Introduction

The N-Squared Text Telephony Gateway (N2TTG[1]) is a flexible and powerful user interaction platform for the implementation of subscriber self-management services in telecommunications networks.

Running on commodity x86-64 hardware/VM under all major modern Linux variants, the N2TTG solution combines easy scalability and simple service design with modern management/integration and low operational overhead.
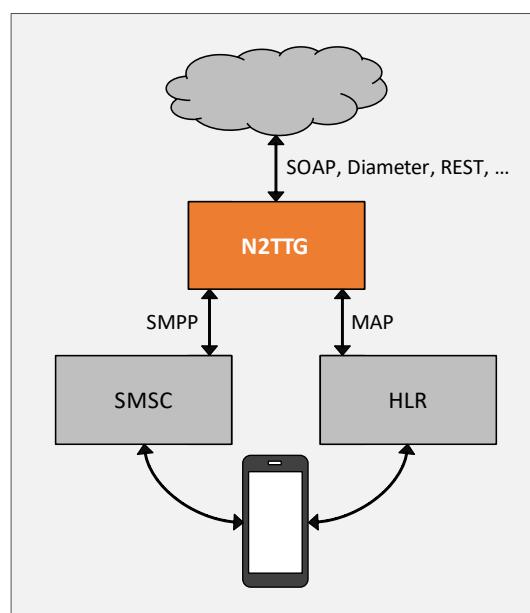

Figure 1 N2TTG for SMPP and MAP(USSD)

Interaction Features

The N2TTG provides all user interaction services via a script-based service definition language for USSD and/or SMPP text interactions initiated by subscribers, including:

- USSD one-shot requests
- USSD interactive, hierarchical menus
- Inbound SMPP requests
- Outbound call connection requests.

The N2TTG can also be instructed to assemble and send outbound non-interactive SMPP or USSD messages, as required.

Integration Enrichment

As it is integrated to the N-Squared Service Daemon (N2SVCD), the N2TTG scripting logic can freely access data and information from external sources using the following standard provided client interfaces for:

- Querying or updating a wide range of relational and document-base databases.
- REST/SOAP operations to read/write to/from external components.

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[1] https://nsquared.nz/product/n2ttg.html

- Diameter application requests, e.g. for Credit-Control balance/price/debit/credit.
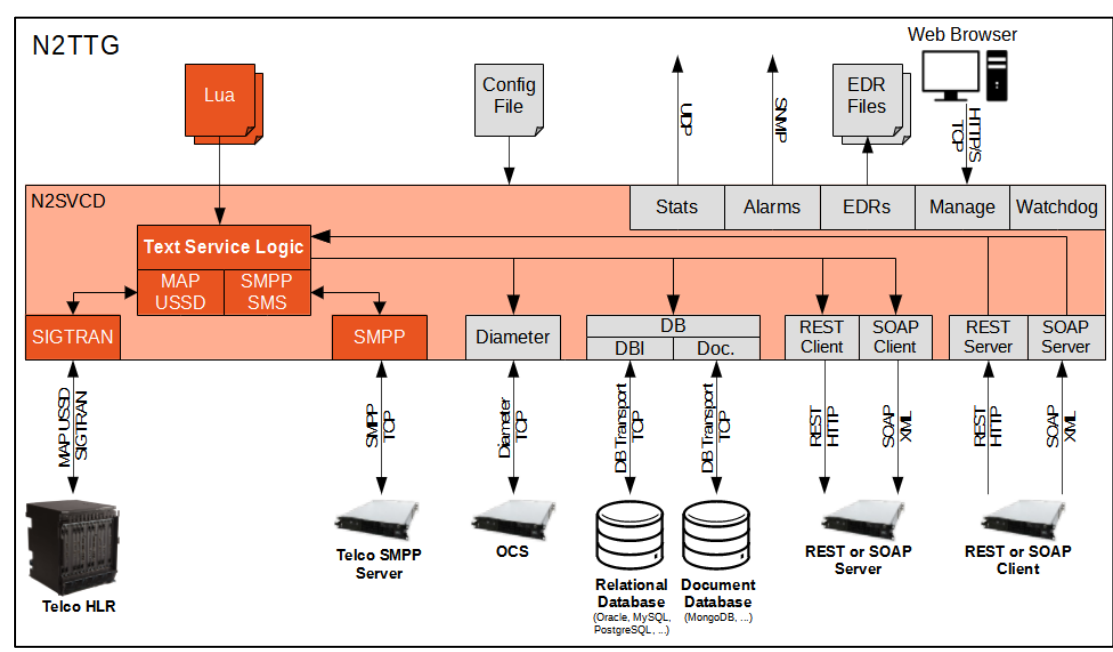

Figure 2 N2TTG integration enrichment via N2SVCD

Subscriber Interaction Scripting

The Text/Telephony Gateway service logic supports the popular embedded Lua scripting language for the definition of arbitrary service logic, with standard functions for branching, mathematics and string manipulation, arrays, and tables. In addition, there is a wide range of third-party libraries for JSON and XML manipulation, etc.

Platform Management & Control

The N2TTG service layer includes a web-based interface for interaction with the run-time service-layer components.

Via a web browser, system administrators may:

- View running configuration.
- Track service statistics.
- Interrogate in-progress calls.
- Monitor resource usage.
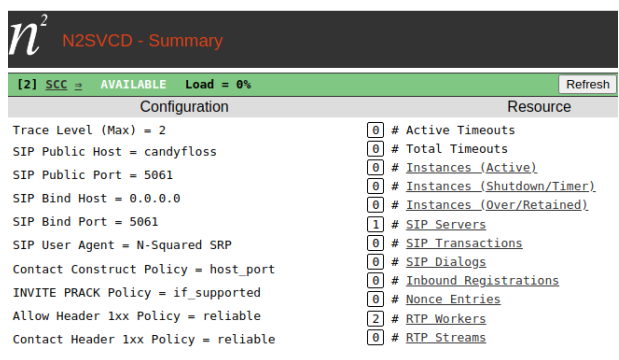- View system alarms.
- Modify platform configuration.

All administration features are also available via REST API.

Figure 3 N2TTG Operational GUI

Scalability & Redundancy

N2TTG nodes are modular and can support flexible HA and DR deployment models. For example:

- Multiple nodes with single management instance.
- DR site synchronised with primary platforms.
- … and more.

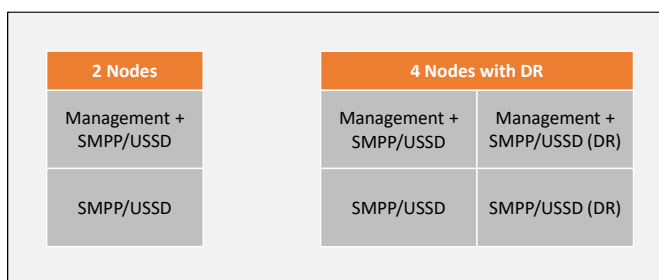| 2 Nodes	4 Nodes with DR	
Management + SMPP/USSD	Management + SMPP/USSD	Management + SMPP/USSD (DR)
SMPP/USSD	SMPP/USSD	SMPP/USSD (DR)

Figure 4 Example N2TTG deployments

Platform Monitoring & Reporting

Platform activities are reported by:

- Alarms off-platform via SNMP.
- Statistics off-platform via Telegraf.
- Event Data Records in flat-file format.

Technical Guide & Protocol Conformance

Full Technical Guide and Protocol Conformance Statements are available online at:

https://www.nsquared.nz/product/n2ttg.html

Support & Maintenance

Ongoing 24/7 platform support and maintenance contracts are offered.