



## SeaChange® Spot+™ Software v1.1

**SeaChange® Spot+™ Software v1.1 protects local advertising revenue by detecting the failure of Spot digital inserters and managing failover to backup inserters automatically, with minimal interruption to insertion.**

The Spot+ Software monitors SeaChange® Spot™ Inserter 2048, 20100, and 20200 GigE devices deployed in a digital ad insertion system watching for catastrophic failures. When an inserter 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 inserter automatically picks up responsibilities for all channels served by the failed inserter.

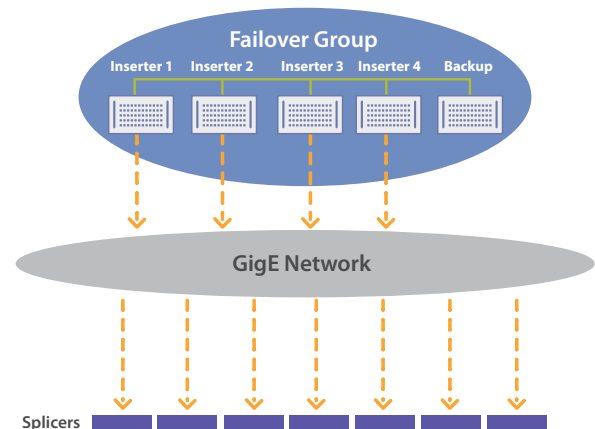
### How it Works

V1.1 of the 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.

### Inserter Failover Scenarios

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

- 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 inserter to failover to the backup inserter. 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 REQUIREMENTS

- All primary and backup inserters must be Spot Inserter 2048, 20100, and 20200 digital inserters using GigE outputs.
- The Spot System must be running Spot System Software V4.6.1 or greater.
- Backup inserters must have a channel capacity equal to or greater than the largest primary inserter in the failover group.

### 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.

### COMPATIBILITY

V1.1 of Spot+ Software is fully compatible with the following:

- SeaChange Spot System Software v4.6.1 and higher
- Terayon Cherrypicker®DM6400 splicers
- BigBand BMR®1200 splicers

### LIMITATIONS

- V1.1 of Spot+ Software is not for use with:
  - Legacy Windows NT 3.51 or NT 4.0 Spot inserters
  - Spot analog inserters or Spot 2048 digital inserters with DVB/ASI outputs
- V1.1 of Spot+ Software includes no provision for scenarios that include failures of two or more inserters within the same failover

### FUTURE FEATURES

Future versions of the Spot+ Software are planned to enable the additional failover capabilities listed below.

- Support for Microsoft® Windows® 2000 master and slave databases (DB3200 to DB3600 series) failover

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

- Support for SeaChange® Spot™ Master Video Library failover

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.

### ORDERING INFORMATION

Sales Order Number	Description
SFK-0009-00	SeaChange Spot System Software and Spot+ Software Bundle (for new customers, per DMA)
SFD-0084-00	SeaChange Spot+ Software (for existing customers with Spot System Software, per DMA)