UWP - Xbox Live Programming Guide

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Abstract

This guide provides Xbox Live features and service components that enable you to use Xbox Live Achievement and Leaderboard services from your Universal Windows App.

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Environment

- 1) Unity Version: Unity 5.3+
- 2) Windows Version: Windows 10.10586 or later version, Windows 10 Anniversary Edition (10.0; Build 14393) is recommended
- 3) Visual Studio Version: Visual Studio 2015 Update 3 or later version
- 4) Xbox Live SDK Version: 1611 or later version
- 5) Publishing platform location: XDP/UDC, which used to allow developer to do Live Service Configuration and publish title.

Xbox Live SDK & Docs

1. Xbox Live Service API (Known as Xbox Live SDK)

https://github.com/Microsoft/xbox-live-api

Preview SDK: https://developer.xboxlive.com/en-us/live/development/Pages/Downloads.aspx

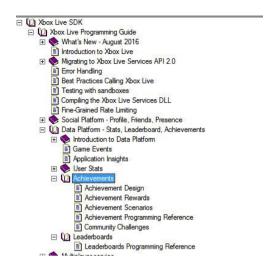
We need to download Xbox Live SDK & Xbox Live Platform Extensions SDK

2. Xbox Live SDK Documentation

https://aka.ms/xbldocs

https://developer.xboxlive.com/en-us/platform/development/documentation/Pages/home.aspx

Xbox Live SDK Documentation (CHM), see Achievement & Leaderboard part



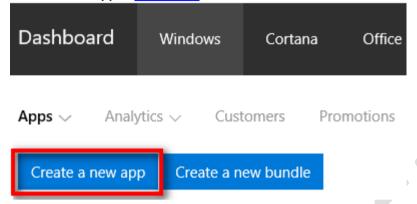
- **3.** Xbox Live Tools package https://aka.ms/xboxliveuwptools
- **4.** Optional XDK Downloads Page https://developer.xboxlive.com/en-us/platform/development/downloads/Pages/optional-xdk-downloads.aspx

Pre-coding Preparation

1. Apply <u>ID@Xbox</u> / Register <u>UDC</u>

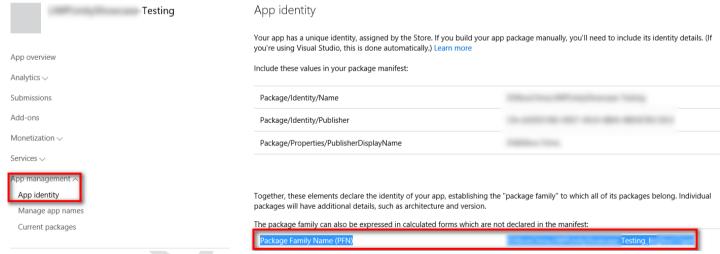
2. Preparation on UDC

1) Create a new app in dashboard



2) Retrieve PFN

App management->App identity-> Package Family Name (PFN)



3) Retrieve MSA Client id

i. Open Windows Live application management site

- ii. Login with **UDC** account
- iii. Find the client id for your UDC product in "Live SDK applications" list



3. Preparation on XDP

1) Create Product Group under Publisher

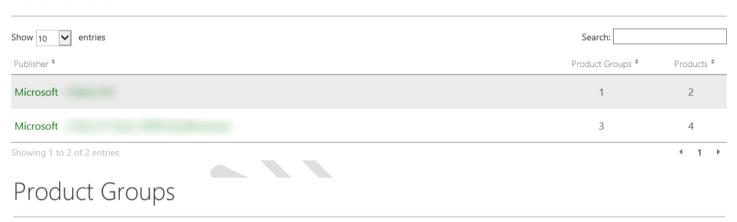
Please working with your developer account manager, or seeking support from idsetup@xbox.com

