XFS4IoT SP-Dev Workgroup

4th March 2025

XFS4IoT SP-Dev Workgroup agenda

- Recap from previous meeting
- Framework update
  - Breaking changes in version 2024-03
- New forms
- Demo using forms
- What's next?
- Next meeting

Recap from previous meeting

Recap from previous meeting

- Contactless card reader demo
- CEN specification update
- Code generators
  - What they are
  - Where they are used
  - How to determine if a file was auto-generated

Framework update

Framework update

- Version 3.0 – published on 28th February
- Available on GitHub

- Main changes
  - Framework migration from –2 to –3 on existing interfaces
  - There are many changes in payload properties in the –3 specification

Framework update

- New interfaces introduced in the –3 specification, such as PowerManagement, IBNS, German DK, and deposit interfaces, are not yet supported in the version 3 package. Supporting these interfaces is on our roadmap.

- As stated from the beginning of our workshop, the framework supports only the latest XFS4IoT specification. The package version 3.0 supports only the –3 specification and is no longer compatible with the –1 and –2 specifications.

Breaking changes

- Printer interface
  - The XFS4IoT 2024-03 specification has separated the printer retract bin from the printer interface and relocated its definition to the storage interface
  - As a result, the XFS4 framework now requires the retract bin to be separated from the printer framework and integrated into the storage framework

Note: This change is breaking for the printer device class when upgrading to framework version 3.0

Breaking changes

- Obsolete properties, classes and methods
  - There are several properties, classes and methods marked with obsolete attributes in the framework due to specification changes from –2 to –3
    - For example, the `Common.PowerSaveControl` command is now obsolete in the –3 specification and has been moved to the `PowerManagement` interface
  - It is recommended to avoid using obsolete objects within the device class and transition to the new objects provided

Note: The obsolete objects will not be supported in the upcoming 4.0 package

Support for new forms

XFS Form support

- XFS supports ‘forms’ to define generic reusable layout for printer and text terminal data
- Forms contain layout information, static text and graphics, and also dynamic information passed from the client

Account	Balance
0123456789123001	$17465.12
0123456789123002	$2458.23
0123456789123003	$6542.78

XFS 3.x Form support

- XFS3.x forms are defined in a custom language. Difficult to work with.

Account	Balance
012345678912300 1	$17465.12
012345678912300 2	$2458.23
012345678912300 3	$6542.78

```
XFSFORM "Multiple Balances"
BEGIN
    UNIT INCH, 16, 16
    SIZE 91, 64
    VERSION 1, 0, "13/09/96", "XFS"
    LANGUAGE 0x0409

    XFSFIELD "Account Title"
    BEGIN
        POSITION 15, 4
        SIZE 30, 4
        CLASS STATIC
        HORIZONTAL CENTER
        INITIALVALUE "Account"
    END

    XFSFIELD "Balance Title"
    BEGIN
        POSITION 45, 4
        SIZE 30, 4
        CLASS STATIC
        HORIZONTAL CENTER
        INITIALVALUE "Balance"
    END

    XFSFIELD "Account"
    BEGIN
        POSITION 15, 8
        SIZE 30, 4
        INDEX 10, 0, 3
    END

    XFSFIELD "Balance"
    BEGIN
        POSITION 45, 8
        SIZE 30, 4
        INDEX 10, 0, 3
        HORIZONTAL RIGHT
    END
END
```

XFS4IoT JSON Form support

- XFS4IoT defines forms in JSON
- Same fields, different format
- Much easier to work with

```json
{
  "name": "Multiple Balances",
  "form": {
    "unit": { "base": "inch", "x": 16, "y": 16 },
    "size": { "width": 91, "height": 64 },
    "version": { "major": 1, "minor": 0, "date": "2024-09-13", "author": "XFS" },
    "fields": {
      "Account Title": {
        "order": 1,
        "position": { "x": 15, "y": 4 },
        "size": { "width": 30, "height": 4 },
        "class": "static",
        "horizontal": "center",
        "initialValue": "Account"
      },
      "Balance Title": {
        "order": 2,
        "position": { "x": 45, "y": 4 },
        "size": { "width": 30, "height": 4 },
        "class": "static",
        "horizontal": "center",
        "initialValue": "Balance"
      },
      "Account": {
        "order": 3,
        "position": { "x": 15, "y": 8 },
        "size": { "width": 30, "height": 4 },
        "index": { "repeatCount": 10, "x": 0, "y": 3 }
      },
      "Balance": {
        "order": 4,
        "position": { "x": 45, "y": 8 },
        "size": { "width": 30, "height": 4 },
        "index": { "repeatCount": 10, "x": 0, "y": 3 },
        "horizontal": "right"
      }
    }
  }
}
```

```
XFSFORM "Multiple Balances"
BEGIN
  UNIT INCH, 16, 16
  SIZE 91, 64
  VERSION 1, 0, "13/09/96", "XFS"
  LANGUAGE 0x0409

  XFSFIELD "Account Title"
  BEGIN
    POSITION 15, 4
    SIZE 30, 4
    CLASS STATIC
    HORIZONTAL CENTER
    INITIALVALUE "Account"
  END

  XFSFIELD "Balance Title"
  BEGIN
    POSITION 45, 4
    SIZE 30, 4
    CLASS STATIC
    HORIZONTAL CENTER
    INITIALVALUE "Balance"
  END

  XFSFIELD "Account"
  BEGIN
    POSITION 15, 8
    SIZE 30, 4
    INDEX 10, 0, 3
  END

  XFSFIELD "Balance"
  BEGIN
    POSITION 45, 8
    SIZE 30, 4
    INDEX 10, 0, 3
    HORIZONTAL RIGHT
  END
END
```

Standard and SP-Dev Framework

- Standard covers printers and text terminals
  - There will be no support for card reader forms – never been used
- SP-Dev framework currently supports printer forms
  - Text terminal support will be added

Demo – working with forms

SP-Dev Framework templates

- Installing the templates
  - dotnet new install KAL.XFS4IoT.SP-Dev.Framework.Templates
- Updating existing templates
  - dotnet new update
- NuGet packages
  - https://www.nuget.org/packages/KAL.XFS4IoT.SP-Dev.Framework.Templates
- Documentation
  - https://kal-atm-software.github.io/KAL_XFS4IoT_SP-Dev-Documentation/

What's next?

What’s next?

- Framework updates and roadmap
- Migrating to new specification versions
- DK, IBNS
- More guest speakers
- More demos (biometrics and more)

Next call

Zoom

- First Tuesday of each month at 1300 UK time for 30 mins

Next call: 1st April 2025
1300 UK, 0800 US EDT, 2100 Tokyo time

Calls are 30 mins long

We will continue to use Zoom
(Interpretation in Japanese, Chinese and Spanish is available using Zoom's interpretation feature)