Alcatel-Lucent 8620

SurePay® | Release 28.12/29.12

Documentation Set Overview Guide

270-735-105R28.12

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Alcatel·Lucent

Contents

List of tables

List of figures

About this document

Purpose

The 8620 SurePay Documentation Set Overview Guide provides a short introduction to 8620 SurePay solution and an overview of the technical documentation available for the 8620 SurePay solution suite including the purpose of each document and the targeted audience for the document.

Reason for reissue

This is the first issue of this document.

Intended audience

The audience for this guide is the marketing personnel and the system administrators who operate, administer, and maintain the 8620 SurePay solution.

Supported systems

This document applies to Alcatel-Lucent 8620 SurePay solution.

How to use this document

This document contains the following chapters:

- 8620 SurePay solution - This chapter provides an overview of the 8620 SurePay solution.
- 8620 SurePay documentation set overview - This chapter provides an overview of the 8620 SurePay documentation.

Conventions used

The typographical conventions used in this document are described in Table 1, “Conventions used” (p. x)

Table 1 Conventions used

Appearance	Description
emphasis	Text that is emphasized
document titles	Titles of books or other documents
file or directory names	The names of files or directories
graphical user interface text	Text that is displayed in a graphical user interface
keyboard keys	The name of a key on the keyboard
`system input`	Text that the user types as input to a system
`system output`	Text that a system displays or prints
`variables`	A value or command-line parameter that the user provides
[ ]	Text or a value that is optional
{ **`value1`** | **`value2`** } { *`variable1`* | *`variable2`* }	A choice of values or variables from which one value or variable is used

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1 8620 SurePay solution

Overview

Purpose

The 8620 SurePay solution suite offers converged rating and charging services across multiple networks and protocols such as GSM, CAMEL, ETSI INAP, ANSI-41 (WIN triggers - IS-826), IMS, LTE, VoLTE, and Diameter protocols. Service providers can deploy the SurePay solution in a multi-vendor switch environment, across multiple networks, allowing common service logic to interface with each network.

The SurePay solution offers the following telecommunication services:

- Prepaid service for wireless and wireline networks - This service supports residential and business Prepaid accounts for wireless and wireline subscribers.
- Postpaid service for wireless and wireline networks - This service supports residential and business Postpaid accounts for wireless and wireline subscribers.
- Usage control service - This value-added service allows to limit the usage of voice calls, SMS/MMS, and data transport and specify usage preferences.
- Prepaid and Postpaid convergent service - This service supports online charging for Prepaid and Postpaid accounts.
- Data services - This service supports real-time charging for the following data services:
  - Data bearer charging for GPRS and UMTS services through CAMEL phase 3 protocol.
  - Data bearer charging for 1XRTT/EVDO services through IS-835C protocol.
  - Flow-based charging through session-based Diameter Credit Control Application (DCCA).
  - MMS and SMS charging through event-based Diameter Credit Control application and 3GPP protocol.
  - Generic event-based charging through Diameter Credit Control application and XML and LDAP interfaces.

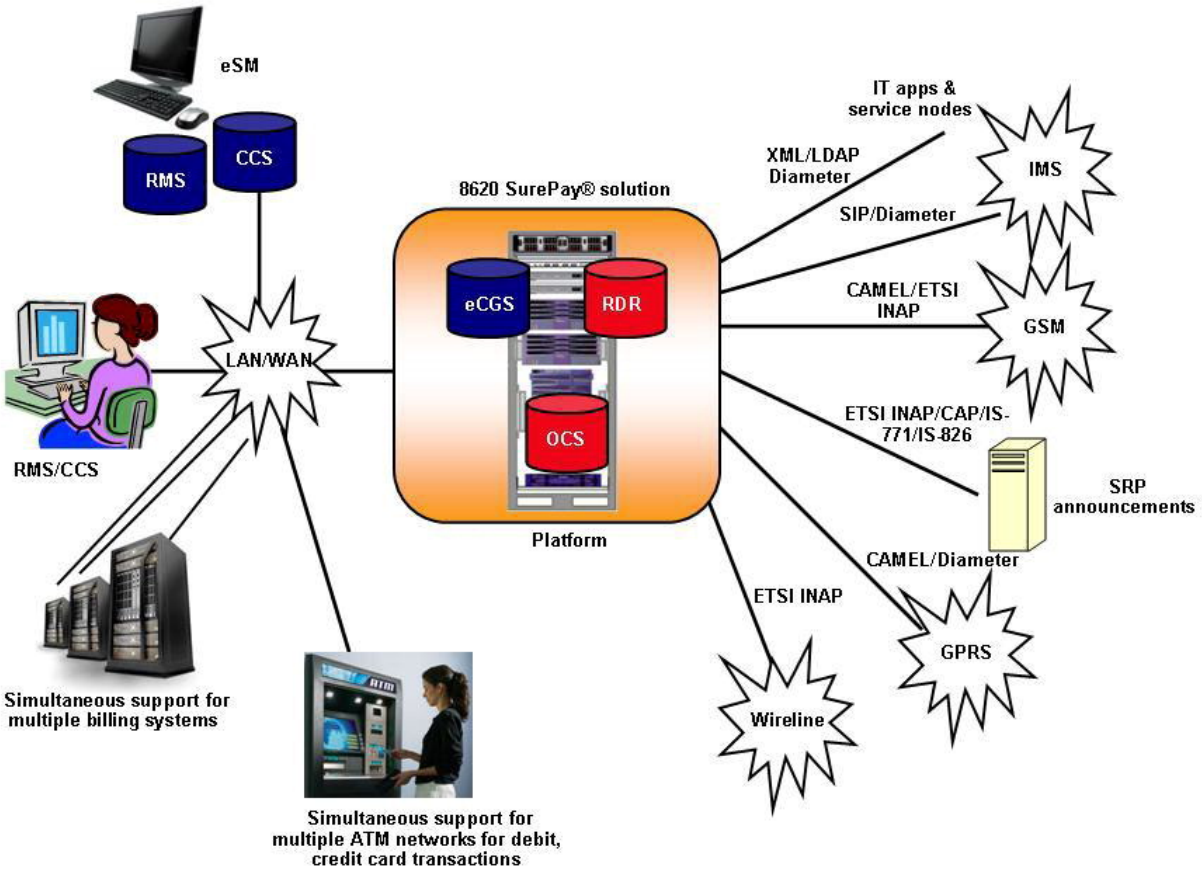
Contents

8620 SurePay solution suite

Main module of 8620 SurePay solution suite

Online Charging System (OCS)

The main module in the 8620 SurePay solution suite includes the 8620 SurePay Online Charging System (OCS) service. This service consists of a collection of service logic programs known as Service Package Applications (SPAs). The SPAs provide the call processing control software, executed as a set of UNIX processes. These processes provide service-specific logic and the operation, administration, and maintenance functions that support the subscriber and the operations support services like resource management per call, measurements, billing, and audits.