Publishers

Show 10

Name *

entries

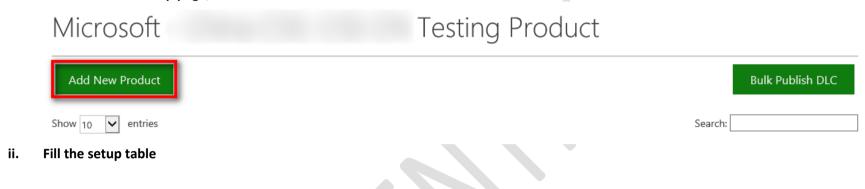


Products *

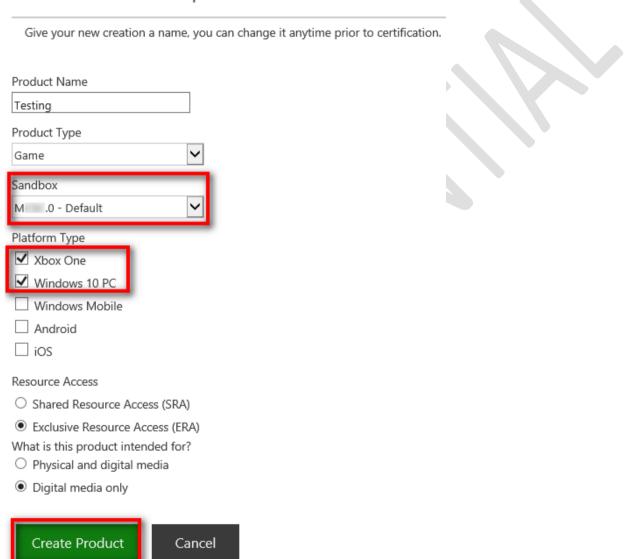
Search:

2) Create Product under Product Group

i. Under Product Group page, click "Add New Product"



Product Setup

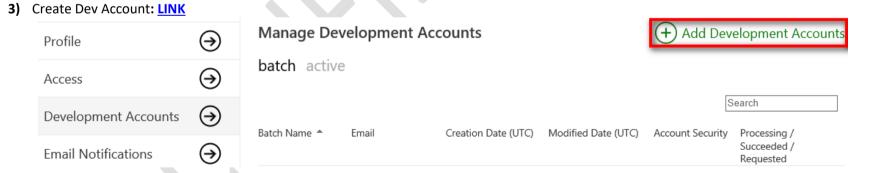


- ❖ Please notice that the sandbox of your product can't be reset, otherwise you create a new product
- ❖ For Platform Type, please check "Windows 10 PC"
- iii. Retrieve TitleId and PrimaryServiceConfigId

Product Setup -> Product Details:



Scid is PrimaryServiceConfigld



After creating Dev Account, please wait a while. Ensure "Processing/Succeeded/Requested" column shows 0/1/1 and the new created account is listed in the active page

Batch Name 🍮	Email	Creation Date (UTC)	Modified Date (UTC)	Account Security	Processing / Succeeded / Requested	
test	franklin	2/6/2017 6:45 AM	2/6/2017 6:45 AM	Protected	0/1/1	Remove
test2	ft	3/6/2017 8:28 AM	3/6/2017 8:28 AM	Protected Available	^e 0/1/1	<u>Remove</u>
test3	ft1	3/7/2017 6:12 AM	3/7/2017 6:12 AM	Protected	1/0/1	

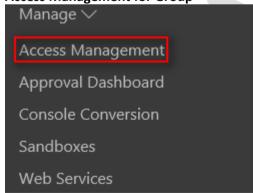


batch active

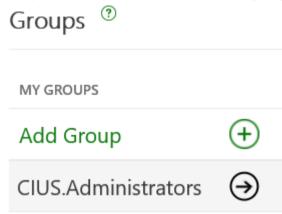


Batch Name 🧢	Account Email Address	Creation Date (UTC)	Account Type	Account Security XUID	
test	@xboxtest.com	2/6/2017	Gold	Protected	Remove
test2)xboxtest.com	3/6/2017	Gold	Protected	Remove
test3	@xboxtest.com	3/7/2017	Gold	Protected	Remove

