

# Quadon NP

## Local Number Portability

Is national telecommunication regulator introducing number portability and you are obliged to connect to the central number portability database?

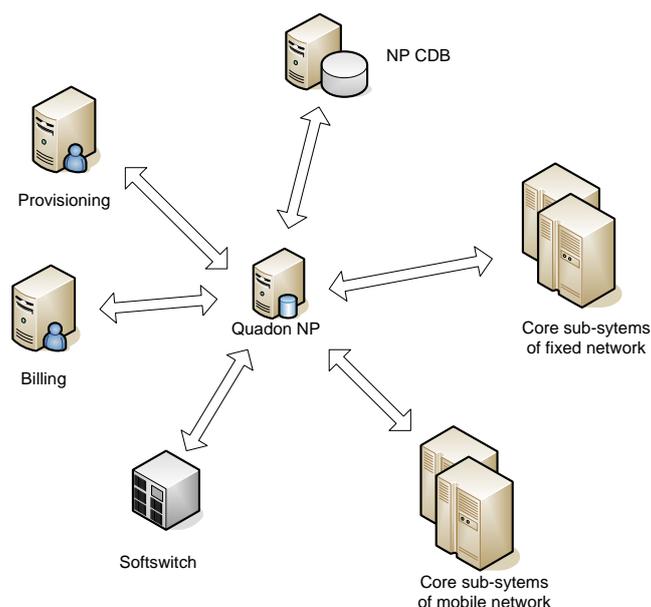
Do you need a reliable system for fully automated administrative and technical porting processes fully compliant with the central number portability database requirements?

Do you need a secure system that will manage all needed number portability processes between the central number portability database and your CRM, ERP, billing/provisioning and other systems?

Do you need a reliable local number portability system with All Call Query (ACQ), Query on Release (QoR) and Onward Routing (OR) routing schemas support that can instantly answer all routing queries of your core network elements like MSC, HLR/VLR, IN, soft-switch, and more ?

### What is Quadon NP Gateway?

Quadon NP is a complete local number portability solution for network operators that perfectly fits into the existing network operator's infrastructure. Quadon NP platform provides all required interfaces for fast and cost-effective integration of number portability system with all core sub-systems for fixed and mobile networks. Quadon NP interacts between central number portability database (CDB) and all operators' systems that require information about ported numbers and their changed routing information.



## Quadon NP Administrative and Technical Processes

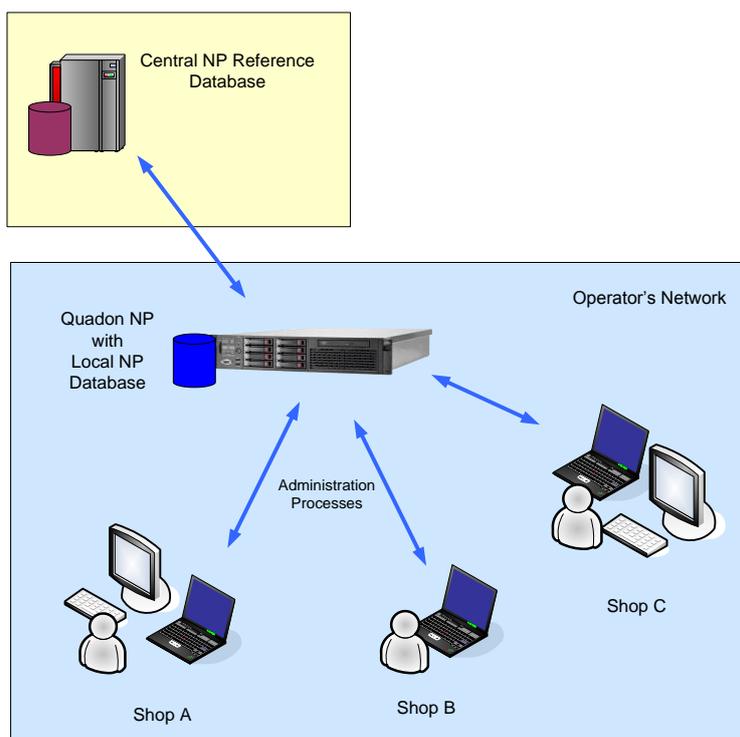
Quadon NP solution communicates with CDB through web service interface (WS-I) methods customized to fully comply with the requirements of the CDB. The architecture of the solution is highly modular and easily adaptive to future changes and developments. It holds local database to store all data.

