

NS2024

POWER OF PARTNERSHIP



Accelerated Engineering

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Tridium – Sales Engineer

NS2024
POWER OF PARTNERSHIP

Agenda

- Template Overview
- Station Templates
- Component Templates
- Device Templates
- Deploying and Upgrading Templates
- Deploying Templates Using Provisioning

Template Overview

- A deployable package of Niagara objects which might include station components, images and px files
- Designed to eliminate unnecessary repetition when deploying multiple instances of components with similar functionality
- Provides better versioning and portability than using palettes or partial bog files
- Helps enforce engineering standards on projects, particularly when multiple application engineers or multiple integrators are involved

Template File

- Encapsulates at least two internal files:
 - template.bog – the root component of the template
 - template-manifest.xml – xml parameters such as UUID, version, resources, etc.
- Optionally includes additional resources such as images, px or html files
- Template is a zip file with a unique extension based on type

Template Type	File Extension	File Location
Station	ntpl	local: file:~stationTemplates
		local: file:!defaults/workbench/newStations
Component	ntpl	local: file:~templates
Device		
Application	napl	local: file:~applicationTemplates

Template File – Example Contents

```
<?xml version="1.0" encoding="UTF-8"?>
<template id="d5fc928d-c7d0-4e37-97b8-a0a00b0c7152" version="1.3" vendor="Tridium" title="AHU_01" description="VT8600 AHU 2H/2C Econ" state="20" buildVersion="4.14.0.118">

  <info i="Viconics VT8600 AHU 2H/2C with Economizer"/>

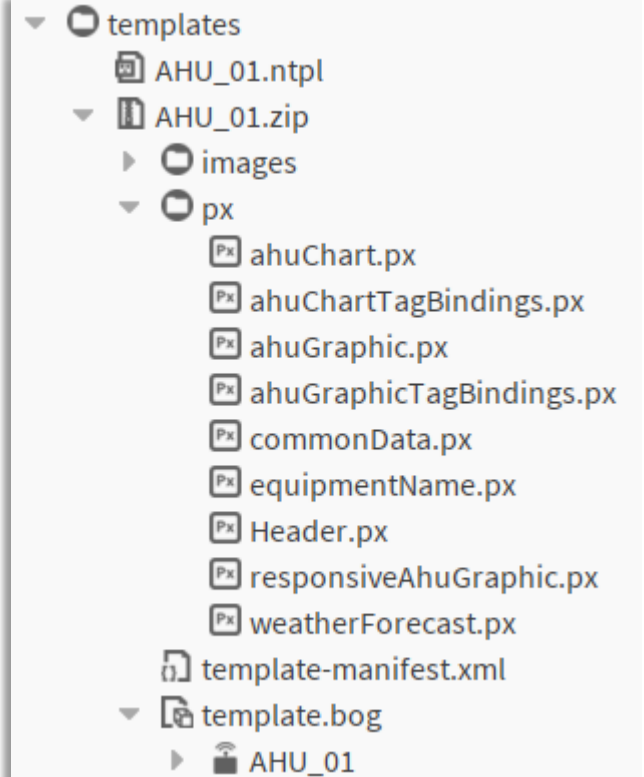
  <revisions>
  </revisions>

  <settings>
    <p n="uID" req="true" typ="str"/>
    <p n="version" req="true" typ="str"/>
    <p n="versionDate" req="true" typ="str"/>
    <p n="deployed" req="true" typ="bool"/>
    <p n="propagated" req="true" typ="bool"/>
    <p n="pxEditBindings" req="true" typ="str"/>
    <p n="address" req="true" typ="str"/>
    <p n="objectId" req="true" typ="str"/>
    <p n="enabled" req="true" typ="bool"/>
    <p n="OccCoolStpt" req="true" units="fahrenheit"/>
    <p n="OccHeatStpt" req="true" units="fahrenheit"/>
    <p n="UnoccCoolStpt" req="true" units="fahrenheit"/>
    <p n="UnoccHeatStpt" req="true" units="fahrenheit"/>
    <p n="ConfigBinding" req="true" typ="str"/>
    <p n="ConfigBinding1" req="true" typ="str"/>
    <p n="ConfigBinding2" req="true" typ="str"/>
    <p n="ConfigBinding3" req="true" typ="str"/>
    <p n="ConfigBinding4" req="true" typ="str"/>
    <p n="ConfigBinding5" req="true" typ="str"/>
    <p n="ConfigBinding6" req="true" typ="str"/>
    <p n="relate" req="true" typ="str"/>
  </settings>

  <links>
    <p n="OccCommand_in16" req="true" dir="in" typ="str"/>
    <p n="OutdoorTemp_in16" req="true" dir="in" units="fahrenheit"/>
  </links>

  <bindings>
  </bindings>

  <resources>
    <r n="ahuGraphic.px" type="px" sourceOrd="file: ^px/deploy/ahu_01/ahuGraphic.px"/>
    <r n="Header.px" type="px" sourceOrd="file: ^px/Header.px"/>
  </resources>
</template>
```



Station Templates

- Complete station used with **New Station Wizard**
- Easier to use and less bloat than trying to clean an existing station with extraneous drivers, services, images, px, etc.

