Loxodon Framework Bundle

AssetBundle Manager for Unity3D

Developed by Clark

Requires Unity 5.3.0 or higher.

Loxodon Framework Bundle is an AssetBundle manager.It provides a functionality that can automatically manage/load an AssetBundle,with its dependencies,from local or remote location.Asset Dependency Management including BundleManifest that keep track of every AssetBundle and all of their dependencies. An AssetBundle Simulation Mode, which allows for iterative testing of AssetBundles in a the Unity editor without ever building an AssetBundle.

Tested in Unity 3D on the following platforms:
PC/Mac/Linux
IOS
Android

Downloads

- Loxodon Framework Bundle

Key Features:

- Build AssetBundle.
- Encrypts/decrypts the file data of the AssetBundle.
- Support AssetBundle simulation mode.

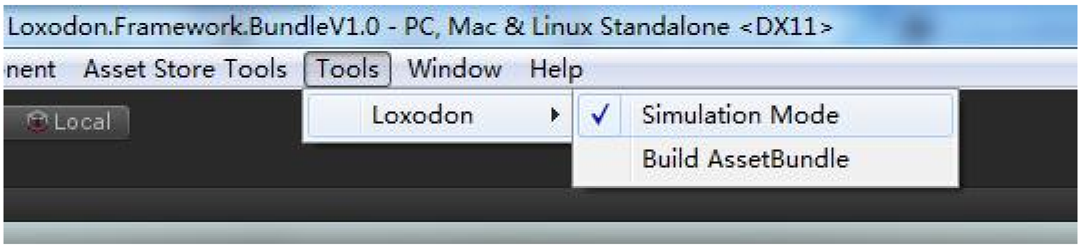
Quick start

```
    private IResources resources;

    void Awake()
    {
        /* Create a BundleManifestLoader. */
        IBundleManifestLoader manifestLoader = new BundleManifestLoader();

        /* Loads BundleManifest. */
        BundleManifest manifest = manifestLoader.Load(BundleUtil.GetReadOnlyDirectory() +
BundleSetting.ManifestFilename);

        /* Create a PathInfoParser. */
        IPathInfoParser pathInfoParser = new AutoMappingPathInfoParser(manifest);

        /* Create a LoaderBuilder */
        ILoaderBuilder builder = new WWWComplexLoaderBuilder(new Uri(BundleUtil.GetReadOnlyDirectory()),
false);
```

```
        /* Create a BundleManager */
        IBundleManager manager = new BundleManager(manifest, builder);

        /* Create a BundleResources */
        resources = new BundleResources(pathInfoParser, manager);
    }

    void Start()
    {
        string path = "LoxodonFramework/BundleExamples/Models/Green/Green.prefab";
        IProgressResult<float, GameObject> result = resources.LoadAssetAsync<GameObject>(path);
        result.Callbackable().OnProgressCallback(p =>
        {
            Debug.LogFormat("Progress:{0}%", p * 100);
        });
        result.Callbackable().OnCallback((r) =>
        {
            try
            {
                if (r.Exception != null)
                    throw r.Exception;
                GameObject.Instantiate(r.Result);
            }
            catch (Exception e) { Debug.LogErrorFormat("Load failure.Error:{0}", e); }

        });

    }
```

Simulation mode in the editor

- In the editor,you can enable the simulation mode of the loading.Loads assets without having to build AssetBundle.



```
    void Awake()
    {
#if UNITY_EDITOR
        if (SimulationSetting.IsSimulationMode)
        {
            /* Create a PathInfoParser. */
            //IPathInfoParser pathInfoParser = new SimplePathInfoParser("@");
            IPathInfoParser pathInfoParser = new SimulationAutoMappingPathInfoParser();

            /* Create a BundleManager */
            IBundleManager manager = new SimulationBundleManager();

            /* Create a BundleResources */
```

```
                resources = new SimulationResources(pathInfoParser, manager);
            }
#endif
        }

        IEnumerator Start()
        {
            string path = "LoxodonFramework/BundleExamples/Models/Green/Green.prefab";
            IProgressResult<float, GameObject> result = resources.LoadAssetAsync<GameObject>(path);
            while (!result.IsDone)
            {
                Debug.LogFormat("Progress:{0}%", result.Progress * 100);
                yield return null;
            }

            if (result.Exception != null)
                yield break;

            GameObject.Instantiate(result.Result);
        }
```

PathInfoParser

The PathInfoParser class is a path parser.

