Security for 5G/LTE Network Infrastructure

Enable security with digital certificates.

THE OPPORTUNITY

Superior security in a highly distributed environment

Telecommunication providers must maintain a reliable and secure network in a world where there is increasingly heavy demand for data services. 4G and 5G telecommunication networks offer fast IP-based network services for voice and data, but they are susceptible to a number of vulnerabilities. To help combat these, the 3rd Generation Partnership Authentication Framework (3GPP TS 33.310) standard specifies the use of IPSec Virtual Private Networks based on pre-shared keys or digital certificates issued from a PKI.

Digital certificates offer superior security and management in a highly distributed environment. PKI also provides reliable certificate renewal and revocation to environments with high volumes of certificates, thus providing telecommunication companies with an extremely secure and robust security architecture.

KEY FEATURES & BENEFITS

- Centralized issuance and reporting - Reduces the risk of outages caused by expiring certificates
- Enhanced deployment - Securely deploys digital certificates to devices
- Improved network security - Centrally issued digital certificates help prevent unauthorized access to network resources
- Seamless and transparent management - Automates the entire lifecycle management of device digital certificates via automated enrollment and transparent renewal
- Comprehensive enrollment offering - Provides a broad range of enrollment capabilities
- Simplified management - Intuitive administrative toolset with system dashboard and automated notifications

Certification Authority

A highly trusted issuer of digital certificates that issues, manages, and revokes certificates

Registration Authority

Enrolls end entities for certificates with the Certification Authority

Security Gateways

High-speed gateways that connect all eNodeBs to the telecommunication provider's services and the internet

eNodeBs

Cellular towers that broadcast the mobile phone signal to a mobile handset and provide voice and data services

Small Cells

Complement eNodeBs by providing additional cellular coverage in areas where coverage can become limited, including urban residential areas and within large structures such as office buildings and stadiums

Telco Infrastructure

Certification Authority

Registration Authority

Security Gateways

Internet
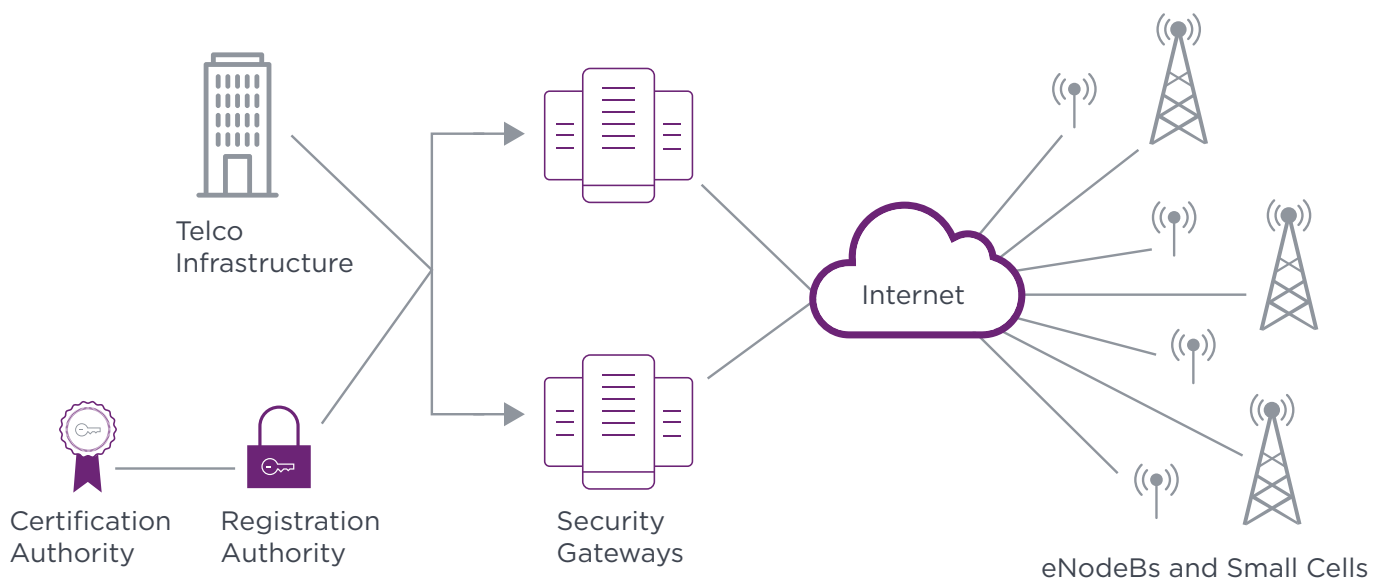
eNodeBs and Small Cells

LTE Security Architecture

In a large mobile telecommunication provider, the LTE architecture consists of many thousands of distributed eNodeBs and small cells, and many centralized security gateways. And to support IPSec VPN, each device requires a unique digital certificate. With such a large distributed deployment, the need for high levels of automation and reporting across the entire estate is critical for reliable enrollment and lifecycle management. Certificate expiries can be extremely costly and, in some cases, will damage your reputation.

Beyond the automation our technology provides for eNodeB enrollment, you can enroll a security gateway by any of the following:

- Manual Certificate Enrollment using PKCS#10/7 signing requests

- Simple Certificate Enrollment Protocol (SCEP)

- Certificate Management Protocol v2 (CMPv2)

The enrollment capability of the security gateway sometimes varies between vendors, so it's important to ensure your LTE PKI can support a broad set of enrollment capabilities.

