IRM Migration Tool

MIGRATION GUIDE

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ABOUT THIS GUIDE

This guide contains information about how to migrate Spyder application to IRM supported applications on a Supervisor or remote host station using IRM Migrator Tool.

Prerequisites: It is assumed that you are familiar with basic Niagara techniques and functions, such as creating platforms, stations, and networks etc.

To use IRM Nx Migrator tool, you need to download latest IRM Engineering Tool version and Honeywell Spyder Tool from the www.centraline.com and install it on workbench. Refer Niagara IRM Engineering Tool - EN2B-0414GE51 to configure the IRM Engineering Tool.
Following are the list of required modules:

IRM Engineering Tool	Honeywell Spyder Tool
- docHoneywellSylkDevice-doc.jar - honeywellSylkDevice-rt.jar - honeywellSylkDevice-ux.jar - honeywellVersionManager-rt.jar - honIrmConfig-rt.jar - honIrmConfig-wb.jar - honIrmConfig-doc.jar - honIrmControl-rt.jar - honIrmControl-ux.jar - honIrmControl-doc.jar - honIrmAppl-rt.jar - airFlowBalancer.jar - spyderToIrmNxMigrator-wb.jar	- honeywellSpyderTool.jar - docHoneywellSpyder.jar - honeywellBacnetSpyder.jar - genericUIFramework.jar - wsVavBalancer.jar - wsStdLonDeviceTemplates.jar - honeywellSpyderMigrator.jar - airFlowBalancer.jar

The file formats that user can migrate from Spyder Merlin backup using the IRM Nx Migrator tool.
Following Items user can migrate from Spyder Merlin to IRM.

Station	Migrate Spyder stations to IRM stations from Spyder backup.
Library	Migrate Spyder library to IRM compatible application library.
Exported Library	Migrate exported Spyder libraries to IRM compatible applications.
Custom Palette	Migrate custom palettes containing Spyder applications to IRM compatible palette.

NOTE: In the migration process, only the contents of Control Program are migrated, that is only the control programs and its associated points present in the control program are migrated.

The CentraLine NX Migrator tool does not support Niagara AX version backups.
Refer Migrating Existing Spyder Applications
If the schedule is defined in the wire sheet and TR75, on migration only one schedule block gets migrated to IRM application.

If user migrate existing Spyder application to IRM application, then for each networksetpoint type sylk parameter, on migration if a link exists to parameter then a loop back link will be created from parameter to all sources from where link exists to this parameter.
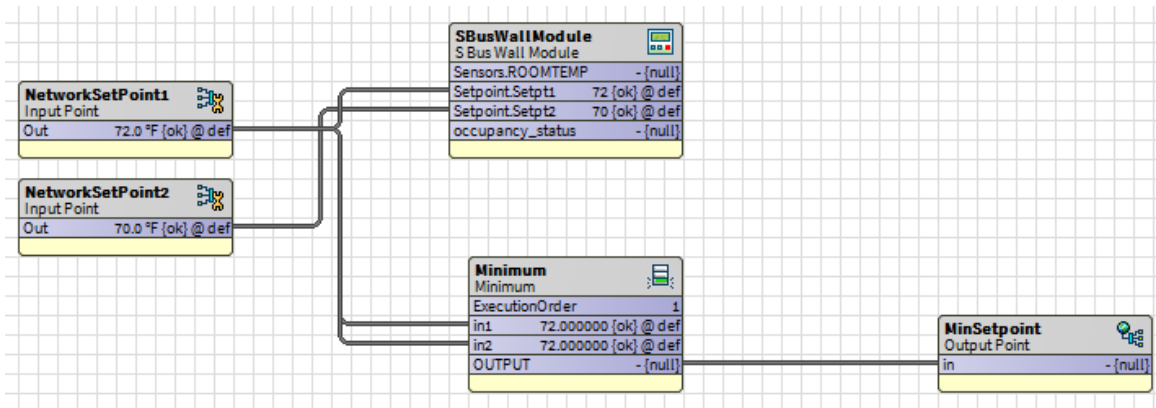
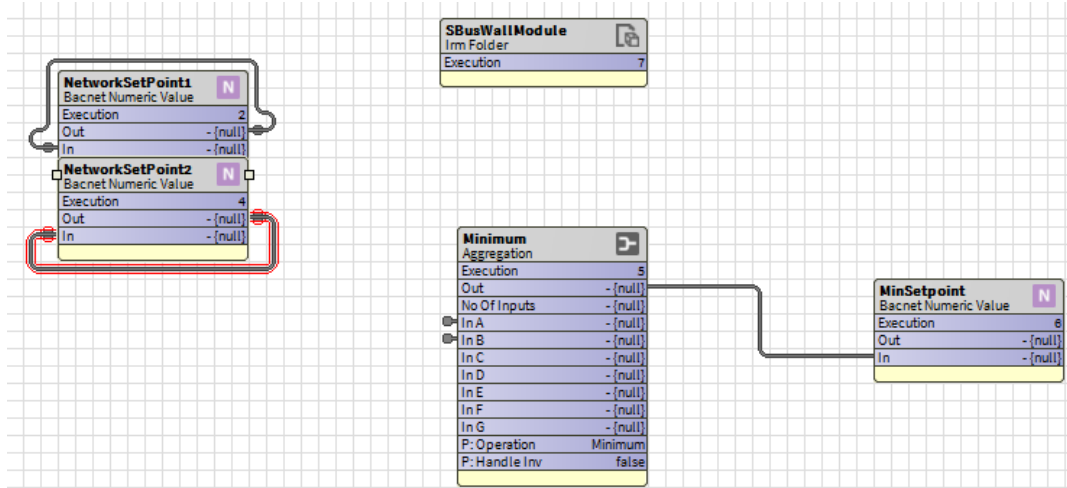**Figure 1: Network setpoints associated with SBus Wall Module**

