



TridiumTalk – Tagging in Niagara

Tips, Tricks and Best Practices

What's New in Niagara 4.10??

Niagara Framework: Always Evolving – 4.10

Niagara 4.10 brings exciting new features that continue to evolve Niagara's key tenets of visualization, rapid deployment, security, Edge, connectivity, certification and IT compliance.



Visualization

System DB Support for Tag Based PX
UI Performance Enhancements
Video Surveillance Viewer
HTML5 Tag Manager



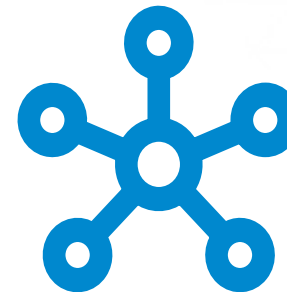
Deployment

ACE for Portable Niagara
Edge Tools Updates
Bulk Certificate Signing Tool



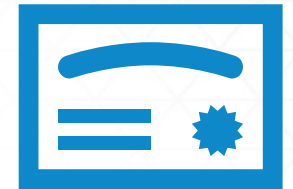
Security

Critical Support/Enhancements



Connectivity

MQTT – Google Auth
Edge Licensing Scheme

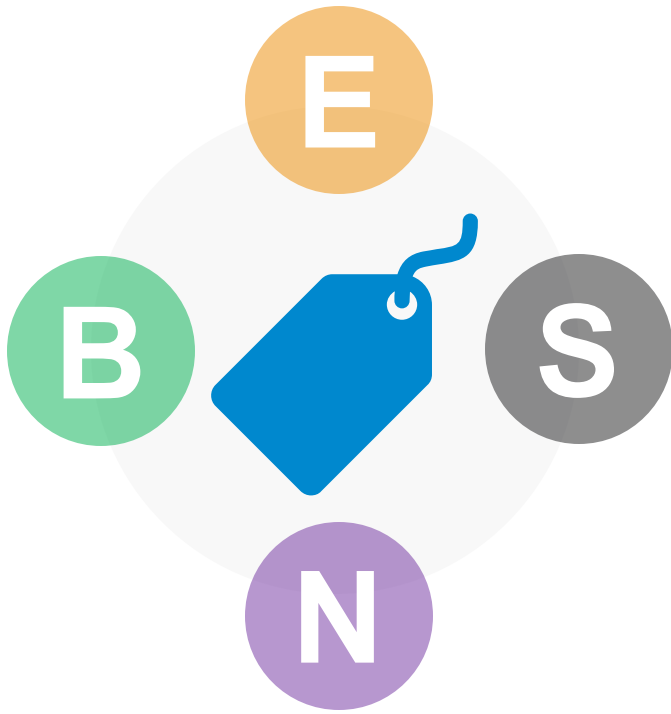


Certification & Compliance

Long Term Supported Release

Why Should I Use Tags in my Niagara Station??

Energy Manager/Facility Engineer



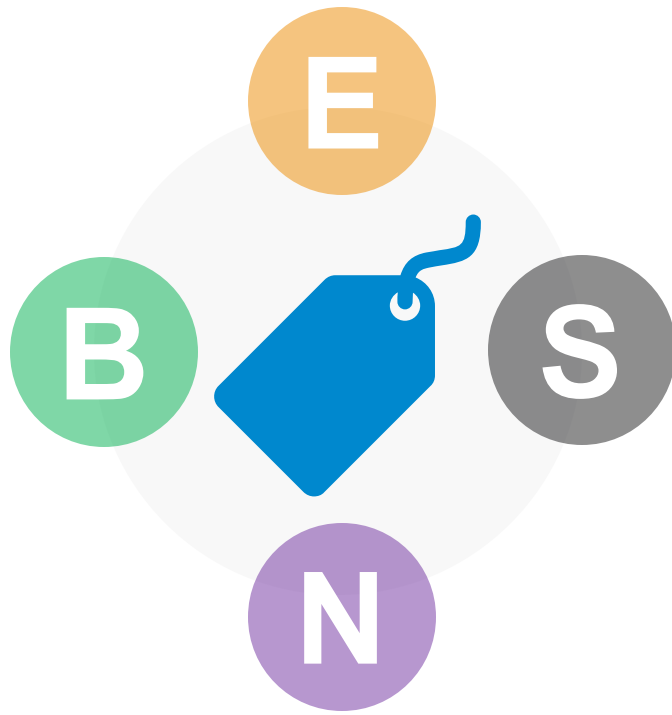
Saves **Valuable Time** and **Resources**

