z/TPF EE V1.1
z/TPFDF V1.1
TPF Toolkit for WebSphere® Studio V3
TPF Operations Server V1.2

IBM Software Group

TPF Users Group Spring 2006

TPF Websphere MQ Update

Name : Allan Feldman
Venue : MQ Task Force

AIM Enterprise Platform Software

IBM z/Transaction Processing Facility Enterprise Edition 1.1.0

Agenda

- Requirements review
- Latest development
- Key APARs
- What's next

Requirements from Fall ballot

MQ04001	Heartbeat	Accepted *
MQ04002	Shared Channel	Accepted *
MQ04003	Document PUT differences	Accepted
MQ04004	Diff record ID for MQ TPFCS	Likely
MQ04005	Remove Long life ECB for server	Not Likely
MQ04006	SSL	Accepted
MQ04007	AdoptNewMCA	Accepted *
MQ04008	Message user exit	Likely
MQ04009	Remote Admin	Accepted

* Will be available soon

Requirements from Fall ballot *(continued)*

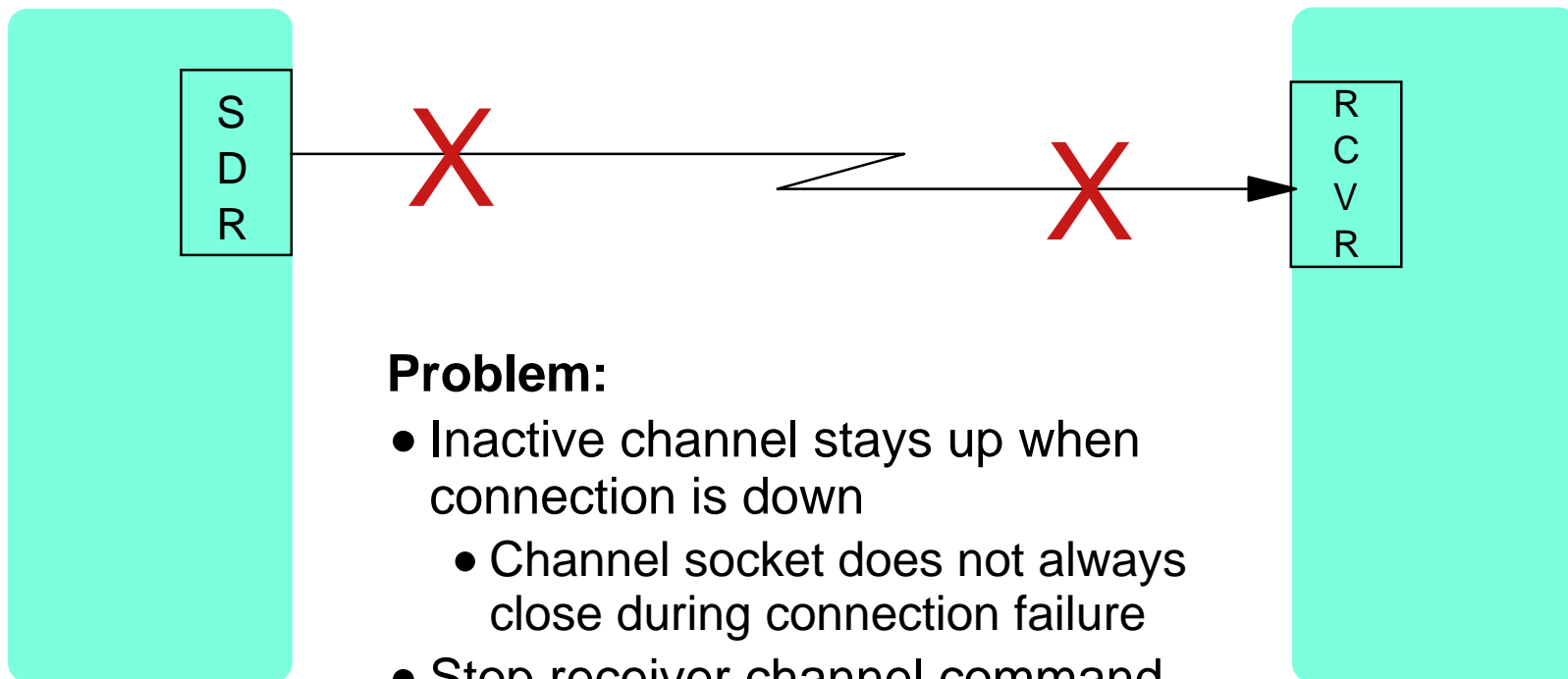|		
MQ04010	MQ Ping	Likely
MQ04011	Remove swept pid list pid after delete ql	Likely
MQ04012	Process msgs from deac processor	Likely
MQ04013	Processor unique attributes	Likely
MQ04014	Display multiple attributes	Not Likely
MQ04015	Batch size monitor	Not Likely
MQ04017	Chl option to auto resolve/reset	Not Likely
MQ04018	Requestor Channels	Likely