Figure 2: Network setpoints reverse connection with SBus Wall Module after migration

|	
SBusWallModule folder	On Sylk migration, for each parameter, one function block will be created and are grouped in folders named with categories.
Parameters inside Sensors Block	Parameters are created under a folder (folder name is based on the category of a Sylk parameter) and category folder contains the Sylk parameters, which are present inside a folder, SylkDevice. In this case, it is SBusWallModule.
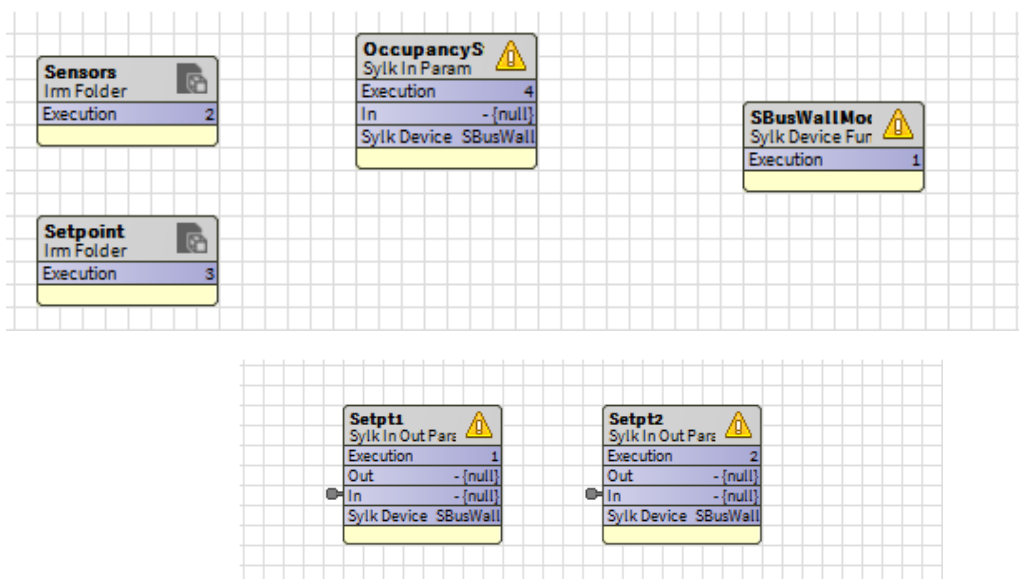
Figure 3: Parameters Inside Sensors Block

UPGRADING CENTRALINE AX PLATFORM TO CENTRALINE N4 PLATFORM

User cannot directly migrate Spyder application running on CentraLine AX platform, as the IRMNX Migrator tool does not support Niagara AX version. To migrate Spyder application from CentraLine AX platform, user need to upgrade Centraline AX platform to CentraLine N4 platform.

Follow the below steps to migrating CentraLine AX to Centraline N4 Platform:

1. Migrate the final backup of AX platform to N4 platform using Niagara 4 Migration Tool.
2. If N4 version not upgraded to N4.8 version, then upgrade N4 (N4.1, N4.2, N4.3, N4.4 or N4.7) to N4.8.
3. Migrate the final backup of N4.8 to IRM compatible version 4.8 using IRMNX Migrator tool.

MIGRATING SPYDER APPLICATION TO IRM APPLICATION

Procedure

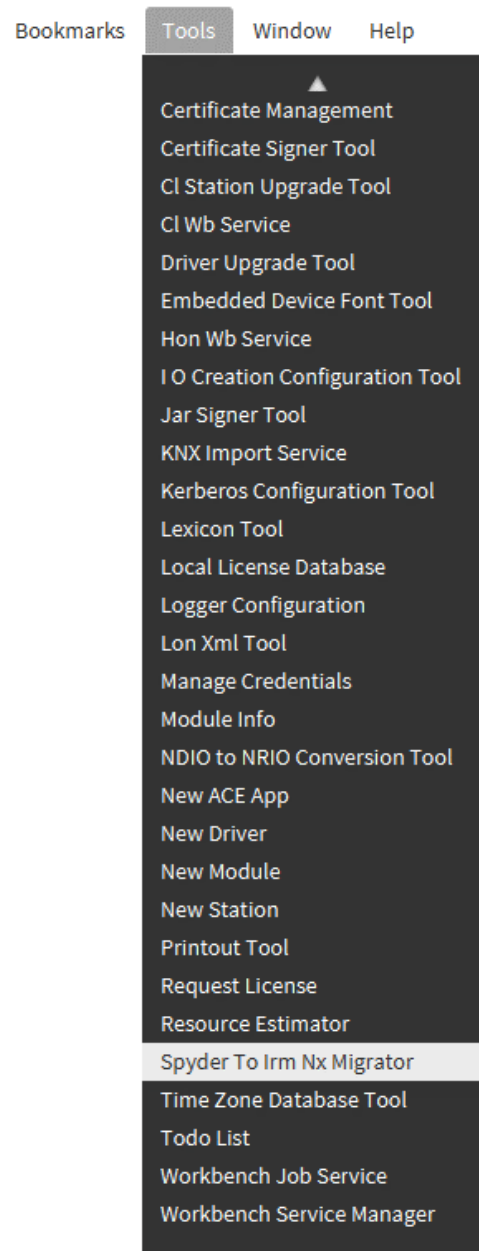1. Navigate to **Tools** and select **Spyder To IRMNx Migrator** option.

