SynthesisVR – Engine

The "SynthesisVR - Engine" is a set of tools, purposed to unify different game functionalities without limiting the VR studios to specific scopes. This is one of the **most important innovations** in LBVR.

"SVR Engine" can be described the "glue" between:

- The games launcher
- Advanced game settings
- Scripting language
- Network discovery
- Provisioning tool

At this moment, the Engine is supposed by only handful of titles, but we sees huge interest in our technology by a significant number of studios.

Scripting variables

We uses XML with the <svr> tag being the one specifying a custom action. The tags can be of two types:

- static – performs custom actions or returns the same result across all PCs
  - ✓ SynthesisVRNetworkNegotiation
    - timeout -- specifies how long the system will be looking for players
    - start_delay – a delay in milliseconds. Helps in the cases where the game server have to be started before the actual client PCs
  - ✓ pcs
  - ✓ server_ip
- condition – defines a condition and returns a text based on the condition result
  - ✓ pcs
    - min – minimum number of stations
    - max – maximum number of stations
    - true – a value if the number of involved PCs is between **min** and **max**
    - false – a value if the condition does not match
  - ✓ is_server
    - true – return value if the current PC is the server/host
    - false – return value if the PC is not the server/host

How to perform automated network discovery:

<svr timeout="10000" start_delay="5000" maxpcs="4" static="SynthesisVRNetworkNegotiation"></svr>

How to determinate if the current PC is the server:

<svr condition="is_server" true="yes" false="no"></svr>

Is this a multiplayer session:

<svr condition="pcs" min="2" max="4" true="yes" false="no"></svr>

What is the server IP:

<svr static="server_ip"></svr>

Real life example

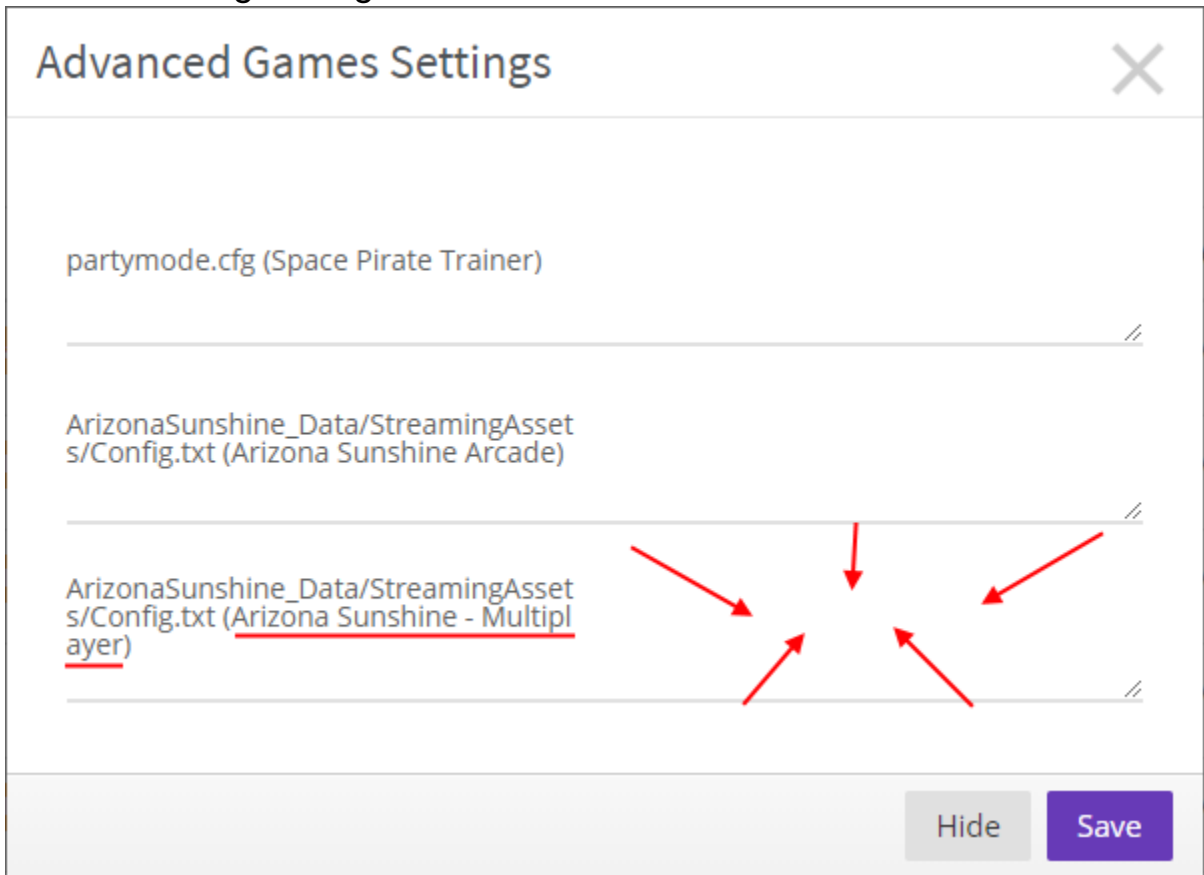For the purpose of the example, we'll take "Arizona Sunshine Arcade".

