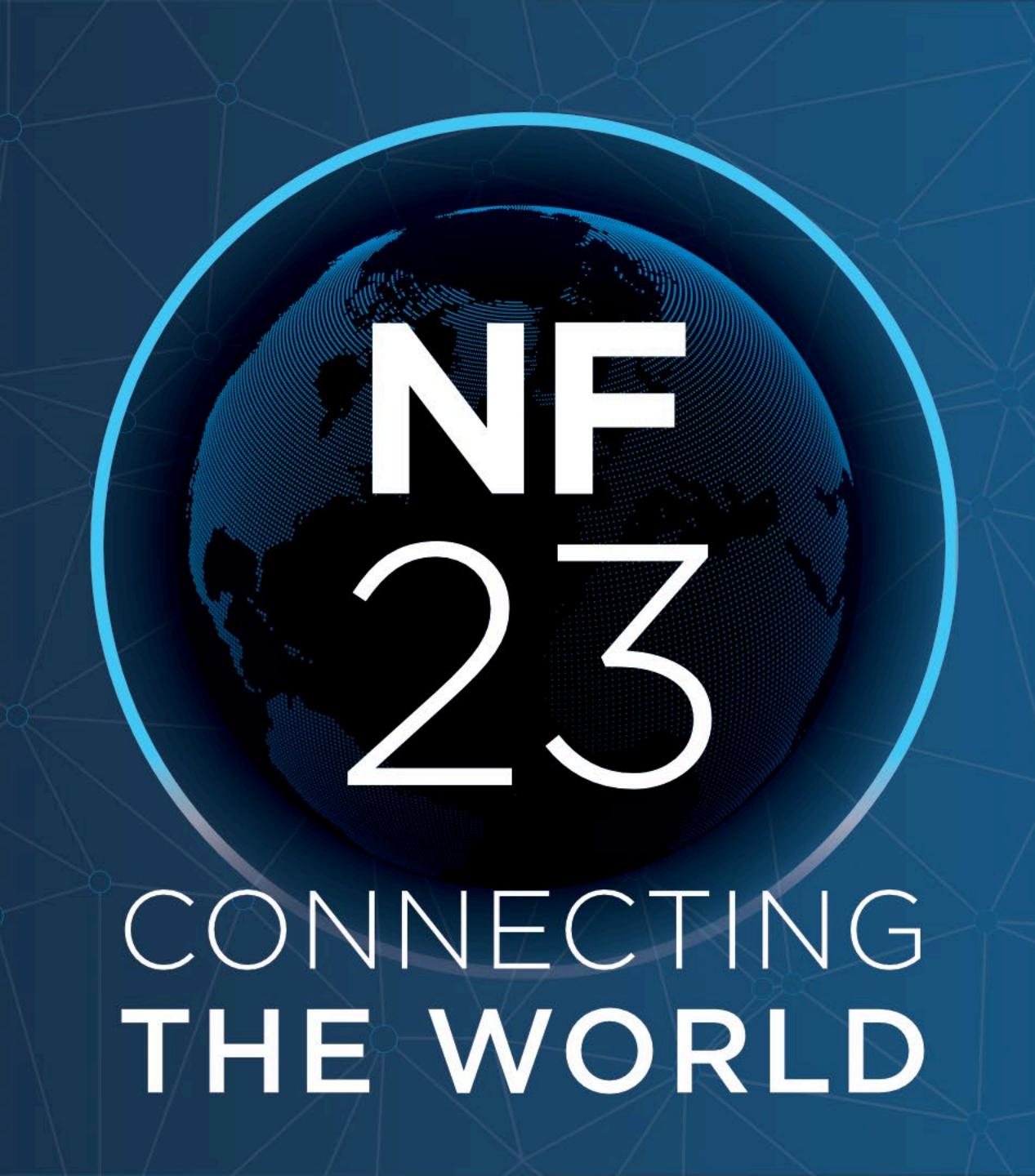




NF  
23

CONNECTING  
THE WORLD



**NE  
23**

CONNECTING  
THE WORLD

## Tagging with Haystack 4

*Kevin Mamajek / Tridium*

# What you are going to SEE in this session



- See how to **Identify** data
- See the **Ability** Niagara brings to Tagging and Relations
- See how **Rewarding** tagging can be

# identify

/eye-den-tuh-fy/

# Identify

Synonyms: **classify, recognize, describe, label, determine, designated, mark**

72

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

Messier object m72, globular cluster  
in Aquarius

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

The number of members in **National Senate of Argentina**

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

72

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

Or is it just the current room temperature in Fahrenheit

In typography, **72-point characters** are 1 inch tall

Number of spaces in a game of **Parcheesi**

radio shorthand translates as "**Best wishes**"

Usual par for an **18-holes of golf**

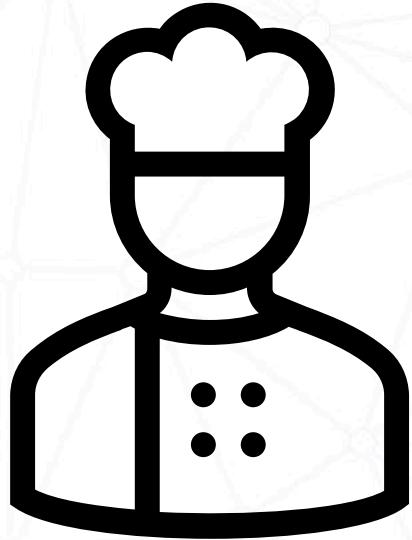






# Ability

Synonyms: potential, knack, **aptitude, power**, facility, competence, **skill, proficiency**



