Case Study
Fischer Homes' AWS assessment and improvements for Sapphire application

Client

Fischer Homes

Fischer Homes was founded in 1980 with the philosophy of promising only what can be delivered, and delivering on what has been promised. From modest beginnings in Kentucky, Fischer Homes experienced substantial growth in the last 20 years, amassing a portfolio of more than 20,000 quality homes built in 130 neighborhoods across five states. Fischer Homes tailors each and every home they design and build to meet the unique lifestyle imperatives expressed by their valued customers. The client requires robust connectivity, reliable network security, and elastic solutions to support their mission-critical, data-demanding applications to ensure that their end users and customers are receiving the best level of service and that their operations are performing at the highest efficiency.

Challenge	CBTS solution	Results
• Client wanted to reduce dependency on third-party vendor SLAs. • Migrate to AWS tenant to run the Sapphire application in their own private tenant. • Slow application performance causing long lead times to roll out. • Challenges identifying security risks in current AWS tenant and architecture best practices. • Needed an established network topology to define gateways, public and private subnet configurations, and resource provisioning rules.	• Professional Services assessment to audit current Sapphire application and AWS environment. • Identify performance bottlenecks. • Implement automated detection and remediation of security gap issues. • Custom-tailor new architecture to run AWS in their own environment. • Implement a NAT gateway to remove Public IP exposure. • Design and deploy a high-availability, Windows-based server architecture hosted in same subnet as VPC.	• AWS CloudWatch automates network monitoring, maintenance, and management. • No longer waiting on lead times for capacity provisioning or third-party vendor support. • Significant reduction in total cost of ownership with cloud scale CapEx model. • NAT gateway reduced exposure risk with multi-layered, pre-defined security configurations. • Remote Desktop Services on high-availability server improved application performance and workload efficiency.

Challenge

Fischer Homes runs a third-party application called Sapphire. Sapphire is a multi-tiered line-of-business application that provides material and cost planning for new homes. The client wanted to segment their dependency on the software vendor, which was managing the Fischer Homes' Sapphire application as well as the Amazon Web Services (AWS) environment it ran on. Fischer Homes was looking to move Sapphire into their own AWS tenant, however, they needed to first identify the proper architecture they would need to support the application for optimal performance.

To understand what was needed, Fischer Homes identified the challenges they were facing with their current application configuration and AWS environment:

- **Slow performance.** The existing Sapphire application takes 15 minutes in Fischer Homes' shortest business use case to complete workload cycles running on the third-party AWS environment.

- **Cloud dependence.** Fischer Homes wanted to migrate the Sapphire application to their own AWS tenant to reduce dependency on the software vendor and reduce total cost of ownership.

- **Security and architecture best practices.** Fischer Homes needed to ensure network security and architecture best practices were fully implemented and successfully patch tested before migrating to their own AWS environment.

CBTS solution

CBTS proposed a number of digital transformation initiatives in addressing the new architecture build with the goal of improving performance, mitigating security risk, increasing productivity, and delivering superior end user service for Fischer Homes. CBTS held an on-site audit to determine the root cause behind the bottlenecks affecting their application performance. CBTS reviewed the current architecture of Fischer Homes' AWS environment to design a Well-Architected Framework, outline security best practices, and establish a roadmap for the build of their new environment. CBTS performed the following Professional Services to assist Fischer Homes in rightsizing their digital transformation:

- **Assessed risk exposure.** Identified specific instances where the client did not want to be directly addressable from the Internet.

- **Implemented a NAT gateway.** Configured private subnets for Internet access without exposing the client's private IP address by routing their traffic through a Network Address Translation (NAT) gateway in a public subnet.

- **Deployed automated, proactive network protection.** CBTS deployed Amazon CloudWatch to monitor the AWS resources and the applications running on Fischer Homes' AWS tenant in real-time. The solution provided single-pane of glass visibility into the operational health of the network with customizable dashboard displays that provided real time insight into resource utilization, workload operational health, compute resource alerts.

- **Improved performance bottlenecks with Remote Desktop Services configuration.** CBTS designed and deployed Remote Desktop Services to run the client's workloads on a high-availability Windows server hosted in the same VPC subnet as the application to drastically improve performance and expand network accessibility companywide.

Results

Our experts were able to identify that the performance issues correlated to the end user's central processing units (CPUs). It was evident that the size of the CPU directly affected performance during critical phases within the application. Our proposal to address the performance issues included implementation of a managed remote desktop service so that users running on systems lacking sufficient CPU power could remotely access the high-availability server, which has significantly more power to run the Sapphire application at scale without the burden or costs of relying on the long lead times associated with third-party support and amendments to existing SLAs.

With their mission-critical corporate application now running in their own dedicated, high-availability Virtual Private Cloud (VPC) environment, Fischer Homes centralized, decreased, and simplified the end-to-end workflow demands previously associated with the performance issues they experienced running the application on the third-party vendor's AWS tenant. The new, agile, architecture built and provisioned by CBTS delivers always-on accessibility, location and vendor agnostic flexibility, reduced cost of ownership, and an enhanced user experience to propel agility in their day-to-day operations. Fischer Homes is now empowered with the elasticity and resiliency it requires to remain future-proofed and competitive in an era of rapid technological change.

"CBTS dedicated, 24x7x365 professional support assured Fischer Homes that the solutions delivered were optimized for peak end user performance, satisfaction, and future growth. It's really all about the people and processes that accelerate this type of environment into a cost-saving or resource-draining solution, so if the right questions weren't asked first, we could have ended up consuming way more of the resources than we really needed. CBTS committed to delivering a high-availability, cost-optimized, custom-tailored, and lean solution to Fischer Homes."—Troy Riegsecker, IT infrastructure manager, Fischer Homes.