

Unity Cloud Editor

--Unity云端分布式算力方案

Turning all advanced key functionality into a
Function-as-a-Service across ecosystems.

**Creator
demand more.**

You need to deliver on the new demands



WorkFlow is paramount

WorkFlow represent by toolset

On demand complexity

Plentiful middleware ecosystem



Create need to be everywhere

Every platform supported

Global accessibility

Cross device Co-creativity



Version-Less evolution

Keeping creators engaged

Delivering new features

Modularity configurable

Connected & powered by ecosystem

Unity is a real bridge.
Ecosystem working as a team.

Built with you in mind.

Flexible

and extensible

Reliable

and stable

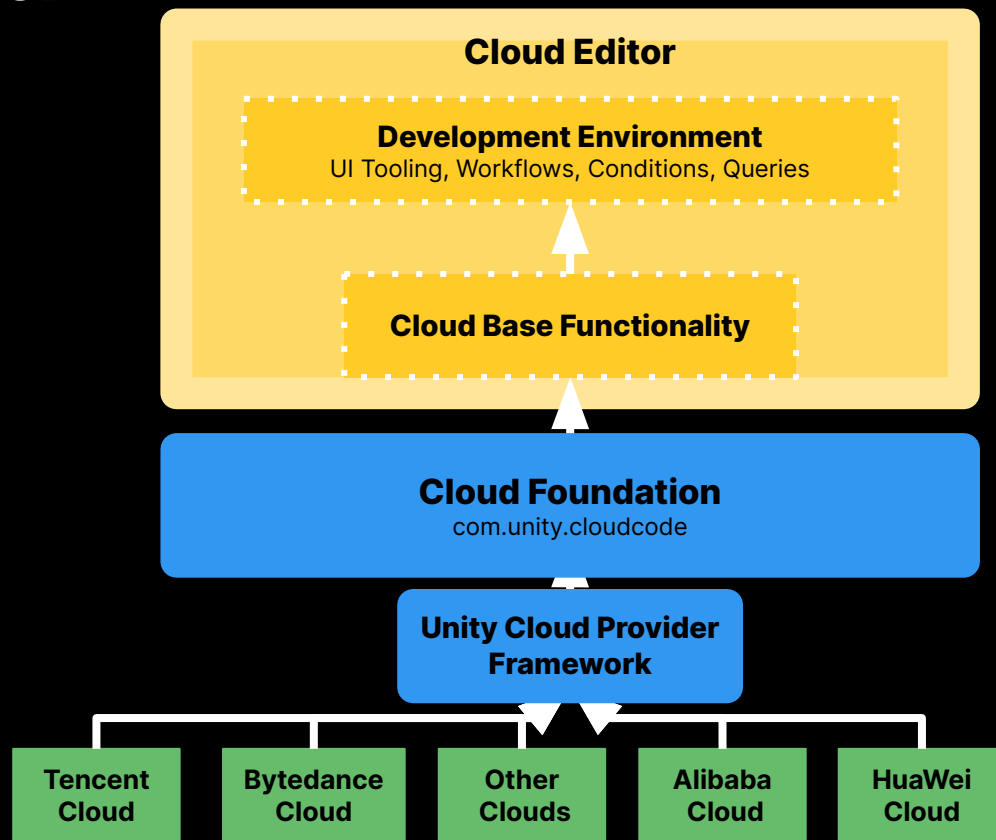
Scalable

and global

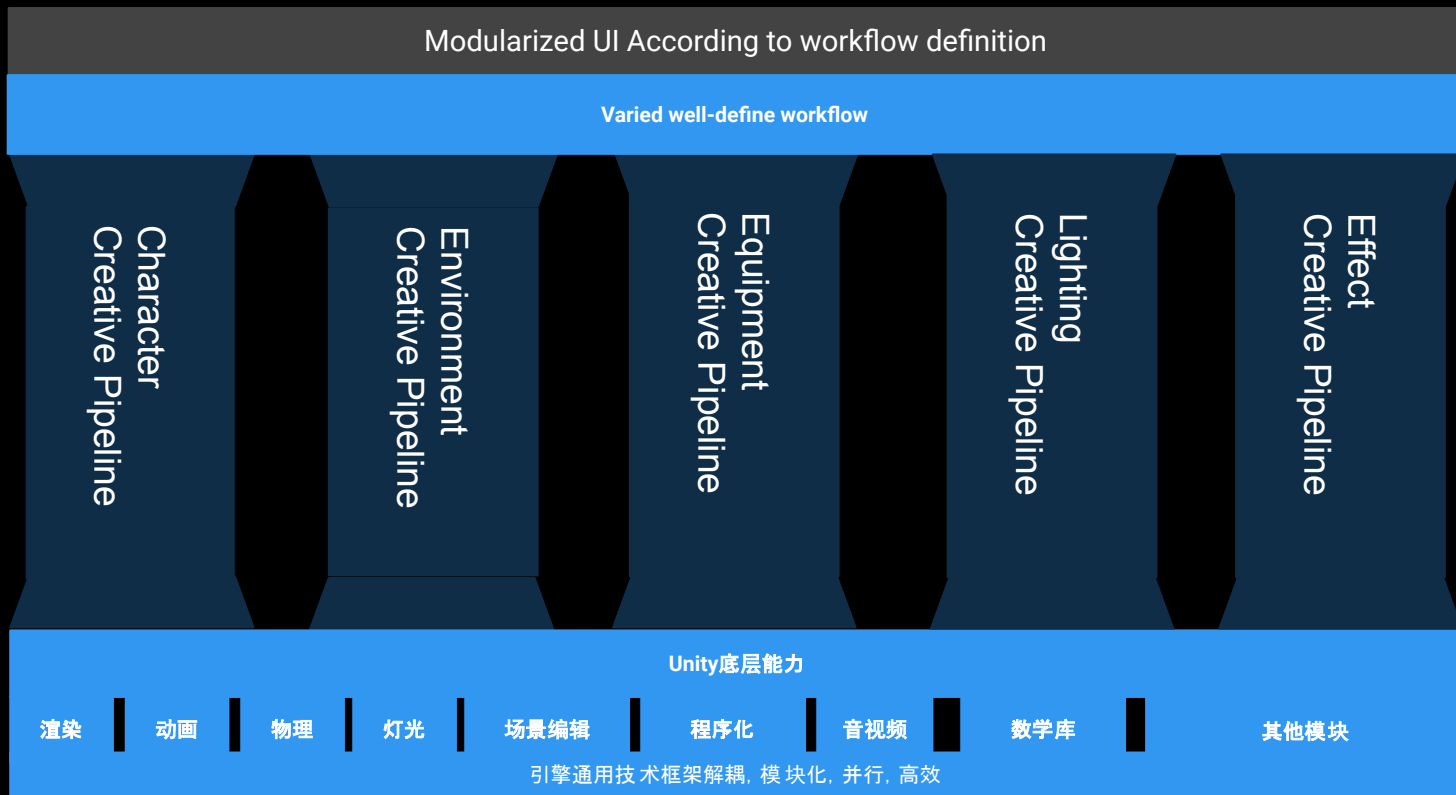
Accessible

and workflow-agnostic

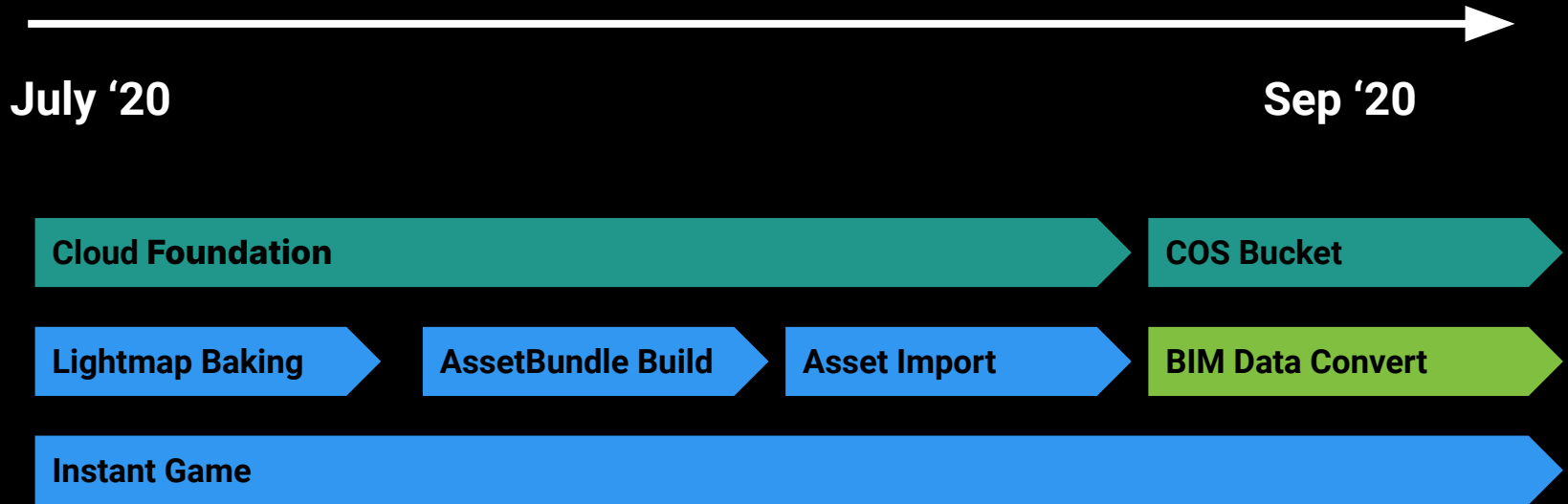
Unity Cloud Editor 架构图



With you from concept to commercialization



What We've Delivered in 2021



Blue = Enhancement

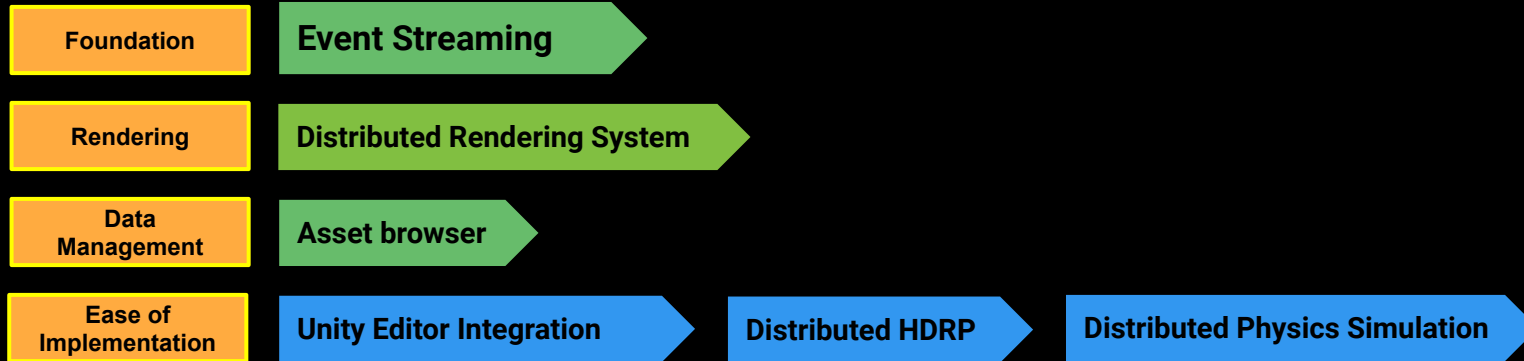
Green = Brand new feature/functionality

Teal = Foundational work

Future Product Roadmap



Themes



Blue = Enhancement

Green = Brand new feature/functionality

如何打造轻快的即时游戏体验

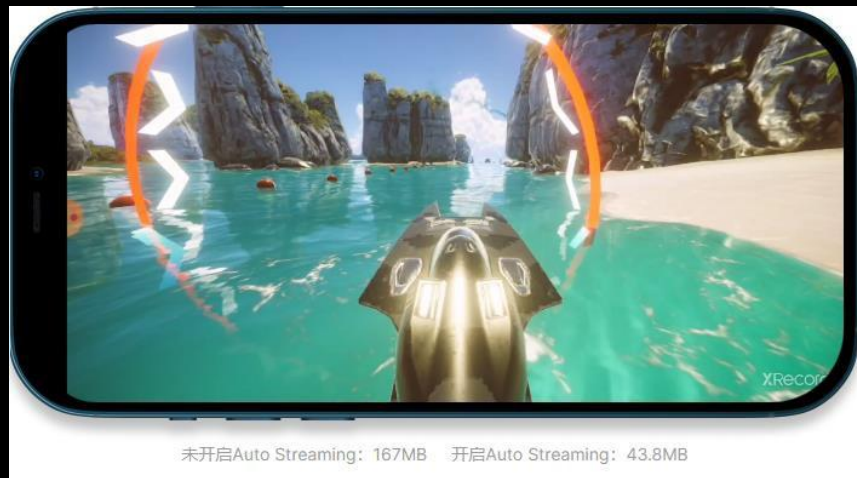
——Unity Auto Steaming 技术介绍

Auto Streaming 简介

该技术对引擎资源加载模块进行了增强，使得开发者可以在不修改代码的情况下加载云端资源，从而减少游戏包体大小，提升加载速度，在不损失质量的前提下，为用户带来了即时游戏的体验。

