SmartDiagnostics® Application Note

OPC DA Server Version 1.3.0 Installation Instructions

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KCF Technologies, Inc.

Overview

The SmartDiagnostics OPC DA Server allows OPC DA-compliant clients to retrieve current values in near real-time from SmartDiagnostics.

Requirements

Windows 7 or later or Windows Server 2008 R2 or later

Minimum 2GB of RAM

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The OPC DA Server will install the following dependencies if they are not already available on the system:

- Microsoft .NET Runtime 4.6.2
- Microsoft Visual C++ 2010 and 2013 redistributables
- OPC Foundation OPC Core Components - more info

The system running the OPC DA Server must be able to communicate with the SmartDiagnostics server (cloud or on-premises, depending on your application). This may require firewall configuration changes. For cloud customers, you must permit outbound HTTPS (port 443) to sd.kcftech.com. For on-premises customers, you must permit outbound HTTP on port 52000 to your SmartDiagnostics server. Note that web filtering proxies are not supported. Contact your IT department for assistance.

Installation Procedure

Download the OPC DA Server installer here:

- https://kcftech.com/smartdiagnostics/resources/software/SmartDiagnostics_OPC_DA_Server_v1.3.0.20.exe

Once the installation completes, configure the service by editing this file (default installation directory assumed):

- C:\Program Files\KCF Technologies\Smart Diagnostics OPC DA Server\customOPC.config

Edit the following keys:

1. Set the "**apiKey**" to the OPC API Key that KCF Support will give to you.
2. For cloud-based SmartDiagnostics installations, leave the "**sdUrl**" as "https://sd.kcftech.com". For on-premises applications, change "**sdUrl**" to "http://<server_ip>:52000" (note "http" rather than "https").
3. Set the "**updateRate**" to your desired rate in seconds. This determines how frequently the OPC DA Server will update its item cache from SmartDiagnostics.

Save the customOPC.config file.

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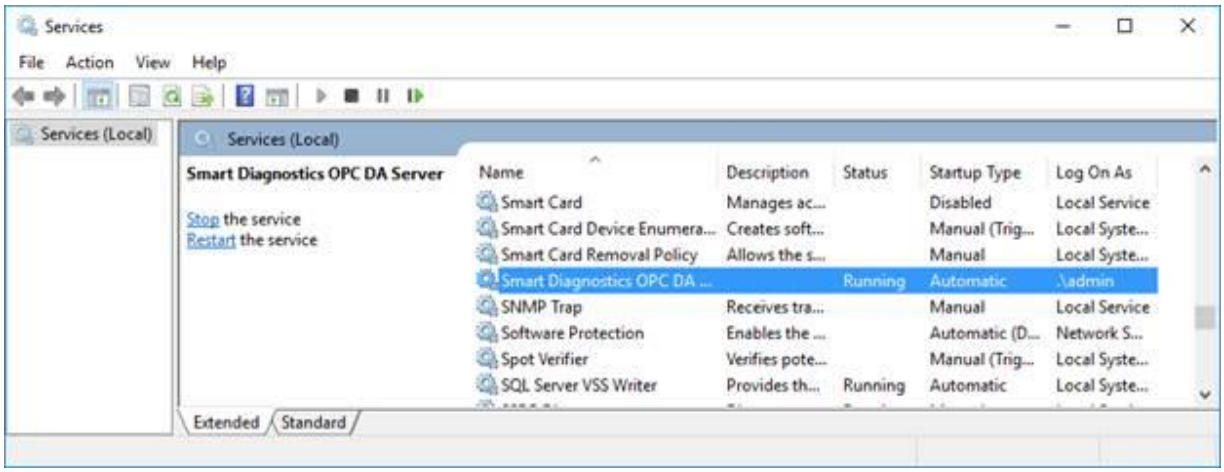
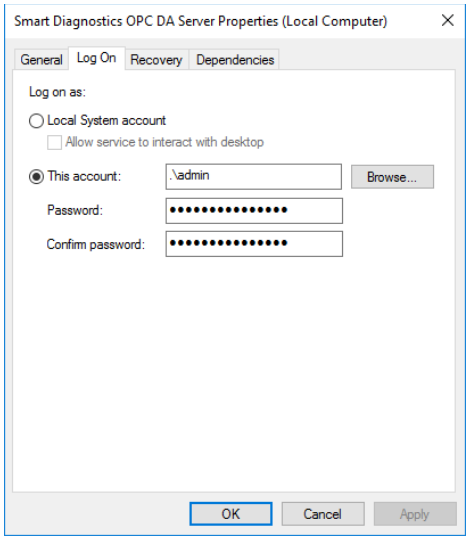
After editing and saving the file, start the Windows service:

1. Open the Windows Services console (you can search for “Services” in the Start Menu).
2. Find “SmartDiagnostics OPC DA Server” in the list. Right-click and select “Start” (or “Restart” if it’s already running). Note that any future changes to the customOPC.config file will require a restart of the service to take effect.

