

eSilicon Pioneers End-to-End Chip Design in the Cloud with Cohesity



INDUSTRY

Semiconductor

USE CASE

Backup and Recovery, Long-Term Retention and Archival

COHESITY PRODUCTS

DataPlatform for Cloud, DataProtect, CloudTier

SOLUTION PARTNERS

Google Cloud Platform

CHANNEL PARTNER

CDW

INTRODUCTION

eSilicon, headquartered in San Jose, California, is an application-specific integrated circuit (ASIC) developer, designing and producing high-end semiconductors. eSilicon serves the high-bandwidth networking, high-performance computing, artificial intelligence, and 5G infrastructure markets. Customers include Fortune 500 OEMs, with global operations and multiple worldwide locations.

CHALLENGES

Several years ago, eSilicon made the decision to adopt a cloud-first global strategy. The nature of the semiconductor industry is that workloads can be spiky, and the company recognized the need for true elasticity and cloud was the best option forward for the business. Complex semiconductor designs also require massive storage and compute resources, and eSilicon manages billions of files and hundreds of terabytes of data per chip design project.

Over the last 18 months, the company implemented Elastifile for NAS (Network Attached Storage), and worked in a hybrid way with Google Cloud. The IT team set a tight deadline to decommission its data center in Bangalore and to migrate data completely to the cloud.

"eSilicon was not only managing billions of files, we were also doing complete chip design and manufacturing operations in the cloud, something no other company has done before. From all levels of management, we were confident Cohesity was the solution partner to carry us forward and meet our requirements for cloud-native data management for several petabytes of data across our global locations. Cohesity enabled eSilicon to complete our move to the Google Cloud for true elasticity, helping us deliver optimized solutions to our customers."

NAIDU ANNAMANENI,

CIO and Vice President of Global IT

Due to the nature of high-performance chip design and electronic design automation (EDA), it is not unusual for eSilicon to work on individual projects with hundreds of millions of NFS-based files each. Previously, the on-premises data centers had data backed up to tape using Commvault. Recovering data could take numerous weeks and was becoming expensive and inefficient. Moving forward with Elastifile and a cloud-first strategy, it no longer made sense to use Commvault, and eSilicon began to look at cloud-native solutions.

eSilicon urgently needed the following capabilities in a data management solution:

- Ability to meet aggressive four-month timeline to migrate billions of files to the cloud
- Cost-effective solution to eventually scale to tens of petabytes
- Cloud-native solution to back up NFS shares on NAS and archive to Google Coldline Storage
- Increased operational efficiency to reduce time spent on infrastructure issues
- Deeper insights into data to sharpen focus on the core business of customized chip design

SOLUTION

eSilicon needed to partner with a solution provider who could meet its aggressive four-month data migration timeline. Meeting the deadline would enable the company to avoid using an interim data center-as-a-service option which would be very expensive. One of the key factors for choosing a solution would be to have the entire vendor executive management team on board. eSilicon was the first company to attempt end-to-end chip design in the cloud, and it was imperative to have commitment from all levels of management for such a complex endeavor. After looking at solutions from other cloud-native backup software vendors and Cohesity, eSilicon was confident Cohesity was going to commit executive support in order to meet the necessary requirements for its groundbreaking infrastructure.

eSilicon knew that decommissioning its data centers would “be like blowing up a bridge: there was no going back.” The company implemented Cohesity DataPlatform for Cloud and DataProtect to back up Elastifile on the Google Cloud Platform for a cloud-native solution. The IT team now manages Cohesity clusters in Iowa and Singapore from a single pane of glass. Cohesity is also used to archive inactive workloads to Google Coldline Storage.

RESULTS

With Cohesity, eSilicon gains tremendous value from simplicity of management, including data recovery. In addition, by using a Cohesity policy to migrate select data to

a Coldline Storage tier from Google, ongoing storage costs are minimized. With 95 percent of the company’s workloads being NFS-based, and with migrating over 10 billion files from just one global location, data volumes will continue to grow rapidly as eSilicon migrates additional data and grows its business. Cohesity is able to meet these demands, as well as enable global data management and disaster recovery for optimal cost and efficiency. Following migration, Cohesity achieved two-to-one compression, resulting in a significant reduction of their recurring cloud spend and eSilicon will continue to optimize and fine-tune the environment after this initial deployment phase.

Cohesity provides greater efficiency for data management across an entire lifecycle of a project, automating SLAs and corporate policies for data retention. In the next several months, eSilicon will begin to leverage Cohesity’s self-service features to give autonomy to its engineering teams without compromising IT security policies. Self-service features will allow engineers to recover data from archived projects, such as when the teams need to re-spin a chip, giving them the ability to grab only the data they need quickly and easily.

Aside from the ability to deliver a solid data management solution, eSilicon knew Cohesity was a solution provider that was not going to let the company down in the midst of such a complex and unprecedented undertaking. “Cohesity never dropped the ball. It was always evident that Cohesity is extremely focused on its customers and our success was always at the forefront,” asserts Annamaneni. “This migration was huge and Cohesity’s ability to solve problems and its demonstrated commitment to our success was a significant victory for eSilicon.”

eSilicon realized many benefits with Cohesity including:

- TCO from Cohesity was 3x lower than other solutions
- Scalable solution to meet demands of high-performance computing environment
- Capability to provide self-service data management to other internal teams
- Executive management over-delivered with excellent support to meet aggressive deadlines