功能特点：

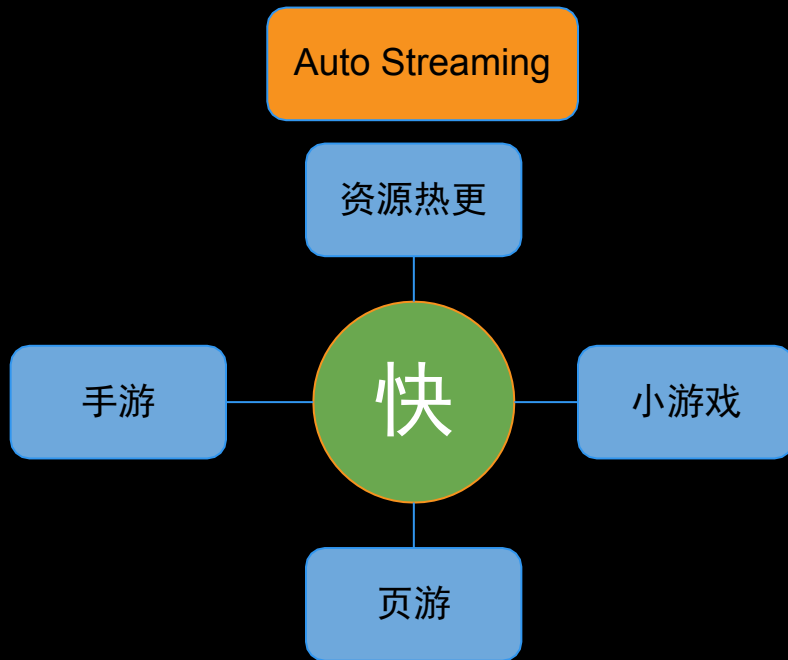
- 大量减小包体
- 无需修改代码
- 支持资源更新
- 运行稳定



未开启Auto Streaming: 167MB 开启Auto Streaming: 43.8MB

快速启动有多重要？

- 快速触达玩家
- 爆发性增长



使用Auto Streaming的Boat Attack

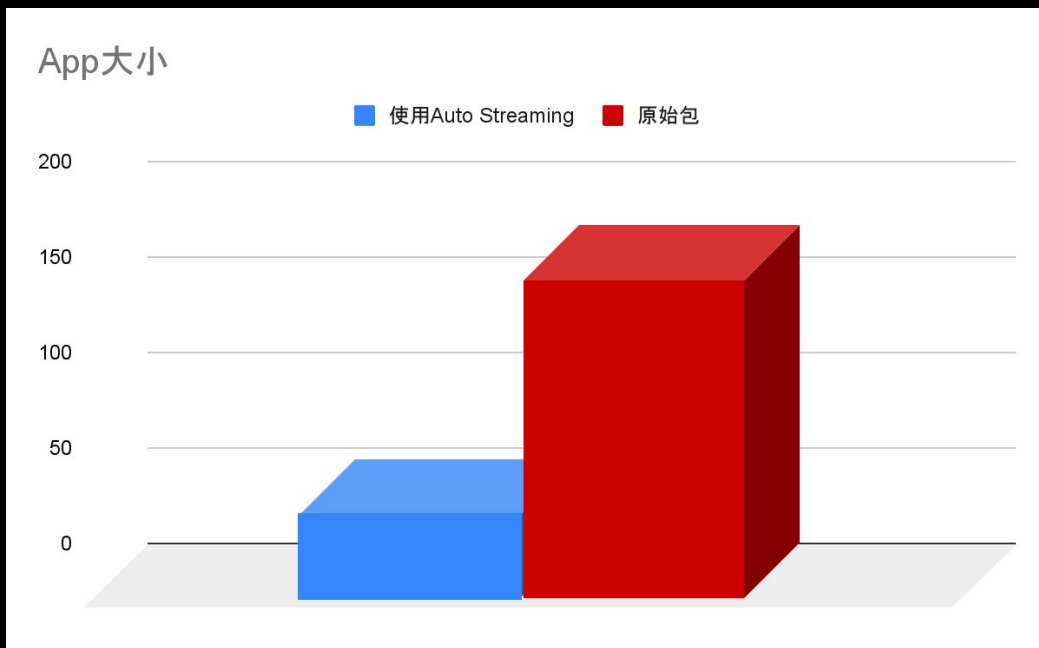


原始的Boat Attack



App大小对比

— 基于AS的包体大小为43.8M，而原始包体大小为167M

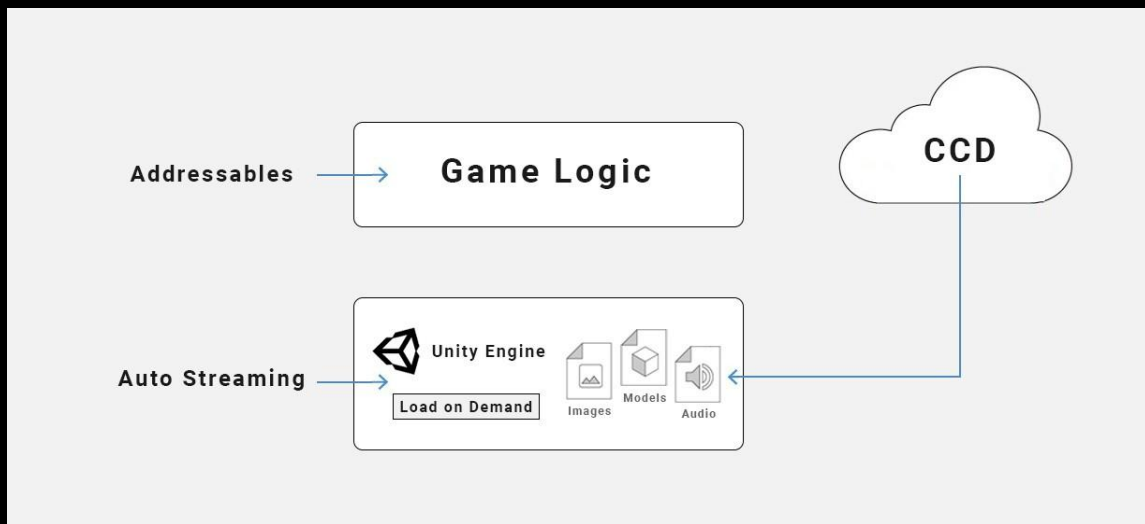


Streaming资源类型

- Texture
- Mesh
- Audio
- Animation
- Font

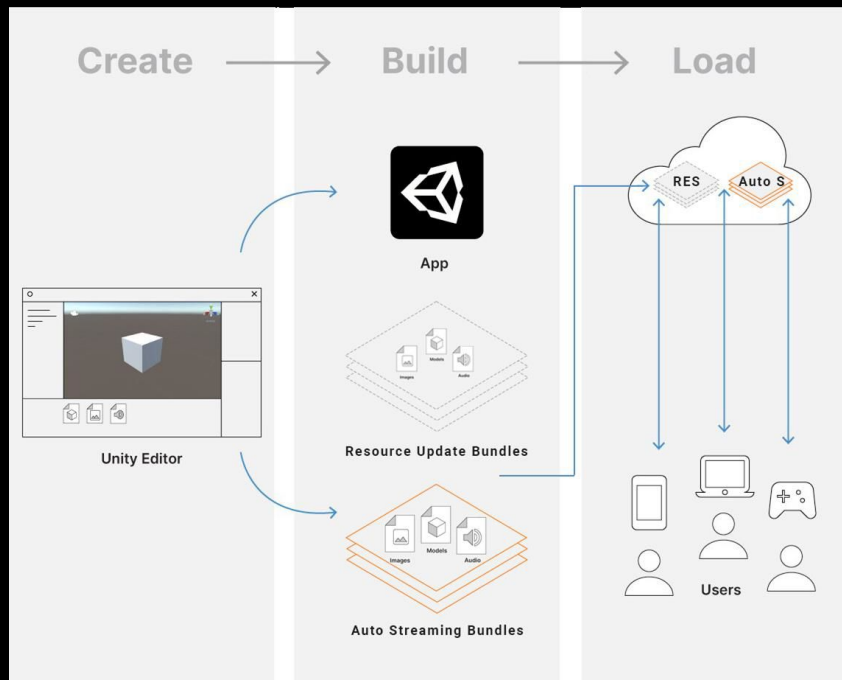
引擎底层实现，无需修改代码

- Auto Streaming是对引擎内部资源加载模块进行了增强，自动去远程加载相关资源，因此该方案无需修改项目代码，只需在构建时指定需要Streaming的资源，制作成Streaming Asset Bundle并上传云端即可



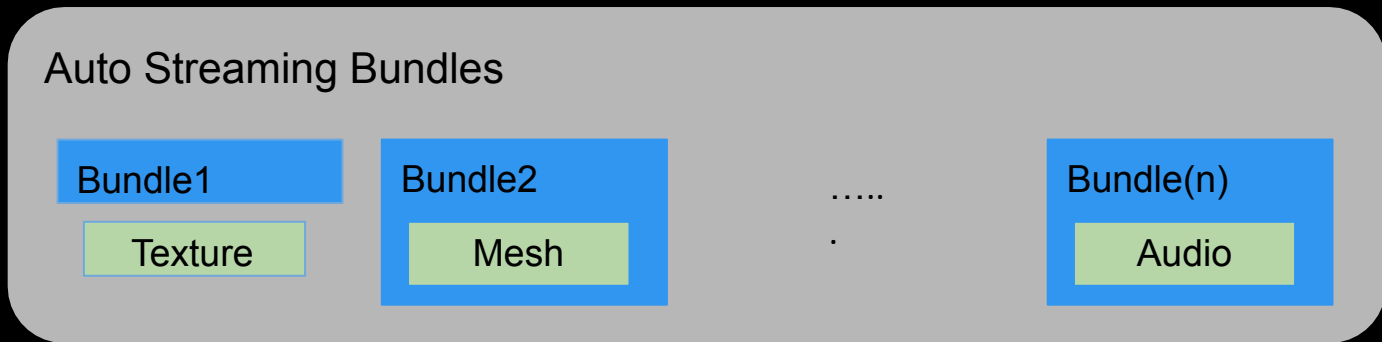
支持资源更新

- 该方案同时支持App与AssetBundle的资源缩减，因此除了App变小变快，整个资源更新的流程也会加快



Auto Streaming Bundles

- Auto Streaming的每一个文件会单独放入一个AssetBundle，利于资源的快速下载和显示，以及内存回收。



服务稳定可靠

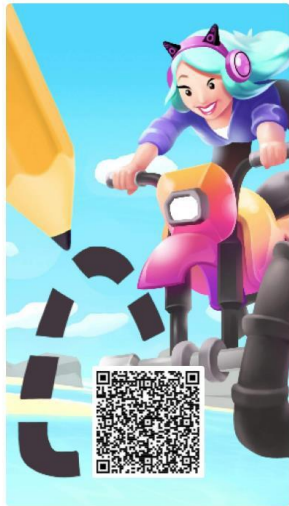
— Auto Streaming技术方案已经在unity与字节，QQ等合作的即时游戏平台中使

用一段时间，并且稳定运行。<https://unity.cn/instantgame>

参考案例

请使用安卓版抖音APP或今日头条APP扫码体验以下高品质Unity instant game

涂鸦骑士



欢乐大厨



杰利的世界



Auto Streaming Demo

- 安装插件
- 设置Texture Streaming
- 设置Mesh Streaming
- 构建App
- 上传Auto Streaming bundles 到CCD
- 上传资源更新bundles到CCD
- 运行资源包

Texture Streaming

- SynTexture
- Generate Placeholders
- Generate AssetBundles

Texture Streaming		Mesh Streaming		Configuration	
Sync Meshes				Selected: 100/152, RT: 4.5 MB	
AssetPath	RT Mem	OnDem	References		
Assets/Objects/props/props/Meshes/Props_low.fbx:Geo_Props_Chair_LOD_0	6.5 KB	<input checked="" type="checkbox"/>	0,1,2		
Assets/Objects/environment/Clouds/Clouds.fbx:Cloud2	5.9 KB	<input checked="" type="checkbox"/>	0,1,2		
Assets/Objects/props/props/Meshes/Props_low.fbx:Geo_Props_ArrowSign_LOD_1	5.8 KB	<input checked="" type="checkbox"/>	1,2		