Enables a **rapid analysis** of large quantities of **disparate data**

Improves **Processes** and **Operations**

Provides **essential insight** into your **building systems** and **equipment operation**

System Integrator/Engineering Technician



Win More **Project Bids** and **Customers**

Tags and metadata are the **Future of Building Management** - Conform to **Division 25** and **ASHRAE Standard 223P**

Saves **Valuable Time** and **Resources**

Eliminates the inherent issues associated with
bespoke **point naming** schemas

Tagging Features in Niagara

Niagara 4 Features Timeline

Niagara 4.3

- Tag rule index

Niagara 4.6

- Bulk Tagging
- SystemDB
- equipRef, siteRef

Niagara 4.10

- HTML5 Tag Manager
- n:hasPxView

2015

2017

2018

2018

2020

2021

Niagara 4.0

- Niagara Entity Query Language(NEQL)
- Hierarchies
- Smart Tag Dictionary

Niagara 4.4

- Haystack dictionary 3.02
- Niagara Analytics 2.0

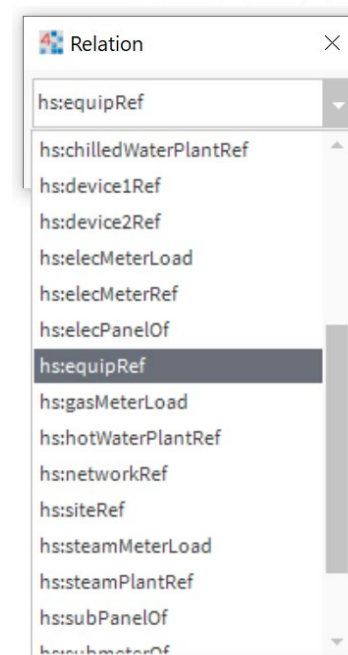
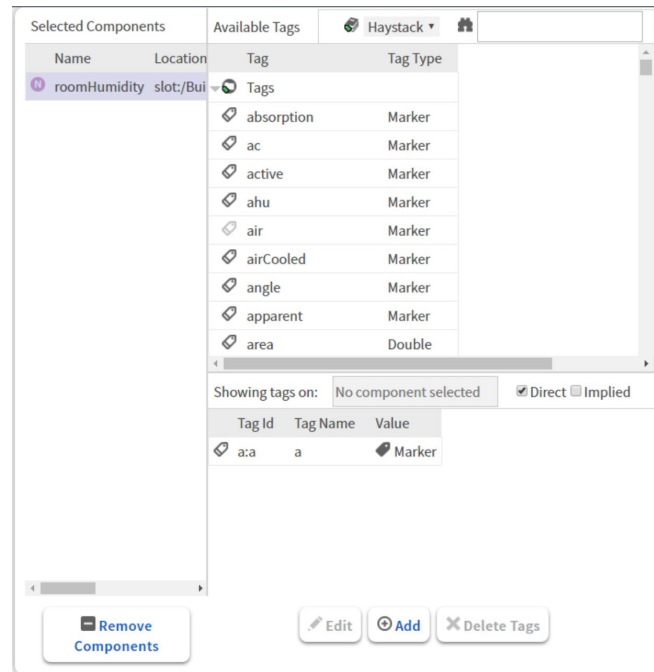
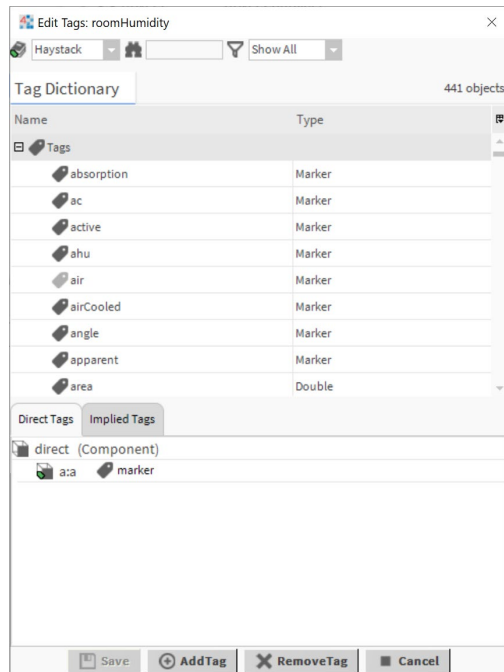
Niagara 4.9

