VMAX Windows Phone 8 SDK

VMAX
Windows Phone 8.0

INTRODUCTION

This document provides technical guidance for using the VMAX SDK. Application developers can use this guide to integrate their applications with the VMAX SDK, specifying the types of Ads, they want to integrate.
This document also provides information on mediation integration with other supported Ad networks.

What is this SDK?

The Vserv VMAX SDK is designed to help you integrate Ads within your application and fast track your way to monetizing your Windows Phone 8.0 (Silverlight) applications.

Who should use this SDK?

This guide is made for Windows Phone 8.0 App developers intending to include the VMAX WP 8.0 SDK into their Application to make Ad requests.

GETTING STARTED

Prerequisites

Caution:

To utilize all features of the VMAX SDK and access all supported ad networks, please make sure that you have created a new Adspot.

An Adspot may be referred to as ZoneId in API calls.

Before beginning, ensure that:

1. You have a Vserv.com Developer Account. If not, sign up at our Developer Portal.
2. Note your Adspot. You will require the Adspot when using the VMAX SDK to request Ads. Check for the default Adspot in your welcome email or visit http://mp.vserv.com/ad-spot-list.html to get a list of all your zones.

Obtaining the SDK

The first step to integrate the VMAX SDK with your WP 8.0 application is to download our SDK package from here. Alternatively, you can obtain the SDK as a NuGet package using the following command in the Nuget Package Manager.

```
Install-Package com.vserv.windows.ads.wp8
```

Setting up the SDK

Unzip the downloaded SDK Zip file into a temporary folder. Assuming that the folder is [VMAX_SDK_FOLDER], you will see the following contents:

VMAXSDKWP8/packages	This folder contains two folders - 1.) **VMAX** - contains VMAX SDK and its dependencies. 2.) **Mediation Partners** - Various mediation partners supported by VMAX SDK along with their mediators/adaptors.
VMAXSampleAppWP8/	Sample WP8 project source code that demonstrates VMAX SDK integration. (By default it has all the mediation partners integrated for demo purpose however you can select any or all of them if you need.)

Integrating the SDK

Complete the following steps to integrate the SDK with your application.

1. Include the **<packages>** folder in your project's folder structure.

2. Using **Project** -> **Add Reference** -> **Browse**, add the **com.vserv.windows.ads.wp8.dll** and **com.vserv.windowsPhone.ads.mediation.dll** to your project.
   These dlls are present in the **packages/VMAX** folder.

   Note *:- If you are already having the older version of VMAX SDK(prior to A-WS-3.0.4) please remove the older references and follow these steps.(As it might cause problem with the old references.Replace the old packages/references with the new one.)

3. Ensure that your project has the following capabilities:
   i. **ID_CAP_NETWORKING**
   ii. **ID_CAP_MEDIALIB_AUDIO**
   iii. **ID_CAP_MEDIALIB_PLAYBACK**
   iv. **ID_CAP_SENSORS**
   v. **ID_CAP_WEBBROWSERCOMPONENT**
   vi. **ID_CAP_MEDIALIB_PHOTO**
   vii. **ID_CAP_PHONEDIALER**
   viii. **ID_CAP_IDENTITY_DEVICE**
   ix. **ID_CAP_LOCATION**
   x. **ID_CAP_IDENTITY_USER**

REQUESTING ADS

Windows Phone 8 apps are composed of UI elements. **VservAdView** is simply another element displaying ads that respond to user interaction..

To display an ad, you first create a **VservAdView** , then specify the **ZoneId** and **UX** type **(Banner/Interstitial)** and finally request an ad.

