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Chapter 1. Common Logging

1.1. Introduction

There are a variety of logging implementations for .NET currently in use, log4net, Enterprise Library Logging, NLog, to name the most popular. The downside of having different implementation is that they do not share a common interface and therefore impose a particular logging implementation on the users of your library. To solve this dependency problem the Common.Logging library introduces a simple abstraction to allow you to select a specific logging implementation at runtime.

The library is based on work done by the developers of IBatis.NET and it's usage is inspired by log4net. Many thanks to the developers of those projects! The library is available for .NET 3.5 and 4.0 with both debug and strongly signed release assemblies.

The base logging library, Common.Logging, provides the base logging interfaces that appear in your code and also include simple console and trace based logger implementations. The libraries are located under bin/net/\<framework-version>/debug or release.

The following logging systems are supported out of the box:

- System.Console
- System.Diagnostics.Trace
- Log4Net 1.2.9
- Log4Net 1.2.10
- Log4Net 1.2.11
- NLog 1.0
- NLog 2.0
- Enterprise Library 3.1 Logging
- Enterprise Library 4.1 Logging
- Enterprise Library 5.0 Logging

There are three enterprise log4net implementations, one for log4net 1.2.9, another for log4net 1.2.10, and still another for log4net 1.2.11. The need for three log4net versions is due to the fact that some of these are signed with a different strong key (making assembly redirection impossible) and that there are breaking changes between 1.2.10 and 1.2.11.

Note that it is not the intention of this library to be a replacement for the many fine logging libraries that are out there. The API is incredibly minimal and will very likely stay that way. Only use this library if you truly need to support multiple logging APIs.

1.2. Upgrading from previous versions

1.2.1. Upgrading to 2.1

The new version of Common.Logging assembly is 100% binary backwards compatible to previous versions. Either you rebuild your project against the new version or simply specify an assembly version redirect:
If you are updating from pre-2.0, and have implemented your own Common.Logging.ILoggerFactoryAdapter and Common.Logging.ILog interfaces, you will need to update your code to the extended interfaces that came with version 2.0. For convenience Common.Logging comes with a couple of support classes, making this task as easy as possible as described in Implementing a custom FactoryAdapter

### 1.3. Using Common.Logging API

Usage of the Logging API is fairly simple. First you need to obtain a logger from the LogManager and call the appropriate logging method:

```csharp
using Common.Logging;
...
ILog log = LogManager.GetCurrentClassLogger();
log.Debug("hello world");
```

It is also possible to obtain a logger by name:

```csharp
ILog log = LogManager.GetLogger("mylogger");
```

When working on NET 3.0 or higher, a logger offers a convenient way to log information while paying as little performance penalty as possible. Sometimes evaluating log message arguments might be costly. These costs even hit you, when the logging is turned off, just because the log call is in your code. In this case one usually writes:

```csharp
if (log.IsDebugEnabled)
{
    log.Debug("my expensive to calculate argument is: {0}", CalculateMessageInfo());
}
```

Since Common.Logging 2.0 and later there is a shortcut notation available that allows you to write:

```csharp
log.Debug( m => m("my expensive to calculate argument is: {0}", CalculateMessageInfo()) );
```

This form is equivalent to the example above and the deferred-execution of the lambda syntax guarantees that CalculateMessageInfo() is only called when the message actually gets logged.