Assets/Objects/environment/Ciiffs/Meshes/Env_Rocks.fbx:Rock_Small_02_LOD1	5.8 KB	<input checked="" type="checkbox"/>	1,2		
Assets/Objects/props/props/Meshes/Props_low.fbx:Geo_Props_Kayak	5.7 KB	<input checked="" type="checkbox"/>	0,1,2		
Assets/Objects/props/props/Meshes/Props_low.fbx:Geo_Props_Umbrella_LOD_1	5.7 KB	<input checked="" type="checkbox"/>	0,1,2		
Assets/Objects/environment/Ciiffs/Meshes/Env_Rocks.fbx:Rock_Small_01_LOD1	5.5 KB	<input checked="" type="checkbox"/>	1,2		
Assets/Objects/boats/Interceptor/Interceptor.fbx:Boat_Interceptor_Engine	5.3 KB	<input checked="" type="checkbox"/>	0		
Assets/Objects/environment/Ciiffs/Meshes/Env_Rocks.fbx:Rock_Large_01_LOD3	4.9 KB	<input type="checkbox"/>	0,1,2		
Assets/Objects/environment/Clouds/Clouds.fbx:Cloud1	4.8 KB	<input type="checkbox"/>	0,1,2		
Assets/Objects/environment/Ciiffs/Meshes/Env_Rocks.fbx:Rock_Small_03_LOD2	4.7 KB	<input type="checkbox"/>	1,2		
Assets/Objects/environment/Clouds/Clouds.fbx:Cloud4	4.7 KB	<input type="checkbox"/>	0,1,2		
Assets/Objects/environment/Ciiffs/Meshes/Env_Rocks.fbx:Rock_Small_04_LOD2	4.6 KB	<input type="checkbox"/>	0,1,2		
Assets/Objects/environment/Ciiffs/Meshes/Env_Rocks.fbx:Rock_Medium_04_LOD2	4.6 KB	<input type="checkbox"/>	1,2		
Assets/Objects/environment/Ciiffs/Meshes/Env_Rocks.fbx:Rock_Medium_02_LOD2	4.5 KB	<input type="checkbox"/>	1,2		
Assets/Objects/environment/Ciiffs/Meshes/Env_Rocks.fbx:Rock_Large_02_LOD3	4.5 KB	<input type="checkbox"/>	0,1,2		
Assets/Objects/environment/Ciiffs/Meshes/Env_Rocks.fbx:Rock_Medium_03_LOD2	4.4 KB	<input type="checkbox"/>	0,1,2		
Assets/Objects/environment/Clouds/Clouds.fbx:Cloud3	3.9 KB	<input type="checkbox"/>	0,1,2		
Assets/Objects/props/props/Meshes/Props_low.fbx:Geo_Props_Chair_LOD_1	3.8 KB	<input type="checkbox"/>	0,1,2		

