

## ITAS THIRD PARTY LIBRARIES (NOV 21)

### OVERVIEW

The purpose of this document is to highlight the various libraries (both open source and subscribed) used within both ITAS CTRM and ITAS Services.

In all cases we undertake a thorough analysis and internal review before commencing use of any new library. Although this is common practice in the software industry it is worth noting the reasons and benefits to taking this approach and this document should go some way to provide confidence to our customers that the security of our customers application environments is one of our top priorities when developing new applications and services.

### WHY USE THIRD PARTY LIBRARIES?

The main reason for using any of these is to implement solutions/features quickly and in most cases more efficiently. Instead of writing lines of code that will take time, we re-use existing libraries that already solve the same problem from a wide community of developers.

We constantly review our use of these libraries and where we only use small parts of one, we will often build our own classes using a copy of the code. In most cases this is possible as they are open-source libraries, i.e. the underlying code/logic is available to review rather than solely existing as compiled binaries which are 'black box' in terms of functionality.

The logic in open-source code is, by its very nature, transparent, so a malicious actor would find it difficult to introduce malware, code that could corrupt data or present trapdoors because the community of developers which contribute to each library actively verify the Pull Requests when code is added to the libraries. This includes members of our development team. The whole industry relies on and benefits from these communities of developers.

The libraries break down into 3 areas: NuGet, npm and VB.

NuGet is the package manager for .NET, and these are directly pulled into Visual Studio.

Javascript packages are provided through npm whereas our VB libraries (that have not changed in over 10 years!) come direct from Microsoft.

To help further scrutinise the libraries we are in the process of assessing/adopting the Package Hunter tool provided by GitHub (the main repository used for all open source used in ITAS). This will be integrated into our Change Management (CI/CD) process operated through TeamCity which is responsible for building our release packages.

### NUGET LIBRARIES (PACKAGES)

- AutoMapper
- AutoMapper.AspNetCore.OData.EF6
- AutoMapper.Extensions.Microsoft.DependencyInjection
- AvalonEdit
- BenchmarkDotNet
- BenchmarkDotNet.Diagnostics.Windows
- Castle.Core

- Castle.Core.AsyncInterceptor
- CefSharp.Common
- CefSharp.OffScreen
- CefSharp.Wpf
- Common.Logging
- Common.Logging.Core
- CommonServiceLocator
- coverlet.collector
- CsvHelper
- Dapper
- Dapper.SqlBuilder
- Devshorts.MonadicNull
- DotLiquid
- Effort.EF6
- EntityFramework
- EntityFramework.Core
- EntityFramework.DynamicFilters
- EntityFramework.Relational
- EntityFramework.SqlServer
- FluentValidation
- Gma.QrCodeNet
- GraphQL.Conventions
- GraphQL-Parser
- HtmlAgilityPack
- HttpClientFactoryLite
- IdentityModel
- IdentityModel.OidcClient
- IdentityServer3.AccessTokenValidation
- IdentityServer4
- IdentityServer4.AccessTokenValidation
- IdentityServer4.AspNetIdentity
- IdentityServer4.EntityFramework
- IdentityServer4.EntityFramework.Storage
- Ix-Async
- jQuery
- jQuery.UI.Combined
- jQuery.Validation
- knockoutjs
- log4net
- Marvin.JsonPatch
- Microsoft.Activities.Extensions
- Microsoft.AspNet.Cors
- Microsoft.AspNet.Mvc
- Microsoft.AspNet.OData