Finally here is the complete interface offered by a logger instance:

```csharp
public interface ILog
{
    // Methods
    void Trace(object message);
    void Trace(object message, Exception exception);
    void Trace(FormatMessageCallback formatMessageCallback);
    void Trace(FormatMessageCallback formatMessageCallback, Exception exception);
    void Trace(IFormatProvider formatProvider, FormatMessageCallback formatMessageCallback);
    void Trace(IFormatProvider formatProvider, FormatMessageCallback formatMessageCallback, Exception exception);
    void TraceFormat(string format, params object[] args);
    void TraceFormat(string format, Exception exception, params object[] args);
    void TraceFormat(IFormatProvider formatProvider, string format, params object[] args);
    void TraceFormat(IFormatProvider formatProvider, string format, Exception exception
```
Common Logging

```csharp
void Debug(object message);
void Debug(object message, Exception exception);
void Debug(FormatMessageCallback formatMessageCallback);
void Debug(FormatMessageCallback formatMessageCallback, Exception exception);
void Debug(IFORMATProvider formatProvider, FormatMessageCallback formatMessageCallback);
void Debug(IFORMATProvider formatProvider, FormatMessageCallback formatMessageCallback, Exception exception);
void Debug(IFORMATProvider formatProvider, string format, Exception exception);
void Debug(IFORMATProvider formatProvider, string format, Exception exception, params object[] args);
void Debug(IFORMATProvider formatProvider, string format, Exception exception, params object[] args);

void Info(object message);
void Info(object message, Exception exception);
void Info(FormatMessageCallback formatMessageCallback);
void Info(FormatMessageCallback formatMessageCallback, Exception exception);
void Info(IFORMATProvider formatProvider, FormatMessageCallback formatMessageCallback);
void Info(IFORMATProvider formatProvider, FormatMessageCallback formatMessageCallback, Exception exception);
void Info(IFORMATProvider formatProvider, string format, Exception exception);
void Info(IFORMATProvider formatProvider, string format, Exception exception, params object[] args);
void Info(IFORMATProvider formatProvider, string format, Exception exception, params object[] args);

void Warn(object message);
void Warn(object message, Exception exception);
void Warn(FormatMessageCallback formatMessageCallback);
void Warn(FormatMessageCallback formatMessageCallback, Exception exception);
void Warn(IFORMATProvider formatProvider, FormatMessageCallback formatMessageCallback);
void Warn(IFORMATProvider formatProvider, FormatMessageCallback formatMessageCallback, Exception exception);
void Warn(IFORMATProvider formatProvider, string format, Exception exception);
void Warn(IFORMATProvider formatProvider, string format, Exception exception, params object[] args);
void Warn(IFORMATProvider formatProvider, string format, Exception exception, params object[] args);

void Error(object message);
void Error(object message, Exception exception);
void Error(FormatMessageCallback formatMessageCallback);
void Error(FormatMessageCallback formatMessageCallback, Exception exception);
void Error(IFORMATProvider formatProvider, FormatMessageCallback formatMessageCallback);
void Error(IFORMATProvider formatProvider, FormatMessageCallback formatMessageCallback, Exception exception);
void Error(IFORMATProvider formatProvider, string format, Exception exception);
void Error(IFORMATProvider formatProvider, string format, Exception exception, params object[] args);
void Error(IFORMATProvider formatProvider, string format, Exception exception, params object[] args);

void Fatal(object message);
void Fatal(object message, Exception exception);
void Fatal(FormatMessageCallback formatMessageCallback);
void Fatal(FormatMessageCallback formatMessageCallback, Exception exception);
void Fatal(IFORMATProvider formatProvider, FormatMessageCallback formatMessageCallback);
void Fatal(IFORMATProvider formatProvider, FormatMessageCallback formatMessageCallback, Exception exception);
void Fatal(IFORMATProvider formatProvider, string format, Exception exception);
void Fatal(IFORMATProvider formatProvider, string format, Exception exception, params object[] args);
void Fatal(IFORMATProvider formatProvider, string format, Exception exception, params object[] args);

// Properties
bool IsDebugEnabled { get; }
bool IsErrorEnabled { get; }
bool IsFatalEnabled { get; }
bool IsInfoEnabled { get; }
bool IsTraceEnabled { get; }
bool IsWarnEnabled { get; }
```
Since the ILog interface mimics that of the interface used in log4net, migration from log4net is often just a matter of changing the 'using' statement.

You can get a reference to an instance of an ILog using the LoggingManager class. Its API is shown below:

```csharp
public sealed class LogManager
{
    public static ILog GetLogger( Type type ) ...
    public static ILog GetLogger( string name ) ...
    public static ILoggerFactoryAdapter Adapter ...
}
```

The Adapter property is used by the framework itself.

### 1.4. Configuring Logging

There are 2 ways of configuring logging in your application - either declaratively or programmatically.

