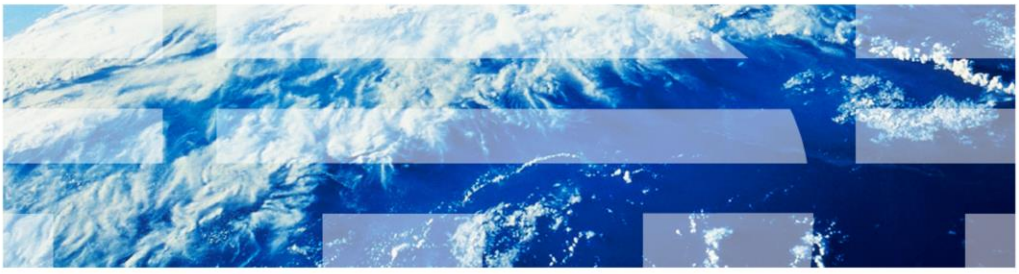
IBM

IBM Tivoli Netcool/OMNIbus V7.3.1

Architectural redundancy options for probe data flow resilience



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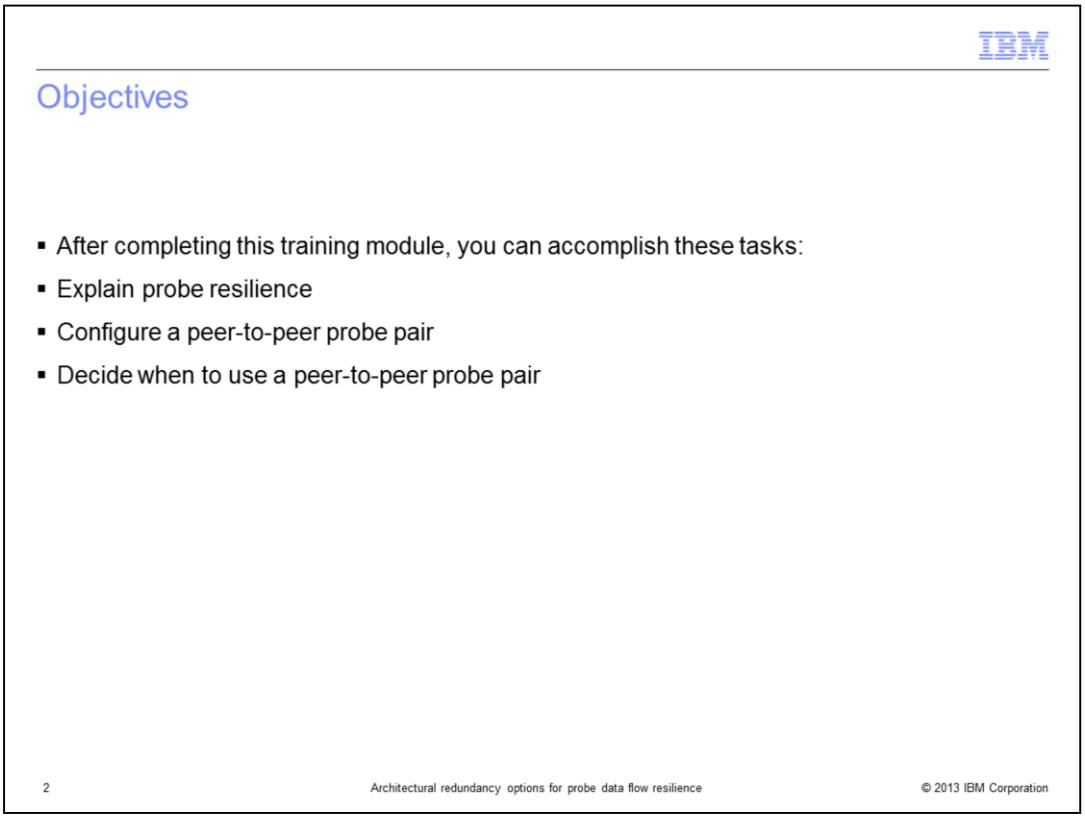
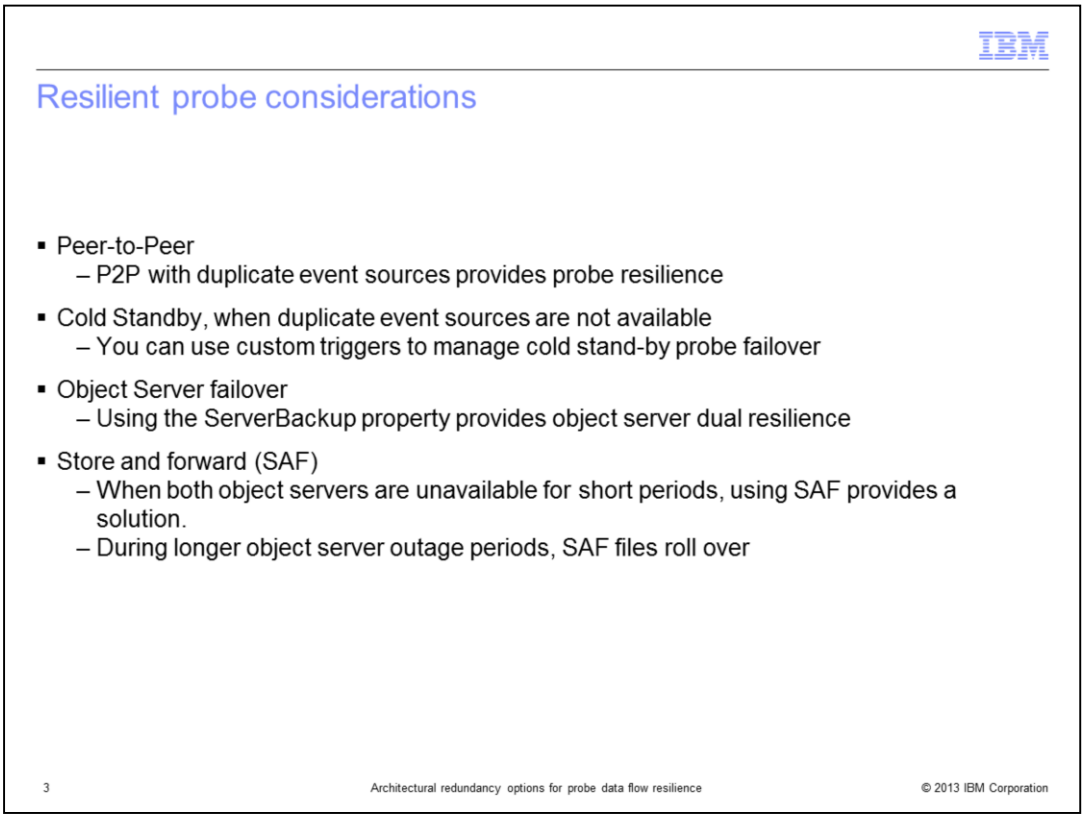
In this training module, you learn about the architecture redundancy options that provide resiliency to the flow of data from IBM Tivoli® Netcool/OMNIbus V7.3.1 probes.