4) Access Management for Group



Add your XDP login account to an access group, for example: Administrators



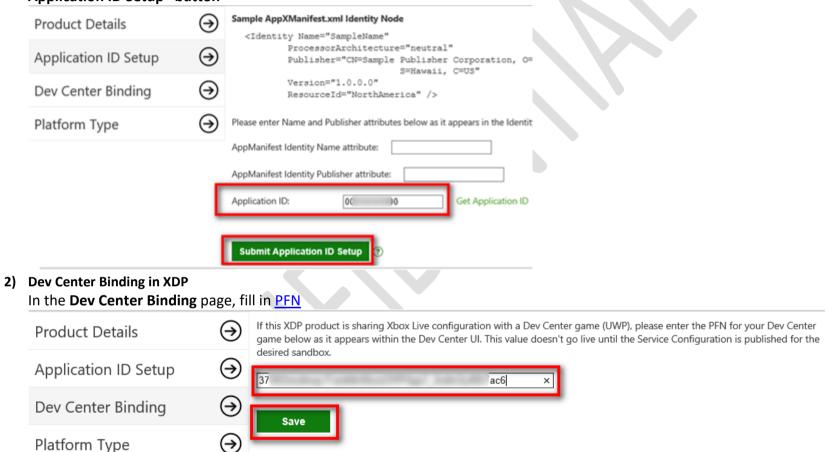
5) Create sandbox and set access permission for an access group (XDP portal->Manage->Sandboxes)
Sandboxes



4. Associate UDC product with the XDP title

1) Application ID Setup in XDP

In the Application ID Setup page, fill the Application Id with MSA Client ID. We just need to fill Application ID part, click "Submit Application ID Setup" button



Dev Guidance

- 1. Configuring your development PC (Sandbox Setup)
 - 1) Xbox Live Account Tool
 Login using Dev account and change sandbox. File Location: {*SDK source root*}\Tools\XboxLiveAccountTool.exe
 - 2) Verify Dev Environment

Try to login using Xbox App on Win10 PC using Dev account to check if the sandbox is already changed If you can't login using dev account, please run this script from admin command prompt: {*SDK source root*}\Tools\SwitchSandbox.cmd <your sandbox ID> Sample: SwitchSandbox.cmd XDKS.1

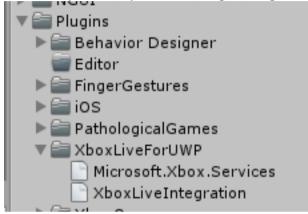
2. Troubleshooting issues when integrating Xbox Live XboxLiveSDK_uwp.chm:



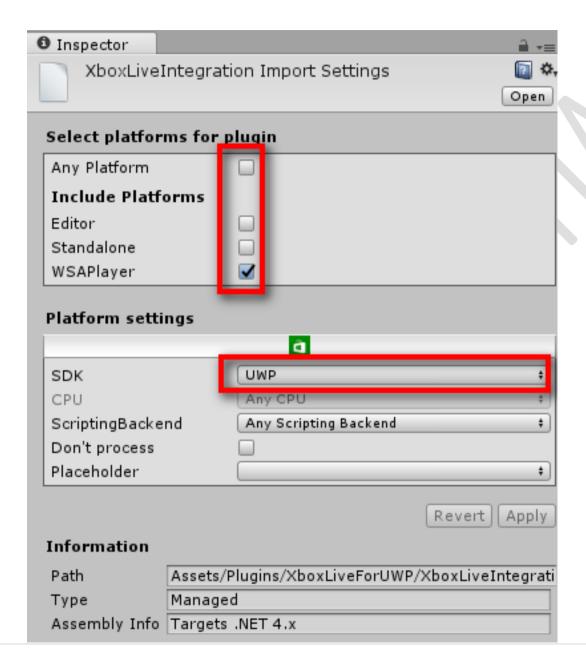
3. Make integration works in UWP app (Unity to UWP)

We can either use the standard API to implement the integration by following the API document, or utilize the **XboxLiveIntegration** class library in Unity project and convert to UWP project. Download the latest release in here

1) In the Unity Editor, Open Assets/Plugins, drag Microsoft.Xbox.Services.winmd and XboxLiveIntegration.dll into to Assets hierarchy



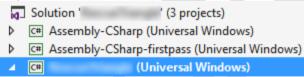
2) Change Importing settings for **XboxLiveIntegration.dll**. Select this item and change setting as follows



