



What's New in Centerprise 6.0



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Overview

We are pleased to announce the release of Centerprise 6, Astera's latest innovative data integration software that offers industry-leading ease of use and extensibility within a powerful, fully functional environment. This version represents a major, across-the-board upgrade that combines many new features with significant enhancements to existing ones to deliver an environment that is usable for non-developers yet robust enough for even the biggest and most complex data integration challenges.

This release builds on Centerprise's impressive complex data mapping capabilities. Hierarchical data mapping has been significantly strengthened to ensure that Centerprise is the best platform for overcoming the challenges of complex hierarchical structures such as extensible markup language (XML), electronic data interchange (EDI), web services, and more.

The server functionality has received a major upgrade that includes scalability enhancements, high availability features, workflow restart, and server and job management improvements.

This document provides an overview of the major new features and enhancements in Centerprise 6. More detailed information on selected topics is available on the Astera website at www.astera.com.



Dataflow Enhancements

Hierarchical Data

Business-to-business (B2B) integration requires working with electronic data interchange (EDI) transactions, extensible markup language (XML) files, and REST or SOAP web services to exchange XML or JavaScript object notation (JSON) data. Frequently, the schemas used are complex hierarchical structures that must be parsed and validated and response structures must be built.

The innovative new features in Centerprise 6 enable users to process hierarchical data of any complexity. The new Scoped Transformation feature enables any Centerprise transformation to be attached to a specific tree node so that transformations such as sort, distinct, join, aggregate, merge union, normalize, denormalize, lookups, and others can be used to process specific sections of a tree. Centerprise also includes a tree join transformation that can be used to join multiple relational tables to create complex tree structures.

With these features, users can quickly and easily parse and construct hierarchical structures using a visual, code-free environment.

Scoped Transformations

Centerprise set transformations such as sort, join, merge, union, route, etc. usually work on the entire incoming data set. This means that sort transformations will sort the entire incoming data set before passing on results to succeeding actions. While this approach works well with flat data sets, it is insufficient for hierarchical data.

Centerprise 6 introduces Scoped Transformations—transformations that can be applied to specific nodes in a hierarchical tree. For instance, a specific tree collection can be sorted or filtered, or used to join two nodes within the same tree. This approach makes it possible to perform sophisticated transformations on complex data trees.

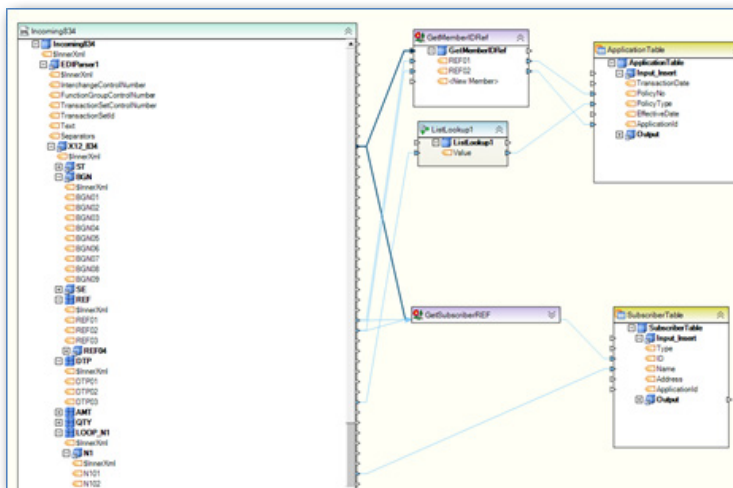


Figure 1. Scoped Transformations can be applied to specific nodes in a hierarchical tree.

Tree Join Transformations

Tree Join Transformations provide the ability to construct complex hierarchical documents by joining multiple disparate data sources. The Centerprise 6 Tree Join feature enables creation of a tree structure to be built within the dataflow and then that tree can be mapped to a destination using Centerprise mapping features.

