

CodeMeasure™ Fact Sheet

OVERVIEW

The increasing complexity of software and the continuing pressure on time to market drives the need for better software development metrics. CodeMeasure™ from SAFE Corporation is an easy to use, fast, and accurate tool to measure software evolution.

CodeMeasure calculates development progress across versions, showing the code growth percentage, the percentage of original code in your new code, and the percentage of original code remaining. CodeMeasure provides quantitative reference points on past development that will help improve predictions of future development.

CONSISTENT and ACCURATE RESULTS

CodeMeasure uses an advanced comparison algorithm that was developed by SAFE Corporation for forensic analysis of software. The technology is able to detect matches even when code is moved, unlike other code comparison tools that typically double count moved code as deleted lines and added lines. This makes CodeMeasure the tool of choice for tracking software evolution where accuracy and consistency are critical. Figure 1 below shows charts of CodeMeasure results using the “First Version” option (compares all later versions with the first version) and the “Previous Version” option (compares current version with the previous version).

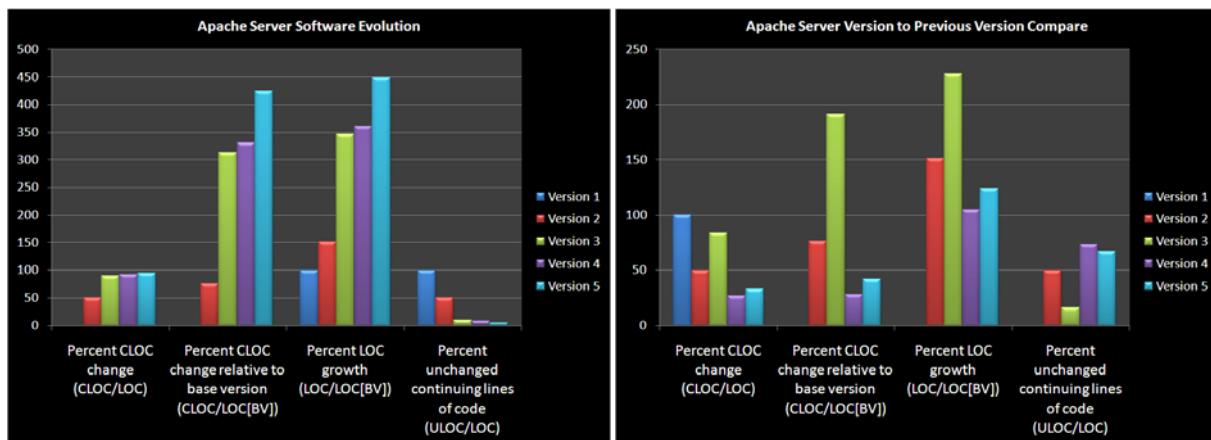


Figure 1. Charts of CodeMeasure results plotted for analysis of 5 versions of Apache server

LANGUAGE INDEPENDENT

CodeMeasure’s advanced algorithm allows comparison of any line-based, text files and can identify the lines that were modified, added, or deleted without positional or language dependence. This means you can measure changes on any scripts, program source, SQL, etc., so one tool can be used to measure all your language development projects. In Figure 2 below you can see an example that analyzes the Ptolemy II project which was written in Java providing the same metrics as above on the Apache server project written in C++.

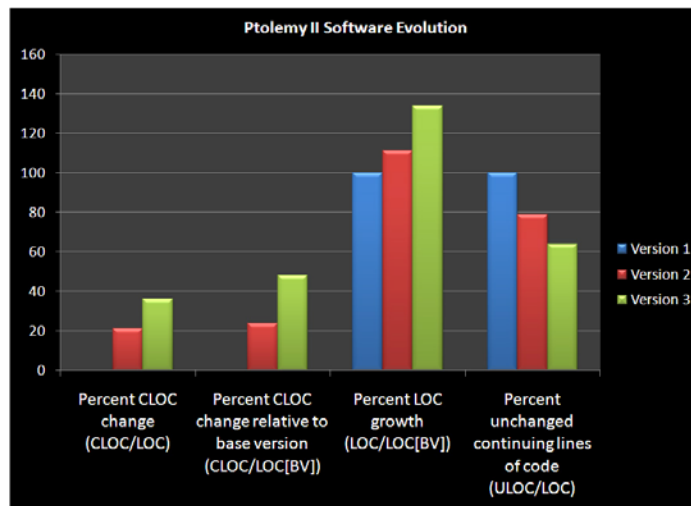


Figure 2. Chart of CodeMeasure results for HTML documentation for 5 versions of Apache server

EASY TO USE

CodeMeasure supports comparison of one or more versions of code with a simple, intuitive user interface shown in Figure 3. You list the top level directory for each version of code you want to compare and the tool will even traverse all the subdirectories to find all the files that match the types that you specify.