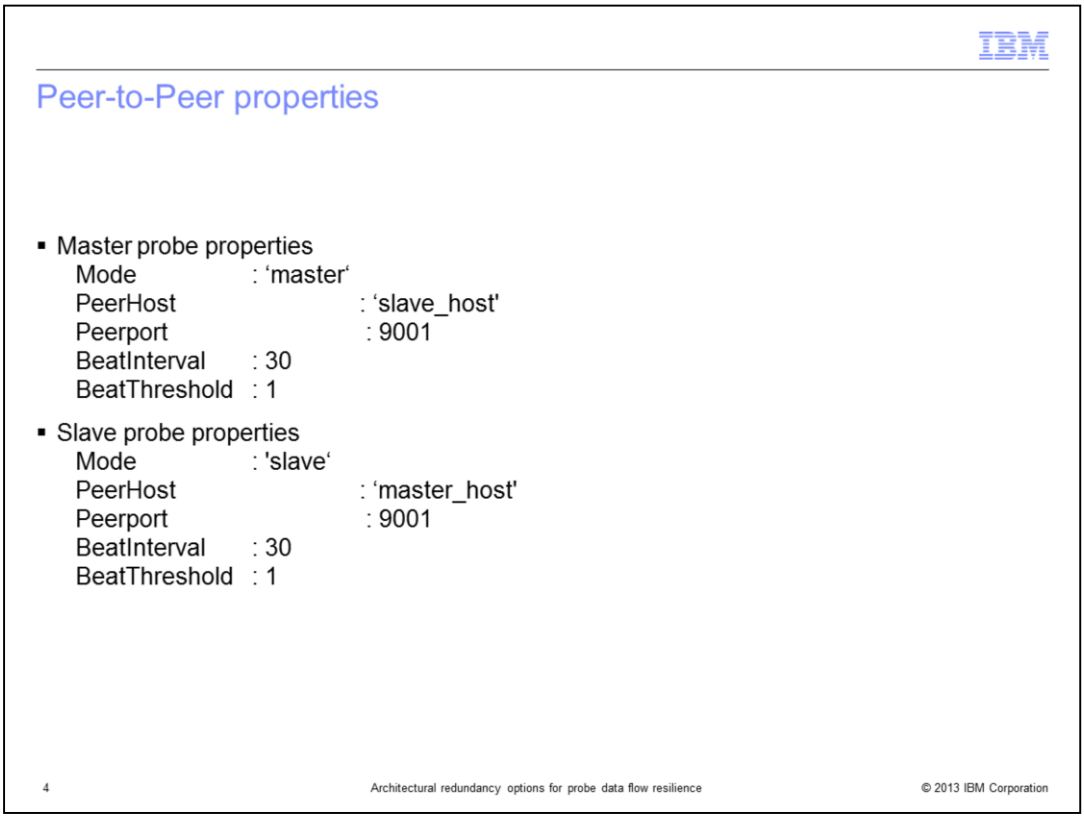
The purpose of this IBM Tivoli Netcool/OMNIbus V7.3.1 training module is to provide an understanding of probe resilience within a multitier system architecture.