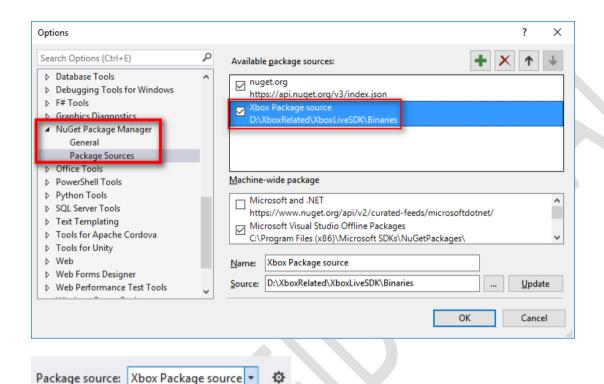
Platform PC, Mac & Linux Standalone Windows Store Windows Store 0 Universal 10 1 Target device PC. 4 UWP Build Type D3D . Build and Run on Local Machine tv tvos Copy References Debugging Android Unity C# Projects Development Build Autoconnect Profiler Xbox One Learn about Unity Cloud Build Player Settings... Switch Platform Build Build And Run

3) File -> Build settings->Choose "Windows Store", select SDK, Target device, Build and Run on as follows:

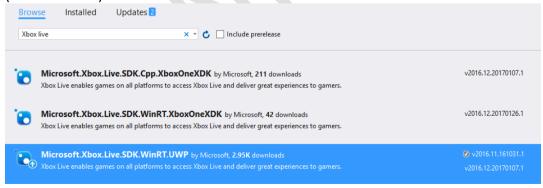
4) Open the converted UWP project in Visual Studio, the first two projects are auto-generated, we need to do some changes in the third UWP project



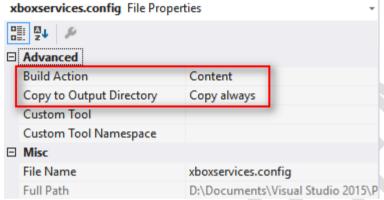
- 5) Install XBL Nuget package for your UWP project
 - i. **Method 1**: Create customized Nuget Source and point to the 'Xbox Live SDK ->Binaries' directory. Choose your source in the "Manage NuGet Packages" page and select the appropriate API set (C++ or WinRT)



ii. **Method 2 (Recommended)**: Search for "xbox live" in the "Manage NuGet Packages" page. Select the appropriate API set (C++ or WinRT) and then click on "Install"



- 6) Associate your Visual Studio project with your Xbox Live enabled title information
 - i. Create a JSON file and name it xboxservices.config
 - ii. Add the JSON file to your primary UWP project (the StartUp Project)
 - iii. Right click on the file, select **Properties** and **ensure that Build Action** is set to Content and set **Copy always** for **Copy to Output Directory**. This will ensure the file is copied correctly in the AppX folder.

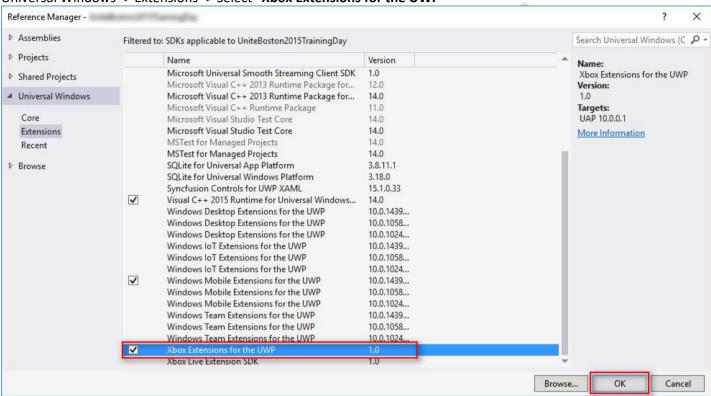


- iv. You can leave the Item Type to Does not participate in build
- v. Edit the JSON file with the following template, and replace the <u>TitleId, PrimaryServiceConfigId</u> with the values you get from Windows Dev Center(UDC)

```
{"TitleId": xxxxxx, "PrimaryServiceConfigId": "exxxx-7xxx-4xxx-axxx-3609xxx" }
```

