

A revolutionary approach to storing data

The Siemens Common Repository (SCR) is the first database system for telco applications that can be expanded to any required size under load. Any number of new users can thus be quickly integrated. SCR uses two approaches to do this: First, it is no longer based on hard drives but stores the database in memory. Second, SCR has a revolutionary cellular data memory architecture that enables the system to automatically adapt the memory resources used to the current demand during operation and to manage these resources, including the required redundancy. The system automatically recognizes and corrects overload and errors in individual compute nodes, to minimize down times and increase service availability. SCR also supports the simultaneous linking of many applications with logically separate views and methods for accessing all session and subscriber data.

One data memory for the MNO

Structurally, SCR is designed as a general-purpose database and is suitable for many applications. In its first incarnation, SCR is being released as a central system for the latest generation of modern mobile communication networks (3G, 4G/LTE, 5G). In principle, it manages all data types at a logical point, i.e., persistent subscriber data of MNO customers, session data of ongoing data and voice connections, data volumes consumed, identification and access status of devices (m2m, Internet of Things), location and mobility information and more.

In concrete terms, SCR acts as a back end for storing static and dynamically changing data for any elements of the core network (Packet Core from 3G) and EPC, (Evolved Packet Core from 4G), such as HSS, HLR, PCRF and AAA, other elements of IMS; and MME, as well as all kinds of packet gateways. In the next step, integrating new elements – from the IT or billing environment, for instance – will facilitate further consolidation and cost savings. It is also common practice to use the system for other wireless (e.g., WiFi) or wired networks (xDSL, cable network) and inevitably so when converging the management of mobile and fixed networks.

The underlying architecture was designed to use up to 1 million CPU cores (virtual or bare metal). Depending on the type of data (subscriber, m2m devices, sessions, other types) and hardware resources, up to 1 billion entries and 1 billion transactions per second can be processed.

Outstanding performance – lower costs

SCR gives network operators a much faster solution for standardizing data management in all modern network elements. It also provides the usual service interfaces and the ability to use different views of the data (multi-protocol, multi-view) in order to facilitate individual analyses of the stored data.

Marketing new business opportunities faster

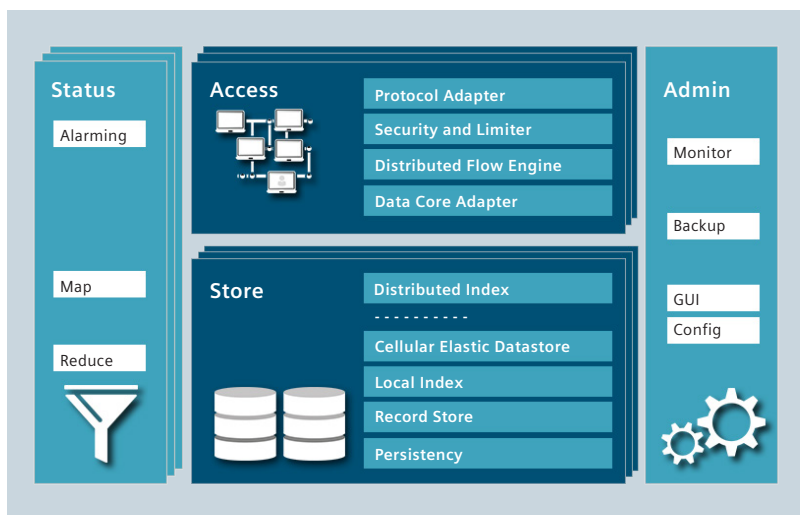
SCR enables new services, for example by requesting specific user data or by easily combining user and other data from a wide range of applications. This includes running big data analysis on all stored data. For another example, the system can automatically provide and assign SIM cards or soft SIMs. Another major advantage is that SCR allows new services to be brought to market faster because comprehensive upgrades are completed in only a few days instead of lasting for months, as it was previously the case. This also makes it easier to plan and customize the system, since SCR supports not only LDAP and SPML but also other protocols such as Diameter and an API. SCR is fully standard-compliant, can thus be integrated into existing systems quickly and without problems, and is open to further expansion.

Arriving safely at the destination with SCR

SCR stores the data redundantly in a highly distributed memory system. Any errors that occur are detected and corrected automatically. Siemens also offers its customers active data migration assistance from planning to implementation. Based on a small single- or multi-site installation, the system can be continuously upgraded according to plan during operation by adding virtual resources, and these upgrades can be performed automatically to save costs. SCR is compatible with all relevant standards and can be operated via an intuitive, graphical user interface which permits rapid modeling of data and client views as well as comprehensive live system monitoring.

SCR – a revolutionary approach to the future

Sometimes it takes a revolution to shape the future. You can join this revolution with SCR, a new consolidated service database that stores user and session data in a single, infinitely scalable system. It speeds up your time to market for new services, gives you more in-depth insights into customer data, and offers numerous data synergies.



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