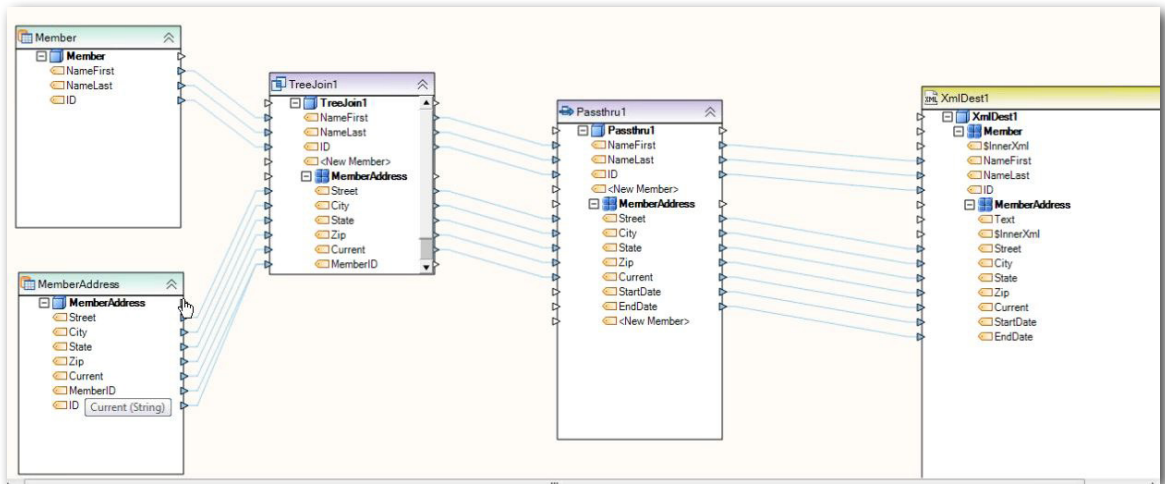


Figure 2. The Centerprise 6 Tree Join Transformation enables creation of a tree structure to be built within the dataflow and then mapped to a destination using Centerprise mapping features.

Detached Transformations

Centerprise 6 enables users to designate selected transformations as detached. Detached Transformations such as file lookup, database lookup, expression, subflow, and others can be used in Centerprise expressions to create powerful validation and conversion functionalities.

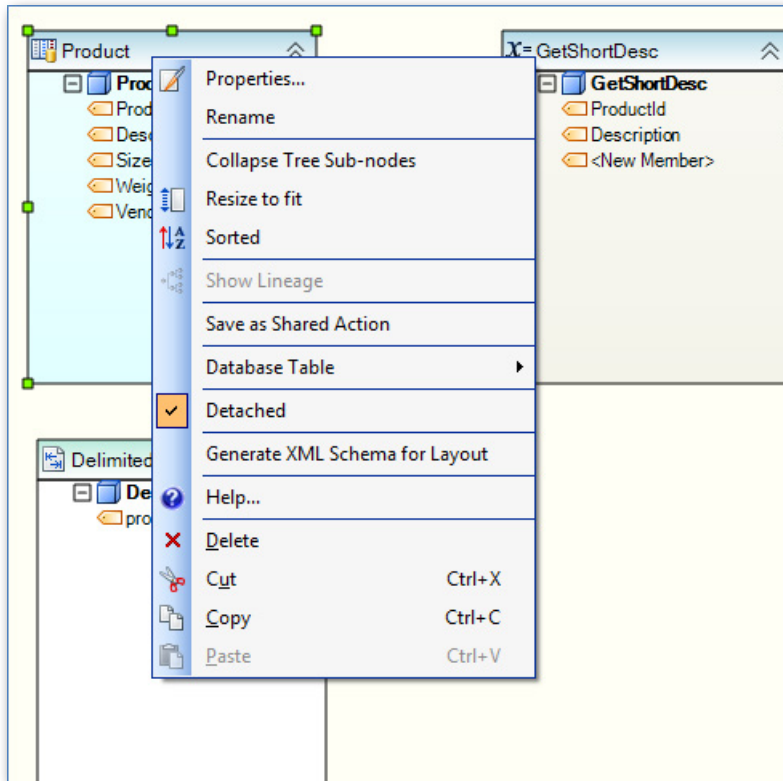


Figure 3. Centerprise 6 Detached Transformation enable users to designate selected transformations as detached in order to create powerful validation and conversion functionalities.

In-Database Joins

As with relational joins, the In-Database Join option can be used to significantly improve the performance of data extractions. In Centerprise 5, the Join Transformation feature enables users to join data within the transformation engine. This, however, necessitates retrieving all data from these tables to perform joins in the Centerprise server's memory. For large data sets, this can be a significant drag on performance.

Centerprise 6 now provides the option to perform these joins within the database. For situations where data from multiple tables needs to be extracted and joined, this feature delivers major performance benefits.