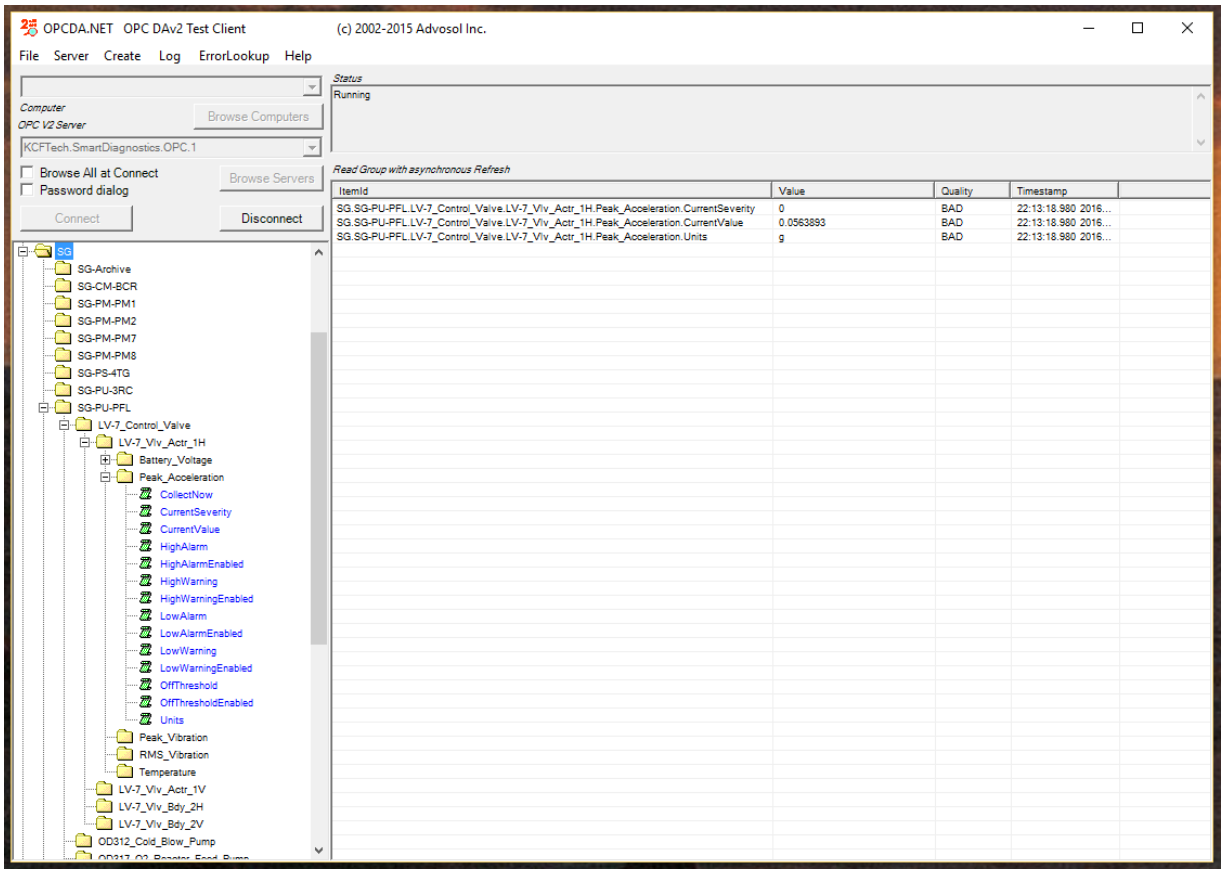


Depending on your Windows version, the Local System or Local Service accounts may not have the necessary permissions to access DCOM. In this case, it may be necessary to modify the service configuration to run under a different account that is a member of the Administrators group.



Usage

Once the OPC DA Server is running, use an OPC test client to verify that it is operating successfully. Connect to the "**KCFTech.SmartDiagnostics.OPC.1**" server. **Note: there are 2 servers listed. Connect to ".OPC.1", not ".OPC".** You will be able to browse an OPC structure that will reflect the structure you've created in SmartDiagnostics.



Each indicator in SmartDiagnostics will expose the following list of items:

- CurrentValue
- CurrentSeverity
- HighAlarm
- HighAlarmEnabled
- HighWarning
- HighWarningEnabled
- LowAlarm
- LowAlarmEnabled
- LowWarning
- LowWarningEnabled
- Units
- IndicatorId
- CollectNow

When a “1” is written to CollectNow, the process of collecting data from the corresponding sensor is initiated. Please note that this may take up to several minutes to complete.

Troubleshooting

The OPC server writes status information to a log file located at C:\ProgramData\KCF Technologies\Smart Diagnostics\logs\opc\OPCLog.txt:

```
2018-06-14 09:47:39.9611 NSPlugin.AppPlugin Server starting.
2018-06-14 09:47:40.0236 NSPlugin.AppPlugin ---------- APIKEY: ABCABCABC ----------
2018-06-14 09:47:40.0236 NSPlugin.AppPlugin ---------- DOMAIN: https://sd.kcftech.com ----------
2018-06-14 09:47:40.0392 NSPlugin.AppPlugin Getting indicators from server...
2018-06-14 09:47:58.4842 NSPlugin.AppPlugin Retrieved 12369 indicators in 18.45 seconds from server.
2018-06-14 09:48:06.3435 NSPlugin.AppPlugin Added 160797 items to the server cache in 7.83 seconds.
2018-06-14 09:48:06.3592 NSPlugin.AppPlugin Server started successfully.
```

If it appears that the server cannot connect and retrieve indicators, try connecting to https://sd.kcftech.com from a web browser on the server to check for an internet connection to the Smart Diagnostics cloud.

If the log file indicates the OPC server is successfully retrieving values from SmartDiagnostics, but you encounter errors in an OPC test client while connecting to or browsing the OPC server, double check the user/service account that is running the “Smart Diagnostics OPC DA Server” service. Make sure that account has proper permissions to use DCOM (see the installation section).