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Case Study: Tivoli Maximo on System z

Modernization, Cost Avoidance and Investment Protection

This report was prepared by
IBM Sofware Group: Tivoli

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This document applies to IBM (Insert software name here)

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Overview

The need: Government agency wanted an asset management solution for physical assets (e.g. vehicles, computers) as well as software. They were looking to deploy on commodity servers.

The solution: IBM Global Business Services recommended Tivoli Maximo and x86 servers. The agency agreed. IBM Sales felt that System z would be better. A Tiger Team, including the agency, IBM's Global Business Services, Software and Server Groups proved it was right.

The benefit: Leveraging unused processors on System z, the agency could deploy in 1/3 the time of the x86 servers and no additional energy costs. The software license charges were over $1 million less on System z. Disaster Recovery was included in the System z where as it would double the x86 costs.

The goal of this paper is to demonstrate that this hybrid solution can:

- **Reduce initial acquisition costs by taking some costs out of the solution**
- **Reduce operational costs**
- **Reduce operational and deployment risks, while meeting the original schedule**
- **Improve the security and resilience of the deployed solution**
- **In addition, looking forward, IBM wants to show investment protection and continued cost benefits through future technology deployment**

Customer agency looking for an asset management solution

IBM Global Business Services was contracted by a large government agency, with offices across the United States, to deploy an asset management system that could replace the home-grown management system that the agency was running on their mainframe. GBS chose Tivoli Maximo Enterprise Asset Management as the solution and included System x as the recommended server for the offering. The government agency has a preferred server arrangement with Dell and decided to deploy the solution on Dell blades.

At this point, the agency's mainframe IT operations organization asked if a mainframe had been considered, as they had unused capacity on their servers, with some of the requisite software already licensed and deployed. They asked if the mainframe might actually be a less expensive solution. As a result, a Tiger Team was formed including agency users of the application, agency IT personnel, GBS, Maximo development and Server group personnel.

Collaboration across IBM and Customer was key

In less than two weeks, the Maximo development and performance organization had a representative agency workload up and running in IBM Gaithersburg. This allowed IBM to emulate the Service Level Agreement goals of the government agency in a controlled environment so that capacity and costs could be better understood. A mixed workload environment, representing 2500 agency users was the baseline measurement. Over time, the agency expected to grow the number of users and so additional testing was done with 5000 users emulated in the benchmark. The excess capacity necessary to meet this doubling of capacity was easily added by turning on unused processors in the System z10 mainframe server. This was the same class of server that the agency already had installed at two different sites. No additional physical installation of servers, energy or floor space was required to meet the capacity goals, which is in start contrast to what would have been required for the deployment of x86 servers.
The end users of the product as well as the mainframe operations team from the agency were able to see that the end user behavior didn't change when hosted on Linux for System z. They also recognized that their existing staff could manage this workload.

Maximo meets the needs of the largest enterprises

IBM Maximo® Asset Management takes the power, performance and possibilities of asset management to an entirely new level. Built on a single software platform, Maximo Asset Management delivers a comprehensive view of all asset types — production, facilities, transportation and IT — across your enterprise. This holistic

perspective allows you to see all of your assets, as well as identify all of the untapped potential within them. You gain the knowledge and control you need to closely align your organization's goals with the overall goals of your business.

When you use Maximo Asset Management to help maximize the performance and lifetime value of complex assets and closely align them with your overall business strategy, you help:

- Improve return on assets.
- Decrease costs and risk.
- Increase productivity.
- Improve asset-related decision making.
- Increase asset service delivery responsiveness and revenue.
- Facilitate regulatory compliance efforts.
- Lower total cost of ownership.

Maximo and System z work well toward meeting Service Level Agreements

While the Maximo Enterprise Asset Manager remains exactly the same for end users when deployed on Linux for System z, it is a dramatically different operational environment. For the Dell environment there were several hundred blades required for the application server. For the Oracle database, there were 48 Dell cores required. These would all have to be installed in a data center, requiring floor space, additional cooling and electricity to meet the processing demands. On Linux for System z, the agency already had System z10 servers installed in two different locations. They required 18 IFLs for the Maximo application servers and 10 IFLs for the Oracle database servers. As this could fit into their existing System z10, no additional floor space, cooling nor electricity would be required. The deployment of the application on System z could begin months earlier than the deployment on commodity x86 servers as well.

System z stands for zero down time

Disaster Recovery and resilience were at the forefront of the decision making of this government agency. With the x86 environment, they intended to double the number of servers, purchase additional automation software for their application and database servers. The result was a close to double charge for the additional servers and software. System z provides a Capacity Backup (CBU) charge where idle processors on a backup machine incur a small monthly service fee, but since they are idle, there are no software license fees. Data can be distributed to the hot site servers through global mirroring in the storage system in anticipation of being accessible by the backup System z servers on demand.

Result: The customer saved over a million dollars

There were many considerations and differences in the pricing comparisons of these two solutions. In aggregation, the reduced cost of the System z10 deployment was over a million dollars less than the x86 server environment. Because they customer chose to stay with System z10, due to an upcoming data center move, they couldn't take advantage of the extra capacity and additional savings that would have been accorded to them with a new zEnterprise System z196 server. The System z hardware was a bit more expensive than the x86 servers. The Maximo software was relatively similarly priced in each environment as it is priced on users. The biggest savings was in middleware that charges by the core or by the processor. System z10 is deployed using 18 application cores and 10 database cores. The 28 CBU cores for disaster recovery on System z have no software license charges. This compares to 96 database cores and several hundred application server cores when disaster recovery is included and resulted in over one million dollars in savings.

The result for this agency is a rapidly deployable solution that meets their current processing needs on their existing server footprint, can accommodate future growth in the same footprint, provides out of the box resilience and investment protection for their future computing needs.

Solution Components

Software

- Tivoli Maximo Enterprise Asset Manager for System z
- Oracle DB for Linux on System z
- Red Hat Enterprise Linux R10

Servers

- System z10 Server with 28 IFLs

Services

- Global Business Services Asset Management Practice

For more information

To learn more about **IBM Maximo Enterprise Asset Management** please contact your IBM marketing representative or IBM Business Partner, or visit the following website: ibm.com/xxxxx