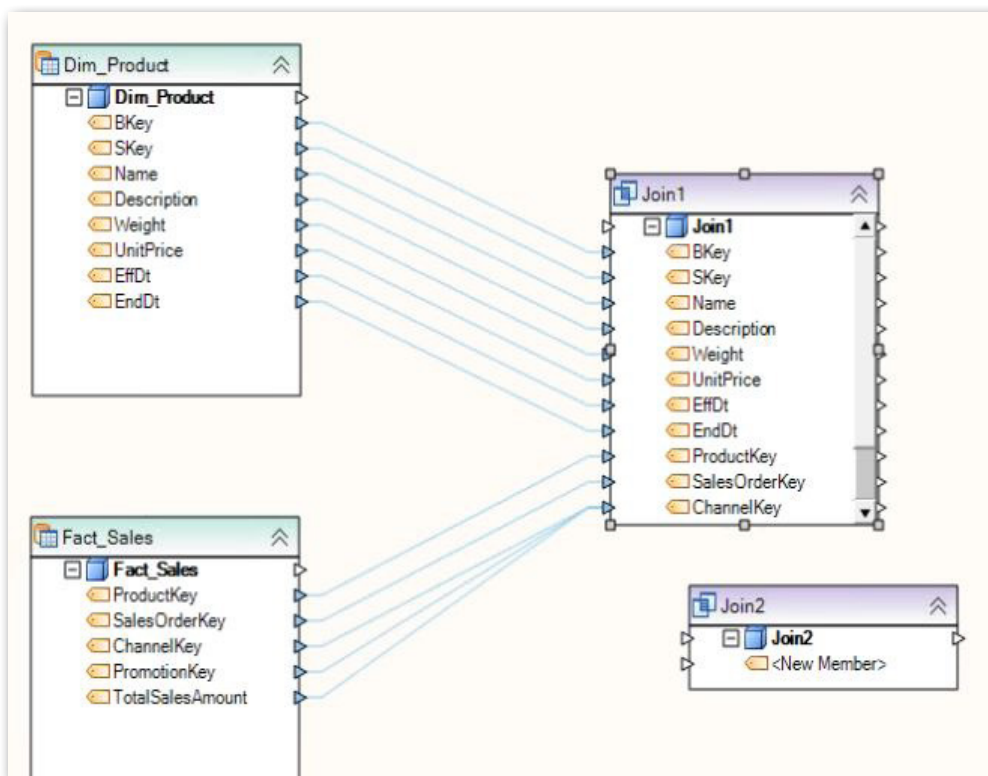


Figure 4. Centerprise 6 provides the option to perform in-database joins within the database, delivering major performance benefits.

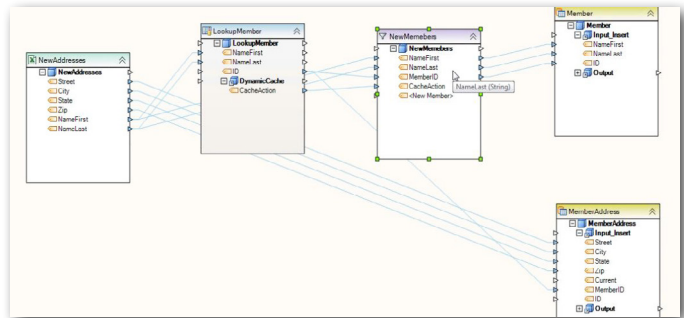
Lookup Enhancements

Database Lookup has been enhanced to provide substantial performance improvements for many common scenarios, including faster caching and improved memory management. Additionally, two new lookup cache types have been added: the Dynamic Lookup Cache and the Persistent Lookup Cache.

Dynamic Lookup Cache

The Dynamic Lookup Cache enables on-the-fly addition of records to the Lookup Cache. Now users can dynamically manage the cache for a table that is being modified by the current dataflow, bringing about considerable performance improvements for these situations. This feature enables loading of multiple related tables in a single-pass dataflow.

Figure 5. The Dynamic Lookup Cache enables on-the-fly addition of records to the Lookup Cache.



Persistent Lookup Cache

In situations where a lookup is performed on a large dataset that changes infrequently, a persistent cache can provide a significant boost in performance. The Centerprise Persistent Lookup Cache stores a snapshot of the lookup table on the server's local drive and uses it in subsequent runs. In situations where the lookup table is updated daily, a snapshot can be taken on the first run after update and can be used throughout the day to process incremental data.

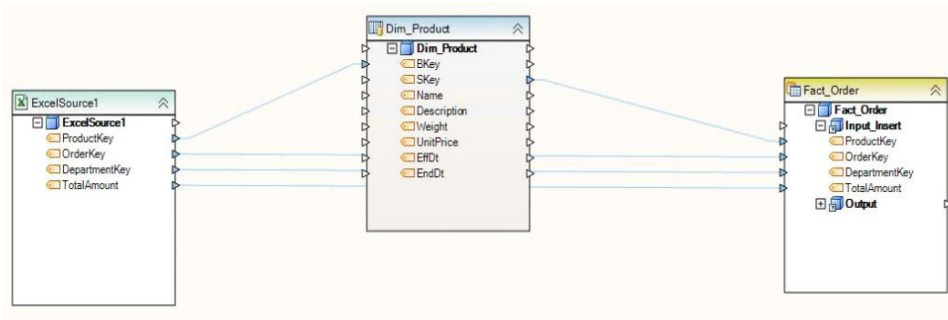


Figure 6. The Persistent Lookup Cache can be used in situations where a lookup is performed on a large dataset with infrequent changes.

Improvements for SQL Lookup

Centerprise 6 provides several improvements for the SQL Lookup Transformation. These include the ability to cache lookup data set as well as improved performance for lookup query execution.

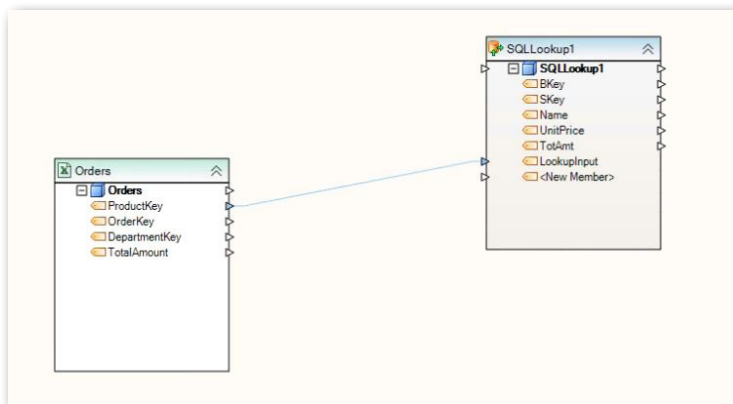


Figure 7. Centerprise 6 provides several improvements for the SQL Lookup Transformation.