The screenshot displays the 'New Station Wizard' application window. On the left, a file explorer shows the path: My Host: ZEUS (transformTesting) > My File System > Sys Home > defaults > workbench > newStations. The right pane shows the wizard configuration:

- Station Name:** ABC_Fasteners
- Station Directory:** C:\Users\James\Niagara4.14\tridium\stations\ABC_Fa.
- Station Templates:** A table listing available templates.

Name	Vendor	Version	Description
NewControllerStation	Tridium	1.7	
NewEntSecControllerStationTemplate	Tridium	1.1	New Enterprise Security Controller Station Template
NewEntSecSupervisorStationTemplate	Tridium	1.1	New Enterprise Security Supervisor Station Template
NewJACEProvisioningStation	Tridium	1.5	
NewSupervisorStationLinux	Tridium	1.9	
NewSupervisorStationWindows	Tridium	1.9	

Creating Station Templates

- Click the **Duplicate** button in the Template View of an existing station template to generate a new station template with the same components but a different UUID
- From a running station by right clicking the root Config node and selecting Templates → Make Station Template

Station Template: Bldg1F1 Vendor: Tridium Version: 1.0

Template Info Component Configuration Graphics Subtemplates

Filename: Bldg1F1

Folder: [Dropdown]

Title: Bldg1F1

Vendor: Tridium

Version: 1.0

State: Draft [Dropdown]

Description: [Text Area]

Info: [Text Area]

Icon: NO ICON SELECTED [Folder Icon]

Save Duplicate Cancel

Component Template

- Could be a single component or group of components
- Can be deployed by drag and drop from the template side bar, bulk deployment from the Template Service, or bulk deployment using Niagara Provisioning

Template: Building Vendor: Tridium Version: 1.1

Template Info Component Configuration Relations Template I/O Graphics Subtemplates

Building

- Tag Definitions
- Tag Group Definitions
- Relation Definitions
- Tag Rules
- templateConfig

Property Sheet

equipCategory	DynamicEnum
Tag Group Definitions	Tag Group Info List
Relation Definitions	Relation Info List
Tag Rules	Tag Rule List
ahuTags	ahuTags
cool1Tags	cool1Tags
cool2Tags	cool2Tags
economizerTags	economizerTags
effSetpointTags	effSetpointTags
effStptTags	effStptTags
fanTags	fanTags
floorTags	floorTags
globalOaTemp	globalOaTemp
heat1Tags	heat1Tags
heat2Tags	heat2Tags
oaTempTags	oaTempTags
occCoolStptTags	occCoolStptTags
occHeatStptTags	occHeatStptTags
occupiedTags	occupiedTags
roomCo2Tags	roomCo2Tags
roomHumidityTags	roomHumidityTags
roomTempTags	roomTempTags
supplyTempTags	supplyTempTags
unoccCoolStptTags	unoccCoolStptTags
unoccHeatStptTags	unoccHeatStptTags
weeklyScheduleTags	weeklyScheduleTags

Template Manager

- Displays status for all deployed instances of component and device templates in the station
- Allows upgrading, downgrading or redeploying a deployed instance
- Allows using an Excel spread sheet to either bulk deploy new instances or update configuration properties of existing deployed instances

Station:4912 (AcmeAnvil) : Config : Services : TemplateService AX Template Manager

AX Template Manager 1 objects

Path	TemplateName	Vendor	Version	Inputs	Outputs	Relations	DefaultPasswords	Avail.Version	Modified
/Services/TagDictionaryService/Building	Building	Tridium	1.1	0	0	0	0	Tridium 1.1	- Up to Date

[Detach](#) [Upgrade All Out Of Date](#) [Upgrade](#) [Reset](#) [Commit](#) [Bulk Deploy From Excel](#) [Update Configs From Excel](#)

Template Export Configs

- Command available on template which generates a XLSX spreadsheet which is used by the bulk deploy process and provisioning jobs
- Spreadsheet allows defining component slot path, name, display name, configuration property values, data links and relations
- Typically, more efficient than using individual property sheets to make changes or manually creating data links and relations

