

.NET Analyzer - 1.2

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 **Summary:** This document provides information about the extension providing **.NET analysis** support.

Extension ID

com.castsoftware.dotnet

What's new?

Please see [.NET Analyzer - 1.2 - Release Notes](#).

Description

This extension provides support for analyzing applications built with .NET, .NET Standard and .NET Core technologies: objects and links between these objects are identified and Automated Function Point values are calculated. A set of .NET specific structural rules are also available with the extension.

Technology support

 Please also see [.NET - Technical notes and limitations](#) for additional information.

Visual Studio / .NET Framework support

Visual Studio version	.NET Framework version	.NET Core	.NET Standard	C# version	VB.NET version	Supported
2003	1.1			1.2	7.1	
2005	2.0, 3.0			2.0	8.0	
2008	2.0, 3.0, 3.5			3.0	9.0	
2010	2.0, 3.0, 3.5, 4.0			4.0	10.0	
2012/2013	2.0, 3.0, 3.5, 4.0, 4.5, 4.5.1, 4.5.2			5.0	12.0	

2015	2.0, 3.0, 3.5, 4.0, 4.5, 4.5.1, 4.5.2, 4.6			6.0	14.0	✓
2017	2.0, 3.0, 3.5, 4.0, 4.5, 4.5.1, 4.5.2, 4.6, 4.6.1, 4.6.2, 4.7, 4.7.1, 4.7.2	1.0, 1.1, 2.0, 2.1, 2.2, 3.0, 3.1	1.0, 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 2.0, 2.1	7.2	15.5	✓
2019	2.0, 3.0, 3.5, 4.0, 4.5, 4.5.1, 4.5.2, 4.6, 4.6.1, 4.6.2, 4.7, 4.7.1, 4.7.2	1.0, 1.1, 2.0, 2.1, 2.2, 3.0, 3.1	1.0, 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 2.0, 2.1	8.0	15.8	✓



- The following are implicitly supported:
 - **ADO.NET**
 - **ASP.NET**
 - **ASP.NET Core (up to v 3.1)**
 - **iFrame**
 - **Interop**
 - **WinForms**
 - **WPF**

LINQ support

- LINQ to Objects
- LINQ to DataSets
- LINQ to SQL

 Please also see [.NET - Technical notes and limitations](#) for additional information.

Xamarin support

First level of support for Xamarin (links to Xamarin API objects will be resolved) for:

- Android
- iOS
- TvOS
- WatchOS
- UWP

Function Point, Quality and Sizing support

This extension provides the following support:

- **Function Points (transactions):** a green tick indicates that OMG Function Point counting and Transaction Risk Index are supported
- **Quality and Sizing:** a green tick indicates that CAST can measure size and that a minimum set of Quality Rules exist

Function Points (transactions)	Quality and Sizing
	

CAST AIP compatibility

This extension is compatible with:

CAST AIP release	Supported
8.3.5	
8.2.x	

Supported DBMS servers

This extension is compatible with the following DBMS servers:

CAST AIP release	CSS	Oracle	Microsoft
All supported releases			

Prerequisites

Required third-party software

 Note that if the CAST Delivery Manager Tool (DMT) is being run (whether from the CAST AIC Portal or direct from the CAST Management Studio (CMS)) from the SAME workstation as the one used for CMS to run the analysis/snapshot generation, then any IDEs or APIs will need to be installed on the workstation running CMS so that the DMT can access them.

To successfully deliver and analyze .NET code, the following third-party software is required:

Install on workstation running the DMT (for extraction)

Install on workstation running CMS (for analysis)

Nothing required for the packing to function.

If your source code references specific frameworks or third-party packages, then these will be required on the workstation running the DMT for packaging purposes.

 Some frameworks/third-party packages are shipped with the extension - see [below](#).

.NET Framework 4.7.2 must be installed in order for the analysis to function. A check will be done when the analysis starts and a message will be produced if the minimum .NET Framework cannot be found.

 Note that a .NET Framework is installed with the CAST AIP setup (see [Install AIP Core](#)), however this may not be the required version. Please check.

Location of the source code deployment folder

In the case of .NET analyses the Deployment folder should always be located **on the same machine as the AIP Node**. If the Deployment folder is located on a remote network file share, there is a risk that assemblies may not be loaded correctly during the analysis, causing external objects to not be saved.

