

MongoDB for Public Sector

Discover how the leading developer data platform is powering mission-critical applications across government agencies, education institutions, and more

Challenges to Innovation in the Public Sector Space

Public sector organizations – government agencies, defense contractors, state and local government entities, and more – face a set of challenges unique to this vertical. These organizations must balance the need to comply with strict regulations like FedRAMP, CJIS, ITAR, and more with the external pressure to innovate in alignment with progress in the private sector. When you add bureaucratic red tape and complicated internal decision-making hierarchies to the mix, public sector organizations face the perfect storm of obstacles to digital transformation.

To navigate these challenges and emerge successfully on the other side of digital transformation, public sector organizations need a data platform underpinning their mission-critical applications. In many cases, U.S. government entities, SIs, and ISVs are spending time and resources self-managing their data, whether it's on-premise or in the cloud.

How is this impacting public sector organizations?

- **Costly and time consuming:** Self-managing is costly and often does not adhere to operational best-practices, leading to wasted time and resources – resources that could otherwise be allocated to more impactful initiatives.
- **Slower to innovate:** On-premises deployment leads to longer development and release cycles, and rigid data models often reduce engineering

velocity. Thus, public sector entities can't keep up with the external and internal pressures to innovate.

- **Reliability issues:** When self-managing your own data on premises, there are no uptime guarantees and it's usually slower to scale, leading to lags, crashes, and challenges with manual backups.

Government agencies constantly face impediments to progress. From complying with regulations to slow-moving upgrades of legacy systems, innovation through development of modern applications is expensive, time consuming, and difficult to achieve.

However, with a modern data platform underpinning development, government agencies can drastically reduce the development cycle, power digital transformation, and turn data into an asset, not a liability.

With MongoDB Atlas for Government, built on the leading developer data platform, your development teams can accelerate innovation and break down data silos, all in a secure environment compliant with FedRAMP regulations. Instead of falling behind private sector technological development, public sector organizations can push the boundaries of innovation and build modern applications in a secure, friction-free environment.

MongoDB for Public Sector

To address all these challenges and power the much needed digital transformation and migration to the cloud across the public sector, let's unpack why MongoDB is the ideal solution to power your mission-critical applications.

Single platform, numerous use cases

MongoDB Atlas for Government is a single developer data platform that can support a range of use cases, including Internet of Things,

AL/ML, analytics, mobile development, single view, serverless development, and more. Reduce architectural complexity and eliminate data silos, extra costs, and data reliability challenges.

Rapid deployment for rapid development

Get your dataset up and running in mere minutes. MongoDB Atlas for Government is on AWS GovCloud, making it as simple as possible to start



spinning up datasets. With frictionless, secure deployment, your developers will be migrating your data in no time.

Built-in security, no bolt-on features

Run your applications in a dedicated FedRAMP authorized environment. MongoDB Atlas for Government offers unparalleled security, and unlike other database options, you don't have to pay extra for added security. All security features – including SAML authorization, role-based access controls, network isolation, encryption in-transit and at-rest, tracking account activity, field-level encryption for in-use encryption, and more – are built in at no additional cost.

Using solutions that are secure by default is critical for public sector organizations, particularly in light of recent comments by Cybersecurity and Infrastructure Security Agency Director Jen Easterly.

“We have to have [multi factor authentication] by default. We can't charge extra for security logging and [single sign-on],” Easterly said. We need to ensure that we're coming together to really protect the technology ecosystem instead of putting the burden on those least able to defend themselves.”

Developer friendly for better outcomes

From simple database deployment to a flexible schema, MongoDB Atlas for Government is the ideal data platform for public sector development teams. The Atlas developer data platform is fully managed with strong security features on by-default, allowing developers to dedicate their time to projects with the greatest impact instead of time consuming administrative tasks.

Reliable, yet flexible, for critical workloads

Spend time driving efficiencies with your data, not managing it. Atlas for Government offers guaranteed high availability with a ~99.995% uptime SLA, and automated backup and data recovery, providing peace of mind that your data is protected.

Atlas for Government also auto-scales up or down to accommodate fluctuations in data consumption, affording greater flexibility and cost control.

Advanced features for modern applications

Atlas for Government gives developers access to greater functionality than legacy solutions of the past could afford. Take advantage of built-in features like Atlas Search, which allows you to combine three systems – database, search engine, and sync mechanisms – into one, delivering application search experiences 30% to 50% faster and at a fraction of cost of deploying database, search engine, and sync mechanisms separately.