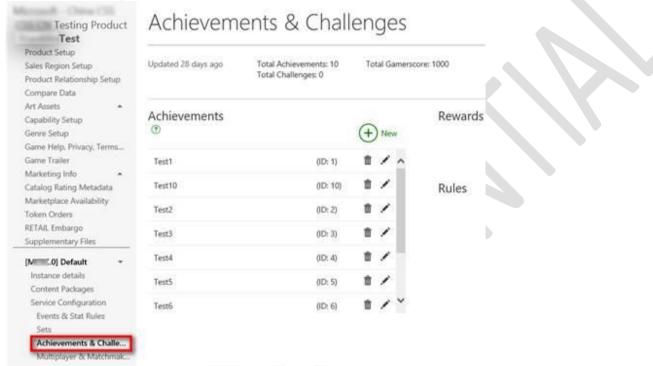
- 7) Associate publisher information with your UWP App
 - i. Open your project in Visual Studio 2015
 - ii. Right click the primary UWP project (the StartUp Project), click **Store** -> **Associate App with the Store**...
 - iii. Sign-in with the Windows Developer account used for creating the app if asked
 - iv. On the next page, select the app you just created, confirm the information, and click **Associate**
- 8) Enable Internet (Client) capability
 - i. Double click on the package.appxmanifest file in Visual Studio 2015 to open the Manifest Designer.
 - ii. Click on the Capabilities tab
 - iii. Click on Internet (Client)
 - iv. Close the file and save the changes.
- 9) Add Xbox Extensions for the UWP

- i. Right-Click project, Add -> Reference...
- ii. Universal Windows -> Extensions -> Select "Xbox Extensions for the UWP"



4. Achievement configuration on XDP

1) Achievement configuration in sandbox



Note: For one product, we must set at least 10 achievements with total 1000 Gamerscore reward

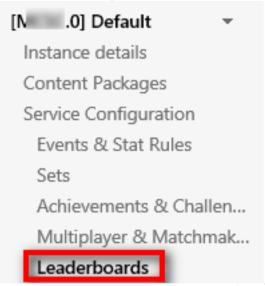
2) After Achievement configuration on XDP, please publish to make changes work

Service Configuration Tasks

Sandbox MCSC.0 Publish from MCSC.0:
Updated 17 hours ago by Franklin Chen
01/16/2017 08:53 AM (UTC)

The changes will take effect about 10-30 minutes later

- 5. Leaderboard configuration on XDP
 - 1) Leaderboard configuration in sandbox



- 2) After Achievement configuration on XDP, please publish to make changes work The changes will take effect about 10-30 minutes later
- 6. The additional code work in converted UWP project as follows (If using XboxLiveIntegration class library)
 - 1) Initialize and Sign in Xbox Live
 - i. When app start, please call //Init and Sign in silently XboxLiveIntegration.LiveResources.GetInstance();
 - to initialize and sign in silently.
 - ii. Handle Keyboard/Gamepad/Joystick Input

```
//Handle Keyboard and Joystick input
if (Input.GetKeyDown("t") || Input.GetKeyDown("joystick button 2"))
{
    XboxLiveIntegration.LiveResource.GetInstance().SignIn();
}
if (Input.GetKeyDown("y") || Input.GetKeyDown("joystick button 3"))
{
    XboxLiveIntegration.LiveResource.GetInstance().SwitchAccount();
}
```

2) Using AchievementManager class to write game event

```
/// <summarv>
/// Unlock First Win Achievement
/// </summary>
/// <param name="totalWinCount">TotalWinCount</param>
void UnlockFirstWinAchievement(int totalWinCount)
    var liveResource = XboxLiveIntegration.LiveResources.GetInstance();
    var measurements = new Windows.Foundation.Collections.PropertySet();
    measurements.Add("TotalWinCount", totalWinCount);
    var dimensions = new Windows.Foundation.Collections.PropertySet();
    dimensions.Add("UserId", liveResource.User.XboxUserId);
    AchievementManager.GetInstance().WriteGameEvent("TotalDataUpdate", dimensions, meas-
urements);
#if NETFX CORE
            var liveResource = XboxLiveIntegration.LiveResources.GetInstance();
            if (liveResource.IsSignedIn)
                this.UnlockFirstWinAchievement(1);//Pass total win count number, 1 as example
            else
                System.Diagnostics.Debug.WriteLine("Please sign in to Xbox Live first");
#endif
```

