

User Accounts and Metadata

User accounts and metadata refers to the identity created for the user when accessing various account types (i.e. service or system accounts), along with managing the metadata related to users and associated objects.

This use case is a critical component of any business application and required to run SaaS services. It involves a strategy that ensures the data is identified, captured, maintained, and retrieved, wherever it's needed.

For example, when a user signs up for a service, they will create an account, profile, objects, and have actions they take which all need to be recorded in a database. Choosing the right database to support a user metadata use case is crucial and can help automate many workflows.

Challenges

After a user signs up for a service, they will start to generate metadata that has to be tied to their particular account. This includes information such as accounts, bills and invoices, user profile and preferences, permissions, assets, and other related user information. These relationships need to be tracked correctly, meaning the user's data must always be available for them to access. If an inconsistency is introduced, it can be very difficult to recover the correct information, which puts the business at risk during compliance audits.

Accounts and metadata availability are crucial to an application's functionality. For example, if your metadata database goes offline, users won't be able to access their

profile and associated information which degrades the customer experience.

Another challenge is being able to scale user accounts and metadata workloads as your business acquires new customers. If your organization expands its reach into new regions, you need to be able to partition user data to live within certain geographies for low latency or regulatory compliance.

Database requirements

Data consistency is a requirement for architecting user accounts and metadata systems. Metadata is often duplicated across multiple databases (e.g. for user access or for internal analytics) so it's imperative that the data is always correct. Leveraging a multi-region database foundation can help when it comes to scale, data locality, and fast user access.

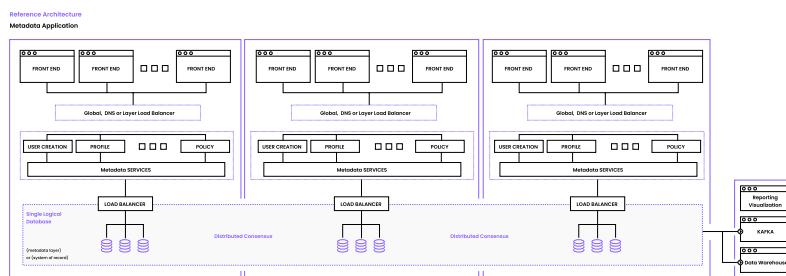
An active-passive system puts too much at risk when it comes to data loss and availability. If the primary database goes offline, there's a period of time before failing over to the secondary where data is not available and could potentially be lost. Choosing an active-active or multi-active system will better ensure your user's metadata is available and consistent.

Why CockroachDB for user accounts and metadata?

Not only does CockroachDB meet the requirements for this use case, but it also makes it significantly easier to build multi-region services and automate metadata management using built-in features like change data capture (CDC).

Reference architecture

This diagram shows how an application might integrate CockroachDB as a user metadata store. The multi-region setup offers inherent benefits in terms of global access and impact to user latency.



Customer Story: Starburst guarantees user metadata availability with CockroachDB

Starburst offers an enterprise and cloud solution that addresses data silos and speed of access problems for their customers. Because their customer base is global, Starburst needed to build an application that could span across multiple geographies, achieve massive scale, and ensure 24/7 uptime. These requirements lead them to select CockroachDB as a backend to replicate their metadata.

Their survival goal = region failure, so they run CockroachDB across 5 regions in order to survive the failure of an entire region, and to minimize latency for their distributed customers.

"We trust our business to run on CockroachDB. It's storing our critical assets for us which is our customer data. We also know that there is a talented team behind the product that's there to help us every step of the way."

Ken Pickering
VP of Engineering

To learn more about Starburst's use case and read other customer stories, visit cockroachlabs.com/customers ↗