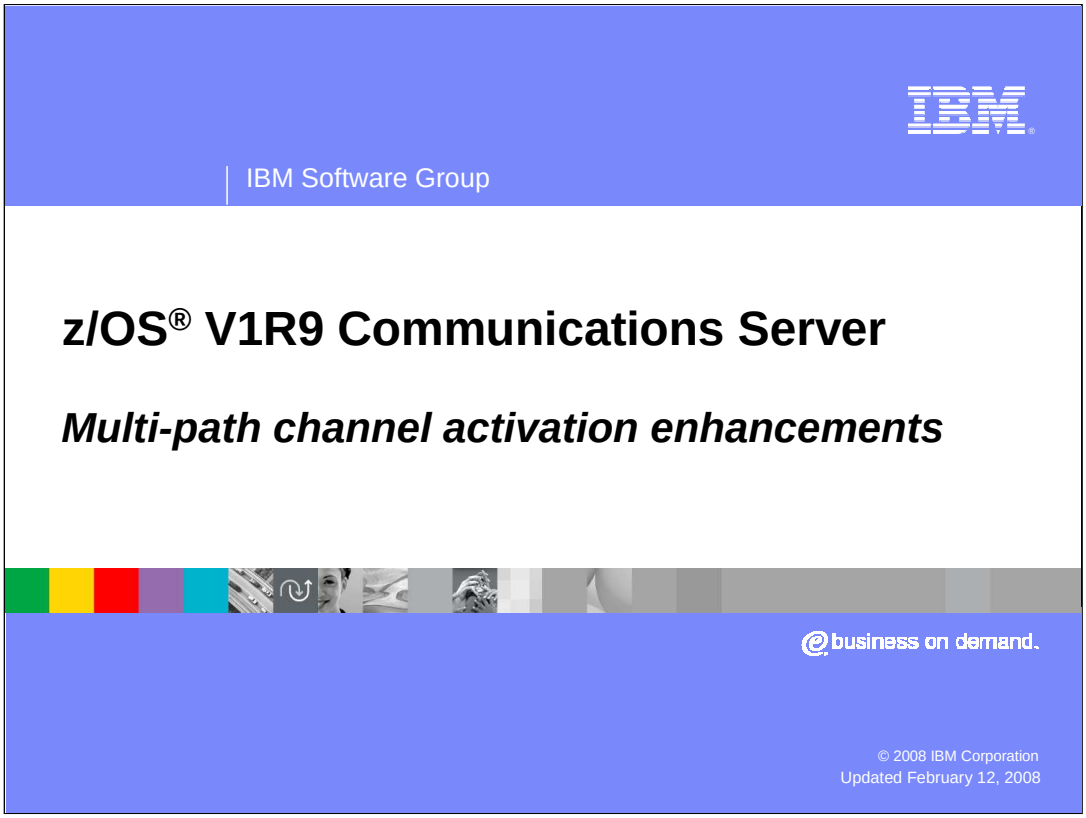
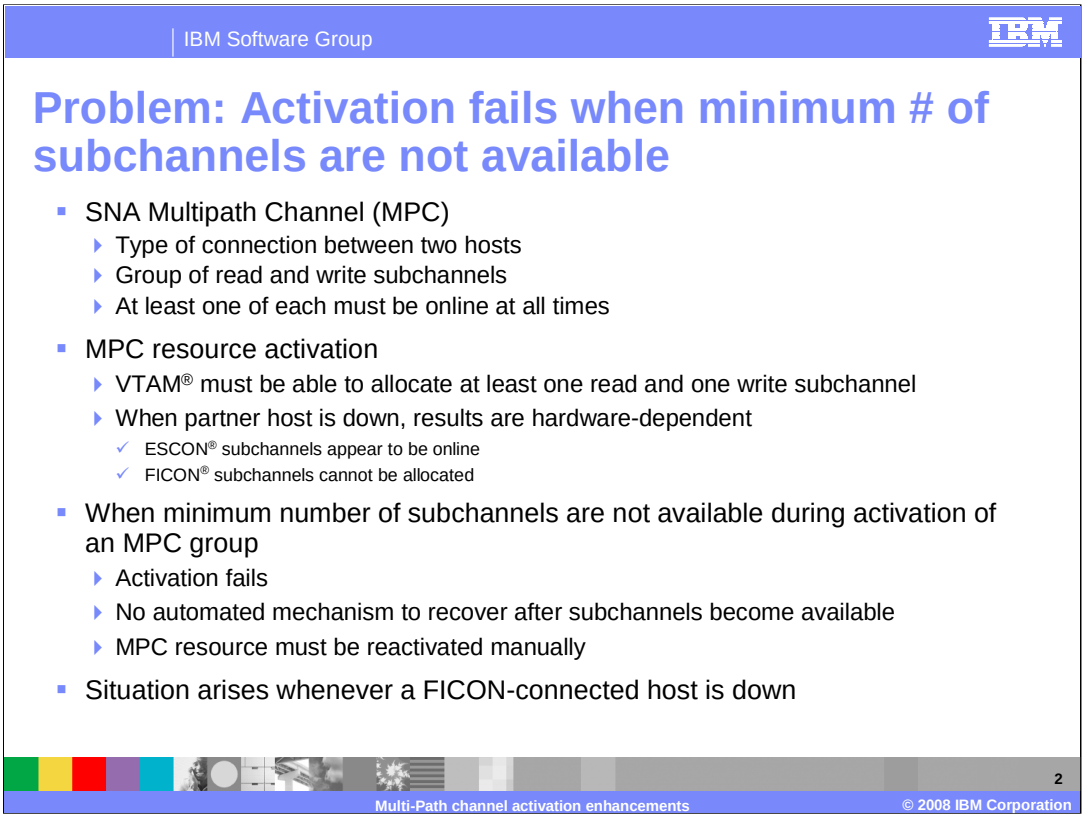


