

# .NET Code Analysis Tool : FxCop

*Ami Shah*



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## What is FxCop?

FxCop is a code analysis tool that checks .NET managed code (code that targets the .NET Framework common language runtime) assemblies (executable file or DLL) for conformance to the Microsoft .NET Framework Design Guidelines for writing robust and easily maintainable code using the .NET Framework.

FxCop analyzes programming elements in managed assemblies, called targets, and provides an informational report containing messages about the targets, including suggestions on how to improve the source code used to generate them. FxCop represents the checks it performs during an analysis as rules. A rule is managed code that can analyze targets and return a message about its findings. Rule messages identify any relevant programming and design issues and, when possible, supply information on how to fix the target.

FxCop uses reflection, MSIL parsing, and call graph analysis to inspect assemblies for more than 200 defects in the following areas:

- COM – rules that detect COM Interoperability issues.
- Design – rules that detect potential design flaws. These coding errors typically do not impact the execution of your code.
- Globalization – rules that detect missing or incorrect usage of information related to globalization and localization.
- Naming – rules that detect incorrect casing, cross language keyword collisions, and other issues related to the names of types, members, parameters, namespaces, and assemblies.
- Performance – rules that detect elements in your assemblies that will degrade performance.
- Security – rules that detect programming elements that leave your assemblies vulnerable to malicious users or code.
- Usage - rules that detect potential flaws in your assemblies that can impact code execution.

FxCop is designed to be fully integrated into the software development cycle and is distributed as both a fully featured application with a graphical user interface (FxCop.exe) for interactive work, and a command-line tool (FxCopCmd.exe) suitable for use as part of automated build processes or integrated with Microsoft Visual Studio® .NET as an external tool.

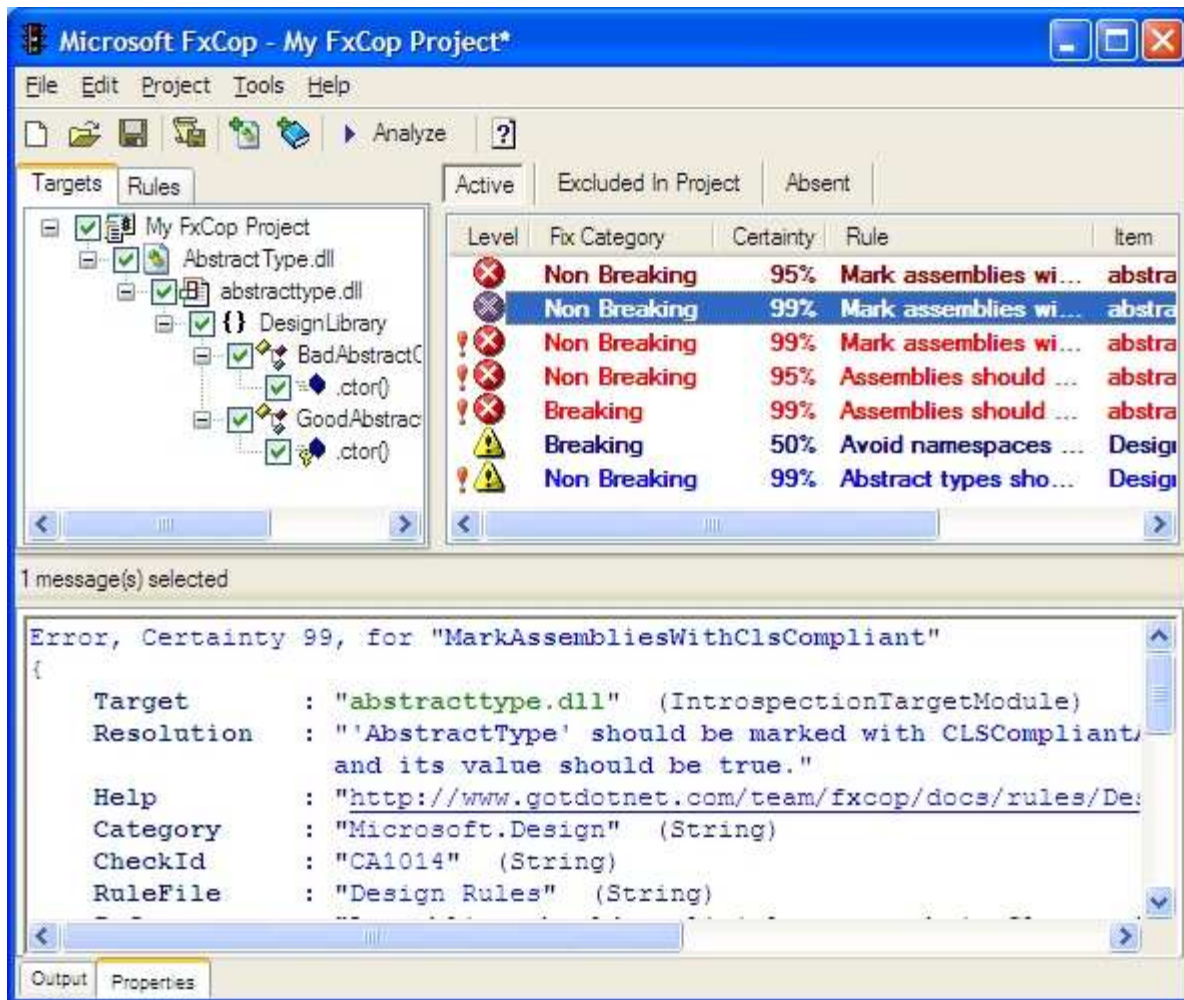
## How to use FxCop?

FxCop can be downloaded from <http://www.getdotnet.com/team/fxcop>

Starting FxCop and Performing an Analysis:

1. Start FxCop from the **Start** menu, or double-click FxCop.exe in the installation directory.
2. From the Project menu, select Add Targets.
3. Browse to the assembly (.exe or .dll file) to add, and click Open.
4. Run the analysis by clicking the Analyze button on the toolbar.

The FxCop application window displays the targets and rules included in a project, and the messages generated when an analysis is performed. The window is divided into three major areas: the configuration pane on the left, the messages pane on the right, and the properties pane below, as shown in the following screen shot.



- The configuration pane displays targets and rules for the current project in a tree view.
- The messages pane displays a report, customizable by column, about the messages generated from an analysis. You can filter the displayed messages by selecting specific targets and rules in the configuration pane.
- The properties pane contains two tabs.
  - The Output tab displays informational, warning, and error messages when the TraceGeneral [System.Diagnostics.TraceSwitch](#) is enabled (the default) in the FxCop.exe.config configuration file.

- The Properties tab displays detailed target, rule, or message information when an item is selected in the configuration or messages pane

**Advantages :**

- Automated process to find noncompliance defects with Microsoft design guidelines from managed code
- Useful as an educational tool for those who are new to the .NET Framework or are unfamiliar with the .NET Framework Design Guidelines
- User can control rules applied to targets i.e. can exclude the rules also
- User can create custom rules
- User can generate reports, apply style sheets to reports
- User can filter and save messages
- User can save and reuse application settings in FxCop projects