TITAN.IUM

ACCESS AND SESSION MANAGEMENT

Product Data Sheet

Carrier ENUM and Authoritative DNS Server

Business Benefits

- ENUM and Number Portability interworking allows for accurate low-cost routing, saving operator termination costs.
- Standards based solution ensures vendor/product interoperability.
- Centralized data provisioning ensures data consistency.
- In-Memory databases assure low-latency lookups while scaling to huge record capacities
- Scalable signaling processing

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Product Data Sheet

ENUM + DNS Performance Number Mapping Services

The Challenge

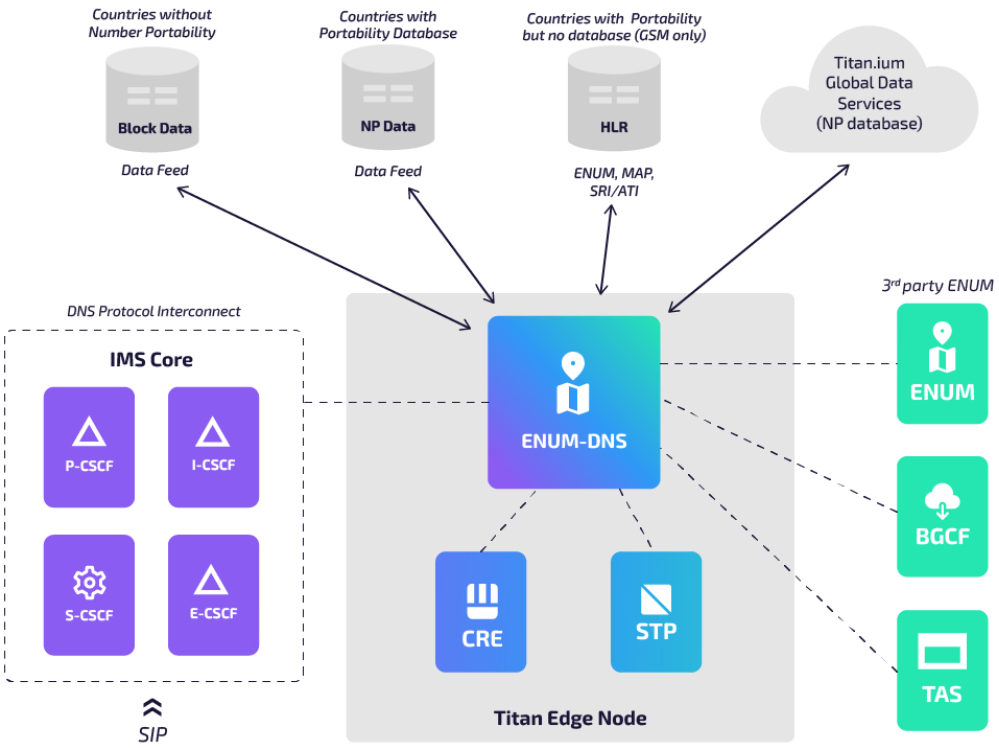
The traditional public switch telephone network continues to evolve to an all IP fixed and mobile network where end users have multiple internet devices tied to one or more telephone numbers. End users may also bring their telephone numbers to different service networks (e.g., VoIP/VoLTE/Vo5G) of the same or different operators.

The ability to efficiently determine number to IP/operator/service network mappings including portability correction is therefore becoming ever more important for the network operator.

Titan.ium ENUM+DNS is the world's most widely deployed Carrier-ENUM solution in Fixed, Mobile, Cable, and IPX networks and has been hardened through field experience to deliver market-leading scalability, performance, reliability, and flexibility.

The Titan.ium Solution

Titan.ium combines ENUM with DNS services (ENUM/DNS) on the Titan Platform and Titan.ium Framework to provide a solution that meets fixed and mobile network needs in addition to those of commercial and/or enterprise solutions such as private LTE and public safety networks. As depicted in the diagram below, both Titan Platform and Titan.ium Framework permit multiple network functions to be collocated with ENUM/DNS in an optimized compute footprint that may be deployed on containerized, virtualized or bare metal servers. Unique to Titan is the ability to scale from a very small single edge node implementation to a very large cluster of edge nodes that can all be administered from a single GUI/API.