3) Using LeaderboardManager class to retrieve Leaderboard data

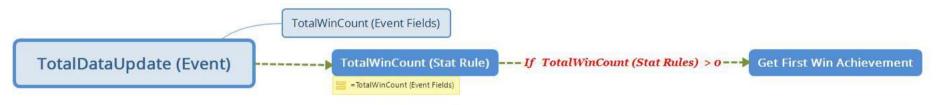
```
/// <summary>
/// Get Xbox Live Leaderboard by Leaderboard name
/// </summary>
/// <param name="name"></param>
async void GetLeaderboardByName(string name)
{
    var result = await LeaderboardManager.GetInstance().GetLeaderboardAsync(name);
}
```

Scenario Sample

Goal: First Win achievement for one game character and leaderboard implementation

Step 1: Achievement Design

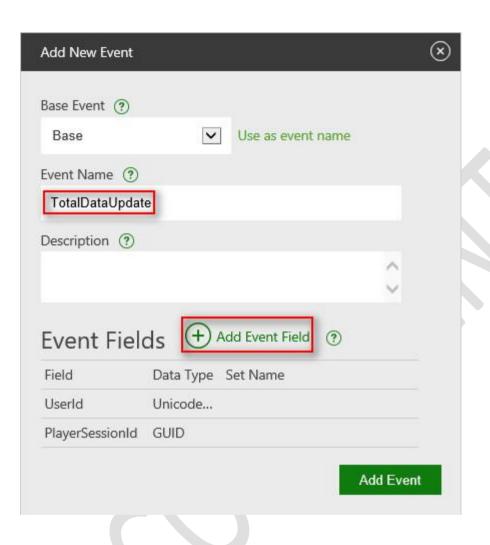
Event->Stat Rules->Achievement

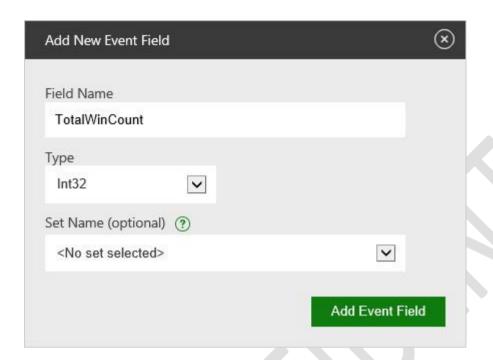


Step 2: XDP Configuration

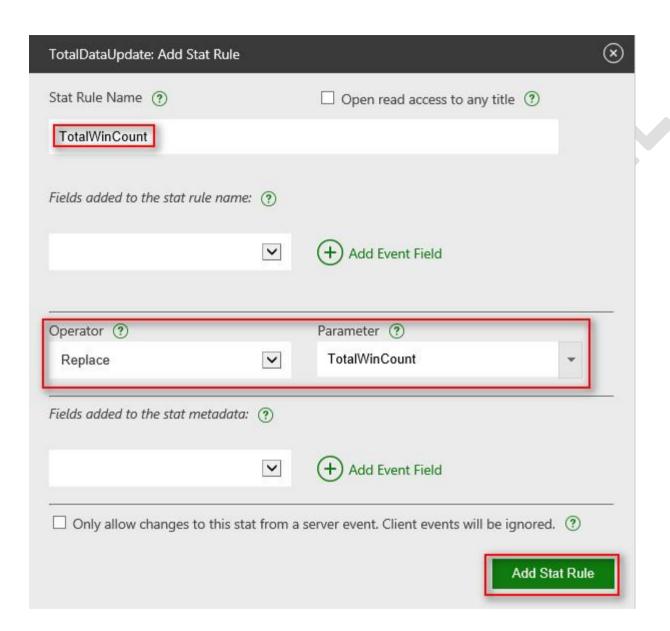
1) Event & Stat Rules

Create new event and add event field



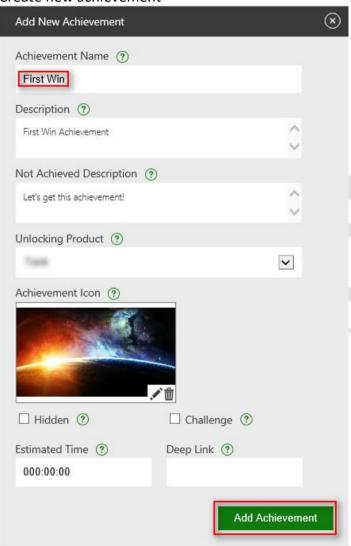


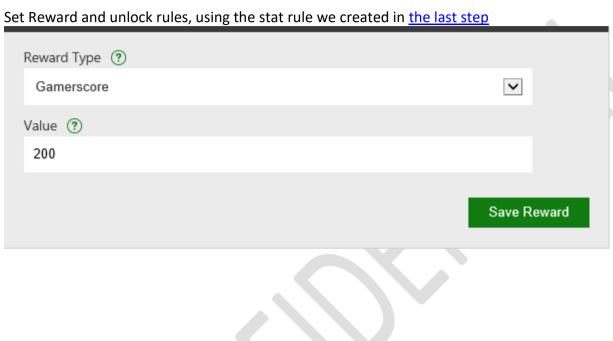
Select the Event we just created and create Stat Rule

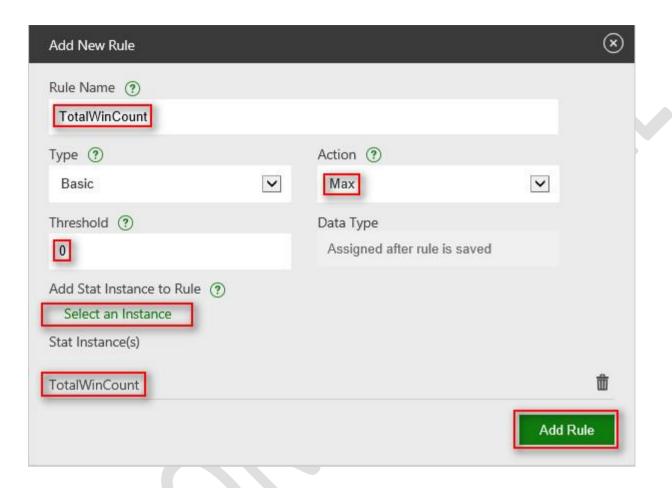


2) Achievement

