

AWS FOR DATA

Harnessing the Power of Data with AWS Partners

Six success stories to learn how AWS and AWS Partners are helping public sector organizations achieve data-driven success



Table of contents

Introduction	03
GBL Systems and US Navy	06
OpenGov and Grand Island, Nebraska	08
Salesforce and Girls Who Code	10
Spin Systems and the Defense Health Agency	12
Tyler Technologies and Fulton County, Georgia	14
Unleash Live and Miami-Dade, Florida	16
Conclusion	18



AWS for Data

It's estimated that 129 zettabytes of data will be generated in 2023 and will more than double by 2027. That means that growth-minded businesses must put data at the center of every application, process, and decision. Data is also the genesis for modern invention—how you put your organization's data to work is the key to accelerating innovation and accomplishing your organizational goals. And that makes it vital to work with experienced and knowledgeable partners. Amazon Web Services (AWS) offers a comprehensive set of data capabilities designed to help your organization unlock more value from your data, build and optimize your data strategy, and eliminate silos to gain the insights you require to compete, grow, and serve your customers' needs, now and in the future.

Becoming data-driven

Only 23.9 percent of companies describe themselves as data-driven, and a mere 20.6 percent claim to have successfully developed a data culture within their organizations.² Becoming data-driven means identifying the right technologies to achieve your data goals, deploying those technologies successfully, and keeping systems and skills up to date. Working with experienced and knowledgeable partners is key.



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¹Worldwide IDC Global DataSphere Forecast, 2023-2027: It's a Distributed, Diverse, and Dynamic (3D) DataSphere

² NewVantage Partners' Data and Analytics Leadership Annual Executive Survey 2023

AWS Partners are ready to support you

AWS delivers more than just analytics, business intelligence, databases, machine learning, and generative AI, among many other services—we also support our customers through a global network of trusted <u>AWS Partners</u> doing business with public sector organizations in over 150 countries. Our partners have proven skills that can help you deliver greater value for your organization, increase agility, and lower costs.

By engaging with an AWS Partner, you'll be able to drive innovation, see results quicker, and provide customizable solutions for your customers. AWS Partners are strategic experts and experienced builders with deep technical knowledge and proven success working with government, education, nonprofit, and healthcare organizations. They can help you to transform how you gather, store, and use data for better business insights, enabling you to compete, grow, and serve your customers' needs, now and in the future. So whatever new capabilities you're looking for, whatever your challenge, there's an AWS Partner ready to help you.



By engaging with an AWS Partner, you'll be able to drive innovation, see results quicker, and provide customizable solutions for your customers. AWS Partners are strategic experts and experienced builders with deep technical knowledge and proven customer success.

Find your AWS Partner today



Unlocking success for the public sector with AWS

AWS works with more than 2 million customers around the world to solve complex data problems in efficient, effective, and innovative ways, and our AWS Partners play an integral role in helping customers accelerate outcomes. Public sector organizations are increasingly exploring how to use emerging innovations in artificial intelligence and machine learning, which have great potential for improving user experiences in government, education, healthcare, and nonprofits.

In the pages that follow, you'll discover success stories from AWS Partners. Learn how they respond to a diverse range of needs and support customers in modernizing their use of data to gain significant financial, operational, and business benefits. And you'll identify ways similar solutions could help your organization. AWS and our global network of partners are ready to help your organization transform to achieve data-driven success.

Learn more about AWS and how our partners are helping <u>public sector</u> <u>organizations</u>.



"In the public sector, decisions impact many lives. That's why a strong data strategy, including databases, analytics, integration, and data governance, is vital. AWS Partners support governments, schools, healthcare organizations, and nonprofits to achieve data-driven success with an end-to-end data strategy built on AWS."

Jeff Kratz Vice President, Worldwide Public Sector Industry and Partner Sales, AWS





US Navy Leverages Biometric Authentication Technologies with GBL Systems and AWS

Amazon Web Services (AWS) provides a cloud infrastructure with powerful tools for data interpretation and extraction to meet strict security guidelines. The US Navy is improving operational efficiency and transforming security protocols for its organization by harnessing the power of artificial intelligence (AI) to develop FutureOrb-ID, a biometric authentication system, using AWS and AWS Partner GBL Systems Corporation. Biometric security is critical for the US Navy, where safeguarding sensitive data and ensuring secure access to facilities are paramount. By working with GBL Systems to deploy FutureOrb-ID, the US Navy is streamlining authentication for individuals' access to restricted spaces and improving the experience for personnel while ensuring both security and privacy.

