API LANDSCAPE 25

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GRAPHISOFT APIS

Python/
JSON

C++

Library
Object
API

File
server

BIMx API

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C++ API
SYSTEM REQUIREMENT CHANGES

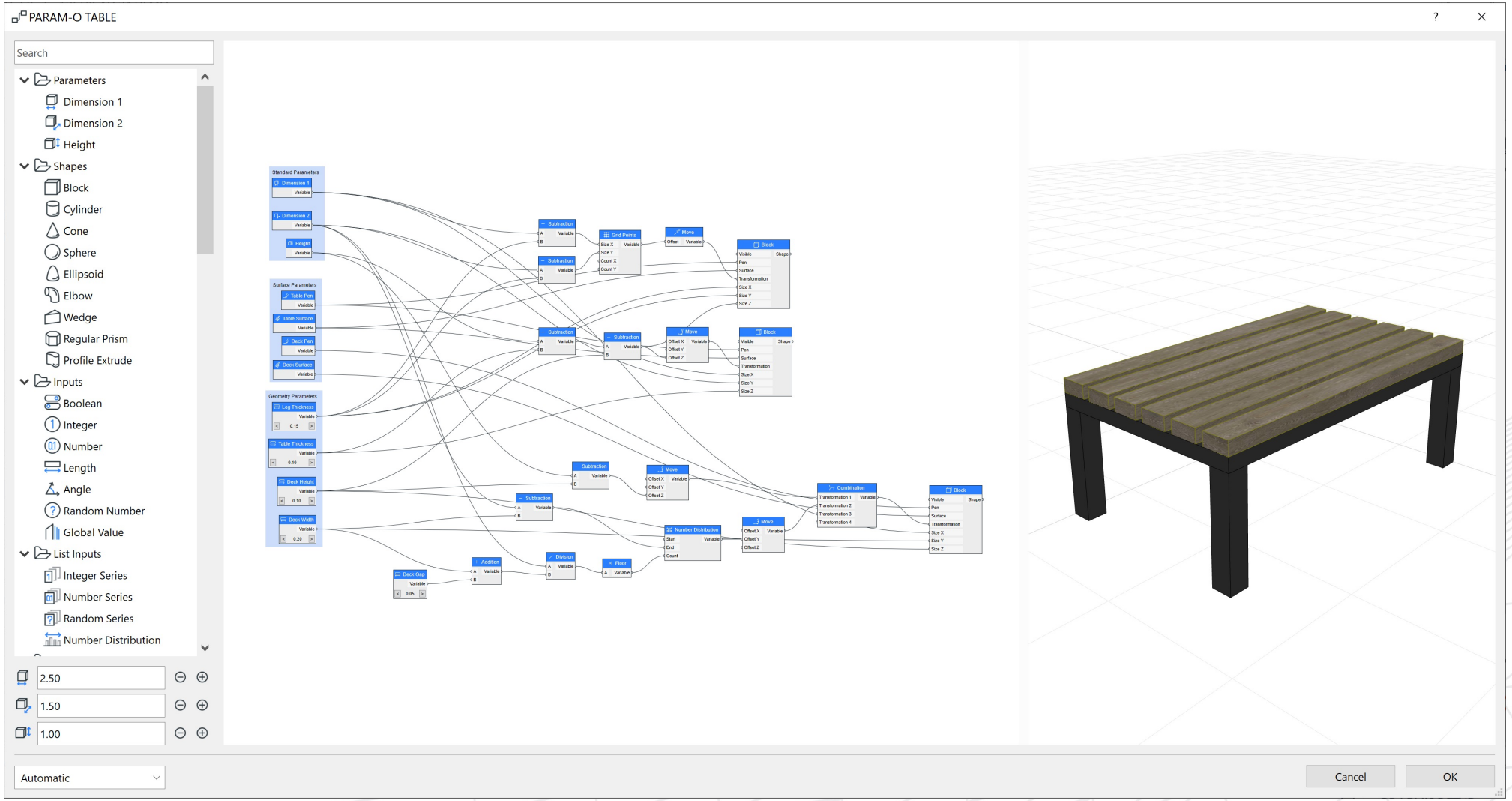
- macOS
  - We support macOS 10.15 and above.
  - Please note, that ARM architecture is not supported yet.
- Windows
  - VC++ 2019 v142 toolset is required.
    You can install it from a Visual Studio 2019 or later installer, or from a Build Tools for Visual Studio 2019 or later installer.