Use our Niagara Tagging cooking skills

Building



Floor / Office / Space



AHU



Fan Meter



VAV

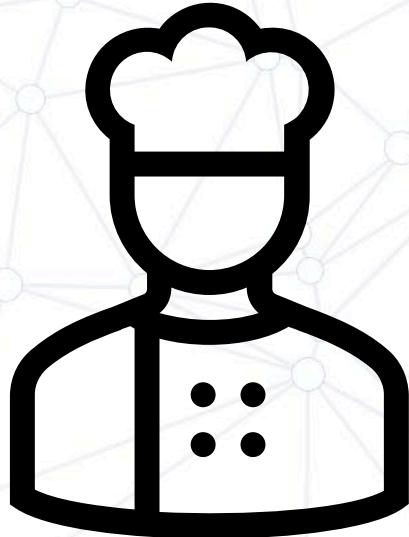
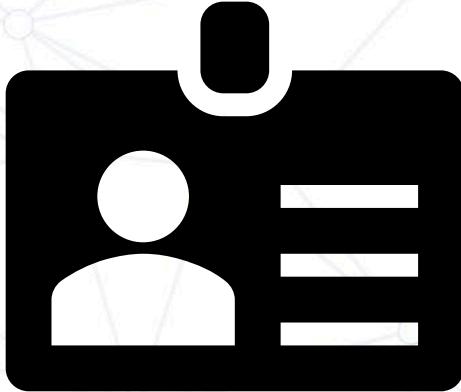


## Ability

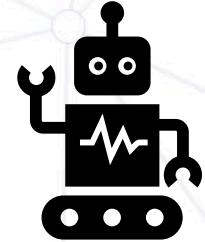
Synonyms: ***potential***, knack, ***aptitude***, ***power***, facility, competence, ***skill***, ***proficiency***

## Identify

Synonyms: ***classify***, ***recognize***, ***describe***, ***label***, determine, designated, ***mark***



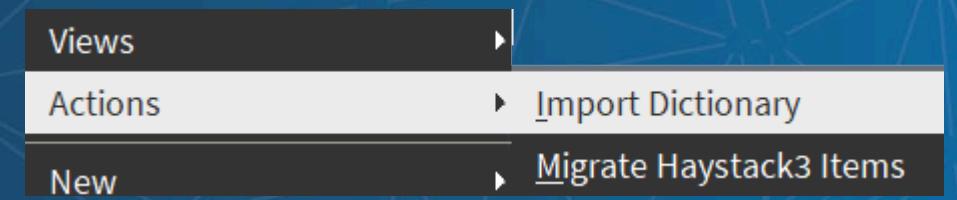
Tag Rules



# Using Haystack 4 for tagging

Niagara 4.13

<https://project-haystack.org/doc/lib-phIoT/vav>

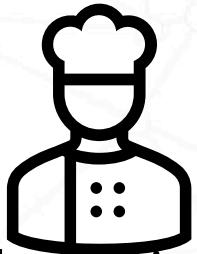


def **vav**

Variable air volume terminal unit. VAV systems use a constant air temperature with a variable air flow rate. See [VAVs](#) chapter.

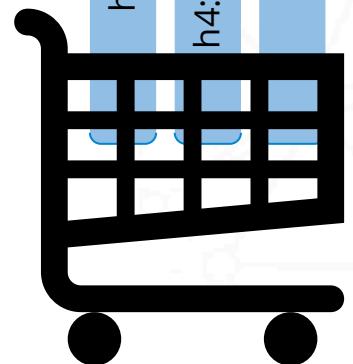
meta	<b>children</b>	See below
	<b>def</b>	vav
	<b>doc</b>	See above
	<b>is</b>	airTerminalUnit
	<b>lib</b>	lib:phIoT
	<b>wikipedia</b>	<a href="https://en.wikipedia.org/wiki/Variable_air_volume">https://en.wikipedia.org/wiki/Variable_air_volume</a>
usage	<b>vav equip</b>	
supertypes	<b>marker</b>	Marker labels a dict with typing information
	<b>entity</b>	Top-level dicts with a unique identifier
	<b>equip</b>	Equipment asset
	<b>airTerminalUnit</b>	Equipment in air distribution systems which terminate at the space
	<b>input</b>	Entity inputs a substance which flows from another entity
	<b>air-input</b>	Entity inputs air which flows from another entity
	<b>elec-input</b>	Entity inputs electricity which flows from another entity
	<b>output</b>	Entity outputs a substance with flows to other entities
	<b>air-output</b>	Entity outputs air to other entities

tags	<b>airRef</b>	Air flows from the referent to this entity
	<b>dis</b>	Display name for an entity
	<b>ductConfig</b>	Ductwork configuration
	<b>elecRef</b>	Electricity flows from the referent to this entity
	<b>equipRef</b>	Reference to equip which contains this entity
	<b>heatingProcess</b>	Processed used to heat a substance
	<b>id</b>	Defines the unique identifier of an entity in system using a <a href="#">ref</a> value type
	<b>siteRef</b>	Reference to site which contains the entity
	<b>spaceRef</b>	Reference to space which contains this entity
	<b>systemRef</b>	Reference to system
	<b>vavAirCircuit</b>	How does the VAV pull in air
	<b>vavModulation</b>	How does VAV modulate the temp based on duct pressure
children	<b>discharge duct equip</b>	
	<b>ductArea sp point</b>	
	<b>hvacMode sp point</b>	
	<b>inlet duct equip</b>	
	<b>perimeterHeat cmd point</b>	
	<b>reheat cmd point</b>	
	<b>thermostat equip</b>	



