

# Demographics

## Maintenance & Support Repository



*Published by the International Software Benchmarking Standards Group*

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**Introduction**

This document summarises key characteristics of applications in the ISBSG Maintenance & Support Repository (M&S) release 7.

You will note that the application totals shown at the bottom of the tables rarely equal the 1,177 applications in the Repository. This is because submitters do not necessarily provide application data for all the data fields that ISBSG offers.

By studying the demographics that follow, you will be able to establish the areas that are of specific interest to you. This is what makes the ISBSG Repository unique. A broad range of application types from many industries and many business areas are available for you to use for estimating, awareness of trends, comparison of platforms and languages or benchmarking.

## Demographics

### Benchmark Year

The Benchmark Year is the main year during which information (e.g. number of defects) is recorded for an M&S application.

The benchmark periods of applications in the M&S Repository range from the year 1993 to 2019.

Application Types	
Number of Applications	Benchmark Year
169	1993
45	2000
3	2001
12	2002
29	2003
30	2004
35	2005
26	2006
12	2007
34	2008
110	2009
29	2010
9	2011
464	2012
111	2018
59	2019
<b>1,177</b>	

**Table 1: Applications per Benchmark Year**

### Benchmark Period

The Benchmark Period represents the number of months that data was collected for an application by an IT or metrics organisation. This is prior to its submission to ISBSG.

The benchmark period of submitted data will vary from less than one month to more than 24 months. To accurately compare data, a scaling factor, based on the benchmark period is calculated.

For example, if the benchmark period of an application is 12 months, the scaling factor will equal “1”; if the benchmark period is 6 months, the scaling factor will equal “2”. This factor will then multiply data such as defect counts and effort values so that accurate statistics can be calculated using the M&S data.

The table below summarises benchmarking periods and the number of applications in each.