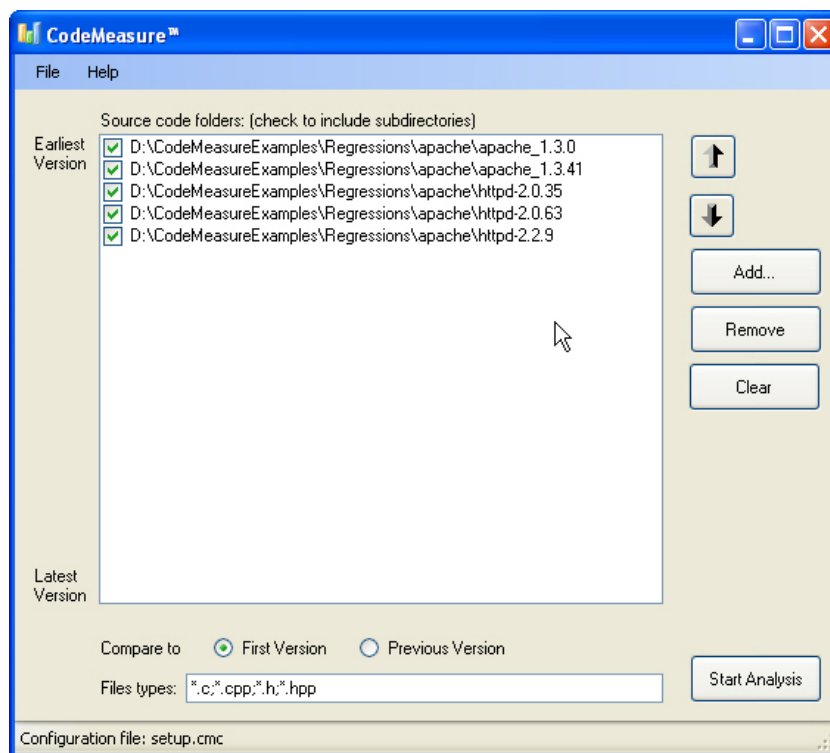


Figure 3. CodeMeasure user interface setup to analyze 6 versions of Linux

The output of the analysis is sent to a text file in comma separated format for easy manipulation and charting in your favorite spreadsheet tool as shown in Figure 4.

CodeMeasure.csv - Microsoft Excel						
	A	B	C	D	E	F
1	CLOC Spreadsheet					
2						
3	Date:	4/7/2010				
4	Time:	12:17:01				
5						
6	Version 1 directory:	D:\CodeMeasureExamples\Regressions\apache\apache_1.3.0				
7		and subdirectories				
8	Version 2 directory:	D:\CodeMeasureExamples\Regressions\apache\apache_1.3.41				
9		and subdirectories				
10	Version 3 directory:	D:\CodeMeasureExamples\Regressions\apache\httpd-2.0.35				
11		and subdirectories				
12	Version 4 directory:	D:\CodeMeasureExamples\Regressions\apache\httpd-2.0.63				
13		and subdirectories				
14	Version 5 directory:	D:\CodeMeasureExamples\Regressions\apache\httpd-2.2.9				
15		and subdirectories				
16						
17	File types:	*.c;*.cpp;*.h;*.hpp				
18	Compare:	Each version to the initial version				
19						
20		Version 1	Version 2	Version 3	Version 4	Version 5
21	Version Summary					
22	Total files [TF]	150	223	653	714	809
23	Total lines of code [LOC]	64829	98122	224130	234269	291038
24	Total bytes [TB]	5246044	3338269	8706093	8667961	10741835
25	Examined version [EV]	Version 1	Version 2	Version 3	Version 4	Version 5
26	Base version [BV]	Version 1	Version 1	Version 1	Version 1	Version 1
27						
28	Change Summary					
29	Files					
30	New files [NF]	0	82	570	632	739
31	Modified continuing files [MCF]	0	137	83	82	70
32	Lines					
33	New and modified lines of code [CLOC]	0	49227	202795	214875	275632
34						
35	Continuation Summary					
36	Files					
37	Continuing files [CF]	150	141	83	82	70
38	unchanged continuing files [UCF]	150	4	0	0	0
39	Lines					
40	LOC in continuing files [LOCinCF]	64829	75647	51863	52886	49313
41	CLOC in continuing files [CLOCinCF]	0	26752	30528	33492	33907
42	unchanged continuing lines of code [ULOC]	64829	48895	21335	19394	15406
43						
44	Summary Statistics					
45	Files					
46	Percent of new and modified files ((NF+MCF)/TF)	0	98	100	100	100
47	Percent of new and modified files relative to base version ((NF+MCF)/TF[BV])	0	146	435	476	539
48	Percent of continuing files (CF/TF)	100	63	13	11	9
49	Percent of unchanged continuing files (UCF/TF)	100	2	0	0	0
50	Lines					
51	Percent CLOC change (CLOC/LOC)	0	50	90	92	95
52	Percent CLOC change relative to base version (CLOC/LOC[BV])	0	76	313	331	425
53	Percent LOC growth (LOC/LOC[BV])	100	151	346	361	449
54	Percent unchanged continuing lines of code (ULOC/LOC)	100	50	10	8	5
55						

Figure 4. Sample output spreadsheet of CodeMeasure evolution analysis of 5 versions of Apache Server

SUMMARY

CodeMeasure provides developers and managers with an easy approach to measure code evolution over time and correlate the amount of code changed to the effort required for development. CodeMeasure delivers consistent and accurate results regardless of language in a simple and easy to use package. CodeMeasure will give you the data you need to add credibility to your development schedule plans and give you an easy way to measure development progress once your project is underway.