Before starting using the SDK you have to import the namespaces for the same.
You can refer to the VMAX namespace in your code by using the following directives -

Through code-behind in C#

```
using com.vserv.windows.ads.wp8;
using com.vserv.windows.ads;
```

Through XAML

1. Import the declared namespace.
2. Copy the following statement to the start of your XAML page (where other XAML namespaces are declared) :

```
xmlns:ad="clr-namespace:com.vserv.windows.ads.wp8;assembly=com.vserv.windows.ads.wp8"
```

You can just define the **VservAdView** using the markup below directly in your XAML markup file.

```
<ad:VservAdView Height="100"
  x:Name="adView"
  ZoneId="MY_ZONE_ID"
  UX="MY_AD_UX_TYPE"/>
```

where
"**MY_ZONE_ID**" has to be replaced with your actual Vserv AdSpot ID.
"**MY_AD_UX_TYPE**" should be replaced with the **UX** type constant you wish to request.
Note: **Banner** and **Interstitial** are currently supported.

Define a VservAdView with code

You can also create the **VservAdView** in code. The following C# example constructs a banner ad by declaring a **VservAdView** and configuring it:-

```
VservAdView  adView=new VservAdView (); // To initialize the VservAdView

// To set the mandatory properties and to configure the adView after initialization.

adView.ZoneId = "MY_ZONE_ID"; // To specify the zone id. Replace "MY_ZONE_ID" with your actual
zone id.
adView.UX= VservAdUX.Banner; // To specify banner ads.
```

Requesting Interstitials

The VMAX SDK provides various mechanisms to request for Ads in your WP8 application. The SDK makes available both simple fully-managed Ad request methods and also the Cache & Show Ad methods to enable prefetching of ads for later viewing.

Managed Interstitials using LoadAd()

To request an interstitial, call the LoadAd() method, after the page has been loaded.
Note:- If you wish to configure AdMob as a mediation partner, then don't use LoadAd()/CacheAd() apis in the PageLoaded Event. Place them somewhere else as AdMob ads are displayed in a separate page so when they are closed the developer page is loaded again (This results in an infinite loop of making calls to Load Ads.)

For example:

```
VservAdView  adView=new VservAdView (); // To initialize the VservAdView
adView.UX=VservAdUX.Interstitial; // To specify Interstitial ads.
adView.ZoneId = "MY_ZONE_ID"; // To specify the zone id. Replace "MY_ZONE_ID" with your actual
zone id.

adView.TimeOut = 20; // To specify the timeout in case of Ad failure. Default is 20

// Location and demographic targeting information may also be specified. Out of respect for user
privacy, Vserv asks that you only specify location and demographic data if that information is
already used by your app. Below are example of optional properties:

adView.UserInfo.Age ="age";
adView.UserInfo.City = "city";
adView.UserInfo.Country = "country";
adView.UserInfo.DOB = "dob";
adView.UserInfo.Email = "email";
adView.UserInfo.Gender = "gender";

Note* - where  "age", "city", "country", "dob", "email" and "gender" should be replaced with the
actual values meeting your targeting requirements.

for e.g.-
Note: Kindly don't copy paste the code as it is. As that may have bad impact on targeting of Ads
served to user.

adView.UserInfo.Age = 23;
adView.UserInfo.City = "Mumbai";
adView.UserInfo.Country = "India";
adView.UserInfo.Gender = eGender.Male;
adView.UserInfo.DOB = DateTime.Now;
adView.UserInfo.Email = "abc@xyz.com";


adView.LoadAd(); // This will load the Ad and on success provides a callBack named DidLoadAd. You
need to handle this to perform any action on this event in your application.

Interstitial Caching

To Cache Ads and show later will be possible through below api:

adView.CacheAd();  // To perform caching of the Ad. If required, this event can be used to run
any custom code.


Showing Cached Ads:
adView.ShowAd();   // To show the Cached Ad
```

```
Cancel Ads:
adView.CancelAd(); // To cancel the Cached Ad and free up all adview resources .
```

