



## Time from Detection of Leased Line Failure to provide a Backup Aggregation to the DTE

Backing-up leased lines quickly and reliably is the key to maintaining user-sessions and meeting SLAs and is a fundamental function of backup equipment.

If the backup can be achieved quickly enough, most applications and user-sessions will be maintained so users/customers are unaware that there has been a circuit problem.

PatapSCO provide the following backup times as a guide to customers and prospective customers.

They were measured on the following basis:

1. A simulated network was used. This will result in slightly faster call establishment times. Adding around 500msecs should equate the time taken for a normal domestic ISDN call, so adding one second to the figures below would be realistic.
2. International gateways can take longer to establish calls so adding two or three seconds is reasonable.
3. All figures exclude the period of time that is configured by the user, which determines the leased line as having failed. If the user configures two seconds, for example, the Databand will detect the failure criteria immediately but wait two seconds before initiating backup action. This period is to ensure the circuit has failed "hard" and is not a temporary glitch. The times shown are from starting backup action once the timer has expired, and providing clock and a clear data path to both DTEs.
4. All examples are where the DB120 dials the remote sites.
5. The block of figures called "A" are for eight physical V.35 circuits on four dual LLB cards in a DB120 chassis. The chassis is populated with the appropriate number of PRIs so there is adequate ISDN coverage for all circuits. The DB120 is communicating, and backing-up, to eight stand-alone Databand LLBs or Minis each using BRI ISDN. All eight leased lines are failed simultaneously and the times given are those to provide the backup speeds to all eight pairs of DTEs.
6. The block of figures called "B" is to backup a single circuit in a DB120 to a single remote Databand LLB or Mini.
7. The block of figures called "C" is to backup a single circuit within a structured G.704 trunk in a DB120 SGN card, to a single remote Databand LLB or Mini.
8. The block of figures called "D" is to backup a multiple circuits within a single structured G.704 trunk in a DB120 SGN card, to a multiple remote Databand LLBs or Minis.
9. The block of figures called "E" is to backup a multiple circuits within a four structured G.704 trunk in a DB120 SGN card, to a multiple remote Databand LLBs or Minis.
10. Other timers can be provided against specific configurations.

**NOTE: The number of seconds in the charts below is the time taken to establish all circuits. Some will establish sooner than others, therefore effectively reducing the backup time for most circuits. The figure shown is the time taken to provide backup to all circuits shown, 100%.**

**It can be seen from the information that PatapSCO's backup system is extremely fast – the "Fastest in the World".**

<b>Data A</b>	
Time to backup 8 simultaneous failures at 64kbps	3 seconds.
Time to backup 8 simultaneous failures at 128kbps	5 seconds.
Time to backup 8 simultaneous failures at 256kbps	8 seconds.
Time to backup 8 simultaneous failures at 512kbps	8 seconds.

<b>Data B</b>	
Time to backup at 64kbps	1 seconds.
Time to backup at 128kbps	1 seconds.
Time to backup at 256kbps	2 seconds.
Time to backup at 384kbps	2 seconds.
Time to backup at 512kbps	3 seconds.
Time to backup at 1.024Mbps	5 seconds.
Time to backup at 1.920Mbps	5 seconds.
Time to backup at 2.048Mbps	5 seconds.

<b>Data C</b>	
Time to backup at 64kbps	1 seconds.
Time to backup at 128kbps	1 seconds.
Time to backup at 256kbps	1 seconds.
Time to backup at 384kbps	2 seconds.
Time to backup at 512kbps	2 seconds.
Time to backup at 1.024Mbps	4 seconds.
Time to backup at 1.920Mbps	4 seconds.
Time to backup at 1.984Mbps	4 seconds.

<b>Data D</b>	
Time to backup 31 simultaneous failures at 64kbps	9 seconds.
Time to backup 15 simultaneous failures at 128kbps and one 64kbps.	7 seconds.
Time to backup 7 simultaneous failures at 256kbps and three 64kbps.	6 seconds.
Time to backup 3 simultaneous failures at 512kbps and three 128kbps and one 64kbps.	6 seconds.
Time to backup one 1.024Mbps and one at 512kbps and three 128kbps and one 64kbps.	5 seconds.

<b>Data E</b>	
Time to simultaneously backup one 1.024Mbps, one 512kbps, one 256kbps and two 64kbps on each of four G.704 trunks. <b>Total of 120 "B" channels and 20 logical circuits.</b>	15 - 25 seconds.

**NOTE: The number of seconds in the charts above is the time taken is to establish all circuits. Some will establish sooner than others, therefore effectively reducing the backup time for most circuits. The figure shown is the time taken to provide backup to all circuits shown, 100%.**