Optional modules of 8620 SurePay solution suite

Customer Care System (CCS)

CCS provides customer service and back-office solutions that meet a wide range of service provider needs such as subscriber provisioning, customer maintenance, system reports, reseller management, and billing data storage and archive.

Recharge Management System (RMS)

RMS supports all aspects of the recharge card (scratch cards or top-up cards) as well as the prepaid calling card life cycle. The card numbers are generated, manufactured, distributed, and eventually used or marked as expired through this system.

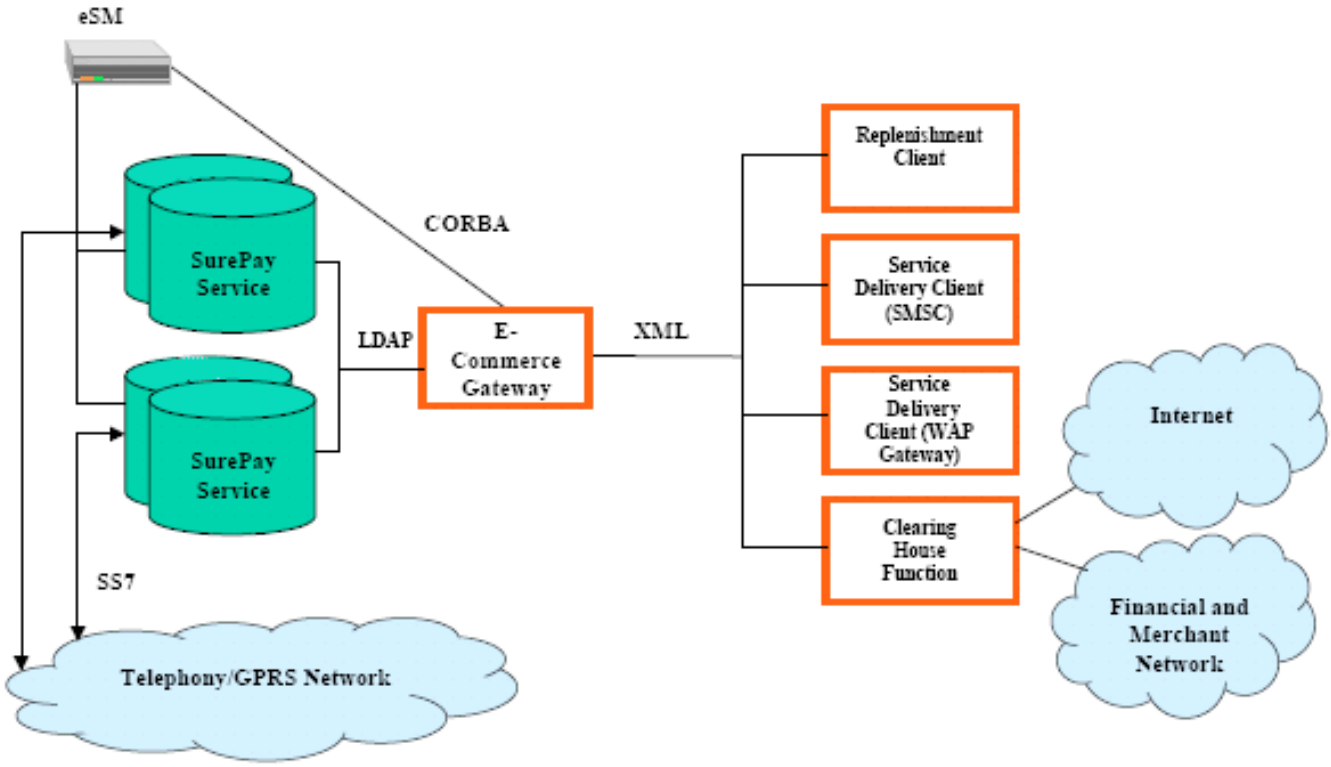
e-Commerce Gateway Server (eCGS)

eCGS provides a simpler way of recharge for credit, debit, and scratch cards. It provides a bridge between the SurePay solution and the third party applications by mapping the subscriber ID to the platform. The service provider can provide the option to the SurePay subscribers to use their SurePay account to pay for the online services. For example, movie tickets, books, recharge of accounts, and text messages.

eCGS interfaces with the following third party applications:

- Replenishment systems such as the Recharge Management System (RMS)
- Service delivery clients such as the Short Message Service Centre (SMSC) and Wireless Application Protocol (WAP)
- Third-party charging clients such as Amazon.com.

"e-Commerce Gateway Server (eCGS)" (p. 1-5) illustrates the role of eCGS within a network.

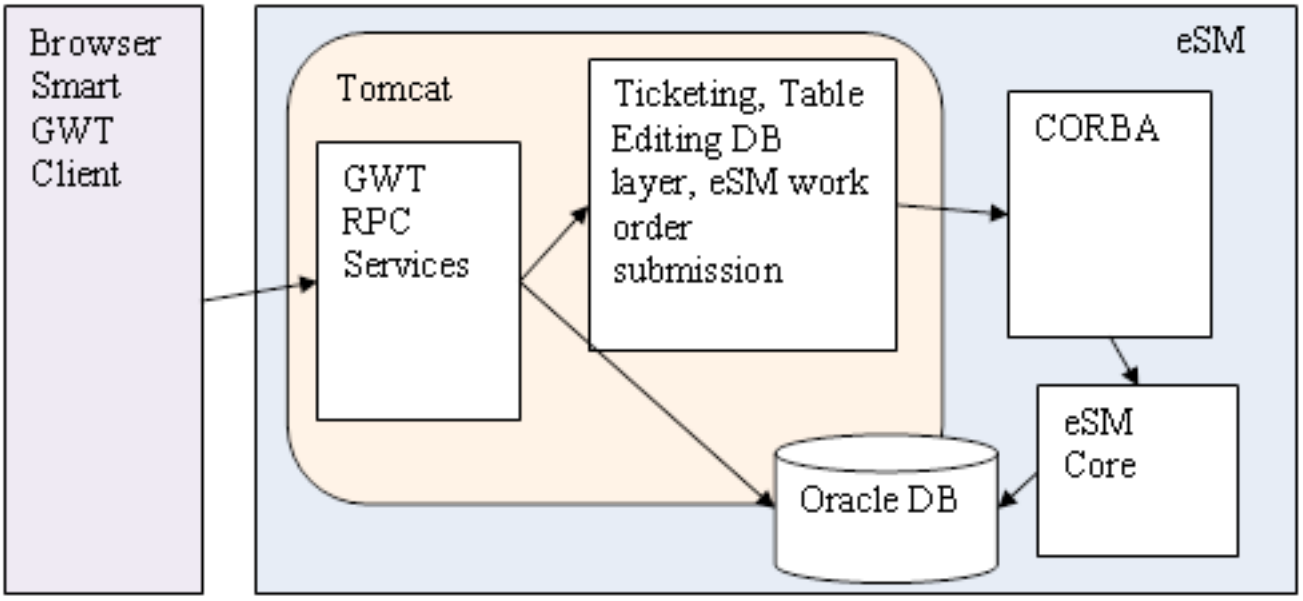


The enhanced Service Manager (eSM), the relevant platform, and SurePay operate together to provide the complete SurePay solution. The service provider can provision data on platform through eSM. The measurements, reports, and log files are sent from platform to eSM, which is viewable by the service provider.