# Shopping for tags

h4:vavAirCircuit    h4:ahuZoneDelivery    h4:site



NF  
23

Use the HTML Tag Manager as the Store Front

Available Tags: Haystack4, vav, Show All, 8 objects

Tag	Tag Type
vav	Marker
vavAirCircuit	DynamicEnum
vavModulation	DynamicEnum
vavZone	Marker

Showing tags on: vav1  Direct  Implied 20 objects

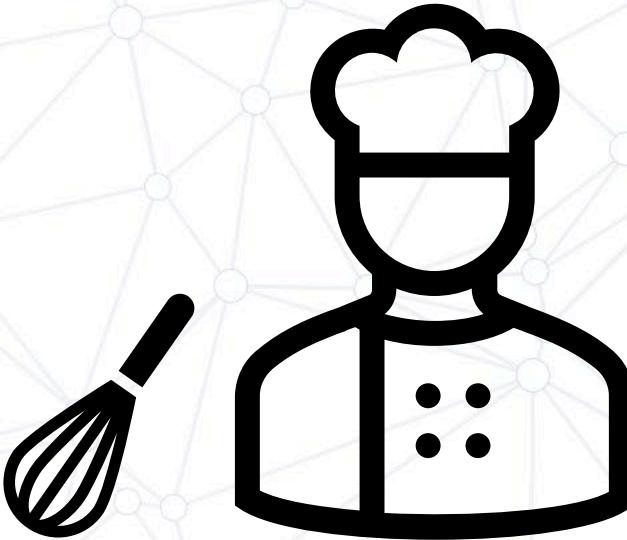
Tag Id	Tag Name	Value
h4:vavParallel	vavParallel	Marker
h4:vavAirCircuit	vavParallel	vavParallel
h4:air	air	Marker
h4:dis	dis	vav1
h4:equip	equip	Marker
h4:airTerminalUnit	airTerminalUnit	Marker
h4:parallel	parallel	Marker
h4:entity	entity	Marker
n:station	station	Haystack
n:name	name	vav1
h4:id	id	namespace:Haystack~slot:.Building1.floor1.vav1

[Edit](#) [Add](#) [Delete Tags](#)

## Building



h4:site	Value
h4:geoAddr	3951 Westerre Pkwy
h4:geoCity	Richmond
h4:geoState	VA
h4:geoPostalCode	23233



## Floor / Office / Space



h4:hvacZoneSpace	h4:space
	h4:hvacZonePoints
	h4:hvac
	h4:airQualityZonePoints

## AHU



h4:ahu

h4:air

h4:ahuZoneDelivery

h4:chilledBeamZone

h4:directZone

h4:multiZone

h4:vavZone

h4:airHandlingEquip

h4:gas

h4:multiZone

h4:equip



h4:id nspace:Haystack~slot:.Building1.AHU1

airHandlingEquip HVAC equipment that conditions and delivers air via one or more fans

## Fan Meter



h4:acElecMeter

h4:submeter

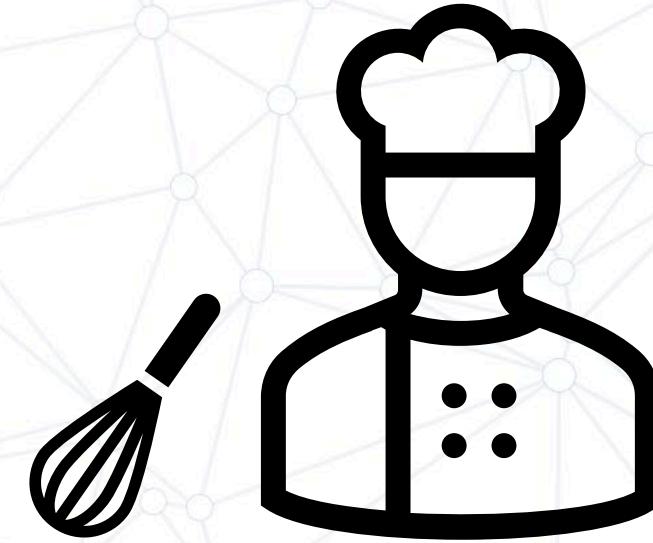
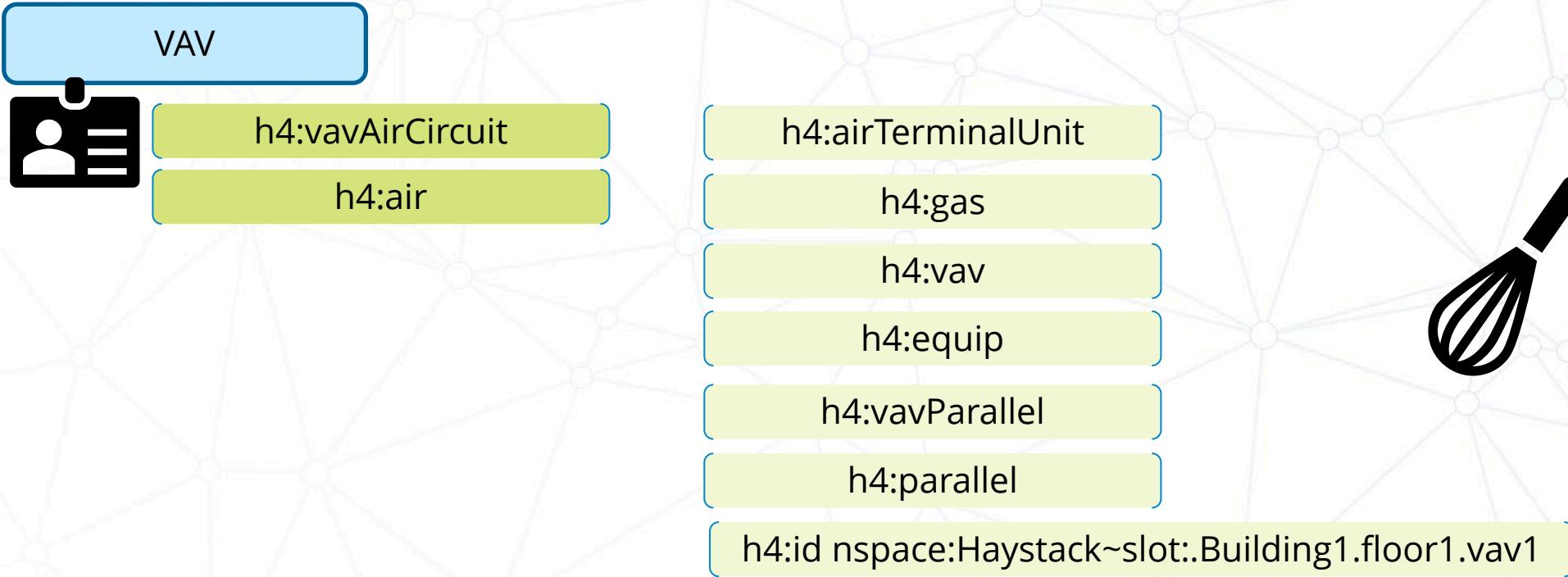
h4:equip

