BLUEARCUS

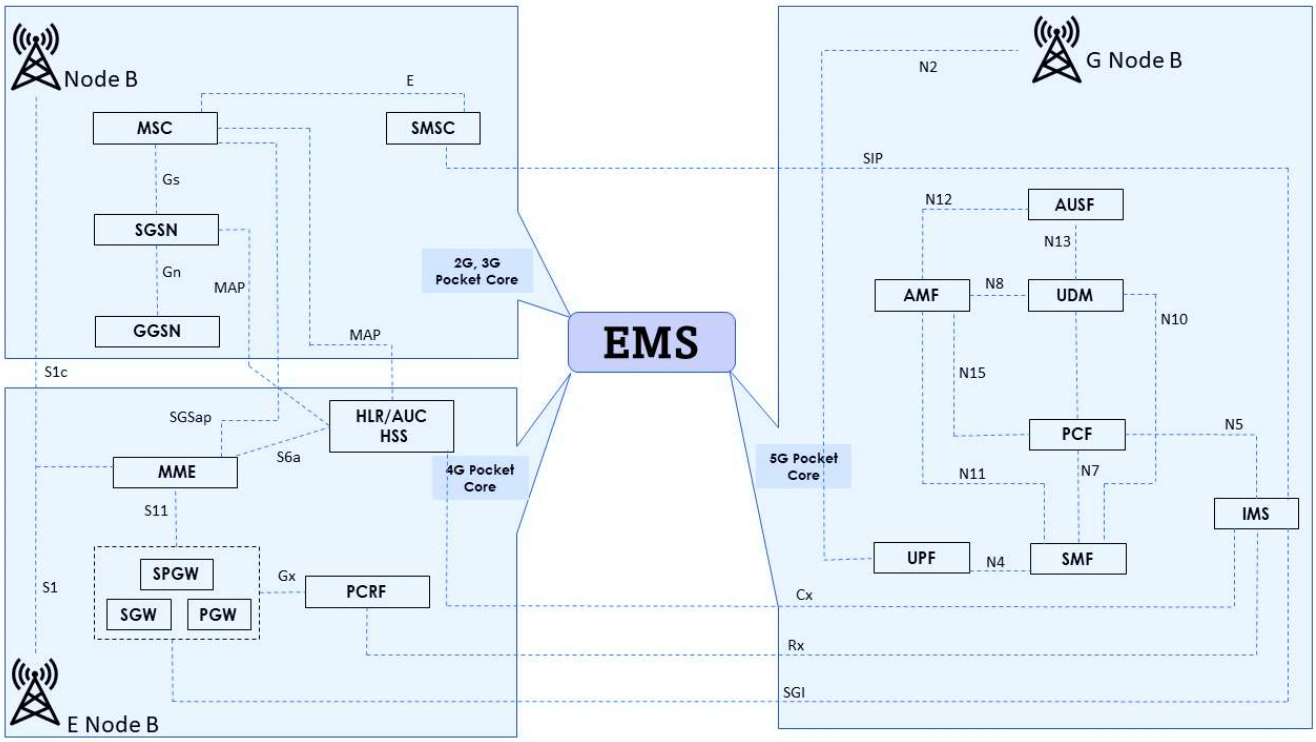
ARCUS EMS DATASHEET

Enterprise to Carrier - Element Management System

Arcus EMS an Element Management System (EMS) is a scalable and full-featured platform that can be customized to manage a wide range of devices in various generations in the ecosystem. In addition to maintaining the standard FCAPS and network history functionalities, arcus has inbuilt elements to manage the 2G – 5G ecosystem. This application is self-monitoring and manages the subscriber database of modules integrated into it. Simultaneously, it shares the precautionary alarm signals if any faults are registered.

This system has all-time security and is an extendable yet easy-to-use application. This system delivers comprehensive, approachable network management capabilities that can be used at the client's desk, and we can configure them with a web browser. EMS can configure and read alarms on nodes or groups of nodes. Normally it manages one or more similar types of telecommunications network elements (NE) within a telecommunication management network (TMN). Finally, these elements refer to nodes directly.

EMS Core Architecture



FEATURES AND BENEFITS

FEATURE HIGHLIGHTS: The feature of the Element Management System (EMS):

- Answerable for gathering, Uniting and Normalizing the information from network elements (NE).

MULTIPURPOSE PLATFORM: Arcus-based EMSs have been deployed to handle various devices, ranging from simple access points to high-performance, complicated devices that require managing thousands of KPIs. Arcus can function with various databases, run on a range of platforms, including Windows and Linux, and handle practically all industry-standard protocols.

2G-5G READY: Arcus adheres to open standards and supports the newest technology. It is the preferred platform for controlling LTE, 5G, and next-generation network components, such as CNF-class devices. Arcus also includes built-in management capabilities for EPC, 5GC, LTE (eNodeB), and 5G. (gNodeB).