Figure 4: Spyder To IRM Nx Migrator tool in Tools Drop-Down Menu

2. When user navigate to **Tools** > **Spyder To Irm Nx Migrator**, default Spyder To IRMNx Migrator tool window displayed.
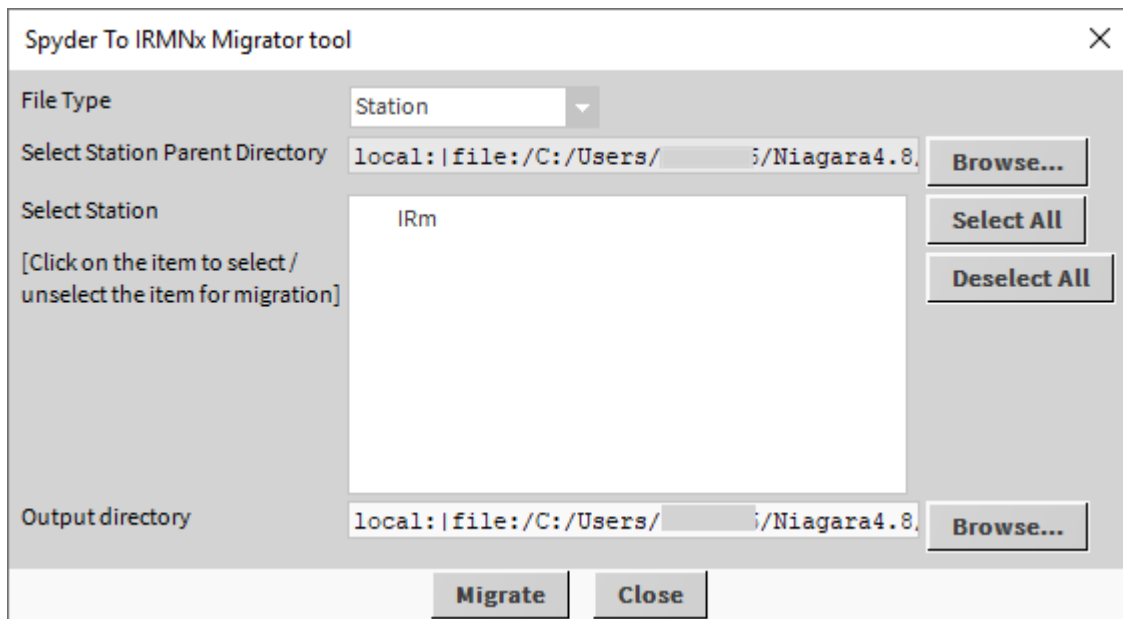
Figure 5: IRM Migrator Tool Window

Migration process from Spyder application to IRMNx application supports different file types. Following are the different file types that can be provided as an input to the IRM migration tool:

- **Migrating Station**
- **Migrating Library**
- **Migrating Exported Library**
- **Migrating Custom Palette**
- **Copying Migration Results to IRM Application**

Steps to Migrate Station

Procedure

1. Select the file type as **Station** in the File Type drop-down menu.
2. Click **Browse** next to the **Select Niagara Home Directory** field and select the directory, where the list of station is available.
3. Locate the specific files in the directory that user need to migrate. User can select one or more files.
4. Click **Browse** next to the **Output directory** field and select the location, where the station files should be stored.
5. By default, all the migrated applications are stored in the **SequencedControlProgram** folder.
6. Click **Migrate** button to start the migration. After migration is completed, the migrated files can be found in the selected output directory.
7. Browse to the Output directory, where the migrated applications are stored. The migrated stations are stored in the **MigratedStations** folder.

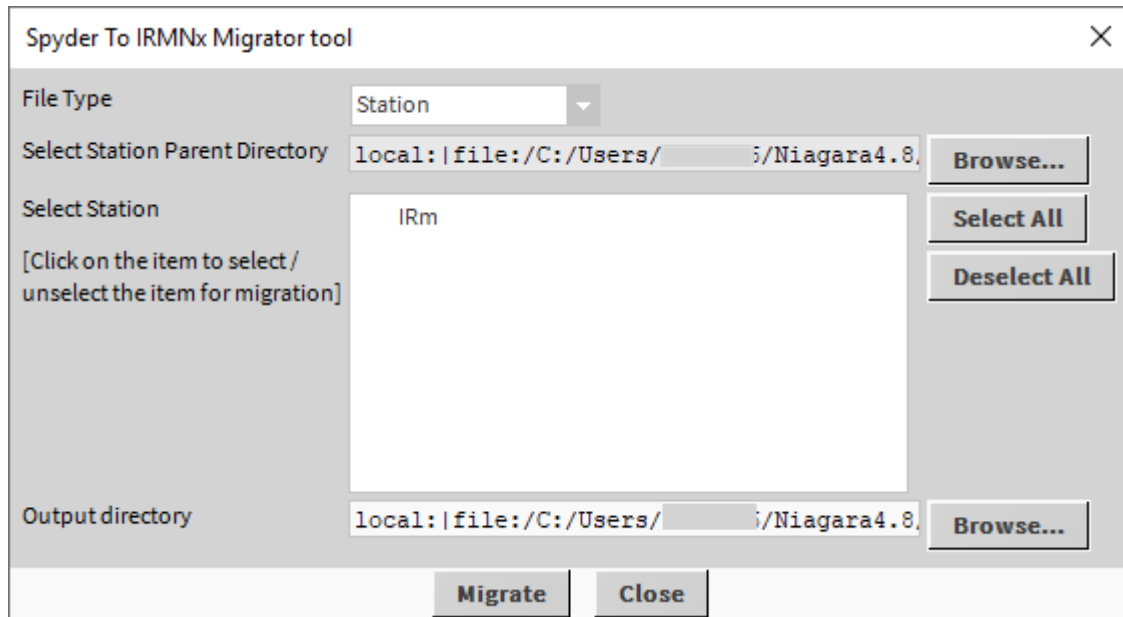Following figure shows the file type as Station and the selected station to migrate.

Figure 6: Station to Migrate

Steps to Migrate Library

With the help of IRM Migrator tool, user can migrate the Spyder libraries to IRM compatible format.
Using Library file type under IRM Migrator tool user can migrate the following in the selected library:

- **Spyder devices**
- **Applications**
- **Macros, which contain some part of the application**
- **SBus wall module**

Procedure

1. Select the file type as **Library** in the File Type drop-down menu.
2. Click **Browse** next to the **Select Niagara Home Directory** field and select the directory, where the list of libraries is available.
3. Locate the specific files in the directory that user need to migrate. User can select one or more files.
4. Click **Browse** next to the **Output directory** field and select the location, where the library files should be stored.
5. By default, all the migrated applications are stored in the **SequencedControlProgram** folder.
6. Click **Migrate** button to start the migration. After migration is completed, the migrated files can be found in the selected output directory.
7. Browse to the Output directory, where the migrated applications are stored. The migrated stations are stored in the **MigratedLibraries** folder.