h4:elec

h4:ac

h4:meter

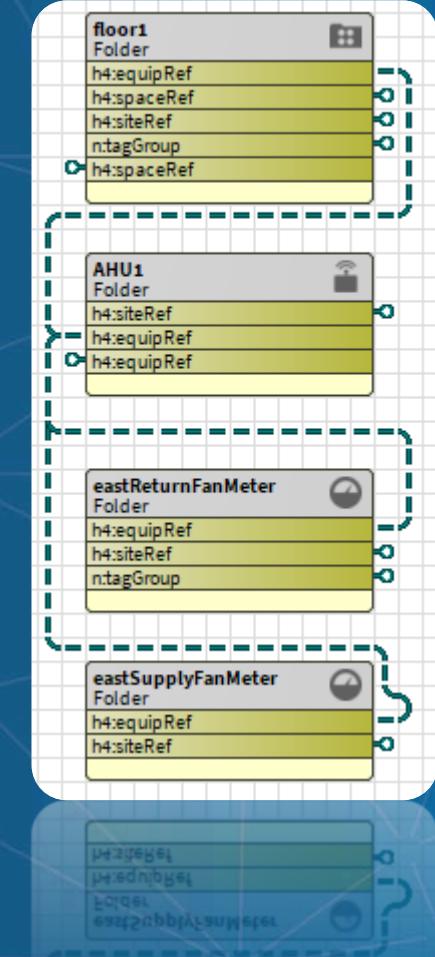
h4:phenomenon

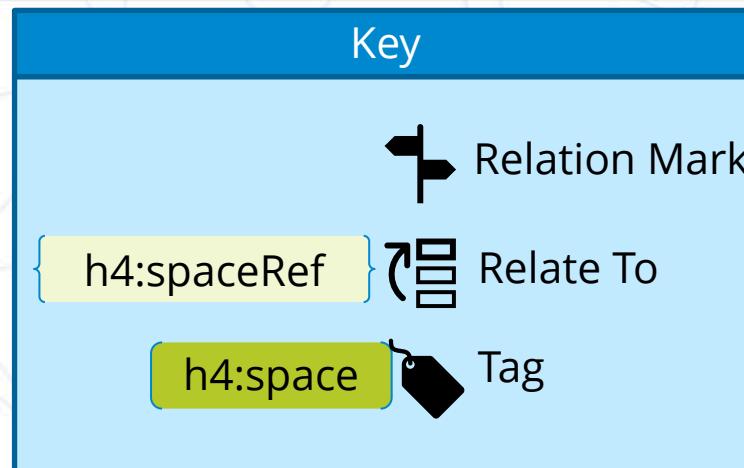
