



# CA Performance Management Tech Series

OpenAPI WeatherMap – Powered by Google Maps

# Weather-map Case Study

- What is a Weather-map?
  - A Geo-location based view which shows high-level Devices on a Map with connections representing the logical circuit(s) between sites
  - Sites and Connections are both colored and sized dynamically based on metric and attribute values/threshold
- What a Weather-map is NOT?
  - A Layer-2 Topology view which shows intra-site device/interface to device/interface connections

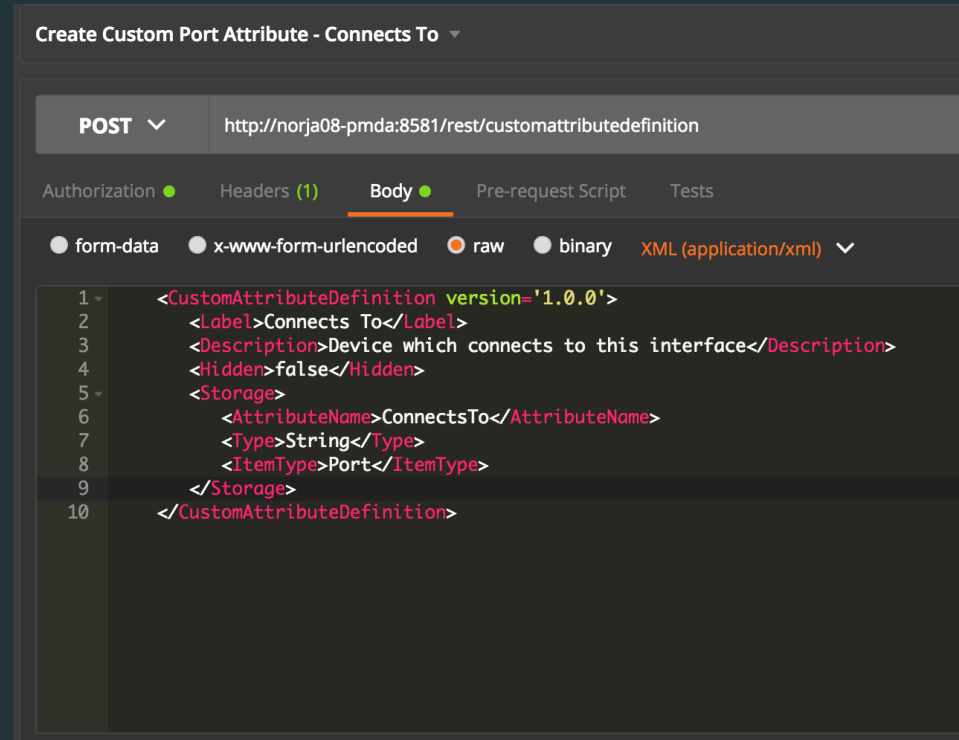
# Weather-map Case Study (cont)

- Pre-requisites:
  - CAPM 3.1 (requires custom attributes & DA proxy & PC App Deployment features)
  - OpenAPI Weather-map Installed
    - GitHub: <https://github.com/CA-PM/Google-WeatherMap>
  - OpenAPI Device Geo-location attributes defined
    - GitHub: <https://github.com/CA-PM/DeviceGeoTag>
  - OpenAPI Interface connection information
    - GitHub: <https://github.com/CA-PM/Interface-Connections>

# Weather-map Case Study – Configuration Steps

Step 1. Create custom attribute to define our device to device connections

- POST to Data Aggregator
- ItemType: Port
- Type: String
- Name: ConnectsTo



# Weather-map Case Study (cont)

Step 2. Create group of Weather-map devices and interfaces

The 'Edit Rule' dialog box is titled 'Edit Rule'. It contains a 'Rule Name' field with the value 'Add Devices'. Below this is an 'Add' section with a dropdown menu set to 'Devices' and a description 'Any device connected to the network with an address'. Underneath is a '+ Add Condition' section. It contains two conditions: 'Device Item' is a member of 'All Groups' (with a '+ [delete]' button) and 'Device Name Alias' is like 'Core' (with a '+ [delete]' button). At the bottom are 'OK' and 'Cancel' buttons.

