

Niagara analytics

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Tagging and Analytics

You must have context for analysis



Sum of four consecutive primes (13 + 17 + 19 + 23)

In a plane, the exterior angles of a regular pentagon measure 72 degrees each

The atomic number of **hafnium** used in filaments and electrodes

Messier object m72, globular cluster in Aquarius

The registry of the U.S Navy's nuclear aircraft carrier **USS Abraham Lincoln (CVN-72)**

Number of spaces in a game of Parcheesi

72

The number of members in National Senate of Argentina

In typography, 72-point characters are 1 inch tall

radio shorthand translates as "Best wishes"

Usual par for an 18-holes of golf

Context

72

Temperature

Room

Return

Supply






Outside

Deck

Tags add Context

You need more info, before you can analyze



-  siteRef
-  equipRef
-  RTU
-  Temperature
-  Zone
-  vavZone

TagDictionaryService

*A public service announcement
- Tagging Service*



Direct Tags

The screenshot shows the Haystack Tag Dictionary interface. At the top, there is a search bar with 'Haystack' and a 'Show All' filter. Below this is the 'Tag Dictionary' header with '441 objects' on the right. A table lists tags with columns for 'Name' and 'Type'. A tree view on the left shows a folder 'Tags' containing 'absorption' (Marker). Below the table, there are tabs for 'Direct Tags' and 'Implied Tags'. The 'Direct Tags' tab is active, showing a list of tags for a 'direct (Component)'. The tags are 'hs:sensor' (marker) and 'a:a' (marker). At the bottom, there are buttons for 'Save', 'AddTag', 'RemoveTag', and 'Cancel'.

Name	Type
absorption	Marker

direct (Component)

- hs:sensor marker
- a:a marker

Implied Tags

Haystack Show All

Tag Dictionary 441 objects

Name	Type
absorption	Marker

Direct Tags Implied Tags

implied (Component)

n:name	Room\$20Humidity
n:displayName	Room Humidity
n:type	control:NumericPoint
n:ordInSession	station: h:f4ab
n:station	BLUE
n:point	marker
n:input	marker
hs:cur	marker
hs:curErr	
hs:curStatus	ok
hs:curVal	66.00
hs:id	h:f4ab
hs:kind	Number
hs:maxVal	+inf
hs:minVal	-inf
hs:point	marker
hs:tz	New_York
hs:unit	misc () percent relative humidity (%RH)
hs:humidity	marker

