

Implementing Backup and Disaster Recovery Strategy for Santa Cruz Bicycles with AWS



Introduction

Santa Cruz Bicycles (SCB), a premium bicycle manufacturer, approached Hex Networks to enhance their backup and disaster recovery (DR) capabilities. Known for their high-performance mountain bikes, SCB operates with a lean yet highly responsive IT setup. With critical product design and customer data on hand, SCB sought a robust solution to safeguard against data loss, minimize downtime, and ensure business continuity. Utilizing Hex Networks' cloud and data management expertise, we collaborated closely with SCB to design and implement a solution leveraging Amazon Web Services (AWS), Veeam and Immutable Object Storage, tailored to their unique needs.

Challenges Faced by Santa Cruz Bicycles

- **Data Protection:** Ensuring continuous protection and availability for critical design data, order records, and customer information.
- **Disaster Recovery:** Establishing a comprehensive DR plan to minimize downtime in case of an incident and enable rapid recovery.
- **Scalability:** Developing a solution capable of scaling with SCB's dynamic data growth and infrastructure needs.
- **Cost Efficiency:** Implementing a cost-effective solution without compromising data integrity or performance.
- **Data Immutability:** Protecting against potential ransomware threats through immutable storage solutions.

Solution Provided by Hex Networks

Hex Networks developed a comprehensive solution, leveraging AWS cloud technologies to implement comprehensive Backup and Disaster Recovery strategy, our approach includes the following key components:

Assessment and Analysis

- **Infrastructure Review:** We conducted a comprehensive audit of SCB's IT infrastructure, assessing existing storage, backup processes, and overall DR readiness. Identifying the best-fit AWS services and mapping out how each component would operate in the cloud.
- **Gap Identification:** Identified potential vulnerabilities and limitations in their current backup and DR practices, such as lack of offsite backup and insufficient data immutability.
- **Objective Setting:** Worked with SCB's stakeholders to define clear objectives, including RTO (Recovery Time Objective) and RPO (Recovery Point Objective) goals, to ensure alignment with their business continuity requirements.

About Santa Cruz Bicycles



Santa Cruz Bicycles (SCB) is a renowned manufacturer of high-performance mountain bikes, known for its innovation in cycling technology and quality craftsmanship. Founded in Santa Cruz, California, SCB combines cutting-edge design with precision engineering to create bikes that cater to professional athletes and cycling enthusiasts alike. With a strong commitment to quality and sustainability, SCB consistently pushes the boundaries of bike performance while fostering an avid, global cycling community.



Solution Design

- **Veeam and AWS Integration:** Designed a solution combining Veeam Backup & Replication with AWS cloud services, providing SCB a flexible hybrid setup for backup and DR.
- **Data Immutability Focus:** Incorporated immutable storage solutions within AWS to safeguard backups from ransomware attacks, including leveraging AWS S3 Object Lock for added data protection.
- **Customizable Backup Policies:** Tailored Veeam backup policies to accommodate SCB's specific data retention needs, setting daily, weekly, and monthly backup schedules to optimize data protection.

Implementation

- **Veeam Configuration:** Set up Veeam Backup & Replication across SCB's on-premises and AWS, configuring backup jobs for critical applications and systems.
- **Replication and Recovery Setup:** Enabled replication processes to ensure that SCB's backups are ready for quick recovery in case of failure or disaster.
- **Access and Security Measures:** Implemented secure access controls, ensuring that only authorized personnel could access or modify backup configurations, enhancing overall system security.

Integration with AWS and Storage Lifecycle Management

- **Tiered Storage Setup:** Configured Amazon S3 as the primary storage location for active data, with automatic lifecycle policies to move data to lower-cost storage options such as S3 Infrequent Access (IA) and Amazon Glacier.
- **Immutable Storage Deployment:** Applied S3 Object Lock on critical backups, preventing accidental or malicious deletion and ensuring data integrity.
- **Cost Optimization:** By automating data lifecycle management, we helped SCB minimize storage costs by storing data in appropriate tiers based on usage patterns and retention requirements.

Testing and Optimization

- **Failover and Recovery Drills:** Conducted multiple failover simulations to ensure that SCB's DR plan was functioning effectively and meeting predefined RTOs.
- **Performance Tuning:** Adjusted backup configurations to optimize for both performance and cost-efficiency, reducing backup times and improving resource utilization.
- **Data Integrity Verification:** Validated that the immutable storage configuration prevented data tampering, ensuring that backups were protected against ransomware or accidental deletion.

Ongoing Support and Monitoring

After successfully implementing Backup and DR strategy, Hex Networks provided ongoing support and maintenance. This involved:

- **24/7 Monitoring:** AWS CloudWatch was used to monitor system performance and application health in real-time. Alerts were configured to notify the operations team of any anomalies or potential issues.
- **Automated backups:** AWS EC2s were configured for automated backups to ensure data protection.
- **Cost optimization:** Hex Networks provided ongoing cost monitoring and optimization recommendations, leveraging tools like AWS Cost Explorer to help Santa Cruz Bicycles manage their cloud spending effectively.

Outcomes and Benefits

- **Enhanced Data Protection:** The integrated backup solution provided SCB with continuous data protection, supporting regular backups and swift recovery mechanisms for critical design and customer data.
- **Strengthened Disaster Recovery:** AWS integration allowed SCB to implement a reliable DR strategy with failover capabilities, minimizing downtime and ensuring business continuity.
- **Scalability and Flexibility:** The combined approach using Veeam, AWS, and tiered storage allowed SCB to scale their backup and DR infrastructure in line with growth, maintaining data integrity while meeting evolving demands.
- **Cost Efficiency:** By employing AWS's pay-as-you-go pricing model and storage lifecycle policies, SCB achieved significant cost savings compared to traditional DR solutions. Immutable storage further protected critical backups against ransomware at minimal added cost.

Conclusion

Through partnership with Hex Networks, Santa Cruz Bicycles successfully implemented a comprehensive backup and disaster recovery solution that addresses their needs for data protection, disaster recovery, scalability, cost efficiency, and data immutability. Leveraging Veeam, AWS, and a tiered data lifecycle strategy, SCB has a resilient, scalable solution that protects their product and customer data from potential threats. Hex Networks' consultative approach and expertise in backup and cloud infrastructure delivered a solution that meets SCB's needs today and positions them for continued success in the competitive manufacturing industry.

About Hex Networks

Hex Networks is focused on creating reliable and secure environments to solve issues quickly and efficiently. We identify areas of opportunity in IT systems to manage overall efficiency while reducing costs via implementing tested and reliable solutions.