Tariff Administration Tool (TAT)

TAT is a GUI based application that runs on the eSM platform and guides and supports the user in the creation and provisioning of SurePay tariff data, including Bundles, Tariff Plans, discounts, and other key supporting components used by the SurePay Rating Engine.

"Tariff Administration Tool (TAT)" (p. 1-6) illustrates the architecture of TAT within a network.



The TAT has a smart Google Web Toolkit (GWT) based GUI which gives a full featured user interface. Backend operations including eSM interactions, ticket and user management are done by GWT action triggers on server side. The Server runs in Tomcat, co-resident with eSM. This allows it to use internal CORBA APIs to eSM core and uses the eSM database.

8620 SurePay OCS Components

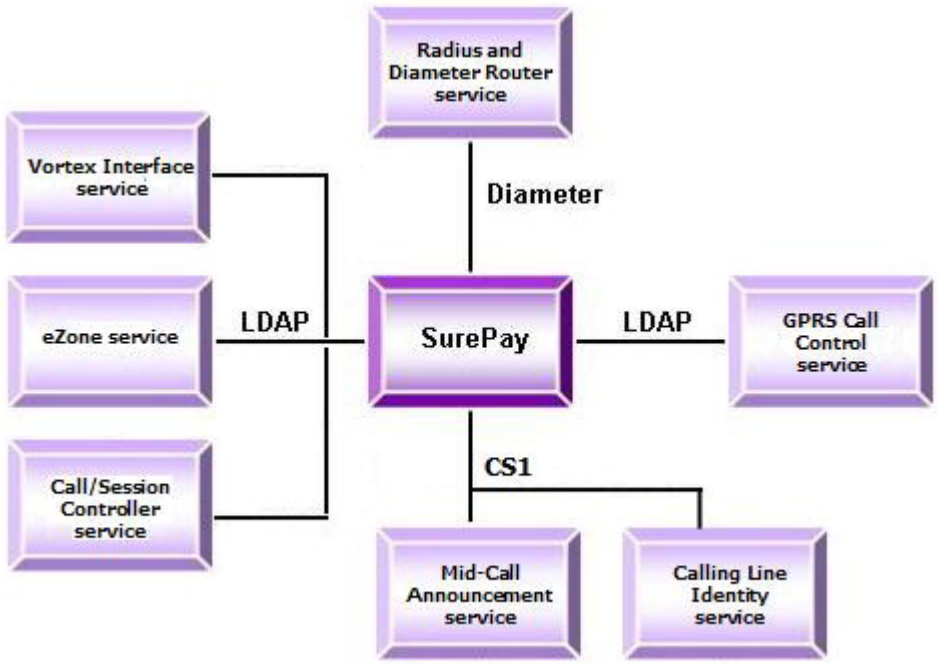
8620 SurePay complementary modules

Purpose

This topic describes the complementary modules of 8620 SurePay solution suite.

Figure 1-1, “8620 SurePay complementary modules” (p. 1-7) illustrates the interfaces between 8620 SurePay and its complementary modules, explained in the following sections.

Figure 1-1 8620 SurePay complementary modules



GPRS Call Control service

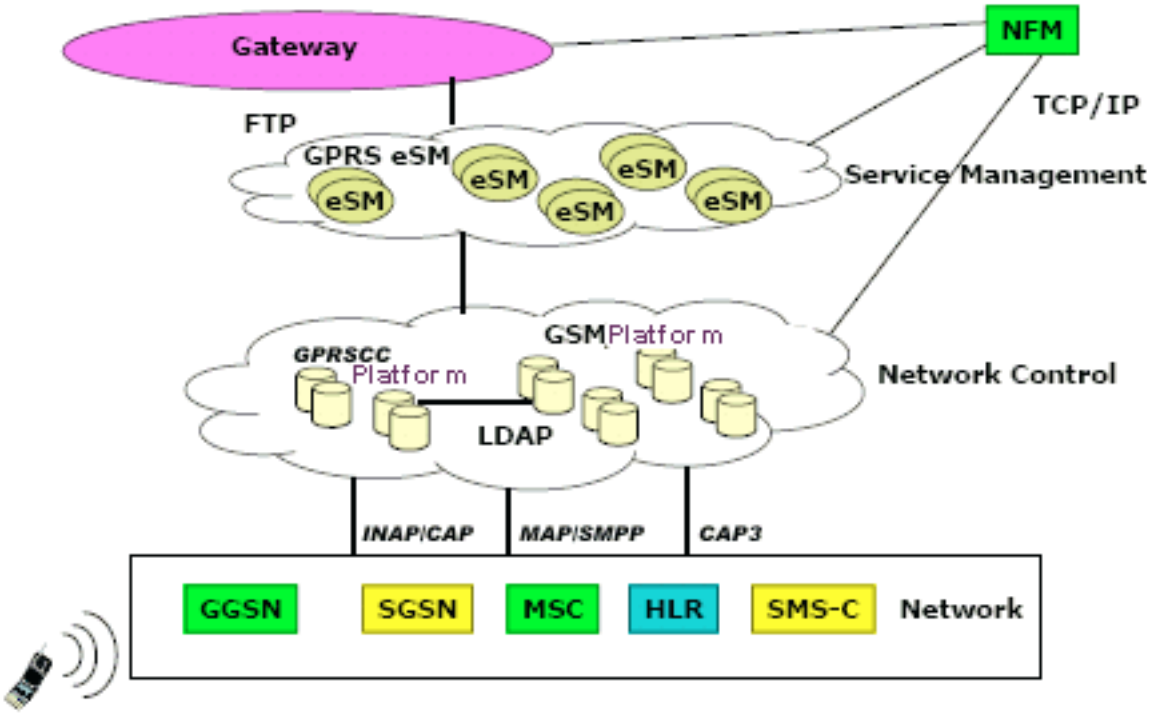
8620 SurePay solution provides prepaid and postpaid charging and call control functionality for UMTS and GPRS networks. The GPRS and UMTS sessions are charged based on different criteria. This functionality resides on a separate SPA known as the GPRS Call Control (GPRSCC) SPA. The GPRSCC SPA is a key node in the SurePay solution suite to provide the functionality of call control and rating for GPRS data calls.

