CODEKKO

A NEW APPROACH TO WEB APPLICATION OPTIMIZATION

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OPTIMIZATION TODAY

Codekko's new approach to optimization enables customers to rapidly benefit from next-generation web application infrastructures

We live in a world where instant access and being "always on" is the norm. Customers expect fast, reliable online experiences along with cool features, bells, whistles, and gadgets. Meanwhile, IT departments are being asked to do more with less and meet these expectations. Optimization solutions have become the weapon of choice.

Today there are multiple ways to address the issues. Developers can work at optimizing their code. However, the code is often generated by tools that are meant to make coding faster and easier, but in most instances also cause it to bloat with unused objects and artifacts that slow the server's efficiency. Even when optimized, these artifacts remain.

Caching can be used downstream at the client; however, this doesn't take care of the network glut. Application Delivery Controllers (ADC) can be implemented between the server and the client to load balance, compress, and optimize the network. But these are usually hardware based, adding to power consumption and increasing infrastructure. While all of these solutions are effective, they only address portions of the problem and do not address the end-to-end application delivery across the infrastructure requiring organizations to piece them together, creating complexity and cost.

What if there was a new way to streamline and optimize web applications that addressed the whole problem in a single software installation?

A NEW APPROACH TO WEB APPLICATION OPTIMIZATION

Codekko has turned the problem around with Ekko Proformance. Ekko Proformance is a software-only solution that is implemented directly on the server and optimizes at the root of the problem. By optimizing the application at the source code level, Codekko can improve execution efficiency and data transfer rates. Application servers benefit by executing code that is more efficient and smaller in size which translates to faster web page processing, reduced CPU usage, improved response times, and faster data delivery.

HOW DO WE DO IT

Codekko's patented optimization technology is used in Ekko Proformance. Shown in Figure 1 below, Ekko Proformance is two modules-Optimization Engine and Filter. Both modules are installed on the server prior to application deployment. The Optimization Engine discovers the web applications on the server and optimizes them. The Filter is an ISAPI filter and acts as a traffic cop between the optimized and unoptimized versions of the web applications or pages.

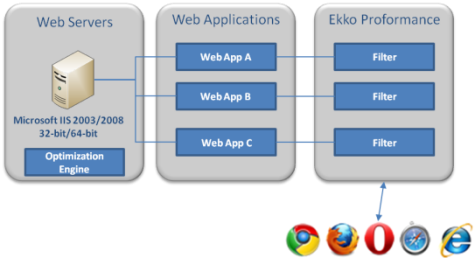

Figure 1 - Codekko's Ekko Proformance is a single installation at the server

Codekko's software removes unused development objects for optimization of production code. This increased efficiency allows for faster page loads due to the software optimization and increases the transaction speeds as well as Web application performance and results in an overall infrastructure reduction. Language-based development environments enable rapid software design and development, utilizing thousands of instructions and therefore consuming CPU and bandwidth as well as driving up power and cooling.

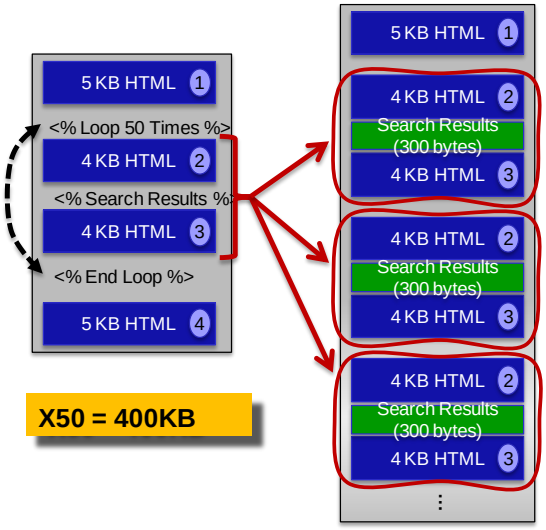

Figure 2 - Both static and dynamic data are returned with each result causing overhead

Ekko Proformance identifies repetitive code in web application source code and replaces large values with references.

- Enables the code to use references in multiple locations rather than large data values
- References are defined once in each page
- References are used multiple times as needed by the source code

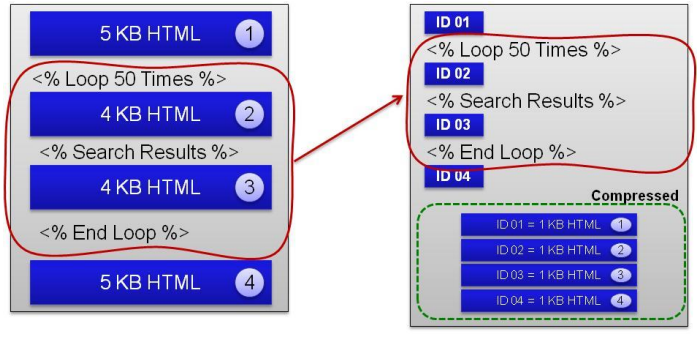

Figure 3 -Codekko replaces redundant static code to increase performance

Optimized source code is reduced in size and complexity enabling servers to execute with greater efficiency:

- 2-3 times increase server execution speed

- 5-10 times improvement in delivery speed

.Net Optimization

The .Net framework makes it much easier for developers to create innovative and user friendly web applications. However, the architecture of the current .NET architecture uses methods which negatively impact performance:

- Extensive page parsing,
- Object creation,
- Method calls, and
- Object destruction.

There are over 30 objects within the framework that can be used by developers making this a rich environment. However, all of these objects are carried by the application whether they are in use or not. This creates inefficiency and overhead for the server and infrastructure causing high CPU and memory usage as depicted in Figure 4 below.

