

Say Hello to appNGIN



appNGIN helps telecommunication operators become more competitive with new and powerful next generation applications. It's an eNGINE that helps create, deploy, execute, orchestrate, and manage new services efficiently and effectively with no complex development or resource-depleting learning curves. That's because **appNGIN** is based on a set of snap-together service enablers that give operators all of the advantages of OOTB deployment with an easy-to-use mashup environment for customizing new apps that stand out from the competition.

With **appNGIN**, new ideas sprint from conception to deployment. Now critical tasks like migrating common call control services to next generation networks and integrating new rich communication functions can be accomplished on time and on budget. No black box here. We bring telecommunication application creation into the light and deliver true converged communication services that respond to market demands.

Capturing New Revenue

While the popularity of social networking services and application distribution platforms like Facebook, Twitter, Foursquare, Google, Apple, and Android are exploding, their presence in the market erodes the revenue streams of many telecommunication operators. The philosophy of **appNGIN** is to help telecommunication operators work more effectively with these social networking applications rather than against them by opening new a new range of blended services. The blended services built with **appNGIN** combine "traditional" telecommunication services with new communication channels and formulate new revenue generating applications.

With technological convergence, the boundaries of the computer, fixed, and mobile telecom industries are disappearing. Operators are recognizing the value of incorporating blended services based on voice, data, presence, and location information. **appNGIN** enables the creation and deployment of these next generation IN services and puts the control back in the hands of revenue seeking operators.

appNGIN is built on top of Oracle Communications products like Oracle Communications Converged Application Server and Oracle Communications Service Broker. These products provide connectivity to network resources and a SIP Servlet and J EE execution environment. **appNGIN** supports both "traditional" SS7 networks and IP based networks like IP Multimedia Subsystem and provides functional building blocks that enable the application developers to program at a higher level of abstraction.

Mobile Client Widgets

Development & Mashup Framework



Common
Call Control



Presence &
Location



Network
Address
Book



Enhanced
Messaging &
Content
Sharing



Social
Network
Integration

Infrastructure Components (OCCAS, OCSB)

Network Resources

The following section provides detailed descriptions of the different enablers and functional building blocks available with **appNGIN**

appNGIN consists of three layers:

1. Service enablers, functional building blocks. These are standards based pre-built components that implement specific telecommunication capabilities such as call conference, rule based call routing, or presence and location information management. These re-useable components are based on the standards defined in SIP, SIP SIMPLE, and the Rich Communication Suite related specifications.
 2. Development and Mashup framework. This is a Telecom 2.0 and Web 2.0 development environment both for developers and end-users. The development environment helps developers expand their creativity and make new converged communication applications by re-using and customizing the portfolio of service enablers and functional building blocks.
 3. Mobile client widgets. These widgets are native mobile device application components that implement some basic Rich Communication Suite features like Network Address Book GUI, Presence & IM GUI, and location service GUI.
- Telco operators that want to be more than bit pipes can use mobile client widgets to build communication client applications that offer compelling mobile services to customers. The **appNGIN** source code for Android and iPhone RCS client applications is available at SourceForge.

appNGIN Enablers

Common Call Control

The Common Call Control enabler is a set of telecom functional building blocks developed for open standard, next generation IN platforms based on SIP Servlet technology. These functional building blocks are ready for deployment across a range of core network technologies including IMS and legacy SS7, and they enable rapid development of voice applications like a VPBX or a toll-free number service using the **appNGIN** Development & Mashup framework.

The Common Call Control enabler consists of the following pre-built functional building blocks:

- Rule Based Call Routing

Here users can influence the destination of a call by specifying complex routing rules. These rules are evaluated during the setup of the call. Based on these rules, a decision is made about the final destination of the call. The routing rule options can be the followings:

- Time of Day routing
- Day of Week routing
- Day of Year routing (including the management of holidays)
- Calling number based routing

- Rule Based Call Filtering

Special filtering rules can be defined for a number that specifies how to contact numbers at specific times. The filtering rule options can be the followings:

- Time of Day filtering
- Day of Week filtering
- Day of Year filtering (including the management of holidays)
- Calling number based filtering

- Conference Call

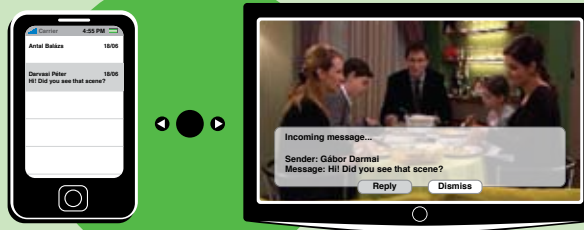
Conference Call feature enables scheduling of conference calls among different parties. The parties can call into the scheduled call or the system can call back the parties automatically when the conference call is started.

