

Softshare ECS[®]

Connect every corner of your enterprise with Softshare ECS, Softshare's communications server. Fluent in a wide variety of data transfer protocols and standards, ECS moves data across your enterprise and trading partner community, seamlessly connecting your customers, suppliers, and back-end systems into one cohesive operation.

At the heart of ECS is its ability to route and process data using today's prevalent Internet communications protocols. This core function happens at the server level, where ECS runs quietly in the background without the need for user intervention. At the client level, ECS is comprised of various utilities that you'll use to manage its operations.

While ECS can be used on its own, it is most typically run in conjunction with Softshare Delta, Softshare's data translator. When paired together, ECS and Delta provide a complete enterprise application integration (EAI) solution capable of coordinating the many diverse applications, databases, and e-commerce formats found across your enterprise.

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ECS Editions

ECS Lite

ECS Lite is the entry-level version of ECS. This edition provides base-level communications and processing capabilities for small-to-mid-size enterprises that intend to exchange data with no more than 10 trading partners. As a streamlined edition of ECS, it does not support many top-level features (as noted in the table) that are supported by the other editions.

ECS Standard

ECS Standard is a significant leap in functionality from ECS Lite. It supports Web services; integration with several security standards; custom scripts and commands; reporting capabilities; advanced event rule logic; and online access to its operations via WebECS.

ECS Enterprise

ECS Enterprise incorporates all the features of ECS Standard, with the addition of two major features: scale-out processing and integrated failover technology. Scale-out processing allows you to manage the work load over multiple servers. Integrated failover technology ensures that if the primary server (controller) fails, a back-up controller provides service in its place. In addition to scale-out and failover capabilities, ECS Enterprise also offers access to the RosettaNet extensions and the ability to bind certificates at the trading partner level.

ECS CX

ECS CX (Commerce eXchange) includes mailbox services and routing for the purpose of trading partner community hosting. It offers an integrated Web EDI solution for your trading partners based upon Softshare Athena and ships with POP3 and FTP servers.

Feature Comparison Across ECS Editions

| Feature | Lite | Standard | Enterprise |
|--------------------------------------|----------|-----------|------------|
| Trading Partners | Up to 10 | Unlimited | Unlimited |
| Delta Compatibility | ✓ | ✓ | ✓ |
| WebECS | | ✓ | ✓ |
| Scale-out Processing | | | ✓ |
| Integrated Failover Technology | | | ✓ |
| Web Services | | ✓ | ✓ |
| SMTP Listener | One | Unlimited | Unlimited |
| HTTP Listener | ◇ | ✓ | ✓ |
| POP3 Server & FTP Server | | | |
| Priority Message Queuing | | ✓ | ✓ |
| Execution of Custom Commands/Scripts | | ✓ | ✓ |
| Management Reports | | ✓ | ✓ |
| Advanced Event Rule Handling | | ✓ | ✓ |
| Exception Handling | ✓ | ✓ | ✓ |
| Data Exceptions | | ✓ | ✓ |
| Parallel Sessions per Channel | | ✓ | ✓ |
| Mailbox Services & Routing | | | |
| Integrated Web EDI | | | |
| ING Bank Protocol Extensions | | ✓ | ✓ |
| RosettaNet HTTP Extensions | | | ✓ |
| Certificate Binding at TP Level | | | ✓ |
| Data Transfer Method | Lite | Standard | Enterprise |
| SMTP | ✓ | ✓ | ✓ |
| HTTP & Secure HTTP | ◇ | ✓ | ✓ |
| POP3 & FTP (Client) | ✓ | ✓ | ✓ |
| User-Defined | | ✓ | ✓ |
| SFTP & FTP/S | ◇ | ✓ | ✓ |
| AS1/AS2/AS3 | ◇ | ✓ | ✓ |

◇ ECS Lite can be enhanced with these items

Editions

Utilities

WebECS

Multi-Server
Deployment

System Requirements

Utilities Overview

At the heart of Softshare ECS is its ability to route and process data. This core function happens at the server level, where ECS runs quietly in the background without user intervention.

At the client level, you have access to ECS' various desktop utilities. You'll use these utilities to configure how data moves through ECS, to view and track the data that's passing through, and to summarize the data. These utilities are available locally from your desktop or, if you're running the standard, enterprise, or CX versions of ECS, the majority of them are also available as parallel Web utilities from within WebECS.

Although ECS' client utilities are only briefly overviewed here, you'll find more detailed information for many of them as you explore the various feature topics in this brochure.

Management Console

ECS' Management Console utility governs data flow. You'll use it to configure where, when, and how ECS retrieves and delivers data, as well as the events that are applied to the data as it travels through ECS.