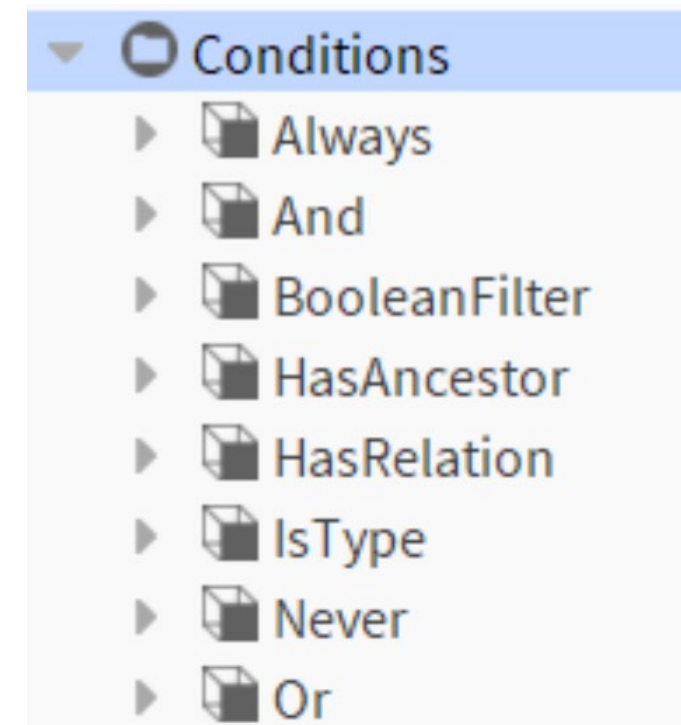
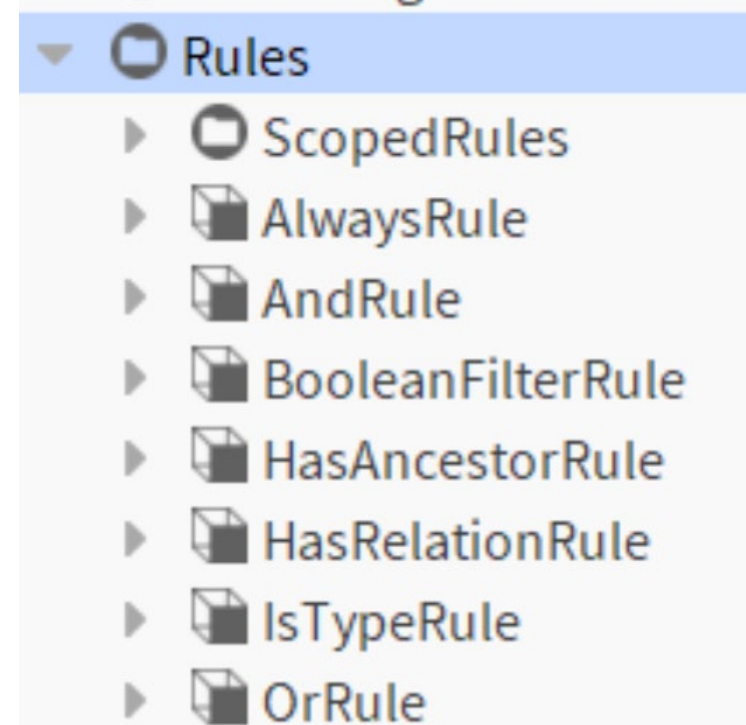
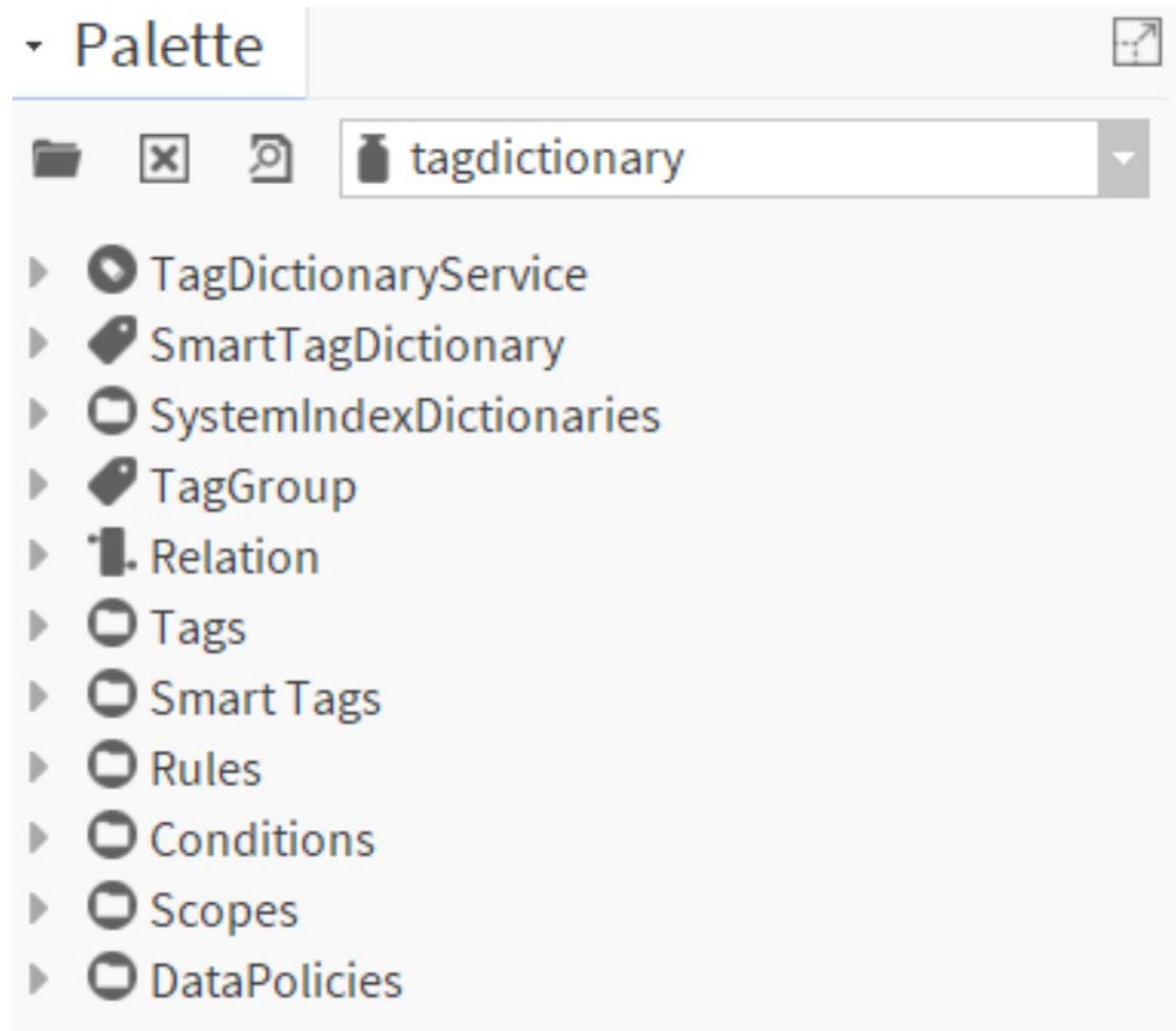
Save AddTag RemoveTag Cancel

