RTSDK C# 3.0.1.L1

INSTALLATION GUIDE

1 Overview

RTSDK packages are specific to the product language (C/C++, C#, or Java). This guide describes the procedures to install and build RTSDK CSharp, starting with RTSDK version 3.0.0.L1 and higher.

The RTSDK supports open sourcing and uses standards-based, freely-available open source tools to provide additional flexibility and benefit.

Solution and project files target the.NET 6.0 platform and Visual Studio 2022.

Note: RTSDK CSharp 3.0.0.L1 is the initial package release for the C# language.

2 Requirements and Limitations

- The RTSDK CSharp package uses XUnit in its unit tests.
- The RTSDK CSharp library may be built using the solution file provided with RRG package.

Note: RTSDK CSharp build does require access to the Internet to download necessary external dependencies from NuGet.

2.1 External Dependencies

- K4os.Compression.LZ4
- Microsoft.IdentityModel.Tokens
- System.IdentityModel.Tokens.Jwt
- XUnit (for unit testing)

Please check README in CSharp directory after obtaining the package (refer to Section 3) for specific versions and a complete list of dependencies.

3 Obtaining the Package

You have the following options in obtaining the RTSDK:

- You can download the package from the Developer Community Portal at the following URL: https://developers.refinitiv.com/en/api-catalog/refinitiv-real-time-opnsrc/refinitiv-real-time-csharp-sdk/downloads

Note: RTSDK CSharp package downloaded from Developer Community Portal contains the necessary build files. Upon build, all external dependencies are expected to be downloaded.

- You can clone the RTSDK from the GitHub repository (at https://github.com/Refinitiv/Real-Time-SDK) by using the following command:

```
git clone https://github.com/Refinitiv/Real-Time-SDK.git
```

Tip: You can also download the source from GitHub via the browser:

- Browse to the URL https://github.com/Refinitiv/Real-Time-SDK/releases
- Each release will have the following options listed beneath it's release name:

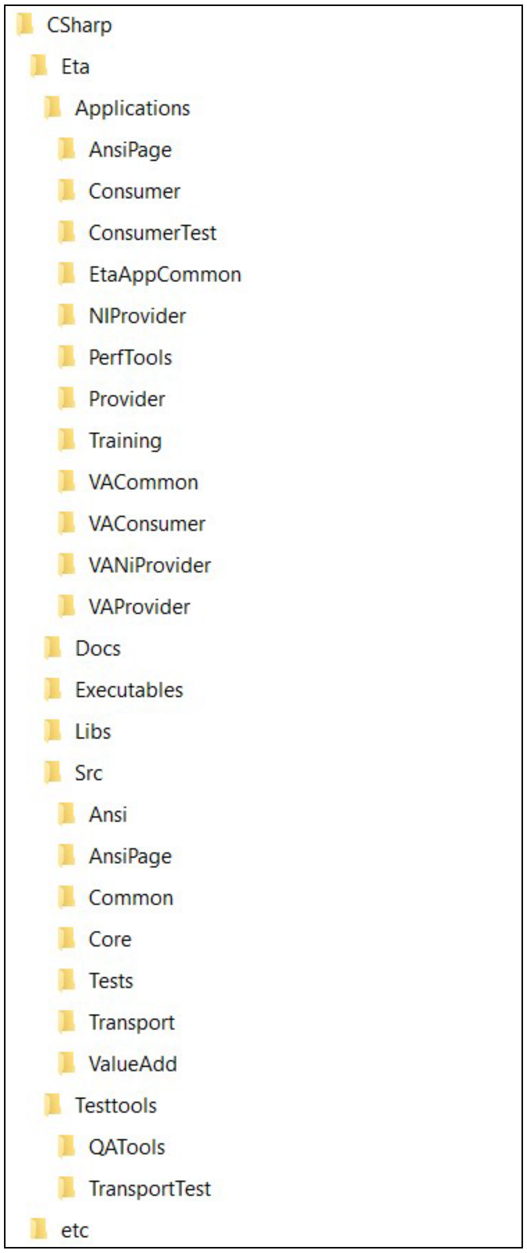
- To download a compressed package, click **zip** or **tar.gzip**.

