



Update of ForCES LFB Library

<draft-ietf-forces-lfb-lib-03 >

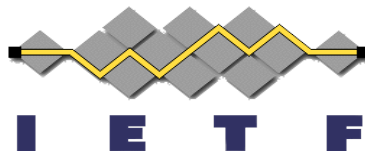
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Summary

- Draft Status
- Consensuses since Version 03
- Issues under discussions
- Next work



Draft Status

- Current Version 03, December 1, 2010
- Major updated contents since Version 02
 - XML definition: Unified the name of some LFB's components/elements.
 - Text: rewrote the overview and description of some LFBs
 - Major changes suggested by Jamal
- Update Version to be made soon
 - based on discussions and consensuses since version 03



Consensuses since Version 03 (1)

- Rewrite some text which Jamal has commented.
(Section 3)
 - Change the description for “Port LFB” by adding text (3.1 section):
 - Packets in an IP router are received and transmitted on physical media typically referred to as "ports".This document will also interchangeably refer to a port to be an abstraction that constitutes a PHY and a MAC as described by the LFBs like EtherPHYCop, EtherMACIn, and EtherMACOut.
 - Add the text on static routing ability?
 - need explain why to miss a few inputs/outputs/errors for some LFBs depicted in figure 1.
 - Redraw figure 1.



Consensuses since Version 03 (2)

- ND for IPv6 needn't be defined in this base library.
- Use cases section only on two cases:
 - IP forwarding
 - IPv4
 - or IPv4 and IPv6?
 - IPv4 address resolution



Consensuses since Version 03 (3)

- Rewrite the text on the processing of packets failed to find ARP information
 - When packet is unable to find Ethernet L2 encapsulation information by ARP table in EtherEncapsulator LFB, it will be sent to an ARP LFB in the FE,(or to CE, if ARP function is implemented by CE.)
 - ARP LFB will generate ARP request. At the same time, the packet will be dropped. If user don't want to drop it, the packet can be wait for the L2 information. Once ARP LFB has got the information, the packet will be encapsulated directly in this LFB. ARP table will also be refreshed.

Consensuses since Version 03 (4)

- Through the interop test, suggest to add IPv4PrefixLen data type as well as IPv4NetMask:

```
<component componentID="2">  
  <name>IPv4PrefixLen</name>  
  <synopsis>IPv4 net mask length</synopsis>  
  <typeRef>uchar</typeRef>  
</component>
```

- For all LFBs which have ports defined as groups, delete the capability: “MaxOutPutPorts” .
- In EtherPHYCop LFB
 - Component "PHYPortID" need change to "read-only". It can not be configured by CE. So the following text in section 5.1.1 be deleted?
 - PHYPortID component is defined for CE to assign an ID to the physical port.
 - EtherPHYOut frameProduced: EthernetII -> EthernetAll



Consensuses since Version 03 (5)

- In EtherMACIn LFB
 - removed "MTU" component.
- In EtherMACOut LFB :
 - "OperStatus" will be replaced by "Adminstatus";
 - Adminstatus, TxFlowControl, RxFlowControl need to be defined as alias.
 - add "MTU" component.
- In IPv4UcastLPM LFB
 - delete expected metadata: DstIPv4Address
- In IPv6UcastLPM LFB
 - delete expected metadata: DstIPv6Address
- In ARP LFB :
 - add the ArpTable as the alias of that defined in EtherEncapsulator.



Consensuses since Version 03 (6)

- Change names of some LFB ports :
 - EtherEncapsulator LFB:
 - output port : PakcetNoARPOut -> PacketNoArpOut
 - BasicMetadataDispatch LFB:
 - input port : PacketsIn -> PktsIn
 - output port : PacketsOut -> PktsOut
 - GenericScheduler LFB:
 - input port : PacketsIn -> PktsIn
 - output port : PacketsOut -> PktsOut
- In all LFBs which have array components:
 - move some array type definitions of components to the Base Type Library.



Consensuses since Version 03 (7)