Check the tooltip ② and document if you have difficult to fill the form Create new achievement

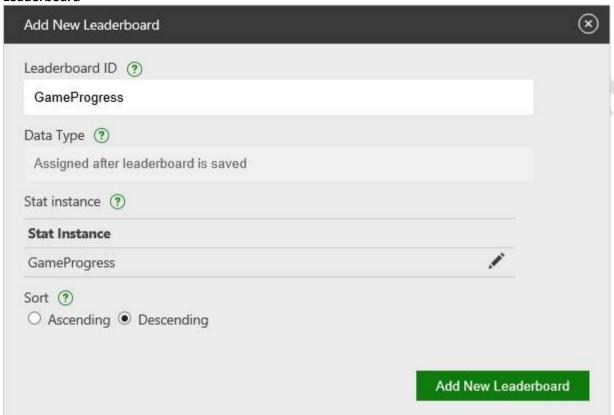






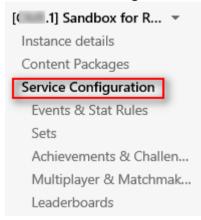
Note: For one product, we must set at least 10 achievements with total 1000 Gamerscore reward

3) Leaderboard

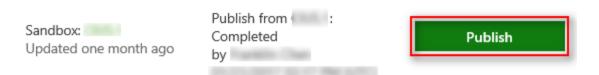


Check the tooltip ② and document if you have difficult to fill the form





Service Configuration Tasks



Publishing Approval: Product Instance .1



If the configuration is passed the validation, the changes will take effect about 10-30 minutes later

Step 3: Development work

Please follow Dev Guidance

Here we will use <u>Tanks</u> project as example:

1) Initialize and Sign in Xbox Live

```
Position: _Completed-Assets\Scripts\Managers\GameManager.cs -> Start() method When app start, please call //Init and Sign in silently XboxLiveIntegration.LiveResources.GetInstance();
```

to initialize and sign in silently.