C++ API NEW FUNCTIONALITY

- 3D model rendering control
- Add-ons can now define and register their own custom commands
- HTTP network client communication module
- Element components
- Analytical model — Load Case, Load Group and Load Combination
- Teamwork Send & Receive
- Mapping of the hotlink proxy elements and source elements

3D MODEL RENDERING CONTROL

PARAM-O



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3D MODEL RENDERING CONTROL

- It can display any Modeler::Model3D model and is capable of handling custom camera events on mouse interactions.
- Use APIAny_InterpretGDLScript3DID function to build a Modeler::Model3D object from a GDL script.
- See the Model3DViewer_Test Add-On in the examples.
- Note, Param-O uses this control for 3D model preview.

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ADD-ON COMMANDS

- Add-ons can now define and register their own custom commands.
- Those registered commands will be available via the HTTP/JSON connection, which is used by the Python connection too.
- Check API_AddOnCommand class in APIdefs_Registration.h.
- See the AddOnCommandTest Add-On in the examples.
- Note, archicad-additional-json-commands github open source project implements Publish, GetProjectInfo, TeamworkReceive etc. commands using this technology.

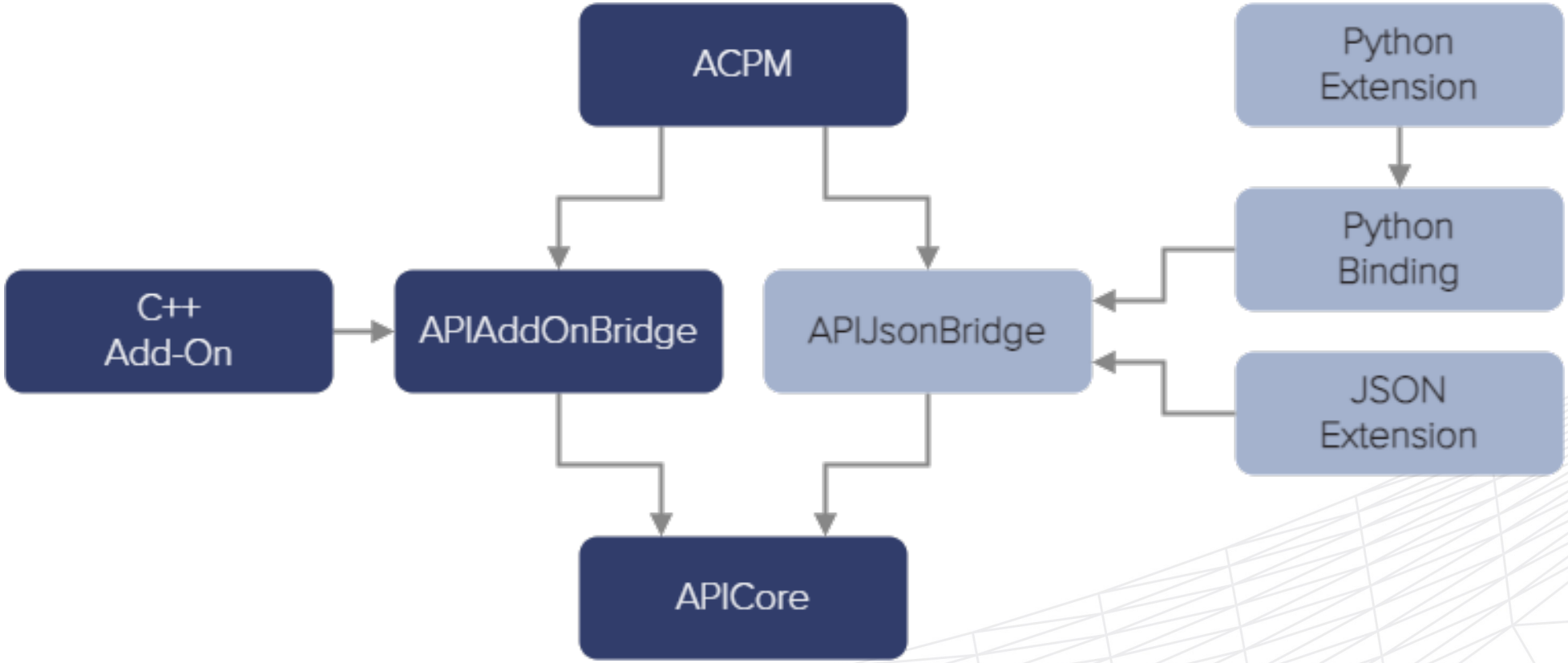
CLIENT COMMUNICATION MODULE

- New HTTP network client communication module in API DevKit.
- Helps to communicate with HTTP servers, using REST API.
- See the CommunicationClient_Test Add-On in the examples.
  That example executes GET request at http://worldtimeapi.org.