Challenge

The US Navy relies on a Common Access Card (CAC) with a PIN to authenticate an individual's access to restricted buildings, ships, and other controlled spaces and systems. Although CAC systems work well in office environments, they are vulnerable to card loss, damage, or theft and may not be optimal in certain naval operational environments. The Navy is collaborating with GBL Systems Corporation, an AWS Partner and leading Department of Defense (DoD) technology company, to explore the use of sophisticated biometric technology that could improve the authentication process.

GBL Systems helped the US Navy use AWS services to create a biometric identification system that satisfies stringent security requirements, complex regulations, and mounting privacy concerns in an operationally efficient system for naval applications. Using facial recognition and cloud-based technologies that can deliver services all the way to the tactical edge, GBL has developed an innovative solution called FutureOrb-ID. This patented technology creates a two-sided marketplace where organizations can access biometric data for authentication and individuals can opt in or out of having their biometric data used. GBL chose to build this new application on AWS to leverage its global footprint that includes one-third of the world's cloud infrastructure.

Result

In less than 1 year, FutureOrb-ID went from concept to prototype, which was exhibited at the 2022 FATHOMWERX Summit. At the demonstration, GBL used <u>AWS DeepLens</u> with AI on-site and an AWS-powered backend to rapidly authenticate personnel who had opted in for using their facial biometrics. Within seconds, the system accurately recognized individuals as either approved for entrance (indicated by a green light), denied entrance (red light), or unknown to the system (yellow light). GBL also demonstrated its FutureOrb-ID Ghosting (FOG) technology, which applies advanced AI and machine learning (ML) algorithms to images in order to mask biometric data. This enables naval personnel and others to share pictures online without the risk of biometrics being scraped for nefarious uses.

Moving forward, GBL aims to deploy FutureOrb-ID to businesses through a software as a service (SaaS) capability. This would enable businesses to offload the burden of processing identity and biometric information to FutureOrb-ID, which is compliant with international, federal, and state regulations.

For more information, read the **full case study**.

"We're interested in new capabilities that provide the robust security that we need as well as support the actual operational mission that our sailors are trying to accomplish. We chose GBL for this development because of their expertise in areas relevant to our mission set and the way they can help accelerate bringing these capabilities to our fleet."

Alan Jaeger, Naval PHE, Manager of Research and Technology Applications

Benefits

- ML/AI-driven image recognition accurately performed in seconds
- Industry-leading security at rest and in transit
- Serverless environment delivers cost efficiencies and scales automatically to support 10 users to 10 million or more

About AWS Partner GBL Systems

Based in Camarillo, California, GBL Systems Corporation is a leading provider of systems engineering and custom software products to the US Armed Forces and is an AWS Public Sector Partner. GBL Systems collaborates with the US Navy to execute research and development and is known for its expertise in developing military applications that use advanced AI and ML algorithms.







OpenGov Enables Better Budgeting for the City of Grand Island Using AWS

Amazon Web Services (AWS) provides a cohesive platform that seamlessly integrates data from multiple systems, helping organizations to efficiently consolidate and analyze a wide range of information for big-picture decision making. Using software-as-a-service (SaaS) solutions from AWS Partner OpenGov on AWS, the City of Grand Island, Nebraska, streamlined employee access to budget data, saved 1,000 hours of manual labor, and freed up staff to innovate and focus on more strategic tasks. By bringing together data from across all city departments and eliminating the need to use spreadsheets for financial tracking, the city has also reduced errors and inefficiencies.

Challenge

With an estimated population of 50,000, <u>Grand Island</u> employs more than 500 government employees across 10 departments. The city has a direct network, but four of its departments—the law enforcement center, the 911 dispatch center, the libraries, and the utility plant—operate on their own networks. Previously, the city government relied on financial software and spreadsheets to track and manage its budget across disparate departments. However, that system consumed staff time and led to errors. Data could be compromised from failed formulas or human error because staff had to manually key in information to multiple spots on different networks. The city needed a cloud-based solution that it could use to build its budget more efficiently and more transparently across departments.

The city began to use AWS Partner OpenGov's Budgeting and Planning solution to build its budget more efficiently, knowing it could help them save time and manual effort. Its multi-year planning capability enables the city to stay on track with its 20-year strategic plan. In 2019, the city became an early adopter of OpenGov's Workforce Planning, cloud budgeting software designed to meet the unique needs of public sector planning and analysis, and in 2021, it implemented the permitting module of Citizen Services, which powers permits, licenses, and inspections with user-friendly workflows.