Location of extensions folder

If you have altered the location where extensions are stored to a network location remote to the analysis machine (for example changing `CAST_PLUGINS_ROOT_PATH` - see [Configure AIP Node storage folder locations - optional - v. 1.x](#)) then you will need to add the following lines to the .NET Framework `machine.config` file (located on the machine where the analysis is being run). This is to ensure that the .NET Analyzer DLLs located in the remote network folder can be successfully run from a network location. The analysis will fail without this configuration.

Replace the following tag:

```
<runtime />
```

with:

```
<runtime>
  <loadFromRemoteSources enabled="true" />
</runtime>
```

Dependent frameworks and third-party packages provided in the extension

Some dependent frameworks and third-party packages are provided in the extension itself. There is therefore no need to specifically package these items if your source code relies on them - note however, that the DMT will generate missing library/assembly alerts for these items - these alerts can safely be ignored.

Frameworks

- .NET framework
- .NET Core
- .NET standard
- Silverlight
- Universal Windows Platform
- Mono Android
- Xamarin iOS
- Xamarin TvOS
- Xamarin WatchOS

Third-party packages

- Microsoft.AspNetCore.All (ASP.NET)
- Microsoft.AspNetCore.App (ASP.NET)
- log4net
- NHibernate
- NPersistence
- NLog
- Newtonsoft.Json
- Newtonsoft.Json.Bson
- MySql.Data
- Iesi.Collections
- EntityFramework
- Microsoft.Practices.EnterpriseLibrary.2008
- elmah.corelibrary

- System.Data.SqlClient
- Serilog
- Remotion.Linq
- Xamarin.Android.Support.v7.AppCompat
- Xamarin.Android.Support.v7.CardView
- Xamarin.Android.Support.v7.MediaRouter
- Xamarin.Android.Support.v4
- Xamarin.Android.Support.Media.Compat
- Xamarin.Android.Support.Fragment
- Xamarin.Android.Support.Design
- Xamarin.Android.Support.Core.Utils
- Xamarin.Android.Support.Core.UI
- Xamarin.Android.Support.Wear
- Xamarin.Android.Wear
- Xamarin.Forms

Dependencies with other extensions

Some CAST AIP extensions require the presence of other CAST AIP extensions in order to function correctly. The **.NET Analyzer** extension requires that the following other CAST AIP extensions are also installed:

- [Web Services Linker](#)

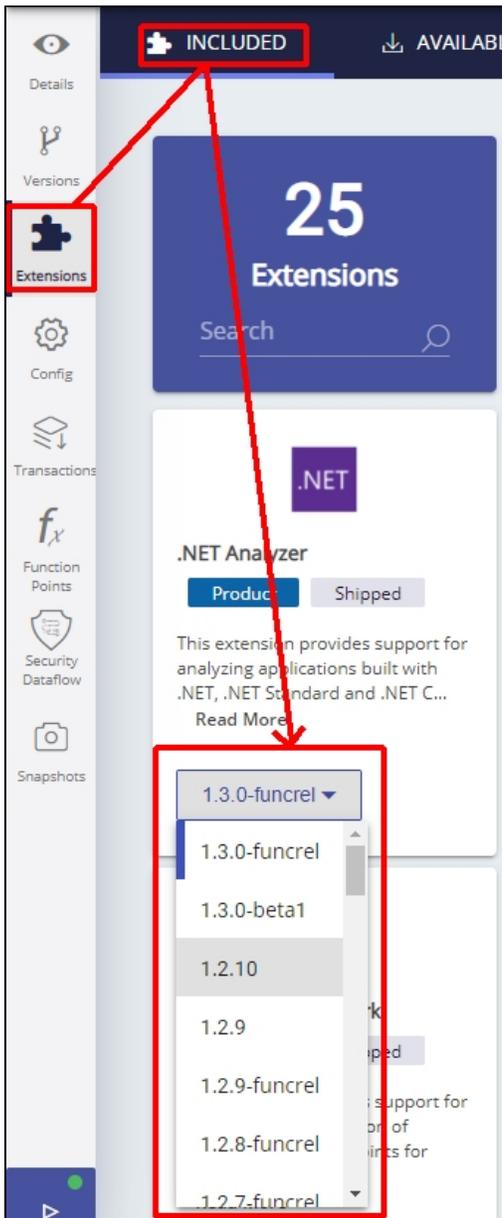


Note that when using the **CAST Extension Downloader** to download the extension and the **Manage Extensions** interface in **CAST Server Manager** to install the extension, any dependent extensions are **automatically** downloaded and installed for you. You do not need to do anything.

