

# Using the QualityLogic Cloud Server (VTN)

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# Topics



- OpenADR VENs and VTNs
- OpenADR Adoption Accelerator
- EPRI Open Source VTN in the Cloud
- Key Features and Benefits
- Cloud Instance Management and Support
- Live Demo with EPRI VEN
- More Info

# OpenADR VEns and VTNs

- OpenADR is Demand Response message exchange protocol
- Messages contain the when, who, and how much of a DR Event
- Two actors...
  - VTNs (utilities/aggregators) send events
  - VEns receive events, act upon them, and provide telemetry data

# The need...

- OpenADR Adoption can be accelerated by...
  - Making it easy for interested parties to “play” with the technology
  - Providing OpenADR developers with readily accessible VENs and VTNs to interoperate with
  - Enabling small scale pilot programs utilizing OpenADR VEN and VTNs
  - Enabling utilities to do “what if” experiments with different OpenADR program characteristics

# EPRI Open Source VEN/VTN

- EPRI released certified open source VTN and VEN in late 2014
- VEN is nicely done Windows GUI app
  - Great diagnostic displays
  - Ad hoc testing capabilities
- VEN is a form based VTN admin application
  - Do same set of basic things a commercial VTN can do
- Both available at [www.sourceforge.org](http://www.sourceforge.org)

# First Steps

- Release of the EPRI open source VEN/VTN is a great first step
- EPRI followed this with the release of VEN C++ libraries, also on Source Forge
- QualityLogic is taking follow-on steps to...
  - Make the EPRI VTN more accessible
  - Enhance the EPRI VTN's capabilities as an interoperability testing tool

# VTN in the Cloud

- The installation of the VTN takes numerous steps and can be a bit complex
- QualityLogic now offers a pre-installed EPRI VTN on the Amazon cloud infrastructure
- QualityLogic's roadmap for the VTN includes..
  - Adding more ad hoc testing and diagnostic capabilities
  - Adding “personalities” that model well known DR program behavior

# Cloud VTN Key Features

- Cloud server implementation of certified OpenADR
- Easy, fast way to configure and execute
- Interoperability tests
- Mirror scenarios before your VEN is deployed in the field
- Supports 'a' and 'b' profiles




# Cloud VTN Key Benefits

- No need to download, install and configure a VTN in your lab
- Use as reference for testing VENS, a platform for small-scale pilots, or as an OpenADR learning tool
- Support forum and services from QualityLogic

# EPRI Open Source VTN





ELECTRIC POWER  
RESEARCH INSTITUTE

Logged in as **admin**   [Log out](#)   [About](#)

Menu

[Accounts](#)


[VENs](#)

[Events](#)

[Schedules](#)

[Admin](#)

**Dashboard**



Putting Technology to the Test

Resources

[Getting Started Video](#)

[Cloud Admin/Forum](#)

[VTN User's Guide](#)

[Premium Support](#)

[OpenADR Training](#)

[Download EPRI VEN](#)

Dashboard: Test\_VEN\_Name (offline) (2014-10-30 11:27:47 UTC)

Event ID	Start Time	Duration (minutes)	Status	Test Event	Opt State
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Dashboard: TH\_VEN (offline) ()