Data Administrator

ECS' Data Administrator utility presents a window to ECS' data repository, allowing you to review repository data; troubleshoot and restage failed communications; and verify whether items are received or delivered as expected. Additionally, Data Administrator provides access to archived data.

Trading Partner Manager

The Trading Partner Manager utility stores trading partner information such as sender/receiver IDs, security settings, and EDI formatting requirements. ECS relies on Trading Partner Manager for many functions including data authentication and security application, user account management, and recognition of data senders and recipients.

Log Viewer

The Log Viewer utility logs all system events that ECS initiates, including communications sessions, command and script executions, and data translation events to name a few.

Status Monitor

ECS' Status Monitor utility gives you real-time insight into ECS' operations. You can use this utility to view and filter current and pending activity, as well as directly affect current processes. For example, you can change data priority, pause and delete work on the message bus, pause and resume data channels and servers, and view ECS activity in a graphic format.

EDI Notepad

EDI Notepad is the ultimate EDI editor, providing all those clever features you've always wanted when working with EDI transactions. These features include several viewing modes, syntax validation for all EDI standards and versions, edit tools to edit or build EDI documents, document delivery capabilities, and automated functional acknowledgment generation.

Softshare WebECS

The standard, enterprise, and CX versions of Softshare ECS ship with WebECS, a Web component that lets you manage various aspects of ECS from your browser. Most of the ECS client utilities that are available locally from your desktop are also available as parallel Web utilities from within the WebECS interface, allowing you to configure, track, and summarize your ECS operations from any computer with a commonly used Web browser such as Microsoft Internet Explorer or Mozilla Firefox.

Secure Access

WebECS can be accessed from your browser via the HTTP or HTTPS protocol. Whether your connection to WebECS is secured via SSL is based on the configurations you establish for ECS' built-in HTTP listener.

The screenshot shows the 'Management Reports' section of the WebECS interface. At the top, there is a navigation bar with 'BACK', 'HOME', 'LOG OUT', and 'PREFERENCES' links. Below this, the 'Management Reports' title is displayed, along with 'Scheduled Reports' and 'Customize' buttons. The 'Report Type' is set to '[General] - MDN Status' and the 'View' is set to 'HTML'. A checkbox labeled 'Limit report to specific trading partners' is checked, and a list of trading partners is shown, with 'Big Foot Locker' selected. Other options include 'Exclude selected partners', 'Limit report to specific channels', 'Limit report to specific document types', and 'Limit report by date'. The 'Limit report by date' section has 'Between' selected, with 'Start Date' and 'End Date' both set to '9/21/09'. There are also options for 'Newer than' and 'Older than' with 'days' and 'ago' units. At the bottom, there is a 'Return no more than' field set to '500' records, and three buttons: 'Submit', 'Save Template', and 'Schedule'.

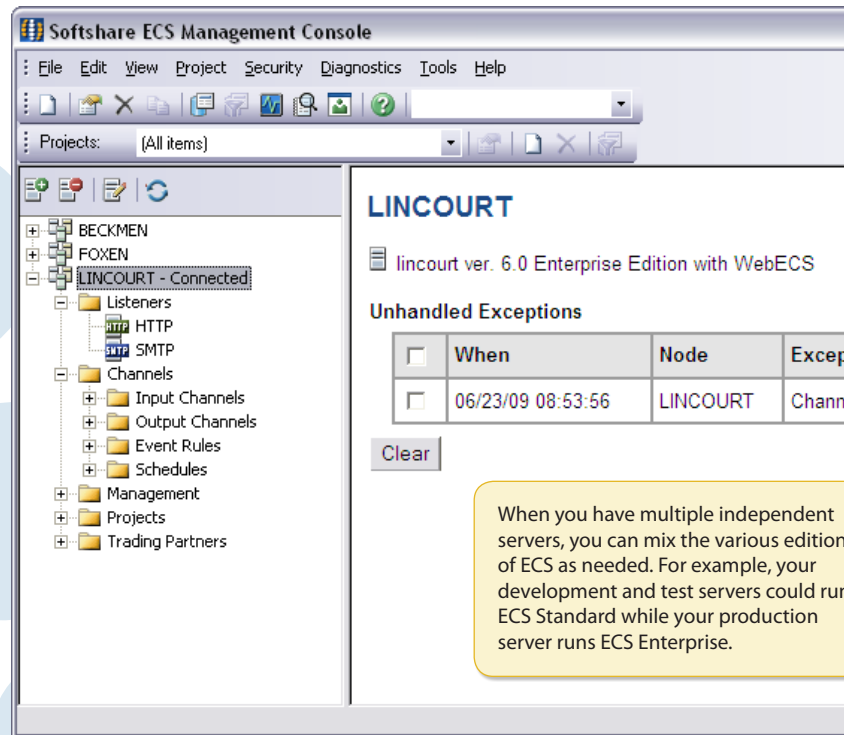
Running Reports from WebECS

Multi-Server Deployment

It's quite common for companies to run Softshare ECS on multiple servers. These ECS servers can be independent of one another or they can be clustered.