#### 1.4.1. Declarative Configuration

Logging configuration can be done declaratively in your app.config

```xml
<configuration>
    <configSections>
        <sectionGroup name="common">
            <section name="logging" type="Common.Logging.ConfigurationSectionHandler, Common.Logging" />
        </sectionGroup>
    </configSections>

    <common>
        <logging>
                <arg key="level" value="DEBUG" />
                <arg key="showLogName" value="true" />
                <arg key="showDateTime" value="true" />
                <arg key="dateTimeFormat" value="yyyy/MM/dd HH:mm:ss:fff" />
            </factoryAdapter>
        </logging>
    </common>
</configuration>
```

**Note**

The concrete set of `<arg>` elements you may specify depends on the FactoryAdapter being used.

Note that if you have installed Common.Logging in the GAC, you will need to specify the fully qualified name of the assembly, i.e. add the Version, Culture, and PublicKeyToken, etc. See the log4net section for an example.

#### 1.4.2. Configuring Logging in your code

You may manually configure logging by setting a LoggerFactoryAdapter in your code.

```csharp
// create properties
NameValueCollection properties = new NameValueCollection();
properties["showDateTime"] = "true";

// set Adapter
```
1.5. Logging Adapters

There are simple out-of-the-box implementations provided with Common.Logging itself. For connecting to log4net, separate adapters do exist.

Note

Be sure to correctly specify the type of the FactoryAdapter in the common logging configuration section and to copy the logging implementation .dlls to your runtime directory. If the specified FactoryAdapter type is not found or its dependent libraries, the NoOpLoggerFactoryAdapter is used by default and you will not see any logging output.

1.5.1. NoOpLoggerFactoryAdapter

This is the default FactoryAdapter if logging is not configured. It simply does nothing ("no-op").

1.5.2. ConsoleOutLoggerFactoryAdapter

ConsoleOutLoggerFactoryAdapter uses Console.Out for logging output.

Table 1.1. Configuration Properties

<table>
<thead>
<tr>
<th>Key</th>
<th>Possible Value(s)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>level</td>
<td>All Debug Info Warn Error Fatal Off</td>
<td>Defines the global maximum level of logging.</td>
</tr>
<tr>
<td>showDateTime</td>
<td>true</td>
<td>false</td>
</tr>
<tr>
<td>showLogName</td>
<td>true</td>
<td>false</td>
</tr>
<tr>
<td>dateTimeFormat</td>
<td>any formatstring accepted by DateTime.ToString()</td>
<td>defines the format to be used for output the timestamp. If no format is specified DateTime.ToString() will be used.</td>
</tr>
</tbody>
</table>

1.5.3. TraceLoggerFactoryAdapter

TraceLoggerFactoryAdapter uses System.Diagnostics.Trace for logging output. For viewing it's output you can use any tool that is capable of capturing calls to Win32 OutputDebugString() - e.g. the tool "DebugView" from www.sysinternals.com.

Table 1.2. Configuration Properties

<table>
<thead>
<tr>
<th>Key</th>
<th>Possible Value(s)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>level</td>
<td>All Debug Info Warn Error Fatal Off</td>
<td>Defines the global maximum level of logging.</td>
</tr>
<tr>
<td>showDateTime</td>
<td>true</td>
<td>false</td>
</tr>
</tbody>
</table>
### Common Infrastructure Libraries (Version 2.1)

#### Table 1.3. Configuration Properties

<table>
<thead>
<tr>
<th>Key</th>
<th>Possible Value(s)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>showLogName</td>
<td>true/false</td>
<td>output logger name?</td>
</tr>
<tr>
<td>dateTimeFormat</td>
<td>any formatstring accepted by DateTime.ToString()</td>
<td>defines the format to be used for output the timestamp. If no format is specified DateTime.ToString() will be used.</td>
</tr>
</tbody>
</table>

#### 1.5.4. Log4NetLoggerFactoryAdapter

There are three implementations, each configured similarly.

- `Common.Logging.Log4Net1211` is linked against log4net 1.2.11.0
- `Common.Logging.Log4Net1210` is linked against log4net 1.2.10.0
- `Common.Logging.Log4Net129` is linked against log4net 1.2.9.0

The only difference is in the type specified to the factory adapter. Each of the adapters accept the following configuration properties:

##### Table 1.3. Configuration Properties

<table>
<thead>
<tr>
<th>Key</th>
<th>Possible Value(s)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>configType</td>
<td>FILE, FILE-WATCH, INLINE, EXTERNAL</td>
<td>INLINE will simply call XmlConfigurator.Configure()</td>
</tr>
<tr>
<td></td>
<td>FILE</td>
<td>EXTERNAL expects log4net being configured somewhere else in your code and does nothing.</td>
</tr>
<tr>
<td></td>
<td>INLINE</td>
<td>FILE, FILE-WATCH: see property &quot;configFile&quot; below.</td>
</tr>
<tr>
<td></td>
<td>EXTERNAL</td>
<td></td>
</tr>
<tr>
<td>configFile</td>
<td>&lt;path to your log4net.config file&gt;</td>
<td>if configType is FILE or FILE-WATCH, the value of &quot;configFile&quot; is passed to XmlConfigurator.Configure(FileInfo) / ConfigureAndWatch(FileInfo) method.</td>
</tr>
</tbody>
</table>

The example below will configure log4net 1.2.10.0 using the file log4net.config from your application’s root directory by calling `XmlConfigurator.ConfigureAndWatch()`:

```xml
<configuration>
  <common>
    <logging>
        <arg key="configType" value="FILE-WATCH" />
        <arg key="configFile" value="~/log4net.config" />
      </factoryAdapter>
    </logging>
  </common>
</configuration>
```

For log4net 1.2.9, change the assembly name `Common.Logging.Log4Net129` and so on.
Another example that shows the log4net configuration 'inline' with the standard application configuration file is shown below.

```csharp
<configuration>
  <configSections>
    <sectionGroup name="common">
      <section name="logging" type="Common.Logging.ConfigurationSectionHandler, Common.Logging" />
    </sectionGroup>
    <section name="log4net" type="log4net.Config.Log4NetConfigurationSectionHandler, log4net"/>
  </configSections>

  <common>
    <logging>
        <arg key="configType" value="INLINE" />
      </factoryAdapter>
    </logging>
  </common>

  <log4net>
    <appender name="ConsoleAppender" type="log4net.Appender.ConsoleAppender">
      <layout type="log4net.Layout.PatternLayout">
        <conversionPattern value="%date [%thread] %-5level %logger %ndc - %message%newline" />
      </layout>
    </appender>
    <root>
      <level value="DEBUG"/>
      <appender-ref ref="ConsoleAppender" />
    </root>
    <logger name="MyApp.DataAccessLayer">
      <level value="DEBUG" />
    </logger>
  </log4net>
</configuration>
```

Note that if you are using Common.Logging or any of the adapters from the GAC, you will need to specify the full type name, including version, publickey token etc., as shown below.

```csharp
<configuration>
  <configSections>
    <sectionGroup name="common">
      <section name="logging" type="Common.Logging.ConfigurationSectionHandler, Common.Logging, Version=2.0.0.0, Culture=neutral, PublicKeyToken=AF0882984F0328E" />
    </sectionGroup>
    <section name="log4net" type="log4net.Config.Log4NetConfigurationSectionHandler, log4net, Version=1.2.10.0, Culture=neutral, PublicKeyToken=1B44E1D426115821"/>
  </configSections>

  <common>
      <arg key="configType" value="FILE-WATCH" />
      <arg key="configFile" value="~/log4net.config" />
    </factoryAdapter>
  </common>
</configuration>
```

### 1.5.5. NLogLoggerFactoryAdapter

There are two implementations:

- Common.Logging.NLog20
  
  is linked against NLog 2.0.0.2

- Common.Logging.NLog10
is linked against NLog 1.0.505

Table 1.4. Configuration Properties

<table>
<thead>
<tr>
<th>Key</th>
<th>Possible Value(s)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>configType</td>
<td>INLINE</td>
<td>INLINE</td>
</tr>
<tr>
<td></td>
<td>FILE</td>
<td>FILE: see property &quot;configFile&quot; below.</td>
</tr>
<tr>
<td>configFile</td>
<td>&lt;path to your</td>
<td>if configType is FILE, the value of &quot;configFile&quot;</td>
</tr>
<tr>
<td></td>
<td>NLog.config file&gt;</td>
<td>is passed to XmlLoggingConfiguration(string)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The example below will configure NLog using the file NLog.config from your application's root directory by calling XmlLoggingConfiguration(string):

```xml
<configuration>
  <common>
    <logging>
      <factoryAdapter type="Common.Logging.NLog.NLogLoggerFactoryAdapter, Common.Logging.NLog10">
        <arg key="configType" value="FILE" />
        <arg key="configFile" value="/NLog.config" />
      </factoryAdapter>
    </logging>
  </common>
</configuration>
```