API TUTORIALS

- New tutorial series were published at API Site.
- See all tutorials at https://archicadapi.graphisoft.com/tag/tutorial
  - Getting started with Archicad Add-Ons
  - Getting started with Archicad-Python Connection
  - Archicad Maze Generator Add-On
    - Part 1: Create elements, handle undo scope.
    - Part 2: Create a dialog to manipulate the functionality.
    - Part 3: Store dialog data in preferences.

C++ & PYTHON/JSON API



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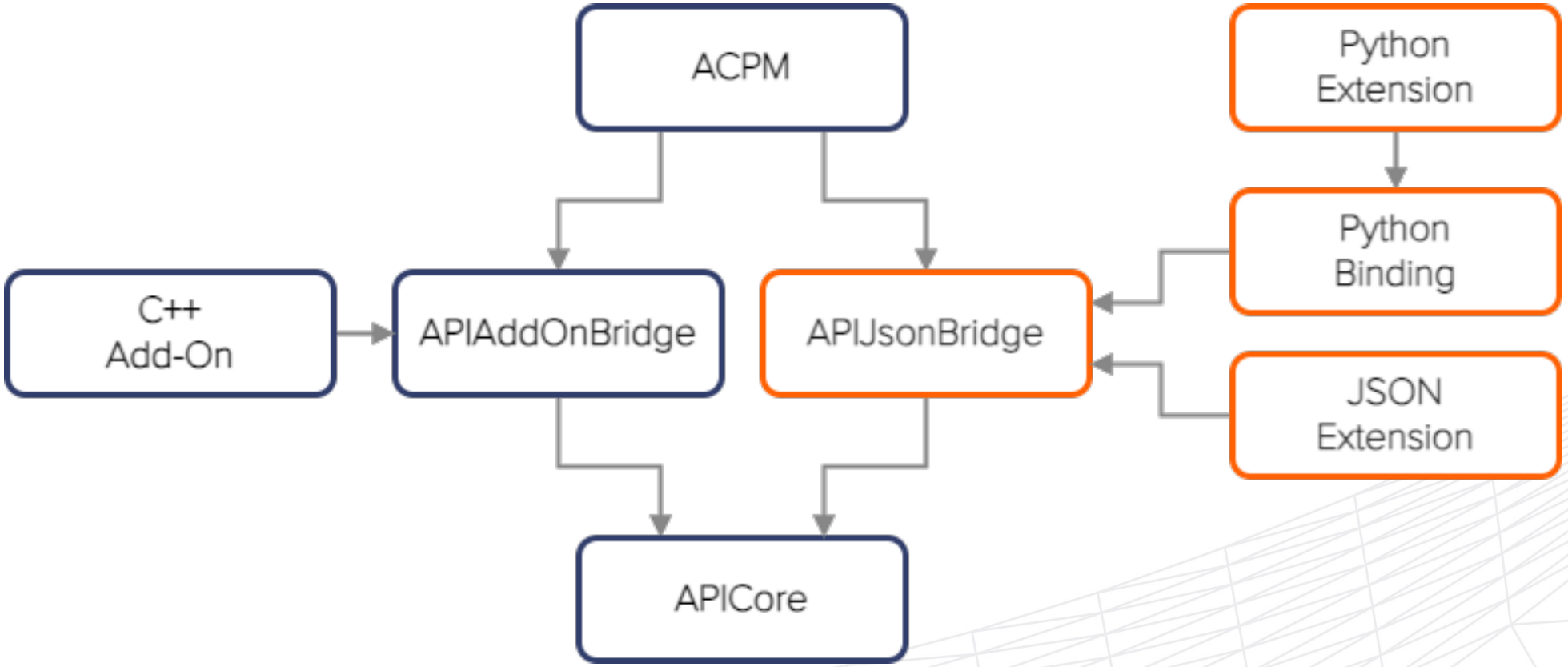
C++ & PYTHON/JSON API



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PYTHON/JSON API

- The communication between Archicad and Python happens via HTTP using JSON messages
- Python package helps to establish the connection and hides the JSON communication layer
- Tutorials:
  - Getting started with Archicad-Python Connection
  - Example Python scripts: https://graphisoft.com/downloads/python#try
- Available JSON commands and examples in documentation:
  - https://archicadapi.graphisoft.com/JSONInterfaceDocumentation

PYTHON/JSON API NEWS: ATTRIBUTES COMMANDS

- GetAttributesByType
  - Retrieve list of attributes by type. Returns identifier list.
- GetSurfaceAttributes, GetLayerAttributes, GetPenTableAttributes etc.
  - Returns the details of the attributes by the given identifier list.
- Modifying attributes is not available via JSON API yet.
  But it's in the kitchen...