AHU_01.xlsx - Microsoft Excel													
Home Insert Page Layout Formulas Data Review View													
X10													
	A	B	F	G	H	I	J	K	L	M	N		
1	Template Description	VT8600 AHU 2H/2C Econ	<div>Slot Name</div> <div>User Tip</div> <div>Bind Hints</div> <div>Target Slot Hint</div> <div>Slot Path Scope</div> <div>Description</div>	Inputs							<div>User Tip</div> <div>Relation Id</div> <div>Relate Hints</div> <div>Direction</div> <div>Slot Path Scope</div> <div>Description</div>	<div>Relations</div> <div>Select the floor this AHU serves.</div> <div>hs:siteRef</div> <div>hs:site and b:Floor</div> <div>Outbound</div>	
2				OccCommand_in16			OutdoorTemp_in16						
3	Template Title	AHU_01		Select the desired schedule to control this AHU			Select the global outside air temp sensor						
4	Template Version	1.6		b:WeeklySchedule			hs:outsideAirTempSensor and b:Global						
5						out			out				
6						Schedules			Services/WeatherService				
7	Network Slot Path	Device Name											
8	Drivers/BacnetNetwork/Floor	AHU_16		SecondFloorWeekly	out	Schedules	Current				Floor		
9	Drivers/BacnetNetwork/Floor	AHU_17		SecondFloorWeekly	out	Schedules	Current				Floor		
10	Drivers/BacnetNetwork/Floor	AHU_18		SecondFloorWeekly	out	Schedules	Current				Floor		
11	Drivers/BacnetNetwork/Floor	AHU_19		SecondFloorWeekly	out	Schedules	Current				Floor		
12	Drivers/BacnetNetwork/Floor	AHU_20		SecondFloorWeekly	out	Schedules	Current				Floor		
13	Drivers/BacnetNetwork/Floor	AHU_21		SecondFloorWeekly	out	Schedules	Current				Floor		
14	Drivers/BacnetNetwork/Floor	AHU_22		SecondFloorWeekly	out	Schedules	Current				Floor		

Provisioning Deploy Template

- Used to deploy a component or device template to remote stations
- Job step selects the xlsx file, but the applicable ntpl file must be located in the same directory on the provisioning station

: Drivers : NiagaraNetwork : ProvisioningNwExt : DeployTagDictionary AX Niagara Network Prototype View

☒ Generate an alarm when any step fails or is canceled
☐ Generate an alarm when job completes successfully

Provisioning steps to run—

Deploy Template Step: Excel File Ord Path = "file:^templateCache/Building.xlsx"

Stations to include in the job—

Bldg1F1
Bldg1F2

Run Now Save Refresh

Provisioning Upgrade Template

- Used to upgrade deployed instances of a component or device template in remote stations
- Job step selects the updated ntpl file, the.xlsx file is not required

: Drivers : NiagaraNetwork : ProvisioningNwExt : UpgradeTagDictionaryTemplate AX Niagara Network Prototype View

☒ Generate an alarm when any step fails or is canceled
☐ Generate an alarm when job completes successfully

Provisioning steps to run—

📁 Upgrade Template Step for Vendor:Title = "file:^templateCache/Building.ntpl"

⊕ ▲ ▼ ✕ 🔍

Stations to include in the job—

📁 Bldg1F1
📁 Bldg1F2

⊕ ▲ ▼ ✕

⚡ Run Now 📁 Save ↺ Refresh

Provisioning Update Template Configuration

- Used to update the configuration property values for deployed instances of a component or device template in remote stations
- Job step selects the updated xlsx file

AX Niagara Network Prototype View

☒ Generate an alarm when any step fails or is canceled
☐ Generate an alarm when job completes successfully

Provisioning steps to run—

Update Template or Application Configuration Step with "file:^templateCache/AHU_01.xlsx"

Stations to include in the job—

Bldg1F2

Run Now Save Refresh

Device Template


- Root component is a specific driver device type
- Can be deployed by drag and drop from the template side bar, matching in the driver device manager view, bulk deployment from the Template Service, or bulk deployment using Niagara Provisioning
- Configuration properties are required for any properties that need to be set with unique values such as device address or setpoints



Template: AHU_01 Vendor: Tridium Version: 1.6


Template Info			Component	Configuration	Relations	Template I/O	Graphics	S
Add			Rename Remove Set Value					
AHU_01								
Attributes								
Enabled								
Alarm Source Info								
Address								
Points								
Virtual								
Alarms								
Schedules								
Trend Logs								
Config								
Enumeration List								
Use Cov								
Use Cov Property								
Max Cov Subscriptions								
b:BuildingId								
b:FloorId								
hs:id								
Slot	Ord	Value						
address	/address	2:01						
objectId	/config/deviceObject/objectId	device:1						
enabled	/enabled	false						
OccCoolStpt	/points/OccCoolStpt/fallback	74.0 °F {ok}						
OccHeatStpt	/points/OccHeatStpt/fallback	70.0 °F {ok}						
UnoccCoolStpt	/points/UnoccCoolStpt/fallback	80.0 °F {ok}						
UnoccHeatStpt	/points/UnoccHeatStpt/fallback	65.0 °F {ok}						

Device Manager – Dev Template Mode



- Apply device template to newly discovered devices while adding to the network
- Apply device template to new offline devices while adding to the network

 AX Bacnet Device Manager



  Bacnet Discover Devices

Success >> 

Discovered2 objects

Device Name	Device ID	Netwk	MAC Addr	Vendor	Model	Objects
 Bldg1F1_51	device:51	1	192.168.5.74:0xBAC0	Tridium	Niagara4 Station	1
 VT8650U5500BP-1	device:86001	2	1	Viconics Technologies	VT8650U5500BP	328

Templates2 objects

Name	Vendor	Version	Description
 AHU_01	Tridium	1.6	VT8600 AHU 2H/2C Econ
 AHU_02	Tridium	1.1	VT8600

Questions