This SPA provides the capability for call handling, signaling to the GPRS network and the SurePay SPAs, protocol adaptation, and provides a front-end interface to the GPRS network.

The Call Control SPA handles GPRS IN prepaid service interactions with the GPRS core network. The tariff and rating engine resides on the SurePay SPAs. The subscriber balance is stored on the platform on the server side with a record of all the current calls in progress. The server platform, upon request from the client platform, allocates credit from the subscriber's balance. A network protocol independent interface performs the rating and screening for the GPRS calls. This interface is implemented using LDAP over TCP/IP protocol.

Figure 1-2, “GPRS architecture topology” (p. 1-8) illustrates the role of the GPRSCC SPA within a network.

Figure 1-2 GPRS architecture topology



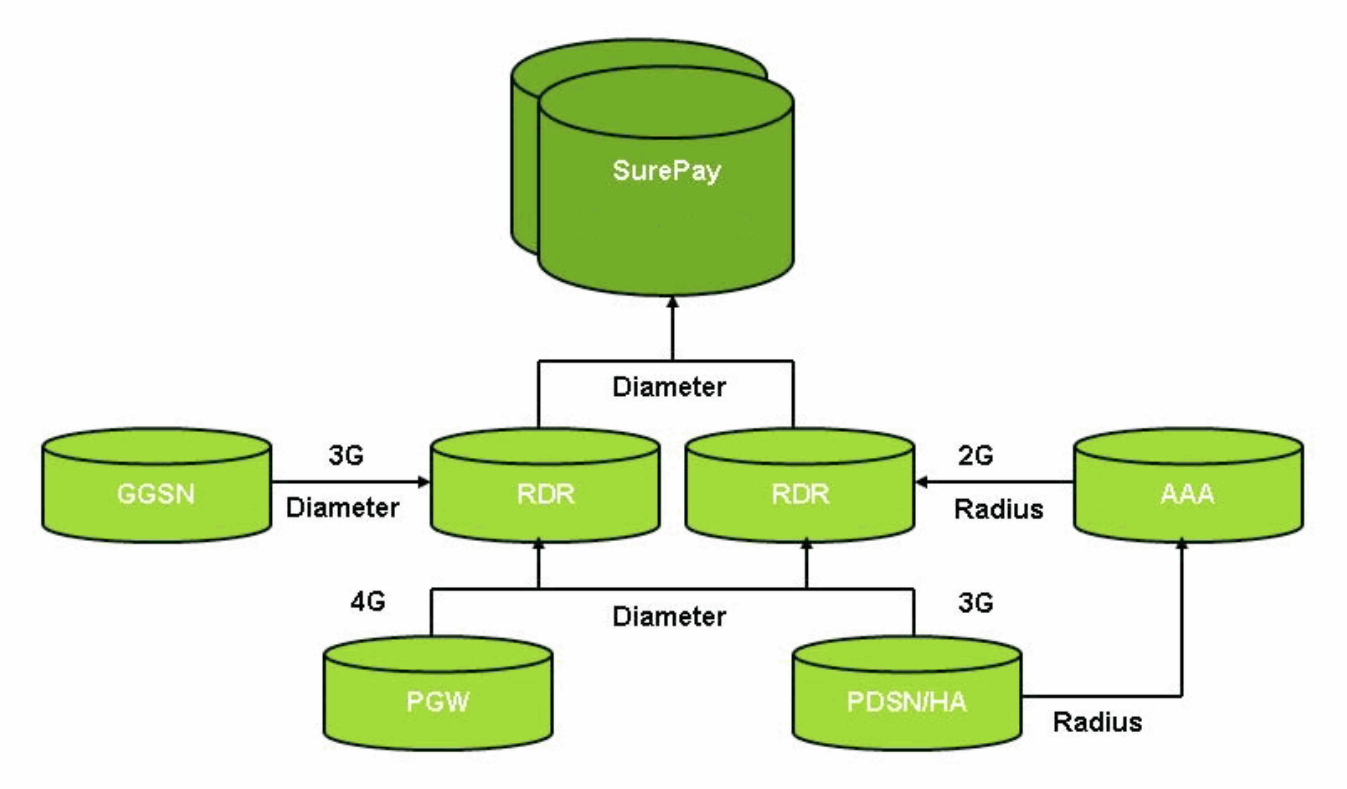
Radius and Diameter Router service

The Radius and Diameter Router (RDR) service is a gateway to access the SurePay rating and charging capabilities. This service is a Diameter agent, which acts as a proxy router at the application level. The Diameter Credit Control Application (DCCA) message routing

capability authorizes and maintains the connection initiated from the client side. It routes Diameter messages by searching local database at the application level. The router also initiates and maintains connections with the servers.

Figure 1-3, “RDR service” (p. 1-9) illustrates the function of the RDR service.