Mesh Streaming

—SyncMeshes

Texture Streaming	Mesh Streaming	Configuration	
Sync Meshes		Selected: 100/152, RT: 4.5 MB	
AssetPath	RT Mem	OnDem	References
Assets/Objects/props/props/Meshes/Props_low.fbx:Geo_Props_Chair_LOD_0	6.5 KB	<input checked="" type="checkbox"/>	0,1,2
Assets/Objects/environment/Clouds/Clouds.fbx:Cloud2	5.9 KB	<input checked="" type="checkbox"/>	0,1,2
Assets/Objects/props/props/Meshes/Props_low.fbx:Geo_Props_ArrowSign_LOD_1	5.8 KB	<input checked="" type="checkbox"/>	1,2
Assets/Objects/environment/Cliiffs/Meshes/Env_Rocks.fbx:Rock_Small_02_LOD1	5.8 KB	<input checked="" type="checkbox"/>	1,2
Assets/Objects/props/props/Meshes/Props_low.fbx:Geo_Props_Kayak	5.7 KB	<input checked="" type="checkbox"/>	0,1,2
Assets/Objects/props/props/Meshes/Props_low.fbx:Geo_Props_Umbrella_LOD_1	5.7 KB	<input checked="" type="checkbox"/>	0,1,2
Assets/Objects/environment/Cliiffs/Meshes/Env_Rocks.fbx:Rock_Small_01_LOD1	5.5 KB	<input checked="" type="checkbox"/>	1,2
Assets/Objects/boats/Interceptor/Interceptor.fbx:Boat_Interceptor_Engine	5.3 KB	<input checked="" type="checkbox"/>	0
Assets/Objects/environment/Cliiffs/Meshes/Env_Rocks.fbx:Rock_Large_01_LOD3	4.9 KB	<input type="checkbox"/>	0,1,2
Assets/Objects/environment/Clouds/Clouds.fbx:Cloud1	4.8 KB	<input type="checkbox"/>	0,1,2
Assets/Objects/environment/Cliiffs/Meshes/Env_Rocks.fbx:Rock_Small_03_LOD2	4.7 KB	<input type="checkbox"/>	1,2
Assets/Objects/environment/Clouds/Clouds.fbx:Cloud4	4.7 KB	<input type="checkbox"/>	0,1,2
Assets/Objects/environment/Cliiffs/Meshes/Env_Rocks.fbx:Rock_Small_04_LOD2	4.6 KB	<input type="checkbox"/>	0,1,2
Assets/Objects/environment/Cliiffs/Meshes/Env_Rocks.fbx:Rock_Medium_04_LOD2	4.6 KB	<input type="checkbox"/>	1,2
Assets/Objects/environment/Cliiffs/Meshes/Env_Rocks.fbx:Rock_Medium_02_LOD2	4.5 KB	<input type="checkbox"/>	1,2
Assets/Objects/environment/Cliiffs/Meshes/Env_Rocks.fbx:Rock_Large_02_LOD3	4.5 KB	<input type="checkbox"/>	0,1,2
Assets/Objects/environment/Cliiffs/Meshes/Env_Rocks.fbx:Rock_Medium_03_LOD2	4.4 KB	<input type="checkbox"/>	0,1,2
Assets/Objects/environment/Clouds/Clouds.fbx:Cloud3	3.9 KB	<input type="checkbox"/>	0,1,2
Assets/Objects/props/props/Meshes/Props_low.fbx:Geo_Props_Chair_LOD_1	3.8 KB	<input type="checkbox"/>	0,1,2

官方技术交流群

Auto Streaming 官方群

628540768



CCD 官方群

550832645



基于Enlighten的Unity云烘焙介绍

Unity Cloud Bake Based on Enlighten Introduction

Contents 概要

- Cloud Bake Overview 云烘焙概述
- Cloud Bake Advantage 云烘焙优势
- Cloud Bake Usage 云烘焙使用
- Project test results 项目实测数据

Contents 概要

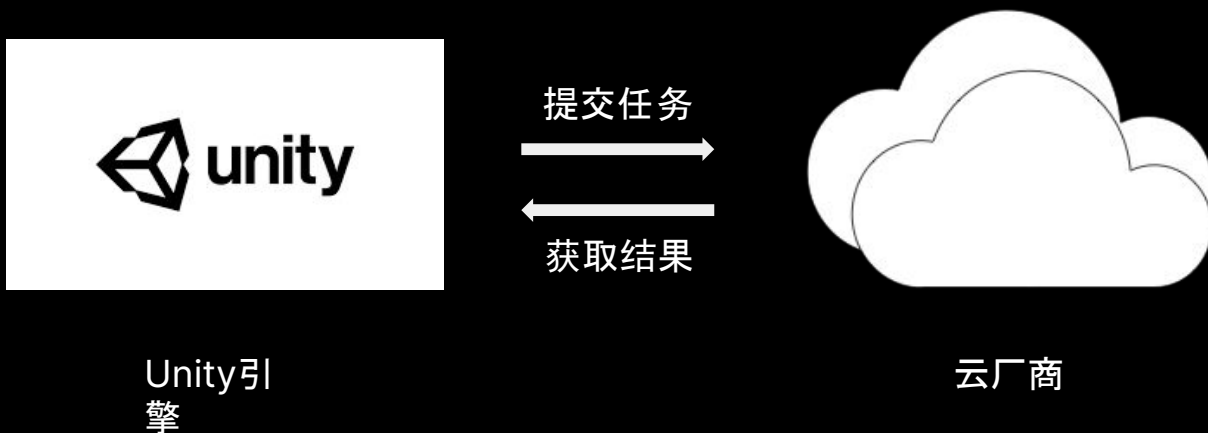
- **Cloud Bake Overview** 云烘焙概述
- Cloud Bake advantage 云烘焙优势
- Cloud Bake Usage 云烘焙使用
- Project test results 项目实测数据

