

# OPC-HDA Overview

## What is OPC-HDA

HDA stands for "Historical Data Access". It is the historical counterpart to "OPC-DA" (data access), which is the more common specification, often used through the OPC-COM module to access realtime data.

HDA is part of the classic OPC specification, which operates through Microsoft COM. Therefore, access is provided by the OPC-COM Module (details about licensing below).

OPC-HDA provides a standard interface for historian systems. Ignition can connect to an historian, browse for tags, and then query the data. In practice, all of the terms and mechanisms are very similar to Ignition's tag history system.

### HDA and OPC-UA

OPC-HDA is not related to OPC-UA. UA is meant to replace the older standards like DA and HDA, but currently the historical portion of UA is not fully standardized or in wide use. Ignition does not currently support any OPC-UA history functionality.

## Using OPC-HDA in Ignition

OPC-HDA is used in Ignition to query data out of historians. It is not used to store data. Data is usually stored by configuring historians to pull data from a source. So for example, the feature to expose Ignition Tags through OPC-UA could be used in conjunction with an OPC-UA driver in the historian to watch and record Ignition tags.

With the OPC-COM module installed, the user can now create a new HDA Tag History Provider by going to Tags>History in the gateway configuration. Once a server has been defined, there are two ways to use HDA:

- Through the Tag History query system, such as tag history bindings, easy chart, etc. Anywhere that you can "browse historical tags", you should now be able to browse and use the HDA datapoints as well.
- Through scripting. In addition to `system.tag.queryHistory`, which can be used with addresses from HDA, there are also new `system.opchda.*` functions that more closely adhere to the OPC-HDA spec.

Tags from OPC-HDA can be used along side tags from Ignition Tag History. In other words, it's not a problem to have both types of tags on an easy chart, or mix them together in `queryTagHistory` calls or tag history bindings.

### Licensing

HDA access is provided by an additional license parameter on the OPC-COM module (the "hda=true" parameter under the OPC-COM element). If this parameter is not present, the HDA functionality will timeout with the normal demo timer. **Note:** Due to how the demo system currently works, where the demo timer is hidden when all modules are licensed in some way, this means that users with licensed systems that do not include HDA may not be able to test HDA in demo mode. In this case, they should contact Sales for an updated demo license, or simply unactivate until they are ready to activate with an updated license.

## OPC-HDA and DCOM

As mentioned, OPC-HDA is based on COM, exactly like DA. The server connection mechanism is exactly the same as OPC-DA, including the way that the OPC-COM module uses `OPCEnum` to browse for servers, how remote connections are established, etc. Therefore, the process of connecting to an HDA server will be essentially the same as DA, and can encounter the same difficulties. You may therefore also wish to read the knowledgebase article covering DCOM config and common issues.

*Unlike OPC-DA, however, HDA in Ignition does not use callback methods.* This makes the security configuration a little easier, as the remote system should not need access back to the Ignition server, as is the case when using subscriptions in OPC-DA.

## Server Specific Notes

### OSI Pi

Access to OSI Pi is provided through the Pi OPC Server executable (most recent known installer name "PIOPCServer\_2010\_.exe"). The Pi OPC Server can be installed remotely on the Pi server, or locally on the Ignition machine. The OPC server uses the Pi SDK to access Pi servers at any location, so we recommend installing the OPC server next to Ignition, and configure the SDK to connect to the remote Pi server. This reduces the likelihood of DCOM issues.

Users will need to consult OSI documentation for information about how to configure the remote connection and security. Once the OPC Server is able to connect to the Pi server (which can be verified through the OPC client included in the installation), in Ignition you can create a new HDA Tag History Provider connected to the local opc server.