Requesting Banner Ads

Managed Banner Ads using LoadAd().
You can request for Banner Ads that refresh automatically in a container using the LoadAd() method. The signature for this method is:

```
VservAdView  adView=new VservAdView (); // To initialize the VservAdView

// To set the mandatory properties and to configure the adView after initialization.
adView.ZoneId = "MY_ZONE_ID"; // To specify the zone id. Replace "MY_ZONE_ID" with your actual
zone id.
adView.UX= VservAdUX.Banner; // To specify banner ads.

// In case you are adding the control through codeBehind(C#) you have to place the VservAdView
into a container control such as a Grid, StackPanel, and so on.
this.ContentPanel.Children.Add(adView);

// Below are optional properties to enable/disable or modify refresh rate/stop/pause/resume. By
default refresh is on in SDK with 30 sec.

// To specify the refresh rate for banner ads Usage : int
adView.RefreshRate = refreshRate;
adView.Refresh =true;  // To enable banner refresh – Usage: boolean
adView.ResumeRefresh(); // To resume refresh.
adView.StopRefresh();  // To stop refresh.
adView.PauseRefresh(); // To pause refresh.

Timeout and Demographics are same as above.
```

Requesting Frame Ads

Pre-requisite for Frame Ads:

- Design below dimensions image frames:

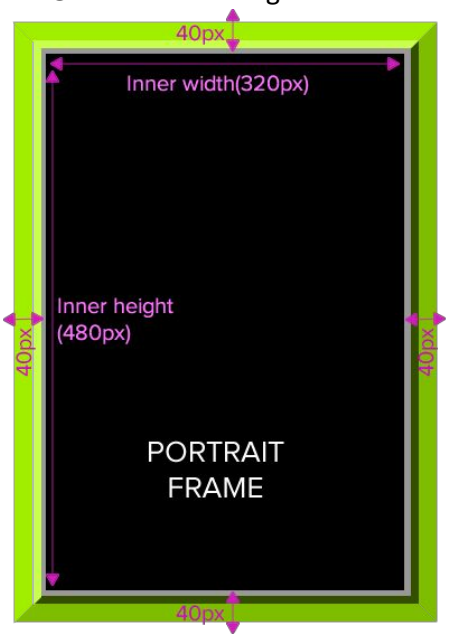
  Portrait:

Inner Dimensions	**Outer Dimensions**
320 x 480	400 x 560

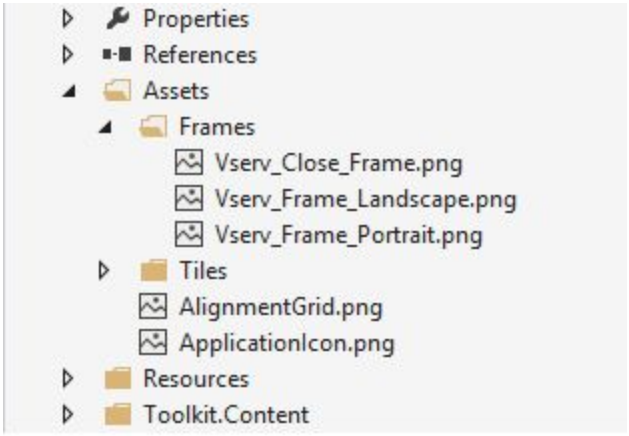
  Landscape:

Inner Dimensions	**Outer Dimensions**
480 x 320	560 x 400

- Frame should be opaque inside with any color(Black recommended) upto inner dimensions mentioned above.
- Frame should be equally distributed outside 40 pixel each side so as to satisfy outer dimensions mentioned above
- That 40 pixel area can consists of Frame border each side. If in case, Frame border is less than 40 pixels thick then the remaining pixels should be set as transparent.
- Here is an image with the description:



- One Close button is required with below dimensions:
  - 36 x 36
- All above three assets (Two Frames [portrait and landscape] and One Close button) should be placed in a folder named **Frames** which needs to be created in the **Assets** folder of your Windows phone 8 Project. (Refer the sample app for the folder structure.)
- Here is an image of the solution explorer of Visual Studio Project specifying the exact place where you need to add the frames and the close button:



- Naming Conventions of above assets:
  - Landscape Frame image should be named as “Vserv_Frame_Landscape”.[extension like png]
  - Portrait Frame image should be named as “Vserv_Frame_Portrait”.[extension like png]
  - 36 x 36 Close button image should be named as “Vserv_Close_Frame”.[extension like png]

To request a Frame Ads, Follow below example for reference:

```
//Follow the same code snippet as mentioned in Requesting Interstitials with only one change. //set UX
property as frame instead of BillBoard.

VservAdView  adView=new VservAdView (); // To initialize the VservAdView

adView.UX = VservAdUX.Frame; //This will set Frame type explicitly.
```

Requesting Native Ads-

Native ads are ads which you can customize to match the unique user experience of your app.
Native ads can be requested in the following manner -

```
VservAdView  adView=new VservAdView (); // To initialize the VservAdView

// To set the mandatory properties and to configure the adView after initialization.
adView.ZoneId = "MY_ZONE_ID"; // To specify the zone id. Replace "MY_ZONE_ID" with your actual
zone id.
adView.UX= VservAdUX.Native; // To specify native ads.

adView.DidCacheAd +=AdView_AdCached; // add handler for successful callback of caching of native
ad.
adView.FailedToCacheAd +=DidFailed_CacheAd; // add handler for failure callback of caching of
native ad.

To request Native ads -

adView.CacheAd();

Note : LoadAd() is not allowed for requesting Native ads. Using that will give an error message.

The VservAdView provides the success and failure callback for Caching of Ads.
The success callback can be used to provide the customization logic of the ad Unit.

NativeAd is represented by the NativeAd property of the VservAdView object that you created which
gives you an object of type NativeAd. In case of success it will contain the various elements of
the NativeAd.

You can extract the values of NativeAd elements by using the GetElementValue(<Predefined constant
values>) API of NativeAd class.

   • Predefined Constants are defined in the class- NativeAdConstants.

or

If you want all the elements in the form of a single JSON object and provide your own parsing
logic, you can use the GetContent() API of the NativeAd class, which will return the NativeAd
content in the form of JSON.

eg.

private void AdView_AdCached(object sender, EventArgs e)
{
    var nativeVservAdView = sender as VservAdView;
    if (nativeVservAdView.NativeAd!=null)
    {
        var nativeAd = nativeVservAdView.NativeAd; // gets the NativeAd property of        the
VservAdView class.
        var nativeAdCustomJson = nativeAd.GetContent(); // gets the Native Ad content as a JSON
object.You can provide your own custom logic to parse this or  fetch values of individual
elements as shown below.

        var buttonLabel = nativeAd.GetElementValue(NativeAdConstants.BUTTON_LABEL);
        var titleText = nativeAd.GetElementValue(NativeAdConstants.TITLE_TEXT);
        var imageUrl = nativeAd.GetElementValue(NativeAdConstants.LARGE_IMAGE);
        var iconUrl = nativeAd.GetElementValue(NativeAdConstants.ICON);
        var description = nativeAd.GetElementValue(NativeAdConstants.DESCRIPTION);
```

```
    }
}
```

Note: On Failure of Cache request the **NativeAd** property of **VservAdView** object will have the value **null.**

Impression Logging-

Impression logging will be done by the application itself.To log the Impression for Native Ads just use the following API -

```
NativeAdHelper.RegisterImpression(adView);
```

Note : Only after registering the impression the ad will be considered successfully rendered in application and impression will be recorded. Absence of calling this mandatory API on successful ad rendering will impact revenue so just ensure that you make a call to it as soon as the NativeAd gets loaded.
The SDK will automatically prevent a duplicate impression from being recorded for a single request.

Click Logging -

To register the clicks for Native ads just use the following API and pass the **UIElement** as the second parameter in which you have rendered your NativeAd.This will automatically listen to the clicks of the UIElement that is passed to it.

```
NativeAdHelper.RegisterViewForCallToAction(adView, NativeAdGrid);
```

Note : Only after registering the nativeAdView for clicks the clicks on the ad will be recorded. Absence of calling this mandatory API on successfully rendered ad will impact revenue so just ensure that you make a call to it as soon as the NativeAd gets rendered.