Performance Enhancements

Numerous performance improvements have been made throughout the product. These include user interface performance enhancements to the flow diagram and loading and saving documents, as well as job management. Runtime performance improvements include faster bulk load and workflow performance improvements.

New Data Types

Centerprise 6 adds two new data types. The TimeSpan Data Type has been added to enable processing of interval and time-of-day situations. The Decimal Data Type has been added to provide added precision of numeric calculation.

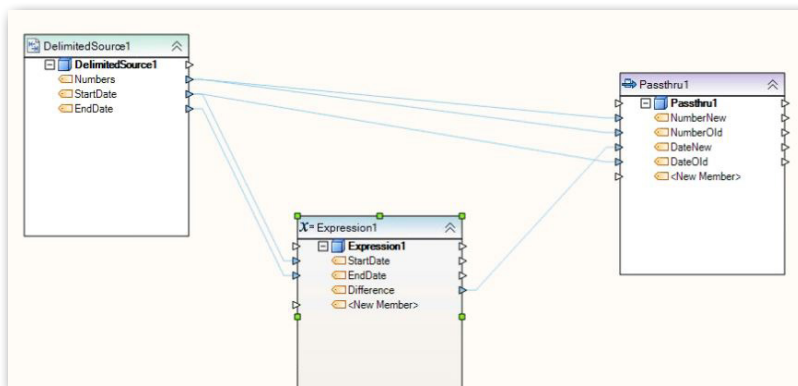


Figure 8. The TimeSpan Data Type enables processing of interval and time-of-day situations.

Built-In Functions

The Centerprise Built-In Function Library has been further strengthened with the addition of new functions, including name and address parsing, address correction, fuzzy matching, and string, date, and time manipulation functions, among others.

New Transformations

Key new transformations that streamline dataflow and workflow processes have been added in Centerprise 6, including:

ApplyToAll

This transformation applies a single function to multiple fields. It can be used to remove unwanted characters, perform a specific lookup, convert all values to a string, and parse dates using a specific logic, among other things.

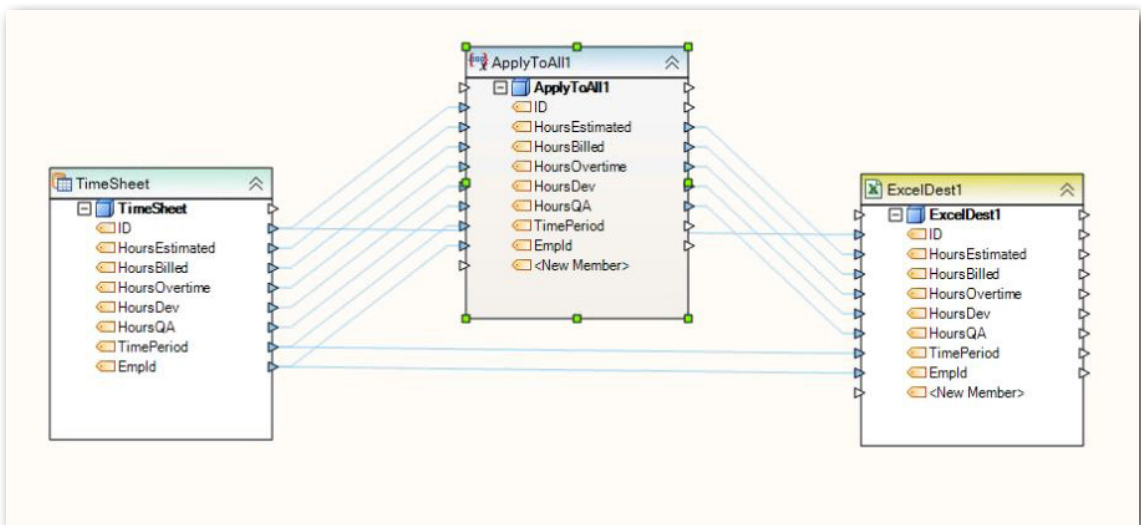


Figure 9. The Centerprise 6 ApplyToAll transformation applies a single function to multiple fields.

FLWOR

The For-Let-Where-Order-Return (FLWOR) Transformation is similar to the XQuery FLWOR transformation and is used to perform specific operations on a tree structure.