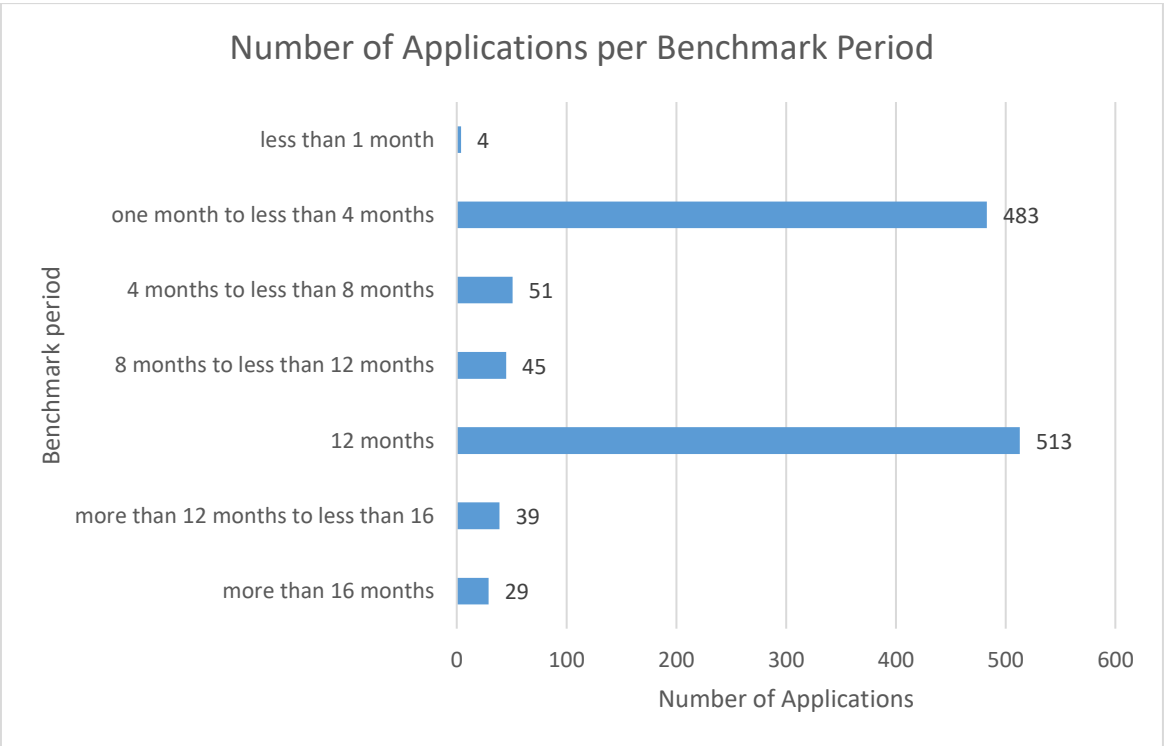
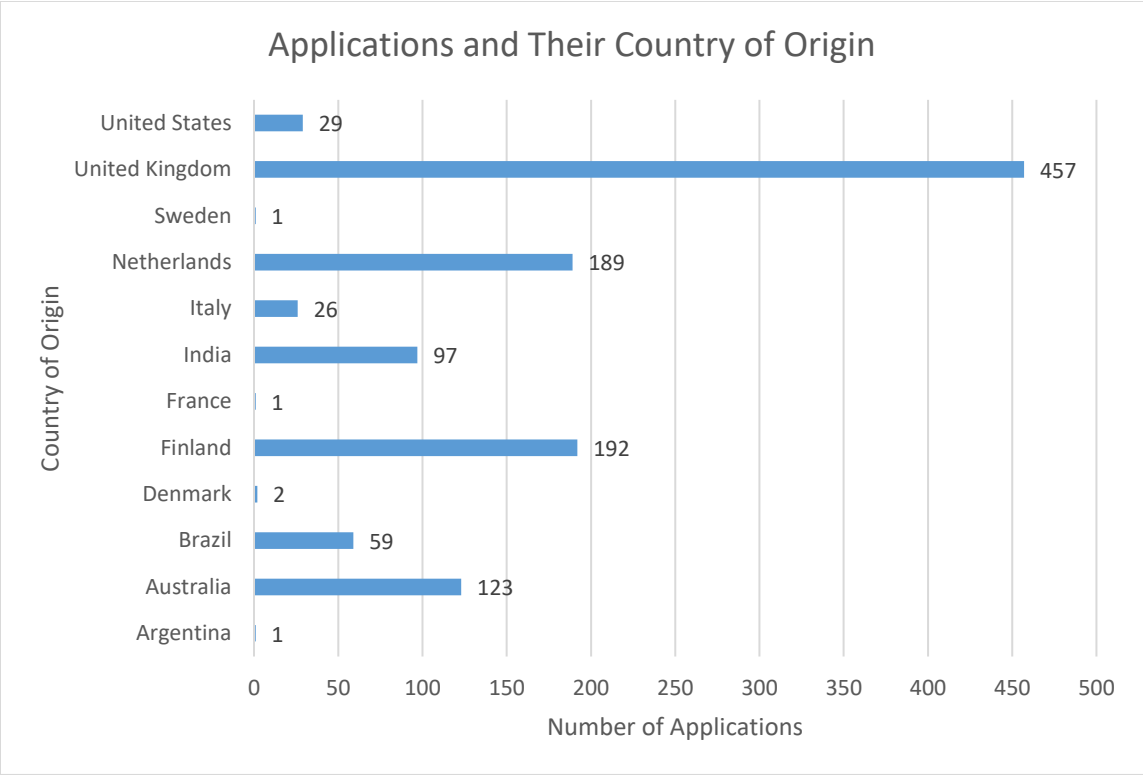