TagDictionary

Tools for rules



TagDictionary Creating Rules



1. Begin with a AndRule
2. Add IsType condition
3. Add Or condition
4. Add BooleanFilter

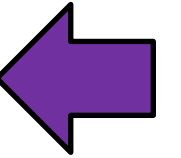
TagDictionary My SpaceTemp rule

Property Sheet

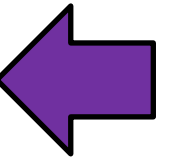
- SpaceTemp (Tag Rule)
 - Condition And
 - IsType Is control:NumericPoint
 - Object Type control NumericPoint
 - Or Or
 - RoomTemp Boolean Filter
 - Filter n:name like '.*RoomTemp.*'
 - RoomTemperature Boolean Filter
 - RoomTmp Boolean Filter
 - SpaceTemp Boolean Filter
 - Filter n:name = 'SpaceTemp'
 - SpaceTemperature Boolean Filter
 - SpaceTmp Boolean Filter
 - Filter n:name = 'SpaceTmp'
 - Tag List Tag Info List
 - Tag Group List Tag Group Info List
 - hs:tempSensor Tag Group Info
 - Validity And
 - Tag List Tag Info List
 - hs:temp Marker
 - hs:sensor Marker
 - Relation List Relation Info List

AND Rule with a IsType + OR condition

Must be a Control Point



AND one of these



Gets these tags

AndRule

isType
or

Boolean
Filter

Tags

TagDictionary My Dashboard rule

Property Sheet	
Dashboard (Tag Rule)	AndRule
Condition And	
IsType Is baja:Folder	isType
Object Type baja Folder	
Or Or	
DASH Boolean Filter	
Filter n:name like '.*DASH.*'	And (One of these)
DSHBD Boolean Filter	
Dashboard Boolean Filter	
Tag List Tag Info List	
mt:Dashboard Marker	Tag them
mt:View Marker	
Tag Group List Tag Group Info List	
Relation List Relation Info List	

Hierarchy use tags too!

<p>GroupLevelDefGEOSTATE Group Level Def groupBy: hs:ge...</p> <p>Query Context >> ⌚</p> <p>Group By <input type="text" value="hs:geoState"/> Group by State</p> <p>Include Empty Groups <input type="checkbox"/> false</p> <p>Sort <input type="text" value="Ascending"/></p> <p>Tags Hierarchy Tags</p>
<p>GroupLevelDefGEOCITY Group Level Def groupBy: hs:ge...</p> <p>Query Context >> ⌚</p> <p>Group By <input type="text" value="hs:geoCity"/> Group by City</p> <p>Include Empty Groups <input type="checkbox"/> false</p> <p>Sort <input type="text" value="Ascending"/></p> <p>Tags Hierarchy Tags</p>
<p>QueryLevelDefDEVICE Query Level Def: hs:device</p> <p>Query Context >> ⌚</p> <p>Query <input type="text" value="hs:device"/> Get the devices</p> <p>Include Grouping Queries <input checked="" type="checkbox"/> true</p> <p>Sort <input type="text" value="Ascending"/></p>
<p>RelationLevelDefPOINTS Relation Level Def: out: n:childP...</p> <p>Query Context >> ⌚</p> <p>Inbound Relation Ids <input type="text"/></p> <p>Outbound Relation Ids <input type="text" value="n:childPoint"/> Get the points</p>

