

“NiCS - Niagara Compatibility Statement”

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Welcome!

- The goal of TridiumTalk is to share with the Niagara community timely content on sales, products and technical topics. Each session will last between 45-60 minutes and will be a mix of presentation, demonstrations and Q&A.
- This session and past sessions will be posted on our community web site at www.Niagara-Central.com (more details to come)
- The content presented here is representative of Tridium's Niagara technology and products in general, please contact your channel partner for specific details and pricing.
- As a courtesy to others in the conference, please place your phone on mute until the Q&A portion of the program

NiCS - Niagara Compatibility Statement

- The NiagaraAX Compatibility Statement (NiCS) provides a structure (or schema) that developers and manufacturers can use to define the various levels and types of Niagara Interoperability with other Niagara based products their products will support.
- The NiCS addresses two primary interactions - the sharing of data between stations (JACEs and Supervisors) and the ability for a tool (i.e., Workplace AX) to engineer a station. The roots of the NiCS concept grew from gathering and understanding the requirements of the various users of Niagara technology consisting of end users (such as building owners), partners (such as BAS Manufacturers).

Agenda

- Overview - Requirements Niagara Community Members
- Tridium Licensing Overview
- Elements of the NiCS
- Example NiCS and Interactions
- More Information
- Question and Answer Session

Overview - End user requirements

- The ability to control their system and determine which contractors can bid or engineer their system
- The ability to insure they can prevent unauthorized parties from accessing the system for engineering or system changes
- The freedom to individually manage authorized parties independent of Tridium
- A methodology that is easy to understand and use

Overview - Partner Requirements

- The ability to define the various levels and types of interoperability their products will support
- The ability to prevent unauthorized parties from accessing an installed system to make engineering changes in order to adequately manage warranty/contractual commitments
- The freedom to individually manage their own compatibility rules independent of Tridium
- A methodology that is easy to understand and use

Overview - Tridium Requirements

- To provide a highly flexible technology solution that will enable partners to achieve their individual business and product goals
- To provide the ability to individually manage software modules that support new features and options
- To create a methodology that is easy to understand and use

License File in XML Format

```
<license version="3.3" vendor="Tridium" generated="2008-03-10" expiration="2008-03-31"
  hostId="Qnx-NPM2-0000-0E56-3398" serialNumber="2598">
  <feature name="about" project="Mobile Classroom" />
  <feature name="brand" brandId="vykon" accept.station.in="*" accept.station.out="*"
    accept.wb.in="*" accept.wb.out="*" />
  <feature name="bacnet" expiration="2008-03-31" device.limit="none" export="true"
    history.limit="none" point.limit="none" schedule.limit="none" parts="J-2XX-AX-DEMO" />
  <feature name="lonworks" expiration="2008-03-31" device.limit="none" history.limit="none"
    point.limit="none" schedule.limit="none" parts="J-2XX-AX-DEMO" />
  <feature name="maxHeap" expiration="2008-03-31" parts="J-2XX-AX-DEMO" />
  <feature name="mstp" expiration="2008-03-31" port.limit="4" parts="J-2XX-AX-DEMO" />
  <feature name="ndio" expiration="2008-03-31" device.limit="none" history.limit="none"
    point.limit="none" schedule.limit="none" parts="J-2XX-AX-DEMO" />
  <feature name="niagaraDriver" expiration="2008-03-31" device.limit="none"
    history.limit="none" point.limit="none" schedule.limit="none" parts="J-2XX-AX-DEMO" />
  <feature name="obixDriver" expiration="2008-03-31" device.limit="none" export="true"
    foreignDevice.limit="none" foreignHistory.limit="none" foreignPoint.limit="none"
    foreignSchedule.limit="none" history.limit="none" point.limit="none"
    schedule.limit="none" parts="J-2XX-AX-DEMO" />
```

License File Definitions

- All license files require an opening `<license >` line, where the last line in the license file is the closing `</license>` tag, and all contents (lines) in between are `<feature >` elements, plus one signature element.
- In the first `<license >` line, there are a number of common attributes
 - `version="3.2"`
 - `vendor="Tridium"`
 - `generated="2007-04-11"`
 - `expiration="2008-03-31"`
 - `"hostId="Win-6827-91CB-C49A-6B4B"`
 - `serialNumber="4856">`
- `version="3.2"`
 - Designates the highest release version of software which can be installed in the JACE.
 - If a newer version of software is installed, the JACE will fail on startup with a license version error.
- `vendor`
 - `vendor="Tridium"` - This is always Tridium.

