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**Handle Resolution Option for ASAP
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Abstract

This document describes the Handle Resolution option for the ASAP protocol.

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[1.](#) Introduction

Reliable Server Pooling defines protocols for providing highly available services. The Aggregate Server Access Protocol (ASAP) provides session management and server selection for applications. Upon request for a server selection -- denoted as handle resolution -- an ENRP server returns a list of selected PE identities. The number of PE identities to be returned is not specified by RSerPool. Furthermore the ASAP protocol does not contain a way for letting the requesting instance specify it.

As shown in [[Dre2006](#)], [[IJAIT2009](#)], [[IJHIT2008](#)], selecting too many entries does not make sense for the application, but on the other hand also result in significant processing and network overhead. Furthermore, it has been shown in [[LCN2005](#)] that the number of requested elements is usually 1, but there are application cases where more PE identities have to be returned. That is, there should be a possibility to specify the number of requested PE items upon a handle resolution.

[1.1.](#) Scope

The Handle Resolution option defined in this draft simply defines an option to let the PU-side specify the desired number of PE identities from the ENRP server.

1.2. Terminology

The terms are commonly identified in related work and can be found in the Aggregate Server Access Protocol and Endpoint Handlespace Redundancy Protocol Common Parameters document [RFC 5354](#) [[RFC5354](#)].

1.3. Conventions

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [[RFC2119](#)].

2. Handle Resolution Option

2.1. Definition

The Handle Resolution MAY be used once in an ASAP Handle Resolution message sent from a PU to an ENRP server. It is defined as follows.

```

      0               1               2               3
    0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
    +---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
    |           Type = 0x803f           |           Length=8           |
    +---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
    |                                     Items                             |
    +---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+

```

Items: 32 bits (unsigned integer)

Contains the number of PE identities to be selected by the ENRP server. Setting it to 0xffffffff denotes to obtain as many PE identities as possible. A setting of 0 denotes to use the ENRP server's default value; this default MUST be used if there is no Handle Resolution option given. The ENRP server SHOULD try to fulfil the request for the given number of items.

Note, that the high-order bits of the type field are set to 10, which means "skip this parameter and continue processing" if this parameter type is not supported by the ENRP server. This allows for interoperability with old implementations.

3. Reference Implementation

The RSerPool reference implementation RSPLIB can be found at [[RSerPool-Website](#)]. It supports the functionalities defined by [[RFC5351](#)], [[RFC5352](#)], [[RFC5353](#)], [[RFC5354](#)] and [[RFC5356](#)] as well as the options [[I-D.dreibholz-rserpool-delay](#)], [[I-D.dreibholz-rserpool-enrp-takeover](#)] and of course the option

defined by this document. An introduction to this implementation is provided in [[Dre2006](#)].

4. Testbed Platform

A large-scale and realistic Internet testbed platform with support for the multi-homing feature of the underlying SCTP protocol is NorNet. A description of NorNet is provided in [[PAMS2013-NorNet](#)], some further information can be found on the project website [[NorNet-Website](#)].

5. Security Considerations

Security considerations for RSerPool systems are described by [[RFC5355](#)].

6. IANA Considerations

This document does not require additional IANA actions beyond those already identified in the ENRP and ASAP protocol specifications.

7. Acknowledgments

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