Cloud Bake Overview 概述

近年来，随着广大游戏公司对游戏品质和大世界场景的开发需求不断提升，对传统制作流程的效率提出了更高的挑战；受制于单机性能的提升瓶颈，原有传统的工作流已经很难满足各个环节的开发需求，其中大世界、高质量的3D场景的烘焙是阻碍项目迭代效率的重要一环，Unity 提出了基于 Enlighten 的云烘焙解决方案，利用高并发的云计算资源，有效降低了烘焙时间，提高了项目开发效率。

Cloud Bake Overview 概述

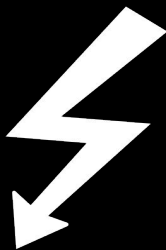
Unity 的云烘焙解决方案是基于引擎底层深度定制了整个烘焙的工作流程。该方案结合了云厂商的Serverless服务, 可以利用高并发的云计算资源, 并支持动态扩容, 具有简单快捷、无任务不计费、低成本等特点。



Contents 概要

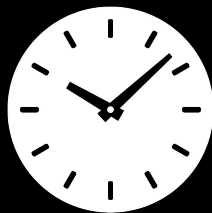
- Cloud Bake Overview 云烘焙概述
- **Cloud Bake Advantage 云烘焙优势**
- Cloud Bake Usage 云烘焙使用
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Cloud Bake Advantage 云烘焙优势



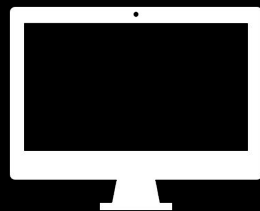
低成本

烘焙时间的降低, 提高了专业人员的工作效率; 同时也降低了对本地计算资源的损耗。目前云端烘焙, 当没有计算任务时, 无成本损耗



高效率

云烘焙可以实现百台计算资源的高并发, 大幅降低本地实际烘焙时间, 提高项目的迭代效率及针对烘焙结果的快速反应时间, 并持续高效改进



免部署

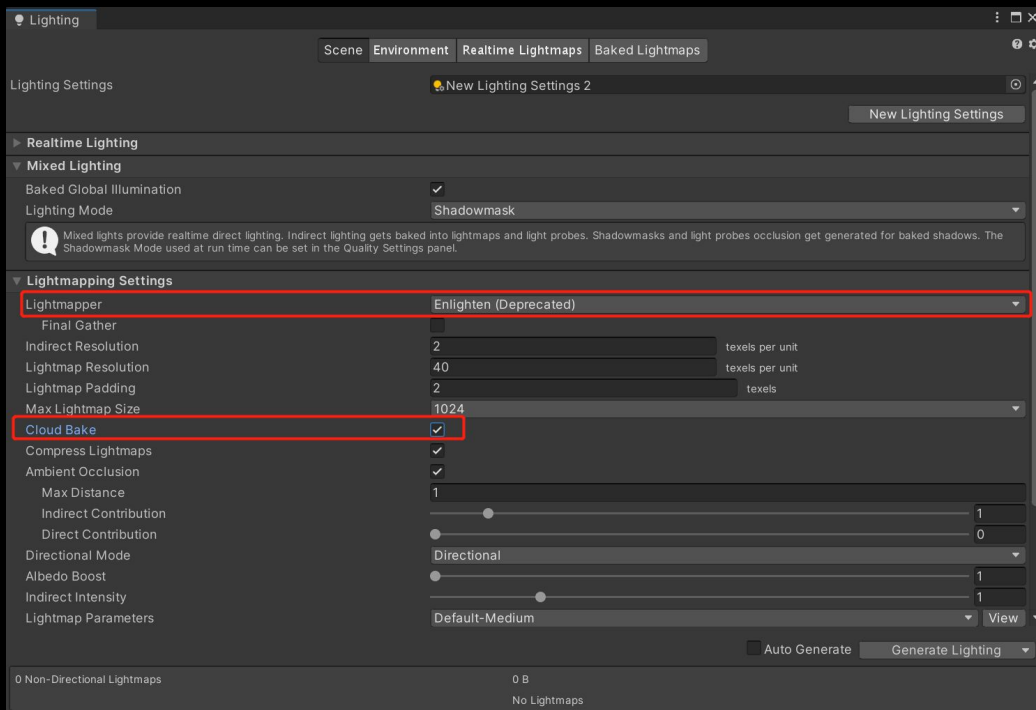
云烘焙的整套流程均被整合到引擎中, 官方可提供对应定制引擎版本及后续升级服务, 无需部署, 快速接入, 即可体验云烘焙

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Cloud Bake Usage 云烘焙使用

官方定制版本、勾选Lighting 面板Enlighten模式下的Cloud Bake 即可完成部署



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- **Project test results 项目实测数据**

Project test results 项目实测数据

- 场景信息

- Built-In管线

- Asset Store素材

- Meadow Environment by NatureManufacture

- Medieval Village Kit Bundle by 3DForge

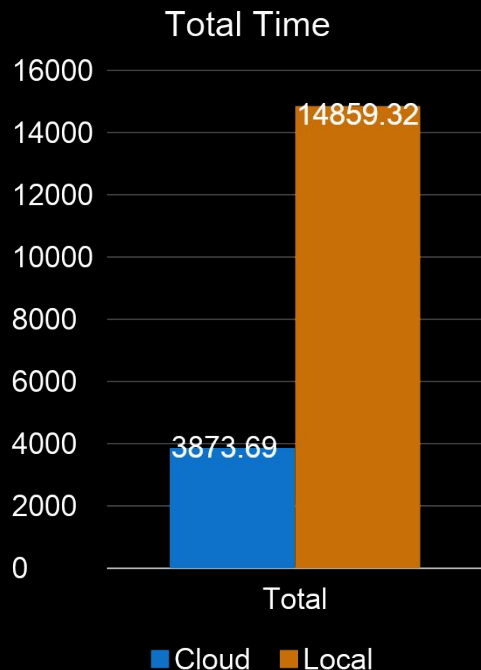
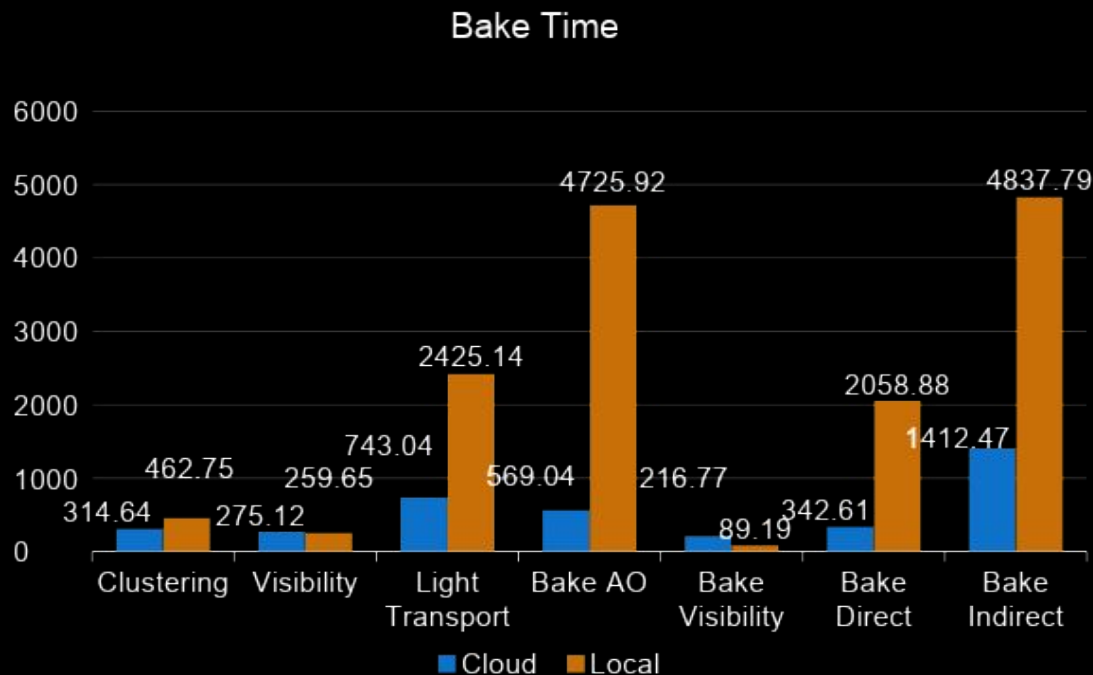
- 一个平行光源