Requirements from Fall ballot *(continued)*

MQ05001	Comms Trace User Exit for tape name and data length	Likely
MQ05002	New parms for trace post processor - chl name, start/end date/time, data translation	Likely
MQ05003	Hostname support on LOCALIP field of sdr chl definition	~~Likely~~ **Accepted** *
MQ05004	Port range support on LOCALIP field of sdr chl definition	~~Likely~~ **Accepted** *
MQ05005	Migrate command one CPU at a time	~~Accepted for future migrations~~ Withdrawn
MQ05006	Trace time precision in microseconds	Likely

Development in progress

- Channel stability enhancements
  - ► Heartbeat
    - – Channel quiesce for receiver channels
  - ► AdoptNewMCA
  - ► Hostname and Port range on LOCALADDR parameter for sender channels
  - ► Upgrade to FAP 4
    - – Required for Heartbeat
      - Heartbeat interval in flow
    - – Queue manager name in flow
    - – Enables shared remote channels on non-TPF Queue Managers
- Sweep trace
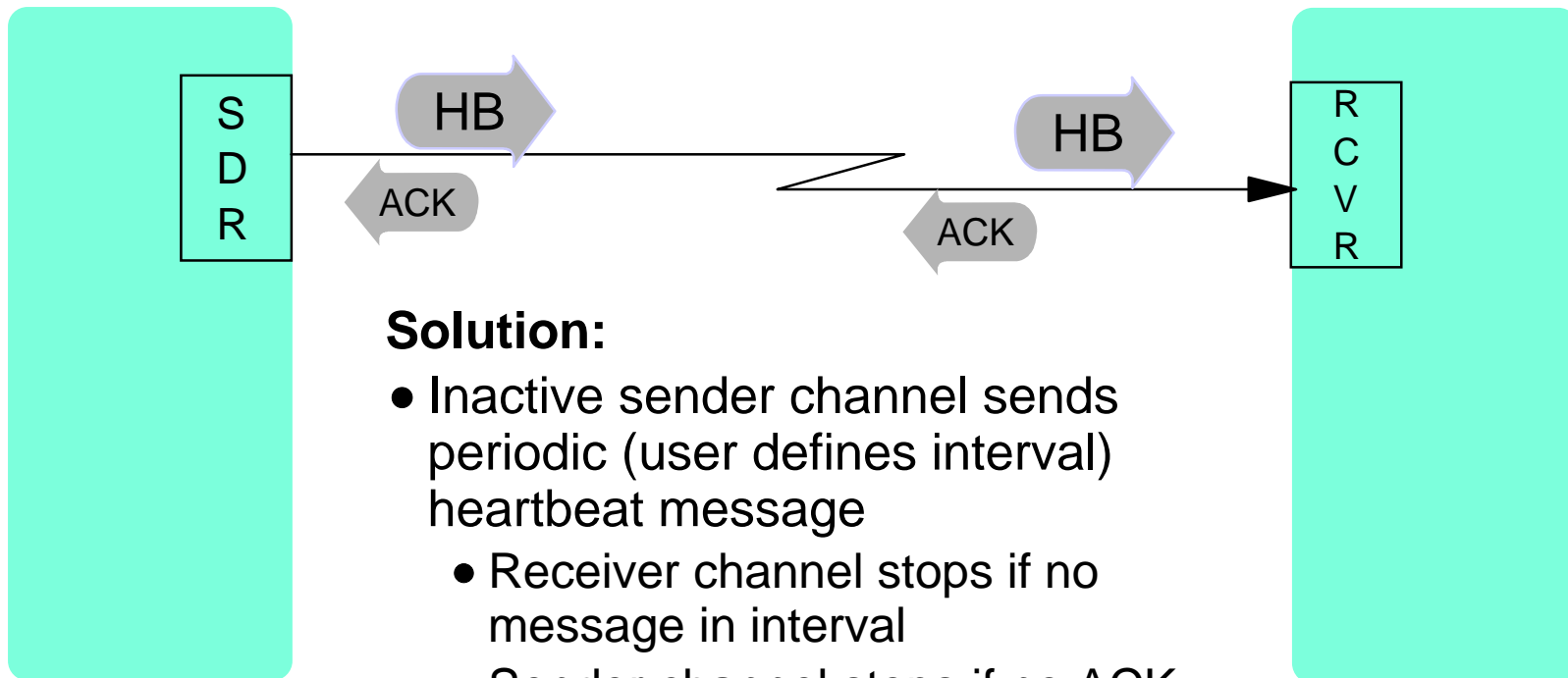- Will be available on TPF4.1 and z/TPF