This presentation discusses the Multi Path Channel (MPC) Activation enhancements in the z/OS V1R9 Communications Server.

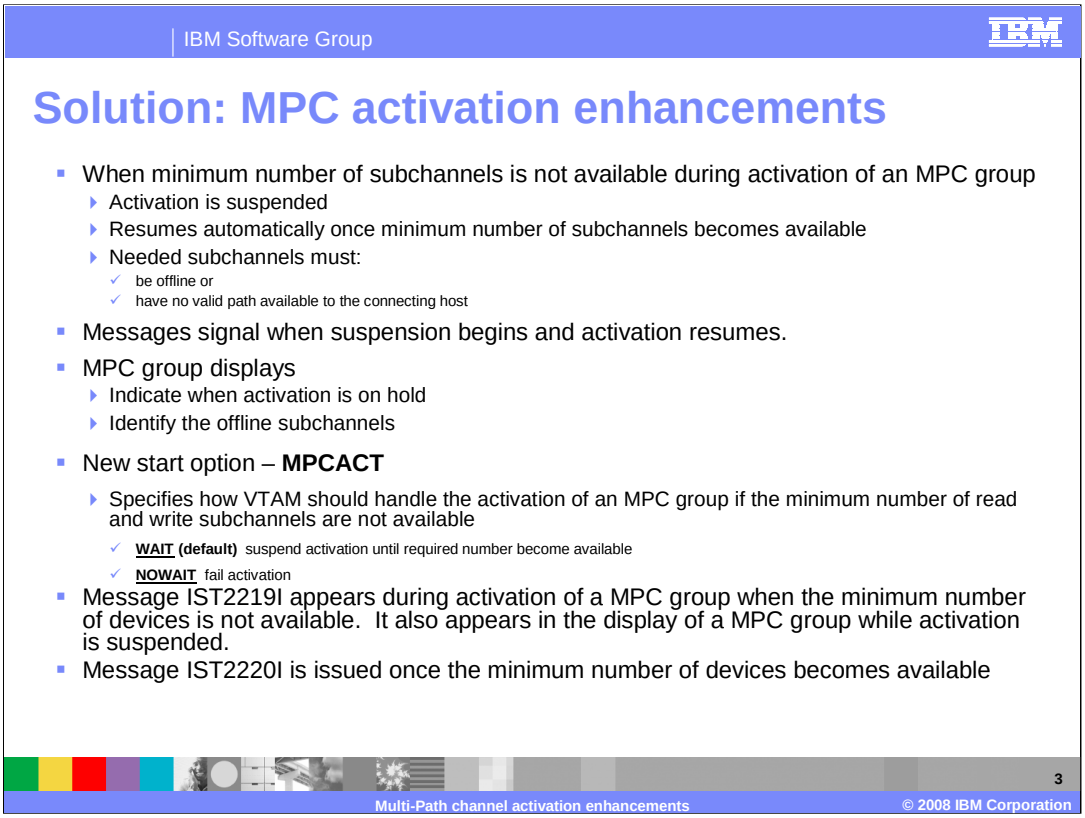


VTAM supports multipath channel (MPC) connections between two hosts. An MPC resource consists of a group of read and write subchannels. At least one of each must be online at all times for the group to be functional. Thus, when the MPC resource is first activated (by a VARY ACT command of some sort), VTAM must be able to allocate at least one read and one write subchannel in the process.