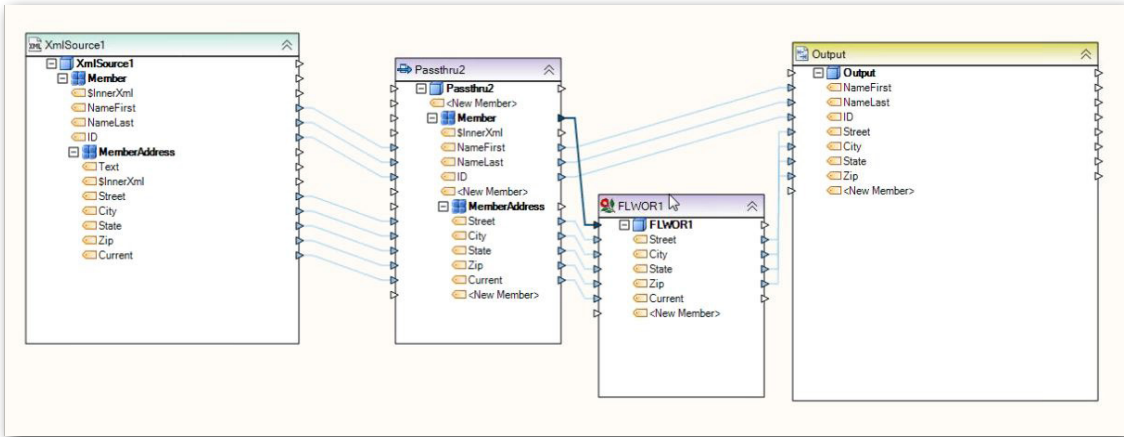


Figure 10. The Centerprise 6 FLWOR transformation can be used to perform specific operations on a tree structure.

Expression List

The Expression List Transformation enables creation of multiple expressions in a single action. This reduces clutter and streamlines dataflows.

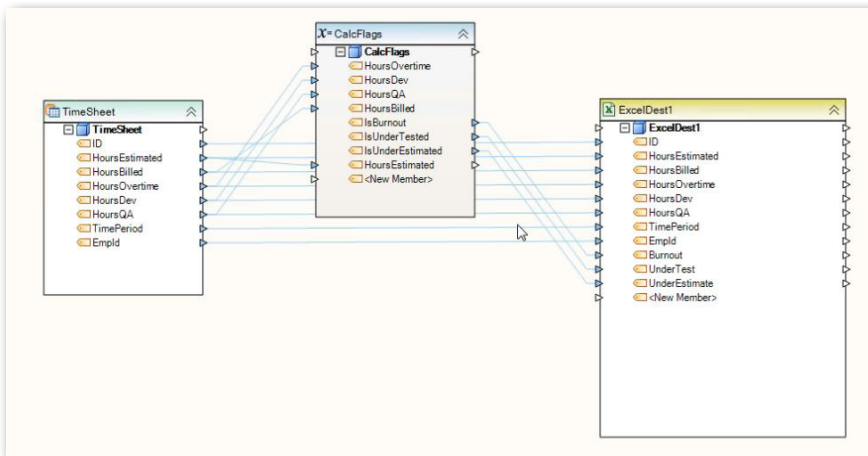


Figure 11. The Expression List transformation outside view.

Element Name	Data Type	Input	Output	Variable	Expression
ENAME	String	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CamelCaseName	String	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Left(ENAME, 1) + ToLower(Right(ENAME, Le
LOC	String	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
HIREDATE	Date	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
ENAMEANDLOC	String	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	CamelCaseName + "(" + LOC + ")"
IsPensionEligible	Boolean	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	HIREDATE < "1/1/1985"
*		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Figure 12. The Expression List inside view.

Source as Transformation

Selected data sources can now be used as transformations. This feature enables processing of multiple small files within a single dataflow. It is useful for situations where a large number of relatively small files are received that must be processed quickly.

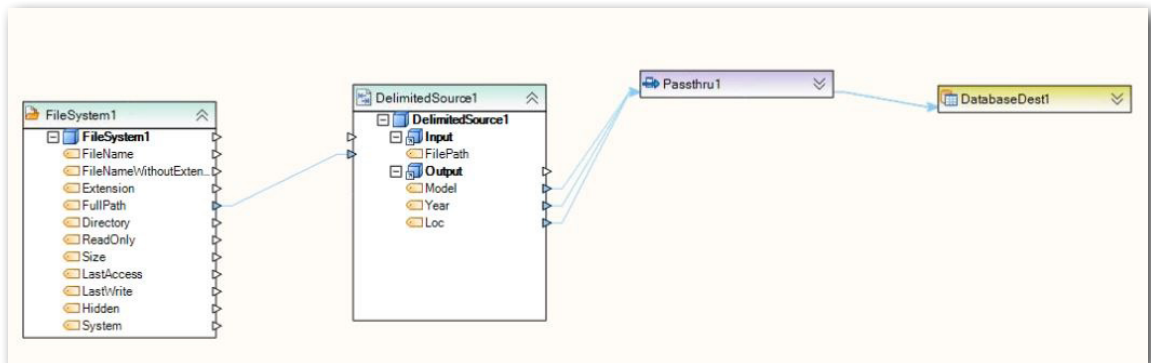


Figure 13. The Source as Transformation allows selected data sources to be used as transformations.

Text Processors

Some data files do not follow specific patterns and may contain hybrid data. For instance, an XML file may contain a field with delimited or fixed length data. The text processors in Centerprise 6 can be used to parse incoming complex files or build outgoing ones by combining multiple text processor types.

