Houdini常用快捷键

1. spare+shift+F 选中模型后，在scene view中聚焦到该模型

2. space-H: Home Grid

3. space-A: Home All

4. space-G: Home Selected

5. Object level和Geometry level: 一个object有Object levle(选中后，按**i**，或者在Network editor中双击object)，用于管理object(整体)的变换，和一个geometry level(选中后，按**U**)，用于定义object的形状(处理每一个顶点、边、面)。在任何tool下(除了view)，按数字1，可以进入object level，按数字2-5进入geometry level。见下面8。

6. RADIAL MENUS: 有三种, X: Snapping C: Main(or Custom) V: View

7. 按Esc键，处于只能view的状态

8. 按Enter键，可以选择物体。此时按数字1-5:

快捷键	OBJECTS	LEVEL
1	Points	Object Level
2	Points	Geometry Level
3	Edges	Geometry Level
4	Primitives/Faces	Geometry Level
5	Vertices	Geometry Level

按数字**4**，再按**n**可以选中所有的faces。

9. 按**Tab**可以弹出一些菜单选项

10. Editable Nodes：A space-separated list of node paths. These nodes can be edited even if this asset is locked.

> *Usually you want assets to seem like self-sufficient black boxes to the user, however for complex operations it might be expedient to let the user dive inside and modify nodes such as paint nodes or curves that affect how the asset works.*
> *Editability does not "bubble up" to assets containing other assets. If node A is editable in asset B, that does not automatically make it editable in an asset C which contains an instance of B. You would need to list A as an editable node of C.*

NODES & NETWORKS

- Everything you do in Houdini creates a Node
- Nodes get connected to build networks
- Each network define a "recipe"
- The recipe can be used over and over again
- Sharing is easy!

Sharing your Assets

传统的方法：把资源存储为一种常见的数据交换格式，如：TIFF, Targa 或者 FBX文件或Alembic文件。这种方法的问题：This is no longer procedural（不再是过程化的了）and the flow of data in the nodes will be flattened(结点中的数据会被毁坏)。但它也适用于：Realtime FX, generating High RES Mesh, exporting Character rigs。

如果想保持网络(network)的过程化性质，就需要另一种方法了：把Network存成Houdini digital asset。这样原始的nodes和networks都存在于asset中了。然后，你可以把这些结点中的参数的改造(promote)为high livel interface，artists 可以用它们来工作。

Houdini Engine Plug-in

把HDA文件拖到Unity中，Houdini engine会Cook它，并把结果传递给unity。When you build the game, a baked out version of the asset will be used during gameplay。Houdini Engine is not a runtime solution but rather a content creation engine for your editor。

- Unity Plug-in first announced in Nov 2013
- Rebuilt from the ground up in the last year
- New 2.0 Plug-in available with H16.5

New Features include

- Better integration with Unity[Prefabs]
- Support for Packed Primitives[instancing]
- New Curve Editor
- Support for Terrains

Problems

1. 从Unity导出hda文件时，报error:Unable to detect Houdini Engine installation. License Type Acquired: Unknown. Failure possibly due to: Unable to start RPC server. Error Code: HAPI_RESULT_FAILURE
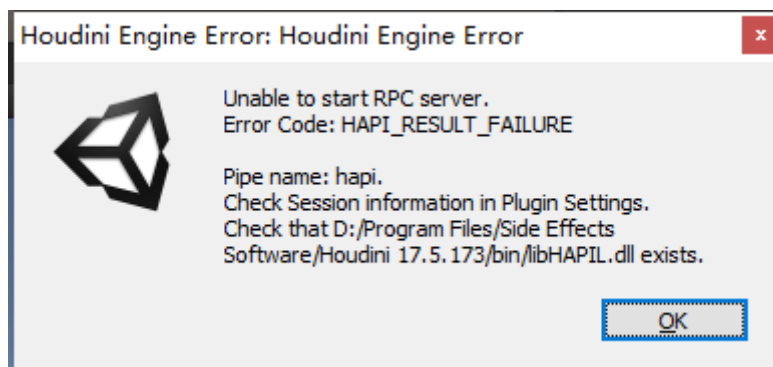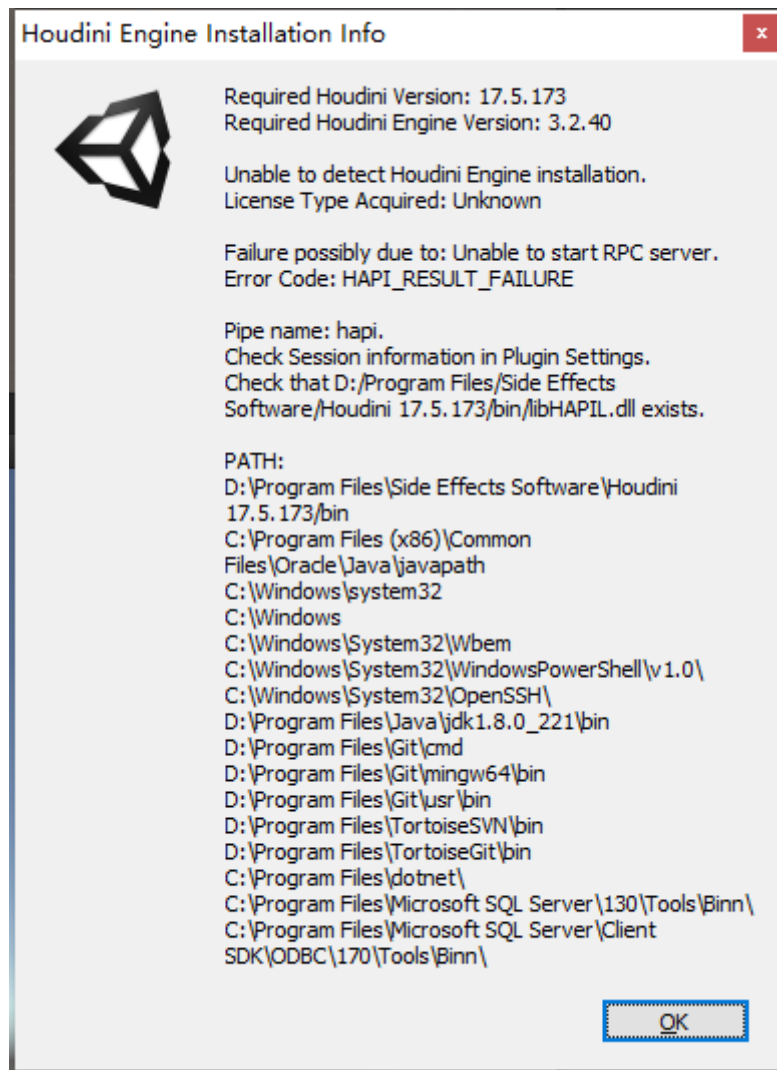
可以通过点击或多次点击**Unity菜单:HoudiniEngine->Session->Restart Session**，来解决上面的问题。解决方案参考Restart Session

Houdini to Unity

参考:

1. Houdini UNITY Plug-in
2. https://www.sidefx.com/docs/unity/
3. houdini engine for unity初探（一）
4. 各种平台、版本的houdini engine下载
5. where is tool options "create in context"?
6. https://www.sidefx.com/docs/houdini/