HIP Registration Extensions draft-koponen-hip-registration-01.txt

Julien Laganier, Teemu Koponen, Lars Eggert,

HIP WG, 63rd IETF Paris, France

Monday, August 1st, 2005

HIP Registration Basics

- Primitively part of the Rendezvous extensions
 - Used by a client to register with its RVS
- Generic HIP registration procedure also useful for:
 - NAT/FW/Midbox Traversal
 - Hi3
 - Etc.

•Hence *split* registration protocol from RVS exts.

Registration Extensions Create a registration

- New parameters
 - REG_INFO
 - REG_REQUEST
 - REG_RESPONSE
 - REG_FAILED
- New message exchanges
 - Modified base exchange

or

- Updates to an existing association

Changes since -00 *Editorial*

- Clarified terminoloy
- Refactorized the document around three lines
 - Registrar Announcing its Abilities
 - Requester Requesting Registration
 - Registrar Granting and/or Refusing Service(s) Registration

Changes since -00 (cont'd) *Technical*

- Registrar can **grant** and **refuse** registration for different services
- Registration lifetimes encoded with exponents
 - 8-bit integer field interpreted as 2^((lifetime 64)/8)
- New requirements level for parameters processing:
 - The requester MUST NOT include more than one REG_REQUEST parameter, while the registrarMUST be able to processone or more REG_REQUEST
 - The registrar MUST NOT include more than one REG_RESPONSE parameter, while the requesterMUST be able to process one or more REG_REQUEST parameters.

Changes since -00 (cont'd) New Security Considerations

- Preserve HIP base exchange security
- Additional threat due to soft state creation, but:
 - Registrar acts on a voluntary basis (not forced to)
 - State created is time-limited
 - If too much state (e.g. registrar under DoS attack)
 - registration can be cancelled**unilateraly**

REG_INFO

0 1 2 3 01234567890123456789012345678901

type		length
Min lifetime	Max lifetime	Rg Type #1 Rg Type #2
• • •	Rg Type #n	
		padding

REG_{REQUEST | REPLY}

0 1 2 3 01234567890123456789012345678901 type length Lifetime Rg Type #1 Rg Type #2 Padding

REG_FAILED

0 1 2 3 01234567890123456789012345678901 type length failure type Rg Type #2 Rg Type #n padding

Establishing a Registration An association between requester and registrar

- Initiating a modified HIP base exchange:
 - *REG_INFO* added on R1
 - *REG_REQUEST* added on I2
 - *REG_RESPONSE* added on R2
 - Or later using an existing HIP association:
 - *REG_INFO* included in UPDATE
 - *REG_REQUEST* included in UPDATE
 - *REG_RESPONSE* included in UPDATE

Registration within the base exchange *Protocol sketch*



Late registration updating an association *Protocol sketch*



Next Steps

- Adopt as a WG item?
 - Needed for RVS operation