



CHARMING SHOPPES, INC.

Overview

Country or Region: United States
Industry: Retail Women's Clothing

Customer Profile

Charming Shoppes is a leading multi-channel specialty apparel retailer primarily focused on plus-size women's apparel. Charming is the parent company of three distinct retail store brands—Lane Bryant, Fashion Bug and Catherines Plus Sizes—and Crosstown Traders, Inc., a direct marketer of women's apparel.

Business Situation

Charming engaged The Henson Group, Inc. ("THG") to analyze its e-commerce environment—which is comprised of ASP, Visual Basic, and SQL technologies—to identify areas of substantial performance degradation and propose viable resolutions.

Solution

For this engagement, The Henson Group leveraged the concept of reverse engineering, carefully analyzing the major components that comprise Charming's e-commerce infrastructure, which includes an assortment of applications.

Results & Benefits

In conclusion, based on the observations of THG Principal Consultant James Casas and Architectural Consultant Greg Henson, as well as the input from a variety of knowledgeable internal and Microsoft sources, The Henson Group strongly recommended Charming rebuild its e-commerce site using Windows 2003, IIS 6, and .NET.

LEADING US WOMEN'S RETAILER SEEKS EXPERT REVIEW OF E-COMMERCE ENVIRONMENT TO BOOST PERFORMANCE

CHARMING SHOPPES, INC.

High-Availability Performance Review

Award-winning Microsoft Gold Certified Partner
The Henson Group performed a comprehensive high-availability assessment of the unique e-commerce environment of women's clothing retailer Charming Shoppes, Inc.

BUSINESS SITUATION

Charming Shoppes, Inc. ("Charming") is a leading multi-channel specialty apparel retailer primarily focused on plus-size women's apparel. Charming is the parent company of three distinct retail store brands—Lane Bryant, Fashion Bug and Catherines Plus Sizes—and Crosstown Traders, Inc., a direct marketer of women's apparel.

With a Vision to be the company known for celebrating the lives and fashion image of women wearing plus sizes, Charming operates more than 2,200 retail stores in 48 states under its various brands. Additionally, apparel, accessories, footwear and gift catalogs, including the following titles, are operated by Charming Shoppes' Crosstown Traders: Old Pueblo Traders, Bedford Fair, Willow Ridge, Lew Magram, Brownstone Studio, Regalia, Intimate Appeal, Monterey Bay Clothing Company, Coward Shoe and Figi's.

Based on the scope of Charming's operations, its extensive catalog businesses, and the nature of the retail clothing industry today, e-commerce activities are obviously a critical component of Charming's continuing success.

Charming engaged The Henson Group, Inc. ("THG") to analyze its e-commerce environment—which is comprised of ASP, Visual Basic, and SQL technologies—to identify areas of substantial performance degradation and propose viable resolutions.

The Henson Group is a nationally recognized Microsoft Gold Certified Partner that offers a technology practice entirely dedicated to serving the business processing needs of the Retail and Consumer industry. This practice has a solid client base that includes such major retailers as Ann Taylor Stores, Dress Barn, Estee Lauder, Movado Group, Maidenform, and many others.



At the outset of this engagement, THG Principal Consultant James Casas assisted IT executives at Charming articulate and document more clearly defined goals for this High Availability Performance Review.

Within its Retail and Consumer Technology Practice, THG provides .NET development services, infrastructure implementations, and strategic IT reviews. Of the many review services THG offers to its retail clients, High Availability Reviews, such as the one THG conducted for Charming, is the service most often requested.

The Henson Group is ranked in the top 10 US partners for Custom Development by Microsoft on Microsoft's Resource Directory (<http://directory.microsoft.com>), possesses Microsoft's official Custom Development Competency, actively engages in Microsoft Early Adopter programs in Custom Development technologies (including .NET Technology Adoption Programs), and has established relationships with multiple third-party vendors

For this assignment, The Henson Group assigned James Casas, a Microsoft Certified Application Developers (MCAD) and former developer from Microsoft.

SOLUTION

The overall goal of this engagement was defined as increasing the availability of the following environments by supplying specific recommendations and best practices on improving and enhancing the production support environment of these e-commerce applications:

- <http://lanebryant.charmingshoppes.com>
- <http://fashionbug.charmingshoppes.com>
- <http://catherines.charmingshoppes.com>

At the outset of this engagement, THG Principal Consultant James Casas assisted IT executives at Charming in articulating and documenting more clearly defined goals for this High Availability Performance Review. These included:

- Identify the primary bottleneck(s) for procedures, in terms of which tiers contain potential bottlenecks (application or database server), as well as which server resources are causing the bottleneck(s) (CPU, I/O, Network, database blocking).
- Identify existing issues and provide technical analysis and recommendations on improving the current database structure and production code which includes all Visual Basic COM components and Active Server Pages.
- Use proven data collection methods, such as Windows Performance Monitor (Perfmon), to capture CPU utilization and I/O utilization on the application and database servers to further analyze Charming's e-commerce applications.

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A thorough Discovery session marked the first phase of the High Availability Review, which would eventually encompass three phases: discovery, assessment, and recommendation delivery.

Upon Discovery, THG found the overall architecture of these e-commerce applications was built upon a Windows 2000 Server environment running IIS 5.0 with Active Server Pages. There also existed a back-end Active/Passive SQL Server 2000 Database Cluster housing the main data needed for the web sites.