OpenGov's full ERP solution on AWS, called the OpenGov ERP Cloud, comprises SaaS solutions for budgeting and planning, financial management, citizen services, and reporting and transparency.

Result

Being on AWS spurs innovation and results in significant cost savings, which OpenGov passes to its customers. Further, the OpenGov ERP Cloud enables government teams to have a shared view of the data. That democratization and greater visibility of data have helped governments optimize their budgets, often enabling them to save 1 percent of their budgets through process improvements. Grand Island's finance department saved 1,000 hours of manual labor—equating to half the time of a full-time staffer—by adopting OpenGov's Budgeting and Planning solution, which enabled the team to allocate a budget analyst's time to more strategic projects.

On AWS, OpenGov can update features and accessibility according to Grand Island's needs. "Using AWS helps us innovate and close gaps quickly," says Steph Beer, senior director of marketing at OpenGov. Now the city is better prepared for unpredictable events. "The OpenGov SaaS solutions give us flexibility and the ease of knowing that if something were to happen, we have a product that would help," says Brian Schultz, assistant finance director of Grand Island.

For more information, read the full case study.

"Our departments are not housed under one umbrella, but they need access to the same budget software. It made sense to use a cloud-based solution because as long as staff have internet access and the authority to access the solution, they can access it from anywhere."

Brian Schultz, Assistant Finance Director, Grand Island

Benefits

- · Scales to meet customer demand
- Meets service-level agreements around availability and reliability
- Saved a customer 1,000 hours of manual labor

About AWS Partner OpenGov

Founded in 2012 and built on AWS, OpenGov serves over 1,000 cities, counties, and state agencies with enterprise cloud suites backed by over 300 years of public sector experience. OpenGov is an AWS Advanced Technology Partner and AWS Government Competency Partner, and is a member of the AWS Public Sector Partner Program.









Girls Who Code Drives Student and Educator Engagement with Salesforce and AWS

Girls Who Code (GWC), a nonprofit organization, is working with AWS Partner Salesforce and Amazon Web Services (AWS) to centralize its program data and gain deeper insights into its mission to encourage young women to prepare for careers in IT. GWC's data hub uses AWS to analyze data and speed up reporting, helping the organization to improve engagement with students and educators, optimize its educational programs, and better communicate with alumni for fundraising.

Challenge

<u>Girls Who Code</u> (GWC) stores most of its data about donors, students, and instructors in <u>Salesforce</u>, a customer relationship management (CRM) platform. To gain better data insights into how well current programs are performing and to analyze alumni engagement data, GWC needed to find an efficient way of creating analytical reports. It had to manually aggregate diverse data to build reports that could be visualized in business intelligence tools, and a data analyst could spend up to 40 hours cleaning data for analysis. It wanted to eliminate that time and make the data easily accessible across the organization.

To solve the problem, GWC needed to build a new data warehouse to enable employees to query historical data and gain actionable insights from updated data.

GWC already uses AWS for its learning management platform (<u>HQ</u>) that manages courses, activities, programs, and materials for teachers and students and shows how students are progressing. So it made sense for GWC to use AWS for its new data solution. GWC selected <u>AWS Partner</u> Salesforce to create a data hub that uses <u>Amazon Elastic Compute Cloud</u> (Amazon EC2) instances to run a data extract, transform, and load (ETL) process and deliver data to Tableau visualization software. The solution uses <u>Amazon Redshift</u> to store data from Salesforce and several other data sources, and it relies on <u>Amazon Simple Storage Service</u> (Amazon S3) for staged and archived data.

Result

Using the data hub, GWC employees now have a centralized place for viewing data on all organizational programs. This gives employees better, deeper insights into organizational data from both Salesforce and other applications. End users can access and visualize dashboards in Tableau that show updated information on current students and programs. The alumni team uses the data hub to analyze alumni engagement data, and the program leadership team uses it to gauge how well programs are performing. GWC can now create and deliver reports faster because it no longer relies on manual processes to prepare data.

By accessing real-time data in a centralized solution, GWC staff can ultimately use data insights to drive better program engagement for students and instructors. "We provide the curriculum for after-school club programs run by schools, libraries, and community centers, and we can use the data hub to learn about the level of engagement students have with the curriculum and our technology," says Feargus Leggett, chief financial officer at Girls Who Code. "By finding out this information, we can see if students and educators are excited about new materials or if new platform features are leading them to submit more projects, and then we can change things if we want to increase engagement."