- RemoteSites
 - Florida
 - NorthCarolina
 - Virginia
 - Richmond
 - JACE001
 - JACE002
 - RoomTemp06
 - RoomTemp07
 - RoomTemp08
 - RoomTemp09
 - RoomTemp10
 - Roanoke

Analytics

Now the fun begins



What this session will NOT include

- What is Niagara Analytics
- How do I purchase Niagara Analytics
- Where do I find the Analytic Service
- How do I start the Analytic Service
- Where the bathrooms are located
- What is for Lunch or Dinner today
- Where is Waldo

Some basic concepts

- Analytic proxy points are your friend
- Build analytic logic folders with relative ORDs
- Watch out for your polling rates – Seriously, I’m not kidding
- Don’t forget to update the analytic cache
- Start simple, add complexity slowly
- Have you searched for your tags?

Some basic concepts

- Have a KNOWN data set
- Build a Px page to help debug your algorithm
 - Web tables to view data set
 - Algorithm outcomes
- Break complex algorithms into stages
 - Comfort = Check_Temp, Check_Humidity, Check_CO2_levels

Property Sheet

N Today (Numeric Writable)

Facets units=kW-hr,precision=2 kW-hr,min=-inf kW-hr,max=+... >> ⌚

Proxy Ext Analytic Proxy Ext

Enabled true

Status {ok}

Fault Cause

Node slot:/Examples/Analytics/Energy/EnergyMeter

Data hs:energy

Data Filter

Time Range today

Rollup Sum

Interval

Aggregation

Totalize true

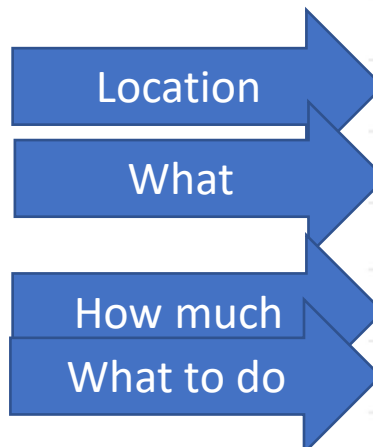
Node Count 1

Poller Default

Last Poll 13-May-2019 07:13:54 PM

Missing Data Strategy

Out 1,976.96 kW-hr {ok} @ 16



Analytic Tools

- ▼ AnalyticService
 - ▼ Alerts
 - ▶ Comfort
 - ▶ PWR
 - ▼ Algorithms
 - ▶ Comfort
 - ▶ Power
 - ▶ Energy
 - ▶ Diagnostic
 - ▶ Heating_Valve_Open_100_Percent
 - ▼ Definitions
 - ▶ energy
 - ▼ Pollers
 - ▶ Default
 - ▶ Fast
 - ▶ TriggeredPoller
 - ▶ Analytics Subscription
 - ▼ Reports
 - ▶ Default Folder
 - ▶ Missing Data Strategy

Nav Services

- ▶ AlarmService
- ▶ AnalyticService
 - ▶ Alerts
 - ▶ Algorithms
 - ▶ Definitions
 - ▶ Pollers
 - ▶ Analytics Subscription
 - ▶ Reports
 - ▶ Default Folder
- ▶ AuditHistoryService
- ▶ AuthenticationService
- ▶ BackupService
- ▶ BoxService
- ▶ CategoryService
- ▶ DebugService
- ▶ EmailService
- ▶ FoxService
- ▶ HierarchyService

Palette

- report
- Reporting
- ReportWidgets

All Reports

Showing 1 to 7 of 7 reports

New Report Search: Sort by: Last Updated

Equipment Operation

Equipment Operation

Location: defaultFolder

Last Updated: April 9th 2018, 21:42

Average Profile

Average Profile

Location: defaultFolder

Last Updated: April 9th 2018, 21:42

Load Duration

Load Duration

Location: defaultFolder

Last Updated: April 9th 2018, 21:42

Spectrum

Spectrum

Location: defaultFolder

Last Updated: April 9th 2018, 21:40

Relative Contribution

Relative Contribution

Location: defaultFolder

Last Updated: April 9th 2018, 21:40

Ranking Report

Ranking Report

Location: defaultFolder

Last Updated: April 9th 2018, 21:39

Aggregation Report

Aggregation Report

Location: defaultFolder

Last Updated: April 9th 2018, 21:39

Nav AnalyticService

- ▶ Alerts
- ▶ Algorithms
- ▶ Definitions
- ▶ Pollers
- ▶ Analytics Subscription
- ▶ Reports
 - ▶ Default Folder
 - ▶ Aggregation Report
 - ▶ Ranking Report
 - ▶ Relative Contribution
 - ▶ Spectrum
 - ▶ Load Duration
 - ▶ Average Profile
 - ▶ Equipment Operations