The 'Edit Rule' dialog box is titled 'Edit Rule'. It contains a 'Rule Name' field with the value 'Add Interfaces'. Below this is an 'Add' section with a dropdown menu set to 'Interfaces' and a description 'A physical network interface'. Underneath is a '+ Add Condition' section. It contains two conditions: 'Interface Item' is a member of 'All Groups' (with a '+ [delete]' button) and 'Interface Name Alias' is like '-' (with a '+ [delete]' button). At the bottom are 'OK' and 'Cancel' buttons.

# Weather-map Case Study (cont)

Step 3. For each device to be placed on map

- Set Geo-location information in Context Page
- Set Alias to '<Site XYZ> Core Router'

Router Pages  
Router: Cisco-3945\_10.251.1.9 [change] ACTIVE Last Hour: Oct 31, 2016 12:00 PM - 1:00 PM [change]

Details

- Set Device Geo-Location
- OpenAPI: Interface Trends
- Supported Metric Families
- PerfDrops
- System Health
- Interface Health
- CBQoS
- Top Interface Discards
- Top Interface Errors
- Top Interface Utilization
- Custom View - Infrastructure M...

Device Geo-Location

Lookup location using Google Maps API

location

Enter location using City, State or City, Country

[Search Google](#)

Geo-Location Details

Longitude

Range: -180 to 180

Latitude

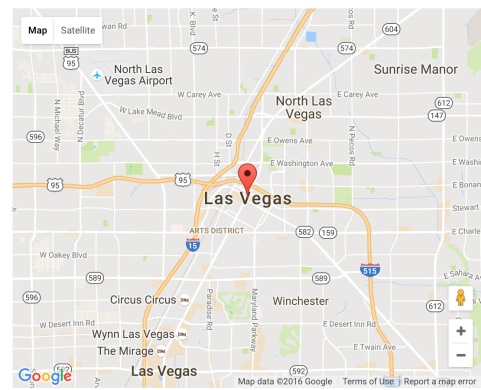
Range: -90 to 90

Location

Description

[Save Device Location](#)

Map Satellite



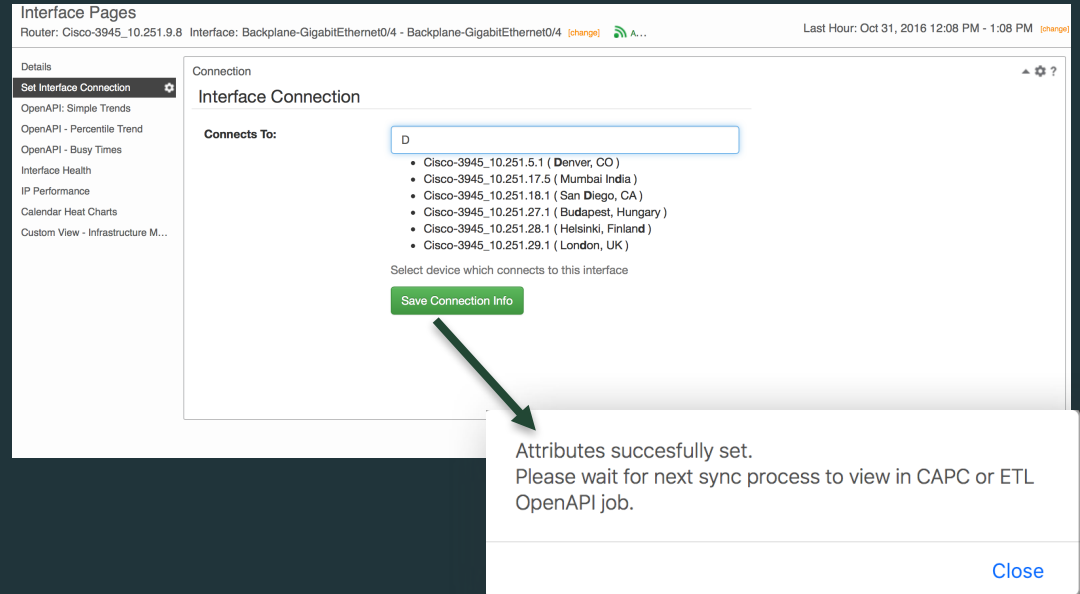
Attributes successfully set.  
Please wait for next sync process to view in CAPC or ETL OpenAPI job.