- Click-to-Dial (Web Initiated Call)

A multi-party call can be set up by invoking a web service or by clicking on a web widget.

- Media Resource Functions Management

Common announcement and common DTMF code handling.



Blended IPTV Common Call Control service example: There is an incoming call to the end user's phone and the calling party name is displayed on an end user's TV screen.



- Prepaid logic
Online charging system integration based on Diameter Sh or legacy protocols.
- Account Code, Authorization Code Management
The operator can set an authorization code for connecting calls. For example, the service asks the caller to provide the right code and if the user gives the proper authorization code via DTMF the call can be initiated.
- Call hunting
This feature attempts calls to a predefined list of alternate numbers when the called party is busy. The application tries each number in sequence until a number answers or all numbers are busy in the list.
- Provisioning web services
Common Call Control enablers require the persistent storage of configuration data (e.g. routing rules). The provisioning of this type of data is done through standardized web service technology to easily integrate with company's existing BSS or SOA infrastructure.
- Self-service provisioning GUI
The configuration of the different telecommunications services (like routing rule management) can be done with a web based self-service GUI. The user of this self-service GUI can administrate all of the functions mentioned here. In addition to that it can also delegate the administration rights to other users.
- Online charging integration
Common Call Control enabler supports prepaid services and can be integrated with online charging systems via diameter (Ro interface) or a custom developed solution.



Presence & Location

The Presence & Location enablers provide a SIP SIMPLE compatible presence server according to Rich Communication Suite specification. It enables the development of presence and location based services.



Proximity service example: The user is notified if one of his friends comes nearby.

The presence enabler aggregates presence information from a number of different sources in a persistent manner and publishes the presence information to a number of different sources. The Presence & Location management enabler establishes a way for services to change their behavior depending on the user's location and availability. This makes it possible to send calls or messages to an active device and to avoid interrupting the user. Presence & Location management stimulates communication between users and provides enhanced and more attractive communication applications that can be monetized by telecommunications operators.

Network Address Book

Network Address Book is a central part of the Rich Communication Suite services. It enables centralized storage of user's contacts and contact synchronization between different type of devices, applications.

Because people often use multiple connected devices, they have to maintain multiple locally-stored address books. Synchronizing contact information on all of these connected devices becomes an increasingly complex task. **appNGIN** synchronizes contact information across multiple platforms, enabling operators to personalize and simplify their messaging services. Network Address Book is a multi-access address book that helps users manage, synchronize and access all their stored contacts on any device.

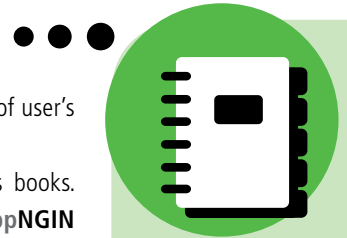
In addition, the Network Address Book can be integrated with other service enablers via standards-based API integration to offer converged services.

Enhanced Messaging & Content Sharing

The Enhanced Messaging enabler provides features for "traditional" (SMS, MMS) and IP based messaging including file/image/video transfer and multiparty chat functionalities. This enabler is compliant with the Rich Communication Suite specification and offers a valuable set of features including:

- Peer-to-peer Instant Messaging
- Multiparty Instant Messaging (Chat)
- File/Image/Video Transfer
- Native SMS protocol support
- Native MMS protocol support

With **appNGIN**'s Enhanced Messaging & Content Sharing enabler application, developers can build robust messaging services for any provider without having to understand or depend on the specific protocols used by that provider's messaging gateway. As a result, operators are able to integrate messaging into their applications in a more portable manner.





Social Network Integration

● ● ● **appNGIN** helps telecommunication operators forge new cooperative relationships with social networking services like Facebook, Twitter, Google – just to name a few – and use these Web 2.0 technologies to offer new services for their customers. **appNGIN** enables telco operators with access to both social networking services and data as well as other communication services such as IP Multimedia Systems's features, Rich Communication Suite services, "traditional"

2G voice, SMS, MMS services. Combining these two types of services helps operators remain competitive and develop previously untapped sources of revenue.



Location to Facebook service example: The user creates a service by using the mashup drag & drop GUI that publishes automatically his location to the Facebook wall.



Mobile Client Widgets

Application stores have successfully attracted customers in the last few years and these application stores are increasingly becoming powerful in delivering value added contents and services to the end-users' mobile devices.