Atlas for Government also includes the MongoDB Connector for BI, which allows you query MongoDB data with SQL using business intelligence tools such as Tableau, Power BI, and Excel, so that you may continue to leverage your existing investments in data analysis.

Cost-effective for government budgets

Atlas for Government deployed on AWS GovCloud uses a consumption-based subscription pricing model. The pay-as-you-go model affords public sector organizations greater control over expenses and transparency into spending. Plus, with auto-scaling capabilities, you are paying only for what you use.

MongoDB Enterprise Advanced for Public Sector

If you don't want or are unable to run your applications in the cloud, MongoDB Enterprise Advanced may be the ideal option for your organization.

Enterprise Advanced is the best way to self-manage your data, with a collection of products and services that drive security, efficiency, and put you in control of your databases. You benefit from many of the features and benefits offered by MongoDB Atlas for Government, just with an on-premises operational model.

Here are two features that make Enterprise Advanced the best choice for some organizations.

Total visibility and control

Leverage database management tools built by the experts to make running MongoDB simple. Automate administration, stay on top of database performance, and unlock opportunities to turn data into value.

Data and business protection

Take advantage of advanced access control and data security features to protect your databases and satisfy compliance or customer requirements. It's easy to integrate MongoDB with your existing security infrastructure and tooling.

How MongoDB Powers Key Public Sector Use Cases

Healthcare

MongoDB is built to bring together data from disparate databases, systems, and data formats to create a single view of the patient. And with MongoDB's dynamic schema, you're ready to enrich your view of the patient with data from new sources, such as connected health devices.

Both MongoDB and FHIR natively support the JSON format, the standard that supports rich data structures and objects prevalent in healthcare such as patient data, claims, policies, and treatment information. In addition, the flexibility of the document model at the heart of MongoDB is uniquely qualified to adapt to future data demands.

Financial Services

Agencies that participate in financial services activities must fully commit to digital transformation – liberating data, empowering developers, and embracing disruption – to keep up with the expectations of instantaneous transactions.

Whether its trading platforms and end-to-end digital loan origination, or AI/ML-driven fraud

detection systems and financial 'super apps', MongoDB's developer data platform enables innovation and speed for payments and core banking applications, and maintains compliance with PCI DSS.

Defense

Few verticals share the security needs that defense agencies and contractors face. MongoDB not only protects that mission-critical data, it also enables building modern applications that span essential use cases like improved supply chain management, proactive maintenance, edge computing, and more.

State and Local Government

National, regional, and local governments are facing pressing challenges with rising costs, changing regulations, and complex technological demands. The traditional systems currently in place are not only expensive, but improperly equipped to handle modern needs for scale, cost efficiency, and flexibility. MongoDB opens doors for new initiatives like building smart cities, planning for traffic and construction updates, and improving the welfare of citizens.



Education

From groundbreaking data-based research to administrative management of schools' complex ecosystems, proper data management can transform how educational institutions operate. A modern data platform helps institutions navigate

complex challenges like providing continuous learning, teaching with limited resources, and retaining students and staff. MongoDB offers an intuitive, secure, cost-effective solution for institutions dedicated to all stages of education.

MongoDB for Global Public Sector

Chicago uses MongoDB to create a smarter and safer city

WindyGrid, a system developed in 2011 by Brett Goldstein, the Chief Data Officer of Chicago, is an intelligent operations platform built on MongoDB. What makes WindyGrid exceptional isn't just that it pulls together seven million different pieces of data from city departments every day. It's that WindyGrid creatively pairs MongoDB-powered analytics with visual maps, giving managers insights they've never had before on city operations, in real time as they unfold.

With MongoDB, WindyGrid created a central nervous system for Chicago, helping improve services, cut costs, and create a more livable city. By pulling together 311 and 911 calls, tweets, and bus locations, the city can better manage traffic and incidents during parades and get streets cleaned and opened up more quickly.

Using analytics, city managers can pinpoint the cascading consequences of separate events, such as faulty street lights or new traffic patterns, to address problems or prevent issues before they occur. For instance, after statistically predicting that within seven days of a garbage complaint a rodent complaint occurs,

the city is able to get ahead of rat problems.

