Challenges and Lessons Learned Using Blaise IS with SQL Server

ByMax Malhotra and Jas Sokhal

Using Blaise IS with SQL Server database with stringent technical and security requirements poses unique challenges particularly in diagnosing and fixing errors during a group administrated CAI survey. This is in direct contrast to the standard method of CAI survey deployment and implementation where data is directly backed up to the Blaise Native Database (.bdb). How does one diagnose/replicate complex technical problems such as Blaise Lockups, Data Link errors, or .boi file corruptions in complex network architecture? This paper will address actual production problems in spite of stringent QA processes being followed prior to launch. It will address the steps to diagnose/replicate these issues in a testing lab, and what strategies were considered for ones which could not be replicated in a controlled environment. Lines of communication and dialogue were established with the technical team at Statistics Netherland resulting in multiple releases and detailed remediation plans.

The technical problems are further compounded by the fact that each component in the network architecture plays a pivotal role in a large scale site administration. The points of failure could include network architecture, server configuration, hardware failure, Blaise-IS, and other unknown variables. For the infrastructure to work correctly the components must follow an established path of communication which implies that the controller and servers must connect to the switch, and the switch will be connected to the Power Over Ethernet (POE) devices, and the POE will connect to the Access Point (AP), at this point the Access points will serve as the broadcast media to the clients and perform bi-directional communication to the servers. The troubleshooting becomes compounded when there are 300 participants under a tight time constraint in the process of conducting a survey; particularly since there is no opportunity to re-take the survey. As such we had to build in redundancy and countermeasures for every component in the infrastructure. From the controller, using internal redundancy in case a port malfunction occurs, the cabling has to be switched manually to a backup system. Thereby having a backup of every component on standby, ready to be swapped out at a moment's notice.

In this paper we will discuss the roadblocks, for example, performing consecutive 'ReadNext, Delete' statements on a BOI update file resulting in only the first record being deleted and then subsequently crashing, as well as datalink errors resulting in using smaller chucks of grouped SQL statements resulting in parsing time reduction on the database.

In particular, we will discuss in detail:

- Blaise IS with SQL Server Architecture & Infrastructure
- Blaise Lockups : Monitoring, Troubleshooting, Logging, Documenting, Resolving
- .boi file corruption where file association are lost with the SQL table, identifying and remediating
- Data Link errors that resulted in the Blaise Manipula (.man) scripts crashing and causing erroneous errors to be generated
- Duplicate Neurocognitive programs launched by Blaise IS
- Data Loss – Recovery from Paradata.

We will talk about the five different versions of Blaise 4.8.2.1589, 4.8.2.1639, 4.8.2.1653, and 4.8.2.1656 that resulted from the issues above.

Even though some of the issues have been resolved, we are still working with Statistics Netherland in identifying the root cause and resolution of the remaining issues and will share the technical details and challenges of these and future plans at the conference.