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INTERNET-DRAFT

Brian Bidulock
OpenSS7 Corporation

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Session Identification Registration (SESSID)
for
Signalling User Adaptation Layers
<draft-bidulock-sigtran-regext-00.ps>

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Abstract

This memo describes **Registration Extensions** that provides the ability for an Application Server Process (ASP) to modify existing Routing Keys (RKs) with a Signalling Gateway (SG).

Current procedures in the SS7 Signalling User Adaptation Layers (UAs) do not provide for the modification of Routing Keys (RKs) without deactivation of the Application Server (AS). This causes problems in making changes to live systems.

The extensions described in this memo permit modification of Signalling Link membership in Application Servers for SS7 MTP2-User Adaptation Layer [M2UA], modification of Circuit Identification Code (CIC) ranges for the SS7 MTP3-User Adaptation Layer [M3UA], modificiation of Destination Local Reference (DLR) ranges for SS7 SCCP-User Adaptation Layer [SUA], and modification of Transaction Identifier (TID) ranges for SS7 TCAP-User Adaptation Layer [TUA].

1. Introduction

1.1. Scope

This Internet-Draft provides parameters and procedures in extension to the parameters and procedures of the SS7 Signalling User Adaptation Layers (UAs) [M2UA, M3UA, SUA, TUA], for the purpose of supporting changed to Routing Keys to be made in live systems.

UA implementations with *REGEXT* are intended to be compatible with UA implementations not supporting this extension.

1.2. Terminology

REGEXT adds the following terms to the terminology presented in the UA documents:

Registration Extension – The parameters and procedures described by this memo.

Signalling Peer Process – refers to an ASP, SGP or IPSP.

Signalling User Adaptation Layer (UA) – one or more of the Stream Control Transmission Protocol (SCTP) [RFC 2960] SS7 Signalling User Adaptation Layers [M2UA, M3UA, SUA, TUA] supporting Registration.

1.3. Overview

Existing registration mangement procedures do not provide for the alteration of Routing Keys on live systems. This can lead to significant operational difficulties in large scale deployments. This memo provides extension procedures that permit this modification.

1.3.1. Limitations of Existing Registration Management

Each of the UAs [M2UA, M3UA, SUA, TUA] provides procedures for registration and deregistration of Routing (Link) Keys. None of these procedures currently provides for alteration of Routing Keys for a Application Server (AS) in the active state.

In SS7 MTP2-User Adaptation Layer [M2UA] registration of a Link Key associates a signalling link with an Interface Identifier (IID). However, registration does not provide a mechanism for associating groups of Interface Identifiers (IID) together into Application Servers (AS), nor does it provide a mechanism for altering the membership of signalling links associated with an Application Server.

The SS7 MTP3-User Adaptation Layer [M3UA] registration of a Routing Key associates a range of tranffic with an Application Server through a Routing Context. However, it does not provide procedures for changing the range of traffic associated with an Application Server and Routing Context without deactivating the Application Server and deregistering the Routing Key. This can cause difficulties when M3UA is used in support of ISUP MTP3-Users where normal circuit management expects to add and remove specific circuits or ranges of circuits (circuit groups) to and from Application Servers.

The SS7 SCCP-User Adaptation Layer [SUA] registration of a Routing Key associates a range of traffic with an Application Server through a Routing Context and the Address Mapping Fucntion. However, it does not provide procedures for changing the range of traffic associated with an Application Server and Routing Context without deactivating the Application Server and deregistering the Routing Key. This can cause difficulties when SUA is used in the connection-oriented environment and the ASP wishes to dynamically assign connections to Application Servers.

The SS7 TCAP-User Adapatation Layer [TUA] registration of a Routing Key associates a range of traffic wtih an Application Server through a Routing Context and the Transaction Mapping Function. However, it does not provide procedures for changing the range of traffic associated with an Application Server and Routing Context without deactivating the Application Server and deregistering the Routing Key. This can cause difficulties when TUA is used in operations class 1, 2 and 3 (dialogues) and the ASP wishes to dynamically assign dialogues to Application Servers.

1.3.2. Registration Extension

This memo provides extensions for the UA registration and dregistration procedures which addresses these limitations in the existing prcoedures. *REGEXT* provide the following

1.3.2.1. M2UA

1.3.2.2. M3UA

1.3.2.3. SUA

1.3.2.4. TUA

2. Conventions

The keywords **MUST**, **MUST NOT**, **REQUIRED**, **SHALL**, **SHALL NOT, SHOULD**, **SHOULD NOT**, **RECOMMENDED**, **NOT RECOMMENDED**, **MAY**, and **OPTIONAL**, when they appear in this document, are to be interpreted as described in [RFC 2119].

3. Protocol Elements

The following subsections describe the parameters which are added or whose use is modified by this extension, their format and the messages in which they are used.

