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OpenFlight API Release Notes

Welcome to the Release Notes for OpenFlight API 16.
What’s new

This section provides an overview of the new features and enhancements introduced in this release of OpenFlight API. For information on how to use these new or enhanced features, refer to the OpenFlight API Developer Guide and OpenFlight API Reference.

“Visual Studio Compatibility” on page 5
“Common Directory Organization” on page 7
“New Functions” on page 10
“New in the OpenFlight Data Dictionary” on page 11
Visual Studio Compatibility

The OpenFlight API is distributed in several binary formats for the Windows platform:

- Visual Studio 2013 (VC12-Win32)
- Visual Studio 2013 (VC12-x64)
- Visual Studio 2008 (VC9-Win32)
- Visual Studio 2008 (VC9-x64)
- Visual Studio 2005 (VC8-Win32)
- Visual Studio 2005 (VC8-x64)

Following are some guidelines to help you decide which binary format is right for you:

If you are developing plug-ins for Creator 16 you should use VC12-x64.

If you are developing plug-ins for Creator 15 you should use VC12-Win32 or VC12-x64 depending on which version of Creator you are using (32 or 64 bit, respectively).

If you are developing plug-ins for Creator 14 you should use VC9-Win32.

If you are developing plug-ins for Creator 13 (v5.0) you should use VC9-Win32.

If you are developing plug-ins for Creator v3.4 - v4.2, you should use VC8-Win32.

If you are developing stand-alone applications, you can choose any format.

If you are developing stand-alone OpenFlight Scripts, you should install VC12-Win32 or VC12-x64 as the necessary Python binding files (.pyd) are only available with these VC12 formats. You will also need to install Python 2.7.X if you are developing stand-alone scripts. You do not need to install Python if you are using OpenFlight script exclusively within Creator.

The OpenFlight API installer for the Windows platform includes the binary files for all platforms. When you install the OpenFlight API on Windows, you can choose which platform you want or you can choose to install them all.

Both of the VC9 versions of the OpenFlight API DLLs are dependent on VC90 CRT version 9.0.21022.8. The OpenFlight API installer automatically installs the proper Microsoft Visual Studio 2008 (release) redistributable package if your computer does not already have it. The debug version of the CRT should be installed on your computer when you apply the proper patches/service packs to Visual Studio 2008.
Both of the VC8 versions of the OpenFlight API DLLs are dependent on VC80 CRT version 8.0.50727.4053. The OpenFlight API installer automatically installs the proper Microsoft Visual Studio 2005 (release) redistributable package if your computer does not already have it. The debug version of the CRT should be installed on your computer when you apply the proper patches/service packs to Visual Studio 2005.
# Common Directory Organization

The OpenFlight API is now installed into the updated Presagis Common Directory Organization. This structure is slightly different than previous installations and affects the developer in the following areas:

“Location of link libraries” on page 7  
“Location of dynamic link libraries” on page 8  
“Location of documentation” on page 9  
“Location of ddbuild parser utility” on page 9

## Location of link libraries

The subfolder containing the link libraries has been changed to include a platform designator:

```
PRESAGIS_OPENFLIGHT_API/lib<platform>
```

where `lib<platform>` is:

<table>
<thead>
<tr>
<th>Link Library Folder</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>lib</td>
<td>Link libraries for VC12-Win32 or Linux</td>
</tr>
<tr>
<td>lib_x64</td>
<td>Link libraries for VC12-x64</td>
</tr>
<tr>
<td>lib_vc9</td>
<td>Link libraries for VC9-Win32</td>
</tr>
<tr>
<td>lib_vc9_x64</td>
<td>Link libraries for VC9-x64</td>
</tr>
<tr>
<td>lib_vc8</td>
<td>Link libraries for VC8-Win32</td>
</tr>
<tr>
<td>lib_vc8_x64</td>
<td>Link libraries for VC8-x64</td>
</tr>
</tbody>
</table>
The relocation of the link libraries may cause you to update your Visual Studio Project files and/or makefiles before the corresponding application(s) or plug-in(s) can be rebuilt with this version of the OpenFlight API. If you are using VC12-Win32 or Linux, your projects will not require any changes. If you are using other configurations on Windows, you will have to change the Linker property Additional Library Directories to reflect the new link library folder names.