2) Handle Keyboard/Gamepad/Joystick Input

Position: Completed-Assets\Scripts\Managers\GameManager.cs -> Update() method

```
//Handle Keyboard and Joystick input
if (Input.GetKeyDown("t") || Input.GetKeyDown("joystick button 2"))
{
    XboxLiveIntegration.LiveResource.GetInstance().SignIn();
}
if (Input.GetKeyDown("y") || Input.GetKeyDown("joystick button 3"))
{
    XboxLiveIntegration.LiveResource.GetInstance().SwitchAccount();
}
```

3) Using AchievementManager class to write game event

Position: Completed-Assets\Scripts\Managers\GameManager.cs

```
/// <summary>
/// Unlock First Win Achievement
/// </summarv>
/// <param name="totalWinCount">TotalWinCount</param>
void UnlockFirstWinAchievement(int totalWinCount)
    var liveResource = XboxLiveIntegration.LiveResources.GetInstance();
    var measurements = new Windows.Foundation.Collections.PropertySet();
    measurements.Add("TotalWinCount", totalWinCount);
    var dimensions = new Windows.Foundation.Collections.PropertySet();
    dimensions.Add("UserId", liveResource.User.XboxUserId);
    AchievementManager.GetInstance().WriteGameEvent("TotalDataUpdate", dimensions, meas-
urements);
/// <summarv>
/// Get Xbox Live Achievement by Id
/// </summary>
/// <param name="id"></param>
async void GetAchievementById(int id)
   var ach = await AchievementManager.GetInstance().GetAchievement(id.ToString());
   if (ach.ProgressState ==
Microsoft.Xbox.Services.Achievements.AchievementProgressState.Achieved)
       var msg = $"You achieved {ach.Name}";
       System.Diagnostics.Debug.WriteLine(msg);
IEnumerator ExecuteAfterTime(float time)
   yield return new WaitForSeconds(time);
   GetAchievementById(1);
```

Position: Completed-Assets\Scripts\Managers\GameManager.cs -> GetGameWinner () method:

```
private TankManager GetGameWinner()
    // Go through all the tanks...
    for (int i = 0; i < m Tanks.Length; i++)</pre>
        // ... and if one of them has enough rounds to win the game, return it.
        if (m Tanks[i].m Wins == m NumRoundsToWin)
#if NETFX CORE
            var liveResource = XboxLiveIntegration.LiveResources.GetInstance();
            if (liveResource.IsSignedIn)
                this.UnlockFirstWinAchievement(1);
            else
                System.Diagnostics.Debug.WriteLine("Please sign in to Xbox Live first");
            if (liveResource.IsSignedIn)
                StartCoroutine(ExecuteAfterTime(2));
#endif
            return m_Tanks[i];
   // If no tanks have enough rounds to win, return null.
   return null;
}
```

4) Using LeaderboardManager class to retrieve Leaderboard data

```
/// <summary>
/// Get Xbox Live Leaderboard by Leaderboard name
/// </summary>
/// <param name="name"></param>
async void GetLeaderboardByName(string name)
{
    var result = await LeaderboardManager.GetInstance().GetLeaderboardAsync(name);
}
```

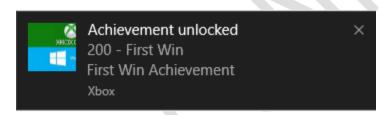
Step 4: Debug and verify Achievement & Leaderboard data

Check the message in the Visual Studio output windows

```
Show output from: Debug

Wrote game event: TotalDataUpdate
Achievement Id: 1
Name: First Win
Description: First Win Achievement
Achievement Type: Persistent
Progress State: Achieved
You achieved First Win
```

The toast notification from Xbox UWP app:



If we get the Achievement, we should also can see the status in the built-in Xbox UWP app