- Microsoft.AspNet.Razor
- Microsoft.AspNet.WebApi
- Microsoft.AspNet.WebApi.Client
- Microsoft.AspNet.WebApi.Core
- Microsoft.AspNet.WebApi.Cors
- Microsoft.AspNet.WebApi.HelpPage
- Microsoft.AspNet.WebApi.Owin
- Microsoft.AspNet.WebApi.OwinSelfHost
- Microsoft.AspNet.WebApi.WebHost
- Microsoft.AspNet.WebPages
- Microsoft.AspNetCore
- Microsoft.AspNetCore.Antiforgery
- Microsoft.AspNetCore.Authentication
- Microsoft.AspNetCore.Authentication.Abstractions
- Microsoft.AspNetCore.Authentication.JwtBearer
- Microsoft.AspNetCore.Authentication.OAuth
- Microsoft.AspNetCore.Authentication.OpenIdConnect
- Microsoft.AspNetCore.Authorization
- Microsoft.AspNetCore.Authorization.Policy
- Microsoft.AspNetCore.Cors
- Microsoft.AspNetCore.Diagnostics
- Microsoft.AspNetCore.Diagnostics.EntityFrameworkCore
- Microsoft.AspNetCore.Hosting
- Microsoft.AspNetCore.Hosting.Abstractions
- Microsoft.AspNetCore.Hosting.WindowsServices
- Microsoft.AspNetCore.Http.Abstractions
- Microsoft.AspNetCore.HttpsPolicy
- Microsoft.AspNetCore.Identity
- Microsoft.AspNetCore.Identity.EntityFrameworkCore
- Microsoft.AspNetCore.Identity.UI
- Microsoft.AspNetCore.Mvc
- Microsoft.AspNetCore.Mvc.Abstractions
- Microsoft.AspNetCore.Mvc.Core
- Microsoft.AspNetCore.Mvc.Formatters.Json
- Microsoft.AspNetCore.Mvc.Testing
- Microsoft.AspNetCore.Mvc.ViewFeatures
- Microsoft.AspNetCore.OData
- Microsoft.AspNetCore.Razor
- Microsoft.AspNetCore.Razor.Design
- Microsoft.AspNetCore.Server.HttpSys
- Microsoft.AspNetCore.SignalR
- Microsoft.AspNetCore.SpaServices
- Microsoft.AspNetCore.SpaServices.Extensions
- Microsoft.AspNetCore.StaticFiles

- Microsoft.AspNetCore.WebUtilities
- Microsoft.Build.Utilities.Core
- Microsoft.CodeAnalysis.CSharp
- Microsoft.CodeAnalysis.NetAnalyzers
- Microsoft.CSharp
- Microsoft.EntityFrameworkCore
- Microsoft.EntityFrameworkCore.Analyzers
- Microsoft.EntityFrameworkCore.Design
- Microsoft.EntityFrameworkCore.InMemory
- Microsoft.EntityFrameworkCore.Relational
- Microsoft.EntityFrameworkCore.SqlServer
- Microsoft.EntityFrameworkCore.Tools
- Microsoft.Extensions.Caching.Abstractions
- Microsoft.Extensions.Caching.Memory
- Microsoft.Extensions.Configuration
- Microsoft.Extensions.Configuration.Abstractions
- Microsoft.Extensions.Configuration.Binder
- Microsoft.Extensions.Configuration.CommandLine
- Microsoft.Extensions.Configuration.Ini
- Microsoft.Extensions.Configuration.Json
- Microsoft.Extensions.DependencyInjection
- Microsoft.Extensions.DependencyInjection.Abstractions
- Microsoft.Extensions.FileProviders.Abstractions
- Microsoft.Extensions.FileProviders.Physical
- Microsoft.Extensions.Hosting.Abstractions
- Microsoft.Extensions.Http
- Microsoft.Extensions.Logging
- Microsoft.Extensions.Logging.Abstractions
- Microsoft.Extensions.Logging.Console
- Microsoft.Extensions.Logging.Debug
- Microsoft.Extensions.Logging.EventLog
- Microsoft.Extensions.Logging.Log4Net.AspNetCore
- Microsoft.Extensions.Options
- Microsoft.Extensions.Options.ConfigurationExtensions
- Microsoft.Extensions.Options.DataAnnotations
- Microsoft.Extensions.Primitives
- Microsoft.Framework.Caching.Abstractions
- Microsoft.Framework.Caching.Memory
- Microsoft.Framework.Configuration
- Microsoft.Framework.Configuration.Abstractions
- Microsoft.Framework.Configuration.Binder
- Microsoft.Framework.DependencyInjection
- Microsoft.Framework.DependencyInjection.Abstractions
- Microsoft.Framework.Logging