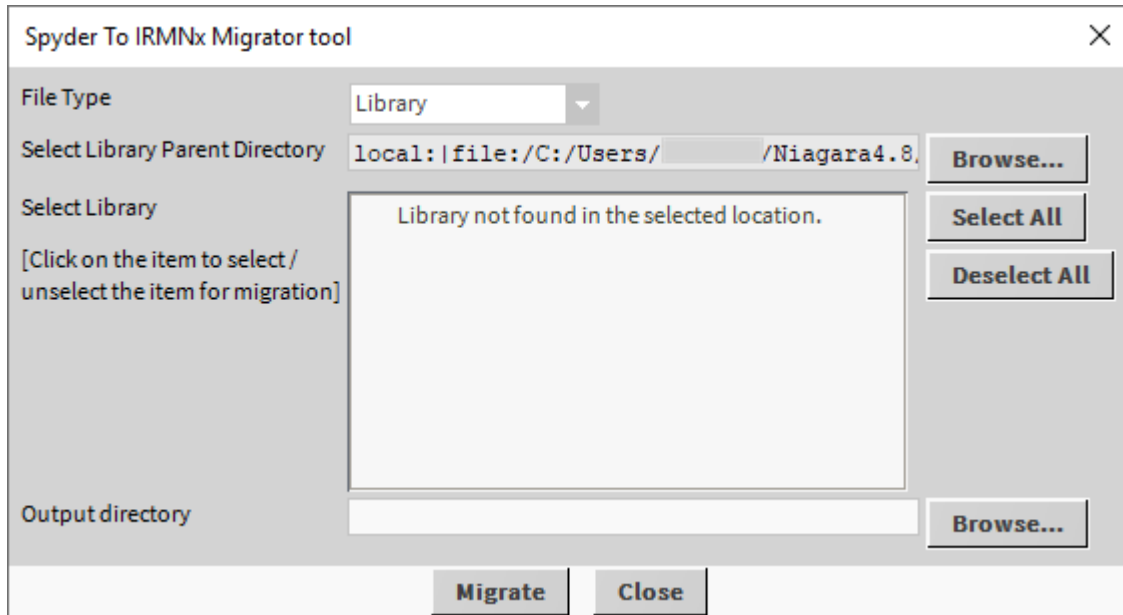Following figure shows the file type as Library.

Figure 7: Library to Migrate

Steps to Migrate Exported Library

With Export Library option, user can convert the Spyder Export Library into IRM compatible Export Library of applications and on exporting the Spyder library, the application creates a folder with '.slb' extension containing migrated applications.

Procedure

1. Select the file type as **Exported Library** in the File Type drop-down menu.
2. Click **Browse** next to the **Select Niagara Home Directory** field to select the path, where the list of exported libraries is available.
3. Click **Browse** next to the **Output directory** field and select the location, where the exported library files should be stored.
4. By default, all the migrated applications are stored in the **SequencedControlProgram** folder.
5. Click **Migrate** button to start the migration. After migration is completed, the migrated files can be found in the selected output directory.
6. Browse to the **Output directory**, where the migrated applications are stored. The migrated stations are stored in the **MigratedLibraries** folder.

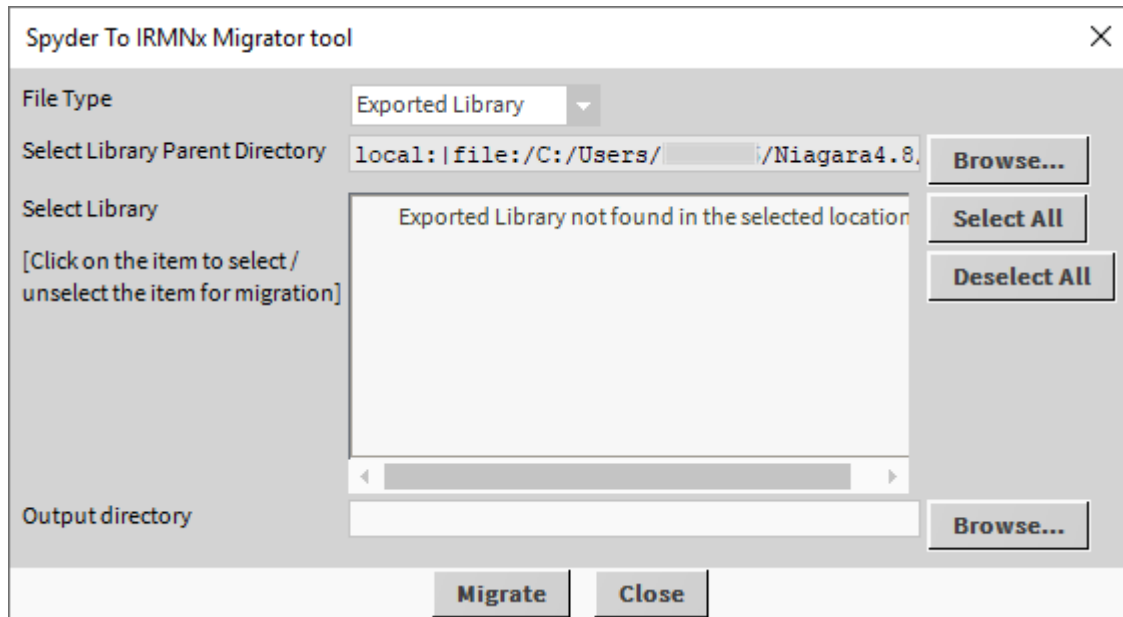Following figure shows the file type as Library.

Figure 8: Exported Library to Migrate

The Export to file window enables user to select multiple items to export.

Steps to Migrate Custom Palette

With the help of the IRM Migrator tool, user can migrate the custom palette files containing Spyder applications. The migrated custom palettes are stored in the **MigratedPalettes** folder.

