



Connecting Visual Studio® .NET to a Zoom Development Kit

Application Note 280

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Abstract

This document explains how to connect Visual Studio .NET to a Logic Zoom Development Kit for application development and debugging.

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REVISION HISTORY

REV	EDITOR	DESCRIPTION	APPROVAL	DATE
A	Russell McGuire	Release	HAR	1/3/05
B	Aaron Stewart	Generalized for all Zoom Development Kits; Updated for Windows CE 5.0 and new ActiveSync; General grammatical and formatting changes	JCA	1/8/07

1 Introduction

The intention of this document is to describe how to connect Visual Studio.NET to a Logic Zoom Development Kit for application development and debugging. The Visual Studio.NET connection will allow for interactive debugging with the target device and can hasten development time.

1.1 Scope

It is not within the scope of this document to cover all aspects of Visual Studio.NET. This document will focus primarily on basic connection issues.

1.2 Limitations

1. Visual Studio .NET cannot determine the type of CPU that is on a Windows CE 4.x device. You must manually select the CPU type from the Tools menu within your project if using Windows CE 4.x.
2. Please disable KITL: You may experience problems connecting with debug Ethernet, KITL, turned on in your Windows CE image.

2 Prerequisites

2.1 Software Requirements

Before getting started, make sure that your environment is set up properly and necessary software is installed.

The following components are required:

1. Visual Studio .NET
2. Microsoft ActiveSync for PC version 3.5 or newer (4.2.0 recommended).
3. Platform Builder 5.0 or newer if building your own image, and all of the latest QFE's.
4. Windows CE. NET utilities v1.1 for Visual Studio .NET 2003.exe or newer
5. A Windows CE 5.0 image (see Section 2.1.1 for necessary components)

2.1.1 WindowsCE Image Component Requirements

Please be sure that your Windows CE image was created with the correct dependencies in order for Visual Studio .NET to be able to communicate with it.

A minimum component set necessary for connection:

1. .NET Compact Framework 1.0
2. OS Dependencies for .NET Compact Framework 1.0
3. Smart Device Authentication Utility
4. ActiveSync and related dependencies
5. Telephony/Unimodem support (for ActiveSync)
6. CAB file installer/uninstaller
7. ToolHelp API
8. Standard SDK for Windows CE .NET (required for interactive debugging only).

2.2 PC Environment Requirements

There are several initial steps that must be completed prior to connecting Visual Studio .NET to the Zoom Development Kit. This section assumes a user already knows how to compile, download, and launch a Windows CE 5.0 image—and, as a result, that a target Logic hardware platform is up and running.

- The user must have ActiveSync installed and running on the PC and setup to use USB. ActiveSync can be downloaded from Microsoft's website.

Note: Although other types of connectivity are possible, this document outlines a USB connection.

- The user must download and install the *Windows CE .NET utilities v1.1 for Visual Studio .NET 2003* from the Microsoft's website. This utility provides embedded CPU specific support for the .NET environment.

After installing *Windows CE .NET utilities v1.1 for Visual Studio .NET 2003* you will have new project options within Visual Studio .NET 2003.

3 Test your Windows CE Image with ActiveSync

Once you have made sure that the software and PC environment requirements have been met, test your ActiveSync connection with your target device before you test Visual Studio .NET with your Windows CE image and application.

To test your ActiveSync connection, plug in the USB cable to both your device and your PC. Ideally, ActiveSync will connect. Please verify that all image components listed in Section 2.1.1 are included in your image. For a detailed look at connecting your kit to your PC via ActiveSync please refer to Section 2.2.1 of the [Zoom™ Development Kit Windows® CE Evaluation Guide](#).

Once your kit properly connects to ActiveSync a window will appear, asking if you want to form a partnership with your Windows CE device. Please select 'NO' unless you are certain you need this feature.

- If ActiveSync does not connect: Make sure you have all the necessary components in your Windows CE image for an ActiveSync connection and that the necessary drivers on your PC support a Mobile Device on ActiveSync. The Wide Area Network / Telephony / Unimodem support driver is required for this to work and is a commonly missed dependency.
- If ActiveSync connects: Continue testing your Visual Studio .NET application.

If you include all the default dependencies suggested by the wizard when building a Compact Framework-based image with ActiveSync, the image can become rather large. If you want to reduce the image size, the following larger items are some that you may want to consider removing:

- Under the ActiveSync Application: The File Sync, Inbox Sync, and Pocket Outlook Database Sync features are not required for debugging over ActiveSync.
- Under the Compact Framework Component: You can remove the SQL server components and the main "Sequel Server CE 2.0" component that resides under Applications and Services Development.

4 Connecting Visual Studio .NET 2003 to the Zoom Development Kit

In Visual Studio.NET:

1. Select 'File | New | Project.'
2. Click on the icon 'Smart Device Application' (or use an existing project you already have created).
3. Next, select your platform. Select 'Windows CE.' Now you can begin work in your application environment.
4. Select 'Tools | Windows CE Device CPU.'
5. Select the processor type that corresponds with your Zoom Development Kit. Then click 'OK' and close the window.

Note: If you select ARMV4I which would be assumed since Logic's BSP is built using ARMV4I, Visual Studio will default to ARMV4T because of a bug that is described in the FAQ mentioned in Section 5.

6. Select 'Tools | Connect to Device.' A window will appear.
7. In the 'Connect to Device' window, select 'Windows CE .NET Device.' You will see 'Establishing Connection' in your status bar, then 'Device Connected.'

After you compile your application you should be able to deploy, debug, and launch your application with the Visual Studio .NET.

5 Further Reading

Logic recommends for further reading that you visit the MSDN website and browse Microsoft's Knowledge Base. Below are some helpful links:

1. If you have trouble getting Visual Studio to deploy to your kit, there are several common problems/solutions that are discussed on Microsoft's FAQ website:
<http://msdn.microsoft.com/mobility/prodtechinfo/devtools/netcf/FAQ>
2. 816826 INFO: Windows CE Utilities for Visual Studio .NET 2003:
<http://support.microsoft.com/default.aspx?scid=kb;EN-US;816826>
3. 818207 INFO: Windows CE Utilities Are Required for .NET Compact Framework Development for Non-Pocket PC Devices:
<http://support.microsoft.com/default.aspx?scid=kb;EN-US;818207>



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