Entrust LTE Solution

Our PKI provides centrally managed policy, enforced by the Certification Authority, to ensure all certificates are issued and managed consistently. The comprehensive enrollment platform supports all enrollment protocols required and will vet certificate requests to ensure they meet the policy defined. Beyond the technology, Entrust has a globally distributed team of PKI experts around the world who are able to deliver a fully compliant and ready-to-use PKI.

Web-Based Administration

Administrators can upload certificates to automatically enable new eNodeB enrollment, and can manage enrollment passwords used by security gateways.
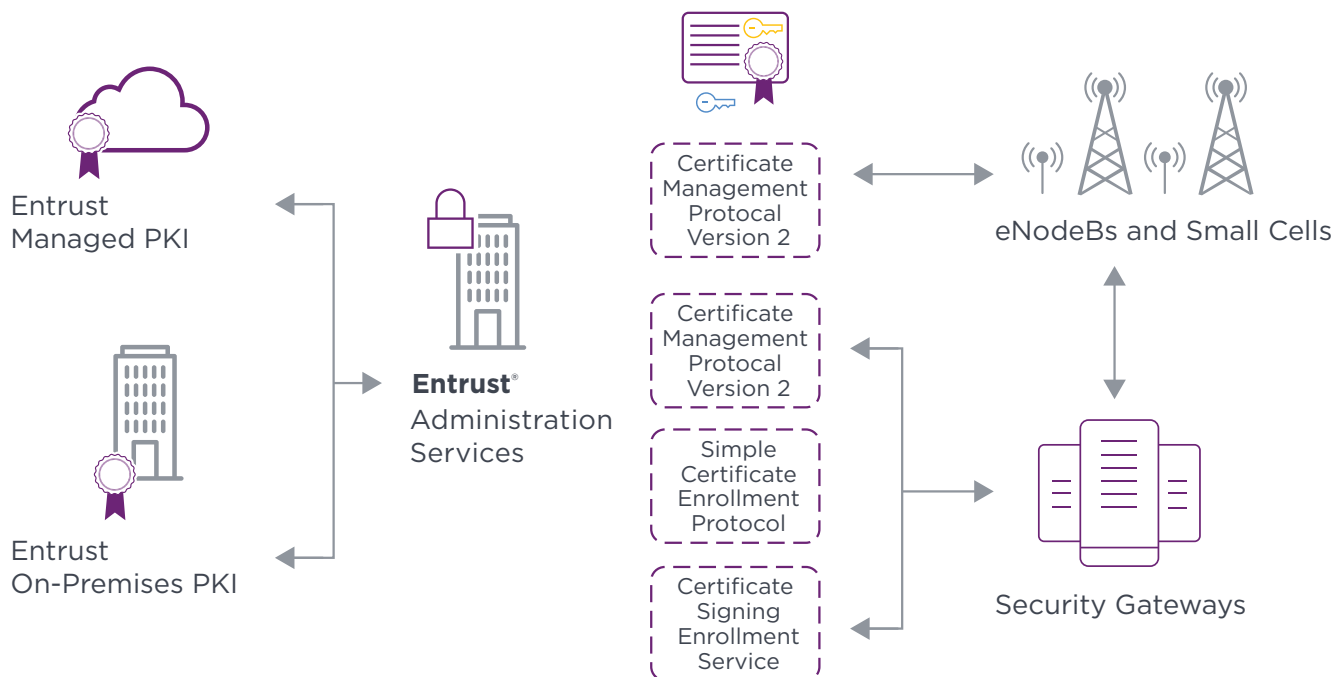
Certificate Lifecycle Management

The Entrust PKI LTE Security Architecture offers fully automated lifecycle management for digital certificates. Administrators can be automatically notified by email about certificates approaching expiration, and can view certificates approaching key lifecycle events via the system dashboard.

Certificate management for these devices has been defined by a number of standards that set out the interactions, certificate profiles and how to deliver digital certificates to an LTE environment:

- RFC4210 - Certificate Management Protocol

- RFC4211 - Certificate Request Message Format

- 3GPP TS 33.310 - Technical Specification

In summary, the Entrust PKI provides a fully compliant, single-supplier solution to meet the certificate-based and 3GPP-driven security requirements of the LTE Security Architecture, especially when there is a mix of device suppliers.

Entrust Managed PKI

Entrust On-Premises PKI

Entrust® Administration Services

Certificate Management Protocol Version 2

Certificate Management Protocol Version 2

Simple Certificate Enrollment Protocol

Certificate Signing Enrollment Service

eNodeBs and Small Cells

Security Gateways

For more information

888.690.2424
+1 952 933 1223
sales@entrust.com
entrust.com

ABOUT ENTRUST CORPORATION

Entrust keeps the world moving safely by enabling trusted identities, payments and data protection. Today more than ever, people demand seamless, secure experiences, whether they're crossing borders, making a purchase, accessing e-government services, or logging into corporate networks. Entrust offers an unmatched breadth of digital security and credential issuance solutions at the very heart of all these interactions. With more than 2,500 colleagues, a network of global partners, and customers in over 150 countries, it's no wonder the world's most entrusted organizations trust us.

Learn more at
entrust.com

ENTRUST

Global Headquarters
1187 Park Place, Minneapolis, MN 55379

U.S. Toll-Free Phone: 888 690 2424
International Phone: +1 952 933 1223
info@entrust.com   **entrust.com/contact**