Procedure

1. Select the file type as **Custom Palette** in the File Type drop-down menu.
2. Click **Browse** next to the **Select Niagara Home Directory** field to select the path, where the list of custom palettes are available.
3. Click **Browse** next to the **Output directory** field and select the location, where the exported custom palette files should be stored.
4. By default, all the migrated custom palettes are stored in the **SequencedControlProgram** folder.
5. Click **Migrate** button to start the migration. After migration is completed, the migrated files can be found in the selected output directory.
6. Browse to the Output directory, where the migrated custom palettes are stored. The migrated stations are stored in the **MigratedLibraries** folder.
7. Click **Browse** next to the Select Niagara Home Directory field to select the path, where the list of custom palettes is available.

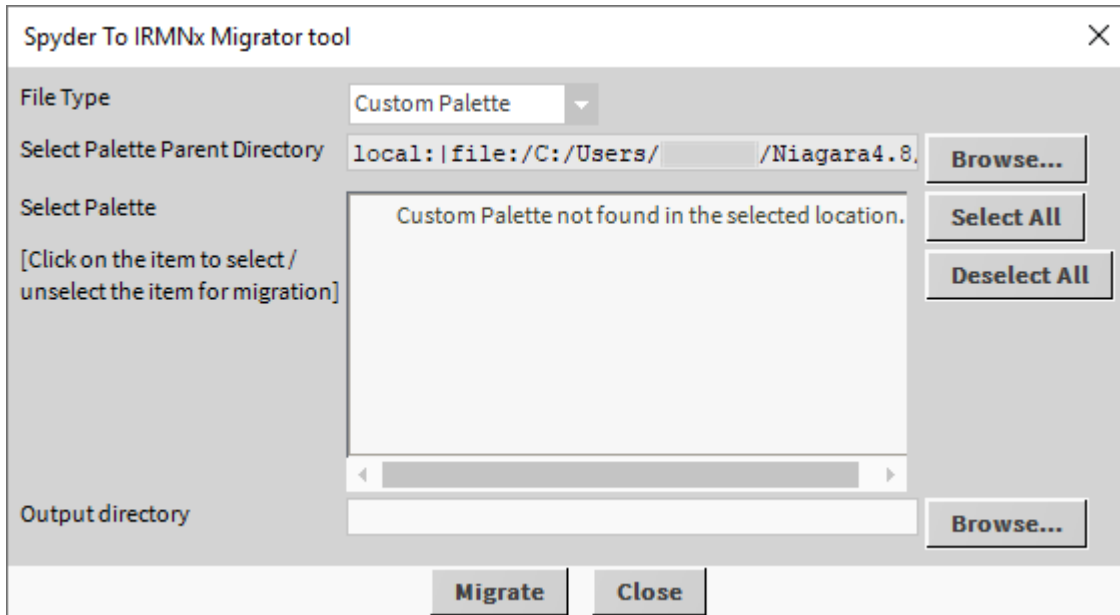Browse to the Output directory, where the migrated applications are stored.

Figure 9: Custom Palette to Migrate

Copying Migration Results to IRM Application

NOTE: In the migration process a .bog file is generated in the specified output directory. Once the migration process is completed, user can see multiple .bog files in the specified output directory. One .bog file represents one Spyder application. On expanding these .bog files, user can see IRM Network, which user can copy and paste to user new station.

After migration, the Station password won't be migrated, user need to open bog file and update the credentials for the admin user. So, when user start the station, user can connect to the station easily.

NOTE: After Migration, Station does not take same password, which was accepted before Migration
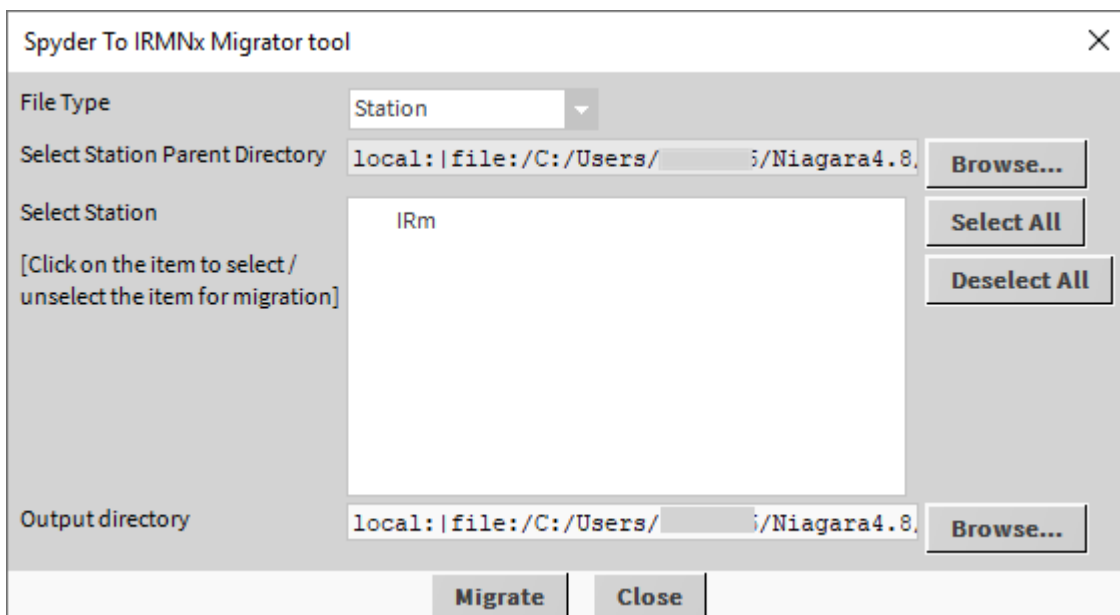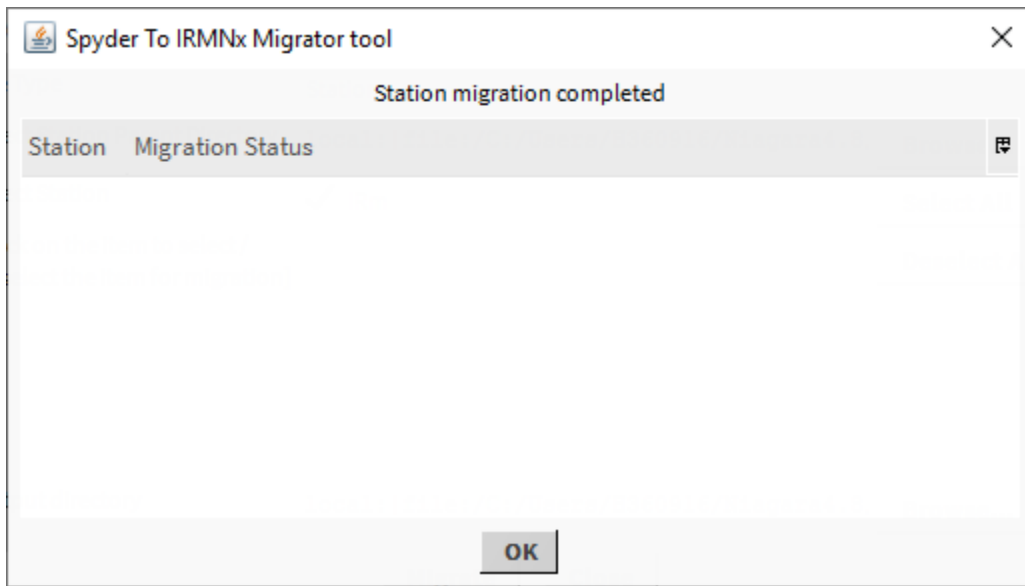
Figure 10: Migrating Station