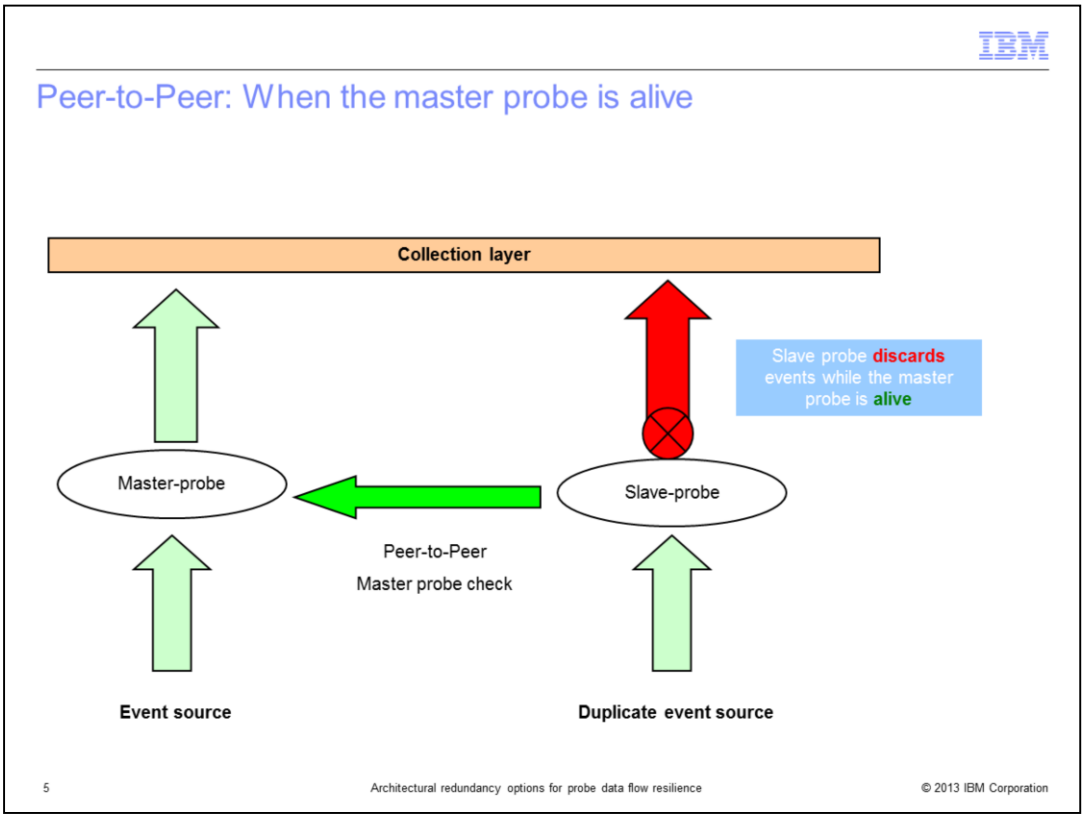
Peer-to-peer requires two identical event sources. This is because the slave probe discards all events when the master probe is reachable from the slave probe's physical host.