[Close](#)

# Weather-map Case Study (cont)

Step 4. For each device to be placed on map

- Set Connection information in Interface Context Page
  - ConnectsTo <device>
- Set Alias to 'Site A -> Site B'




# Weather-map Case Study (cont)

Step 5. Allow OpenAPI ETL Job to complete and verify group contents and geo and connection tags set properly

Performance Management  
QueryBuilder

Query Expression

for interface select ID, Name, ConnectsTo expand device ID, Name, Longitude, Latitude, LocationDesc filter (groups/Name equal My Weathermap) and (ConnectsTo is not empty) and (device/LocationDesc is not empty)

▼ OData URL 

http://norja08-pmda.ca.com/.../interfaces?Expand=device&\$select=ID,Name,ConnectsTo,device/ID,device/Name,device/Longitude,device/Latitude,device/LocationDesc&\$filter=((groups/Name eq 'My Weathermap') and (length(device/ConnectsTo) ne 0) and (length(device/LocationDesc) ne 0))

Run Table

ID	ConnectsTo	device				
		ID	Name	Longitude	Latitude	LocationDesc
GigabitEthernet0/0	Cisco-3945_10.251.12.1	1084	Cisco-3945_10.251.1.5	-122.3321	47.602	Seattle, WA
GigabitEthernet0/1	Cisco-3945_10.251.18.1	1084	Cisco-3945_10.251.1.5	-122.3321	47.602	Seattle, WA
GigabitEthernet0/100	Cisco-3945_10.251.5.1	1084	Cisco-3945_10.251.1.5	-122.3321	47.602	Seattle, WA
GigabitEthernet0/101	Cisco-3945_10.251.16.1	1084	Cisco-3945_10.251.1.5	-122.3321	47.602	Seattle, WA

Query Expression

for interface select ID, Name, ConnectsTo expand device ID, Name, Longitude, Latitude, LocationDesc filter (groups/Name equal My Weathermap) and (ConnectsTo is not empty) and (device/LocationDesc is not empty)

26219	GigabitEthernet0/101	Cisco-3945_10.251.16.1	12185	Cisco-3945_10.251.16.5	115.8669	-31.9505	Perth Australia
26345	GigabitEthernet0/0	Cisco-3945_10.251.25.10	12189	Cisco-3945_10.251.17.5	72.8777	19.076	Mumbai India
26346	GigabitEthernet0/1	Cisco-3945_10.251.3.1	12189	Cisco-3945_10.251.17.5	72.8777	19.076	Mumbai India

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# Weather-map Case Study (cont)

## Step 6. Verify CAPC Group contents and Alias values via Inventory views

### Devices

Group: My Assigned Groups > All Groups > My Weathermap [\[change\]](#)

#### Devices

User Group: My Weathermap

<input type="checkbox"/> Name Alias	Model	Type	Address	Life Cycle State
<input type="checkbox"/> Seattle Core Router	Cisco 3945 SPE250	Router	10.251.1.5	Active
<input type="checkbox"/> Las Vegas Core Router	Cisco 3945 SPE250	Router	10.251.1.9	Active
<input type="checkbox"/> NYC Core Router	Cisco 3945 SPE250	Router	10.251.12.1	Active
<input type="checkbox"/> Raleigh Core Router	Cisco 3945 SPE250	Router	10.251.16.1	Active
<input type="checkbox"/> Sydney Australia Core Router	Cisco 3945 SPE250	Router	10.251.16.2	Active

Search

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[On Demand](#) [Manage Life Cycle](#)

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### Interfaces

Group: My Assigned Groups > All Groups > My Weathermap [\[change\]](#)