Note： Assets directory is the root of all assets,so it is omitted.

```
AssetBundle:characters.unity3d
Asset:Assets/Characters/MonkeyKing.prefab
```

- SimplePathInfoParser example

```
        //BundleName:characters or characters.*
        //AssetName:Assets/Characters/MonkeyKing.prefab
        string path = "characters@Characters/MonkeyKing.prefab";
        BundleManifest manifest = ...
        ILoaderBuilder builder = ...
        SimplePathInfoParser parser = new SimplePathInfoParser(new string[] { "@" });
        var resources = new BundleResources(parser, new BundleManager(manifest, builder));
        IProgressResult<float, GameObject> result = resources.LoadAssetAsync<GameObject>(path);
        result.Callbackable().OnCallback((r) =>
        {
            if (r.Exception != null)
                throw r.Exception;
            GameObject.Instantiate(r.Result);
        });
```

- AutoMappingPathInfoParser example

```
         //AssetName:Assets/Characters/MonkeyKing.prefab
```

```
              string path = "Characters/MonkeyKing.prefab";
            BundleManifest manifest = ...
            ILoaderBuilder builder = ...
            AutoMappingPathInfoParserparser parser = new AutoMappingPathInfoParser(manifest);
            var resources = new BundleResources(parser, new BundleManager(manifest, builder));
            IProgressResult<float, GameObject> result = resources.LoadAssetAsync<GameObject>(path);
            result.Callbackable().OnCallback((r) =>
            {
                if (r.Exception != null)
                    throw r.Exception;
                GameObject.Instantiate(r.Result);
            });
```

Custom ILoaderBuilder

```
        public class CustomBundleLoaderBuilder : AbstractLoaderBuilder
        {
            private bool useCache;
            private IDecryptor decryptor;

            public CustomBundleLoaderBuilder(Uri baseUri, bool useCache) : this(baseUri, useCache, null)
            {
            }

            public CustomBundleLoaderBuilder(Uri baseUri, bool useCache, IDecryptor decryptor) : base(baseUri)
            {
                this.useCache = useCache;
                this.decryptor = decryptor;
            }

            public override BundleLoader Create(BundleManager manager, BundleInfo bundleInfo, BundleLoader[]
dependencies)
            {
                Uri loadBaseUri = this.BaseUri;

                if (this.useCache && BundleUtil.ExistsInCache(bundleInfo))
                {
                    loadBaseUri = this.BaseUri;
                    return new WWWBundleLoader(new Uri(loadBaseUri, bundleInfo.Filename), bundleInfo,
dependencies, manager, this.useCache);
                }

                if (BundleUtil.ExistsInStorableDirectory(bundleInfo))
                {
                    /* Path: Application.persistentDataPath + "/bundles/" + bundleInfo.Filename    */

                    loadBaseUri = new Uri(BundleUtil.GetStorableDirectory());
                }
                else if (BundleUtil.ExistsInReadOnlyDirectory(bundleInfo))
                {
                    /* Path: Application.streamingAssetsPath + "/bundles/" + bundleInfo.Filename */

                    loadBaseUri = new Uri(BundleUtil.GetReadOnlyDirectory());
                }

                if (bundleInfo.IsEncrypted)
                {
                    if (this.decryptor != null && bundleInfo.Encoding.Equals(decryptor.AlgorithmName))
                        return new CryptographBundleLoader(new Uri(loadBaseUri, bundleInfo.Filename), bundleInfo,
dependencies, manager, decryptor);

                    throw new NotSupportedException(string.Format("Not support the encryption algorithm '{0}'.",
bundleInfo.Encoding));
                }

                return new WWWBundleLoader(new Uri(loadBaseUri, bundleInfo.Filename), bundleInfo, dependencies,
manager, this.useCache);
            }
        }
```

