

Comparison of provider features

This document compares the feature set of our three V8 OLE DB providers and tries to answer the question which provider is right for my application? I assume a basic knowledge of the functional workings of OLE DB.

Introduction

With our V8 release we will be distributing three OLE DB data providers:

- SAS Local Data Provider (referred to here simply as the local provider)
- SAS IOM Data Provider (referred to here as the IOM provider)
- SAS/SHARE Data Provider (referred to here as the SHARE provider)

The primary attribute that distinguishes one provider from another is where the provider finds the data it accesses or, in other words, the type of data store the provider supports. The local provider gives access to data sets local to the available file system on the Windows system it runs. If the user can find a data set using his Windows Explorer, he can manipulate it using the local provider.

The IOM provider gives access to data sets managed by an Integration Technologies object server. While an object server is a scriptable interface to the SAS system, the IOM provider is the sanctioned public channel to direct data manipulation in that server context.

Finally, the SHARE provider gives access to data sets managed by a SAS/SHARE server. This provider gives users a mechanism for access SHARE data outside of a local SAS session. Both the SHARE and IOM providers surface any data that SAS can process including SAS/ACCESS data bases and views. The local provider is restricted to V6, V7 and V8 SAS data sets.

Which provider for what application?

Given the above high level comparison of providers, the next question a user will want to know is which provider is best suited for his application. This can be determined by answering three question:

1. Where is my data located?

If the user's data is accessible from the desktop file system, the local provider is a strong candidate for the end application. The local provider adapts well to applications where the data is local and relatively small.

There is a lot of operational data stored in SHARE servers. The SHARE provider is ideally suited to help the user incorporate SHARE data into a thin-client desktop application. The user can keep his operational data where it is while migrating his applications built against that data to the latest desktop data access methods.

If the user's application is being developed using the Integration Technologies IOM interface hierarchy, the IOM provider is the clear choice to make. Along with Microsoft's ADO components, this provider is the publicly documented mechanism for directly accessing tabular data in an object server.

2. Will my application run in a single- or multi-user environment with respect to accessing my data?

The local provider is constrained to single user access. In the SAS data model we call this exclusive member level lock. In other words if one user is accessing a file with this provider, any other users are locked out. This restriction is acceptable with the local provider since it is constrained to a desktop environment (where as the other providers can cross machine and operating system boundaries.)

Both the SHARE provider and the IOM provider allow multiple users to access a data store simultaneously. They both integrate SAS record-level locking features into the OLE DB model. When the user has multi-user requirements, one of these providers is the correct choice. Which exactly can depend on what product (SHARE or Integration Technologies) is available at the user site and on whether or not the application needs object server support in addition to data access.

3. In addition to basic tabular access, does my application need to do complex computations on my data that the SAS system can do for me?

If the user's application needs to do complex manipulations on data in addition to simple table operations,

the IOM provider along with object server is the appropriate choice. This provider can allow the user to integrate OLE DB/ADO features into his application along with the computational features of the IOM hierarchy.

By considering the issues these questions address, our users can get a better idea of when to use each of our providers. There may be cases where more than one provider is appropriate. One of the strengths of OLE DB is that providers can be interchanged much more easily than ODBC providers can because the OLE DB API is more generic than ODBC. For the most part a user can develop an application using one provider and then start using another or use another in conjunction with the first without having to change the application significantly. The limitation to this is the the application must be written to generic provider interfaces. If the code has been written using ADO, the user can feel confident this limitation is met.

Feature set comparison

The table below gives a more detailed comparison of the different features our providers support. This information can help users with very specific needs understand how each provider can help them. For the technically savvy OLE DB programmer, we also have [a table of supported interfaces](#) (view using the HTML version of this document); this table is fairly low-level and is probably not interesting to most people but is included for completeness.

	Local Provider	SHARE Provider	IOM Provider
General location of data	Any directory available to the desktop file system	Any SHARE server accessible through a TCP/IP connection	Any object server available from the desktop
Type of data	V6, V7 and V8 data files; V5 XPT files	data files, views and SAS/ACCESS sources	data files, views and SAS/ACCESS sources
Releases of SAS supported	V6, V7 and V8 data sets	V6, V7 and V8 servers [Note the SHARE guys haven't provided V6 support yet, but it has been promised.]	V8 and beyond
Platform formats supported	6.12 data sets created on any of the following platforms: <ul style="list-style-type: none"> • Windows 3.1/95/98/NT • INTEL ABI • IBM AIX for RS/6000 • DG UNIX • MIPS ABI • Solaris 2 • SunOS 4 • OS/2 • DOS • Macintosh 68K • PowerPC for Mac • OpenVMS Alpha • OpenVMS VAX V7/V8 data sets created on any of the following platforms: <ul style="list-style-type: none"> • Windows 3.1/95/98/NT • Solaris 2 • HP-UX • IBM AIX for 	All platforms that target the SAS/SHARE product and are TCP/IP enabled.	All platforms that target the Integration Technologies product.

	RS/6000 <ul style="list-style-type: none"> • MIPS ABI • INTEL ABI • OS/2 • DOS • OpenVMS Alpha 		
Read access	Supported	Supported	Supported
Write/update access	Single user support (member-level lock)	Multi-user support (record-level lock)	Multi-user support (record-level lock)
Data set creation	Supported	Supported	Supported
Random row access	Supported	Supported	Supported
Command processing	NOT supported	WHERE clause filtering on data sets and <i>possibly</i> some SQL processing	SQL support
Format processing	Planned support for a core subset of SAS formats/informats. Limited integration with ADO in the first release.	Full support at the provider level; limited integration with ADO in the V8 release.	Full support at the provider level; limited integration with ADO in the V8 release.