Another example that shows the NLog configuration 'inline' with the standard application configuration file is shown below.

```xml
<configuration>
  <configSections>
    <sectionGroup name="common">
      <section name="logging" type="Common.Logging.ConfigurationSectionHandler, Common.Logging" />  
    </sectionGroup>
    <section name="nlog" type="NLog.Config.ConfigSectionHandler, NLog" />
  </configSections>

  <common>
    <logging>
      <factoryAdapter type="Common.Logging.NLog.NLogLoggerFactoryAdapter, Common.Logging.NLog10">
        <arg key="configType" value="INLINE" />
      </factoryAdapter>
    </logging>
  </common>

    <targets>
      <target name="console" xsi:type="Console" layout="${date:format=HH:MM:ss} ${logger} ${message}" />
    </targets>
    <rules>
      <logger name="*" minlevel="Debug" writeTo="console" />
    </rules>
  </nlog>
</configuration>
```

1.5.6. Enterprise Library 3.1 Logging Adapter

There is one implementation located in the assembly `Common.Logging.EntLib31` and is linked against the Microsoft Enterprise Library v 3.1, aka EntLib 3.1. The .dlls for EntLib can not be redistributed so you will need to download EntLib separately.
There are no configuration options for the adapter. Configuration of EntLib logging is done entirely though App.config. The example below shows the basic configuration of the EntLibLoggingAdapter

```xml
<common>
  <logging>
  </logging>
</common>
```

Future releases may include configuration of the priority and also the format in which information about an exception is logged. The current priority used is -1, the default.

Note that the following mapping of Common.Logging LogLevel to System.Diagnostics.TraceEventType is used.

### Table 1.5. EntLib 3.1 to Common.Logging log level mapping

<table>
<thead>
<tr>
<th>Common.Logging.LogLevel</th>
<th>System.Diagnostics.TraceEventType</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trace</td>
<td>Verbose</td>
</tr>
<tr>
<td>Debug</td>
<td>Verbose</td>
</tr>
<tr>
<td>Error</td>
<td>Error</td>
</tr>
<tr>
<td>Fatal</td>
<td>Critical</td>
</tr>
<tr>
<td>Info</td>
<td>Information</td>
</tr>
<tr>
<td>Warn</td>
<td>Warning</td>
</tr>
</tbody>
</table>

#### 1.5.7. Enterprise Library 4.1 Logging Adapter

There is one implementation located in the assembly `Common.Logging.EntLib41` and is linked against the Microsoft Enterprise Library v4.1, aka EntLib 4.1. The .dlls for EntLib can not be redistributed so you will need to download EntLib separately.

There are no configuration options for the adapter. Configuration of EntLib logging is done entirely though App.config. The example below shows the basic configuration of the EntLibLoggingAdapter

```xml
<common>
  <logging>
  </logging>
</common>
```

Future releases may include configuration of the priority and also the format in which information about an exception is logged. The current priority used is -1, the default.

Note that the following mapping of Common.Logging LogLevel to System.Diagnostics.TraceEventType is used.

### Table 1.6. EntLib 4.1 to Common.Logging log level mapping

<table>
<thead>
<tr>
<th>Common.Logging.LogLevel</th>
<th>System.Diagnostics.TraceEventType</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trace</td>
<td>Verbose</td>
</tr>
<tr>
<td>Debug</td>
<td>Verbose</td>
</tr>
<tr>
<td>Error</td>
<td>Error</td>
</tr>
</tbody>
</table>
1.5.8. Enterprise Library 5.0 Logging Adapter

There is one implementation located in the assembly `Common.Logging.EntLib50` and is linked against the Microsoft Enterprise Library v5.0, aka EntLib 5.0. The .dlls for EntLib can not be redistributed so you will need to download EntLib separately.

There are no configuration options for the adapter. Configuration of EntLib logging is done entirely though App.config. The example below shows the basic configuration of the EntLibLoggingAdapter

```
<common>
  <logging>
  </logging>
</common>
```

Future releases may include configuration of the priority and also the format in which information about an exception is logged. The current priority used is -1, the default.

Note that the following mapping of Common.Logging LogLevel to System.Diagnostics.TraceEventType is used.