The peer-to-peer feature is not available for all probes. To check if the feature is available, run the probe with the –dumpprops or the –help option and check for the peer-to-peer settings.

When only one event source is available, keep the backup probe in cold standby. This behavior requires custom configuration. All probes support Server and ServerBackup properties that allow probes to failover and failback between a primary and backup object server. All probes support store and forward. SAF stores event data in files on the probe server when the object server is unavailable. The SAF files have a finite size and event data is lost when the SAF files overflow.

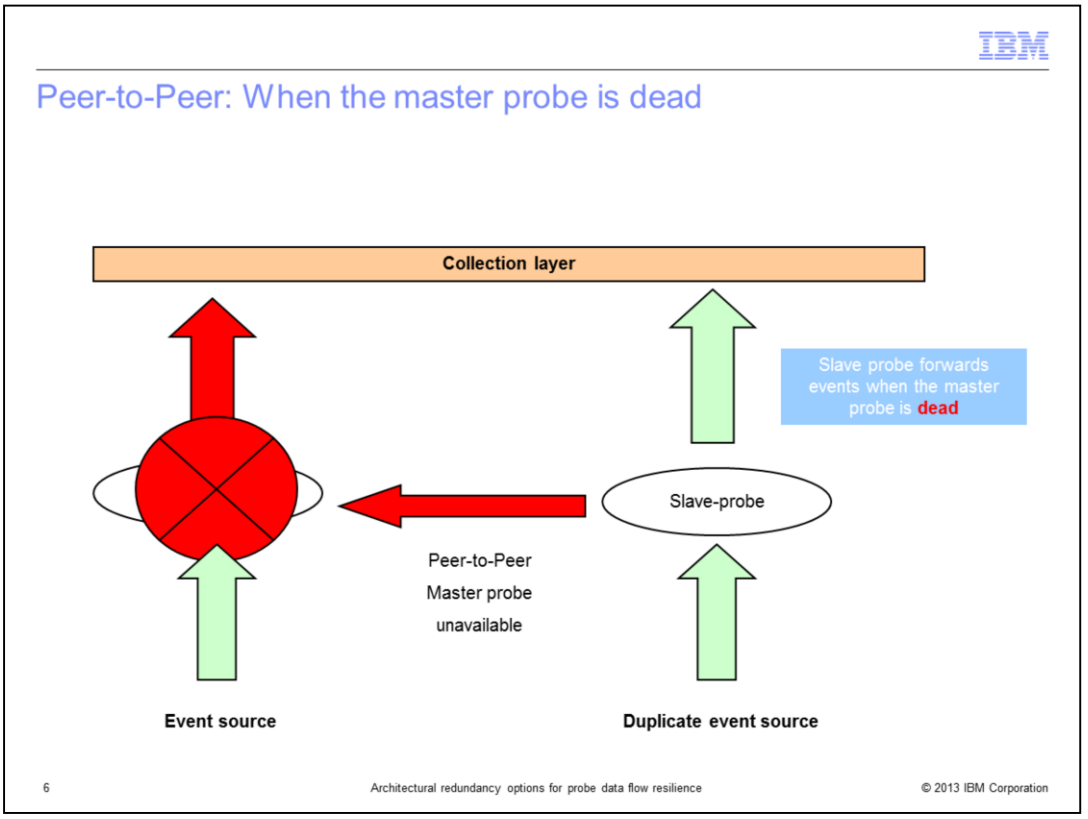


The peer-to-peer properties are Mode, PeerHost, PeerPort, BeatInterval, and BeatThreshold. Mode and PeerHost interchange between the probe’s positions in the peer-to-peer pair, with PeerHost being the IP Address or FQDN of the other probe server in the peer-to-peer pair. Peerport is a port that is available for use on both servers. After you configure Mode, PeerHost, and PeerPort, the peer-to-peer feature functions under normal conditions. The properties BeatInterval and BeatThreshold are provided to allow you to configure the peer-to-peer pair to tolerate network and system conditions. Setting BeatInterval to larger values, reduces the load on the probes and the network. Setting the BeatThreshold to a larger value allows for longer delays in the probes processing of peer-to-peer messages.

