OsmoSTP - Feature #4218

dynamic IPA ASPs

10/08/2019 03:00 PM - laforge

Status: Closed
Priority: Urgent
Assignee: pespin

Start date: 10/09/2019
Due date: 10/09/2019
% Done: 100%

Description

The traditional way of configuring ASP (Application Server Processes) in an STP/ITP, including osmo-stp is to manually / statically configure them in the configuration system. This doesn’t easily scale.

osmo-stp already implements some parts of dynamic ASP creation for the M3UA protocol by means of extending M3UA RKM (Routing Key Management).

This feature seeks to implement dynamic ASPs using the IPA/SCCP-lite protocol. The key question is how to identify/map a given incoming IPA connection (treated internally like a M3UA ASP) to a given AS. It is proposed to use the IPA CCM mechanism for this, so one of the UNIT_ID / SERIAL_NR tags exchanged at IPA connection setup can be used as a look-up key to find the AS to which this dynamic connection belongs.

Implementation of this feature will include

1. Detailed specification of mechanism to map incoming IPA connection to AS
2. Implementation of auto-creating dynamic ASPs on incoming IPA connection
3. Implementation of automatic test cases in TTCN-3

Related issues:

Follows OsmoSTP - Feature #4220: osmo_ss7: support traffic-mode load-share

Closed 10/08/2019

History

#1 - 10/18/2019 09:12 PM - laforge

some updates

- the lookup of the AS is already done in ipa_asp_fsm_wait_id_resp(), and the “IPA CCM unit name” is used as look-up key for the AS name

   DLSS7 <000c> ipa.c:103 IPA_ASP(asp-dyn-3) [WAIT_ID_RESP]: Received Event IPA_CCM_ID_RESP
   DLSS7 <000c> osmo_ss7.c:1022 0: Adding ASP asp-dyn-3 to AS mahlzeit

- we already create dynamic ASPs within that AS after such a look-up, they are called "asp-dyn-NR" where NR is an incrementing integer

OsmoSTP# show cs7 instance 0 asp

<table>
<thead>
<tr>
<th>ASP Name</th>
<th>AS Name</th>
<th>State</th>
<th>Type</th>
<th>Rmt Port</th>
<th>Remote IP Addr</th>
<th>SCTP</th>
</tr>
</thead>
<tbody>
<tr>
<td>asp-dyn-3</td>
<td>?</td>
<td>WAIT_ID_ACK2</td>
<td>ipa</td>
<td>20000</td>
<td>127.0.0.1</td>
<td></td>
</tr>
<tr>
<td>asp-dyn-4</td>
<td>?</td>
<td>WAIT_ID_ACK2</td>
<td>ipa</td>
<td>20001</td>
<td>127.0.0.1</td>
<td></td>
</tr>
<tr>
<td>asp-dyn-5</td>
<td>?</td>
<td>WAIT_ID_ACK2</td>
<td>ipa</td>
<td>20002</td>
<td>127.0.0.1</td>
<td></td>
</tr>
</tbody>
</table>

what is currently undefined is the behavior in presence of multiple IPA ASP for one AS. I think we should wait for this to work in M3UA (see #4220) and then re-visit this ticket.

#2 - 10/18/2019 09:12 PM - laforge

- Due date set to 10/09/2019
- Start date changed from 10/08/2019 to 10/09/2019
- Follows Feature #4220: osmo_ss7: support traffic-mode load-share added

#3 - 11/05/2019 04:48 PM - laforge

- Priority changed from Normal to Urgent

05/15/2020 1/2
I think this should already be working fine after last changes in osmo-stp and TTCN3.

May be worth adding a test in STP_Tests_IPA.ttcn similar to TC_tmt_override or TC_tmt_loadshare, but using ipa-as-dynamic-asp this time, similar to what TC_unknown_client_dynamic does.

yes, please take care of this so we can wrap this up.

Submitted following tests verifying everything's working fine:
STP_Tests_IPA.TC_unknown_client_dynamic_tmt_override
STP_Tests_IPA.TC_unknown_client_dynamic_tmt_loadshare

I also submitted a few osmo-stp patches with minor fixes/improvements in related code.
Once stuff from osmo-ttcn3-hacks.git (branch laforge/stp), docker-playground.git and libosmo-sccp.git are merged this ticket can be marked as resolved afaict.

all commits merged, tests pass. closing.