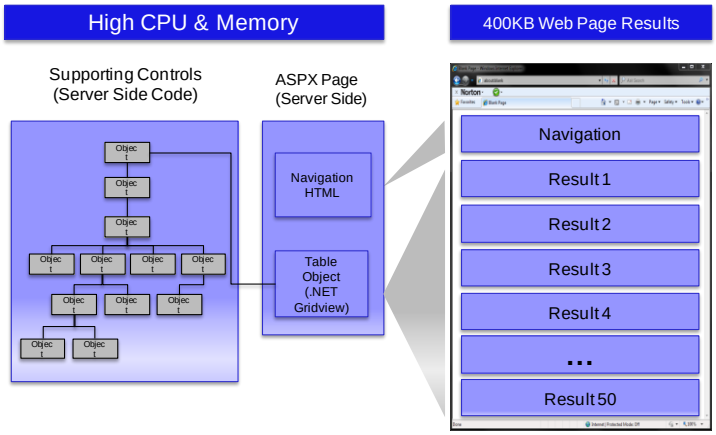

Figure 4 - The .Net framework provides a rich development environment, but inefficient code

Ekko Proformance optimizes controls at the IL (DLL) level to eliminate object creation, methods, and destruction without losing any existing functionality.

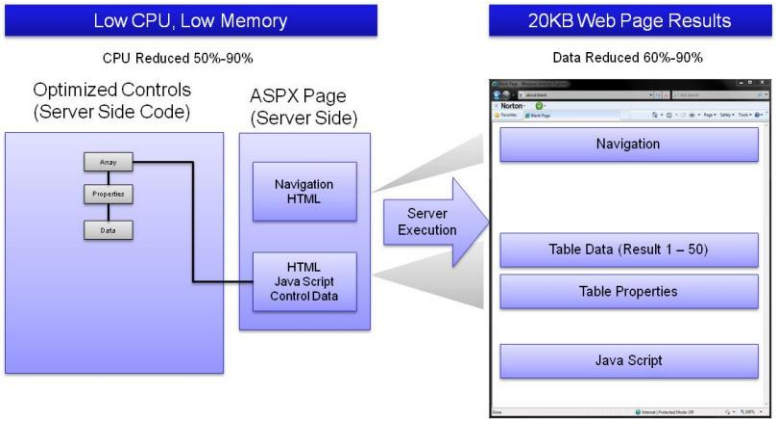

Figure 5 - Codekko removes unused development objects reducing size and increasing performance

The End Result

Ekko-optimized pages are self-extracting using Java Script. The optimized page is delivered to the end user contains control data, properties, and Java Script. When the page loads, the Java Script self-extracts the content and builds the HTML page dynamically at the browser. As illustrated in Figure 4 below, the end users see the same behavior, functionality and presentation as the original application, only faster.

THE VALUE OF CODEKKO'S APPROACH

Codekko's new approach to software optimization solves the whole problem and enables customers to rapidly benefit from next-generation web application infrastructures. By addressing the issue at the root cause, the performance improvements cascade across an organization's entire infrastructure with one solution.

Optimized source code is reduced in size and complexity enabling servers to execute with greater efficiency. Servers can execute 2-3 times as much optimized code in the same amount of time.

Reducing server requirements and supporting infrastructure such as power, networking, and real-estate, without compromising quality of service, yields strong value to data center operators and IT managers. This also allows organizations to reallocate assets, enabling faster growth and speed to market.

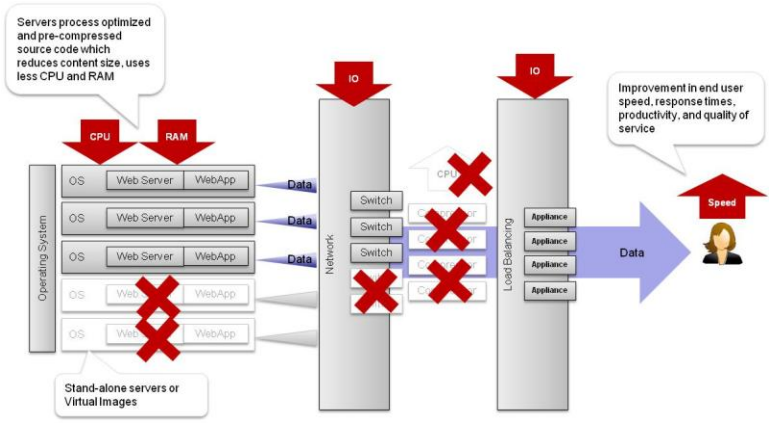

Figure 6-Codekko reduces the need for additional infrastructure

Enterprises benefit from a strong business case reducing capital and operating expenses, while end-users benefit because web pages are executed and delivered faster improving transactions and overall satisfaction.

- Lower costs thanks to reduced infrastructure – increased server capacity (by 200%) enables server consolidation – the effects of which cascade to the network, software, energy, and footprint costs making entire environment less costly
- Enhanced web application performance: increased page loads and transaction speeds improve customer satisfaction and employee productivity
- More green – consolidated server environments reduce hardware requirements, energy needs and footprint – making the infrastructure more environmentally friendly

ABOUT CODEKKO

Headquartered in Texas, Codekko creates technologies that enable customers to adopt and benefit from next-generation web application

infrastructures. Codekko's software improves web application performance while reducing required infrastructure. Codekko's patented technology optimizes web applications directly by removing unnecessary production code. Codekko helps customers across industries realize the benefits of server consolidation while improving performance

For more information on Codekko and our approach to web application optimization, please contact us at info@codekko.com or visit our website www.codekko.com.