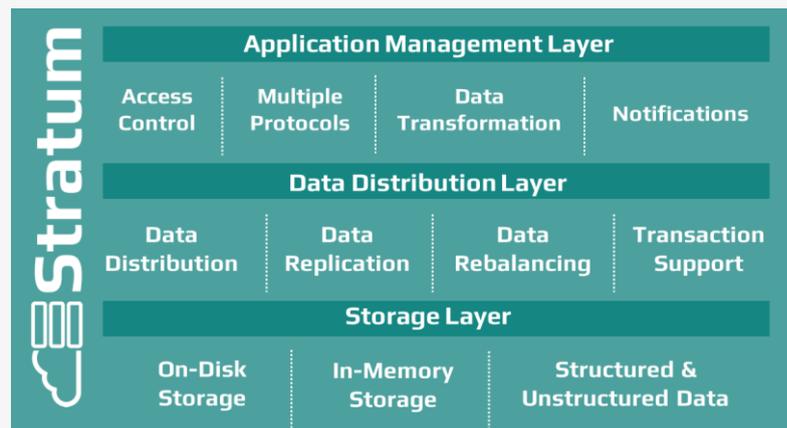


Stratum Cloud Data Manager

As operators migrate their networks to NFV environments, a big challenge for them is to ensure 5 nines of availability and seamless service continuity. The legacy deployment model of mated pairs does not work in NFV because – (a) the average failure rate of VMs is significantly higher than that of physical servers, and (b) VMs are much smaller than physical servers in terms of resources, i.e. number of nodes in NFV deployments is significantly higher than that in physical deployments. Making network functions **stateless** can mitigate the availability risks in NFV deployments. Stateless network functions store all data, including subscription and session information, in an external data layer. When a stateless NF fails, it can be easily replaced by another instance of the NF which can immediately resume service operations by accessing the required data from the external data layer. Various industry associations and standards organizations have also recommended stateless architecture for 5G networks.

Stratum Cloud Data Manager is a common data layer built for 4G NFV and 5G networks. It enables stateless network functions by providing a **3GPP UDR and UDSF** standards compliant unified hybrid storage for all types of data. It can scale in/out on demand, perform multi-site data replication and data transformation in real time. With Stratum, network functions can access **any data, anywhere, anytime**.



One Repository for All Needs

With Stratum, you don't need to have multiple repositories in the network to satisfy performance and durability requirements of various network functions. Stratum provides hybrid storage and multiple durability options for all types of data, be it **structured** or **unstructured**. Network functions can store **subscription data, session data, policy data as well as VNF data** in Stratum using the same interface. The data can be stored **on disk** or **in memory**. Stratum allows you to specify storage and durability policy at attribute level.

Flexible Replication Options

Stratum has a highly efficient data replication mechanism which enables you to build and deploy multi-site applications without worrying about availability and consistency of data across the sites. Stratum supports synchronous, asynchronous and hybrid models of replication within and across sites. With our patent-pending **Just-In-Time Geo Replication**, Stratum can provide user context at edge sites without having to replicate all the data to the edges.

5 Nines Availability in NFV

With built-in data distribution mechanism and flexible redundancy options, Stratum provides 5 nines of telco grade availability in virtualized (NFV) deployments. Thus, Stratum allows stateless network functions to provide seamless service continuity by ensuring that the data required by the network functions is always available and accessible.

Unmatched Performance

Stratum has been built with more than 2 decades of experience in creating highly performant and reliable data management solutions for mobile networks. Stratum in-memory store can perform **10000 TPS per vCPU at sub-millisecond latency** and can elastically scale to hundreds of millions of TPS. Stratum disk-based store can perform 5000 TPS per vCPU at <1ms read and <5ms write latency.

Virtual Schemas

Stratum allows creation of multiple Virtual Schemas – virtual views of the data based on a single physical schema. The built-in data transformation capabilities dynamically transform the request/response from physical to virtual view and vice-versa. This allows applications using different naming conventions to access the same physical copy of the data, thus reducing integration time and costs, and eliminating data duplication and inconsistencies.

About Openwave Mobility

Openwave Mobility, an Enea company, empowers service providers to manage and monetize encrypted and unencrypted mobile traffic, optimizing available RAN and maximizing the value of user data. To find out more about our products, visit owmobility.com.
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Stratum helps you
Simplify your network,
make it **Agile**,
and reduce **Costs**

Multiple Protocol Support

Stratum supports multiple data access protocols. Network functions can access data stored in Stratum using LDAP, DIAMETER and HTTP (SOAP, REST/JSON) protocols. With multiple protocol support, operators can deploy Stratum today for 4G NFV network and continue using the same platform for 5G network which will use HTTP REST/JSON as the default protocol for control plane communication.

Event Driven Programming

Stratum allows network functions and external applications to subscribe to notifications on data changes. Network functions can subscribe to changes at multiple levels of granularity – from individual attributes to a group of records. This allows network functions to create event driven workflows and helps reduce chatter in the network, e.g. policy enforcement functions don't need to keep reading the policy data for changes. Event driven programming is especially useful in IoT use cases.