If you want to register only selected elements of your view for the click registration you can also pass them in the form of a list to this API along with the NativeAd parent container.

```
List<UIElement> listOfNativeClickableElements = new List<UIElement>();
listOfNativeClickableElements.Add(description);
listOfNativeClickableElements.Add(this);

NativeAdHelper.RegisterNativeViewForCallToAction(adView, NativeAdGrid,
listOfNativeClickableElements);
```

Note : In cases where you re-use the view to show different ads over time, make sure to call **UnRegisterNativeViewForCallToAction**() before registering the same view with a different instance of **NativeAd.**

OPTIONAL CALLBACKS

The VservAdView generates callbacks in 2 scenarios:

- Successful and unsuccessful fetching attempts of Ads
- Interactions with the ads.

Methods

Specifying callbacks in XAML-

```
<ad:VservAdView
    x:Name="adView"
    DidCacheAd="AdCached"
    DidLoadAd="AdReceived"
    FailedToLoadAd="AdFailed"
    DidInteractWithAd="InteractedWithAd"
    WillDismissOverlay="AdCollapsed"
    WillLeaveApp="LeavingApplication"
    WillPresentOverlay="AdExpanded"
    FailedToCacheAd="DidFailed_CacheAd"/>
```

Specifying callbacks through Code-

```
adView.DidLoadAd+=AdReceived;
adView.FailedToLoadAd+=AdFailed;
adView.DidInteractWithAd+=InteractedWithAd;
adView.WillDismissOverlay+=AdCollapsed;
adView.WillLeaveApp+=LeavingApplication;
adView.WillPresentOverlay+=AdExpanded;
adView.FailedToCacheAd+=DidFailed_CacheAd;
```

The following are different methods to generate an API callback.

FailedToLoadAd Callback

The VMAX SDK offers this callback, in cases where an Ad is not served. If required, this event can be used to run any custom code.

```
private void AdFailed(object sender,
com.vserv.windows.ads.wp8.VservAdView.AdFailedEventArgs e)
{
       // ..Custom code goes here
}
```

FailedToCacheAd Callback

The VMAX SDK offers this callback, in cases where an Ad is not cached. If required, this event can be used to run any custom code.

```
private void DidFailed_CacheAd(object sender, EventArgs e)
       {
              // … Custom code goes here
       }
```

DidLoadAd Callback

The VMAX SDK offers this callback, in cases where an Ad is rendered successfully. If required, this event can be used to run any custom code.

```
private void AdReceived(object sender, EventArgs e)
{
    // ..Custom code goes here
}
```

DidCacheAd Callback

The VMAX SDK offers this callback, in cases where an Ad is cached successfully. If required, this event can be used to run any custom code.

```
private void AdCached(object sender, EventArgs e)
{
    // ..Custom code goes here
}
```

DidInteractWithAd Callback

The VMAX SDK offers this callback, in cases of a successful interaction with the Ad. If required, this event can be used to run any custom code.

```
private void InteractedWithAd(object sender, EventArgs e)
{
    // ..Custom code goes here
}
```

WillDismissOverlay Callback

The VMAX SDK offers this callback, in cases of an Ad dismissal. If required, this event can be used to run any custom code.

```
private void AdCollapsed(object sender, EventArgs e)
{
    // ..Custom code goes here
}
```

WillLeaveApp Callback

The VMAX SDK offers this callback, in cases of the Ad closing the current App and opening another App. If required, this event can be used to run any custom code.

```
private void LeavingApplication(object sender, EventArgs e)
{
```

```
    // ..Custom code goes here
}
```

WillPresentOverlay Callback

The VMAX SDK offers this callback, in cases where an interstitial/overlay is shown. If required, this event can be used to run any custom code.

```
private void AdExpanded(object sender, EventArgs e)
{
    // ..Custom code goes here
}
```

TESTING INTEGRATION

You can test the Vserv SDK integration using any of the following methods:

- Set your integration to Test mode for certain devices.
- Set your integration to use Test zones, which Vserv provides.