Download and installation instructions

A specific version of the .NET Analyzer extension is shipped with AIP Core. However, this release may not be the release you want to use, therefore you should check before beginning the analysis (i.e. by performing an [Advanced onboarding](#)) that the correct extension release is being used. You can see the list of shipped extensions for each release of AIP Core here: [Technology coverage changes in CAST AIP 8.3.x](#).

If you need to change the release use the **Included** interface in AIP Console:



There is nothing further to do. Follow the instructions below to run a new analysis/snapshot to generate new results:

- [Advanced onboarding - run and validate the initial analysis](#)
- [Advanced onboarding - snapshot generation and validation](#)

Application qualification information

Please see: [.NET - Qualification](#).

Prepare and deliver the source code

Please see: [.NET - Prepare and deliver the source code](#)

Analysis configuration and execution

Please see: [.NET - Analysis configuration and execution](#) and all child pages:

- [.NET - Analysis configuration](#)

- .NET - Environment Profiles
- .NET - Run and validate analysis
- .NET - Analysis messages
- .NET - Analysis results

What analysis results can you expect?

Please see: [.NET - Analysis results](#)

Structural rules

The vast majority of rules provided for the .NET Analyzer are embedded in CAST AIP - see [.NET - Structural rules](#) for more information. In addition, some rules are also provided with the extension:

1.2.15	https://technologies.castsoftware.com/rules?sec=srs_dotnet&ref= 1.2.15
1.2.14	https://technologies.castsoftware.com/rules?sec=srs_dotnet&ref= 1.2.14
1.2.13	https://technologies.castsoftware.com/rules?sec=srs_dotnet&ref= 1.2.13
1.2.12	https://technologies.castsoftware.com/rules?sec=srs_dotnet&ref= 1.2.12
1.2.11	https://technologies.castsoftware.com/rules?sec=srs_dotnet&ref= 1.2.11
1.2.10	https://technologies.castsoftware.com/rules?sec=srs_dotnet&ref= 1.2.10
1.2.9	https://technologies.castsoftware.com/rules?sec=srs_dotnet&ref= 1.2.9
1.2.9-funcrel	https://technologies.castsoftware.com/rules?sec=srs_dotnet&ref= 1.2.9-funcrel
1.2.8-funcrel	https://technologies.castsoftware.com/rules?sec=srs_dotnet&ref= 1.2.8-funcrel
1.2.7-funcrel	https://technologies.castsoftware.com/rules?sec=srs_dotnet&ref= 1.2.7-funcrel
1.2.6-funcrel	https://technologies.castsoftware.com/rules?sec=srs_dotnet&ref= 1.2.6-funcrel
1.2.5-funcrel	https://technologies.castsoftware.com/rules?sec=srs_dotnet&ref= 1.2.5-funcrel
1.2.4-funcrel	https://technologies.castsoftware.com/rules?sec=srs_dotnet&ref= 1.2.4-funcrel
1.2.3-funcrel	https://technologies.castsoftware.com/rules?sec=srs_dotnet&ref= 1.2.3-funcrel
1.2.2-funcrel	https://technologies.castsoftware.com/rules?sec=srs_dotnet&ref= 1.2.2-funcrel
1.2.1-funcrel	https://technologies.castsoftware.com/rules?sec=srs_dotnet&ref= 1.2.1-funcrel
1.2.0-funcrel	https://technologies.castsoftware.com/rules?sec=srs_dotnet&ref= 1.2.0-funcrel
1.2.0-beta5	https://technologies.castsoftware.com/rules?sec=srs_dotnet&ref= 1.2.0-beta5
1.2.0-beta4	https://technologies.castsoftware.com/rules?sec=srs_dotnet&ref= 1.2.0-beta4
1.2.0-beta3	https://technologies.castsoftware.com/rules?sec=srs_dotnet&ref= 1.2.0-beta3
1.2.0-beta2	https://technologies.castsoftware.com/rules?sec=srs_dotnet&ref= 1.2.0-beta2
1.2.0-beta1	https://technologies.castsoftware.com/rules?sec=srs_dotnet&ref= 1.2.0-beta1
1.2.0-alpha2	https://technologies.castsoftware.com/rules?sec=srs_dotnet&ref= 1.2.0-alpha2
1.2.0-alpha1	https://technologies.castsoftware.com/rules?sec=srs_dotnet&ref= 1.2.0-alpha1