Figure 1-3 RDR service



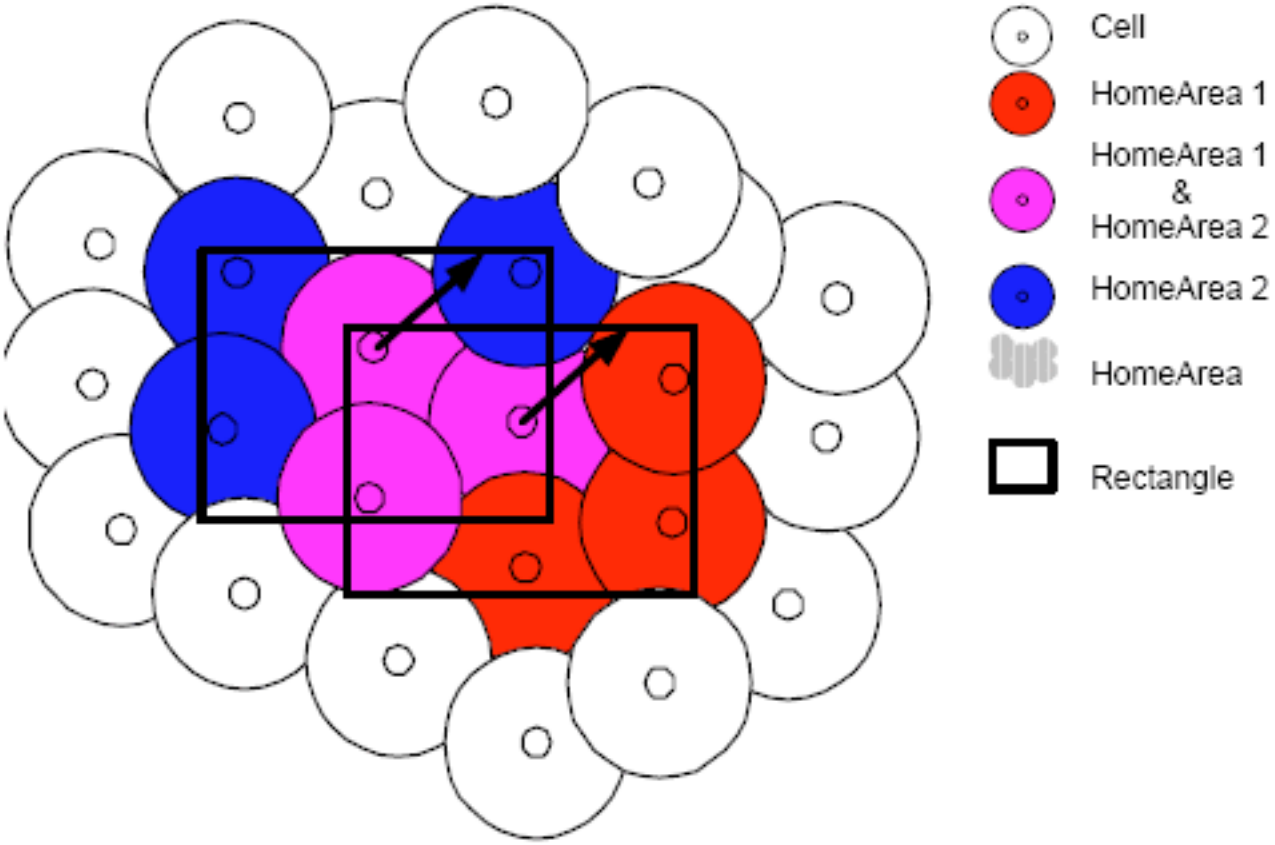
eZone service

The eZone service addresses the need for location-based call screening and call routing functionality for a subscriber. The core functionality of the service includes location information retrieval for the subscriber and location-based outgoing call and incoming call screening. It handles all the external interfaces to the location servers such as the HLR.

A home area is created by combining neighboring cells in the network. If the cells are located within the predefined rectangle, then they belong to the same home area. The home areas form the geographical basis for the location screening. The location information of the subscriber is retrieved from the Initial Detection Point (IDP) message for outgoing call and from the HLR through ATI query for incoming call. The eZone service is a separate SPA that runs on the platform with supporting data at the global and the subscriber level. The application communicates using an internal LDAP interface.

Figure 1-4, “Definition of HomeAreas” (p. 1-10) illustrates the location-based service.

Figure 1-4 Definition of HomeAreas



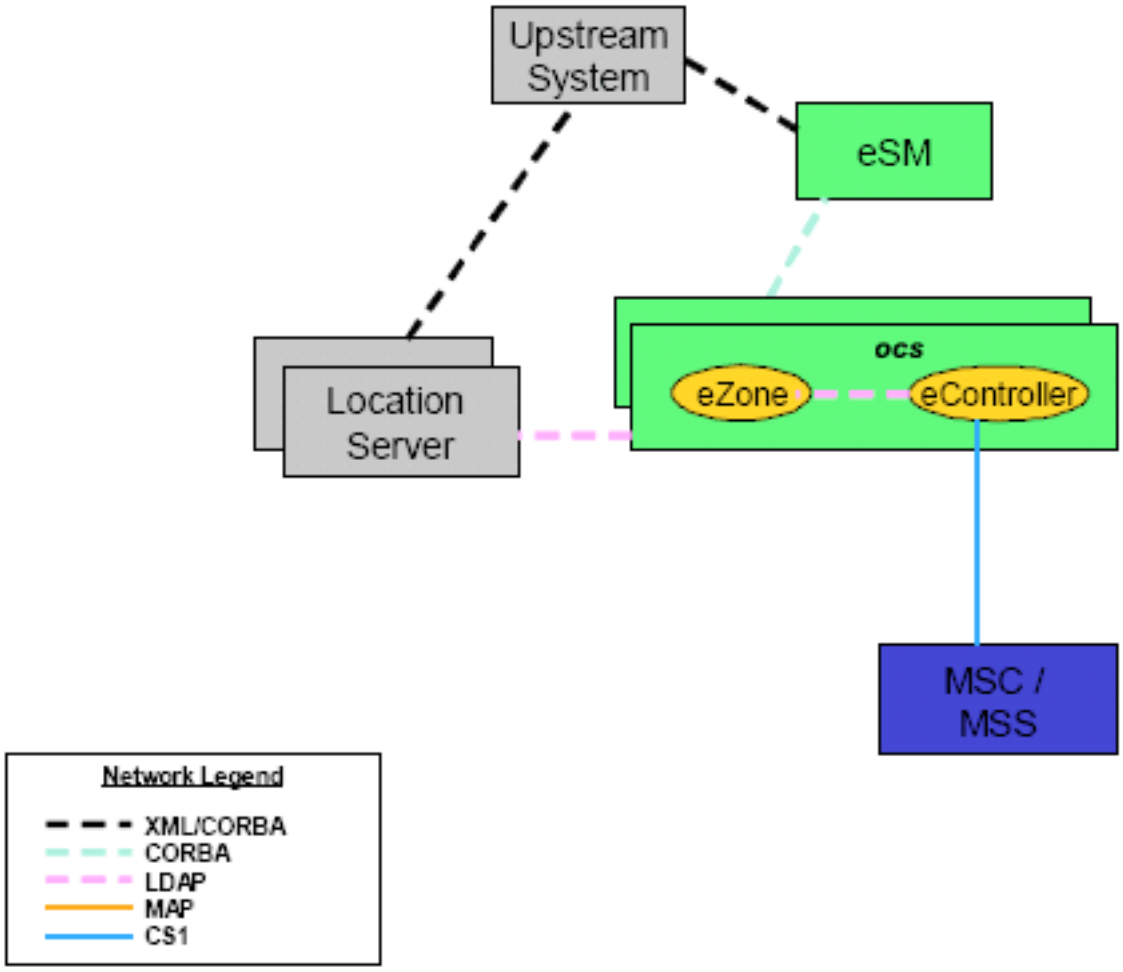
Call/Session Controller service

The Call/Session Controller (eCtrl) service supports the basic voice call flow. The eCtrl service manages the voice call control interfaces to the signaling network, receives CS1 triggers from the MSC and handles the required CS1 signaling interactions. The implementation of the call flow includes CS1/CAP2/IS-826 protocol support, incoming, outgoing, and third party call, call forwarding, voice mail access and vacant code handling.

One of the major functionality of the eCtrl SPA is to provide flexible IVR service. Using the generic LDAP interface, eCtrl acts as an IVR server for SurePay. This functionality further enhances the generic LDAP interface on SurePay to support IMOM commands and subscriber profile change over the LDAP interface.

Figure 1-5, “eCtrl and eZone service network configuration” (p. 1-11) illustrates the network configuration for the eCtrl and the eZone service.