Figure 11: Successful Station Migration

User can verify migrated station, Navigate to C:\ Users\ useraccount\ Niagara4.8\ Centraline\ stations\ MigratedStations.
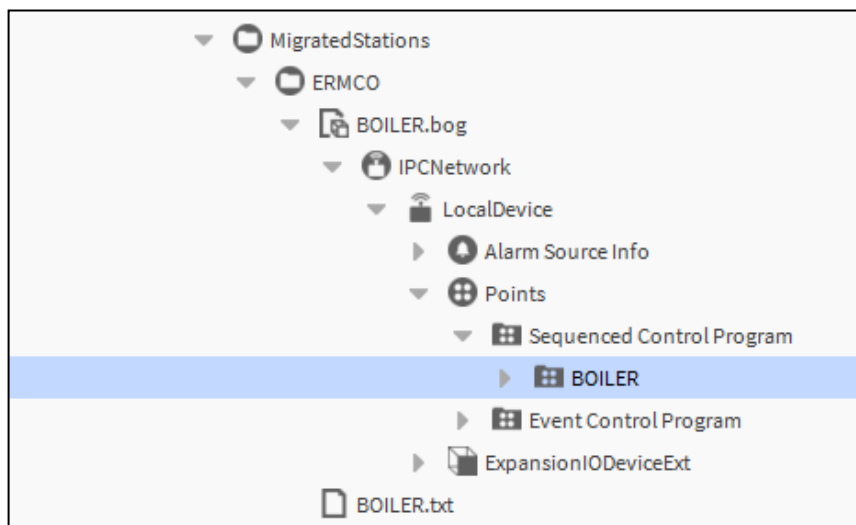

Figure 12: Tree View of bog File Generated after Migration

Copy the logic present in the **Sequenced Control Program** folder under Nav tree and paste it into the **Sequenced Control Program** of the current station in IRM controller.

Schedular Migration Limitation

- This limitation is applicable for the Weekday/Month for every year option in the Holidays tab. Here user can select a month and date of holiday and those details are migrated as they are.

  If the number in the Duration field is more than one then only the first day is migrated to IRM Engineering application, because of the complexity in directly mapping the rest of the days following the first day in Niagara 4 version. Remaining days are not migrated, and application shows an error message that user should separately migrate the schedule for remaining days.

  For example, if user select **January** from the Select Holiday Start Month drop-down menu, **LastSunday** from the Select Holiday Start Day drop-down menu, and enter **3** as Duration. In the migration process, out of three last days of January, only one day is migrated, that is, Last Sunday of January. The remaining two days, that is Monday and Tuesday, are not migrated.

- If user click **Load US Holidays**, there can be some holidays which fall in the Weekday/Month for every category, for example, Thanksgiving and Day After. In this scenario, the limitation related to migration of the schedule is not applicable and the schedule for all days mentioned in the Duration field is migrated.

  NOTE: TUNCOS slot of Schedule block in Spyder is mapped to Out Time To Next slot of EnumSchedule of Compact VAV. EnumSchedule in IRM Compact VAV perform same operation as of Tuncos in Spyder.

- If Spyder programming does not have any Schedule block in the logic, EnumSchedule is created with default weekly schedule configuration and the component is present under IRM Program ˃ Periodic Program.
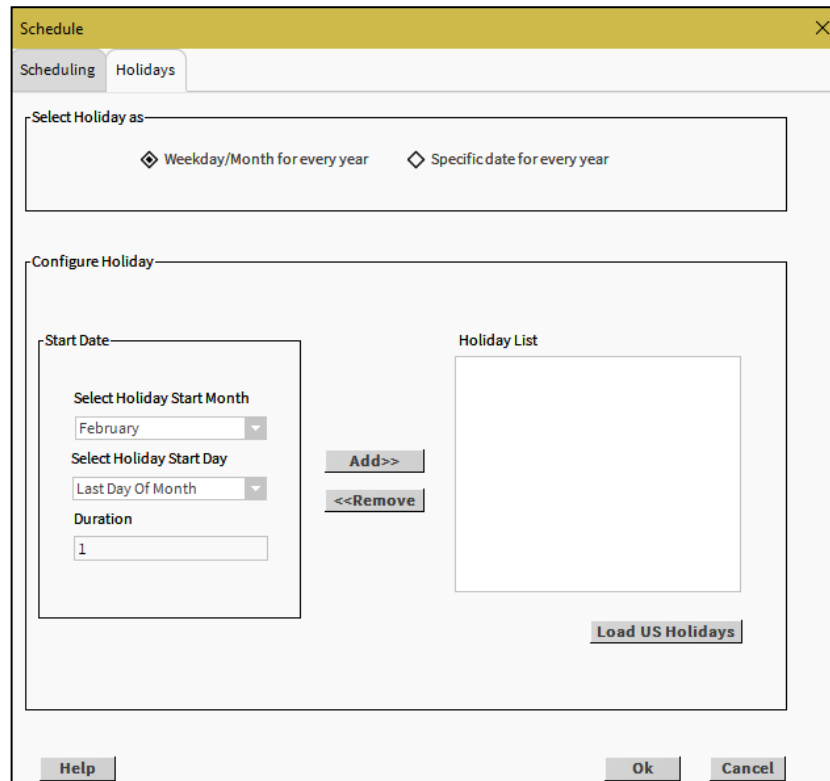