1) Go to "Administration >> Games & Licensing >> Your Games".
   Locate Arizona Sunshine Arcade and click on it
2) Create a new game variant:

3) Go to "Administration >> Games & Licensing >> Game Categories" and assign "Arizona Sunshine – Multiplayer" to the list:

4) Save the changes and "Refresh" the page with the game categories
5) The "Advanced Game Settings" button would appear and it will lead to the following settings:

Advanced Games Settings   ✕

partymode.cfg (Space Pirate Trainer)

ArizonaSunshine_Data/StreamingAssets/Config.txt (Arizona Sunshine Arcade)

ArizonaSunshine_Data/StreamingAssets/Config.txt (Arizona Sunshine - Multiplayer)

Hide   Save

Take the default "Arizona Sunshine Arcade" config file and apply the Engine rules. Complete example:

```
{<svr timeout="10000" start_delay="5000" maxpcs="4"
static="SynthesisVRNetworkNegotiation"></svr>
    "IsMultiplayer": "<svr condition="pcs" min="2" max="4" true="yes" false="no"></svr>",
    "IsHost": "<svr condition="is_server" true="yes" false="no"></svr>",
    "NumberOfPlayers": <svr static="pcs"></svr>,
    "AutoStart": "<svr condition="pcs" min="2" max="4" true="Holdout_Canyon"
false=""></svr>",
    "ConnectIPAddress": "<svr static="server_ip"></svr>",
    "ForceLanguage": "",
    "HordeModePlayTime": "00:00:00",
    "HordeModeReviveSeconds": "00:00:10",
    "MutilationAndBlood": "yes",
    "AutoReloadOnEject": "yes",
    "LaserSight": "no",
    "SingleHandMode": "no",
    "ForceLeftHanded": "no",
    "InvincibleAtStartOfLevelSeconds": 180.0,
    "FriendlyFire": "yes",
    "SelfDamage": "yes",
    "Invincibility": "no",
    "InfiniteAmmo": "no",
    "ForceStartWeaponMainHand": "",
    "ForceStartWeaponOffHand": "",
    "ForceStartWeaponSingleHand": "",
    "AutoSkipEndScreenTime": "00:00:30",
    "PlayVideoAfterTimeIdle": "23:59:59",
    "VideoFilename": "test.avi",
    "PrintHighscore": "no",
    "ShowPrintDialog": "no",
    "LocalLeaderboardNetworkFolderPath": "",
    "NetworkTickRate": 20,
    "InputDeviceLeftModelType": "",
    "InputDeviceRightModelType": "",
    "MainMenuQuitButton": "yes",
    "MatchMakerBranch": "",
    "RenderScale": 1.0,
    "IsUsingNewSteamVRInputSystem": "yes",
    "UniquePlayerIndex": 0,
    "UniquePlayerIndex0Color": {
        "r": 0.75,
        "g": 0.7900000214576721,
        "b": 0.04699999839067459,
        "a": 0.0
    },
    "UniquePlayerIndex1Color": {
        "r": 0.8299999833106995,
        "g": 0.03500000014901161,
        "b": 0.03500000014901161,
        "a": 0.0
    },
    "UniquePlayerIndex2Color": {
        "r": 0.03500000014901161,
        "g": 0.03500000014901161,
        "b": 0.8299999833106995,
        "a": 0.0
    },
```

```
    "UniquePlayerIndex3Color": {
        "r": 0.03500000014901161,
        "g": 0.8299999833106995,
        "b": 0.03500000014901161,
        "a": 0.0
    }
}
```

On multiple of your stations, start the "Multiplayer" version through SynthesisVR.

The result: https://svrstorage.s3.amazonaws.com/kamen/v3.7-launch-in-arizona.mp4

The "Engine" will be a subject of multiple additions in the next few months.

For questions or ideas, shoot us an email: info@synthesisvr.com