When the partner host is down during MPC activation, the information VTAM receives about the subchannels when they are allocated depends on the hardware makeup of the connection. ESCON subchannels appear to be online in this case, so VTAM activates the device and waits for the other side to come up. For FICON subchannels, VTAM gets an indication that there is no valid path to the device, causing allocation of the subchannel to fail. This impacts the ability of VTAM to activate the MPC resource successfully.

Previously, once activation of an MPC group lacking one online read and one online write subchannel failed, there was no mechanism to recover automatically from this failure, even after the needed amount of subchannels became available. Reactivation of the MPC group had to be performed manually.

This situation is especially applicable when a FICON-connected host is down, due to the failures VTAM encounters when allocating the subchannels.



Now activations of MPC groups that fail to meet the one read/one write requirement are put on hold, provided any needed read or write subchannel is an offline CTC or one that has no valid path available to the connecting host. The suspension continues until the required minimum number of subchannels becomes available or the group is deactivated. New messages signal when the hold begins and when activation resumes.

The display of an MPC group indicates when its activation is on hold. Other existing output in that display identifies the offline subchannels, so appropriate action can be taken to bring enough of them online to cause activation of the MPC group to complete.

MPC Activation Enhancements is enabled by default. A new, modifiable VTAM connectivity start option (MPCACT) can be used to disable the function whenever manual retry is needed.

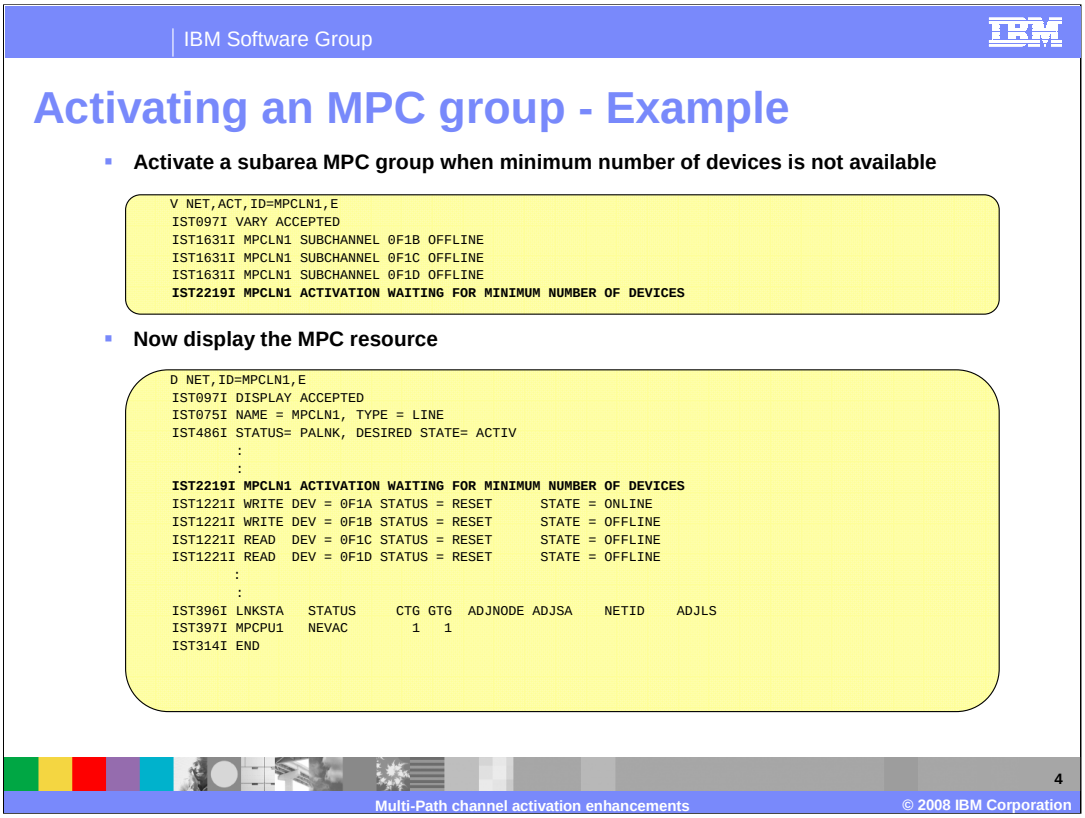
MPCACT=WAIT (default) specifies that activations of MPC subchannel groups are to be suspended if the minimum number of read and write subchannels are not available, either because they are offline or no valid path exists to the connecting host. VTAM will automatically resume activation once the minimum number becomes available.

MPCACT=NOWAIT specifies that VTAM is to fail activations of MPC subchannel groups if the minimum number of read and write subchannels are not available. The system operator must manually retry such activations after the minimum number becomes available.

Note: When modified, the option does not take effect for MPC groups that are in the process of being activated when command is issued until those MPC groups are deactivated and reactivated.