Chart 1: Applications per Benchmark Period

**Application origin**

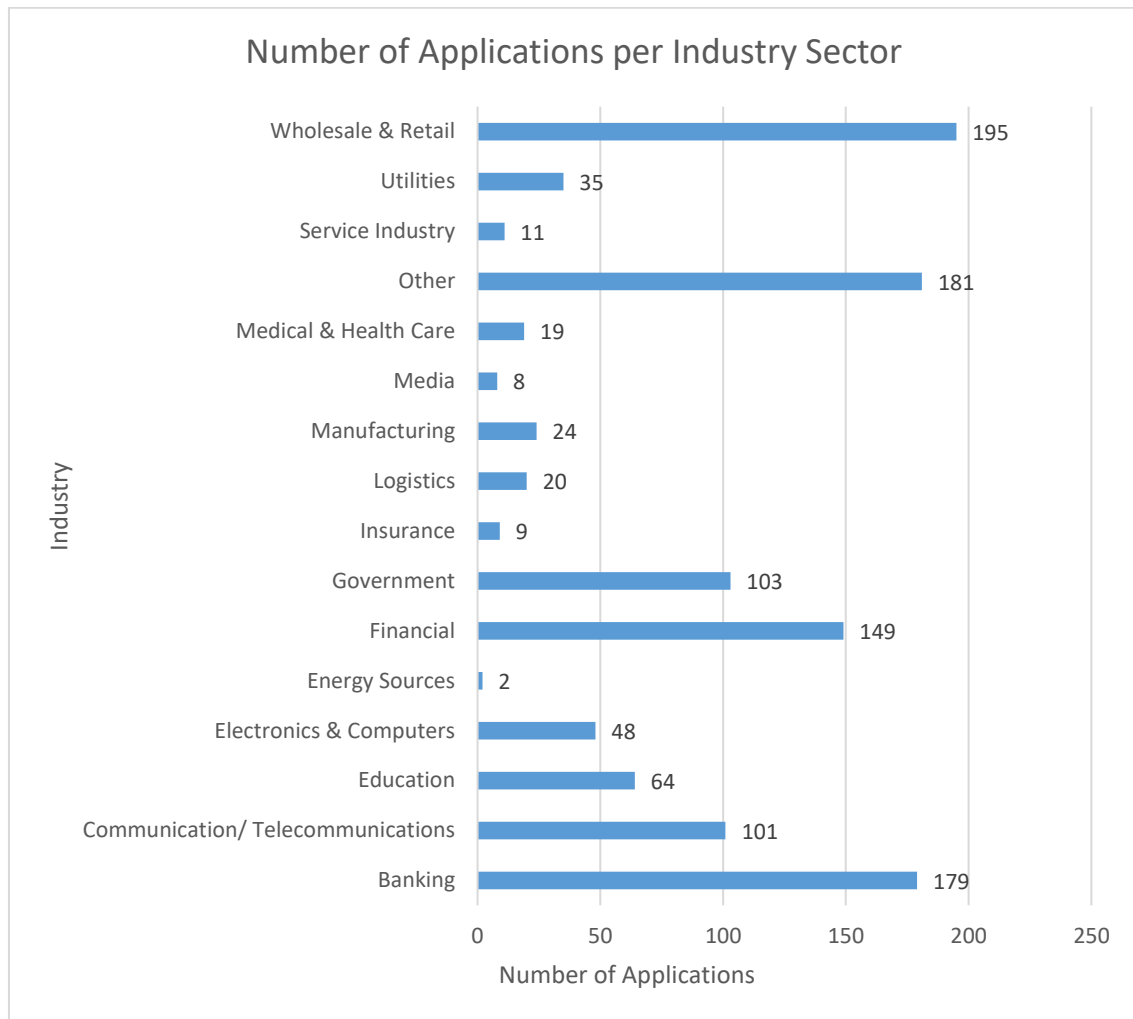
Applications have been submitted from 12 different countries, as displayed in the chart below.



**Chart 2: Applications and Their Country of Origin**

## Industry

Applications in the M&S Repository originate from a variety of industries, as shown in the table below.



**Chart 3: Applications per Industry Type**

## Application Types

The application types found in the in the M&S Repository are displayed in the table below.