Using **appNGIN's** Mobile Client Widgets, operators can allow third party mobile client developers to have access to their communication services such as the network address book, presence & location or messaging with the re-use of pre-built mobile user interface components. This means that the developers can easily enhance their application's logic with presence or location information handling or with instant messaging functionality while the enhanced application generates more revenue for the operators.

Mobile Client Widgets are available on Android and iPhone platforms as open source components. Source code can be downloaded from SourceForge (<http://sourceforge.net>).

sourceforge

Getting Started with appNGIN

All **appNGIN** components run on top of Oracle Communications Converged Application Server. For operators employing legacy SS7 networks, integration requires the use of Oracle Communications Service Broker product. The **appNGIN** enablers store their persistent configuration data in Oracle RDBMS. Oracle products provide a robust, scalable and reliable foundation for **appNGIN** application components.

Supported Standards

J EE

- Servlets 2.5
- JSP 2.1
- JSF 1.2
- EJB 3
- JAX-WS, and JAXB 2.0

SIP

- IETF RFC 3261
- IETF RFC 2976, 3262, 3265, 3311, 3323, 3325, 3372, 3428, 3455, 3515, 3665, 3725
- 3GPP TS 23.218

SS7

- ETSI TS 129 078 V5.9.0 CAMEL Application Part (CAP) CAMEL Phase 4
- 3GPP TS 29.202 v4.3

MAP

- 3GPP TS 29.002 version 3.4.0 Mobile Application Part Phase 2+

SMS

- UCP
- SMPP

MMS

- MM7

Location Server

- MLP

IMS

- Diameter Sh
- Diameter Ro
- Diameter Rf
- RFC 5022 MSCML

RCS

- OMA Presence SIMPLE Specification v1.1
- OMA XML Document Management (XDM) Specification v2.0
- OMA Presence XDM Specification v1.1
- OMA Instant Messaging using SIMPLE v1.0
- OMA Resource List Server (RLS) XDM Specification v1.1
- GSMA Rich Communication Suite Release 1 v1.2
- GSMA Rich Communication Suite Release 2 v1.1
- GSMA IR.79 – Image Share Interoperability Specification v1.2
- RFC 3261 • RFC 3262 • RFC 3264 • RFC 3265
- RFC 3310 • RFC 3311 • RFC 3428 • RFC 3489bis
- RFC 3515 • RFC 3856 • RFC 3863 • RFC 3891
- RFC 3892 • RFC 3903 • RFC 3994 • RFC 4169
- RFC 4479 • RFC 4480 • RFC 4488 • RFC 4566
- RFC 4825 • RFC 4826 • RFC 4975 • RFC 5025
- RFC 5547

About Alerant

Alerant Information Technologies Inc. is a recognized expert in telecommunication technology based infrastructure solutions. The scope of its activities mainly covers the development, integration, implementation and support of JEE-based individual applications. Alerant Inc. is a strategic partner of Oracle, the provider of IT infrastructure to large enterprises. Alerant's customers are large enterprises, mainly telecommunication companies, financial institutions, industrial companies and public administration organizations. A Central European market survey – Fast 50 – conducted by Deloitte put Alerant on the fourth place, and in 2006 the first place was reached in the 'Rising Star' category. On the 2008 EMEA survey of Deloitte – Fast 500 – Alerant was 27th.

T-Systems and Alerant's Collaboration

T-Systems and Alerant bring operators an end-to-end solution to help them integrate and deploy Alerant's appNGIN and Oracle's Service Delivery Platform to build converged communication solutions worldwide.

T-Systems's portfolio of integrated solutions for telecommunication, specifically its experience in Service Delivery Platforms, CRM and integrated billing solutions, together with its global strategy consulting and system integration capabilities, makes it a natural partner of choice.



Oracle Communications **ORACLE**

Oracle is #1 in Communications globally with 20 of the world's top 20 communications companies running Oracle applications. Oracle Communications integrates industry specific BSS and OSS solutions with a standards-based service delivery portfolio, as well as the capabilities of Oracle's industry-leading enterprise applications, business intelligence tools, and carrier-grade middleware and database technologies. Oracle Communications enables service providers to deliver next generation convergent services rapidly, increase customer satisfaction and loyalty, and reduce costs in the business and the network.

About T-Systems **••T••Systems•**

Global corporations and European public institutions rely on T-Systems for Information and Communications Technology (ICT). Drawing on a global infrastructure of data centers and networks, T-Systems operates information and communication technology (ICT) systems for multinational corporations and public sector institutions. T-Systems provides integrated solutions for the networked future of business and society. The company's employees combine industry expertise and ICT innovations to add significant value to customers' core business all over the world. T-Systems generated revenue of around EUR 8.8 billion in the 2009 financial year.

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