For more information, read the full case study.

"Using the data hub on AWS gives our program leadership team a 360-degree view of how our programs are performing, which helps them debrief quickly after each program cycle."

Feargus Leggett, Chief Financial Officer, Girls Who Code

Benefits

- Centralizes program data
- Provides 360-degree view of programs
- Enables faster reporting
- Drives better student and educator engagement

About AWS Partner Salesforce

Salesforce, based in San Francisco, California, is a cloud-based software company that provides a leading customer relationship management platform and enterprise applications focused on customer service, marketing automation, analytics, and application development.







SpinSys Accelerates Defense Health Agency Migration of Applications and Data to AWS GovCloud in Days Instead of Months

The US Defense Health Agency improved its processes and saved costs by working with AWS Partner SpinSys to migrate its applications and over 1.7 PB of data to AWS. The results—server deployments that are 99 percent faster than before and projected savings of \$33 million over 5 years—demonstrate the value of building a data strategy on Amazon Web Services (AWS).

Challenge

The <u>Defense Health Agency</u> (DHA) is a key US government organization that enables the US Army, Navy, and Air Force medical services to provide a medically ready force to Combatant Commands in wartime and peacetime. As part of its mission, DHA manages healthcare for <u>Military Health System</u> (MHS) beneficiaries, including active duty, reserve, national guard, veterans, and family members. The agency's mission-critical MHS Information Platform (MIP) is DHA's largest data repository. For over a decade, DHA hosted MIP in an on-premises data center, which had become increasingly inefficient. DHA needed to scale the MIP environment to meet rapid data growth. They conducted a Department of Defense Business Case Analysis—a structured methodology and document that aids decision making by identifying and comparing alternatives by examining the mission and business impacts (both financial and non-financial), risks, and sensitivities—to chart the best path forward, which resulted in the selection of AWS.

DHA, in partnership with the Naval Information Warfare Center (NIWC), turned to <u>AWS Partner Spin Systems</u> (SpinSys), its long-time technology partner, to lead the migration to the cloud. SpinSys coordinated and planned the large-scale data center migration from DHA's data center to <u>AWS GovCloud (US)</u>, which provides AWS Regions designed to host sensitive data and regulated workloads. AWS GovCloud (US) provides the most stringent US government security and meets compliance requirements. It was recommended because MIP houses large amounts of protected health information. The teams' discovery phase resulted in the creation of a MIP cloud transition plan for moving the infrastructure and more than 750 databases to AWS GovCloud (US). Next, SpinSys used <u>AWS Snowball</u> appliances and the <u>Multiplatform, Data Acquisition, Collection, and Analytics</u> solution to migrate more than 1.7 PB of data with personally identifiable information and protected health information for DHA's more than 9.5 million beneficiaries into an <u>Amazon</u> <u>Virtual Private Cloud</u> (Amazon VPC) environment on AWS GovCloud (US).

Result

SpinSys worked with the DHA to migrate 253 physical servers and more than 1.7 PB of data to AWS in 93 days instead of 21 months, and cut provision time by 99 percent. Additionally, by avoiding server maintenance and refreshes, eliminating several commercial products, and automating numerous business and technical processes, DHA estimated it will save \$33 million over a 5-year span.

For more information, read the full case study.

"We have not had to go through the government procurement process to buy a physical server in over two years since moving to AWS, and that means we can respond faster to our internal customers. Now, we can begin new work for a customer in hours or weeks instead of 6–9 months waiting on a server to be shipped and racked in a data center."

Trey Oats, Information Dominance Evangelist, MID Integrated Product Team supporting DHA, the Enterprise Intelligence and Data Solutions Program Management Office, and NIWC Defense Health Information Technology Division

Benefits

- Migration completed in 93 days instead of 21 months
- Provisioning time cut by 99%
- \$33 million saved over 5 years

About AWS Partner SpinSys

SpinSys, headquartered in Falls Church, Virginia, provides a comprehensive range of cloud services including stabilizing, modernizing, and migrating legacy and complex enterprise applications, developing migration plans and roadmaps, creating solutions for Big Data problems, refactoring applications, and developing new cloud-based systems.







Tyler Technologies Helps Fulton County use Data Analytics on AWS to Give People Access to the Services They Need

Fulton County, Georgia, worked with AWS Partner Tyler Technologies to implement a data sharing platform that integrates information from many different criminal justice, behavioral health, and other agencies across the region. The project is part of the county's effort to reduce recidivism and homelessness, connect people to needed mental health services, and lower the incarceration rate.