Figure 13: Schedule Function Block

- Holidays which are configured for the "Last Day of Month" in the Spyder tool will not be migrated to IRM tool and not displayed in EnumSchedule.

- Holidays in Schedule block will be migrated as events and will be configured in Calendar block. EnumSchedule block will have special event as Reference type with the ORD of Calendar block linked to it.
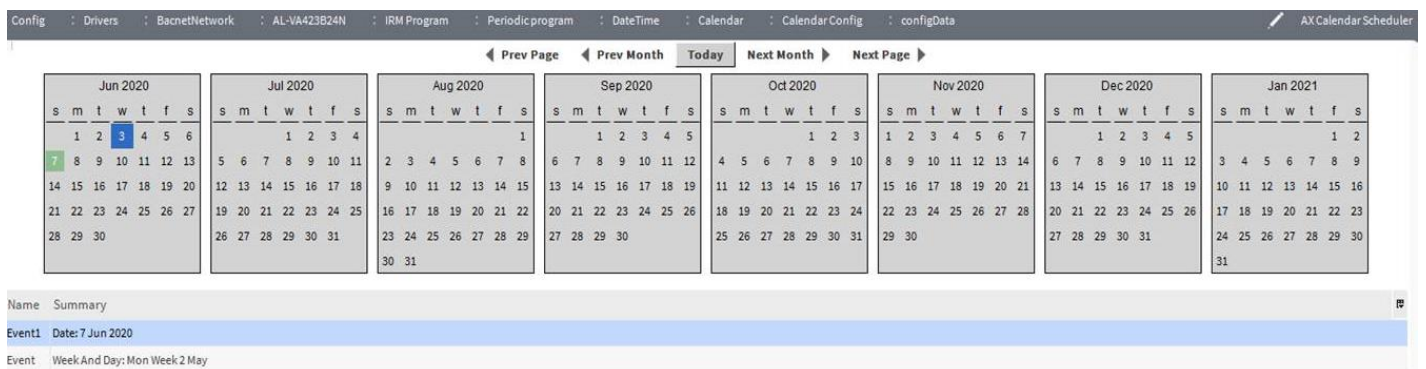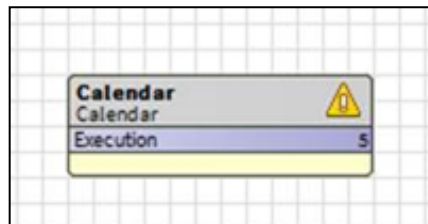
- Spyder to IRM Migration will work fine only if the migrated Spyder application has no validation errors.

LIMITATIONS OF SPYDER TO IRM MIGRATOR TOOL

Following are the limitations in the migration process:

General Limitation

- After migrating the application user has to update the IRM Controller Model and the IO mapping on the migrated IRM application based on the target IRM controller.

- **Air Flow Balancer Tool** — After migrating existing Spyder application to IRM application. Then user need to configure proper units as per the measurement type for CfgKfactor, BalBoxZeroOffset and BalKFactorOffset data points (earlier these points doesn't have any units).

- After migrating Spyder application to IRM application, assigned pin/terminal are interchanged in IRM Compact VAV controller.

- There is no one to one device model map from Spyder to IRM. So, the migrator assumes the application is being migrated to highest end model of IRM with maximum IO combination.

- Pulse meter Input is not supported by IRM Controller. Spyder Pulse meter input will appear as a standard modulating input in IRM application with default configuration values after migration.

- Counter Input is not supported by IRM Controller. Spyder Counter input will appear as a standard modulating input in IRM application with default configuration values after migration.

- Momentary Binary Input is not supported by IRM Controller. Spyder Momentary Binary Input will appear as a standard modulating input in IRM application with default configuration values after migration

- Many of the Spyder functional blocks don't map one to one with IRM functional block. Hence migration will result in multiple IRM function blocks stacked one over the other at the same position on the wiresheet building the logic to represent the corresponding Spyder function block.

- There is limitation of 32 folders max and 100 function blocks under each folder and total of 2000 function blocks in IRM. The migrator does not explicitly check for these limitations while migrating Spyder application. Since the migrator instruct the underlying IRM tool, the tool may throw errors that would abort migration process. The user needs to check the exception message in the workbench console log to confirm the reason for abortion of migration. The user needs to restructure the Spyder application to be within IRM limits before retrying migration.

- This migration tool will assume the migration of BACnet Spyder only. If Lon Spyder has to be migrated, then first it has to be migrated as a BACnet Spyder and then migrate it to IRM

- It is recommended that user revisit or review the custom sensor linearization data entries after migration process.

- After the migration process, the unassigned points are assigned to the valid terminals in the IRM Engineering tool.

- Enum names used in Physical points/Network points are not migrated.

- After migration Analog output will be converted as 4-20mA in IRM (if user configured Modulating output as AO and set as default 0 to 10 mA).

- Default value of enum is not migrated. First item in the enum is used as default value.

- Niagara Alarm and History Extensions added to points are not migrated and user needs to configure those manually.