- Microsoft.Framework.Logging.Abstractions
- Microsoft.Framework.OptionsModel
- Microsoft.IdentityModel.Logging
- Microsoft.IdentityModel.Protocols
- Microsoft.IdentityModel.Protocols.OpenIdConnect
- Microsoft.IdentityModel.Tokens
- Microsoft.jQuery.Unobtrusive.Validation
- Microsoft.NETCore.Platforms
- Microsoft.OData.Core
- Microsoft.Owin
- Microsoft.Owin.Diagnostics
- Microsoft.Owin.Host.HttpListener
- Microsoft.Owin.Hosting
- Microsoft.Owin.Security.Jwt
- Microsoft.Owin.Security.OAuth
- Microsoft.Rest.ClientRuntime
- Microsoft.SourceLink.AzureRepos.Git
- Microsoft.TypeScript.MSBuild
- Microsoft.VisualBasic
- Microsoft.VisualStudio.Web.BrowserLink
- Microsoft.VisualStudio.Web.CodeGeneration.Design
- Microsoft.Web.Infrastructure
- MicrosoftExpressionInteractions
- Moq
- NCrontab.Advanced
- Newtonsoft.Json
- Newtonsoft.Json.Schema
- Nito.AsyncEx
- NLog
- Oracle.EntityFrameworkCore
- Oracle.ManagedDataAccess
- Oracle.ManagedDataAccess.EntityFramework
- Owin
- PCLCrypto
- PdfiumViewer
- PdfiumViewer.Native.x86.v8-xfa
- PInvoke.BCrypt
- PInvoke.Kernel32
- PInvoke.NCrypt
- PInvoke.Windows.Core
- Portable.Licensing
- Prism.Unity
- PropertyChanged.Fody
- Quartz

- Remotion.Linq
- RhinoMocks
- Rx-Core
- Rx-Interfaces
- Rx-Linq
- Rx-Main
- Rx-PlatformServices
- Rx-WPF
- Rx-XAML
- Scrutor
- Select.HtmlToPdf
- String.Interpolate
- Swashbuckle.AspNetCore
- Swashbuckle.AspNetCore.Swagger
- Swashbuckle.AspNetCore.SwaggerGen
- ThrottlingSuite.Http
- TrackerEnabledDbContext
- Unity
- Unity.WebAPI
- Validation
- WebApiContrib.Testing
- WebApiTestClient
- WpfAnimatedGif
- YamlDotNet
- Z.EntityFramework.Extensions
- ZXing.Net

## NPM LIBRARIES (PACKAGES)

- axios
- bootstrap
- devextreme
- devextreme-react
- fortawesome/free-solid-svg-icons
- fortawesome/pro-duotone-svg-icons
- fortawesome/pro-regular-svg-icons
- fortawesome/pro-solid-svg-icons
- fortawesome/react-fontawesome
- history
- js-guid
- jwt-decode
- loadable/component
- microsoft/signalr

- moment
- oidc-client
- react
- react-beautiful-dnd
- react-bootstrap
- react-dom
- react-draggable
- react-moment
- react-pdf
- react-resizable
- react-router-dom
- rxjs
- toastify-js
- types/react
- types/react-dom

## VISUAL BASIC LIBRARIES

- msado21.tlb#Microsoft ActiveX Data Objects 2.1 Library
- msxml.dll#Microsoft XML, version 2.0
- msxml3.dll#Microsoft XML, v3.0
- msxml6.dll#Microsoft XML, v6.0
- scrrun.dll#Microsoft Scripting Runtime
- ieframe.dll#Microsoft Internet Controls
- mshtml.tlb#Microsoft HTML Object Library
- stdole2.tlb#OLE Automation
- ComDlg32.OCX
- MSFlxGrd.ocx
- mscomctl.OCX
- richtx32.Ocx
- TabCtl32.Ocx

## CONCLUSION

This document provides a full and comprehensive list of libraries and open-source code used and distributed as part of the ITAS software packages (8.12 – Nov21). Information about each of these is widely available and sources include:

<https://www.nuget.org/>

<https://about.gitlab.com/>

<https://www.npmjs.com/>

We constantly review our use of each and from time to time we will republish this document to reflect any changes.