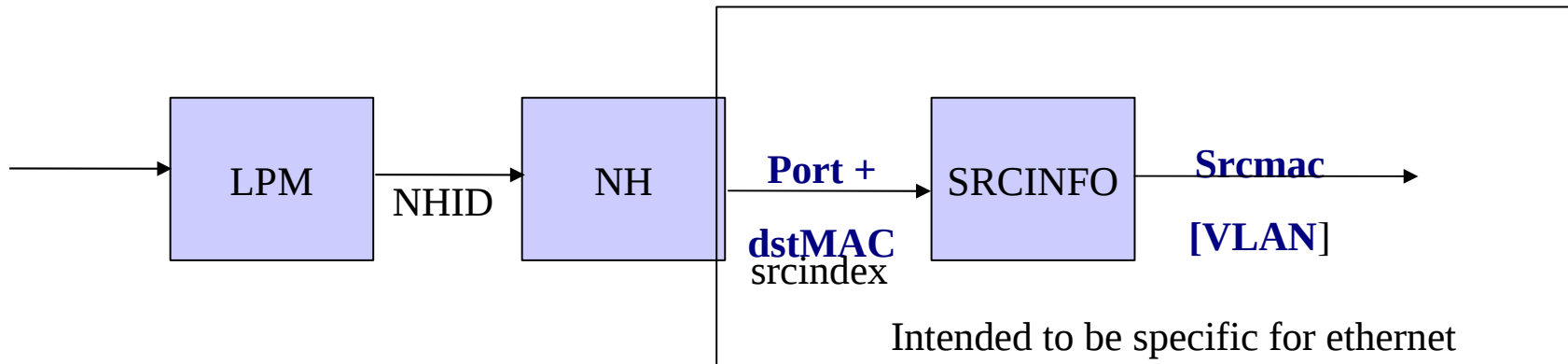
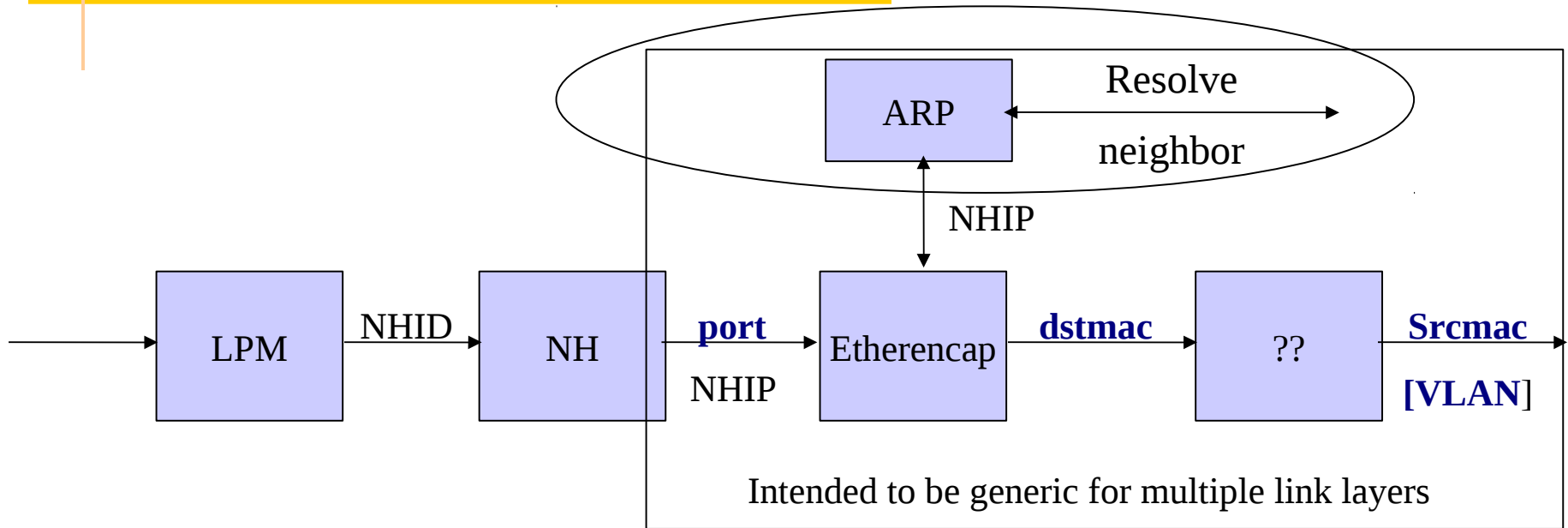
- In BaseTypeLibrary
 - In MACOutStatsType,
 - "NumPacketsTransimtted" -> "NumPacketsTransmitted"
 - "NumPacketsDropped" -> "NumPacketsDropped"
 - In MACInStatsType,
 - "NumPacketsDropped" -> "NumPacketsDropped"
 - In IPv4ValidatorStatisticsType, all component's type:
 - uint32 -> uint64
 - In IPv4PrefixInfoType and IPv6PrefixInfoType
 - some components name with "Nexthop" need to be changed to "NextHop".
 - Deleted PortStatsType



Issues under discussion

- Separate pieces for LPM and NH table
 - discussed before and almost agreed
 - Can agree now?
- Need a hook so that the CE can tell that it needs to provide the ARP/ND and prepopulation functionality.
 - If we have done things right, that could be represented simply by the FE not supporting certain LFBs. But we still need a place for the table.

Genericity and Offload





Next work

- Update the draft according the consensuses since Version 03.
- Add more detailed description in the use case chapter.
- Optimize the description text in LFB lib XML file.



Thanks!