Adding Test Devices

The Vserv VMAX SDK allows you to set a number of devices as Test Devices by passing their DeviceID to the SDK. You can add test devices by using the **TestDevice** property which takes a list of id (string) as its parameters.

```
adView.TestDevice = new List<string>() { [your device id/ids here] };
```

Each Device's DeviceID can be fetched by using the following code in your application.

```
// Place this snippet in a method and take the value returned by it and use it as device id.
try
{
       var value = (byte[])DeviceExtendedProperties.GetValue("DeviceUniqueId");
       return Convert.ToBase64String(value);
}
catch { return string.Empty; }
```

Using the TestZones

You can also test your integration across our solutions by using the following Adspots (ZoneIDs)

Billboard Test Adspot (ZoneID): **8063**

Banner Test Adspot (ZoneID): **20846**

Note: Please make sure your production App does not utilize these Zones as you would not be earning revenue using these Zones.

APPENDIX

A: Mediation

To support Mediation with partners:

1. The "**Mediation Partners**" folder inside the "**VMAXSDKWP8/packages**" folder consists of all supported Client to Server integration partners like Admob, Microsoft, AdDuplex and their respective adapters/mediator dlls.
2. Browse and add references to the dlls in your project that are present in the corresponding folder. For example- for mediating through **AdMob,** add the reference of the dlls to your project which are present in the "**AdMob**" folder **(GoogleAds.dll** & **AdMobMediator.dll)** inside "**Mediation Partners**".
3. You can add/remove the dlls based on your choice of the mediation partners that you want.Just make sure to add/remove all the dlls for a specific partner that are present in the respective folder.(This will help you in reducing the unwanted size overhead)
4. Fill required details on the Vserv web interface at mp.vserv.com/ad-spot-list.html to start mediation for that zone.
5. The following table describes the files to be added for the respective mediation partners -

Partner	Folder where respective mediation files placed(inside VMAXSDKWP8/packages/ Mediation Partners)	.dll Files to be selected and added as a reference to the Project.
AdMob	AdMob	GoogleAds.dll AdMobMediator.dll
AdDuplex	AdDuplex	AdDuplex.WindowsPhone.dll AdDuplexMediator.dll
Microsoft	Microsoft	Microsoft.Advertising.Mobile.dll Microsoft.Advertising.Mobile.UI.dll Microsoft.Phone.Controls.Maps.dll MicrosoftMediator.dll

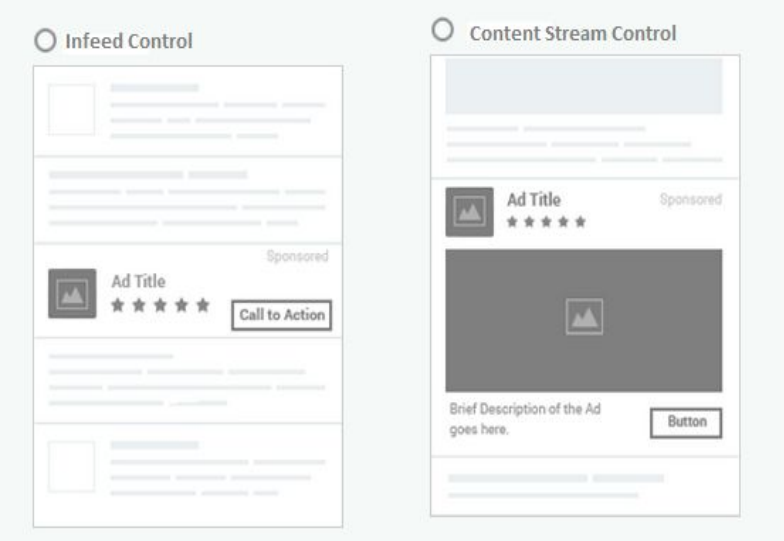
Note : - All the capabilities required for mediation partners are included in the section "Integrating The SDK" mentioned above. Make sure you have included all of them.