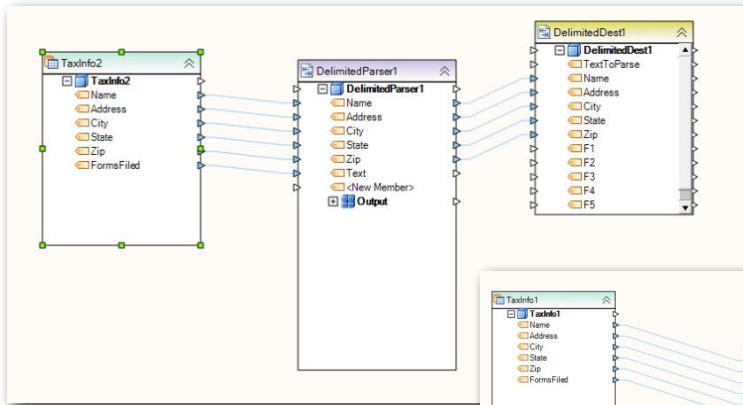


Figure 14. Centerprise 6 Text Parser.

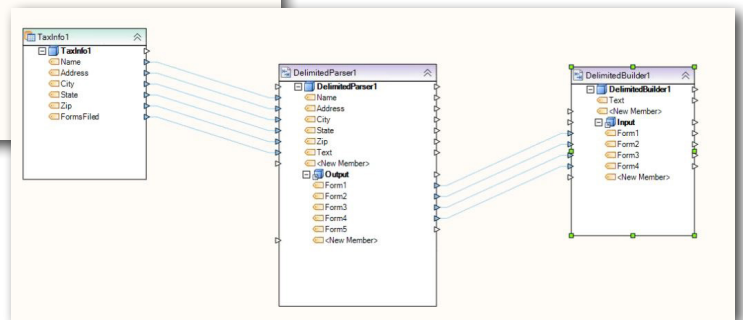


Figure 15. Centerprise 6 Text Builder.

REST Web Service

In addition to SOAP connectivity, Centerprise 6 provides a robust connector for REST web services that can be used as a source, transformation, lookup, or destination. This feature enables connectivity to a wide range of web services, including search engines like Google and Yahoo and social media platforms such as Facebook, LinkedIn,

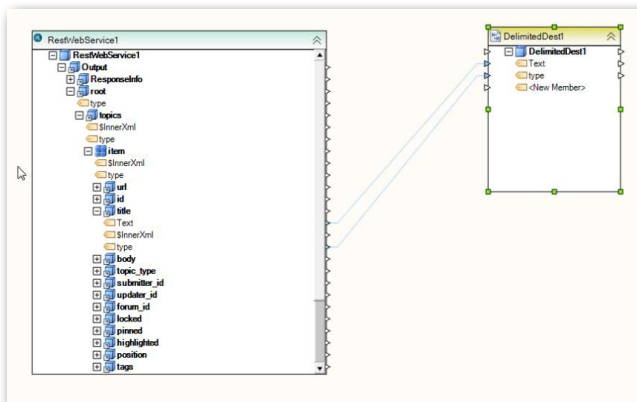


Figure 16. Centerprise 6 connector for REST web services

and Twitter, as well as other services like Amazon, Netflix, etc.

Variables

Variables are important new addition to Centerprise 6 dataflows.

Two types of variables, action and dataflow, are supported:

Action Variables

Action variables enable users to store information that can be used and manipulated across records. These variables can be used to keep track of running totals, counts, values from prior records, and more. Currently, these variables are only supported in expression list transformations.

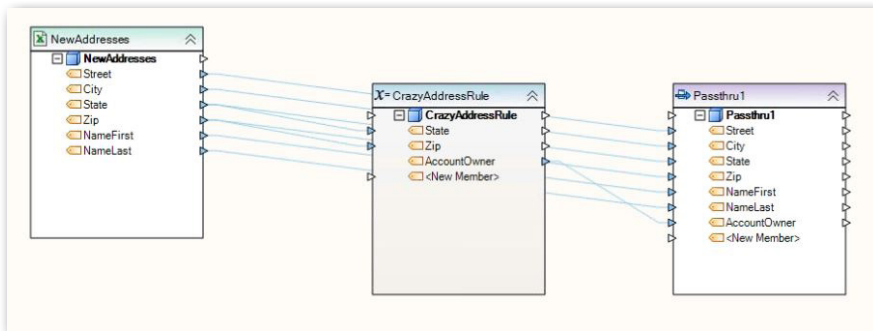


Figure 17. Action variables enable users to store information that can be used and manipulated across records.