- 场景大小约6700×5600

- 有效大小约525×525



内部某项目实测数据



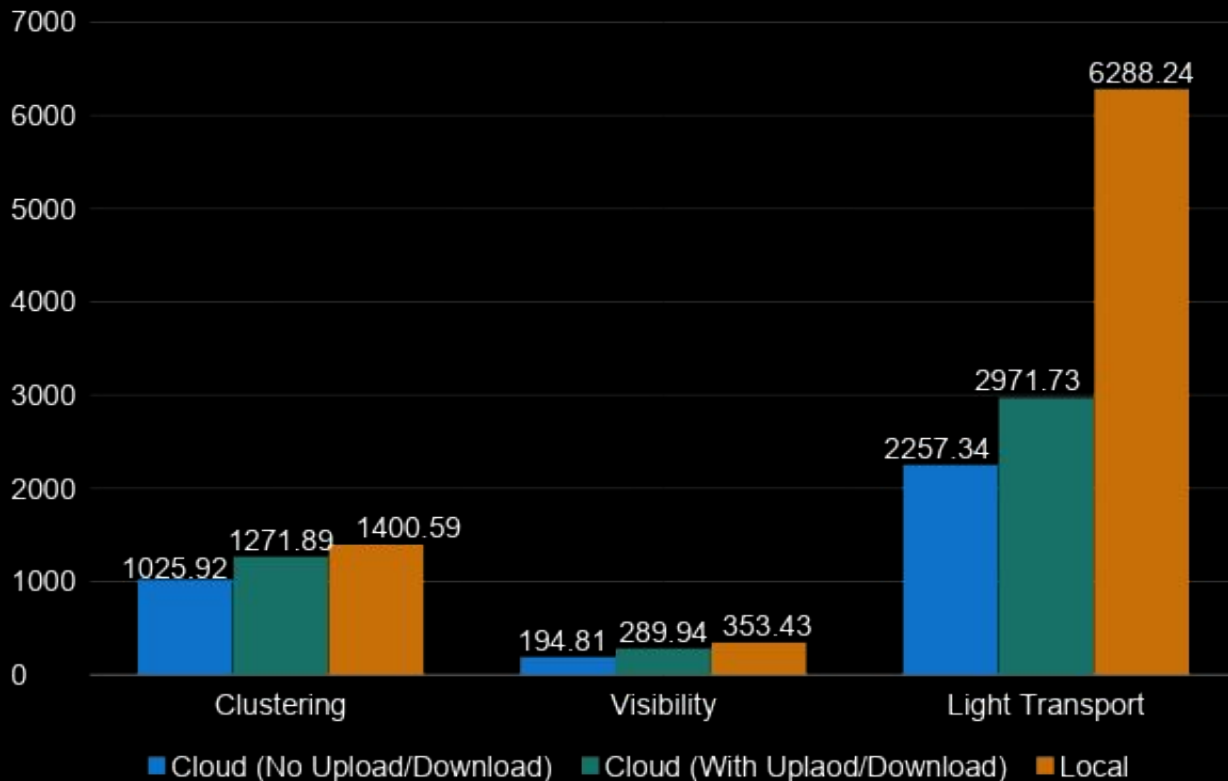
云端配置: 2x Intel(R) Xeon(R) CPU E5-26xx v4 @ 2.40GHz (3GB RAM)

4x Intel(R) Xeon(R) Platinum 8255C @ 2.50GHz (6GB RAM)

本地配置: 8x Intel(R) Core(TM) i7-9700K CPU @ 3.60GHz (32GB RAM)

Bilibili 某项目实测数据

Bake Time



Total Time



Unity云端分布式资源导入与打包

Unity Cloud Distributed Asset-importer and
Assetbundle-build (UCDAA)

Contents 概要

- UCDAAs Overview UCDAAs方案概述
- UCDAAs Advantage UCDAAs方案优势
- UCDAAs Usage UCDAAs方案使用

Contents 概要

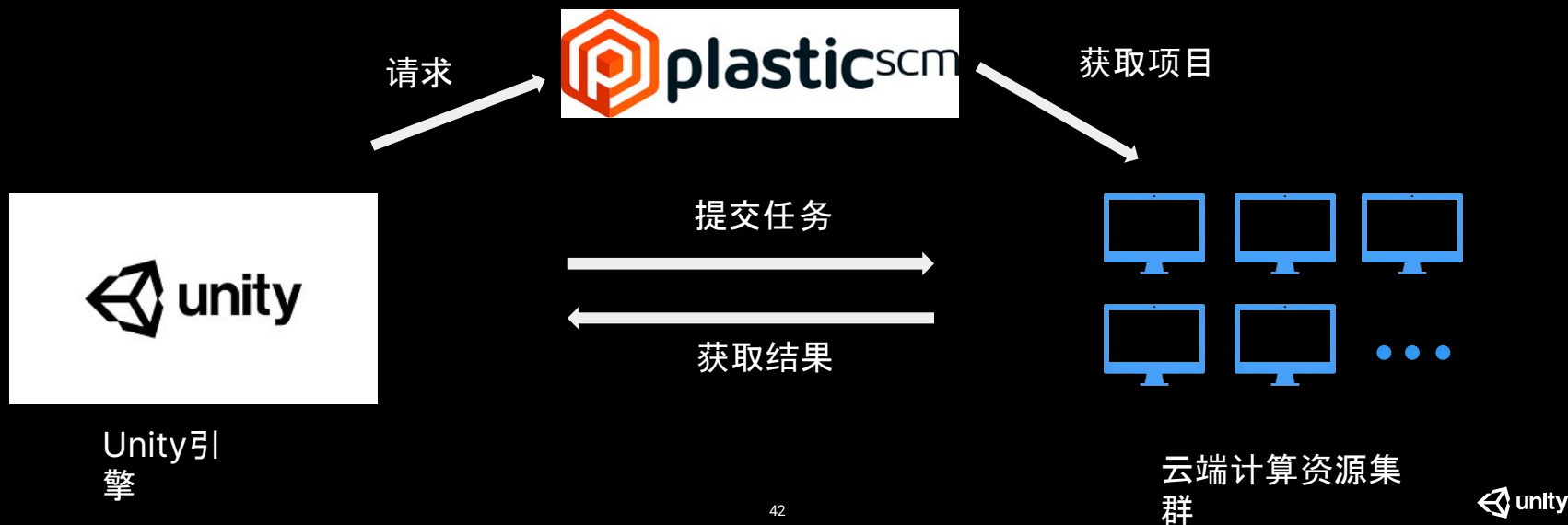
- UCDAAs Overview UCDAAs方案概述
- UCDAAs Advantage UCDAAs方案优势
- UCDAAs Usage UCDAAs方案使用

