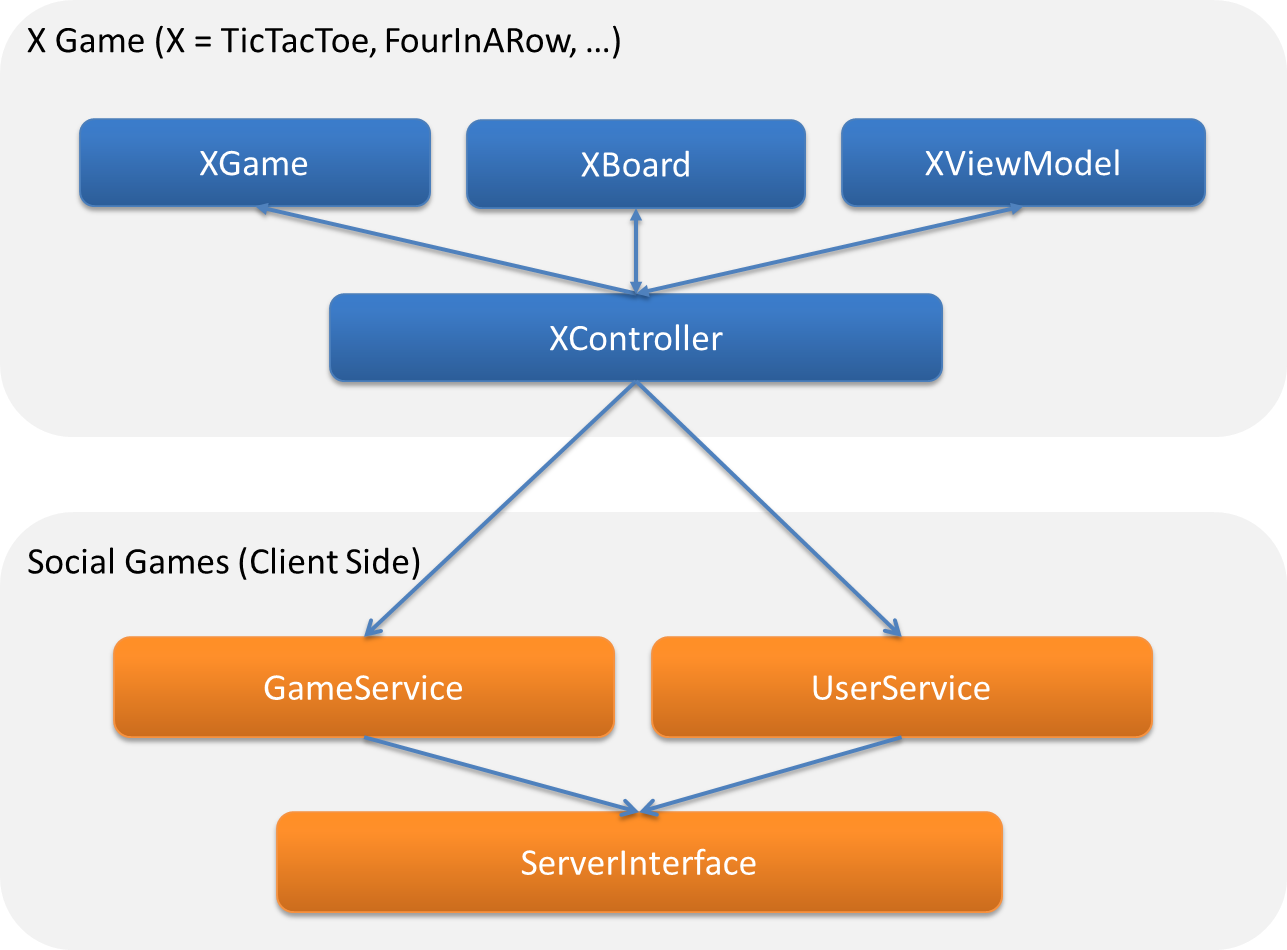
The Solution

* 1. The design of the Toolkit is organized in a way to facilitate other developers identify the reusable components to build their own social games.
  2. **High Level Architecture**
  3. 
  4. Figure 14
  5. High level architecture
  6. **Solution Structure**
  7. Open Visual Studio from **Start** | **All Programs** | **Microsoft Visual Studio 2010**.
  8. Open the **SocialGames.sln** solution located under the **code** folder of the Toolkit package. The solution includes the following projects:
     + **SocialGames.Core**: This project contains the model of the Social Game API. Here is where the all the game entities and the repositories are located.
     + **SocialGames.Worker:** This project contains all the processes that perform background tasks, like storing invitations, collecting game statistics, etc.
     + **SocialGames.Web:** This is an ASP.NET MVC project that hosts the Game Service API endpoints, as well as the “Tic Tac Toe” and “Four in a Row” games samples shipped with the Toolkit.
     + **SocialGames.Cloud:** This is the Windows Azure project associated to the role projects in the solution (**SocialGames.Web** and **SocialGames.Worker** projects). The local configuration is already in place to run the services on the Windows Azure Emulator.
     1. 
     2. Figure 15
     3. SocialGames solution
  9. Let’s take a look in more detail to the **SocialGames.Web** project. In Solution Explorer, expand the **SocialGames.Web** project node.
     1. This project contains, at the root level, all the common and reusable components to build social games, and uses an MVC Area for all the code related to a specific game implementation. In this case, the code specific to the “Tic Tac Toe” and the “Four in a Row” games are placed in that MVC Area.
     2. 
     3. Figure 16
     4. SocialGames.Web project
  10. Expand the **Views** folder at the root level of the web project. Do the same for the **Views** folder located inside the **Samples** MVC area.
      + The **common views** are for the features of the Social Game API that are common to all the games, like authentication, support for managing friends and the user profile, and a simple leaderboard.
      + The **game specific views** render the game play flow of different type of games.

|  |  |
| --- | --- |
| Common views | Game specific views |
|  |  |

* 1. Expand the **game** subfolder inside the **Script** folder at the root level. Do the same for the **game** folder inside the **Script** folder at the **Samples** MVC area.
     + The **common JavaScript game files** interact with the service operations provided by Game Service API. They take care of handling the communication through HTTP requests and send the appropriate response to the game specific components.
     + The **game specific JavaScript files** manage the behavior of a particular game. For example, they know how to render the game board, and execute the game rules, etc.

|  |  |
| --- | --- |
| Common JavaScript game files | Game specific JavaScript files |
|  |  |

* + 1. Below a diagram illustrating the interaction between the common and game specific JavaScript components:
    2. 
    3. Figure 17
    4. JavaScript components diagram