Users which access Charming's various e-commerce sites from the internet are sent through two Cisco LD 410 Load Balancers. Users are then routed to either one of the four Web servers housing the e-commerce applications.

Within this environment, there existed separate image servers that contained common images served to the sites and also mail enabled servers that are used for mass email campaigns and email promotions.

The application servers have dual NICs where the backend NICs are routed to a switch which allows access to the backend SQL Server Cluster and Warehousing databases.

As part of the SQL Server configuration discovery process, THG looks at several specific settings on the SQL Server Cluster, which include physical and logical drive layouts, Affinity Mask, "Allow Updates" Setting, Fiber Mode, Max Server Memory, Recovery Interval, and Set working set size. The ECSqlServer Cluster was built on Windows 2000 Server houses the CHRS database, which is the main database used by the e-commerce web sites. The cluster is active/passive with a fixed memory configuration of 6.5 GigBytes.

The Discovery and Analysis processes, which produced the data used to form the basis of THG's findings, focused on the performance of these e-commerce applications and their expected usage patterns; specified the required reliability profile of these applications; and assessed the software architecture, with the intention of proposing changes, if needed, to reconcile it with the reliability profile.

During this particular review, THG focused on Charming's Web front end (ASP), VB COM components, Stored Procedures, SQL connectivity, and database integrity. These are the critical components that collectively comprise the technological backbone of Charming's total e-commerce solution.

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RESULTS & BENEFITS

Based on this review process, The Henson Group's Microsoft Certified consultants formulated a number of key recommendations, including:

The SQL Server database required optimization, in regards to the use of Deprecation and General Administration. Additionally, the settings to reconfigure the database server are related to defaults and rules, expression aliasing, user objects, and error log size. Making these modifications would produce a moderate increase to the overall responsiveness of all three sites.

Regarding the database, THG discovered a number of issues. However, once these issues are addressed and effective resolutions executed, THG is confident the changes are likely to significantly improve the performance of all three sites. These issues include:

- (1) The discovery of most objects not defined as Primary Keys or Unique Constraints, leading to degradation of performance under load
- (2) User object naming was not correctly implemented, which causes name clashing and performance issues
- (3) Key objects were found misusing the T-SQL cursor update usage causing slow responsiveness
- (4) Objects were found without settings for explicit index creation as Clustered or Non-Clustered
- (5) Many Insert Column Lists were not found
- (6) Several triggers did not utilize the NOCOUNT option when NOCOUNT ON should be implemented
- (7) Some objects were found invoking NULL comparisons when IS or NOT IS syntax should be used
- (8) There is usage of SELECT * on table causes maximum overhead on transactions, as opposed to requesting specific columns
- (9) SET options are not configured
- (10) TOP without ORDER BY was found, which may lead to unexpected results
- (11) Fully schema qualifying table names are recommended for performance



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About The Henson Group

Founded by former Microsoft engineers in 2000, The Henson Group is an award-winning Microsoft Gold Certified Partner specializing exclusively in deploying Microsoft technologies, official product training, and strategic consulting for overcoming today’s business challenges.

The preferred solution provider for many major US and international corporations, The Henson Group is designated an official “Go To” partner for most major products, consistently ranked within the top three consultancies in Microsoft’s partner directory (found at: <http://directory.microsoft.com>), holds a seat on the national Microsoft Partner Advisory Council, has direct ties to the product groups, and offers a price guarantee that assures the highest quality service at an unbeatable value.

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(12) TEMPDB is over used, with several objects calling separate TEMPDB tables causing increased system resources.

“These issues are by no means extraordinary and are often inherent obstacles for e-commerce environments of similar scope and nature to Charming’s sites,” Casas says.

“Addressing these issues at this stage is more proactive, because they were not necessarily critical issues,” Casas adds. “Implementing our recommendations will enable them to achieve the business objectives for customer service, cost savings, growth, and expansion they seek.”

In conclusion, based on the observations of THG Principal Consultant James Casas and Architectural Consultant Greg Henson, as well as the input from a variety of knowledgeable internal and Microsoft sources, The Henson Group strongly recommended Charming rebuild its e-commerce site using Windows 2003, IIS 6, and .NET.

The primary reasons for this recommendation was that Charming’s VB 6 code is unmanaged, meaning there is minimal error-handling and minimal “garbage collection” capabilities, which inevitably results in application instability.

In addition to the advantages that come with working with managed code, VB.NET offers other features, such as structured exception handling, custom attributes, and common language specification (CLS) compliance.

Most importantly, application development is usually reduced by 50% using VB.NET over VB 6, because system classes can inherit from other system classes.

“Upgrading Charming’s legacy code to ASP.NET and VB.NET using the .NET 1.1 Framework will also align Charming with Microsoft’s long-term roadmap and will make it easier to migrate their codebase to future versions of .NET,” Casas adds.

Additionally, IIS 6 performs significantly faster, since it has kernel access, pre-compiles pages into memory, and increases application stability through application pools.

In the interim, as Charming’s executives review these findings, THG prepared and delivered a formal proposal, including a well-defined list of Deliverables that represent resolutions to address all issues listed above.

The Henson Group estimated that it would take approximately between two to three weeks to test, implement, retest, and monitor these changes.

The Henson Group was subsequently retained to execute the recommendations, which produced the desired results.