The city of Chicago collects more than seven million rows of data every day. With MongoDB's flexible data schema, Chicago doesn't need to worry about unwieldy and constantly changing schema requirements.

WindyGrid put Chicago on the path of revolutionizing how it operates not by replacing the administrative systems already in place, but by using MongoDB to bring that data together into a new application. With MongoDB's flexible data model, WindyGrid doesn't have to go back and redo the schema for each new piece of data. Instead, it can evolve schemas in real time. Which is crucial as WindyGrid expands and adds predictive analytics, growing by millions of pieces of structured and unstructured data each day.

With MongoDB, Chicago put itself on the road to something big – a predictive, intelligent data management platform that will help forge a more livable and smarter city.

<https://www.mongodb.com/customers/city-of-chicago>

DWP's agile response to Covid-19 saw it scale universal credit 10x with MongoDB to meet demand

The Department for Work and Pensions (DWP) is the largest department in the UK government and is responsible for distributing £191 billion in welfare, pensions and child maintenance. It serves over 20 million citizens each year and its critical monthly payments help these people with living costs, childcare needs and employment opportunities – all when they need it most.

As the COVID-19 pandemic hit, the UK was put into a national lockdown and entire industries ground to a halt. It left millions unable to work or unemployed. The system had to stay online to protect the most vulnerable citizens, yet it would need to be refined and re-scaled once again.

DWP Digital worked with MongoDB to maintain



online services during the biggest welfare crisis since the Second World War.

MongoDB's distributed architecture meant the DWP Digital team was able to scale up individual nodes in a rolling fashion, ensuring that while scaling was in progress, the operations of each cluster were never impacted. It meant the team had continued high availability of its data and consistent operational performance. This agility ensured UC applications and their services had the data they needed to function and remain online.

This achievement was made even more impressive by the fact that the team were in a self-managed environment, with limited capabilities around performance monitoring and observability – yet MongoDB still handled the scale without any downtime. During those frantic weeks, the busiest clusters handled more than 15,000 requests per second while the overall system grew to 110TB of uncompressed claim-related data, 5TB of indices, and 6TB of memory.

Roma Capitale partners with MongoDB to turn the Eternal City into a smart city

Roma Capitale has led local initiatives across the city of Rome for more than a decade and has helped enhance environmental assets, improve economic and social programmes, and elevate the city's urban development.

“But we needed to do more and to improve our services. We had to get smarter in our approach for the people of Rome,” said Raffaele Gareri, Development Manager, Roma Capitale.

To do this, the team first needed to build a centralized data platform for the city, a vast ecosystem that was capable of ingesting and housing huge amounts of disparate data. It would allow for much simpler and quicker insights and to help drive these new services.

Considering its small team and ambitious target, Roma Capitale began scouting for help. To build a data management platform of this kind required a solution that had flexibility, scalability, and a cloud-first approach.

DWP Digital and MongoDB guaranteed that the UC service was always available despite the huge volume of requests. It ensured that vulnerable citizens could access the information and welfare they needed in a timely manner throughout the lockdown months.

“At the peak, we managed to handle 100k new claims and over 2.2 million claim enquiries in a single day and keep our on-time payment rates over 88%, which is pretty phenomenal,” explained Tom Padgham, Deputy Director of Engineering, DWP Digital.

“Agile development, multi-disciplinary teams, rapid iteration and weekly releases have all helped us react seamlessly to changes in demand,” Padgham added. “MongoDB has been able to cope with that all the way through and gave us the agility and flexibility we so needed.”

<https://www.mongodb.com/customers/department-for-work-and-pensions>

“MongoDB impressed us immediately with its high scalability and flexible data model,” said Gareri. “With MongoDB, we now had the opportunity to manage data in a more intuitive way. This made a big difference. For the first time, we were able to work with a variety of data types (transport details, legal documents, welfare records, etc.) and achieve excellent performance.”

Today, Roma Capitale's new data ecosystem manages more than 110 million documents (with 10 million more documents being added per year). That's in excess of 50 TB of data, used by thousands of users, online services, and applications across the GED system. It led Rome to jump from 15th place to 4th in the 2020 Global Smart Cities ranking.

Together with MongoDB, Roma Capitale has been able to transform back-end infrastructure systems and services to better enable citizens and improve the efficiency of the city's operations.

<https://www.mongodb.com/customers/roma>



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