Automatic CFM domain configuration using CC

BROADEN YOUR LIFE

David Elie-Dit-Cosaque
Kamakshi Sridhar
Maarten Vissers
Tony Van Kerckhove
Introduction: CC automatic CFM domain configuration

> We propose a CC based CFM domain configuration

> Goal: Auto-configure MIP’s with their correct level

> Simple solution reusing CC for applications where GARP is not implemented.

> In addition: solution prevents leaking out of CFM domain
Level determination of MIP’s using CC

> Today: MIP’s do not react to CC

> Proposal: MIP looks at the CC and picks minimum\{level#1, … level # k\}
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Flow points

- **Maintenance End Point**
- **Maintenance Intermediate Point**
- **Maintenance Stop Point** – NEW
  Is a MIP/MEP+filtering
- **Inactive Flow point**
  No MIP, MEP, MSP activated
Maintenance Stop Points (MSP)

> MSP’s filter CFM frames
> Automatically configured
Maintenance Stop Points (MSP)

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> MSP’s filter CFM frames
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Automatic configuration of MIPs and MSPs
Automatic configuration of MIPs and MSPs

Bridge 1
1
IFP

2
MEP1

Bridge 2
1
IFP

2
IFP

CC frames

Inactive Flow point
Maintenance End Point
Maintenance Stop Point
Maintenance Intermediate Point
Automatic configuration of MIPs and MSPs

CC from both direction --- > MIP

Bridge 1
1
MIP1
2
MEP1

Bridge 2
1
MIP2
2
MEP2

CC frames

Inactive Flow point
Maintenance End Point
Maintenance Stop Point
Maintenance Intermediate Point
Automatic configuration of MIPs and MSPs

CC from a single direction --> MSP

Bridge 1
1
MSP
2
MEP1

Bridge 2
1
MSP
2
MEP2

Inactive Flow point
Maintenance End Point
Maintenance Stop Point
Maintenance Intermediate Point

Automatic CFM domain configuration using CC — 5
Automatic configuration of MIPs and MSPs

No CC --> Inactive Flow Point

Bridge 1

CC frames filtered

Bridge 2

Inactive Flow point
Maintenance End Point
Maintenance Stop Point
Maintenance Intermediate Point
Automatic configuration of MIPs and MSPs

1. Bridge 2
2. IFP

Check UUCSIID

CC frames

1. Bridge 1
2. MEP1

CC frames

Inactive Flow point
Maintenance End Point
Maintenance Stop Point
Maintenance Intermediate Point
Automatic configuration of MIPs and MSPs

MSP --> MIP

Bridge 1

1

MIP1

2

MEP1

Bridge 2

1

MEP2

2

IFP

CC frames

CC frames

Inactive Flow point

Maintenance End Point

Maintenance Stop Point

Maintenance Intermediate Point

Automatic CFM domain configuration using CC — 5
Automatic configuration of MIPs and MSPs

CC from both direction --- > MIP

Inactive Flow point
Maintenance End Point
Maintenance Stop Point
Maintenance Intermediate Point
## Automatic configuration of MIPs and MSPs

<table>
<thead>
<tr>
<th>Current State</th>
<th>Next State</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC from a single direction</td>
<td>MSP</td>
</tr>
<tr>
<td>No CC</td>
<td>Inactive flow point state</td>
</tr>
<tr>
<td>CC from both direction</td>
<td>MIP</td>
</tr>
<tr>
<td>Maintenance Stop Point (MSP) receiving CC from outside the domain with correct CSIID</td>
<td>MIP</td>
</tr>
</tbody>
</table>
Problem: Inter-operator leaks

> Normally: A MEP will not let CC frames get in or get out

> If the MEP filtering function is defective, CFM frames might leak from a domain to the other
Problem: Inter-operator leaks

> If filter (1) faulty:
  • no need to take immediate corrective action
  • CFM frame filtered by filter (2)
Problem: Inter-operator leaks

> If both filter (1) and (2) faulty, CFM frames are not filtered
  • UUCS11D filtering needed at both MIPs + MEPs
Every MEP in the operator network first looks at the UUCSIID of a received CFM frame:

- if its UUCSIID = authorized UUCSIID for the MEP CFM frame is processed
- if its UUCSIID ≠ authorized CSIID for the MEP CFM frame is filtered
Method for automatic CFM domain configuration
> Automatic Level configuration of MIPs
> Automatic Placement of MSPs
> No inter-operator leaking thanks to UUCSIID filtering
> No additional frames: Reuses CC frames that has the level and UUCSIID information