The solution is customized to fully support all administrative and technical processes defined by the central number portability database system. The solution provides a web based gui application for manual execution of porting processes from different operator offices or stores. Web based application requires no installation and enables easy access over standard protocols. Additionally, the solution can be integrated with custom operator CRM system and enables the operator to fully automate the porting process.

Quadon for operators solution can be integrated with operator's provisioning system to support a fully automated modifications of call routing, due to the changes in the central number portability database. Integration of the provisioning systems is fully synchronized with the technical part of the number portability porting process.

## Quadon NP for Shops

Quadon NP is a complete number portability solution with full support for operator's shops. Quadon NP enables operators to connect their shops with the number portability system and easily integrate their customer care and provisioning ecosystem with the number portability services. With Quadon NP operators can fully automate their internal processes for acquiring new customers who also want to keep their existing number.



## Quadon NP and number portability management

Quadon NP solution is connected and synchronized with the CDB at all time. It connects to the CDB over reliable VPN tunnel, synchronizes with CDB and receives other CDB events using machine-to-machine language (web services) defined by the CDB provider. An additional layer of security can be used with encryption on TCP level such as HTTPS (SSL) and the authentication using electronic signatures and server and client certificates.

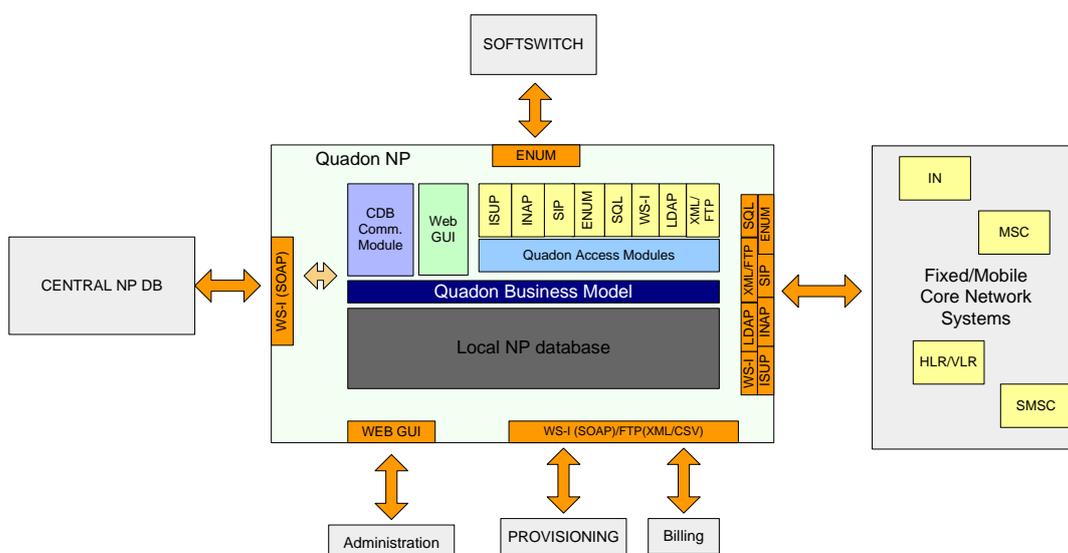
The download of data is performed over different protocols as HTTP (WS-I), FTP and other. When CDB notifies Quadon NP system that specific mobile or fixed number will be ported, Quadon NP stores information in local database, it notifies provisioning and other relevant systems about the scheduled number porting, together with the porting details and expected porting date. Quadon NP stores complete up to date lists of all ported numbers and numbers that will be ported in the following days (TODO list) in its local database. Data is available and can be accessed through **web service (WS-I), SIP, SQL** and **LDAP** interface. Data can be automatically exported to XML files and available through the FTP for download.

Provisioning system connects to the Quadon NP system using provided WS interface for synchronous and asynchronous communication. Provisioning system retrieves the data of ported numbers using specified synchronous web service calls or it can also be notified by the Quadon NP system when new number porting event appears. Quadon provisioning web services are always tailored to fit specific needs, specifications and requirements of the operator's provisioning system.

## Quadon NP and call query

Quadon NP connects with SSP and SCP elements of the operator's fixed and mobile network and provides detailed routing information for porting numbers. SSP and SCP elements further use this information to correctly route calls to ported numbers and also to generate proper CDR files.