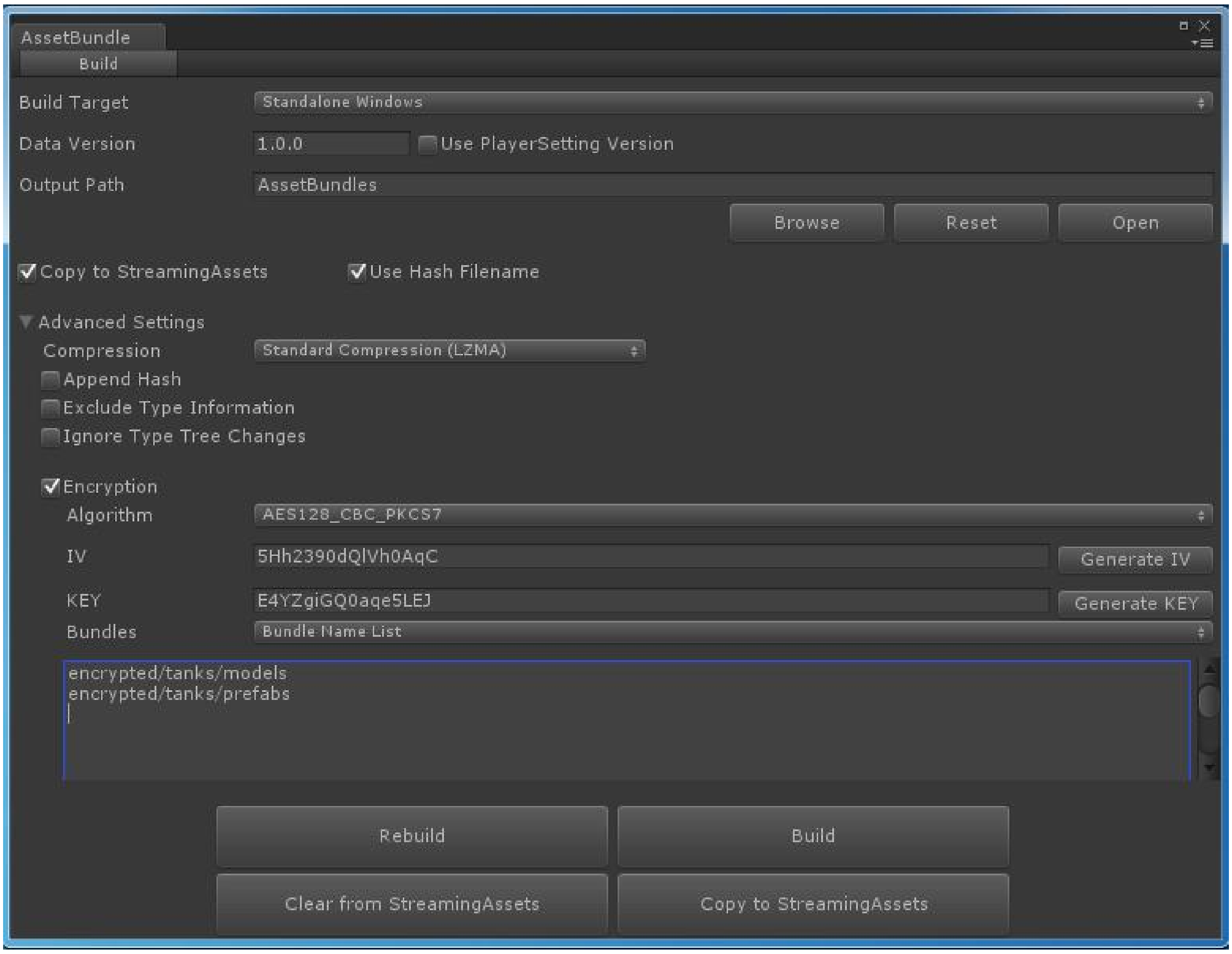
Custom BundleLoader

```
public class CustomBundleLoader : BundleLoader
{
    public CustomBundleLoader(Uri uri, BundleInfo bundleInfo, BundleLoader[] dependencies, BundleManager
manager) : base(uri, bundleInfo, dependencies, manager)
    {
    }

    protected override IEnumerator DoLoadAssetBundle(IProgressPromise<float, AssetBundle> promise)
    {
        string path = this.GetAbsoluteUri();
        using (WWW www = new WWW(path))
        {
            while (!www.isDone)
            {
                promise.UpdateProgress(www.progress);
                yield return null;
            }

            if (!string.IsNullOrEmpty(www.error))
            {
                promise.SetException(new Exception(string.Format("Failed to load the AssetBundle '{0}' at the
address '{1}'.Error:{2}", this.BundleInfo.Name, path, www.error)));
                yield break;
            }
```

```
                var assetBundle = www.assetBundle;
                if (assetBundle == null)
                {
                    promise.SetException(new Exception(string.Format("Failed to load the AssetBundle '{0}' at the
address '{1}'.", this.BundleInfo.Name, path)));
                    yield break;
                }

                promise.UpdateProgress(1f);
                promise.SetResult(assetBundle);
            }
        }
}
```