Application Types	
Description	Number of Applications
Business	151
Catalogue/register of things/events	13
Command/control	1
Communications	1
Customer billing	28
Customer relationship management	40
Data collection	29
Data warehouse	4
Database system	7
Decision support system	4
Diagnostics	1
Document management	24
Electronic data interchange	18
ERP	20
Financial	73
Human resource management	13
Job, case, incident project management	9
Logistic or supply/planning and control	17
Management/performance reporting	14
Mathematics/statistics/engineering	7
Network & systems	29
Online analysis & reporting	16
Policy management	2
Stock control & order processing	10
Telecommunications	3
Web applications	19
Wholesale & Retail	21
Workflow supply & management	13

Table 2: Application Types



## Application Sizing Methods

Application sizes are measured using various functional sizing methods or by counting thousands of lines of code (KSLOC).

The following chart summarises the methods used to measure application sizes. The value next to each sizing method represents the number of applications sized by this method. In some cases, applications were sized using a function point method (i.e. FiSMA, IFPUG or NESMA) as well KSLOC.

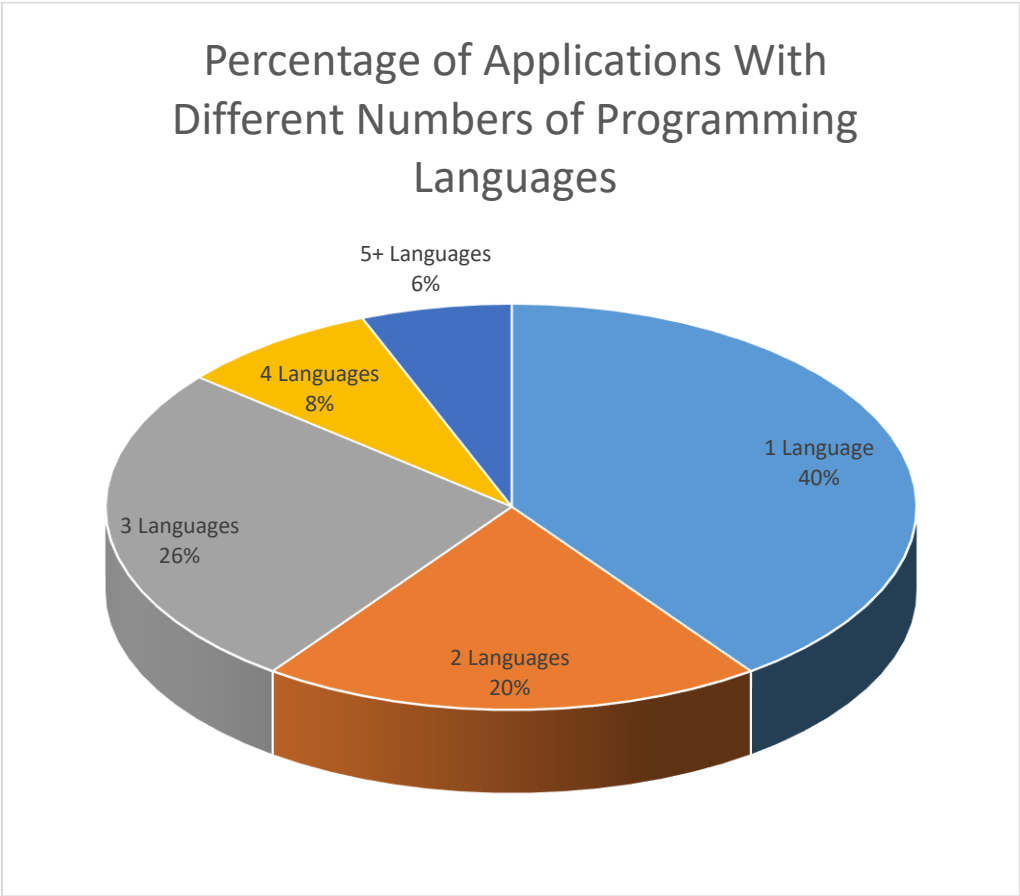
Application Sizing Methods	
Description	Number of Applications
FiSMA	192
IFPUG	144
NESMA	186
KSLOC	348

**Table 3: Application Sizing Methods**

**Programming Languages**

Approximately 109 different programming languages are used across the 601 applications that provide information about programming languages.

Programming Languages were specified 1,301 times for the applications in the M&S Repository. The pie chart below displays the percentage of applications with one, two, three, four or five or more programming languages.