Dataflow Variables

Dataflow variables enable users to exchange data between a dataflow and the containing workflow. These vari-

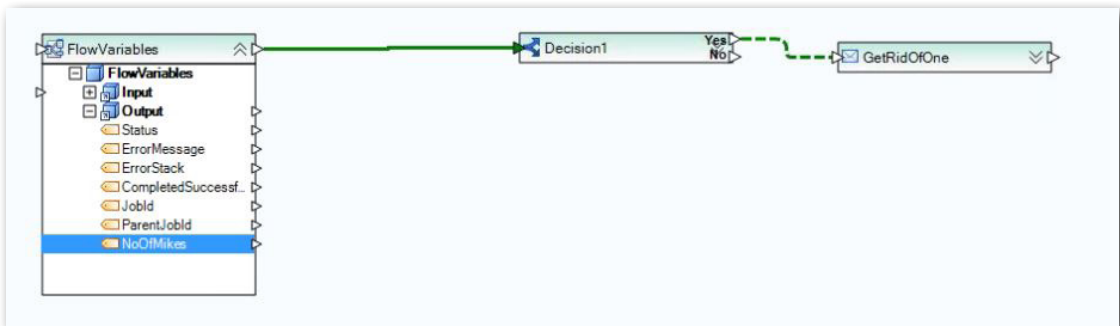


Figure 18. Dataflow variables enable users to exchange data between a dataflow and the containing workflow.

ables can be set or incremented during processing and are passed as return values to the containing workflow.

Workflow

Workflow has received several enhancements. These include the introduction of an OR Action and Start From a Specific Point, as well as Restart After Abnormal Termination. Workflows can now distribute jobs across the server farm.

Job Restart



Figure 19. Job Restart allows a workflow to be started from a specific point.

Centerprise 6 supports the ability to restart a workflow from the point of failure. A workflow can also be started from a specific point.

OR Action

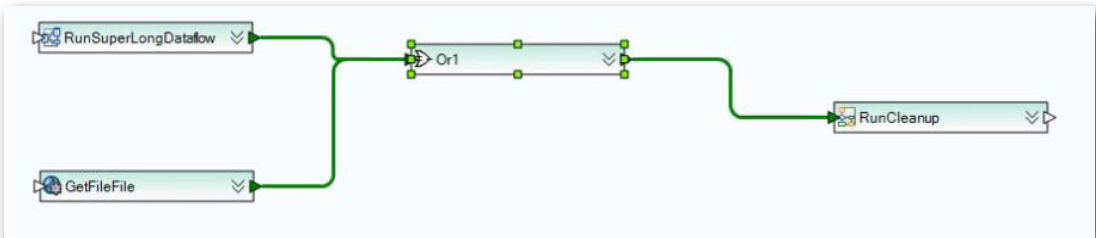


Figure 20. Centerprise 6 now supports the OR Flow Control Action

The Centerprise 6 workflow now supports the OR Flow Control Action.

Reporting

Lineage and Impact Analysis

Centerprise now provides visual lineage and impact analysis at table and field levels. The lineage diagrams can be navigated and drilled down with simple drag and drop. A visual graph of dependencies enables users to view the lineage of a data element as well as the impact of any change to that element downstream.

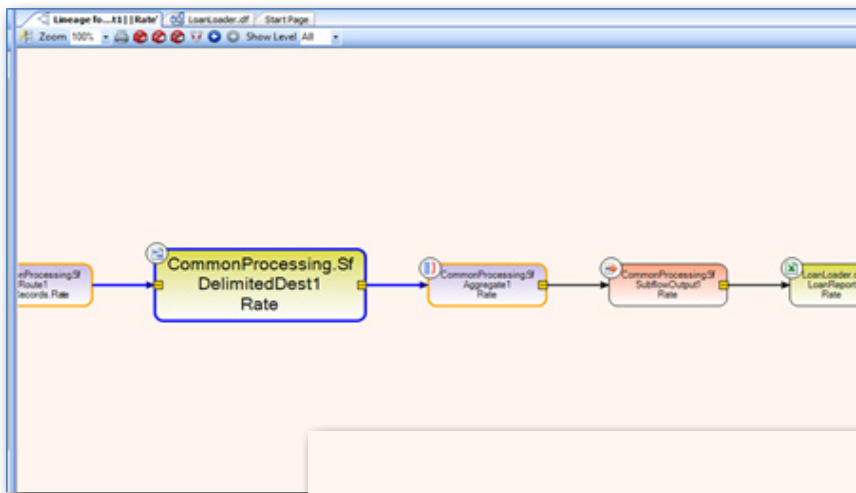
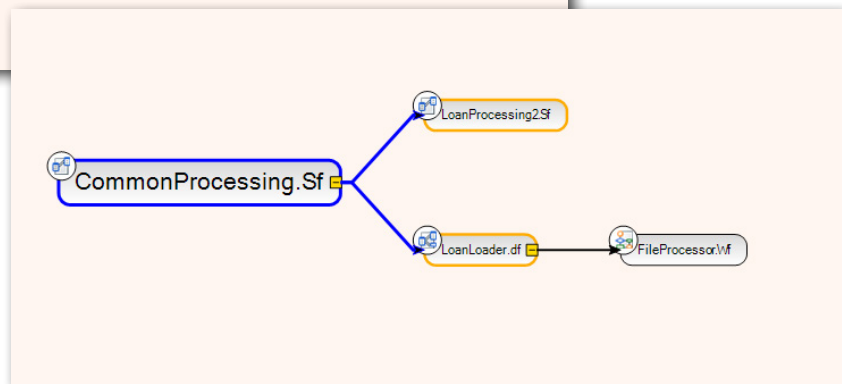


Figure 21. Visual graph showing the lineage of the data element and impact of any change to that element downstream.