Challenge

About 2 million times a year, people with serious mental illnesses are admitted to jails across the US, according to the National Alliance on Mental Illness (NAMI). NAMI also reports that the cost of jailing people with mental illness is high, and these inmates often have longer jail stays and higher recidivism rates.

Fulton County, Georgia, a county of more than 1 million residents, wanted to face this problem head on. Like many other communities across the country, Fulton County realized its criminal justice system was a fallback for managing mental illness in the community. Its goal was to reduce the population of people going to jail who do not need to be there and redirect them to mental health services and resources.

Fulton County needed to bring together disparate data from criminal justice agencies, courts, and behavioral health systems to identify the people who should be redirected.

Fulton County decided to implement a data sharing platform based on the <u>Tyler Technologies</u> Enterprise Data Platform. Tyler Technologies, an <u>AWS Partner</u>, runs the solution on <u>Amazon Elastic Compute Cloud</u> (Amazon EC2) instances and uses <u>Amazon Kinesis Data Streams</u>, a serverless streaming service, to store and ingest streaming data from different county agencies and departments. The solution also relies on <u>Amazon Relational Database Service</u> (Amazon RDS) and <u>Amazon Simple Storage Service</u> (Amazon S3) to store and manage organizational data.

The Tyler Technologies data platform connects and shares data across the disparate systems. The data includes pre-arrest, housing, court collaboration, homelessness, medical treatment, and re-entry information. County judges, nonprofit agency administrators and department leaders, and organizations that provide housing and other services for homeless people use the solution, which easily collects and stores data from their existing systems.

The Tyler Technologies platform also provides controls for maintaining security and complying with HIPAA regulations, which is essential because of the privacy concerns around the data.

Result

Using the Tyler Technologies solution, Fulton County has a centralized location for connecting and sharing data across agencies. The solution analyzes each aspect of a person's care, including the data consolidated from systems across the county.

Fulton County judges using the Tyler Technologies solution now have more information about why people are being detained, which can help divert people to mental health treatment centers instead of incarcerating them. Similarly, police officers can use the data to decide whether to transport someone to jail or connect them with a behavioral healthcare provider instead. Healthcare providers can also use the data to simplify the intake process and make it more efficient.

Fulton County anticipates significant cost savings as a result of reducing the incarceration rate. It believes that, properly scaled, the solution can save the county millions of dollars. While working toward that goal, it will continue to work with its vulnerable population to make sure they have access to the services they need so they can be productive citizens in the community.

For more information, read the full case study.

"Using the data we have in the Tyler Technologies solution, we're finding that many people who are in a cycle of going to jail repeatedly are homeless, have mental illness, and/or have substance abuse issues. The data insights we have help us find alternatives for people so they're getting the treatment they need instead of cycling through the criminal justice system."

Mike Rowicki, Director of Strategic Planning and Performance Management, Fulton CountyTechnology Division.

Benefits

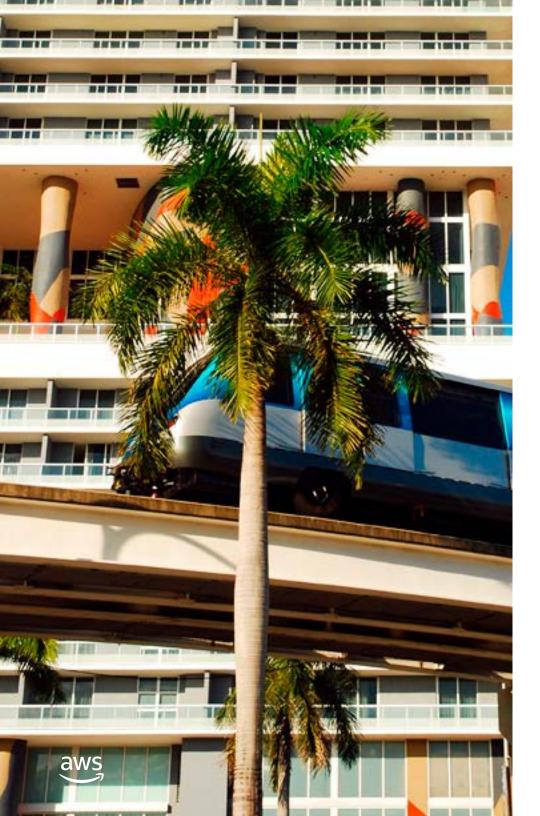
- Helps reduce homelessness and recidivism
- Gives people access to needed mental health services
- Lowers the incarceration rate
- Scales to support additional systems

About AWS Partner Tyler Technologies

Tyler Technologies, based in Plano, Texas, provides integrated software and technology services to the public sector. The company's solutions empower local, state, and federal government organizations to operate more efficiently and connect more transparently with their constituents and each other.