**Chart 4: Percentage of Applications and Their Numbers of Programming Languages**

### Programming Language Type

There are many programming languages recorded in the repository. This can make it difficult to compare some applications. Consequently, languages are classified by type.

Of the 1,301 occurrences of Programming Languages in the M&S Repository, 1,255 of these could be classified according to their language type – Application Generator, 2GL, 3GL or 4GL.

The most popular Application Generator is Telon.

The most popular 3GLs are: Cobol, JCL, Visual Basic and Java.

The most popular 4GLs are: .Net, Easy, Easytrieve, SQL, PL/SQL.

The pie chart shown below displays the percentage breakdown of programming language types in the M&S Repository.

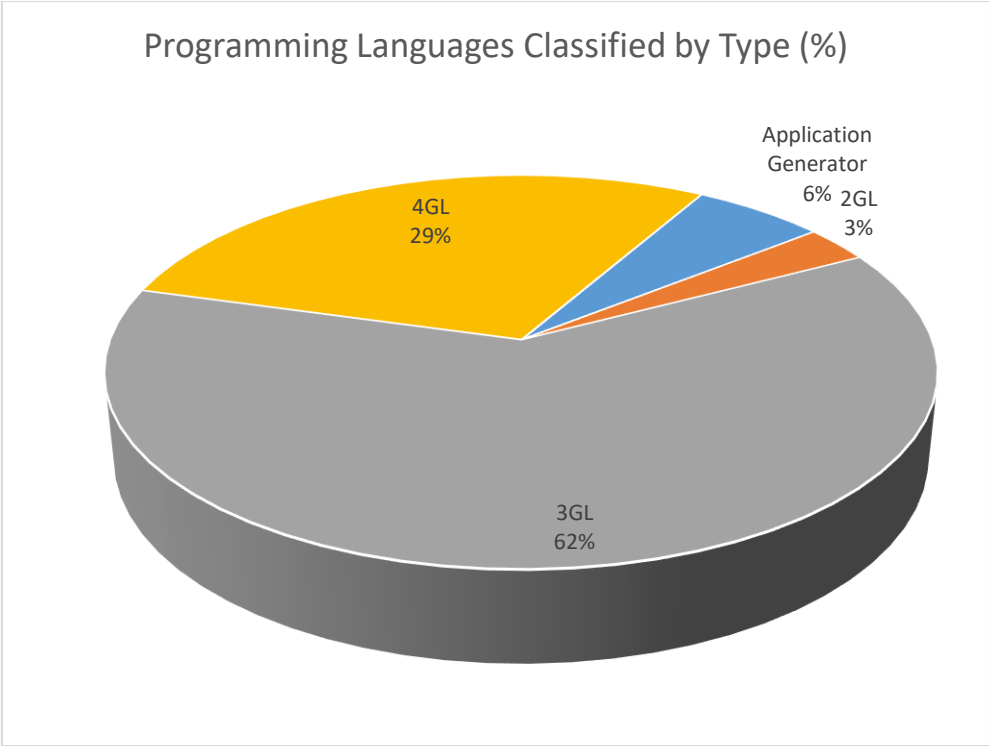
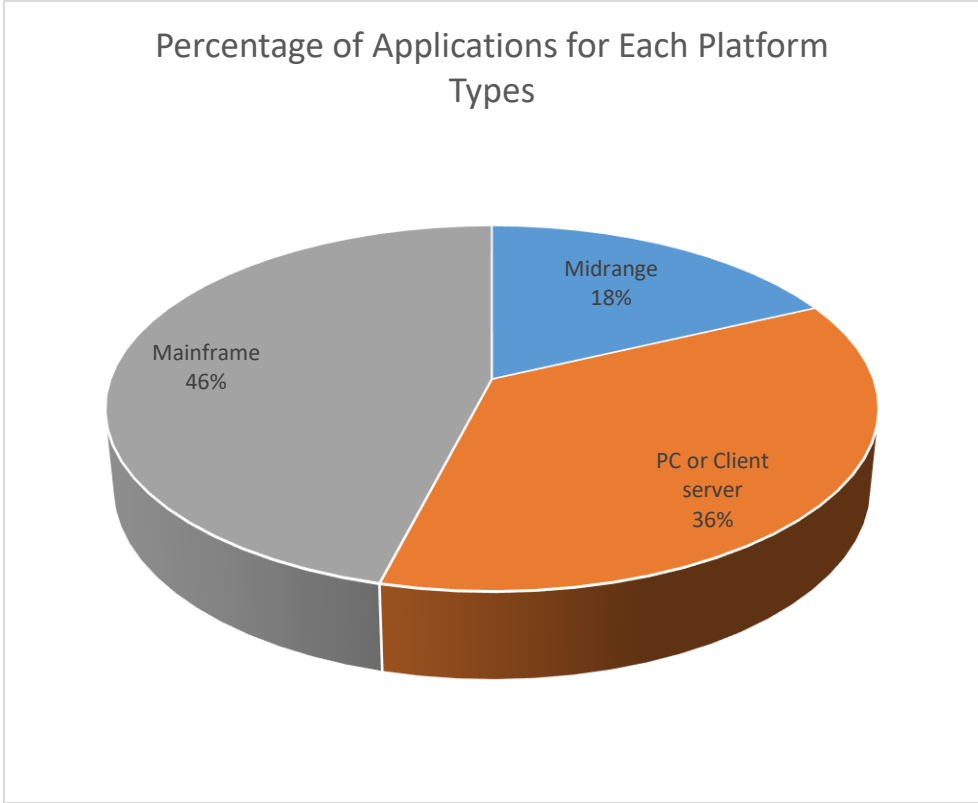