#### Interfaces

User Group: My Weathermap

<input type="checkbox"/> Interface Name Alias	Connects To	Interface Name	Device Name Alias	Speed In (bps)	Speed Out (bps)
<input type="checkbox"/> San Diego -> Denver	Cisco-3945_10.251.5.1	GigabitEthernet0/1	San Diego Core Router	10.00 Mbps	10.00 Mbps
<input type="checkbox"/> Raleigh -> Denver	Cisco-3945_10.251.5.1	GigabitEthernet0/1	Raleigh Core Router	10.00 Mbps	10.00 Mbps
<input type="checkbox"/> NYC -> Denver	Cisco-3945_10.251.5.1	GigabitEthernet0/1	NYC Core Router	100.00 Mbps	100.00 Mbps
<input type="checkbox"/> Raleigh -> San Diego	Cisco-3945_10.251.18.1	GigabitEthernet0/101	Raleigh Core Router	10.00 Mbps	10.00 Mbps
<input type="checkbox"/> NYC -> San Diego	Cisco-3945_10.251.18.1	GigabitEthernet0/101	NYC Core Router	10.00 Mbps	10.00 Mbps

Search

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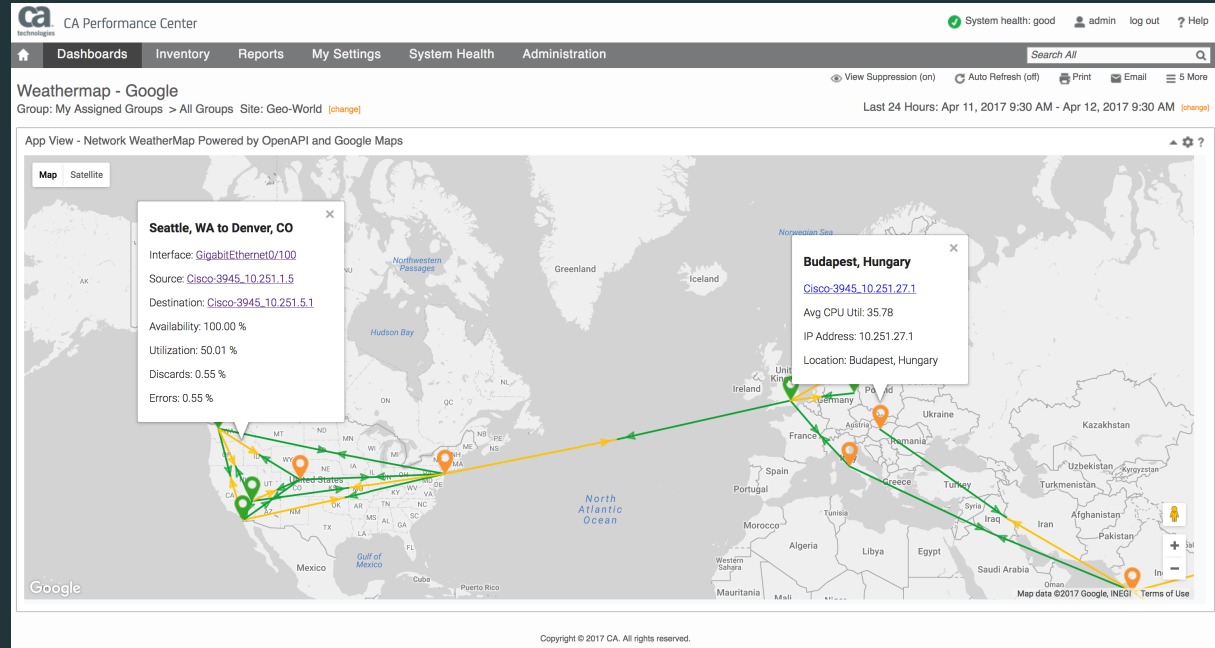
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[On Demand](#)

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# Weather-map Case Study (cont)

Step 7. Launch CAPC  
Weather-map App  
Dashboard and  
select group



# Other OpenAPI Apps

- Visit our GitHub Repository for other great Apps which can easily be deployed and customized

<https://github.com/CA-PM>