<table>
<thead>
<tr>
<th>Common.Logging(LogLevel</th>
<th>System.Diagnostics.TraceEventType</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trace</td>
<td>Verbose</td>
</tr>
<tr>
<td>Debug</td>
<td>Verbose</td>
</tr>
<tr>
<td>Error</td>
<td>Error</td>
</tr>
<tr>
<td>Fatal</td>
<td>Critical</td>
</tr>
<tr>
<td>Info</td>
<td>Information</td>
</tr>
<tr>
<td>Warn</td>
<td>Warning</td>
</tr>
</tbody>
</table>

1.6. Advanced Logging Tasks

1.6.1. Integrating with System.Diagnostics.Trace

There are 2 ways of integrating with `System.Diagnostics.Trace`: Either you redirect all log messages from `System.Diagnostics.Trace` to `Common.Logging` or vice versa. Logging from `Common.Logging` to `System.Diagnostics.Trace` is done by configuring `TraceLoggerFactoryAdapter`.

To configure `System.Diagnostics.Trace` to route its output to the `Common.Logging` infrastructure, you need to configure a special `TraceListener`:

```
<configuration>

```
This configuration causes all messages logged via `System.Diagnostics.Trace.Write` to be logged using a logger instance obtained from `LogManager` by the "name" attribute and using the LogLevel specified in the "initializeData" attribute.

1.6.2. Implementing a custom FactoryAdapter

If you want to plug in a new, yet unsupported logging library, you need to provide a logger factory adapter that implements the `Common.Logging.ILoggerFactoryAdapter` interface. Loggers must implement the `Common.Logging.ILog` interface.

Important: Any implementation must provide a public constructor accepting a `NameValueCollection` parameter as shown in the example below:

```csharp
public class MyLoggingFactoryAdapter : ILoggerFactoryAdapter
{
    public MyLoggingFactoryAdapter(NameValueCollection properties)
    {
        // configure according to properties
    }

    public ILog GetLogger(Type type) { ... }
    public ILog GetLogger(string name) { ... }
}
```


1.6.3. Bridging logging systems

In the case your application uses frameworks that are tied to different logging systems, one usually had to find a workaround yourself. Using Common.Logging removes this problem: All integration modules come with plugs to route log messages in 2 directions - either send messages from Common.Logging to the 3rd party logging system, or you can feed messages from that other logging system into Common.Logging.

Let's assume, one of your frameworks uses log4net, another one `System.Diagnostics.Trace`. You prefer the small but powerful NLog system. First you need to configure log4net to send all log events to Common.Logging:
Example 1.1. Route log4net messages to Common.Logging

```xml
<log4net>
  <appender name="CommonLoggingAppender">
      <param name="ConversionPattern" value="%level - %class.%method: %message" />
    </layout>
  </appender>
  <root>
    <level value="ALL" />
    <appender-ref ref="CommonLoggingAppender"/>
  </root>
</log4net>
```

To get System.Diagnostics.Trace messages routed to Common.Logging, you need to configure the corresponding CommonLoggingTraceListener:

Example 1.2. Route System.Diagnostics.Trace messages to Common.Logging

```xml
<system.diagnostics>
  <sharedListeners>
    <add name="Diagnostics" type="Common.Logging.Simple.CommonLoggingTraceListener, Common.Logging" initializeData="DefaultTraceEventType=Information; LoggerNameFormat={listenerName}.{sourceName}"
         filter="System.Diagnostics.EventTypeFilter" initializeData="Information"/>
  </sharedListeners>
  <trace>
    <listeners>
      <add name="Diagnostics" />
    </listeners>
  </trace>
</system.diagnostics>
```

Finally you want Common.Logging to output all events to NLog:

Example 1.3. Route Common.Logging messages to NLog

```xml
<nlog autoReload="true" throwExceptions="true">
  <targets>
    <target name="common.logging">
      <layout type="Common.Logging.NLog.CommonLoggingTarget, Common.Logging.NLog10" layout="${longdate}|${level:uppercase=true}|${message}"
              filename="C:\temp\${date:format=yyyy-MM-dd}_logA.txt"/>
    </target>
  </targets>
  <rules>
    <logger name="*" minlevel="Info" writeTo="common.logging" />
  </rules>
</nlog>
```