Message IST2219I indicates that activation of an MPC group is suspended waiting for the minimum number of read and write subchannels to become available.

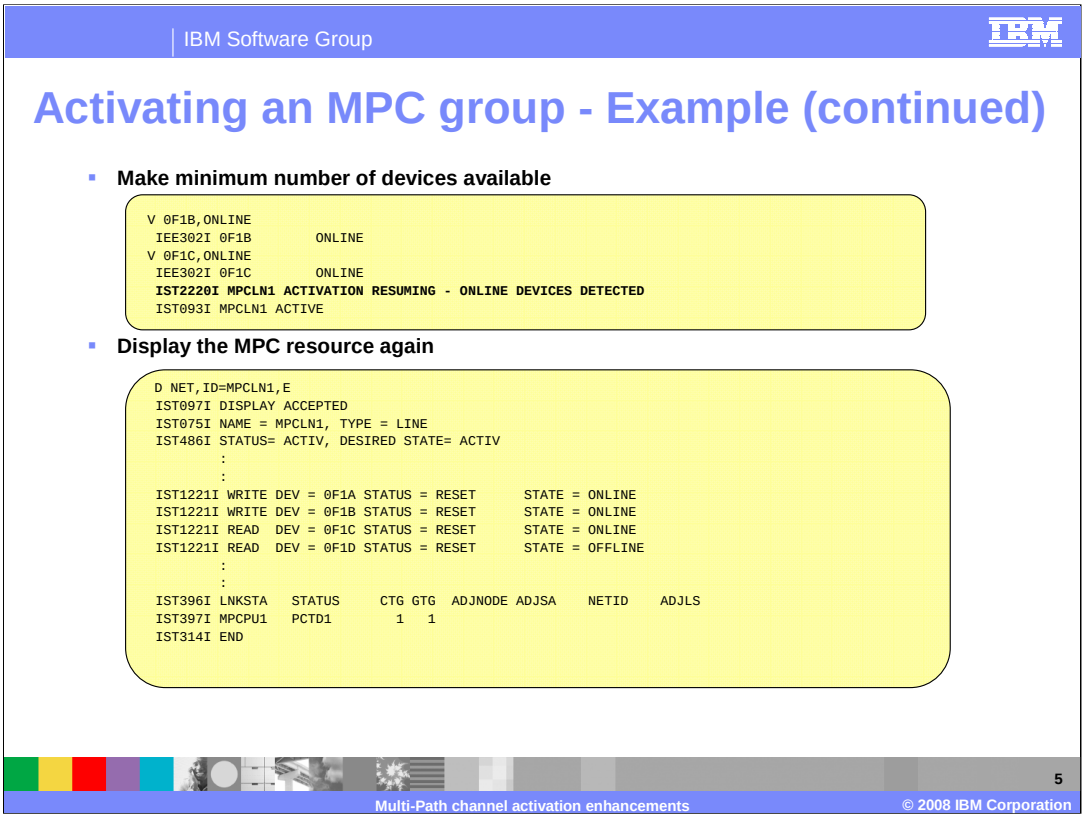
Once the minimum number of devices becomes available, message IST2220I is issued to indicate that VTAM is ready to retry allocation of those subchannels it has detected as being available. If the minimum number still cannot be obtained for some odd reason, activation of the MPC group is suspended again, signaled by the reappearance of IST2219I along with any appropriate IST1631I messages. Otherwise, activation proceeds as in previous releases, ultimately resulting in message IST093I for the MPC line.



This example that shows how new and existing messages can be used to handle an MPC group that has insufficient subchannels available at activation time.

On this slide, the activation of a subarea MPC line (MPCLN1) is being suspended, as signaled by the IST2219I message. The set of IST1631I messages identifies which subchannels (0F1B-0F1D) are candidates to be brought online to allow activation to complete.

Displaying the subarea MPC line offers another method of identifying the subchannels that are candidates to be brought online to allow activation to complete. A write subchannel (0F1A) is already online, so only a read subchannel is needed in this case. The presence of IST2219I indicates the suspended activation condition, leaving the MPC line (MPCLN1) and PU (MPCPU1) states in **PALNK** (pending ACTLINK) and **NEVAC** (never active), respectively.



This slide shows activation of the subarea MPC line resuming after a needed read subchannel (0F1C) has been brought online. This is evidenced by the IST2220I message. Note that bringing 0F1B online had no effect, as it is a write subchannel, and one of those (0F1A) was already online.

Displaying the subarea MPC line at this point shows that enough subchannels are online now. The MPC line (MPCLN1) state is now **ACTIV** and the PU (MPCPU1) state becomes **PCTD1** (pending contacted 1), awaiting the partner to come up. Note that IST2219I no longer appears in the display.

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