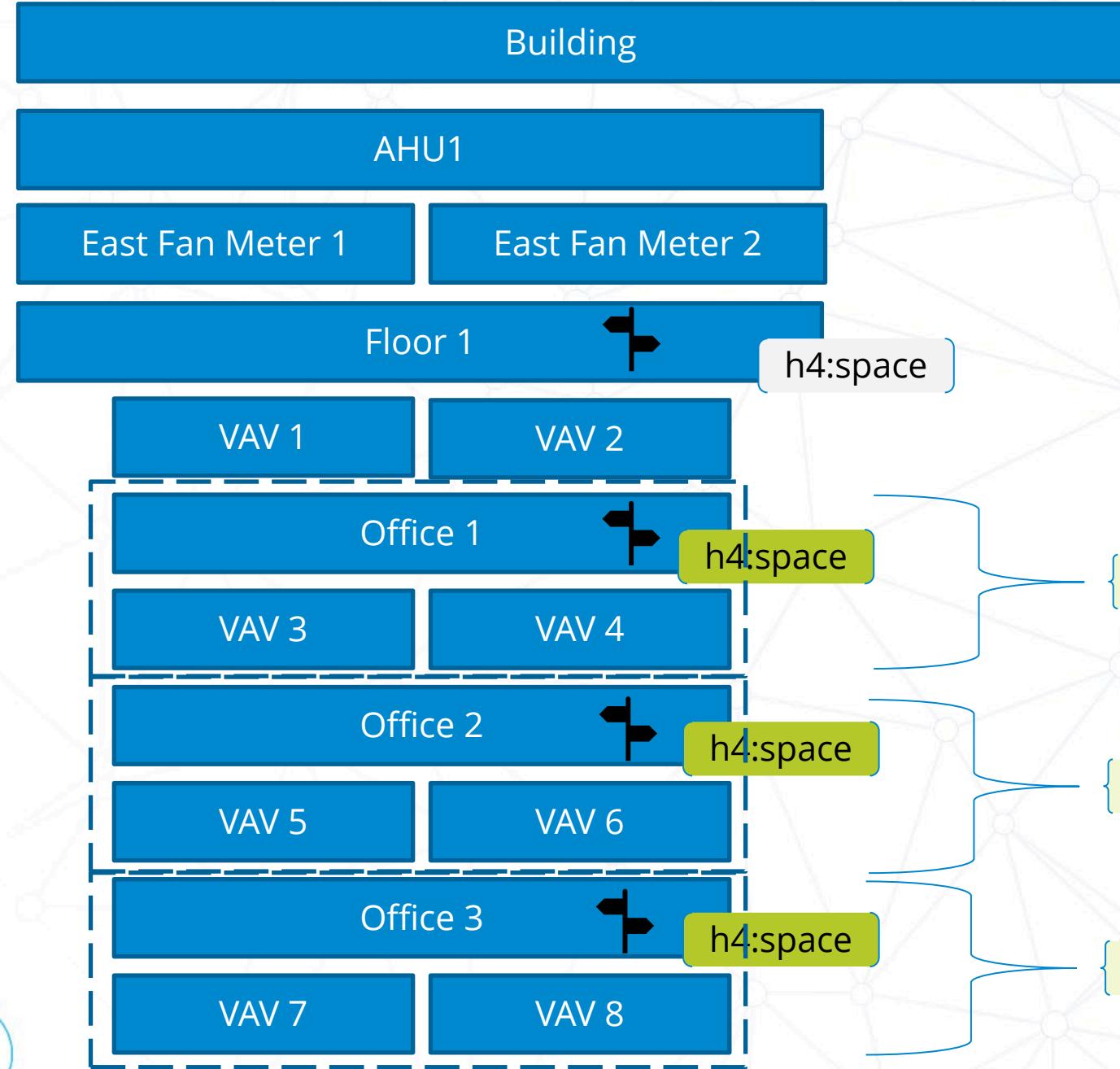


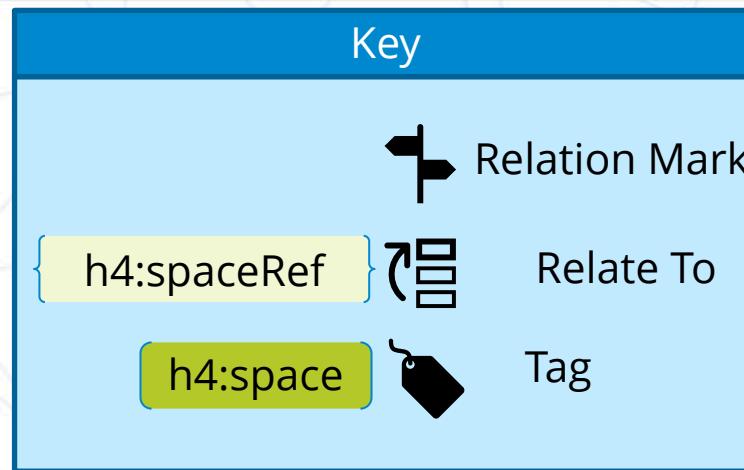
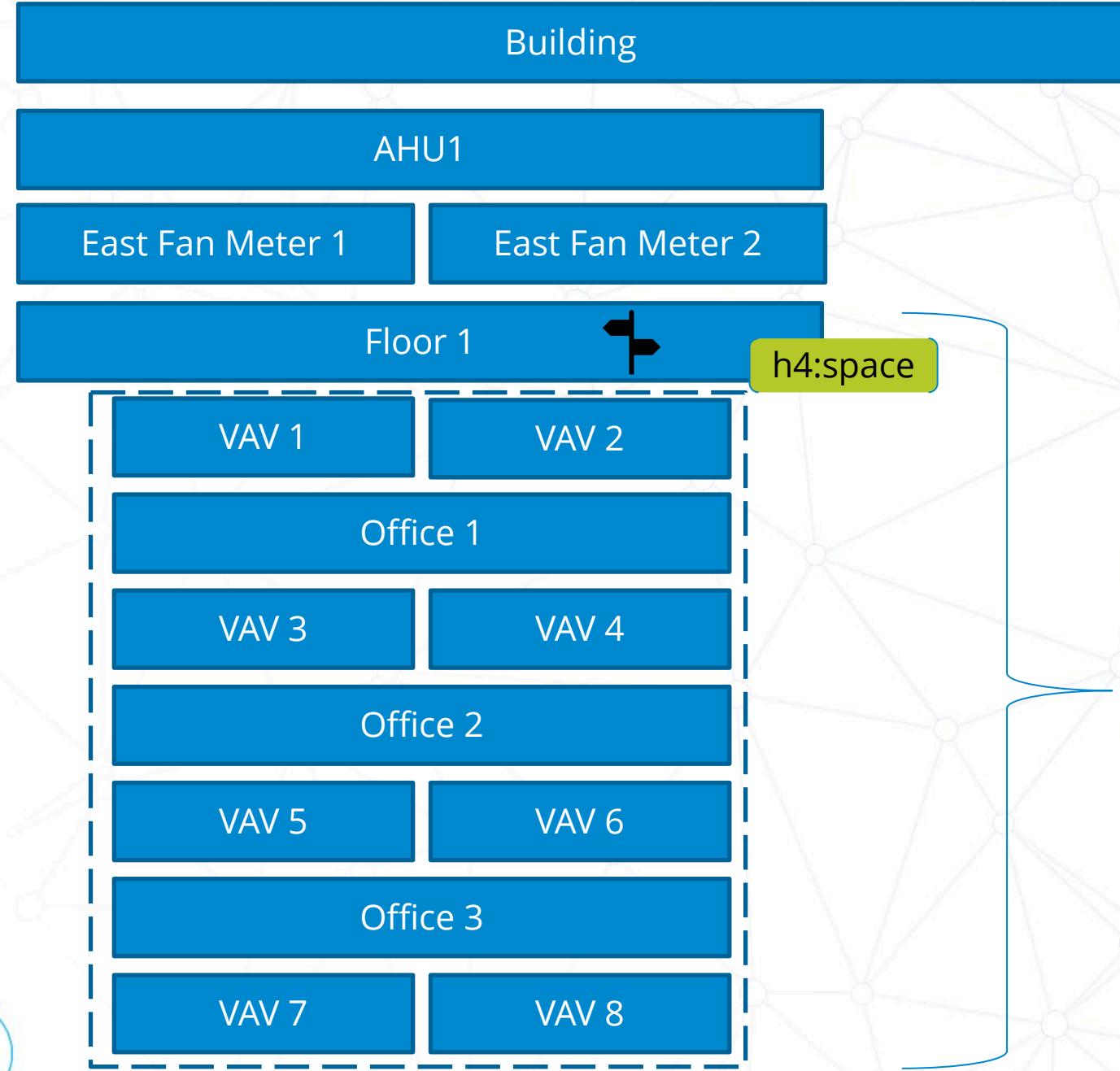
# Using Relations and References