- Tag Based Visualizations

Tagging in Niagara Tips, Tricks and Best Practices

Tag Dictionary

- Tag definitions
- Tag group definitions
- Relation definitions



Direct Tag Groups

- n:tagGroup relation: component → tag group definition
- Tag group's tags are implied (red)
- Tag group ID marker tag also implied (green)
- Caution: Deleting the tag group definition or its dictionary deletes the relation
 - Tag group's tags will no longer be implied
 - Recommendation: Make dictionary changes in-place

Relation Sheet

Relation Id	Slot	Dir	Type	Other Path	
n:tagGroup	-	▶	baja:Relation	slot:/Services/TagDictionaryService/Haystack/tagGroupDefinitions/airFlowStandbySp	-

The screenshot shows the Haystack interface with a list of available tags and a table of tag values. The 'Available Tags' list includes: airFlowSensor, airFlowStandbySp, airPressureSensor, apparentPowerPhaseSensorA, apparentPowerPhaseSensorAB, and apparentPowerPhaseSensorB. The 'Showing tags on:' dropdown is set to 'points'. The 'Tag Id', 'Tag Name', and 'Value' columns are visible. The 'Value' column shows 'Marker' for several tags, which are highlighted with red boxes. The 'Tag Id' column shows 'hs:airFlowStandbySp' and 'hs:standby', which are highlighted with green boxes. The 'Tag Name' column shows 'airFlowStandbySp' and 'standby'. The 'Value' column shows 'slot:/Services/TagDictionarySe' for 'airFlowStandbySp' and 'Marker' for 'standby'.

Tag Id	Tag Name	Value
hs:air	air	Marker
hs:airFlowStandbySp	airFlowStandbySp	slot:/Services/TagDictionarySe
hs:flow	flow	Marker
hs:id	id	h:4380
hs:sp	sp	Marker
hs:standby	standby	Marker
n:displayName	displayName	points
n:name	name	points
n:ordInSession	ordInSession	station:h:4380
n:station	station	BuildingAnalytics
n:type	type	baja:Folder

Smart Tag Dictionary

- Tag rules – imply tags, tag groups, and/or relations
 - Save heap memory
 - Easier to maintain and update
 - Drop into an existing station
 - Trade-off: computation at runtime
- Scoped tag rules – applies to descendants of a specified component

Tag Rule Conditions

- And, Or (short-circuiting)
- Always
- IsType
- BooleanFilter- uses a NEQL query
 - HasAncestor- the component itself or one of its ancestors satisfies the query
 - HasRelation- the component itself or a component reached by a relation satisfies the query

Tag Rule Conditions

- Recommendations
 - Because they're quick, put IsType conditions first
 - Use the n:type tag for an exact match
 - Use “(?i)” to ignore case: “n:name like ‘(?i)roomCO2’”

Tag Rule Example

Property Sheet

CO2Sensors (Tag Rule)

- Condition And
 - And And
 - IsType Is control:NumericWritable
 - Object Type control NumericWritable
 - Or Or
 - BooleanFilter Boolean Filter
 - Filter n:name like '(?i)roomCO2'
 - BooleanFilter1 Boolean Filter
 - Filter n:name like '(?i)CO2Sensor'
 - Tag List Tag Info List
 - hs:air Marker
 - hs:sensor Marker
 - hs:co2 Marker
 - Tag Group List Tag Group Info List
 - Relation List Relation Info List

Simple Implied Tags

- Implied value is fixed
 - Marker
 - Value defined in the rule
 - Examples: hs:phase = “BC”, hs:stage = 1.00

Smart Implied Tags

- Implied value is derived
 - n:name, n:displayName, n:type, n:ordInSession, n:station
 - hs:id, hs:kind, hs:tz
- May/may not be implied
 - n:input, n:output
 - n:hasPxView
- Combination
 - n:history
 - hs:enum, hs:maxVal, hs:minVal, hs:unit
 - Scoped tag

Scoped Tag

- Simple use-case
 - Tag is implied if an ancestor has a tag with the same ID
 - Implied tag value matches ancestor's tag value
- Advanced options
 - Search for a different tag ID
 - Out-of-scope tag- tag is not implied if intermediate ancestor has a tag with this ID
 - Copy the value of a different tag on the ancestor

