

# Mesh Topology

*Supported by AVM*

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Date: 2023-02-08

## History

Date	Version	Changes
2023-02-08	1	Initial version

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## 1 Mesh Topology

A mesh topology in terms of FRITZ!OS is a mapping of a network topology. It consists of nodes (e.g. FRITZ!Boxes, Wi-Fi stations or desktop PCs), node interfaces of different technologies (e.g. LAN, WLAN and PLC) and node links between node interfaces which connect two nodes.

For details on how to interpret a mesh topology, please refer to the JSON schema matching the corresponding FRITZ!OS version as well as chapter 2.

FRITZ!OS version	JSON schema URL
07.51, 07.50	<a href="https://avm.de/fileadmin/user_upload/Global/Service/Schnittstellen/mesh_topology/mesh_topology_schema_v4.11.json">https://avm.de/fileadmin/user_upload/Global/Service/Schnittstellen/mesh_topology/mesh_topology_schema_v4.11.json</a>
07.30, 07.29, 07.20	<a href="https://avm.de/fileadmin/user_upload/Global/Service/Schnittstellen/mesh_topology/mesh_topology_schema_v1.9.json">https://avm.de/fileadmin/user_upload/Global/Service/Schnittstellen/mesh_topology/mesh_topology_schema_v1.9.json</a>
07.15, 07.14, 07.13, 07.12, 07.11	<a href="https://avm.de/fileadmin/user_upload/Global/Service/Schnittstellen/mesh_topology/mesh_topology_schema_v1.6.json">https://avm.de/fileadmin/user_upload/Global/Service/Schnittstellen/mesh_topology/mesh_topology_schema_v1.6.json</a>
07.10, 07.08	<a href="https://avm.de/fileadmin/user_upload/Global/Service/Schnittstellen/mesh_topology/mesh_topology_schema_v1.5.json">https://avm.de/fileadmin/user_upload/Global/Service/Schnittstellen/mesh_topology/mesh_topology_schema_v1.5.json</a>

*Table 1 JSON schema URLs for mesh topology by FRITZ!OS version*

## 2 FAQs

This chapter provides answers to the most frequently asked questions regarding mesh topologies and the corresponding JSON schemata.

### ***2.1 Are UIDs of nodes, node interfaces and node links stored in the property “uid” unique within a mesh topology?***

Yes, within a mesh topology UIDs are always unique. However, retrieving the mesh topology twice in a row from the same FRITZ!OS device does not guarantee that a UID refers to the same topology element it referred to before. Hence, UIDs may not be used to find a topology element.

### ***2.2 Why do some nodes have no node links to any other nodes?***

A mesh topology also contains nodes which were not actively seen for a while and thus have no active node links anymore.

### ***2.3 Why does a mesh topology with two or more PLC adapters contain node links from each PLC adapter to any other adapter?***

A PLC network is inherently composed of a bus (a power line), i.e. any PLC adapter is connected to any other adapter. Since there is no topology element which maps to a bus, a node link from each PLC adapter to any other adapter is used.

### ***2.4 Is a mesh topology always free from loops?***

No, loops may exist due to PLC networks, Wi-Fi DBDC connections or switching loops.