

Web Render 2021.1 X5

USER MANUAL



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INTRODUCING WEB RENDER

Web Render is a back-end tool designed as a service provider for mobile applications. Relying on dedicated HTTP servers, it generates content for 3D visualization on the web. A request for high quality 3D rendering of a configured product is issued by the application and transmitted to the server, which returns the calculated image in real time. An API allows the customer to develop the front-end that suits him.

Web Render is the ideal solution to configure customizable products with a large number of possible combinations, while guaranteeing an independent use of the technological platform.

Structure

Web Render consists of two software, RenderUnit and WebProvider, a web server and a front-end (website, application ...).

Render Unit

The Render Unit is responsible for calculating images returned to the user. Therefore, it consumes a significant amount of RAM and requires a high performance graphics card. Each Render Unit application must be installed on a dedicated machine.

The number of Render Units is directly dependent on the expected computation volume.

The Render Units must be connected to the Web Providers in LAN (local network), which means that they are on the same physical site as the Web Providers.

Access to the Render Unit's hard drive is required. The Aspect Digital Models (MNAs) operated by Pa-Web Render are stored on each machine that serves as Render Unit.

Web Provider

The Web Provider interprets the requests received and sends the calculation requests to the Render Units. These are normally two dedicated machines with available resources in RAM and CPU. The second instance of WebProvider is provided to take over in case of downtime, especially if the front-end is a public website.

These machines must be connected to the renderers by LAN (local area network). Connection to the front-end server will be made by LAN or by WAN.

Front-End

Web Render comes with API and its documentation for client developers. The customer is free to integrate it in an application for a tablet, phone or desktop computer, in a website, or in other front-end format.

WEBPROVIDER

Installation

The WebProvider manages the RenderUnit (s). This is a server that receives commands from Web Render and distributes them to render units. The calculated renderings follow the reverse path to be displayed to the Web Render user.

Launch the installer *WebProvider* and follow the instructions.

Configuration files

In the file `C:\ProgramData\Lumiscaphe\WebProvider\Samples` :

1. Copy the following file: `settings.xml`
2. Paste it in `C:\ProgramData\Lumiscaphe\WebProvider`.



NOTE

To change the default multicast settings, also move the file `netRenderSettings.xml`.



NOTE

If a WebProvider is already present on the network and you want to distinguish between the two, it is important to specify different multicast addresses.

Configuring WebProvider

In `C:\ProgramData\Lumiscaphe\WebProvider`, open the file `settings.xml`. The following elements must be configured according to three setting levels:

Basic configuration:

Setting	Default value	Description
<code>httpPort</code>	80	HTTP listening port. Change this port if WebProvider and Web Render are installed on the same machine. In this case, it is preferable to reserve port 80 for the Web Render server which will be configured later.
<code>maxWidth</code>	1920	The maximum width of a render. Larger rendering requests will not be processed.
<code>maxHeight</code>	1920	The maximum height of a render. Larger rendering requests will not be processed.
<code>cacheRepository</code>	<code>C:\ProgramData\Lumiscaphe\WebProvider\Cache</code>	The place where the calculated images are stored.

Advanced configuration:

Setting	Default value	Description
name	Computer name	Name of the web provider.
scheme	null	Redirects the URL scheme.
host	null	Redirects the host URL.
httpsPort	0	HTTPS listening port.
httpTimeout	60	HTTP request timeout.
tcpPort	8080	TCP listening port.
accessControlAllowOrigin	*	Access-Control-Allow-Origin header
maxAge	3 153 6000	Cache-Control max-age header

Hidden configuration:

Setting	Default value	Description
id	Random	Id of the web provider.
allowMultipleInstances	false	Flag to operate multiple web providers on the same computer.
cacheBypass	false	Flag to bypass the cache.
cacheShardingLevel	3	Distribution of the cache on several servers.
exportMetadata	false	Flag to export the metadas file of an image.
maxBatchImageCount	120	Maximum number of images per batch.
maxRenderJobAttempts	3	Maximum number of failed render attempts.
administrationRequestToken	null	
renderRequestToken	null	
textureLibrary	C:\ProgramData \Lumiscaphe \WebProvider \Textures	Path for texture libraries.
webLoggerServer	null	URL of the web logging server.

Setup for use from a non-administrator account

WebProvider needs to be started by an Administrator account. If you want to use it with a non-administrator account, follow the instructions below.

In a command line opened as Administrator, enter the following command:

```
netsh http add urlacl url=http://+:80/ user=DOMAIN\user
```

The value 80 in `http://+:80/` is the `portHttp` specified in file `settings.xml`.

- DOMAIN is the access domain,
- user is the Windows user of this machine with which WebProvider will be run.