NOTE:

<u>**Sylk**</u>
- Unassigned fixed Sylk point is migrated to a placeholder component (Zelix parameter). User need to correct the component, that is, replace Zelix parameter with an appropriate component and its links accordingly.
- Zelix device is not supported, for each Zelix parameter one function block will be created as place holder.
- Sylk IOs if any, are migrated as physical inputs/outputs, and next available pin is assigned. COV of Sylk IO is not migrated.
- TR70x device is migrated as TR71x.
- Links to networksetpoint type parameters are not bidirectional.
- After migration the sylk Categories and Parameter view will appar only after the migrated devices added into station, it won't show in the migrated location.

<u>**Function Blocks**</u>
- Alarm function block is migrated as NumericWritable with Out-of-range alarm extension.
- PriorityOverride block is migrated as a NumericWritable component.
- If the units of the same type of parameters connected with any function block are different then after migration unit converter block will be added between the parameter and the function block For example if the Temperature setpoints connected to the Temperature Setpoint Calculator function block have different units then after migration the unit will remain same but unit converter block are added to convert the parameters unit to support the default unit of the function block of IRM programming tool palette.
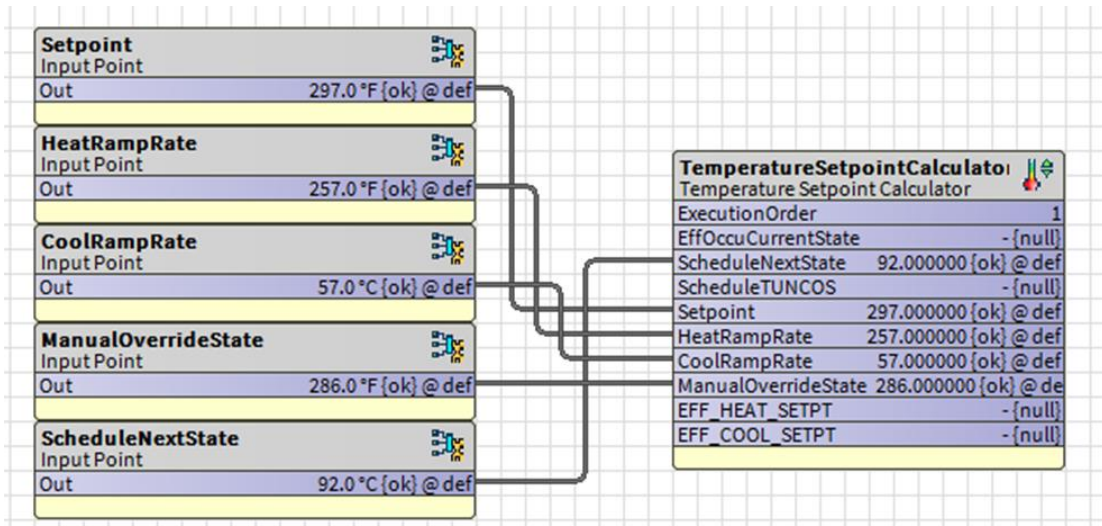

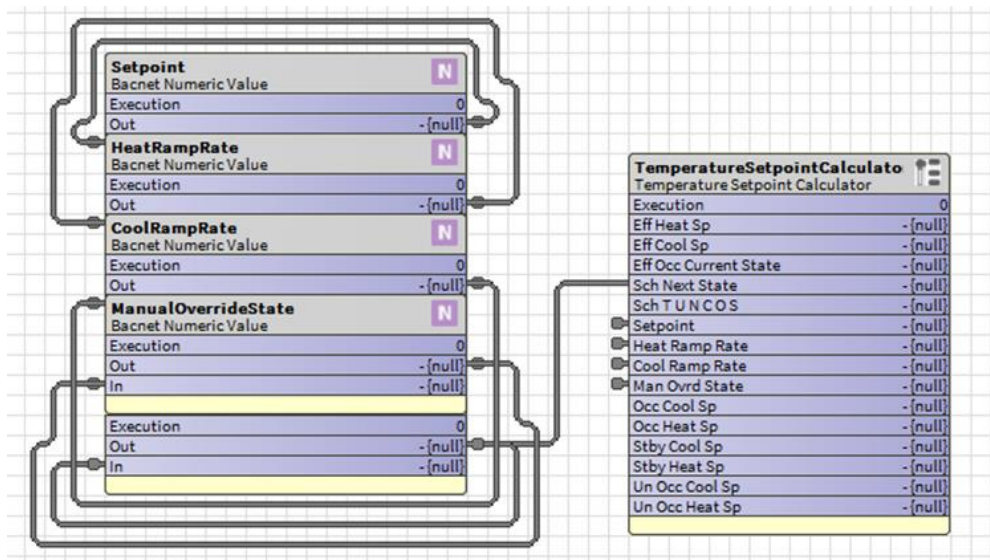**Figure 13: Temperature Setpoint Calculator Function Block**

Figure 14: TemperatureSetpointCalculator after migration

IOs

- Momentary Binary Input is not supported by IRM Controller. Spyder Momentary Binary Input will appear as a standard modulating input in IRM application with default configuration values after migration
- Counter Input is not supported by IRM Controller. Spyder Counter input will appear as a standard modulating input in IRM application with default configuration values after migration
- Pulse meter Input is not supported by IRM Controller. Spyder Pulse meter input will appear as a standard modulating input in IRM application with default configuration values after migration
- FloatingMotor output/Actuator type is migrated as periodic execution block of type BFloatingMotor.
- Pin assignment for physical inputs/outputs is not preserved during migration. After migration, next available pin is assigned.
- Modulating Inputs of type CustomResistive/CustomVoltage are migrated as CustomSensor
- Sensor Offsets for modulating inputs, if any, are picked up from the Bacnet interface during Library Application Migration.
- Physical Outputs are migrated as NumericWritables. If the migrated application is a Bacnet application, the priority is picked up from Bacnet Object Advanced Settings. Else priority 12 is used as default priority.
- Network Inputs/Outputs are migrated as NumericWritables. Any links to/from Network Inputs/Outputs are linked to/from priority10 slot of the NumericWritable.

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