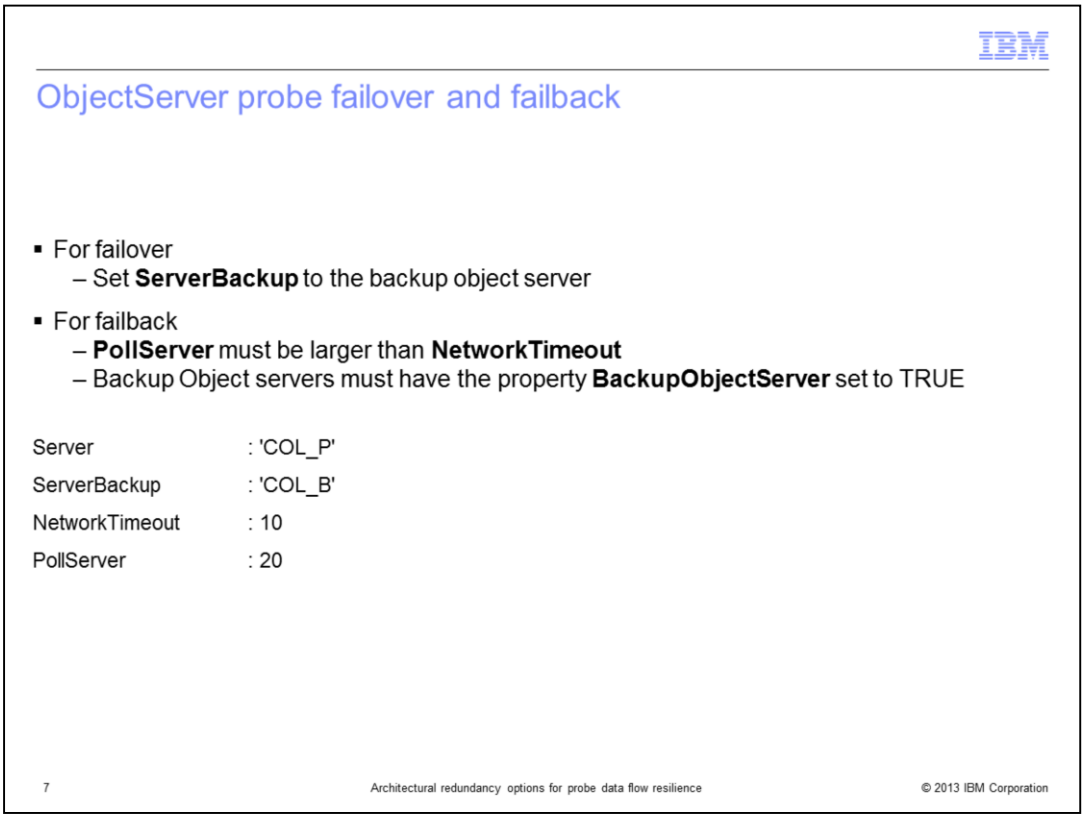


Under normal circumstances, the slave probe checks that the master probe is available by using the Peerport. When the master probe is available, the slave probe discards all of the events it receives.