Operator's core systems as MSC, HLR, VLR, IN and SMSC can connect and query Quadon NP through different interfaces like **ENUM, SIP, LDAP, ISUP, INAP, WS-I** and **SQL**.

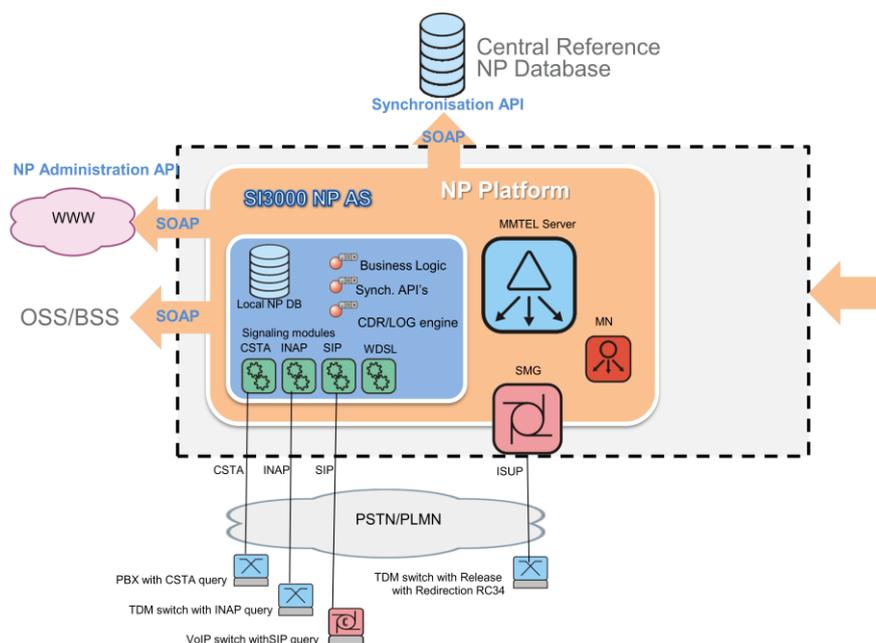


Quadon NP has a great support of call queries for different core network systems. MSC, HLR and VLRs can query Quadon system through ISUP, ENUM or ISUP interface. IN and SMSC/MMS systems can query through INAP and MAP interface. Using Quadon's SIP interface system can be well integrated into the operator's NGN/IMS infrastructure. Soft-switch can send routing queries for different destination numbers through SIP, ENUM (DNS routing queries), SQL or WS interface.

Operator's billing system can send additional queries against the number portability system to retrieve all needed information for successful charging of calls, messages and other events. Quadon system generates CDR records for every SSP or SCP inquiry, regardless of the interface being used. CDR records contain all needed billing information for successful call charging. CDR record format and parameters are configurable. All billing queries and data can be retrieved over WS and SQL interface, or can be downloaded in XML or CSV formats over FTP or SFTP protocol. Quadon billing web services and XML/CSV data formats are tailored to fit specific needs, specifications and requirements of the operator's billing system.

Quadon NP solution for all call related functionalities is based on Iskratel's SI3000 switching center solution. SI3000 NP AS is a high performance switching platform and a complete Number portability solution for Fix, ILEC, Mobile, Alternative, CLEC, VoIP and NGN operators. SI3000 NP AS is a complete NP switching platform that provides operators with the following support:

- ACQ and QoR triggering
- Connected to any PSTN/PLMN network using:
  - SS7-ISUP with REL14 option
  - SS7-INAP with NTS feature
- NP voice announcements
- CSTA connectivity (CSTA server)
- SSP (INAP) connectivity
- ISUP interface
- SIP interface
- Supporting MAP connectivity for non call related NP for mobile operators (SMS/MMS)
- TDR generation
- ported-in and ported-out procedures for subscribers



## Why Quadon NP ?

Quadon NP is a complete local number portability solution that enables operators to manage all required number portability processes with central number portability database, easily integrate number portability system with billing/provisioning system and execute call queries through number of supported interfaces and protocols - SIP, ENUM, LDAP, ISUP, INAP, SQL and WS-I.



Quadon NP system is designed as an adaptive infrastructure solution to provide a stable, secure, expandable and high availability platform. All vital hardware components are duplicated and configured in HA cluster composition to avoid single point of failure. To improve system capabilities, service response times or capacity, additional nodes can be seamlessly added.

**Choose Quadon and establish complete local number portability today!**



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