3.1. Parameters

Registration Extensions does not add any new parameters, but permits the use of the *Routing Context* parameter within a *Routing Key* parameter. It also allows the use of the *Routing Key* parameter within a *DEREG REQ* message.

3.1.1. Routing Key

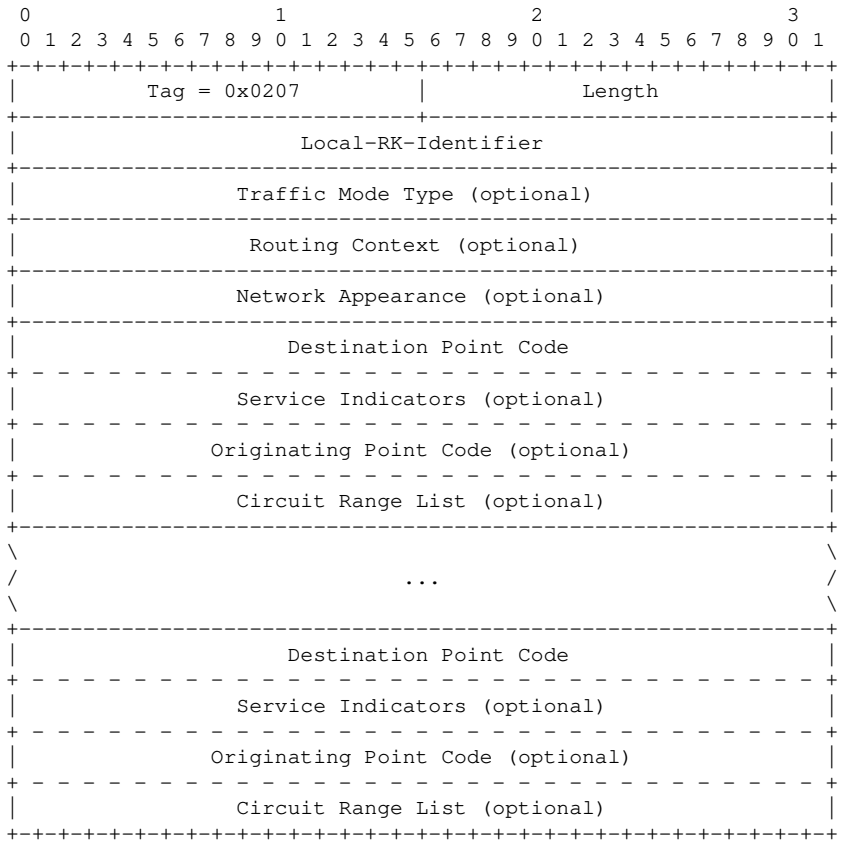
REGEXT augments the *Link Key* parameter of M2UA [M2UA] and the *Routing Key* parameters of M3UA, SUA, and TUA [M3UA, SUA, TUA].

3.1.1.1. M2UA Link Key

3.1.1.2. M3UA Routing Key

The *Routing Key* parameter is used in the *REG REQ* and *DEREG REQ* messages. It is used to identify the portion of traffic for which an ASP is registering or deregistering.

The *Routing Key* parameter is formatted as follows:

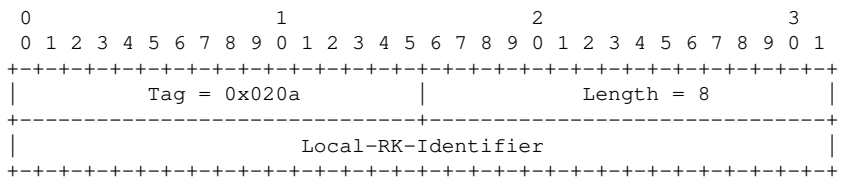


The *Routing Key* parameter contains the following sub-parameters:

Local-RK-Identifier parameter: TLV

The mandatory Locak-RK-Identifier parameter is used to uniquely identify the registration request. The Local-RK-Identifier value is assigned by the ASP, and is used to correlate the response in an REG RSP message with the original registration request. THe Locak-RK-Identifier value must remain unique until the REG RSP message is received.

The format of the Local-RK-Identifier is as follows:



3.1.1.3. SUA Routing Key

3.1.1.4. TUA Routing Key

Routing Key

3.2. Messages

4. Procedures

4.1. Regsitration

4.1.1. Registration Procedures

4.1.2. Deregistration Procedures

4.2. AS and ASP State Maintenance

4.2.1. ASP State

4.2.2. AS State

4.2.3. ASP Up Procedures

4.2.4. ASP Down Procedures

4.2.5. ASP Active Procedures

4.2.6. ASP Inactive Procedures

4.2.7. Notify Procedures

5. Examples

6. Security

7. IANA Considerations

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Notes

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Author's Addresses

Brian Bidulock
OpenSS7 Corporation
4701 Preston Park Boulevard
Suite 424
Plano, TX 75093
USA

Phone: +1-972-839-4489
Email: bidulock@openss7.org
URL: http//www.openss7.org/

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