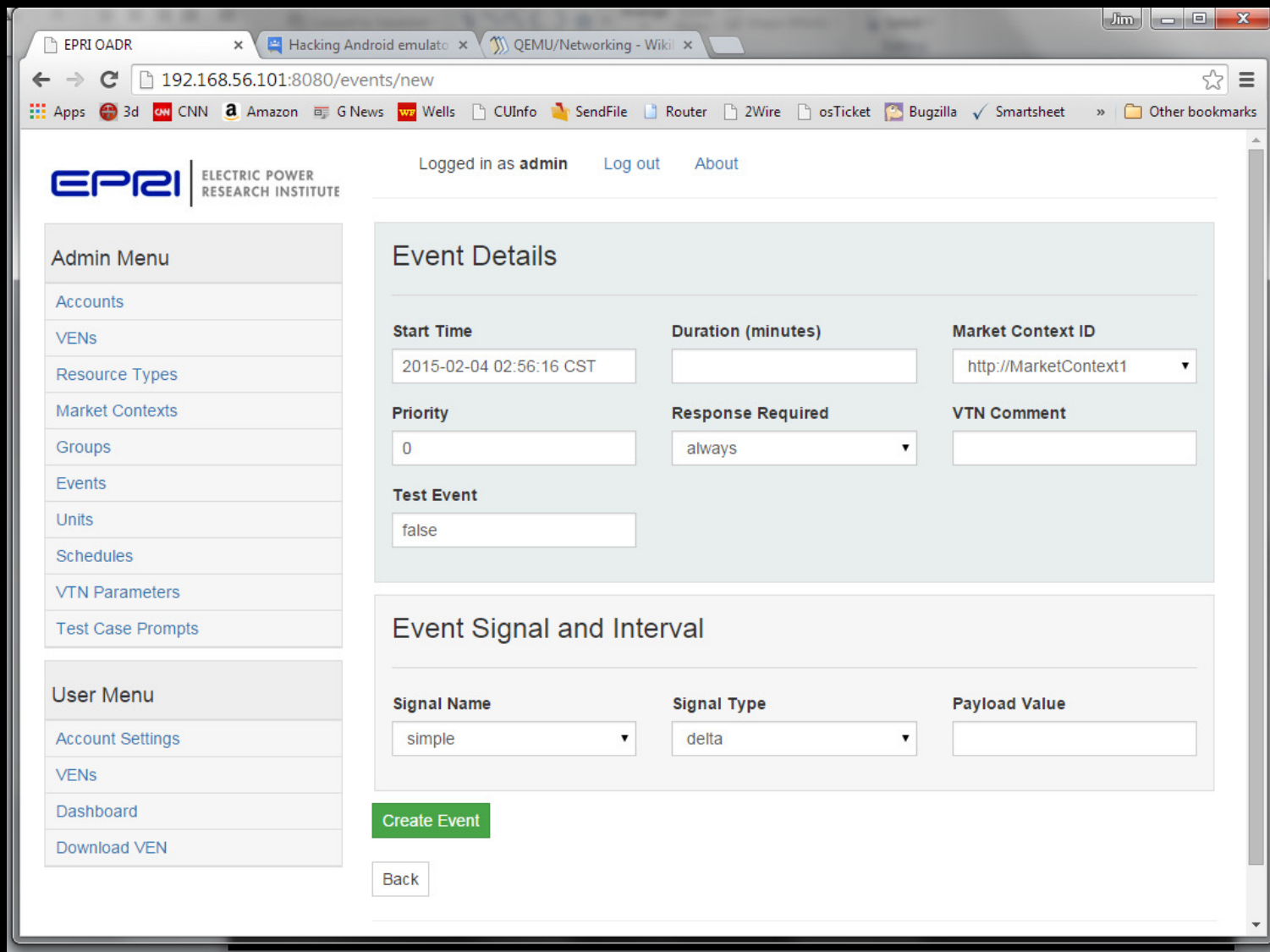
Event ID	Start Time	Duration (minutes)	Status	Test Event	Opt State
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Last Refreshed: January 27, 2015 03:32

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v0.9.3

# EPRI Open Source VTN



The screenshot shows a web browser window with the URL `192.168.56.101:8080/events/new`. The browser's address bar and tabs are visible at the top. The page header includes the EPRI logo and the text "ELECTRIC POWER RESEARCH INSTITUTE". The user is logged in as "admin", with links for "Log out" and "About".

The interface is divided into two main sections: "Admin Menu" and "User Menu". The "Admin Menu" includes links for Accounts, VENS, Resource Types, Market Contexts, Groups, Events, Units, Schedules, VTN Parameters, and Test Case Prompts. The "User Menu" includes links for Account Settings, VENS, Dashboard, and Download VEN.

The main content area is titled "Event Details" and contains several input fields and dropdown menus:

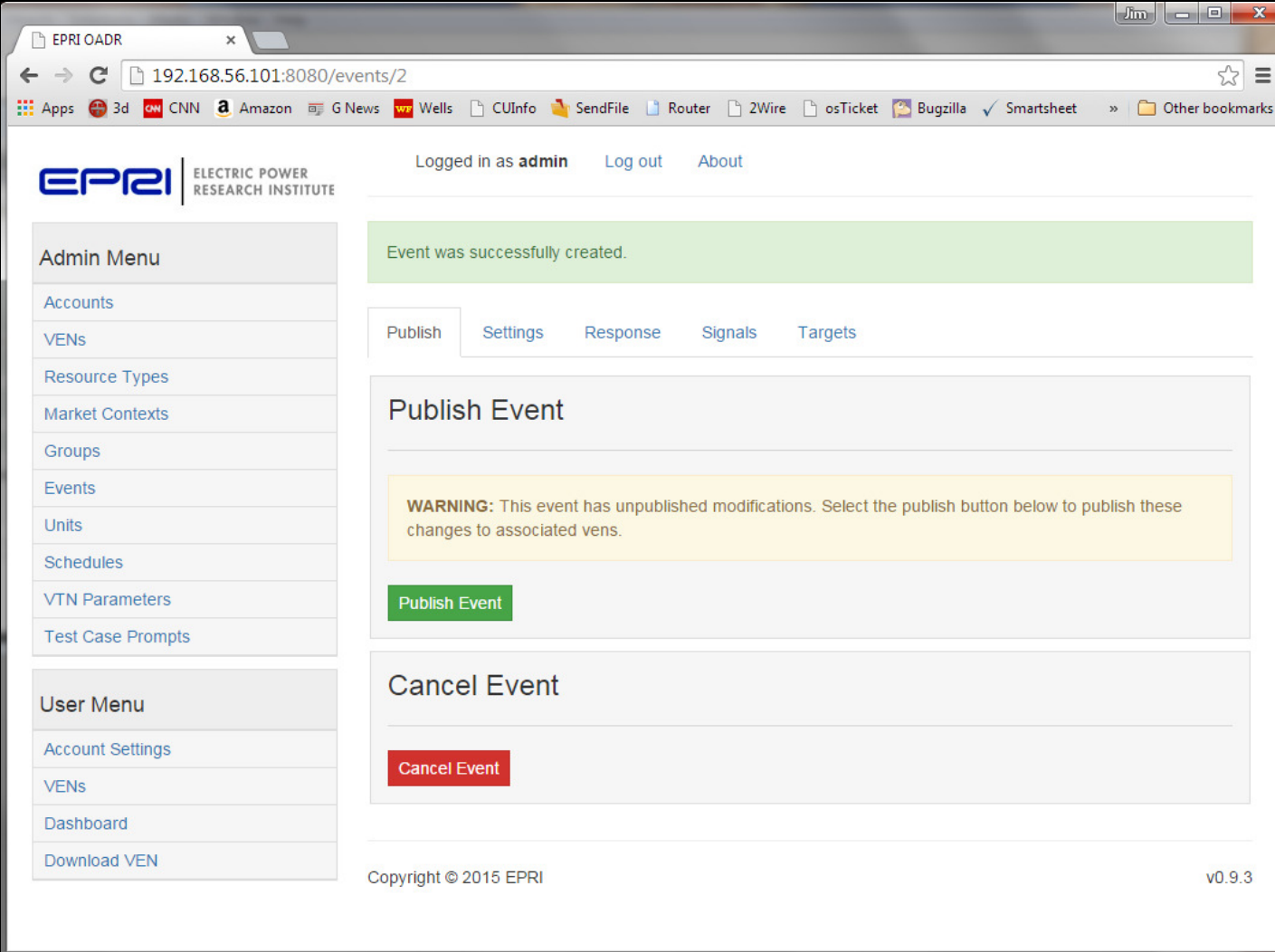
- Start Time:** A text input field containing "2015-02-04 02:56:16 CST".
- Duration (minutes):** An empty text input field.
- Market Context ID:** A dropdown menu showing "http://MarketContext1".
- Priority:** A text input field containing "0".
- Response Required:** A dropdown menu showing "always".
- VTN Comment:** An empty text input field.
- Test Event:** A text input field containing "false".

Below the "Event Details" section is the "Event Signal and Interval" section, which contains:

- Signal Name:** A dropdown menu showing "simple".
- Signal Type:** A dropdown menu showing "delta".
- Payload Value:** An empty text input field.

At the bottom of the form, there is a green "Create Event" button and a "Back" button.

# EPRI Open Source VTN



The screenshot shows a web browser window with the address bar displaying `192.168.56.101:8080/events/2`. The browser's bookmark bar includes links to various applications like 3d, CNN, Amazon, G News, Wells, CUInfo, SendFile, Router, ZWire, osTicket, Bugzilla, Smartsheet, and Other bookmarks. The user is logged in as **admin**, with links for **Log out** and **About**.