Heartbeat

Problem:
- Inactive channel stays up when connection is down
  - Channel socket does not always close during connection failure
- Stop receiver channel command will close socket after 20 seconds if inactive

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Heartbeat

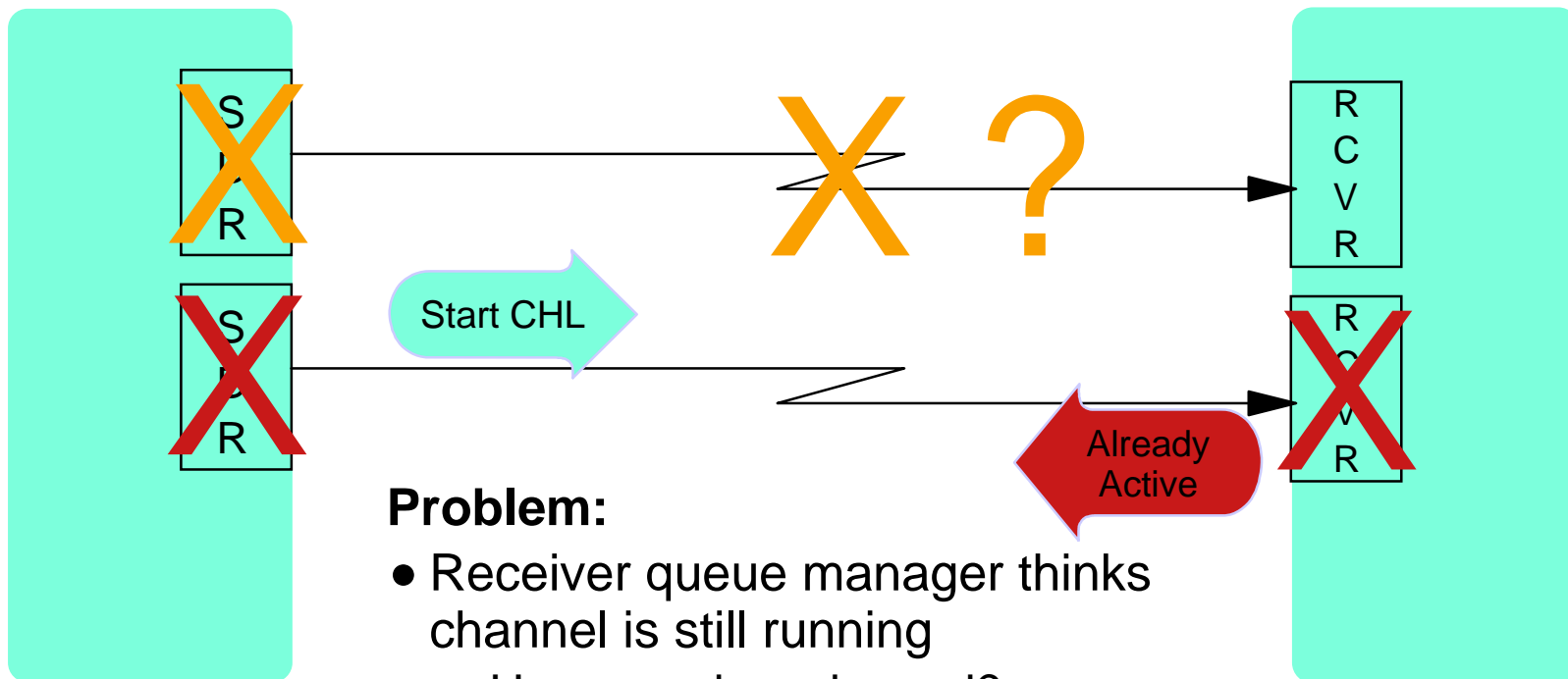| S D R | HB | | HB | R C V R |
ACK ← ← ACK →

Solution:
- Inactive sender channel sends periodic (user defines interval) heartbeat message
  - Receiver channel stops if no message in interval
  - Sender channel stops if no ACK
- Stop receiver channel command uses heartbeat ack message to signal remote sender channel to quiesce (controlled shutdown)