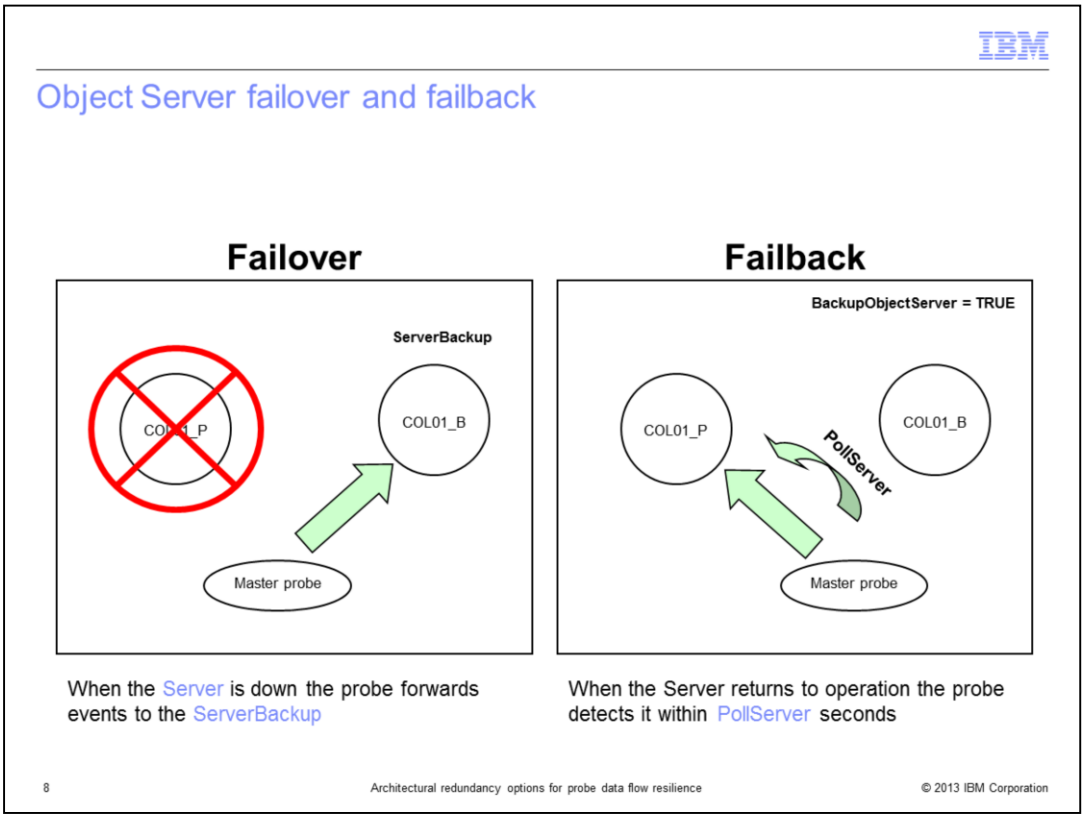
The master probe forwards events regardless of the status of the slave probe.



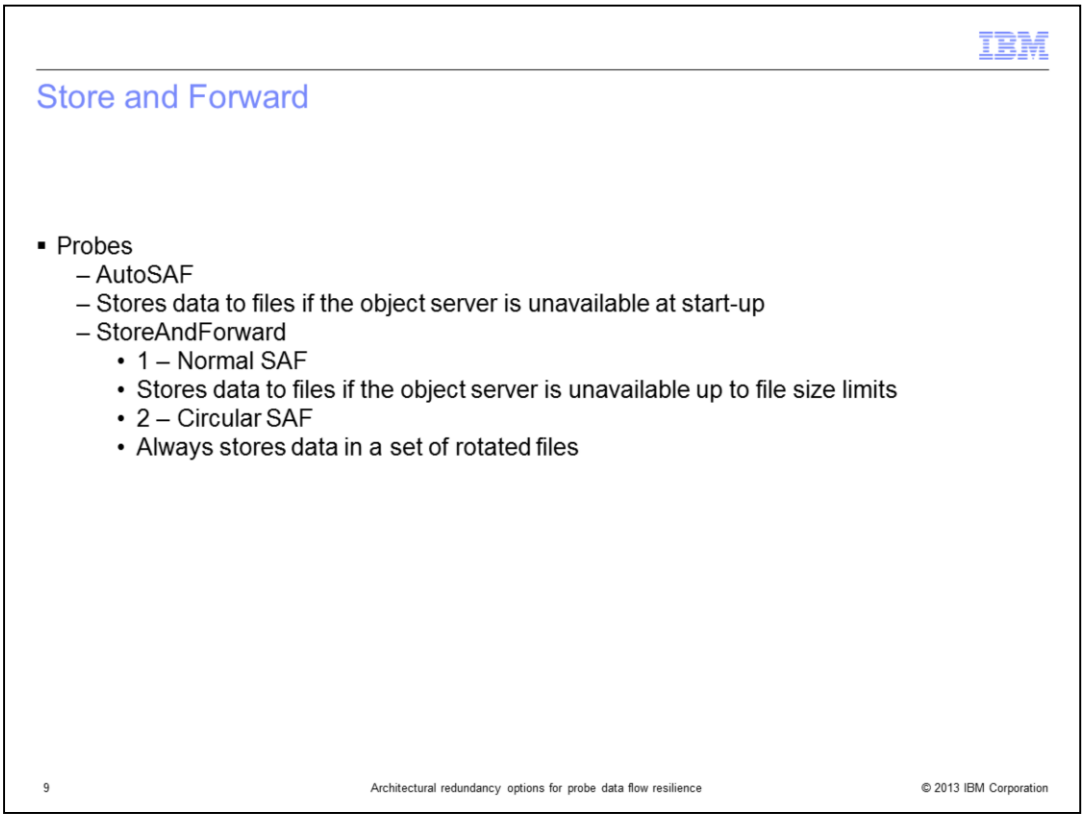
When the master probe is shutdown, the slave probe is unable to check its status with the Peerport. The slave probe then forwards the events it has stored, since the last successful check of the master probe, to the object server it is connected to.