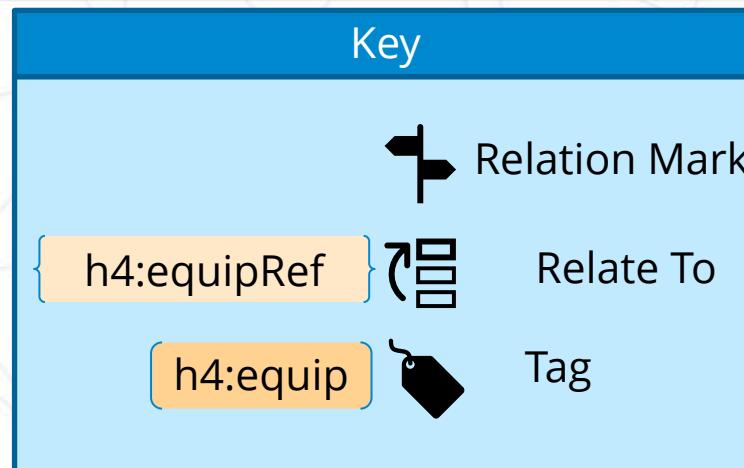
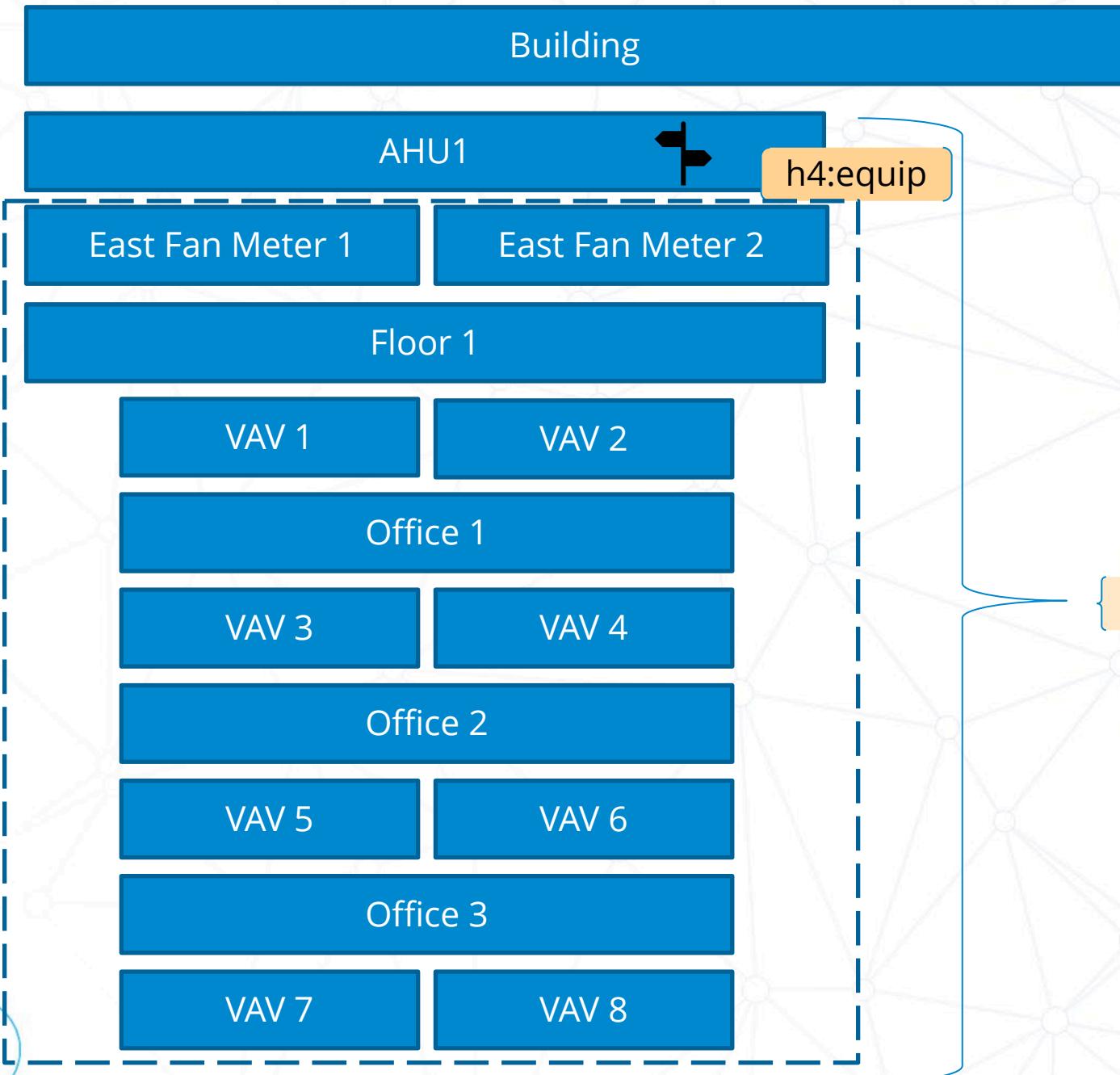
Niagara 4.13