Scoped Tag - Simple

Property Sheet	
IsComponent (Tag Rule)	
▶ Condition	Is baja:Component
▼ Tag List	Tag Info List
▼ scoped	Scoped Tag
▶ Validity	Is baja:Component
▶ Search Tag List	Singleton Tag Info List
▶ Out Of Scope Tag List	Singleton Tag Info List
▶ Value Source Tag List	Singleton Tag Info List
▼ Tag Group List	Tag Group Info List
▼ Relation List	Relation Info List

Before

- Ancestor
 - Folder1
 - PointA
 - PointB
 - PointC
 - Folder2
 - PointD
 - PointE
 - PointF

After

- Ancestor + my:scoped
 - Folder1 (my:scoped)
 - PointA (my:scoped)
 - PointB (my:scoped)
 - PointC (my:scoped)
 - Folder2 (my:scoped)
 - PointD (my:scoped)
 - PointE (my:scoped)
 - PointF (my:scoped)

Scoped Tag - Advanced

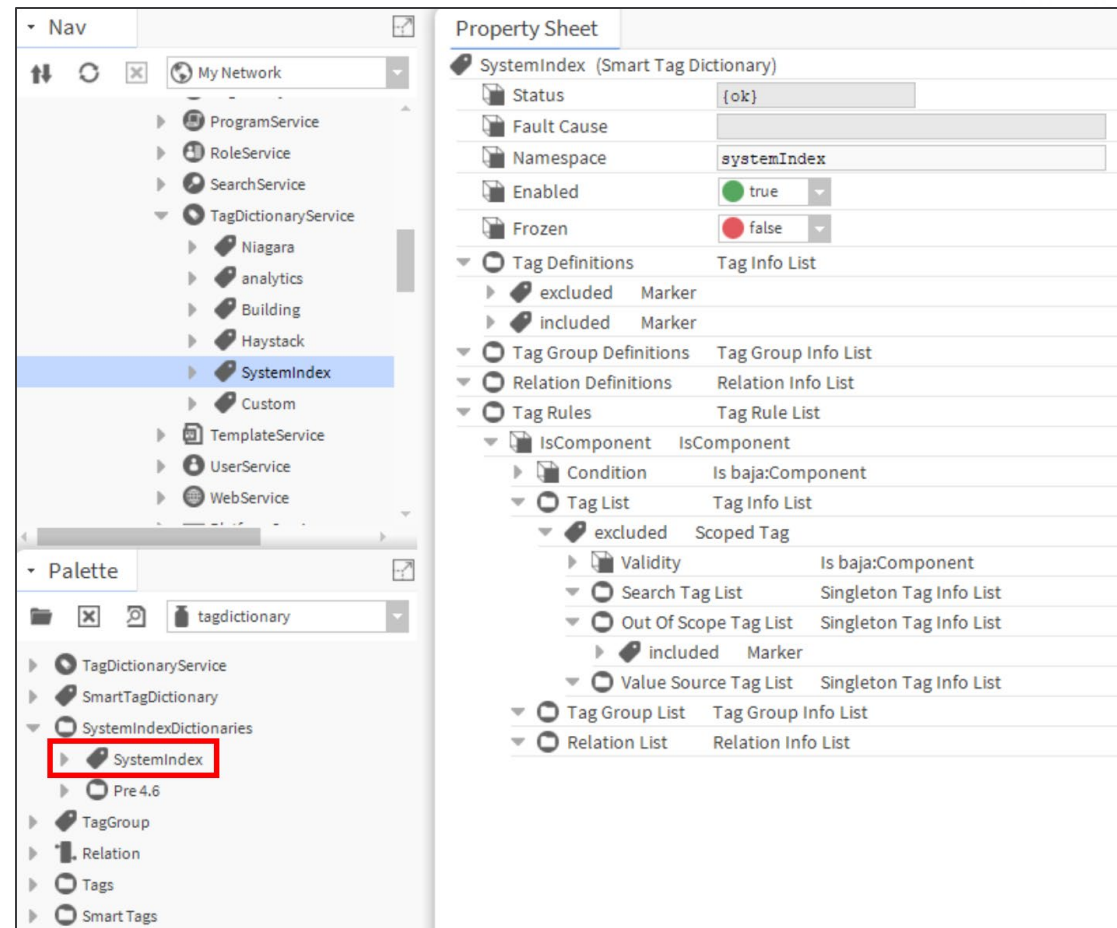
Property Sheet	
IsComponent (Tag Rule)	
▶ Condition	Is baja:Component
▼ Tag List	Tag Info List
▼ scoped	Scoped Tag
▶ Validity	Is baja:Component
▼ Search Tag List	Singleton Tag Info List
▶ other	Marker
▼ Out Of Scope Tag List	Singleton Tag Info List
▶ outOfScope	Marker
▼ Value Source Tag List	Singleton Tag Info List
▶ n:name	Marker
▼ Tag Group List	Tag Group Info List
▼ Relation List	Relation Info List

