

Comparison of Data Replication Options

As the data need for this question has been defined to be limited and a subset of the source its unlikely complex solutions like snapshots, log shipping or AlwaysOn will be required. Their features do provide for the top tier of performance in terms of the availability and breadth of data provided though. These replicating solutions are more relevant when an entire dataset is required but if some assurance of data synchronicity is required at smaller timescales - they can be an advantageous option.

The remaining options discussed here are variations on a “extract/transport/load” pattern. In these an action will package the data at the source, then transport/staging takes place before the data can be brought into the target. Data migration through explicit and portable packaging includes Import/Export jobs, bcp and CSV spools, some of which have been modeled within other project solutions here. With respect to these packaged data feeds the ease of implementation can sometimes obscure auditability of transport and staging. Care should be taken to ensure the path of transport can be reviewed ex post facto in addition to the other data migration actions taking place on source and target.

There are options of packaging whereby invocation of the migration method provides for assigned point to point actions as part of a transaction or larger batch operation. The use of data services provides for extensive options in terms of scope and function. This can be illustrated by their complexity unfortunately too. Within transactional systems use-cases can exist for coordinated refresh needs at both transactional and batch groups needs as well as logical transaction boundaries within the related application. MDS provides for advanced workflows to support this.

In summary the scope of data, schedule need and overall solution suitability should drive migration option selection. If the time requirements allow, simpler solutions tend to be manageable and most cost efficient whereas full database replication has greater data provisioning and and resource cost.

| Replication Option | Data Production | Maintenance Need | Cost |
|--|------------------------|------------------|------|
| data replication through stored procedures | on invocation/schedule | low | low |
| data migration through export (ssis,bcp,csv) | on invocation/schedule | low/moderate | low |
| snapshot replication | on schedule | moderate/high | low |
| read-only database replicas | synchronized to source | moderate/high | high |