

SeaChange Spot+ Software

QuickSpec

Version 1.3

SeaChange Spot+ Software v1.3 protects local advertising revenue by detecting the failure of Spot devices and managing failover to backup devices automatically, with minimal interruption to insertion.

The Spot+ Software monitors various SeaChange Spot system devices deployed in a digital ad insertion system watching for catastrophic failures. When a protected device fails to function as expected due to a malfunction or power loss, the Spot+ software sends an alarm notification via the Spot System and the designated backup device automatically picks up responsibilities for the failed device.

NEW IN V1.3

Support has been added for databases and Master Video Libraries. The Spot+ Software now provides failover protection for the following Spot System devices:

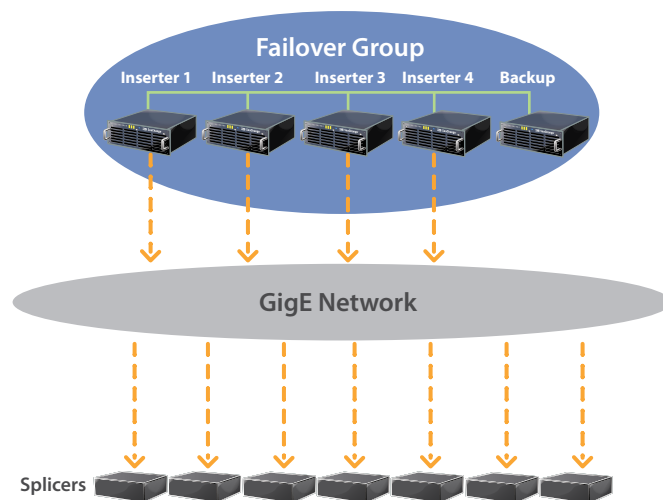
- Spot 2048, 20100, and 20200 TSI inserters
- Spot DB2000, DB3000 and DB4000 series databases Spot MVL2000 and MVL3000 master video libraries

HOW IT WORKS - INSERTER FAILOVER

Spot+ Software supports monitoring and failover of primary inserters within a defined failover group.

- The failover group may be comprised of up to four primary inserters and one backup inserter.
- The inserters in the failover group may be a mix of Spot Inserter 2048, 20100, and 20200 devices, provided that:
 - All inserters must use **GigE outputs**.
 - The backup inserter must have a channel capacity that is **equal to or greater than** the largest primary inserter in the failover group.

When the backup inserter is in standby mode and the primary inserters are operating properly, the backup inserter continuously maintains an up-to-date copy of the ad schedules and ad content loaded on each of the primary inserters. If a primary inserter fails, the backup inserter picks up that inserter's duties using the spots and schedules it had preloaded while in standby mode.



Because the backup inserter constantly updates its copies of spots and schedules for all other inserters in the group, failover time is very quick, and interruption to insertion on channels served by a failed primary inserter is minimized. Actual failover time depends on the number of channels on the failed inserter, but typically executes in under 10 minutes.

Once the failed primary inserter is repaired, the operator initiates a fail-back request to restore the original primary inserter to service and return the backup inserter to standby mode.

DATABASE FAILOVER

Spot+ Software v1.3 supports monitoring and failover of Spot databases within a defined failover group.

- All databases must be DB2000, 3000 or 4000 series databases
- One (1) backup database must be configured for each Master database
- One (1) backup database must be configured for up to three (3) Slave databases
- Channel capacity of the backup database must be identical to or greater than the largest channel capacity of any databases it is configured to protect

On detection of database failure, the backup database assumes all responsibilities for the failed database.

MVL FAILOVER

Spot+ Software v1.3 supports monitoring and failover of Spot master video libraries within a defined failover group.

- All MVLs must be MVL2000 or MVL3000 series Master Video Libraries.
- One (1) backup MVL must be configured for each Master Video Library.
- The spot capacity of the backup Master Video Library must be identical to or greater than the spot capacity of the Master Video Library it is configured to protect.

Videos that are added to the primary MVL are also automatically added in a shadow capacity to the standby MVL. On detection of a failed primary MVL, the backup MVL assumes all responsibilities for failed MVL.

FAILOVER SCENARIOS

The following conditions in a primary device can trigger automatic failover to the backup device:

- Catastrophic memory failure
- Catastrophic CPU failure
- System boot failure
- Loss of power to both power supplies
- System “blue screens” and does not reboot within a user-configurable period of time

In addition, the Spot+ Software includes a web utility that enables an operator to manually force a specified primary device to failover to the backup device. The web utility is accessible from systems connected to the Spot network.

NETWORK FAILOVER SCENARIOS

Using the manual failover option provided by the Spot+ web utility, an operator can manage manual failover for the following network conditions:

- Failure of the GigE network connection between the inserter and the splicer. If the primary inserter receives a “no ad stream found” error from the splicer, it can generate an alarm via the SeaChange Spot System. The operator can initiate a manual failover if appropriate.
- Failure of the splicer command/control network (SCTE 30/35 control network) between the inserter and the splicer. If the primary inserter detects a “splicer connection lost” condition, it can generate an alarm via the SeaChange Spot System. The operator can initiate a manual failover if appropriate.
- Failure of the Spot network connection between the inserter and other Spot devices in the system. If the backup inserter detects an inability to update copies of spots and schedules from a primary inserter, it can generate an alarm via the Spot System on behalf of

a primary inserter and determine through the command/control network if the primary inserter is still active. If the primary inserter does not respond via the command/control network, an automatic failover can be initiated. (The Spot master database will also initiate a “system reachability” alarm in this case.) If the primary inserter is accessible via command/control, but not exchanging spots and schedules with the backup inserter, the operator can initiate a manual failover if appropriate.

MINIMUM SYSTEM REQUIREMENT

- Spot+ v1.3 requires Spot System Software v5.0 or later to support inserter, database, and MVL failover.
- All primary and backup inserters must be Spot Inserter 2048, 20100, and 20200 digital inserters using GigE outputs.
- Backup devices must have a channel capacity equal to or greater than the largest primary device in the failover group.
- If a DigitalX Transcoder is configured, it must be running v1.6 or later for continued workflow automation in the event of an MVL or database failover.
- If a SeaChange QuickSilver Input Workstation is configured, it must be running v2.0 or later for automatic MVL failover.

SYSTEM RECOMMENDATIONS

For optimum Spot+ Software performance, SeaChange strongly recommends the use of separate networks for each of the following types of traffic:

- Communication between Spot System components (inserters, databases, MVL, etc.)
- Data streaming between inserters and splicers
- SCTE 30/35 Control Network carrying control messages between Spot inserters and splicers
- Supporting all traffic on a common GigE network may result in degraded Spot+ performance

LIMITATIONS

- Not available for legacy Windows NT 3.51 or NT 4.0 Spot system components.
- Not available for cross-SQL system components running Spot 4.6.2.
- Not available for Spot Analog Inserters or Spot DVB/ASI Digital Inserters.
- Does not support multiple simultaneous failures within the same Failover Group.
- Splicer failover capability is dependent on features provided by the splicer manufacturer.

SALES ORDER NO.	DESCRIPTION
SFD - 0153 - 00	SeaChange Spot+ Software (for existing customers with Spot System Software, per DMA)



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