Chart 5: Programming Language Types

**Primary Platform Type**

Primary platforms are mainly classified as Mainframe, Midrange, PC or Client/Server. 214 M&S applications had their primary platform specified as one of these. The percentage breakdown of this classification is shown below.



**Chart 6: Percentage of Applications for each Platform Type**

### Applications by Functional Size

523 applications in the Repository provide a size using Function Points. A break-down of the number of applications per functional size range is:

Applications by Functional Size	
Functional Size Range	Number of Applications
<= 100	72
> 100 and <= 200	37
> 200 and <= 500	108
> 500 and <= 1000	110
> 1000	196
<b>Total</b>	<b>523</b>

Table 4: Applications per Functional Size Range

### Applications Sized by Lines of Code

347 applications in the Repository provide KSLOC (thousands of lines of code). A breakdown of the number of these applications by KSLOC range is:

Application Types	
KSLOC Size Range	Number of Applications
<= 5	76
> 5 and <= 15	64
> 15 and <= 50	59
> 50 and <= 100	43
> 100 and <= 500	42
> 500 and <= 5000	48
> 5000	15
<b>Total</b>	<b>347</b>

Table 5: Applications per KSLOC Size Range

## Appendix 1 - ISBSG

The ISBSG is a not-for-profit organization founded in 1997 by a group of national software metrics associations. Their aim was to promote the use of IT industry data to improve software processes and products.

ISBSG is an independent international organization that collects and provides industry data of software development applications and maintenance & support activities in order to help all organizations (commercial and government, suppliers and customers) in the software industry to understand and to improve their performance.

ISBSG sets the standards of software data collection, software data analysis and software application benchmarking processes and is considered to be the international thought leader in these practices.

The ISBSG mission is to help YOU and your organization improve the estimation, planning, control and management of your IT software applications and/or maintenance and support contracts.

To achieve this:

ISBSG maintains and grows 2 repositories of IT software development/maintenance & support data. This data originates from trusted, international IT organizations and can be obtained for a modest fee from the website [www.isbsg.org/application-data/](http://www.isbsg.org/application-data/)

### Help us to collect data

ISBSG is always looking for new data. In return for your data submission, you receive a free benchmark report that shows the performance in your application or contract against relevant industry peers.

Please submit your data through one of the forms listed on <http://isbsg.org/submit-data/>

### Partners

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