- You can specify RTSDK libraries are external dependencies download-able from NuGet when building your application. Here are the dependencies to include in your **csproj** file:

```
<dependency>
  <ItemGroup>
    <PackageReference Include="LSEG.Eta.Core" Version="3.0.0" />
    <PackageReference Include="LSEG.Eta.ValueAdd" Version="3.0.0" />
    <PackageReference Include="LSEG.Eta.Ansi" Version="3.0.0" />
    <PackageReference Include="LSEG.Eta.AnsiPage" Version="3.0.0" />
  </ItemGroup>
</dependency
```

4 Package Directory Changes

The following table illustrates the RTSDK package directory structure.

RTSDK C# 3.0.1.L1 PACKAGE
The following diagram illustrates the top-level directory structure for the RTSDK C# 3.0.1.L1 release: 

```
CSharp
  Eta
    Applications
      AnsiPage
      Consumer
      ConsumerTest
      EtaAppCommon
      NIProvider
      PerfTools
      Provider
      Training
      VACommon
      VAConsumer
      VANiProvider
      VAProvider
    Docs
    Executables
    Libs
    Src
      Ansi
      AnsiPage
      Common
      Core
      Tests
      Transport
      ValueAdd
    Testtools
      QATools
      TransportTest
  etc
```

Table 1: RTSDK CSharp Package Structure

5 Using the Package

There are two ways to build the sources obtained from GitHub:

- Use the solution file to build libraries and examples: Use appropriate **Visual Studio** version.
- Use `dotnet` command line to build the libraries and/or examples.

▶ Building RTSDK

Note: Building the RTSDK on Linux is the same as building on Windows with the `dotnet` tool, however **Visual Studio** is only for Windows

Using Solution Files and Visual Studio

Use the provided solution (or **sln**) file to build in **Visual Studio.**

Using `dotnet`

Navigate to **RTSDK/CSharp** and issue the appropriate `dotnet` command as follows to build libraries and/or examples:

```
dotnet build --configuration <Release|Debug> ETA_NET6.0.sln
```

Note:
- In a GitHub build, this builds libraries and places them into **Eta/Libs** and examples into **Eta/Executables**
- In RRG package, this builds only libraries and places them into a custom directory: **Eta/Custom/Libs**

To build just libraries:

```
dotnet build --configuration Release Eta/Src/Core/Core_NET6.0.csproj
dotnet build --configuration Release Eta/Src/ValueAdd/ValueAdd_NET6.0.csproj
dotnet build --configuration Release Eta/Src/Ansi/Ansi_NET6.0.csproj
dotnet build --configuration Release Eta/Src/AnsiPage/AnsiPage_NET6.0.csproj
```

Note:
- In a GitHub build, this builds libraries and places them into **Eta/Libs** and examples into **Eta/Executables**
- In RRG package, this builds only libraries and places them into a custom directory: **Eta/Custom/Libs**

- To build just examples: Each example may be built separately using the individual **csproj** files. Please note that the RRG package also contains a **.sln** file for each example. Sample command line to build examples:

```
dotnet build --configuration Release Eta/Applications/Consumer/Consumer_NET6.0.csproj
dotnet build --configuration Release Eta/Applications/Consumer/Consumer_NET6.0.sln
```

Note:
- Both **sln** and **csproj** files build examples and place them into **Eta/Executables**.
- Solution files exist only in RRG package.
- In RRG package, building examples via **csproj** or **sln** link to pre-built libraries located in **Eta/Libs**.
- In a GitHub build, each example expects libraries in **Eta/Libs** to exist.

▶Running Examples

Navigate to the **CSharp** directory in the RTSDK package and issue the appropriate `dotnet` command to run various examples using

`dotnet` [runtime-options] [path-to-application] [arguments]

- `dotnet` Eta/Executables/Consumer/Debug/net6.0/Consumer.dll [arguments]
- `dotnet` Eta/Executables/ConsMod1a/Debug/net6.0/ConsMod1a.dll [arguments]

```
dotnet Eta/Applications/VAConsumer/bin/Debug/net6.0/VAConsumer.dll -c localhost:14002
   DIRECT_FEED mp:TRI
```

Tip: You can see a list of all possible arguments by passing the command: `"-?"`

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