Address Management for IPv6 Transition

draft-sun-v6ops-openv6-address-pool-management-00

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Motivation

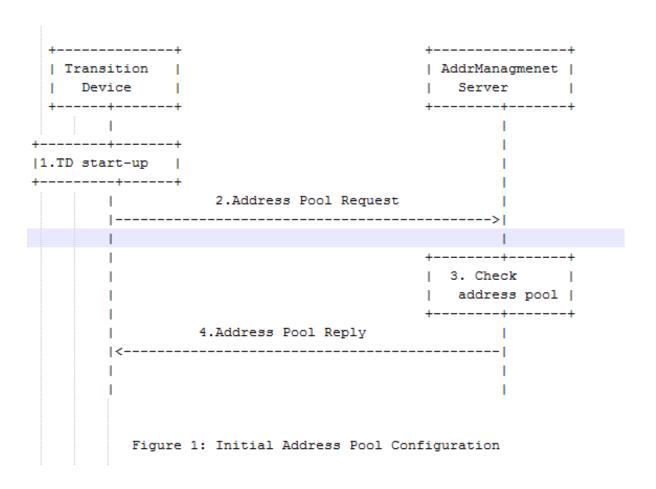
- Network address migration to IPv6 is ongoing or upcoming throughout the world due to the lack of IPv4 addresses.
 - It is quite complicated for a carrier to manage scattered address pools in many transition devices.
 - It will become worse when multiple transition mechanisms coexists with different address pools.
- The occupation of the address pools may vary during different transition periods.

How to manage the address pools more flexible?

Overall Procedure

- This mechanism consists of two components
 - Address Management Server
 - Transition Device
- Operators will configure remaining address pools centrally in the Address Management Server.
- Transition Device will initiate AddressPool request to the AMS. AMS lookups the remaining address pool in its local database. It will then allocate a set of address pools to the TD.
- If the lifetime of the address pool is going to expire, the TD should issue an AddressPoolRenew request to extend the lifetime.
- The AddressPoolReport module keeps monitoring and reports the current usage of the current address pools for each transition mechanism.

Initial Address Pool Configuration



Address Pool Status Report

```
Transition
                                               AddrManagmenet |
                                                  Server
     Device
|1.Monitor and
|count the status|
                 2.Address Pool Status Report
                                                 Record
                                                  address pool |
                4.Address Pool Report Confirm
```

Address Pool Status Query

+	+	++
Transition Device	 	AddrManagmenet Server
 	1.Address Pool Status Query	
+	+	
	3.Address Pool Status Report	 > ++ 4. Record
 	5.Address Pool Report Confirm	address pool +
		I I

Run Out of Address

+	+		+	+
Trans	ition		A	ddrManagmenet
_	ice			Server
+	++		+	+
	 +	_		
1.Addres				
not us	ed for a			i i
long	time			1
+	++ !	2.Address Pool Release Request	-	1
	' 	root keteuse keques		>
	l	-	+	+
	I			Update
	I			address pool
	l			database
	1 1 4	.Address Pool Release Notific		
	<			
+	+	-		T.
5. Reduce				1
addres	s pool	_		
	,, I	6.Address Pool Release Confi:	rm	
				>
	L			T.
	<u> </u>			T.
		Figure 4: Address Pool Releas	se	

Next Step

Suggestions, Comments?