Unleash Live Uses AWS to Help Miami-Dade County Transit Safely Collect Data During Pandemic

With the help of AWS Partner Unleash live, the Miami-Dade County Department of Transportation and Public Works gained a new way to analyze ridership data and reduce congestion using anonymized commuter data from closed-circuit television video (CCTV) cameras. The solution uses artificial intelligence (AI) to process video streams on Amazon Web Services (AWS) to identify areas of high demand so the department can put more trains into service when needed.

Challenge

Around the globe, the COVID-19 pandemic reshaped the way people move around and live their lives, and public transportation systems that serve a mobile population had to adjust to keep their ridership and employees safe. This is true for the Miami-Dade County Department of Transportation and Public Works. In March 2020, Miami-Dade County took the approach of proactively relieving possible congestion hotspots at ticketing gates, making the service temporarily free. With no gate receipts, the county had to come up with a new way of accounting for and assessing commuter volume because the ticketing system was the primary method of capturing data on commuter traffic. Carlos Cruz-Casas, chief innovation officer of the Department of Transportation and Public Works for Miami-Dade County, reached out to Unleash live, an AWS Partner which was developing Al solutions based on AWS technology to solve problems resulting from the pandemic, such as social distance monitoring.

Unleash live developed a customized software-as-a-service (SaaS) solution that leverages AI, and deployed it to Miami-Dade County's existing CCTV video cameras. The solution uses the existing video feed to collect data on ridership and then runs custom analytics on that data. Because the solution is camera-agnostic, Unleash live was able to implement it remotely. Unleash live's AI engine ingests video and imagery streams from cameras, which are then processed using **Amazon Elastic Compute Cloud** (Amazon EC2) instances and split across raw streams and AI streams from on-the-fly analytics. To protect privacy, the footage is anonymized, to ensure that any personal identifiable information (PII) is not captured. The entire implementation took less than three weeks—most of which was devoted to testing the solution.

Result

The county was able to adjust its services and put more trains into operation to meet higher demand within the limited capacity of social distancing due to detailed ridership information. This helps prevent crowds from forming at high-demand stations and creating potential hotspots for disease spread. The county also uses the data to prevent unnecessary exposure of its frontline staff by deploying them only where they are needed to enforce social distancing. Miami-Dade County continually monitors the transit system to ensure that it is implementing all possible safety precautions to minimize the spread of COVID-19. In addition to ridership data, Cruz-Casas believes that Unleash live's solution has the potential to enhance public safety in other ways. He is exploring how to use the solution to test the efficacy of the county's messaging about public safety.

For more information, read the **full case study**.

"I'm excited to see how we can leverage the system resources and bring innovation to the conversation about public safety."

Carlos Cruz-Casas, Chief Innovation Officer of the Department of Transportation and Public Works, Miami-Dade County

Benefits

- Helps county comply with social distancing regulations
- Provides analytics on commuter behavior
- Enables county leadership to optimize public safety
- Enables remote deployment and monitoring

About AWS Partner Unleash live

Based in New South Wales, Australia, Unleash live delivers AI solutions via its AWS-based cloud platform. The Unleash engine uses AI on live video and imagery input from a number of different sources and pushes structured data into customers' existing systems.





Conclusion

Our vast network of AWS Partners can help your organization maximize the business value of your data using AWS. If you're looking to connect different sources of data across your organization to eliminate silos and improve efficiency, you'll find an AWS Partner with the expertise you need.

AWS Partners can help to transform how you gather, store, and use data for better business insights—or find new ways of working in response to changing business conditions, new regulations, climate challenges, or geopolitical developments. You'll also find AWS Partners that are ready to help you embrace new capabilities such as generative artificial intelligence (GenAI), so you can create new products and services for your customers. Ultimately, AWS makes the complexities of data management easier, so you spend less time managing data and the underlying infrastructure and more time getting value from it.

Whatever your needs, you'll find a unique AWS Partner to help.

Find your AWS Partner today.

AWS makes the complexities of data management easier, so you spend less time managing data and the underlying infrastructure and more time getting value from it.