hello

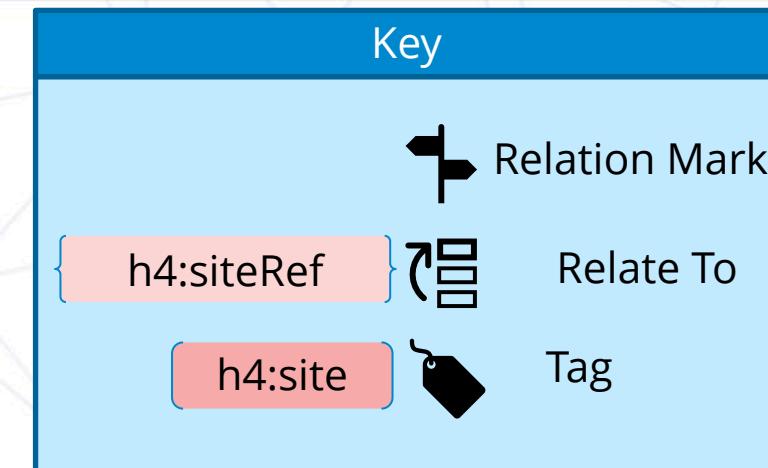
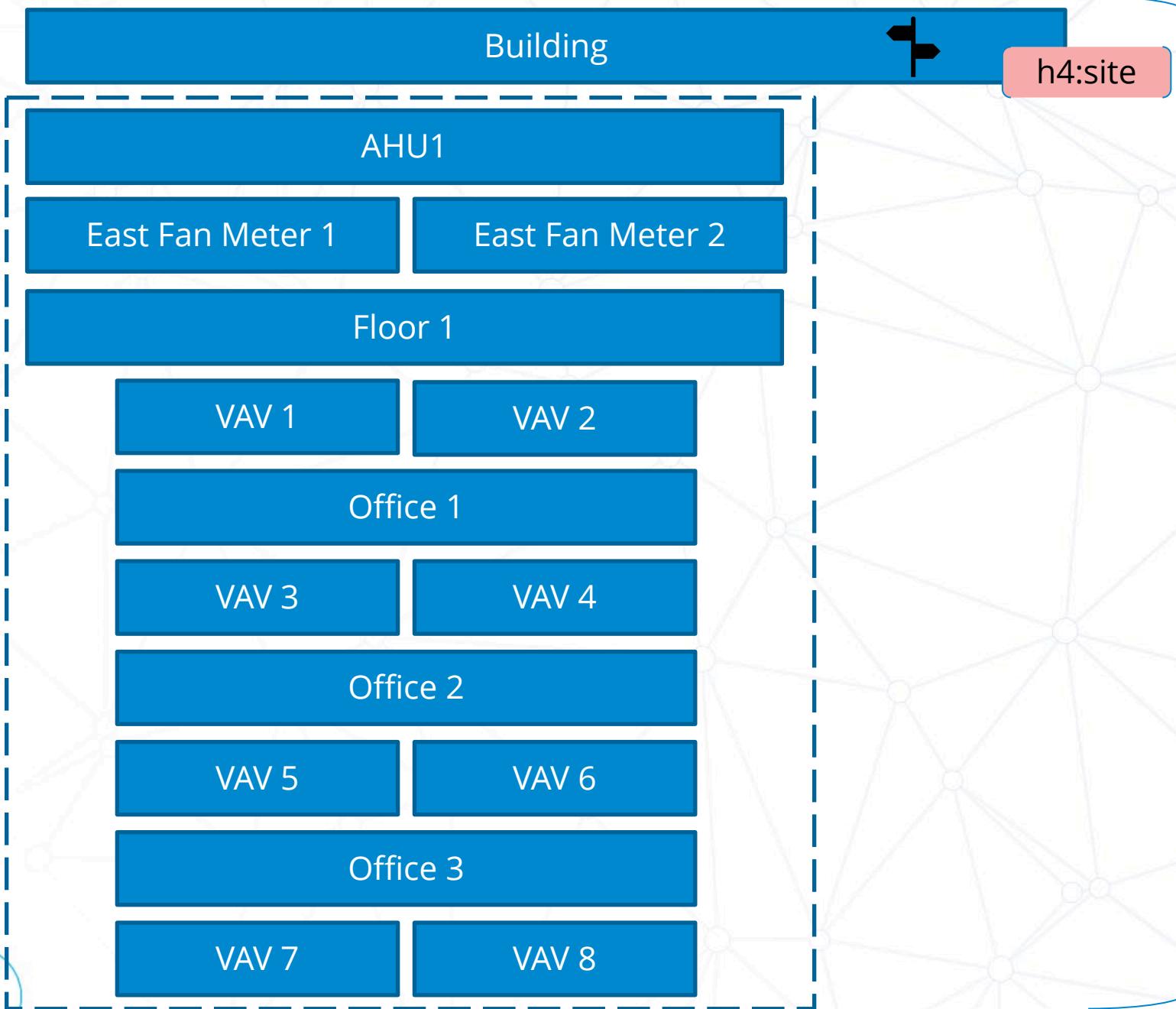