The application header features the **EPRI** logo and the text **ELECTRIC POWER RESEARCH INSTITUTE**. A left-hand navigation menu is divided into two sections:

- Admin Menu**
  - Accounts
  - VENs
  - Resource Types
  - Market Contexts
  - Groups
  - Events
  - Units
  - Schedules
  - VTN Parameters
  - Test Case Prompts
- User Menu**
  - Account Settings
  - VENs
  - Dashboard
  - Download VEN

The main content area displays a green message box: "Event was successfully created." Below this is a tabbed interface with tabs for **Publish**, **Settings**, **Response**, **Signals**, and **Targets**. The **Publish** tab is active, showing the **Publish Event** section. A yellow warning box states: "WARNING: This event has unpublished modifications. Select the publish button below to publish these changes to associated vens." Below the warning is a green **Publish Event** button. The **Cancel Event** section below it contains a red **Cancel Event** button.

At the bottom of the page, the footer includes "Copyright © 2015 EPRI" on the left and "v0.9.3" on the right.

# EPRI Open Source VEN

OADR VEN2b

Help

Default Opt: ☒ Opt In ☐ Opt Out ☐ Manual

Server: URL  ☐ Use SSL/TLS ☐ Disable Hostname Verification

Client Certificate

Client Cert Password

Credentials: VEN Name  VEN ID  Poll Interval

Log: ☒ Auto Scroll Log

Events | Resources & Reports | Opt Schedule | Opt Schedule 2 | Registration | Market Context | Custom Signals | Testing

Registration

Registration ID:

VEN ID:

VTN ID:

Min Poll Frequency:

Oadr Profiles

☒ Profile: 20a ☒ Profile: 20b

Service Specific Info

Oadr Extensions

Request/Reply | System Messages

Log

Date	Response Time	Request Type	Response...	Response Co...
2/3/2015 9:12:26 PM	0.0635081	oadrPoll	oadrRe...	200
2/3/2015 9:12:36 PM	0.0680087	oadrPoll	oadrRe...	200
2/3/2015 9:12:46 PM	0.0585074	oadrPoll	oadrRe...	200
2/3/2015 9:12:56 PM	0.062508	oadrPoll	oadrRe...	200
2/3/2015 9:13:06 PM	0.0520066	oadrPoll	oadrRe...	200
2/3/2015 9:13:17 PM	0.0585075	oadrPoll	oadrRe...	200
2/3/2015 9:13:27 PM	0.0700089	oadrPoll	oadrRe...	200
2/3/2015 9:13:37 PM	0.0625079	oadrPoll	oadrRe...	200

Request XML

```
<?xml version="1.0" encoding="utf-8"?>
<oadrPayload
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema"
  xmlns="http://openadr.org/oadr-2.0b/2012/07">
  <oadrSignedObject>
    <oadrPoll d3p1:schemaVersion="2.0b"
      xmlns:d3p1="http://docs.oasis-open.org/ns/energyinterop/201110">
      <d3p1:venID>cf0dd61cba8c337d0f34</d3p1:venID>
    </oadrPoll>
  </oadrSignedObject>
</oadrPayload>
```

Response XML

```
<?xml version="1.0" encoding="utf-8"?>
<oadrPayload
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema"
  xmlns="http://openadr.org/oadr-2.0b/2012/07">
  <oadrSignedObject>
    <oadrResponse
      d3p1:schemaVersion="2.0b"
      xmlns:d3p1="http://docs.oasis-open.org/ns/energyinterop/201110">
      <d3p1:eiResponse>
        <d3p1:responseCode>463</d3p1:responseCode>
        <d3p1:responseDescription>Not Registered/Authorized</d3p1:responseDescription>
      </eiResponse>
    </oadrResponse>
  </oadrSignedObject>
</oadrPayload>
```

Idle | 200: OK | Server time: 2/3/2015 8:07:43 PM (-3954s) | Version: 0.6.7.1 | VEN IS Registered

# Instance Management

- Users can manage their cloud VTN using the QualityLogic instance management page
  - Generate backups
  - Restore backups
  - Reboot, start and stop the server
  - Disable unsecured access
  - Access a support forum for help



# Instance Management



## Instance Management Page For test (test@test12.com)

System Message:

Time Check

Status: Instance exists and is **running** with status check result **ok**

Unsecured access: VTN URL: <http://54.172.125.180:8080>

Secured access: VTN URL: <https://54.172.125.180:443>

Instance Control:

Messages:

Timestamp	Message
11/4/2014 1:11:57 AM	this is a test

# Cloud VTN Availability Details



- Monthly fee of \$100
- 10% OpenADR member discount
- Free 2<sup>nd</sup> months use for completing survey on VTN enhancement preferences
- Easy on-line purchase at [www.qualitylogic.com](http://www.qualitylogic.com)
  - Look for “OpenADR VEN Tester”



# Questions?