After

- Ancestor + my:other
 - Folder1 + my:outOfScope
 - PointA
 - PointB
 - PointC
- Folder2 (my:scoped = "Ancestor")
 - PointD (my:scoped = "Ancestor")
 - PointE (my:scoped = "Ancestor")
 - PointF (my:scoped = "Ancestor")

Scoped Tag - System Index

- By default, components with systemIndex:excluded tag are not indexed



Smart Implied Relations

- Niagara
 - n:child, n:parent
 - n:childDevice, n:parentNetwork
 - n:childPoint, n:childNullProxyPoint, n:parentDevice
- Haystack
 - hs:equipRef- from non-null proxy points to an ancestor with hs:equip
 - hs:siteRef- from non-null proxy points to their equip's site

Tag-Based PX Graphics

- Bindings use NEQL queries
- Bound components must have the expected tags and relations but not the same name or location in the component tree
- Traverse queries can bind to anywhere in the station using relations
- Graphics can be more reusable

System Database

- Periodically update tag and relation info for selected entities from each station in the NiagaraNetwork (System Index)
 - Default: all networks, devices, points, schedules, point/device folders, and components with a PX view
- Single-tier Support
- Enhances features that use NEQL queries such as search and hierarchies
- New in 4.10: virtual tag-based PX graphics (requires SystemDb)

Updated Resources | tridium university



Getting to know the Edge 10 (FREE)

STATUS: In Progress | TYPE: Course | DURATION: 42m

The Edge 10 was designed as a small unitary controller capable of powering applications such as fan coil units, small AHUs, heat pumps, zone control, etc...

20%



Niagara 4.8 Feature Update Tutorials (FREE)

STATUS: In Progress | TYPE: Course | DURATION: 27m

This course will take you through how to use the Security Dashboard, Client Certification Authentication, and Application Control Engine features new with the Niagara 4.8 release.

0%



Niagara 4.9 Feature Update Tutorials (FREE)

STATUS: Not Started | TYPE: Course | DURATION: 37m

This course will demonstrate the new features included in the 4.9 release of Niagara.

0%

Where Can I Find More TridiumTalk?



OPEN AUTOMATION SOLUTIONS

Niagara Community

Niagara Resource Center

Tridium University

Products

Where to Buy

Services & Support



Professional
Services



Software
Maintenance
Agreements



Niagara Asset
Manager



Tridium University



Niagara
Marketplace



Niagara Cloud
Services



Library



About Tridium



Events

Leveraging provisioning in an enterprise Niagara system

James Johnson walks through how to perform tasks such as disaster recovery backups, managing station and platform users, managing TLS certificates, updating security settings, configuring NTP, deploying templates and more.

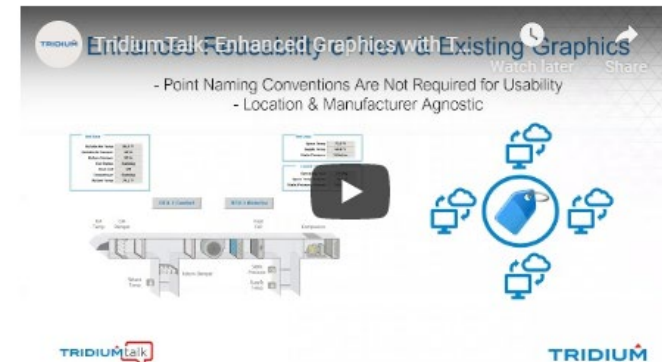


Q & A Document

Download Niagara 4.8 Example Bog File (password: tridium) Copy the partial bog file into your own station to view the Provisioning Jobs in the same way that was shown in the webinar.

Enhanced Graphics with Tag Based Visualization

Product Manager Stephen Holicky and Advanced Software Engineer Eric Anderson will provide an overview on how to create new, and edit existing, Niagara graphics to incorporate tag based PX bindings. While reviewing several examples, the team will discuss how to automatically convert existing Niagara graphics to utilize tags, the required syntax when manually creating tag-based graphics and other time-saving recommendations that will quickly help you get the job done right.



Q & A Document



Looking for Niagara Pro Tips?



<https://www.youtube.com/user/TridiumInc/videos>



Questions??