Figure 1-5 eCtrl and eZone service network configuration



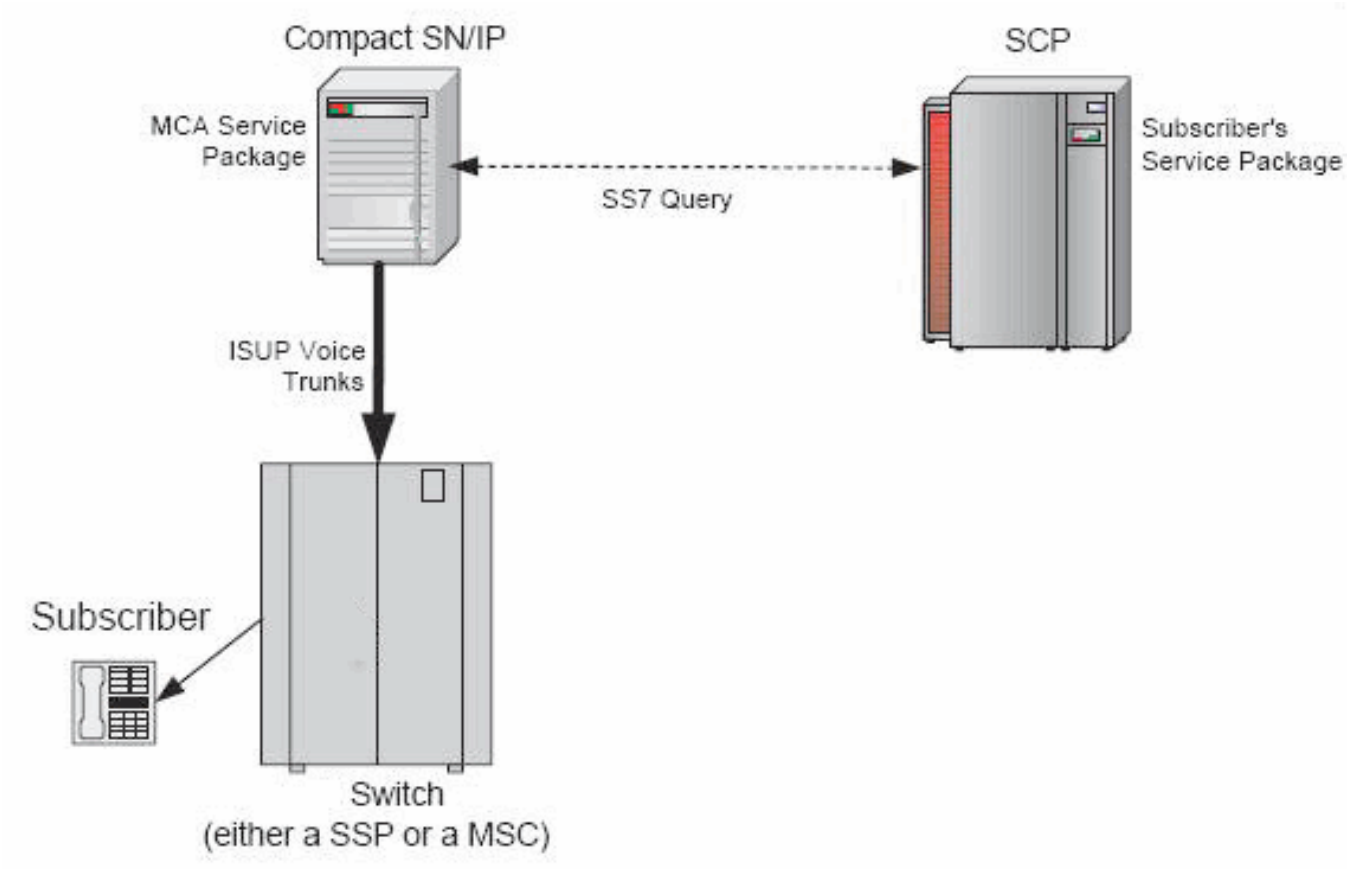
Mid-Call Announcement service

The Mid-Call Announcement (MCA) service allows an announcement to be played to a subscriber while the subscriber has a call in progress. This announcement is used to alert a subscriber that their prepaid calling time will expire within a short period. The MCA service requires another service to request that a message be played. The MCA service does not play announcements without a request from another service. Each subscriber should be configured with the call waiting feature in order to receive this announcement.

The MCA service involves the following Intelligent Network (IN) platforms: Intelligent Network Switch (IN Switch), which is an SSP or a Mobile Switching Center (MSC), Service Control Point (SCP) and a Compact Service Node/Intelligent Peripheral (Compact SN/IP).

Figure 1-6, "MCA service network configuration" (p. 1-12) illustrates the network configuration for the MCA service.

Figure 1-6 MCA service network configuration

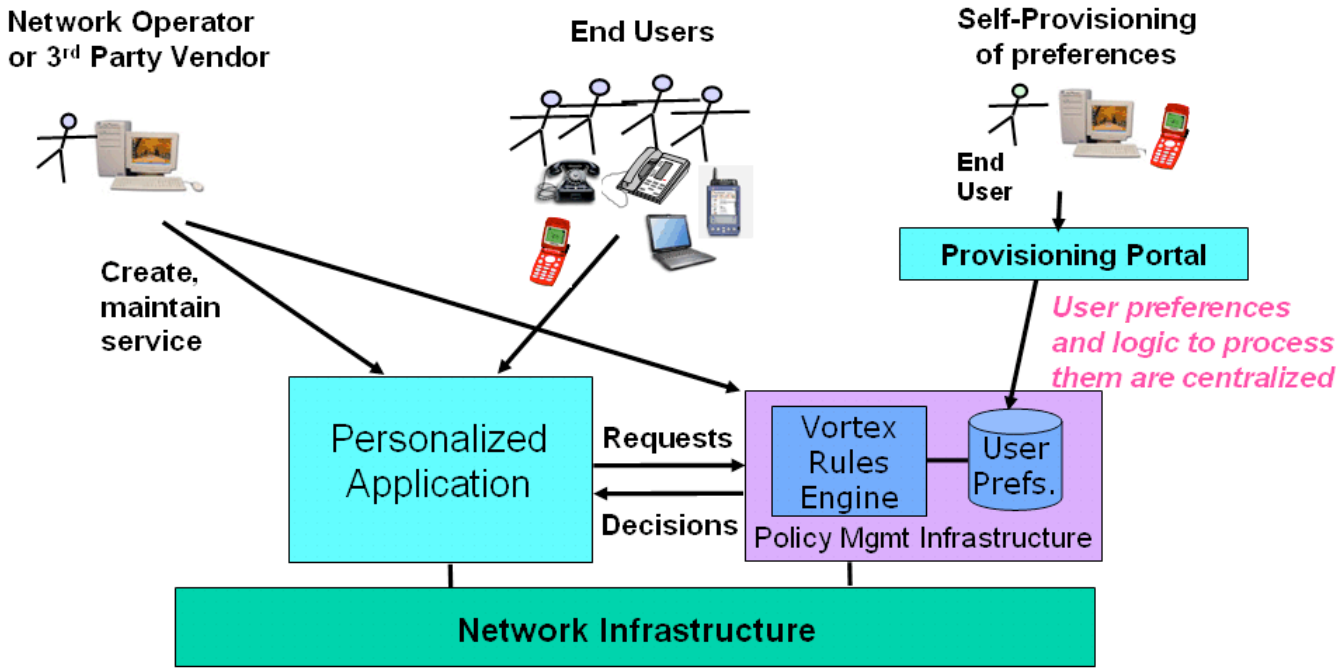


Vortex Interface service

The Vortex Interface SPA (VISPA) is a service, which runs on the platform. This SPA is independent of SurePay and does not use common SurePay network data. This SPA supports policy management infrastructure and provides the following mechanisms:

- A rules language appropriate for customization and enablement of telecom services
- A fast, centralized rules engine
- A rules editor for creating the rules

Vortex provides a mechanism for personalization to the subscriber. For example, location privacy for location-based services. Vortex also provides flexibility to the network operator. For example, quick incorporation of new pricing policies and promotions in billing.



See 8620 SurePay Service Customization guide for more information on the Vortex service.

Calling Line Identity service

The Calling Line Identity (CLI) service provides additional RTDBs for CLI-related functionalities such as CLI automatic blacklist and CLI-MSISDN attach and detach. The attach and access or update for CLI RTDB is performed in the EPPSM SPA and these RTDBs are regarded as one separate service for eSM provisioning. Thus, the CLI SPA enables eSM to operate these RTDBs as a single service. CLI SPA and EPPSM SPA are co-located in order to use the CLI-related functionality.

8620 SurePay supplementary modules

Purpose

This topic describes the 8620 SurePay supplementary modules that function in a supporting capacity to SurePay. They are the Dummy service, the Default service, and the Public tables service.

Dummy service

The Dummy service acts as an interface for subscriber profile provisioning. If the Radius Diameter Router (RDR) SPA is used, SurePay provides a new interface for the Diameter subscriber profile provisioning. The Dummy SPA maintains the ROUTSIM RTDB for eSM RTDB provisioning purpose without any functionality and RC data definition. It does not provide service features.

Default service

The Default service processes calls which cannot be processed by Service Switching Point (SSP). These calls normally arise from a mismatch in the setup between the switch and the network. This SPA applies the release call treatment as determined by parameters set during service provisioning and ensures that all the emergency calls are routed to the dialed number.

Public Tables service

The Public Tables service enables service providers to provision data that is common to a range of intelligent network services including SurePay, Advanced Routing Services (ARS) and Virtual Private Network (VPN). The Public Tables service consists of data, which provides functionality such as language labels and holiday dates. The Public Tables service is organized in the form of two SPAs, Network Common tables (NWTCOM) SPA and NetworkWireless tables (NWTGSM) SPA. These SPAs are installed and maintained on eSM and on each relevant platform, which runs the dependent services. It does not provide service features.

2 8620 SurePay documentation set overview

Overview

Purpose

This chapter provides a listing of all the documents, which are part of the 8620 SurePay documentation set.

Contents

Online Charging System (OCS)

Title of the Guide	IP Identifier	Purpose of the Guide	Audience
8620 SurePay® Documentation Set Overview Guide	270-735-105	This document describes the SurePay documentation set.	System administrators, marketing personnel, and technology development personnel
8620 SurePay® Software Update Guide	270-735-091	This document describes the new and enhanced features in a Software Update (SU) release. This guide provides end-to-end information for a feature including overview, use cases, data definition, call flow diagrams, and provisioning information.	System administrators and technology development personnel
8620 SurePay® Installation Guide	270-735-069	This document describes the installation procedures for the 8620 SurePay SPAs on the eSM, MAS, and MCAS platforms.	System administrators
8620 SurePay® User Guide	9YZ-05807-2812-PCZZA	This document describes the feature provisioning tasks within the SurePay solution. To provision a feature, the administrator should refer to this document and the Data Definition guide to understand the steps outlined for each procedure along with the corresponding provisioning data.	System administrators and technology development personnel
8620 SurePay® Maintenance and Troubleshooting Guide	270-735-067	This document describes the maintenance and troubleshooting information for the SurePay solution.	System administrators and technology development personnel
8620 SurePay® Volume 1. Data Definition Guide	270-735-068	This document provides detailed description of the tables and fields for SurePay feature provisioning. This document lists the data included in Audit (EPPSA), EPPSM, and NWTPPS SPAs along with the fields and value range for each field.	System administrators and technology development personnel

Title of the Guide	IP Identifier	Purpose of the Guide	Audience
8620 SurePay® Volume 2. Data Definition Guide	270-735-068	This document provides detailed description of the tables and fields for SurePay feature provisioning. This document lists the data included in the CLI, SUREPAY, UCA, VISPA, and CDRPP SPAs along with the fields and value range for each field.	System administrators and technology development personnel
8620 SurePay® Public Tables Operations, Administration, and Maintenance Guide	270-735-071	This document is the operations, administration, and maintenance (OA&M) manual for the Public Tables service.	System administrators
8620 SurePay® GPRS Call Control/Diameter Router/LDAP/Dummy Services Operations, Administration, and Maintenance Guide	270-735-070	This document is the Operations, Administration and Maintenance (OA&M) manual for the following Service Package Applications (SPAs): GPRS Call Control (GPRSCC), D-router, L-router, and Dummy (DUMMY). It also contains data tables for D-router, L-router, GPRSCC, and Dummy services.	System administrators
8620 SurePay® Default Service Package Application Operations, Administration, and Maintenance Guide	270-735-087	This document is the operations, administration, and maintenance (OA&M) manual for the Default SPA service.	System administrators
8620 SurePay® Call/Session Controller Operations, Administration, and Maintenance Guide	270-735-090	This document is the operations, administration, and maintenance (OA&M) manual for the Call/Session Controller service.	System administrators

Title of the Guide	IP Identifier	Purpose of the Guide	Audience
8620 SurePay® Service Customization Guide	270-735-073	This document describes Decision Graph (DG) and Vortex information.	System administrators
8620 SurePay® Capability Handbook	270-735-075	This document describes the functionality of Alcatel-Lucent SurePay. This document describes what the service does rather than how it does.	Marketing personnel, system administrators, and technology development personnel
8620 SurePay® CDR/EDR Specification	270-735-076	This document describes the AMA structure, AMA fields, event labels, event result, the relationship scenarios, and fields.	System administrators
8620 SurePay® Open Rating Interface	270-735-077	This document describes the open rating interface when SurePay is used as Diameter Credit Control Server.	System administrators
8620 SurePay® External RCMS Interface Specification	270-735-078	This document describes the RMS/RCMS recharge interface.	System administrators
8620 SurePay® LDAP Interface Specification	270-735-079	This document describes the Lightweight Directory Access Protocol (LDAP) interface to the SurePay solution implemented on the MAS platform. This document also includes a specification of the LDAP interface required to be supported by the server system.	System administrators
8620 SurePay® TCP/IP Interface Specification	270-735-080	This document describes the TCP/IP interface information.	System administrators
8620 SurePay® SMPP Interface Specification	270-735-081	This document describes the implementation of the Short Message Peer to Peer (SMPP) protocol for the SurePay solution.	System administrators

