

GUPTA Team Developer – e-Systems Performance Benchmark

Introduction

e-System Corporation is a public company listed on the Tokyo Stock exchange. e-System integrates leading application software packages with a focus on Enterprise Resource Planning (ERP) and Customer Relationship Management (CRM). As a leading Japanese System Integrator, e-System has many years of experience across a broad range of technology platforms. Integral to e-System's business model is a complete understanding of the application development tools in the market, and leveraging the benefits of the tools to design the highest quality business solutions.

Application Development Tools Benchmark

e-System is a business partner of Gupta Technologies, LLC ('GUPTA') and has been working with GUPTA products for 11 years. e-System performed a stringent due diligence process on various well known application development tools to understand the comparative value of each tool. The due diligence process ensures that they work with the highest quality of products and services to meet the needs of their Japanese client base.

e-System measures value in terms of the time and cost involved to develop various applications ranging from simple utility applications comprised of a small number of lines of code (e.g. simple print utility), to more complex 'mid-range' applications with hundreds of lines of code, up to complex large scale enterprise level applications comprised of thousands of lines of code.

In order to derive a substantial base of statistics to compare the application development tools, e-Systems has been conducting studies for several years over the course of real-world development projects. The projects were undertaken by engineers who have experience using all the tools selected for the study.

The Application Development Tools examined:

- C++
- Delphi (Borland)
- Java
- PowerBuilder (Sybase)
- Team Developer (GUPTA)
- Visual Studio (Microsoft)

The results of the comparative study are expressed below and measured based on 'Time-to-Production.' Time-to-Production is defined as initial analysis, design, coding, QA and beta testing.

The study was broken down by project size. The project scope ranged from small utility programs to large-scale enterprise applications. The same six products were used in each phase of the program to ascertain the efficiency and productivity of each product relative to the other products as project scope increased.



Small Utility Program – Different Application Development Tools compared to GUPTA Team Developer ('TD'):

1. Sybase PowerBuilder (1.3 times longer in time and effort versus TD)
2. Microsoft Visual Studio (1.6 times longer in time and effort versus TD)
3. Borland Delphi (1.8 times longer in time and effort versus TD)
4. C++ (2 times longer in time and effort versus TD)
5. Java (2.1 times longer in time and effort versus TD)

Medium Sized Application compared to GUPTA Team Developer ('TD'):

1. Microsoft Visual Studio (2.6 times longer in time and effort versus TD)
2. Sybase PowerBuilder (2.9 times longer in time and effort versus TD)
3. Borland Delphi (4 times longer in time and effort versus TD)
4. C++ (4.6 times longer in time and effort versus TD)
5. Java (5 times longer in time and effort versus TD)

Large Scale Enterprise Level Application compared to GUPTA Team Developer ('TD'):

1. Microsoft Visual Studio (4.75 times longer in time and effort versus TD)
2. Sybase PowerBuilder (7.25 times longer in time and effort versus TD)
3. Borland Delphi (8.5 times longer in time and effort versus TD)
4. C++ (9.25 times longer in time and effort versus TD)
5. Java (9.5 times longer in time and effort versus TD)

Summary:

In each category, Team Developer out-performed the other five tools in the study. In order to quantify how Team Developer can deliver such significant improvements in efficiency, Mr. Kunio Shiba, Director GUPTA Division for e-System, reviewed the available tools and utility modules that make up each product in order to ensure that all products were rated equally and no third party tools or add-on's were included in the study.

Based on the study, Team Developer out performed the other products due to the power of the embedded class libraries and Team Object Manager (TOM). The Class libraries include pre-defined modules called by the main program and TOM's change control and version management module. TOM is especially effective when undertaking larger scale application development projects and provides Programming Manager's with a highly efficient control mechanism to ensure that all changes and updates are maintained with a high level of integrity.

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