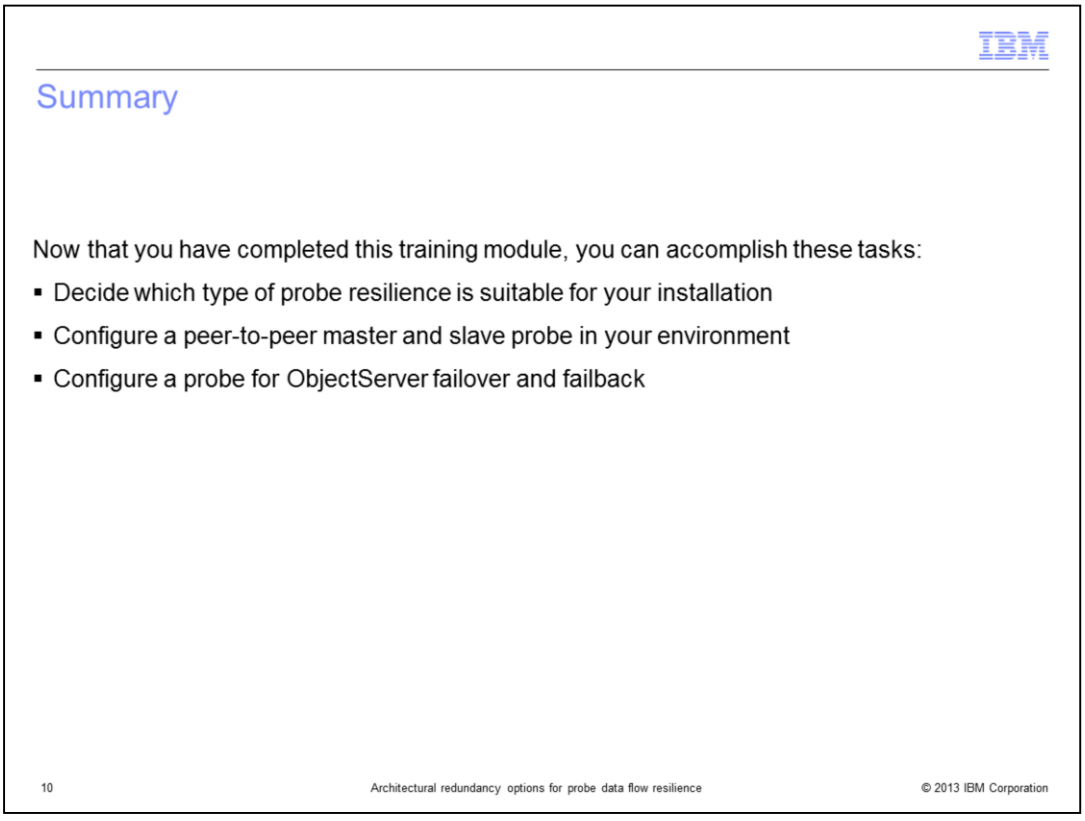
All probes support object server failover and failback. In a multitier environment Server and ServerBackup are set to collect object server names, or when you are not using a collection layer, to aggregate object server names. The use of a virtual object server, such as AGG_V, is not a desirable configuration, as probe failback is unmanaged, and requires a restart of the backup aggregation object server. In the example property settings, NetworkTimeout is set to ten seconds, and PollServer to twenty seconds. Typically, PollServer is set to twice the value of NetworkTimeout, where NetworkTimeout is a value that allows detecting that the connection to the object server is unavailable.