Build AssetBundle

Build AssetBundle,you can open a Editor window in menu: Tools/Loxodon/Build AssetBundle



AssetBundle
Build

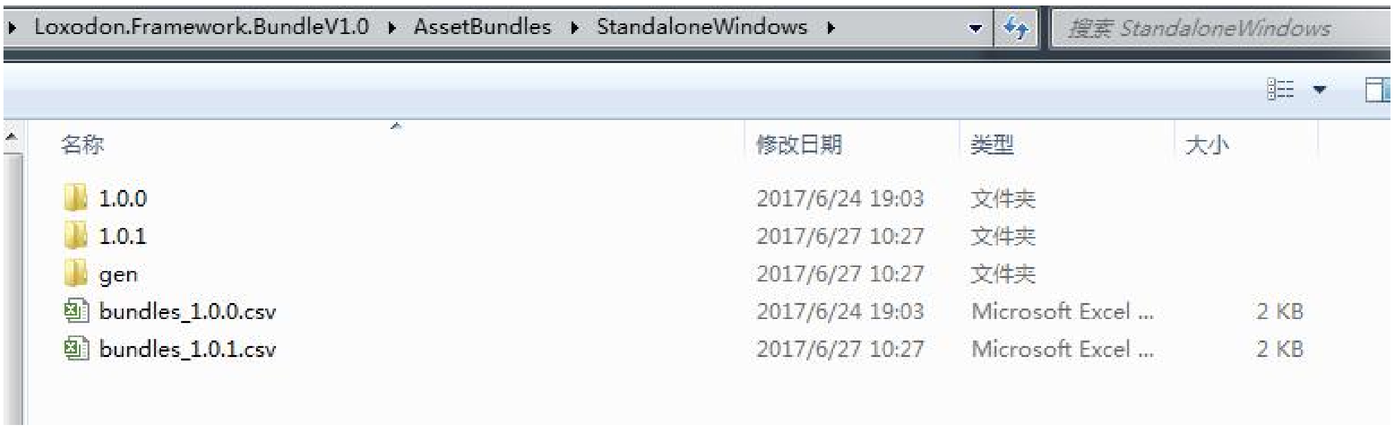
Build Target: Standalone Windows
Data Version: 1.0.0 ☐ Use PlayerSetting Version
Output Path: AssetBundles