PYTHON/JSON API NEWS: ADDON COMMANDS

- IsAddOnCommandAvailable
  - Checks if the command is available or not.
    (= The handler Add-on is loaded or not.)
- ExecuteAddOnCommand
  - Executes a command registered in an Add-on.

PYTHON/JSON API NEWS: ADDON COMMAND EXAMPLE

- Additional JSON/Python Commands Add-On implements new JSON commands. Open-source Add-On at GitHub.
- Example how to publish all publisher sets using the Publish command registered by the Additional JSON/Python Commands Add-On.

```
addOnNamespace = 'AdditionalJSONCommands'
addOnCommandName = 'Publish’
addOnCommandId = act.AddOnCommandId (addOnNamespace, addOnCommandName)
for publisherSetName in acc.GetPublisherSetNames ():
  parameters = { 'publisherSetName': publisherSetName }
  acc.ExecuteAddOnCommand (addOnCommandId, parameters)
```


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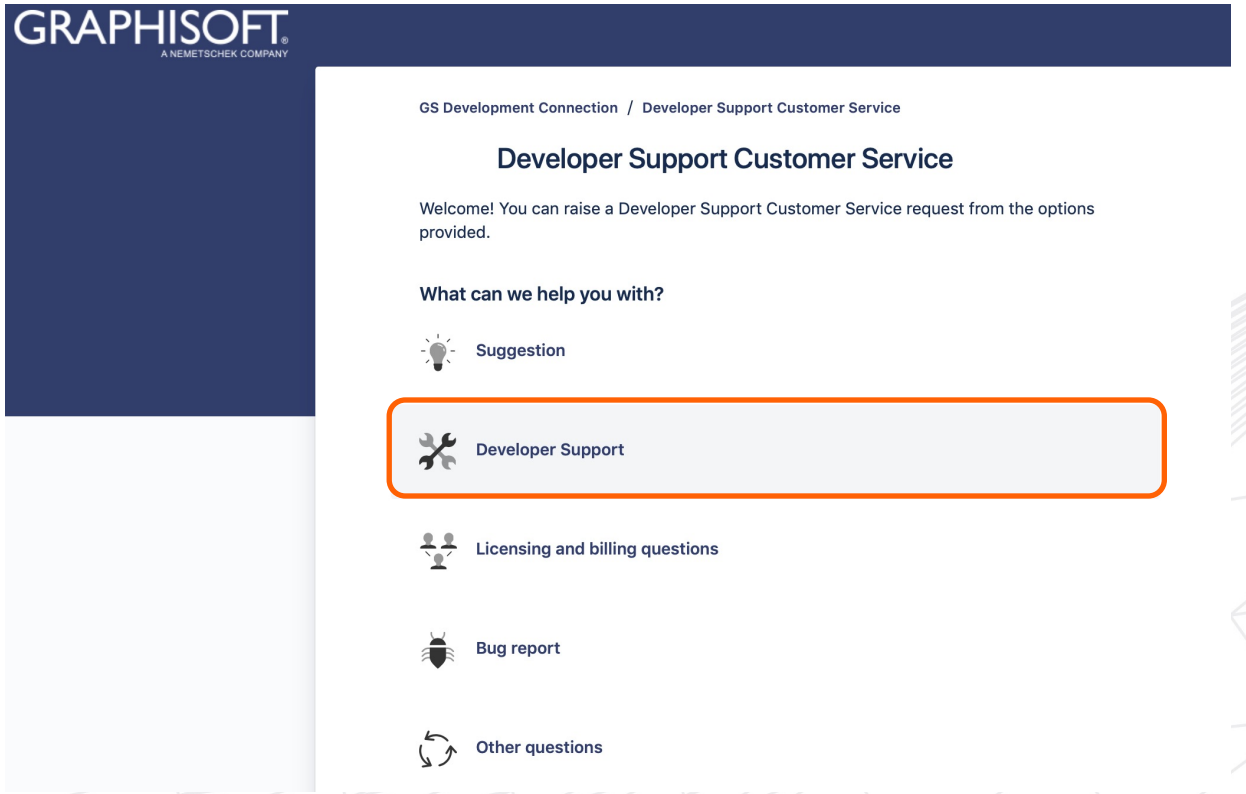
PYTHON/JSON API NEWS: COMPONENT COMMANDS

- GetComponentsOfElements
  - Returns the identifiers of every component for the given elements.
- GetPropertyValuesOfElementComponents
  - Returns the property values of the components.
  - For example, area and volume of a component.

API SUPPORT

- Main channel is the Jira ServiceDesk portal
- All mails to archicadapi@graphisoft.com go here



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