B: Native Ad Helper Library Usage

Introduction

This document will help you utilize a Native Ad Helper Library to render the native ads in a couple of predefined formats.

The VMAX Native Ad Helper Library has been designed to reduce the efforts of the developer in rendering the native ads. The library helps in rendering the native ads in any one of the two formats. **Infeed** and **Content Stream**. Here is an image showing the actual format.



Integrating the SDK

Complete the following steps to integrate the native ad helper library with your application.
Include the **<packages>** folder in your project's folder structure.
Using **Project** -> **Add Reference** -> **Browse**, add the VservNativeAdHelper.WP8.dll to your project.
It is present in the **packages/VMAX** folder.

Getting Started

The library internally provides two controls which can be added to the xaml file. **InfeedControl** and **ContentStreamConrtol**. You may even create an object of these control in the backend and add it to any one of your grids programmatically. This is how the library can be referred in the xaml

```
xmlns:VservControl="clr-namespace:VservNativeAdHelper.WP8;assembly=VservNativeAdHelper.WP8"
```

and this is how the controls can be referred to.

```
<Grid x:Name="MainGrid">
                <Grid.RowDefinitions>
                    <RowDefinition/>
                    <RowDefinition/>
                </Grid.RowDefinitions>
                <VservControl:InFeedControl Name="InfeedAdControl"
                                            Grid.Row="0"
                FailedToRenderNativeAd="InfeedAdControl_FailedToRenderNativeAd"
                                            DidRenderNativeAd="InfeedAdControl_DidRenderNativeAd"
                                            Height="Auto"/>
                <VservControl:ContentStreamControl Name="ContentStreamAdControl"
                                                   Grid.Row="1"
                FailedToRenderNativeAd="ContentStreamAdControl_FailedToRenderNativeAd"
                                                DidRenderNativeAd="ContentStreamAdControl_DidRenderNativeAd"
                                                   Height="Auto"/>

 </Grid>
```

For code behind access, add the namespace after referring the dll in the project as:

```
using VservNativeAdHelper.WP8;
```

Once the controls have been placed in the xaml, what remains is the actual native ad data to be shown in these controls. You can get the native ad data using the VMAX Windows phone sdk by selecting appropriate Ad UX Types and using proper Zone keys as explained in this documentation here. You should, then, call an API **SetContentAndShowNativeAd()** on the controls. This API takes JObject (JSON object) as a parameter. (If you do not have a reference to the **Newtonsoft.Json** library, add it using the nuget package manager.) This JObject, you can obtain from the **NativeAd** property of the adView. The **GetContent()** API will return you a JObject from the native ad as shown here.

```
InfeedAdControl.SetContentAndShowNativeAd(adView.NativeAd.GetContent());
ContentAdControl.SetContentAndShowNativeAd(adView.NativeAd.GetContent());
```

Once you call this API with its necessary parameter, the control will be populated with the necessary parameters from the JObject that was provided.

Here is a sample image showing the appearance of the ads:

Infeed Ad

Content Stream Ad

Optional Callbacks

1. **DidRenderNativeAd()**
This callback can notify you about the successful rendering of the native ad.