Under normal conditions the master probe is connected to the primary collection object server. When the object server is detected as being unavailable, the master probe switches to the ServerBackup object server. This switchover happens when an event is ready to send to the object server, and within the period NetworkTimeout defines. If the primary object server, that Server defines, becomes available, the master probe fails back within the period the property PollServer specifies. If NetworkTimeout is greater than PollServer, the master probe never fails back automatically.



In addition to ServerBackup, all probes support store and forward. There are two types of store and forward, AutoSAF and SAF. AutoSAF works automatically, and does not require the object servers to be available to be initiated. SAF requires that the object servers are running before it is initiated. SAF has two modes, normal and circular. The administrator decides if store and forward is required, under what circumstances SAF needs to activate, and how much event data it needs to preserve.

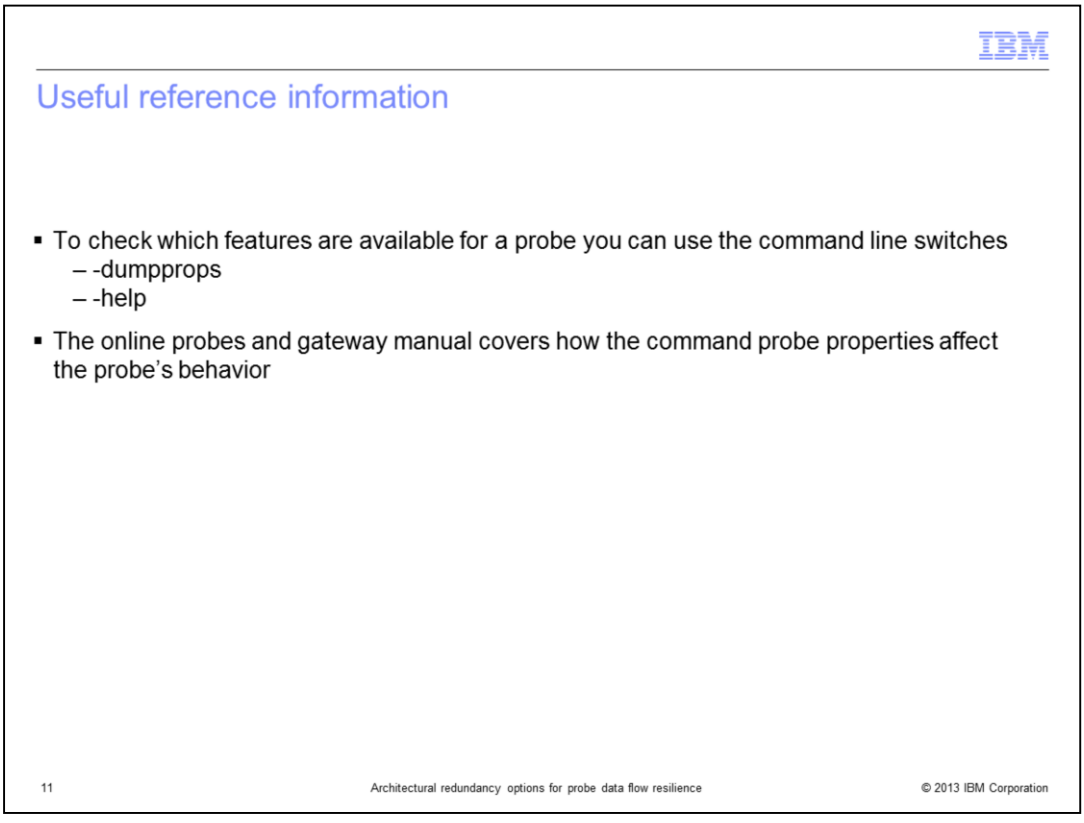


Now that you have completed this training module, you can accomplish these tasks:

Decide which type of probe resilience is suitable for your installation

Configure a peer-to-peer master and slave probe in your environment

Configure a probe for ObjectServer failover and failback



To check which features are available for a probe you can use the command line switches

-dumpprops

-help

The online probes and gateway manual covers how the command probe properties affect the probe's behavior

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