Title of the Guide	IP Identifier	Purpose of the Guide	Audience
8620 SurePay® Service Interface Specification for Upstream Provisioning System	270-735-083	This document describes the data that the upstream system can send to the eSM using the eSM CORBA interface for the following transactions: • Insertion of new subscribers • Deletion of existing subscribers • Query subscriber data • Update subscriber data • Query and provisioning of SIM Special Destination Numbers • Execution of service commands available	Application developers
8620 SurePay® Performance Engineering Guideline	270-735-086	This document describes the service performance characteristics and the impact of this service on the various MAS resources.	System administrators
8620 SurePay® Performance Engineering Guideline on mCAS (ATCA & HP RMS)	270-735-106	This document describes the service performance characteristics and the impact of this service on the various ATCA and HP RMS resources.	System administrators
8620 SurePay® OCS Alarms Dictionary	9YZ-05807-2811-QEZZA	This document describes the alarms triggered on OCS.	System administrators
8620 SurePay® RDR Alarms Dictionary	9YZ-05807-R812-QEZZA	This document describes the alarms triggered on DRouter.	System administrators
8620 SurePay® CDR File Format for Offline Charging (CDRPP)	9YZ-05807-2812-RQZZA	This document describes the CDR file format used in CDRPP module of SurePay OCS product.	System administrators

Customer Care System (CCS)

Name	IP ID	Purpose	Audience
8620 SurePay® Customer Care System (CCS) Operations, Administration, and Maintenance Manual	270-725-067	This document describes how to install, configure, and use Alcatel-Lucent Technologies' 8620 SurePay® Customer Care System (CCS). 8620 SurePay® CCS supports the Customer Care accesses, adjusts, and reports subscriber data in conjunction with the Alcatel-Lucent 8620 SurePay® Online Charging System (OCS) service.	Customer care personnel, system administrators, and technology development personnel
8620 SurePay® Customer Care System (CCS) Difference Summary	270-725-068	This document provides feature information to help Alcatel-Lucent Intelligent Network (IN) customers plan for the implementation and migration to SurePay® Customer Care System (CCS).	Marketing personnel, system administrators, and technology development personnel
8620 SurePay® CCS Performance Engineering Guidelines	270-725-069	This document summarizes the software architecture, strategy, key variables involved in SurePay® CCS performance and capacity testing and tuning to support more services. It also includes the performance and capacity testing results for current SurePay® CCS release.	System administrators and technology development personnel

Recharge Management System (RMS)

Name	IP ID	Purpose	Audience
8620 SurePay® Recharge Management System (RMS) Operations, Administration and Maintenance Manual	270-725-071	This document describes the installation, configuration, and use of the Alcatel-Lucent Technologies SurePay® Recharge Management System (RMS). SurePay® RMS supports the use and management of recharge cards in conjunction with the Alcatel-Lucent SurePay® OCS Service.	System administrators and technology development personnel
8620 SurePay® Recharge Management System (RMS) Difference Document	270-725-072	This document provides feature information to help Alcatel-Lucent Technologies Intelligent Network (IN) customers plan for the implementation and migration to SurePay® Recharge Management System (RMS).	Marketing personnel, system administrators, and technology development personnel
8620 SurePay® RMS Performance Engineering Guidelines	270-725-073	This document provides a detailed description of the critical resource constraints, the engineering limits, and the recommended configuration of the SurePay® RMS system. The intent is not to provide a detailed step-by-step monitoring procedure guideline but rather an overview of major issues involved in performance testing and in engineering the system.	System administrators, and technology development personnel

Name	IP ID	Purpose	Audience
8620 SurePay® RMS Customer Application Interface Specification	270-725-074	This document provides the specification of SurePay® RMS customer application interface for external system.	Application developers, system administrators, and technology development personnel

e-Commerce Gateway Server (eCGS)

Name	IP ID	Purpose	Audience
8620 SurePay® e-Commerce Gateway Server (eCGS) Operations, Administration and Maintenance Manual	270-725-062	This document describes the installation, configuration, and usage of Alcatel-Lucent SurePay® e-Commerce Gateway application.	System administrators and technology development personnel
8620 SurePay® e-Commerce Gateway Server (eCGS) Software Update Guide	270-725-093	This document provides new and enhanced feature information in a software update release.	Marketing personnel, system administrators, and technology development personnel
8620 SurePay® eCGS XML Interface Specification	270-725-064	This document defines the client interface to 8620 SurePay® eCGS. This document provides the XML DTD used by the service as well as a description of the XML structures, relationships, and expected data formats. It also covers the HTTP request and response syntax, backwards compatibility, and gives guidelines for client development. It provides examples of each type of transaction supported by eCGS.	Application developers and technology development personnel

Name	IP ID	Purpose	Audience
8620 SurePay® eCGS Performance Engineering Guideline	270-725-065	This document provides a detail description of the critical resource constraints, the engineering limits, and the recommended configuration for 8620 SurePay® eCGS. This document summarizes the software architecture, strategy, key variables involved in eCGS performance and capacity testing and tuning to support more services. It also includes the performance and capacity testing results for current eCGS release.	System administrators and technology development personnel

Tariff Administration Tool (TAT)

Name	IP ID	Purpose	Audience
8620 SurePay® Tariff Administration Tool (TAT) Operations, Administration, Maintenance, and Provisioning Guide.	9YZ-05807-0289-TNZZA	This document provides information on the installation, provisioning, and maintenance of Alcatel-Lucent 8620 SurePay® Tariff Administration Tool (TAT).	Engineers, technicians, and system administrators who perform configuration and administration tasks for the Alcatel-Lucent 8620 SurePay® Tariff Administration Tool.
8620 SurePay® Tariff Administration Tool (TAT) Cookbook	9YZ-05807-2812-DMZZA	The TAT Cookbook provides an overview of the different marketing campaigns that can be created using the TAT. Marketing campaigns are the promotions offered to the subscribers by the service providers. The cookbook explains the elements of tariff plans such as promotions, bonus, bundles, buckets, and discounts and the different ways to configure them on the TAT.	The intended audience of this cookbook include marketing personnel who want to gain an understanding of the different marketing campaigns that can be created using the SurePay service. This cookbook requires the marketing personnel to have a basic knowledge of the SurePay service.