Palette analytics

- ▶ AnalyticService
- ▶ Algorithm
- ▶ DataSourceBlock
- ▶ Constant Blocks
- ▶ Filter Blocks
- ▶ General Blocks
- ▶ Math Blocks
- ▶ Switch Blocks
- ▶ Points
- ▶ Charts
- ▶ Tables
- ▶ Reports
 - ▶ AggregationReport
 - ▶ SpectrumReport
 - ▶ RelativeContributionReport
 - ▶ RankingReport
 - ▶ AverageProfileReport
 - ▶ LoadDurationReport

Report Editor Load Duration Report

Node

- ▶ HVAC
 - ▶ HVAC_Demand_Sim_1A
- ▶ Plug
 - ▶ Plug_Demand_Sim_1A
- ▶ Lighting
 - ▶ Light_Demand_Sim_1A

Data Type: hs:power

Reporting Period: Last Week: 1 Apr 18 00:00 - 8 Apr 18 00:00

Sun Mon Tue Wed Thu Fri Sat

Baseline: Show Details No baseline

Normalization: Floor Area

Degree Day: 65.00 °F

Degree day type: Heating

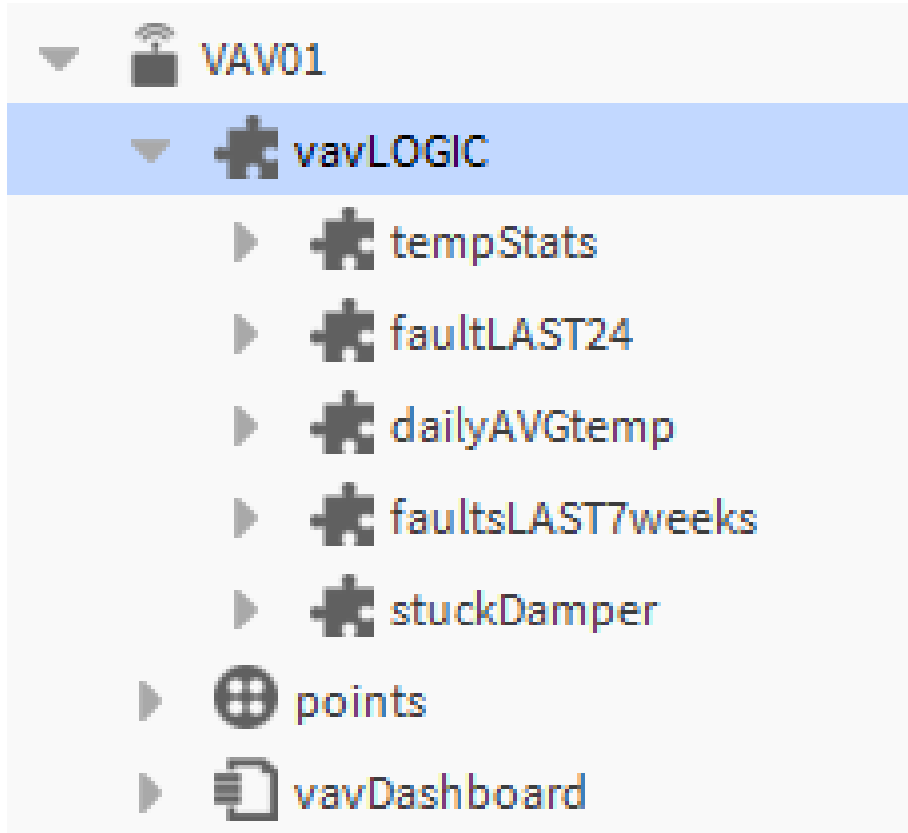
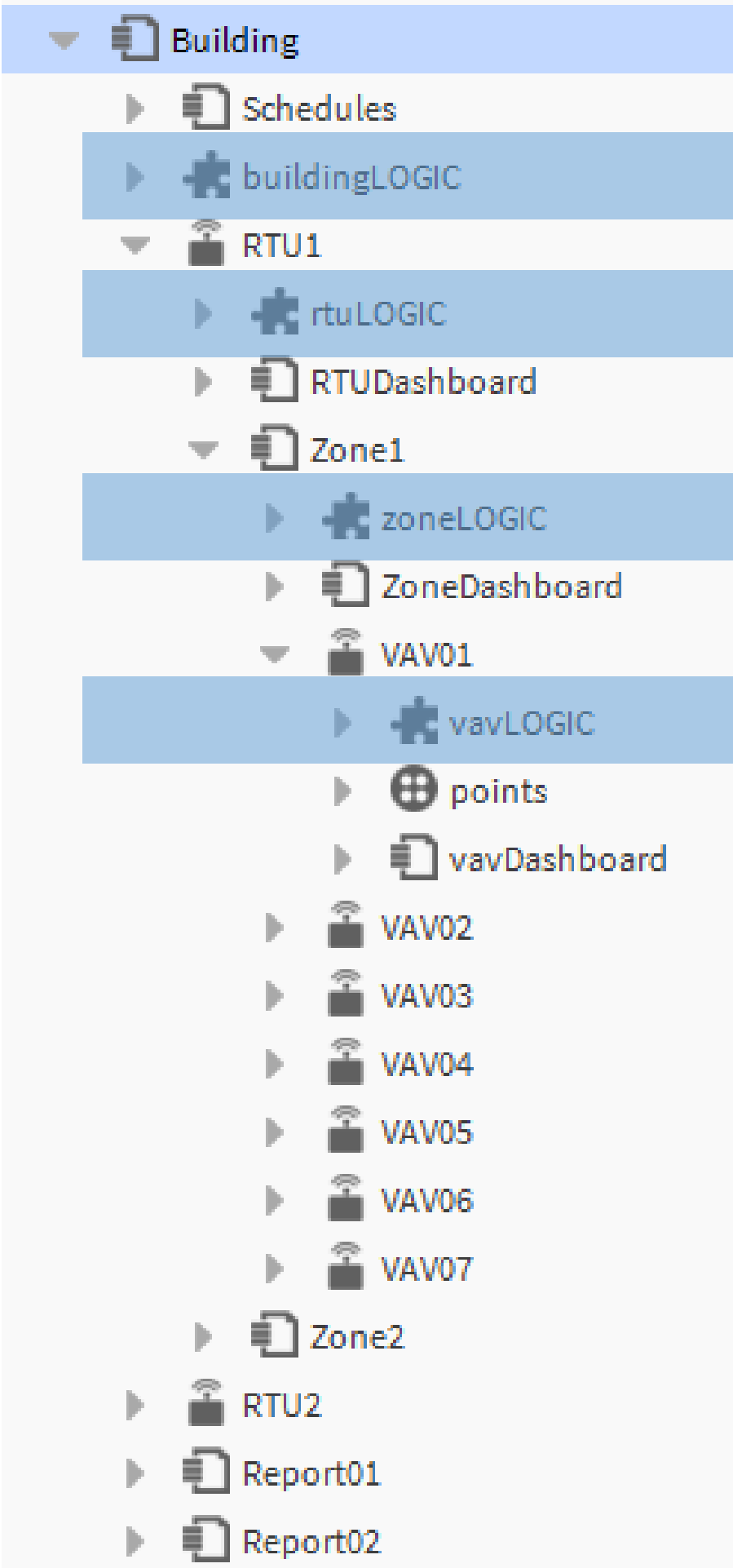
Run Report Advanced

1 Apr 18 00:00 - 8 Apr 18 00:00

Search: Display: 100 1 - 100 of 168

Hours	HVAC (kW)	Plug (kW)	Lighting (kW)
0h 0m	356.9	166.9	296.2
1h 0m	351.1	166.6	296.0
2h 0m	345.2	166.3	295.9
3h 0m	345.1	166.1	294.1
4h 0m	338.3	166.0	292.5
5h 0m	310.6	165.7	246.1

Structure



Live Walkthrough

Stations:

- *rangeCOUNTErrors*
- *Bldg1*

