Binding Control Protocol
for discussion in Thursday joint DCB-Interworking session at
January 2010 802.1 Interim meeting Austin, TX, USA

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evb Protocols

VM manager fetches port profile from port profile manager

Port profile manager

Bridge fetches port profile from manager

VM manager fetches port profile from port profile manager

Port Profile format

Push VM/VSI configuration info to server

Multichannel capabilities (LLDP extension)

Bridge fetches port profile from manager

Server

Red indicates in scope for 802.1 evb protocol project;
Black indicates possible candidate for standardization elsewhere.
Bold red indicates protocols of interest for this discussion

Multichannel capabilities (LLDP extension)

establish/release channel

establish/release VSI to profile binding
evb protocol alternatives

Server Control or Bridge Control

Discover capabilities of physical link peers eg., I support 'Multichannel' / I see you support 'Multichannel'.

Channel Binding
Server requests use of channel (eg., of type RR or NRR) / Bridge supplies SVID of granted channel or denies request.

VSI-to-Profile Binding
Server requests binding between VSI and Profile / Bridge indicates whether binding granted or failed.

LLDP (with new TLV or extension of existing TLV carrying capabilities such as 'Multichannel')

Binding Control Protocol (BCP)
contains generic binding management state machines

Channel Binding Protocol contains specific channel binding management state machines

VSI-to-Profile Binding Protocol contains specific VSI-to-Profile binding management state machines

LLDP

LLDP-like (different Ethertype)

T3P(R) LLDP-like with transport capabilities

areas of agreement

model 1 (register individual bindings; generic binding protocol; no transport needed)

model 2 (synchronize full binding database; type-specific binding protocol; transport needed)

three transport alternatives
VSI bind example

Server sends request for binding between VSI 101 and Profile ID (PID) abcd.

The binding has been established (the hypervisor can start the VM with VSI 101);

The binding has been rejected (the hypervisor can try to start this VM somewhere else or take other action);

Bridge fetches Profile with PID abcd from profile database; determines whether VSI to Profile binding can be granted;
LLDP/T3P Model
Transfer Entire Database when VM Moves

server
committed
SVID14
VSI-PID Associations
VSI34 – PID1234
VSI58 – PID2345
VSI71 – PID3456
temp
SVID14
VSI-PID Associations
VSI34 – PID1234
VSI58 – PID2345
VSI71 – PID3456
VS201 – PID9876
bridge
SVID14
VSI-PID Associations
VSI34 – PID1234
VSI58 – PID2345
VSI71 – PID3456
LLDP/T3P
Periodic update (or update triggered by change)
add VS201 – PID9876
VSI34 – PID1234
VSI58 – PID2345
VSI71 – PID3456
VS201 – PID9876
delete VSI58 – PID2345
VSI34 – PID1234
VSI71 – PID3456
VS201 – PID9876
add VSI58 – PID2345
VSI34 – PID1234
VSI99 – PID4567
VSI71 – PID3456
VS201 – PID9876
VSI99 – PID4567
VSI71 – PID3456
VS201 – PID9876
BCP Model
Transfer *one* database entry when VM Moves

**server**

SVID14
VSI-PID Associations

VSI34 – PID1234
VSI58 – PID2345
VSI71 – PID3456
VS201 – PID9876

add VS201 – PID9876

BCP request

reply

BCP request

reply

add VS201 – PID9876

**bridge**

SVID14
VSI-PID Associations

VSI34 – PID1234
VSI58 – PID2345
VSI71 – PID3456
VS201 – PID9876

BCP model
Transfer *one* database entry when VM Moves

VS201 – PID9876

VSI71 – PID3456

VSI34 – PID1234

VS201 – PID9876

VSI71 – PID3456

VSI34 – PID1234

VS201 – PID9876

VSI71 – PID3456

VSI34 – PID1234
Key points

- There are two types of protocols proposed for ‘channel establish/release’ and ‘VSI-to-profile binding’:
  - Protocols (LLDP, T3P) that transfer the entire database of VSI-to-profile associations when a VM moves;
  - Require the introduction of a new transport protocol;
  - A protocol (BCP) that transfers only the VSI-to-profile association for the VM that has moved;
- Not a shred of evidence has been introduced to justify the need to transfer the entire database when a VM moves;
  - The interworking group should be very concerned about the introduction of a new transport protocol;
  - Particularly when no justification has been provided;
  - and a simple request/response control protocol is adequate.