RELIABLE AND EXPANDABLE: Arcus element management system and network management system are highly secure. There are various layers of security in this system. Arcus-based EMSs installed in highly secure environments. They are scalable and installed to manage millions of devices. It has been security-tested and extensively certified for security compliance.

LESS HUMAN INTERFERENCE: Arcus has advanced features such as zero-touch provisioning, automated device onboarding workflows, and bulk firmware upgrade. These features eliminate the complicated and painful manual process when the devices are first deployed in the field.

VIRTUAL SUPPORTED WITH MULTI-OCCUPATION: Arcus can be installed on various cloud platforms, such as Azure, AWS, and Google Cloud. It can manage multiple customer deployments with a single EMS server instance, helping you save time.

Some of the significant advantages of EMS are listed below:

- Centralized management portfolio
- Configuration and Integration management of different nodes
- Secure navigation through element grouping as well as role-based access along with audit trails.
- Centralized fault, diagnostics, and performance monitoring
- Instant alarm identification and fast resolution.

ARCUS EMS SPECIFICATIONS

LTE INTERFACES

S6a (MME <-> HSS) This interface enables the transfer of subscription and authentication data of user access.

S11 (MME <-> SGW) is used to establish the bearers with the EPC.

S5 (SGW <-> PGW) user plane tunnelling and tunnel management.

S8 (SGW <-> Roaming PGW) data roaming.

Sgi (PWG <-> PDN) connects to the internet or other PDN.

Gx (PGW <-> PCRF) transfer of (QoS) policy and charging rules.

SGs (MME <-> MSC) connection to 2G-3G network for CSFB service.

E (MSC <-> SMSC) interface for SMS services

Gs (MSC <-> SGSN) is used to establish the bearers with MSC

Gn (SGSN <-> GGSN) user plane tunnelling and tunnel management

Cx (HSS/HLR <-> IMS) User-Authorization-Request or Answer

Rx (PCRF <-> IMS) Policy assignment for VoLTE

MAP (MSC <-> HSS) provides an application layer for the various nodes

SGSap (MME <-> MSC) For circuit switch fallback function

MAP (SGSN <-> HSS) transfer of subscriber related data

SIP (SMSC <-> IMS) Interface for SMS services over VoLTE

N12 (AUSF <-> AMF) Support signaling for authentication and key agreement, steering of roaming, and UE parameter update

N13 (AUSF <-> UDM) Support authentication services procedure.

N8 (AMF <-> UDM) Handle new subscription data (e.g., SMS subscription data retrieval).

N15 (AMF <-> PCF) Provides Service Area Restriction capability and policy

N10 (UDM <-> SMF) Carries subscriber data management and UE context management services.

N5 (PCF <-> IMS) data session handover support

N7 (PCF <-> SMF) Use to retrieve the session management policy information corresponding to the PDU session of the UE acts as a consumer of the PCF-provided session management policy service

N11 (AMF <-> SMF) Session management carries a message to add, modify, or delete a PDU session across the user plane

N4 (UPF <-> SMF) Managing the UE's PDU sessions, establishment, modification, and release of the PDU sessions.

ARCUS EMS SPECIFICATIONS

SCALABLE CAPACITY:

- Design flexibility:
  - 1 to 1M+ devices
  - System is a highly enhanced, scalable, and flexible platform.
- Easy to be customized, Enhance and Scalable
- Arcus EMS can manage not only current devices but also those of future use.
- Arcus EMS is a very flexible, best-in-class system that can be easily customized to deliver an EMS that helps you differentiate your device in presenting its unique features.

KEY MODULES OF ARCUS:

- **Faults**: Fault detection, Fault isolation, Fault tracking, Corrective action
- **Performance**: Data collection, Trending, Reporting
- **Configuration**: Configuration template, Discovery-triggered configuration, Alarm-triggered configuration, Firmware upgrades, Configuration editor, Configuration profiles, Configuration audit, Configuration backup/restore
- **Security**: Restore database
- **Deployment**: Standalone, Cloud deployment, Load balancing, Active/Standby, it permits to scale seamlessly.

EMS SOLUTION:

- Performance
- Approvals
- Log Checking
- Administration Tasks (Backup, Log maintenance, etc.)
- Fast Messaging

SYSTEM CAPABILITIES:

- Individual EMS is enough to monitor and manage the full network.
- Large volume and flexible server architecture.
- Smart self-validation machine.

EMS ACTIVE - STANDBY SETUP FOR REDUNDANCY:

The dual EMS servers work in master-slave mode. Normally, the EMS 0 is the master server, while the EMS 1 is the slave one. The master server takes all the tasks, while the slave one is only responsible for synchronizing its database with the master. The slave EMS server becomes the master when the master fails.

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