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Product Data Sheet

ENUM + DNS Performance Number Mapping Services

The Titan.ium Solution (continued)

Titan.ium's ENUM/DNS is standards compliant, adhering to all the relevant IETF RFCs for carrier ENUM/DNS services. In addition, it supports the ENUM/DNS interworking solution specified in GSMA IR.67 and NG.105. Titan.ium ENUM/DSN flexibly supports multiple different deployment scenarios including support of Split-Horizon, which can provide different DNS/ENUM results for the same domain in response to queries from different sources. ENUM/DNS also supports Zone sharing and zone chaining, providing the maximum in flexibility, power and control.

Business Benefits

Providing routing information for telephone numbers via an ENUM server allows operators to have a central data source for different routing engines, e.g., CSCF, SBC, TAS, or for different networks, e.g., VoIP/VoLTE/Vo5G. Supporting ENUM interworking between operators allow the efficient exchange of routing information.

Carrier DNS service allows operators to use a central database to manage IP addresses for all their network functions. Standards based DNS interworking allows smooth interconnection of network elements among operators.

Up-to-date number portability data is critical for the accurate routing of messaging and voice traffic. CSPs and messaging providers must choose between multiple suppliers for each destination. A low-cost routing engine is only as good as the data it receives as input. Titan.ium's ENUM/DNS enables CSPs to make use of always current number portability data, leading to high success rates, low latency and reduced costs.

Key Capabilities

Client Handling
On a per request basis, Titan.ium's ENUM/DNS may perform Service Selection on IP address, port, or transport protocol, each of which can be defined per subnet.

ENUM Per Request Screening and Processing
ENUM/DNS performs request authorization and authority determination based on the content of the received DNS request and can act as Server and Resolver. It can support referral queries via industry standard protocols and Forward DNS services are also supported.

IMS ENUM
ENUM/DNS provides 3GPP standard ENUM services to IMS cores, enabling them to discover locally provisioned IMS subscriber information organized in one or more Titan database views. The naming and hierarchical structure of the local database views can be adjusted to meet customer/project-specific needs.

Carrier ENUM
ENUM/DNS supports optional queries towards external authoritative ENUM servers. Carrier-ENUM service logic is typically utilized to optimize the routing of VoIP and IMS sessions between trusted partners. Such services include VoIP interconnect, VoLTE, Vo5G, RCS hosting, and RCS interconnect.

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ENUM + DNS Performance Number Mapping Services

Key Capabilities

NAPTR Regular Expressions and Replacement URIs

ENUM supports NAPTR record regular expressions and replacement URIs that can be assigned individually per ENUM entry (0-NF organization) or can be shared by multiple ENUM entries (1-NF organization). NAPTR RR can also be dynamically generated for the number contained in an ENUM query, without using back reference in the regular expression field of NAPTR RR. Finally, it is possible to delegate specific numbers or whole number blocks to a different DNS/ENUM server.

Number Portability

ENUM/DNS can apply portability correction to the received called number by obtaining NP data collected via INAP, MAP, CAP, ENUM, SIP, and other industry standard protocols from external servers or databases. Different NAPTR RR can be generated for different routing numbers received from NP data.

Number Translation

The number contained in an ENUM query may be set differently for different deployment scenarios, e.g., to international number, or to national number, or to a number with routing prefix/infix/suffix. To use the same key in the ENUM database, number translation/modification is supported by Titan.ium ENUM/DNS. In addition, variables can be defined for any part of the number contained in an ENUM query or in a routing number received from NP data so that they can be used to build the NAPTR RR dynamically.

DNS Server

ENUM/DNS' DNS Server delivers authoritative results from locally provisioned data or from imported zone files (AXFR and IXFR). The naming and hierarchical structure of database views can be adjusted to meet customer/project specific needs. With this, ENUM/DNS' DNS Server can organize DNS records in separated/shared zones or based on the record type, as well as any other criteria defined by the operator or generated from the data provisioned. IPV4 and IPV6 address formats are both supported. ENUM/DNS can also support optional "forward-DNS" services in both recursive and iterative modes.

Contact Titan.ium Today

Please visit www.titaniumplatform.com for product or solution information. For configuration and pricing details, please contact your local account representative via sales@titaniumplatform.com

About Titan.ium

Titan.ium Platform is a leader in signaling, routing, subscriber data management, and security software and services.
Our solutions are deployed in more than 80 countries by over 180 companies, including eight of the world's top ten communications service providers and all of the top five. Titan.ium supports any network, domain, signaling protocol, and infrastructure with advanced routing capabilities and a unified end-user experience.

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