License File Definitions

- generated
 - generated="2007-04-11" - The date which the license file was generated.
- expiration
 - expiration="2008-03-31" - The expiration date of the license file. After the expiration date the Workbench software will fail start due to a license expired error.
 - Typically engineering copies of Workbench have expiration dates which expire on an annual basis.
 - License files for actual projects are issued with non-expiring licenses, where this attribute value is "never".
- hostId
 - hostId="Win-6827-91CB-C49A-6B4B" - Alpha numeric code which is generated upon installation of the Workbench software on a Windows-based platform.
 - QNX-based JACE controllers are assigned a hostId similar to this hostId="Qnx-NPM2-0000-0E8F-2420".
 - The hostId in the license file must match the hostId of the JACE controller, otherwise the JACE cannot run a station.

License File Definitions

- serialNumber
 - serialNumber="4856" - Applies to a license for a QNX-based JACE only.
 - Designates its unique serial number assigned from the factory.
 - The serial number in the license file must match the serial number of the JACE.
- about
 - The "about" feature is used to designate optional information, and does not affect station operation in any way.
 - This information can be useful for filtering records when searching the license database.
 - Two attributes in this feature are typically designated when ordering product: `<feature name="about"`
 - owner="Tridium"
 - project="Tridium Testing"/>

NiCS Overview

- Niagara Conformance Statement
- The NiCS provides a structure (or schema) that companies can use to define the various levels and types of Niagara interoperability that their products will support.
- Embedded into Tridium's Licensing Model
- Incorporating the needs of the Niagara Community Members

BRAND Feature

- The NiCS definitions are contained in the this feature item which is checked by a station or tool when it starts up.
- There are five attributes to the NiCS:
 - BrandID
 - Station Compatability In,
 - Station Compatibility Out,
 - ToolCompatibility In
 - Tool Compatibility Out.
- These elements can be combined in a variety of ways to achieve unlimited flexibility.
- Example
 - `<feature name="brand" brandId="Vykon" accept.station.in="*" accept.station.out="*" accept.wb.in="*" accept.wb.out="*" />`

Brand Feature Definitions

- brandId
 - brandId="Vykon", brandId="CompanyA", brandId="CompanyB",
 - Every licensed station and tool has a Brand Identifier (BrandID).
 - This field holds a text descriptor that the OEM chooses as the identifier for its product line.
 - Each station or tool can have only one BrandID entry.
 - This can not be changed once it is licensed
- accept.station.in
 - accept.station.in="*", accept.station.in="CompanyA", accept.station.in="CompanyB"
 - This field is a list of brands that this local station will allow NiagaraAX data to come in from.
 - From a JACE perspective, "this is the list of brands that I can accept data from".
 - The "*" is a wildcard designation to allow all brands.
- accept.station.out
 - accept.station.out="*", accept.station.out="CompanyA", accept.station.out="CompanyB"
 - This field is a list of brands that this local station will allow NiagaraAX data to be shared with.
 - "This is the list of brands that I can share data with".
 - The "*" is a wildcard designation to allow all brands

Brand Feature Definitions

- accept.wb.in
 - accept.wb.in="*" ,
 - This field is a list of brands that this station will allow to be connected to it for engineering of its application.
 - "This is the list of brands that can engineer me".
 - The "*" is a wildcard designation to allow all brands
- accept.wb.out
 - accept.wb.out="*" ,
 - This field is a list of brands that this tool is allowed to connect to and engineer.
 - "This is the list of brands that I can engineer".
 - The "*" is a wildcard designation to allow all brands

Device to Device Compatibility



- Company "A" and "B" JACEs pass data because of station in and out compatibility match.

Device to Device Compatibility



- Company "A" and "B" JACEs pass data because of station in and out compatibility match.
- Company "C" JACE does not pass data to either JACE "A" or "B".
- It stands alone relative to Niagara but may integrate using other protocols such as BACnet.

Device to Supervisor Compatibility



- Company "A" and "B" JACEs pass data because of station in and out compatibility match.
- AX Supervisor "B" and Company "A" or "B" JACEs pass data because of station in and out compatibility match.