UCDAA Overview 概述

近年来，随着广大游戏公司对游戏品质和大世界场景的开发需求不断提升，大型重度的游戏项目也越来越多，这也对制作工具提出了更高的要求；受制于单机的计算资源有限，原有工作流已经很难满足各个环节的开发需求，其中资源导入和打包是许多重度项目开发迭代的主要性能瓶颈。为此，Unity 提出了[云端分布式资源导入与打包方案](#)，其原理是利用云服务的计算资源实现高并发处理，可以实现对导入和打包速度的线性加速。

UCDAA Overview 概述

Unity 的分布式资源导入与打包是基于引擎深度定制方案并且资源导入与打包可以分开使用，其中资源打包还需依赖package接入到现有项目中。该方案结合了Serverless云服务，可以获取高并发的计算资源，并支持动态扩容、快捷部署等。



Contents 概要

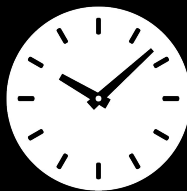
- UCDAAs Overview UCDAAs方案概述
- UCDAAs Advantage UCDAAs方案优势
- UCDAAs Usage UCDAAs方案使用

UCDAA Advantage 优势



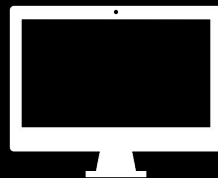
低成本

具有按次收费, 无服务不收费等特点。



高效率

云端海量计算资源, 高效处理, 大幅缩短导入和打包时间, 提高开发效率



易部署

定制引擎版、Package方式接入并配置相关账号信息便可

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- UCDAAs Overview UCDAAs方案概述
- UCDAAs Advantage UCDAAs方案优势
- UCDAAs Usage UCDAAs方案使用

UCDAA Usage 使用

云端分布式导入使用

- 通过batchmode启动与导入示范如下

```
"C:/Program Files/Unity/Editor/Unity.exe" -quit -batchmode -projectPath "C:/Demo/MyProject"  
-assetCloudImport -username "xxxxx" -password "xxxxx"
```

云端分布式打包使用

- 打开项目接入package
- 更改底层AB打包接口

```
//Original Interface 原有接口  
BuildPipeline.BuildAssetBundles("AssetBundle", builds.ToArray(), BuildAssetBundleOptions.ChunkBasedCompression, BuildTarget.Android);  
  
//UDAB Interface 分布式打包接口  
DistributedBuild.BuildPipeline.BuildAssetBundles("AssetBundle", builds.ToArray(), BuildAssetBundleOptions.ChunkBasedCompression,  
BuildTarget.Android, DistributedBuild.DistributedBuildOptions.None);
```

基于Pixyz Batch的工业数据云转换介绍

Introduction: Cloud Industrial Data Conversion (CIDC) Based on Pixyz Batch

Contents 概要

- CIDC Overview CIDC概述
- CIDC Advantage CIDC优势
- CIDC Usage CIDC使用

Contents 概要

- CIDC Overview CIDC概述
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CIDC Overview 概述

近年来, 随“中国制造 2025”的提出和互联网信息技术的发展, 物联网(IOT)及其相关数字孪生、数字城市、数字工厂等得到了传统工业等各领域厂商的关注。各大传统制造及建筑等行业寻求发展数字相关产业以提升运行效率、降低运营成本的需求迫在眉睫。Unity作为全球领先的实时3D创作及运营平台, 越来越受到各个行业关注, 并为各个产业数字孪生的发展创新和落地提供统一的“技术平台底座”, 而对接Unity和各个行业之前的原有的数据流转化是其中重要一环, 因此显的尤为重要。为此, Unity 开发了基于Pixyz Batch的工业数据云转换(CIDC)来简化 workflow, 为开发者带来便利。

CIDC Overview 概述

CIDC解决方案是基于Pixyz Batch定制了整个格式转换的工作流程。该方案结合了云厂商的Serverless服务, 可以利用高并发的云计算资源, 并支持动态扩容, 具有简单快捷、无任务不计费、低成本等特点。

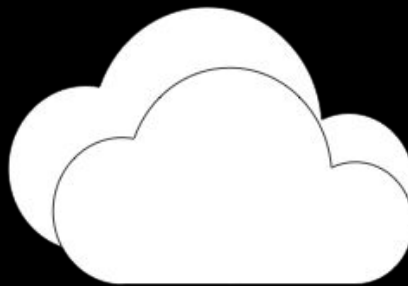


Unity引擎

提交任务及待处理数据



获取转换后的结果

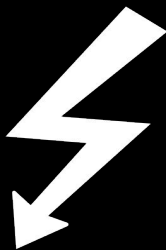


云服务

Contents 概要

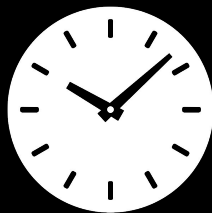
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CIDC Advantage 优势



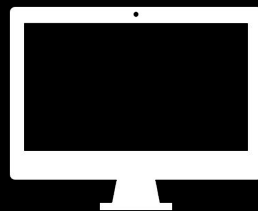
低成本

免去技术人员调试，安装维护、升级等时间，有效的降低了企业成本



高效率

CIDC可以实现高并发的数据转换，显著提升了格式转换效率



免部署

格式准换的整套流程，均部署在云端，本地只需要负责上传和下载获取结果，简单快捷

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CIDC Usage 使用

- 配置账号相关信息
- 收集待处理格式文件并压缩成zip
- 运行CloudPIXYZ.exe <inputfile.zip> <outputfile.zip>
- 等待运行结束, 文件自动下载完成
- 解压文件并导入Unity项目, 转换结束