Heartbeat

- New parameter on channel definition for heartbeat interval
  - ► Channel status display has negotiated interval
  - ► Negotiated interval is the higher of the sender and receiver channel definitions
- Requires FAP 4
  - ► Heartbeat interval in channel negotiation flow
- Supported on SVRCONN channels for remote client which issues MQGET with Wait
- Channel quiesce uses heartbeat flow to stop inactive receiver channel
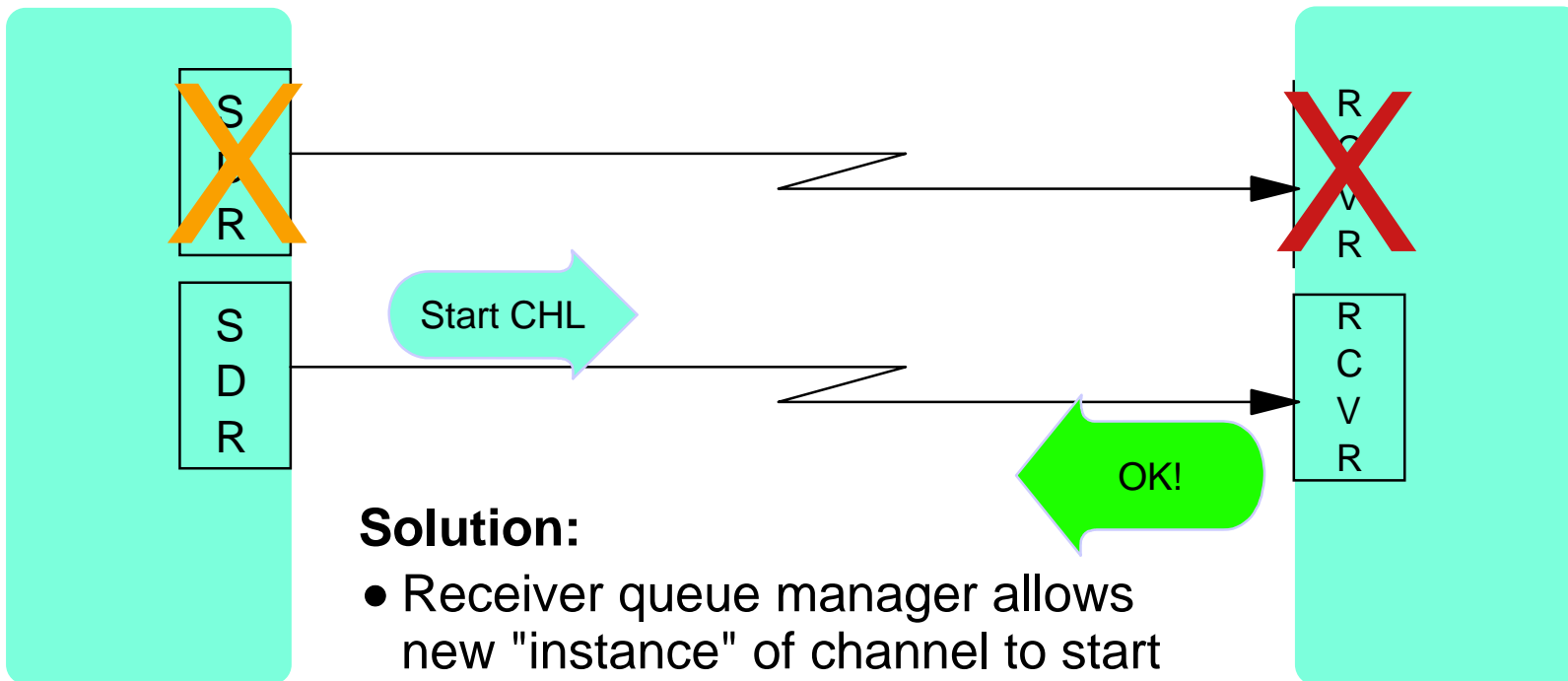 - ► Previously channel closed socket after 20 seconds

AdoptNewMCA

Problem:

- Receiver queue manager thinks channel is still running
  - Hung receiver channel?
  - Link failure but socket still up?
- Channel can not start
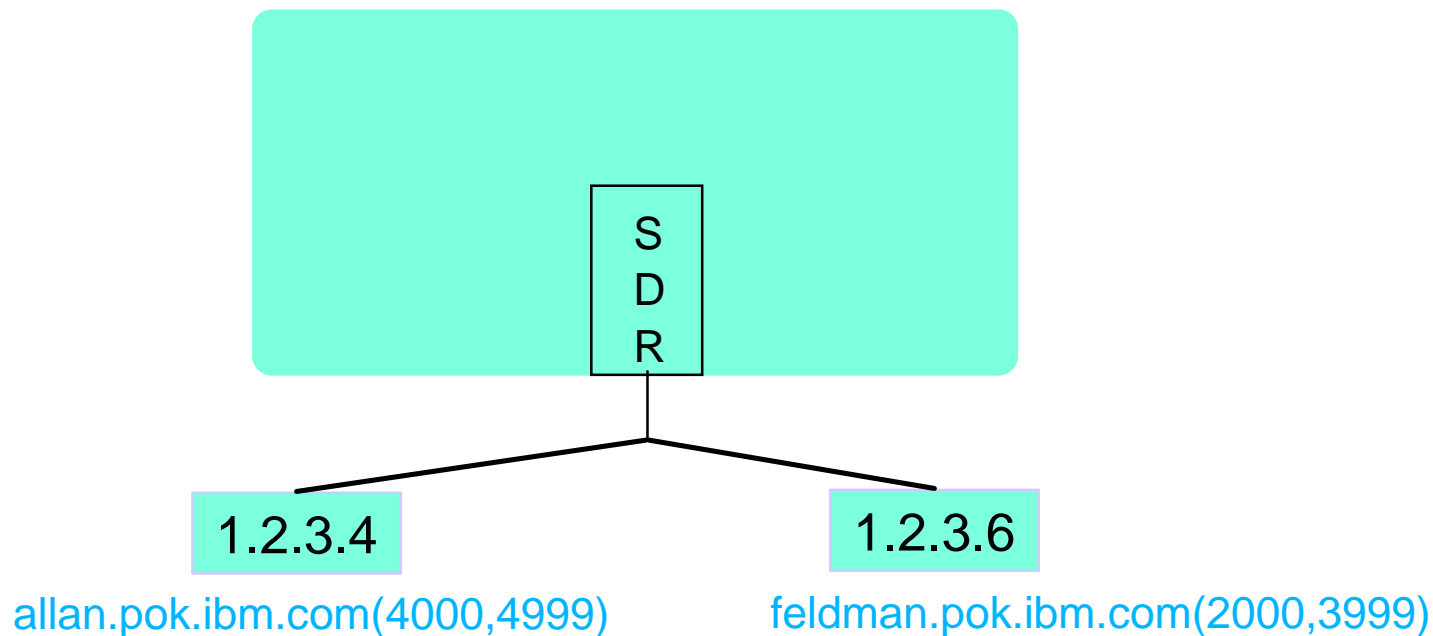 - Receiver channel has to be stopped manually

AdoptNewMCA

Solution:

● Receiver queue manager allows new "instance" of channel to start

AdoptNewMCA

- Receiver channel queue manager performs optional validity check based on:
    - ► Queue manager name
    - ► IP address
- FAP4 required for queue manager name validation

Support for Hostname and Port Range on LOCALADDR for Sender Channels

```
        ┌─────┐
        │  S  │
        │  D  │
        │  R  │
        └─────┘
          ╱ ╲
    1.2.3.4   1.2.3.6
```

allan.pok.ibm.com(4000,4999)   feldman.pok.ibm.com(2000,3999)

Support for Hostname and Port Range on LOCALADDR for Sender Channels

- LOCALADDR parameter commands now allow hostname and port
- Hostname support allows network administrator to change local IP addresses without updating sender channel definition
- Port range allows network administrator to control range of ports through firewalls and access control lists
- LOCALADDR replaces LOCALIP parameter on ZMQSC DEF/ALT CHL commands to be consistent with other platforms

Sweep Trace

- Sweep and unsweep activity will be logged for diagnostic purposes
  - ► Time stamp, Return Code, Message Count, and more
  - ► Always on
- Log will be available in dumps
- Trace will survive an IPL
- New SWEEPTRACE parameter on ZMQSC DISP QL command to display a formatted subset of data in the trace table
  - ► Optionally the trace table can be captured to a file

Key APARs

- PJ30975 - MQ
  - ► Unsweeping a very large TPFCS BLOB may cause the system to run out of recovery log resulting in a catastophic CTL-C117
  - ► Unsweep was very inefficient (excessive I/O's) in determining the low swept message number
    - – We keep track of the "oldest" message in a swept TPFCS BLOB
  - ► Available on TPF4.1 PUT 20. Not yet available on z/TPF.
- PJ30860 - TPFCS
  - ► Deleting a large TPFCS collection can cause a catastophic CTL-C117 or CTL-6DF (no IOBs)
  - ► Available on TPF4.1 PUT 20. Not yet available on z/TPF.
- PJ31087 - MQ Checkpointing
  - ► Error during channel checkpointing can hang main checkpoint ECB
  - ► Not yet available

What's next...?

- z/TPF only
- SSL support for channels
- Remote Admin

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