☑ Copy to StreamingAssets ☑ Use Hash Filename

▼ Advanced Settings
Compression: Standard Compression (LZMA)
☐ Append Hash
☐ Exclude Type Information
☐ Ignore Type Tree Changes

☑ Encryption
Algorithm: AES128_CBC_PKCS7
IV: 5Hh2390dQlVh0AqC
KEY: E4YZgiGQ0aqe5LEJ
Bundles: Bundle Name List

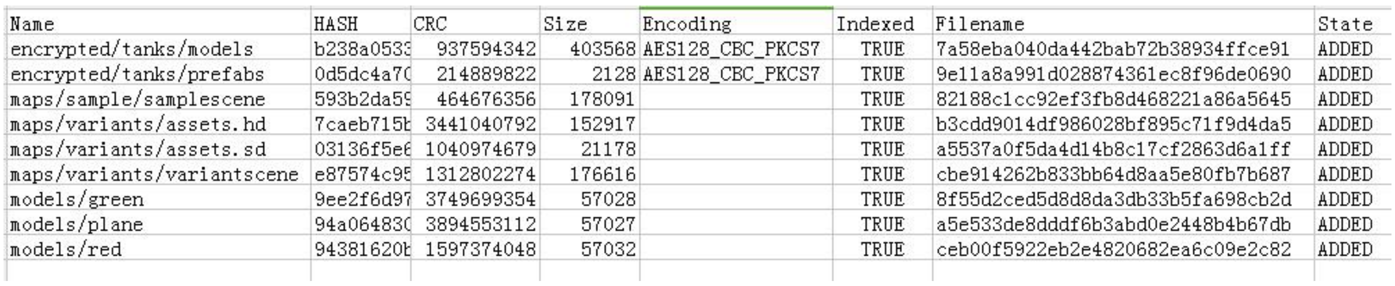
```
encrypted/tanks/models
encrypted/tanks/prefabs
```



Loxodon.Framework.BundleV1.0 ▸ AssetBundles ▸ StandaloneWindows ▸

搜索 StandaloneWindows

名称	修改日期	类型	大小
1.0.0	2017/6/24 19:03	文件夹	
1.0.1	2017/6/27 10:27	文件夹	
gen	2017/6/27 10:27	文件夹	
bundles_1.0.0.csv	2017/6/24 19:03	Microsoft Excel ...	2 KB
bundles_1.0.1.csv	2017/6/27 10:27	Microsoft Excel ...	2 KB



Name	HASH	CRC	Size	Encoding	Indexed	Filename	State
encrypted/tanks/models	b238a0533	937594342	403568	AES128_CBC_PKCS7	TRUE	7a58eba040da442bab72b38934ffce91	ADDED
encrypted/tanks/prefabs	0d5dc4a70	214889822	2128	AES128_CBC_PKCS7	TRUE	9e11a8a991d028874361ec8f96de0690	ADDED
maps/sample/samplescene	593b2da59	464676356	178091		TRUE	82188c1cc92ef3fb8d468221a86a5645	ADDED
maps/variants/assets.hd	7caeb715b	3441040792	152917		TRUE	b3cdd9014df986028bf895c71f9d4da5	ADDED
maps/variants/assets.sd	03136f5e6	1040974679	21178		TRUE	a5537a0f5da4d14b8c17cf2863d6a1ff	ADDED
maps/variants/variantscene	e87574c95	1312802274	176616		TRUE	cbe914262b833bb64d8aa5e80fb7b687	ADDED
models/green	9ee2f6d97	3749699354	57028		TRUE	8f55d2ced5d8d8da3db33b5fa698cb2d	ADDED
models/plane	94a064830	3894553112	57027		TRUE	a5e533de8dddf6b3abd0e2448b4b67db	ADDED
models/red	94381620b	1597374048	57032		TRUE	ceb00f5922eb2e4820682ea6c09e2c82	ADDED

Contact Us

Email: yangpc.china@gmail.com