The command line returns a confirmation of the recording of this command.

RENDERUNIT

Installation

RenderUnit is responsible for rendering images. Therefore, it must be installed on a dedicated machine with a high-performance OpenGL graphics card.

This machine must also be connected to that of the WebProvider in the local network.

Launch the installer *RenderUnit* and follow the instructions.

Configuration files

In the file `C:\ProgramData\Lumiscaphe\RenderUnit\Samples`:

1. Copy the following file: `settings.xml`
2. Paste it in `C:\ProgramData\Lumiscaphe\RenderUnit`.



NOTE

If you've changed the default multicast settings, paste a copy of the file `netRenderSettings.xml` of WebProvider in `C:\ProgramData\Lumiscaphe\RenderUnit`.

RenderUnit configuration

In `C:\ProgramData\Lumiscaphe\RenderUnit`, open the file `settings.xml`. The following elements must be configured according to three setting levels:

Basic configuration:

Setting	Default value	Description
<code>databaseRepository</code>	<code>C:\Program-Data\Lumi-scaphe\RenderUnit\Databases</code>	The place where the databases from which the renderings will be generated will be transferred.
<code>extraDataInspection</code>	None	Introspection of additional data. None Materials Surfaces All - All for Lumis 3D / None otherwise



TIP

It is recommended to modify this value in order to move this folder to a dedicated partition. Allow enough storage space in this partition for the databases that will be uploaded to Web Render.

Advanced configuration:

Setting	Default value	Description
name	Computer name	Name of the rendering unit.
tcpPort	8080	TCP listening port.
cacheRepository	C:\ProgramData \Lumiscaphe \RenderUnit \Cache	Web Render uses this folder to store files generated during rendering.
materialLibrary	C:\ProgramData \Lumiscaphe \RenderUnit\Ma- terials	Web Render uses this folder to store materials when rendering.
fboWidth	3840	FBO width.
fboHeight	3840	Height of FBO.
multisampling- Hardware	4	Multisampling hardware.
pickBuffer	false	Indicator to activate selection.
extraBuffersAl- location	None	Allocation of additional buffers. Values can be: <ul style="list-style-type: none"> • None • RealTimeSunBuffers • BlitterFloatBuffer • EnhancedTransparencyBuffers • ScreenSpaceReflectionsBuffers • AllBuffers
RAMManagement- Strategy	LRUCacheFullDa- tabase	RAM database management strategy. Values can be: <ul style="list-style-type: none"> • NoCache • LRUCacheNeededResources • LRUCacheFullDatabase
GPUManagement- Strategy	LRUCache	GPU database management strategy. Values can be: <ul style="list-style-type: none"> • NoCache • LRUCache • Threshold • NeverFlush

Hidden configuration:

Setting	Default value	Description
id	Random	Id of the web provider.
allowMultipleInstances	false	Flag to operate multiple web providers on the same computer.

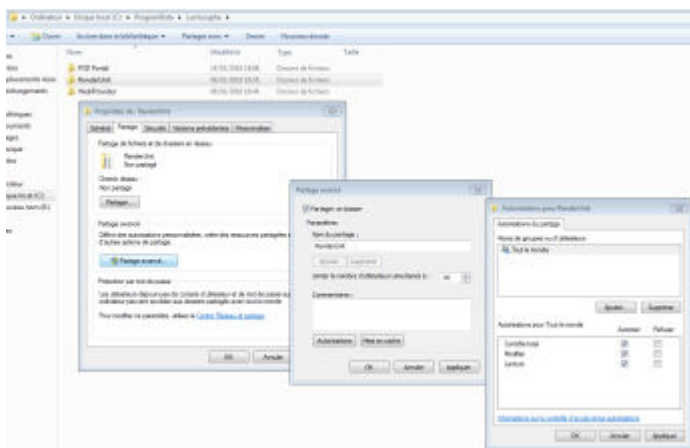
DatabaseRepository Access Configuration

The folder C:\ProgramData\Lumiscaphe\RenderUnit must be configured in Windows in order to share it on the local network. It must be accessible by the user account of the WebProvider and Lumis 3D, which distribute the content to be returned there.

Various solutions are possible. Choose one that matches your network configuration and security standards.

A simplified solution would be to make this folder accessible without username and password:

1. Access the configuration in Windows by right-clicking on the folder to share, then select **Properties**.
2. Click on **Advanced sharing**.
3. In the window that opens, check the box **Share this folder**, then click **Permissions**.
4. In the window that opens, select **Read** and **Change** in the column **Allow**.
5. Validate each window to close it.



If you are using more than one RenderUnit, repeat this installation and setup procedure for each render unit.