Tool To Device Compatibility



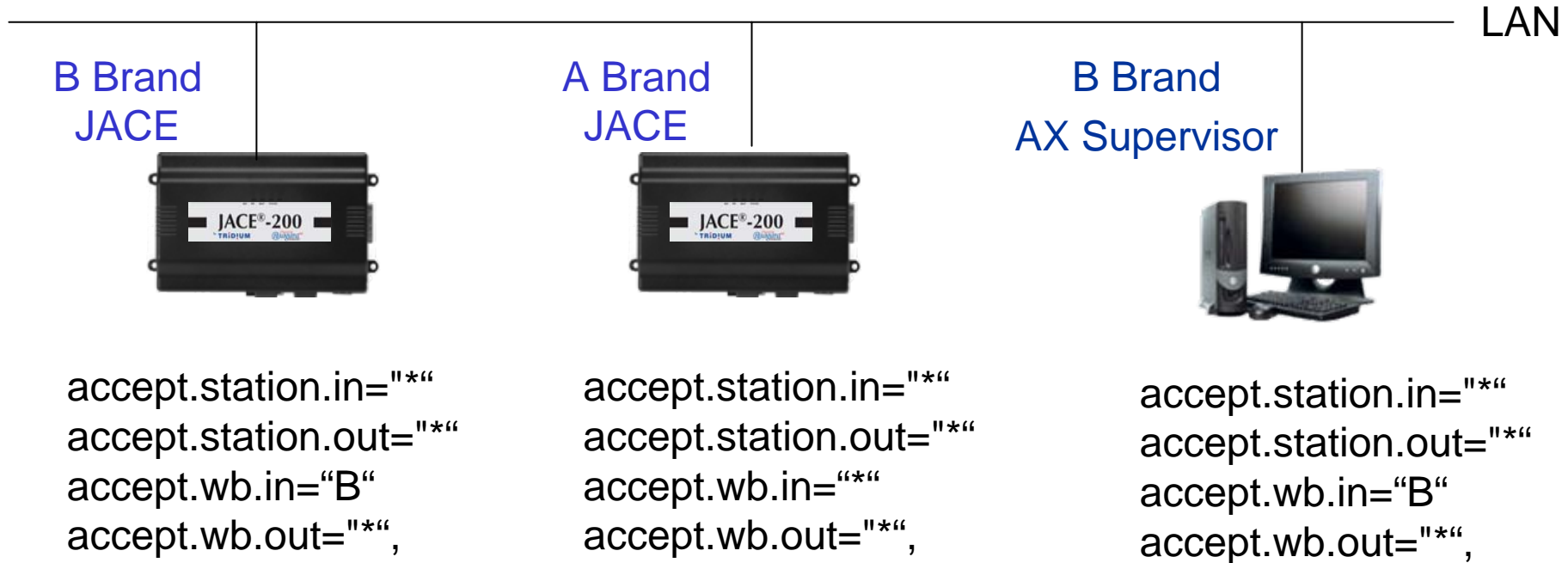
- Company "B" WorkBench can engineer JACE "B" since JACE and WorkBench brands match.
- Company "B" WorkBench can engineer JACE "A" since company "A" accepts any brand.

Tool To Device Compatibility



- Company "A" WorkBench can engineer JACE "A" since JACE and WorkBench brands match (also because JACE A accepts any brand tool).
- Company "A" WorkBench can not engineer JACE "B" since company "B" only accepts a Company "B" tool.

Compatibility Example



- Company "A" and "B" JACEs and Company B Supervisor pass data because of station in and out compatibility
- Company "B" Supervisor with integral WorkBench can engineer JACE "B" since JACE and WorkBench brands match.
- Company "B" Supervisor with integral WorkBench can engineer JACE "A" since company "A" accepts any brand.

Why Not An Open NiCS?

- Some applications use Niagara for critical or specialized applications
 - Modifying the application with Workbench could compromise safety or cause equipment damage
 - In some cases manufacturers have used BACnet, Modbus etc. to communicate outside the application too other BAS systems.
- Some manufacturers wish to have only authorized representatives of the manufacturer to change the application in a station.
 - This could be for quality or competitive reasons.

How Do I Get Open NiCS?

- Before you buy
 - Specify Open NiCS
 - Open NiCS Spec available from Tridium
 - *All NiagaraAX software licenses shall have the following NiCS: "accept.station.in=*"; "accept.station.out=*" and "accept.wb.in=*" and "accept.wb.out=*".*
- Existing project
 - Ask your vendor to modify their license to allow for interoperability with other Niagara systems

NiagaraAX Security Infrastructure

- The NiCS infrastructure provides high level, manufacturer defined, interoperability management, but it is only part of the security methodology for NiagaraAX -based software applications and products. This is where the security infrastructure comes in.
- Access to an installed system by a user or by another station is limited at the device level by security and passwords.
- NiagaraAX's extensive security model provides fine grained control over access to an engineering tool, a station, and even down to individual displays and components.
- Detailed information on the security model is provided in the White Paper "NiagaraAX Security" or by contacting Tridium, Inc

Question and Answer Session

- Select the Q&A icon in the Netspoke menu bar to type your questions
- Feel free to speak up for further discussion
- Please introduce yourself, company name, and where you are calling from.

Thank you!

- We would like your feedback on today's TridiumTalk
- Please take a moment to answer our short survey
- If you have any further questions, comments or topic suggestions, please email them to SalesSupport@tridium.com



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