**Dave T. Ashley’s Tool Set**

Software Engineering Manual

Table of Contents

[1 Introduction and Overview 3](#_Toc468626169)

[2 Tool Set Design 3](#_Toc468626170)

[3 Supported Platforms 3](#_Toc468626171)

[4 Build Instructions 3](#_Toc468626172)

[5 Coding Standards 3](#_Toc468626173)

[6 Design Standards 3](#_Toc468626174)

[7 Testing Standards, and Testing 3](#_Toc468626175)

[8 Index 4](#_Toc468626176)

# Introduction and Overview

*Dave T. Ashley’s Tool Set*[[1]](#footnote-1) is an eclectic open-source tool set, primarily geared towards embedded software development.

This document contains the software engineering description of the tool set, and covers issues that are not generally of interest to casual users of the tool set. These issues include:

* A description of supported platforms for which the tool set can be built.
* Build instructions for supported platforms.
* Design of the tool set.
* Coding standards.
* Design standards.
* Testing standards, and how the tool set is tested.

# Tool Set Design

The tool set consists of:

* A number of individual projects (i.e. programs):
  + Each project consists of:
    - The project files (Visual Studio project files, makefiles, etc.).
    - Source and graphics files that are unique to the program (the *main()* function, icons, etc.).
  + Each project may make reference to files in the shared source code (described below).
  + Each project parameterizes the build (by setting preprocessor directives) for the target platform.
* Shared source code:
  + Does not stand alone—it is included in a project.
  + Parameterized for the build platforms and variants.

# Supported Platforms and Build Variants

The tool set is build is parameterized in a number of nearly orthogonal directions.

|  |  |
| --- | --- |
| **PREPROCESSOR CONSTANT** | **DESCRIPTION** |
| Platform (DTATS\_PF) | |
| DTATS\_PF\_K\_WINAPI | Windows API (also sometimes called Win32, although this a misnomer because 64-bit programs can use the Win32 API). |
| DTATS\_PF\_K\_WIN\_NET | Windows .NET (DTATS\_PF\_K\_WIN\_NET) |
| * Unix (DTATS\_PF\_K\_UNIX) |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
| * Linix (DTATS\_PF\_K\_LINUX) * Android (DTATS\_PF\_K\_ANDROID) * iOS (DTATS\_PF\_K\_IOS) |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

Platforms (DTATS\_PF)

* Windows API (DTATS\_PF\_K\_WINAPI)
* Windows .NET (DTATS\_PF\_K\_WIN\_NET)
* Unix (DTATS\_PF\_K\_UNIX)
* Linix (DTATS\_PF\_K\_LINUX)
* Android (DTATS\_PF\_K\_ANDROID)
* iOS (DTATS\_PF\_K\_IOS)

Machine Word Size (DTATS\_MWS)

* 32 (DTATS\_MWS\_K\_32)
* 64 (DTATS\_MWS\_K\_64)

Program Type (DTATS\_PROGTYPE)

* Console (DTATS\_PROGTYPE\_K\_CONSOLE)
* GUI (DTATS\_PROGTYPE\_K\_GUI)
* Tcl-Based Tool A (DTATS\_PROGTYPE\_K\_TCL\_A)
* Tcl-Based Tool B (DTATS\_PROGTYPE\_K\_TCL\_B)
* CGI-BIN (DTATS\_PROGTYPE\_K\_CGIBIN)

Screen Size (DTATS\_SCREENSIZE)

* Small (Phone) (DTATS\_SCREENSIZE\_K\_SMALL)
* Large (Tablet) (DTATS\_SCREENSIZE\_K\_LARGE)
* Adaptive (Tailors its behavior). (DTATS\_SCREENSIZE\_K\_ADAPTIVE)

Threadedness (DTATS\_THREADS)

* Single-threaded (DTATS\_THREADS\_K\_1)
* Dual (DTATS\_THREADS\_K\_2)
* Triple (DTATS\_THREADS\_K\_3)
* Quad (DTATS\_THREADS\_K\_4)
* Adaptive Full Load (DTATS\_THREADS\_ADAPTIVE\_FULL\_LOAD)
* Adaptive Medium Load (DTATS\_THREADS\_ADAPTIVE\_MEDIUM\_LOAD)
* Adaptive Low Load (DTATS\_THREADS\_ADAPTIVE\_LOW\_LOAD)
* Adaptive Medium Load (DTATS\_THREADS\_ADAPTIVE\_MINIMUM\_LOAD)

6 x 2 x 3 x 3 = 108

DTATS\_PF\_WN

# Build Instructions

# Coding Standards

# Design Standards

# Testing Standards, and Testing

# Index

testing, 3

1. I opted not to use the word *toolset*, as it tends to have the narrower meaning of add-ins for a specific application. [↑](#footnote-ref-1)