

To participate in PG&E’s Automated Demand Response (ADR) Program, you will need to acquire an OpenADR 2.0A or 2.0B-Certified Virtual End Node (VEN) device. A list of OpenADR-Certified products is available at the OpenADR Alliance website: <http://products.openadr.org>.

The VEN device can connect to the PG&E Demand Response Automation Server (DRAS) to receive and respond to Demand Response event information. The VEN acts as a gateway between PG&E and a facility or equipment control system (sometimes the VEN and the control system are one and the same). The VEN will poll the PG&E DRAS for event information and communicate that information to the customer control system:



Figure 1: OpenADR communication chain

VEN setup involves four steps:

1

Connect the VEN to the customer control system. All VENs are different – some may connect using dry contacts, while others may be software-based solutions. Follow the manufacturer’s instructions to connect your VEN to the appropriate controls platform.

2

Request an account on the PG&E DRAS. In order to connect to the DRAS, you will need to use the appropriate login credentials and endpoint for your particular VEN. First, email the DRAS Support Team for an account – please specify in the request the manufacturer of your VEN device, whether you are using the 2.0A or 2.0B profile, and which DR program(s) you wish to participate in.

Please Note: Customers with multiple PG&E electric meters may require additional account setup. If you don’t know whether your VEN is controlling multiple resources, please ask your PG&E ADR Customer Lead.

3A

Configure your OpenADR 2.0A VEN for connection to the DRAS. The required steps will depend on whether the 2.0A or 2.0B profile is used. The 2.0A profile only requires username and password for authentication and connection to the DRAS – not security certificates. The DRAS Support Team will respond to your account request with a username and password.

1. Log into the PG&E DRAS at <https://pge.openadr.com> with your account username and password
2. Create a new DRAS client for your VEN device by clicking the “New Client” button on the bottom left above the PG&E logo
3. Choose a client name and password for the DRAS client, and include a simple identifier for your system in the “Device Type” field with the manufacturer and profile (e.g. “Honeywell 2.0A”)

4. You will need to configure your VEN with the correct parameters before connecting to the DRAS server. Contact the manufacturer of your VEN for instructions on how to change your VEN's settings. Input the following information into the settings for your VEN:
 - a. The same client name and password created for the DRAS client in Step 3
 - b. The OpenADR 2.0A device endpoint URL:
<https://www.pge.openadr.com/vtn/OpenADR2/Simple/EiEvent>
 - c. Set your VEN's Market Context field to *, the wildcard field

3B

Configure your OpenADR 2.0B VEN for connection to the DRAS. The 2.0B profile uses certificate-based authentication. You will need to procure a production certificate from NetworkFX prior to connecting to the DRAS. If your VEN is controlling multiple resources, you may need to procure a test certificate first for use on the PGE2 test server – please ask your PG&E ADR Customer Lead if this applies to you.

1. You will need to configure your VEN with the correct parameters before connecting to the DRAS server. Contact the manufacturer of your VEN for instructions on how to change your VEN's settings. Input the following information into the settings for your VEN:
 - a. The OpenADR 2.0B device endpoint URL:
<https://pgevtn.openadr.com/bvtn/OpenADR2/Simple/2.0b>
 - b. VTN ID: HONEYWELL.PGE.VTN
 - c. Set your VEN's Market Context field to *, the wildcard field
2. Send a registration request from your device to the DRAS. You should receive a VEN ID. Send your VEN ID to the DRAS Support Team, who will confirm when your client configuration is complete and send you login credentials for your account.

4

Confirm your VEN is online in the DRAS and schedule a test event. Use your credentials to log into your DRAS account at <https://pge.openadr.com>. You should be able to see that your client's "Comm Status" is ONLINE. To coordinate a load shed test and confirm your VEN can receive event signals and your facility sheds load as anticipated, please contact your PG&E ADR Customer Lead.

Important things to know about your VEN and the DRAS:

- **Contacts:** You can configure your VEN to automatically notify any number of contacts when an event is called or the VEN loses connection with the DRAS for a certain period of time. To do so, log into the DRAS and click the name of the client for which you wish to add contacts. Then click the "Contacts" tab, and select the "New Contact" button. Check the "Comm Notifications" box to enable this contact to receive offline notifications and use the "On/Off Season Notify" fields to specify how long the VEN can go offline before a notification email is sent to the specified contact.
- **Certificates:** The 2.0B profile requires client-side (VEN) and server-side (DRAS) certificates to authenticate each party and allow for secure exchange of information. These certificates allow the client and server to recognize one another and execute an electronic "handshake" to communicate payloads – this helps prevent unauthorized parties from attempting to acquire payloads or exchange information. A valid client certificate must be installed on the VEN prior to connecting to the DRAS – if connecting to the production DRAS a production certificate is required, while a free test certificate will

suffice for any required testing on the test server. Please contact the DRAS Support Team or your PG&E ADR Customer Lead to determine which server you will be using. Most certificates come pre-installed on manufacturer VENs, but certificates can also be download from the NetworkFX website (www.networkfx.net).

- **Market Context:** This field specifies which programs are accepted by the VEN. A wildcard field (*) will allow the VEN to accept all DR program types and is required by PG&E. Failing to use the wildcard field can prevent customers from successfully testing their equipment and even responding to actual events.
- **Push vs. Pull:** OpenADR 2.0B allows for both “push” and “pull” signal transmission – PG&E currently only uses the “pull” model, in which VENs must poll the DRAS at regular intervals for event information. No payloads or control signals are transmitted to a VEN without the VEN requesting them.
- **Reporting:** While the OpenADR 2.0B profile does support reporting capabilities, this is not currently enabled or required by PG&E.
- **Resource IDs:** Customers who use a single VEN to control multiple resources must also program their VENs with the appropriate “Resource IDs” to control those resources. One example of this would be a customer with multiple stores spread over a large geographic area – in order for PG&E to include a subset of stores in an event, the VEN must assign the correct Resource ID to each store. This setup also requires any testing to be performed on PG&E’s test server. Please discuss with your PG&E ADR customer lead whether these requirements apply to you.
- **Signal Type:** The PG&E DRAS currently only utilizes simple signals – NORMAL, MODERATE, and HIGH. The use and timing of these signals depends on the program in which a customer is enrolled. No other signal types (e.g. pricing, load control) are currently transmitted.
- **VENID:** The VENID is automatically assigned by the DRAS and is the identifier used to recognize individual 2.0B VENs. When polling the DRAS for the very first time, a VEN should use a blank VENID. The DRAS will assign a VENID as described above in the configuration instructions. The VEN should then store this assigned VENID and use it whenever the DRAS is polled in the future. Removing the assigned VENID will require the VEN to go through the registration process again.

DRAS Support Team

Ryan Bird

(510) 482-4420 x269

rbird@energy-solution.com

Daniela Urigwe

(510) 482-4420 x268

durigwe@energy-solution.com