C# 4.0
New Compiler Options

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Outline

- **Embedding COM Interop type information**
  - /link compiler option
  - Type equivalence
- **Specifying an app.config file to the C# compiler**
  - /appconfig compiler option

Embedding COM Interop type information

- Primary Interop Assemblies (PIAs) are used for COM Interop
- They contain interface declarations decorated with attributes, including `ComImport`, `Guid` and `TypeIdentifier`
- The assemblies themselves are marked with a `Guid` attribute as well as either `ImportedFromTypeLib` or `PrimaryInteropAssembly`
- In client assemblies, the type information can be embedded
- The reference to the PIA is then not needed
- Loose coupling is promoted
- Type Equivalence features allow different views of types to be regarded as equal
- Primary use case: Automation, for instance with Microsoft Office
- Use either the reference property in VS or the /link compiler option

Compile-time app.config files

- The command line compiler option /appconfig can specify an app.config file to the compiler
- Microsoft's use case example is to have assembly references for different .NET Framework version at once, e.g. Standard vs. Silverlight
- .csproj options (used by MSBuild) are also available
  - `AppConfigForCompiler` can specify a file
  - `UseAppConfigForCompiler` uses the project app.config

```
<configuration>
  <runtime>
    <assemblyBinding>
      <supportPortability PKT="7cec85d7bea7798e" enable="false"/>
      <supportPortability PKT="31bf3856ad364e35" enable="false"/>
    </assemblyBinding>
  </runtime>
</configuration>
```

Summary

- Embedding COM Interop type information is a very useful feature for those who deal with Automation scenarios and other COM library based implementations
- In the current mixed-platform .NET development world, the new /appconfig parameter is certainly important, but it remains a highly advanced use case

References

- C# 4.0 Language Specification: http://osturm.me/cs40spec