2. FailedToRenderNativeAd()
You can register for an event **FailedToRenderNativeAd**which can tell you the reason behind the failure in rendering the native ad. One of the reasons can be Empty or Improper JObject being passed to the **SetContentAndShowNativeAd()** API.

```
        private void InfeedAdControl_FailedToRenderNativeAd(NativeAdEventArgs e)
        {
            MessageBox.Show(e.ErrorMessage, "Infeed Ad Control", MessageBoxButton.OK);
        }

        private void InfeedAdControl_DidRenderNativeAd()
        {
            MessageBox.Show("Infeed ad shown successfully", "Infeed Ad Control",MessageBoxButton.OK);
        }

        private void ContentStreamAdControl_FailedToRenderNativeAd(NativeAdEventArgs e)
        {
            MessageBox.Show(e.ErrorMessage, "Content Stream Ad Control",MessageBoxButton.OK);
        }

        private void ContentStreamAdControl_DidRenderNativeAd()
        {
            MessageBox.Show("Content Stream ad shown successfully", "Content Stream Ad Control",
MessageBoxButton.OK);
        }
```

The class **NativeAdEventArgs** contains a field by name **ErrorMessage** which can tell you the exact reason for the failure in rendering the native ad.

JSON Details

The Vserv Server gives you a JSON that will appear as below:

```
 {
    "BUTTON_LABEL": "Install Now",
    "ICON_48x48": "sample http image url",
    "ICON_80x80": "sample http image url",
    "SCREENSHOT_300x250": "sample http image url",
    "SPAN_320x50": "sample value",
    "LARGE_IMAGE_1200x627": "sample http image url",
    "TITLE_TEXT": "Lost Twins - A Surreal Puzz...",
    "DESCRIPTION": "Lost Twins is a delightful indie game that is original, beautifully made...",
    "PRICE": "Free",
    "TOTAL_INSTALLS": "100",
    "REVIEW": "sample string",
    "RATING": "4.1",
    "SIZE": "2MB",
    "TOTAL_REVIEWS": "1100",
    "PRODUCT_CATEGORY": "Action Games",
    "IMPRESSION_URL": "sample http impression url",
    "CLICK_URL":”sample http click url”
}
```

It has several fields out which help in rendering the native ad depending upon the type. The VMAX Sdk also internally gets the same JSON. But it adds more elements to it and creates a new JSON like:

```
{
    "BUTTON_LABEL": "Install Now",
    "ICON": "sample http image url",
    "ICON_HEIGHT": "48",
    "ICON_WIDTH": "48",
    "SCREENSHOT": "sample http image url",
    "SCREENSHOT_HEIGHT": "800",
    "SCREENSHOT_WIDTH": "480",
    "SPAN": "sample http image url",
    "SPAN_HEIGHT": "480",
    "SPAN_WIDTH": "800",
    "LARGE_IMAGE": "sample http image url",
    "LARGE_IMAGE_HEIGHT": "1200",
    "LARGE_IMAGE_WIDTH": "627",
    "TITLE_TEXT": "Lost Twins - A Surreal Puzz...",
    "DESCRIPTION": "Lost Twins is a delightful indie game that is original, beautifully...",
    "PRICE": "Free",
    "TOTAL_INSTALLS": "100",
    "REVIEW": "sample string",
    "RATING": "4.1",
    "SIZE": "2MB",
    "TOTAL_REVIEWS": "1100",
    "PRODUCT_CATEGORY": "Action Games",
    "IMPRESSION_URL": "sample http impression url",
    "CLICK_URL": "sample http click url"
}
```

You can pass any of the above mentioned forms of JSON objects (in a JObject format) to the **SetContentAndRenderNativeAd()** API and the ad will be rendered according to the type of control used (Infeed or Content Stream).

Customizing Native Ad

If you wish to customize the controls in their appearance, the following is the list of attributes which you can change:

Properties	Can developer modify
Background Color	yes
Foreground Color	yes
Border Thickness	yes
Border Brush	yes
Font Family	yes
Font Style	yes
Font Weight	no
Font Stretch	yes
Margin	no (Changes in this attribute may distort the control)
Width	no (Changes in this attribute may distort the control)
Height	no (Changes in this attribute may distort the control)
Horizontal Alignment	yes
Vertical Alignment	yes
Changes in Phone Theme Color	yes

The stars in the rating control take up the color of the theme applied.

***Note- Make sure you add the controls in a grid or any container with Height="Auto" as shown in the snippets above.**