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

```xml
<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": "00:00:10",
"PlayVideoAfterTimedOut": "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
}
```
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