Centerprise Integration Server

To meet the needs of our rapidly expanding customer base, the Centerprise server has received a major upgrade in Centerprise 6 that improves scalability, availability, and management capabilities.

Unified Server Management

Centerprise 6 introduces a unified server management interface. This feature provides a single view of all the servers connected to a repository and shows server load, the health of individual server components, and the server event log.

Server Name	Product Name	Version	Operating System	License Type	License Key	Status
ASTWKS702-9000	Astera Integration	6.0.43.0	Microsoft Windows	Not-Licensed		Running
ASTWKS702-9257	Astera Integration	6.0.56.0	Microsoft Windows	Production	PCS-13GV1Y-13	Running

Component Name	Current State	Error Info
DroppedFileProcesso	Active	
FileDropListener	Active	
ConfigUISupport	Active	
FailoverProcessor	Active	
RequestProcessor	Active	
Scheduler	Active	
RealTimeManager	Active	
JobManager	Active	

Name	Value
RunningCount	0
QueuedCount	0

Component Name	Current State	Error Info
ServerHealthMonitor	Active	
ScheduledJobManag	Active	

Server Name	Product Name	Version	Operating System	License Type	License Key	Status
ASTWKS702-9000	Astera Integration	6.0.43.0	Microsoft Windows	Not-Licensed		Running
ASTWKS702-9257	Astera Integration	6.0.56.0	Microsoft Windows	Production	PCS-13GV1Y-13	Running

Figure 22. The Centerprise 6 Server Monitor provides a single view of all the servers.

ID	Server Name	Component	Severity	Message	Error Info	Date and Time
2156	ASTWKS70...		Info	Cluster Settings info refreshed.		5/4/2013 2:49:11 PM
2155	ASTWKS70...		Info	No staging directory specified for cluster. Local temp directory of server will be us...		5/4/2013 2:49:11 PM
2154	ASTWKS70...		Info	Cluster Settings info refreshed.		5/4/2013 2:49:06 PM
2153	ASTWKS70...		Info	No staging directory specified for cluster. Local temp directory of server will be us...		5/4/2013 2:49:06 PM
2152	ASTWKS70...	Config UI Su...	Info	Cluster Settings Modified		5/4/2013 2:49:06 PM
2151	ASTWKS70...	Job Manager	Info	Job 8173: Dataflow2.DF - Job Started		5/4/2013 11:48:21 A
2150	ASTWKS70...	Job Manager	Info	Job 8173: Z:\Centerprise DataMover\CustDemos\Ironheart\Dataflow2.DF - Job Q...		5/4/2013 11:48:21 A
2149	ASTWKS70...	Job Manager	Info	Job 8172: Dataflow2.DF - Job Started		5/4/2013 11:36:21 A
2148	ASTWKS70...	Job Manager	Info	Job 8172: Z:\Centerprise DataMover\CustDemos\Ironheart\Dataflow2.DF - Job Q...		5/4/2013 11:36:20 A
2147	ASTWKS70...	Job Manager	Info	Job 8171: Dataflow2.DF - Job Started		5/4/2013 10:53:30 A
2146	ASTWKS70...	Job Manager	Info	Job 8171: Z:\Centerprise DataMover\CustDemos\Ironheart\Dataflow2.DF - Job Q...		5/4/2013 10:53:29 A
2145	ASTWKS70...	Job Manager	Info	JobInfo older than 7 days was purged.		5/4/2013 10:45:45 A
2144	ASTWKS70...		Info	Server component startup completed.		5/4/2013 10:45:44 A
2142	ASTWKS70...		Info	No staging directory specified for cluster. Local temp directory of server will be us...		5/4/2013 10:45:44 A
2143	ASTWKS70...		Info	Server components starting		5/4/2013 10:45:44 A
2141	ASTWKS70...		Warning	Server Profile not found in repository. Using Default.		5/4/2013 10:45:44 A
2140	ASTWKS70...	Job Manager	Info	JobInfo older than 7 days was purged.		5/4/2013 10:30:34 A
2139	ASTWKS70...		Info	Server component startup completed.		5/4/2013 10:30:33 A

Figure 23. The Centerprise 6 Server Monitor event log.

Scalability

Centerprise 6 enables distribution of workflow components across multiple servers to improve performance and scalability of integration jobs. Improved parallelism and database bulk load optimizations combine to deliver substantial performance improvements in job execution.

High Availability

Centerprise 6 adds high availability capabilities to avoid disruptions to mission-critical business processes due to server or network outages. In the event of an outage, Centerprise automatically reroutes processing to servers unaffected by the outage.

Job Management

The Job Management functionality has been upgraded to include a number of new features, including the addition of job priorities, moving jobs between servers, and more.

Scheduler Blackout Time

The Centerprise scheduler or scheduled jobs can now be disabled for specific periods. This is often necessary during regular server backups or maintenance.