**Location of dynamic link libraries**

The subfolder containing the dynamic link libraries has been changed to include a platform designator:

```
PRESAGIS_OPENFLIGHT_API/bin<platform>
```

where `bin<platform>` is:

<table>
<thead>
<tr>
<th>Dynamic Link Library Folder</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>bin</code></td>
<td>Dynamic Link libraries for VC12-Win32 or Linux</td>
</tr>
<tr>
<td><code>bin_x64</code></td>
<td>Dynamic Link libraries for VC12-x64</td>
</tr>
<tr>
<td><code>bin_vc9</code></td>
<td>Dynamic Link libraries for VC9-Win32</td>
</tr>
<tr>
<td><code>bin_vc9_x64</code></td>
<td>Dynamic Link libraries for VC9-x64</td>
</tr>
<tr>
<td><code>bin_vc8</code></td>
<td>Dynamic Link libraries for VC8-Win32</td>
</tr>
<tr>
<td><code>bin_vc8_x64</code></td>
<td>Dynamic Link libraries for VC8-x64</td>
</tr>
</tbody>
</table>

The relocation of the dynamic link libraries does not require you to update your Visual Studio Project files and/or makefiles. However, since these dynamic link libraries must accompany your application when it is deployed, you should be aware of this change.
Location of documentation

On the Windows platform, the documentation for the OpenFlight API is now included in the *Presagis Documentation Library*. The *Presagis Documentation Library* is Compiled HTML Help (CHM) format and includes documentation for all the Presagis products you have installed. The *Presagis Documentation Library* is located at:

```
PRESAGIS_ROOT/docs/Presagis_MS.chm
```

where `PRESAGIS_ROOT` is the root folder where your Presagis products are installed. To view the OpenFlight documentation, as well as all Presagis product documentation, open this file and browse to the OpenFlight API section in the *Presagis Documentation Library* viewer that is displayed. You can also access the *Presagis Documentation Library* via the Windows Start Menu.

On the Linux platform, the documentation is still located in:

```
PRESAGIS_OPENFLIGHT_API/docs
```

In addition to the CHM versions of these documents, some documents are provided in alternative formats:

- The *OpenFlight API Installation Guide* and *OpenFlight API Release Notes* (PDF) - both located in:
  
  ```
PRESAGIS_ROOT/docs/
```

- *OpenFlight API Developer Guide* (PDF) - located in:
  
  ```
PRESAGIS_OPENFLIGHT_API/docs/developerguide
```

- *OpenFlight API Reference Set* (HTML) - located in:
  
  ```
PRESAGIS_OPENFLIGHT_API/docs/reference/
OpenFlight_API_Reference_Set.htm
```

Location of ddbuild parser utility

The `ddbuild` parser (used to help you create your OpenFlight extension plug-ins) is now located in:

```
PRESAGIS_OPENFLIGHT_API/tools
```
New Functions

This section lists the functions that are new in this release. See OpenFlight API Reference for more information on these functions.

Extension Functions

- mgExtensionFieldGetCoord3d
- mgExtensionFieldSetCoord3d

Projection Functions

- mgMakeProjCoord
New in the OpenFlight Data Dictionary

The following record type was added to the OpenFlight Data Dictionary corresponding to the new Point node in OpenFlight version 16.6.

**fltPoint**

The **fltPoint** record type includes the following Point node specific fields:

- fltPointPosition
- fltPointNormal
- fltPointXAxis
- fltPointHasNormal
- fltPointHasXAxis

as well as the common node fields:

- fltMatrix
- fltIO
- fltComment
Fixes and issues

This section describes the fixes made to OpenFlight API since the previous release and any known issues and limitations.

“Fixes” on page 13

“Known issues” on page 15
This section describes the limitations identified in previous releases that have been fixed.

<table>
<thead>
<tr>
<th>Case No.</th>
<th>SFDC No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fix memory leak in the following functions when used in OpenFlight Script (Python) to return dynamically allocated strings:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mgGetComment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mgGetName</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mgGetTextString</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mgGetSwitchMaskName</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mgGetTextureName</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mgGetTextureSaveName</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mgGetCurrentColorName</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mgGetPolyColorName</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mgGetPolyAltColorName</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mgGetVtxColorName</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mgNameOfLightSource</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mgNameOfLightPointAppearance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mgNameOfLightPointAnimation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mgNameOfSound</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mgNameOfMaterial</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mgRec2Filename</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mgGetTextureMappingName</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mgNameOfShader</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mgGetShaderProgramSaveName</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mgShaderGetVertexProgramNth</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mgShaderGetFragmentProgramNth</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mgExtensionSiteGetName</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mgExtensionFieldGetName</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mgExtensionMakeGUID</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Duplicate Node Names

In previous versions, a node whose name (id) was the same as that of another node in the same OpenFlight file and was 7 characters in length or less was automatically renamed such that its name became unique. Such a node was renamed whenever the file was loaded into the OpenFlight API or Creator. Note that nodes with duplicate names longer than 7 characters were not renamed in this way in previous versions. In this version, nodes with duplicate names are no longer renamed when loaded into the OpenFlight API or Creator - regardless of the length of the name. The behavior is now consistent.
Known issues

This section describes any known issues and limitations of the current version, as well as any pending issues from previous versions.

**mgInit**

*mgInit / mgExit* can only be called one time per process.
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