**h4:equipRef**



# Using Tag Rules

Niagara 4.13

hello

NF  
23

- ▼ TagDictionaryService
  - ▶ Niagara
  - ▶ Haystack4
  - ▶ Haystack
  - ▼ NF2023
    - ▶ Tag Definitions
    - ▶ Tag Group Definitions
    - ▶ Relation Definitions
    - ▼ Tag Rules
      - ▶ SpaceTemp
      - ▶ damperPosition
      - ▶ floor
      - ▶ dischargeAirFlowSetpoint
      - ▶ damperSP
    - ▶ Building

TRIDIUM

SpaceTemp

SpcTmp

SpaceTmp

SpaceTemperature

spaceTemperature

spacetemperature

itIsAtemp

Space Temperature ]

F1dAmPer2SptR146

Numeric Writable

Out 25.0 {ok} @ def

In10 - {null}

In16 - {null}

Fallback 25.0 {ok}

Property Sheet

damperPosition (Tag Rule)

Condition And

IsType Is control:NumericPoint

Object Type control NumericPoint

Or Or

damperPosition Boolean Filter  
Filter n:name = 'damperPosition'

dmpPos Boolean Filter  
Filter n:name = 'dmpPos'

damper Boolean Filter  
Filter n:name like '(?i).\*damper.\*' and not (n:)

Tag List Tag Info List

Tag Group List Tag Group Info List

h4:ventilationDamperSensorPoint Tag Group Info

Validity Always

Tag List Tag Info List

h4:ventilation Marker

h4:damper Marker

h4:sensor Marker

h4:point Marker

Relation List Relation Info List

Refresh Save

Remember name space! h4:



If the Name contains the letters roomtemp, all in a row, somewhere in the name itself

Regex Ignore Case

(?i)

Wild Card open/close

. \* . \*

tag name

n:name

operator

like

characters

roomtemp

Filter

n:name like ' (?i) . \* roomtemp . \* '

**n:name like ' (?i) . \* roomtemp . \* '**

local: | module: // docJdk / doc / jdk - se / java / util / regex / Pattern . bajadoc  
<http://xenon.stanford.edu/~xusch/regexp/>

If the Name contains the letters damper, AND spt OR cmd  
in any group of letters somewhere in the name itself



Regex Ignore Case	(?i)			
Wild Card open/close	.	*	.	*
tag name	n:name			
operator	like and or			
characters	damper	spt	cmd	

n:name	like	'	(?i)	.	*	damper	.	*	'	and
n:name	like	'	(?i)	.	*	spt	.	*	'	or
n:name	like	'	(?i)	.	*	cmd	.	*	'	

(n:name like '(?i).\*damper.\*') and ((n:name like '(?i).\*spt.\*') or (n:name like '(?i).\*cmd.\*'))

If the Name contains the letters damper and NOT spt or cmd in groups of letters somewhere in the name itself



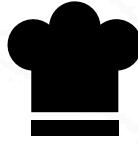
Regex Ignore Case	(?i)			
Wild Card open/close	.* .*			
tag name	n:name			
operator	like and or not			
characters	damper spt cmd			

Filter	n:name	like	'	(?i)	.*	damper	.*	'	and	not
	n:name	like	'	(?i)	.*	spt	.*	'	or	
	n:name	like	'	(?i)	.*	cmd	.*	'		

(n:name like '(?i).\*damper.\*') and not ((n:name like '(?i).\*spt.\*') or (n:name like '(?i).\*cmd.\*'))

rewarding

/ree-ward-ing/



Synonyms: fulfilling, **valuable**, satisfying, gratifying, **beneficial**,  
**worthwhile**, pleasing, **successful**

- Hierarchies made easy
- Brings life to Searches
- Enables for analytics
- Future Proofing for delivery to the cloud
- Gives the Customer consistent data model
- Customer OWNS data model, allowing for re-use



**MEANINGLESS**

# Group:Tag:Rules The Party



# 72

radio shorthand  
translates as "Best  
wishes"



NF  
23

CONNECTING  
THE WORLD