Multiple Independent ECS Servers

Independent ECS servers have individual databases and are completely unaware of one another. A typical example of a grouping of independent servers would be separate development, testing, and production environments. All of ECS' client utilities feature helpful tools that allow you to easily register additional ECS servers and move among them.

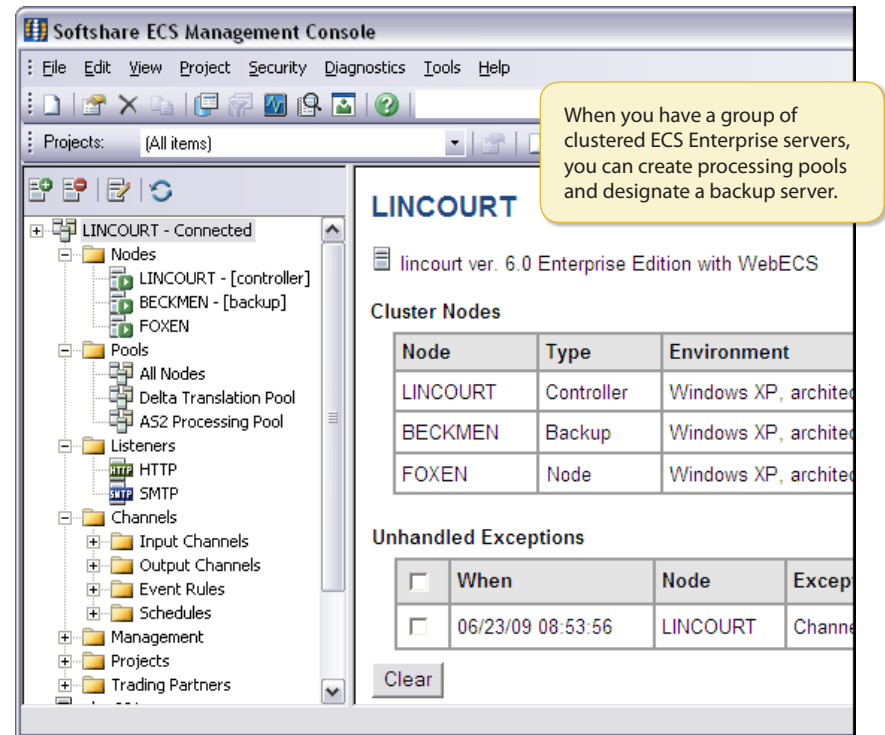


Independent Servers

Clustered ECS Servers

Using ECS Enterprise, you can scale out your processing and manage the workload over a cluster of ECS servers. All ECS servers within a cluster share the same database; when one server is busy, another can step in and handle the processing. For even more efficiency, you can "pool" servers in different configurations. For example, you could create a pool that consists of all servers and assign your most time-sensitive processing to that pool. A second pool could then be created using a subset of servers for less urgent processing.

Beyond scale-out processing, ECS Enterprise also offers integrated failover capabilities. By configuring a backup server, you can avoid downtime in the event that the primary server (controller) fails.



Clustered Servers

ECS Server System Requirements

| Component | Minimum Requirement |
|----------------------|--|
| Computer | Intel-Pentium-compatible CPU with 1 GHz or higher processor |
| Memory* | 2 GB of RAM (4 GB recommended if running on the same computer as Microsoft SQL Server) |
| Hard Disk Space | 500 MB available disk space |
| Operating System | Microsoft Windows Server 2008, Windows Vista, Windows 2003 (Standard, Enterprise, or Data Center editions), or Windows XP Professional |
| Microsoft SQL Server | Microsoft SQL Server 2000 (SP4 or higher), 2005, or 2008 |
| Internet Connection | Full-time connection to the Internet via a dedicated data access line |

*Maximum recommended batch size should not exceed 125 MB; actual limits may be larger depending on server's available virtual memory

ECS Client System Requirements

| Component | Minimum Requirement |
|----------------------|--|
| Computer | Intel-Pentium-compatible CPU with 500 MHz or higher processor |
| Memory | 1 GB of RAM |
| Hard Disk Space | 100 MB available disk space |
| Operating System | Microsoft Windows Server 2008, Windows Vista, Windows 2003 (Standard, Enterprise, or Data Center editions), or Windows XP Professional |
| Microsoft SQL Server | Microsoft SQL Server client access license may be required for each client machine |

Data Transfer & Security Protocols

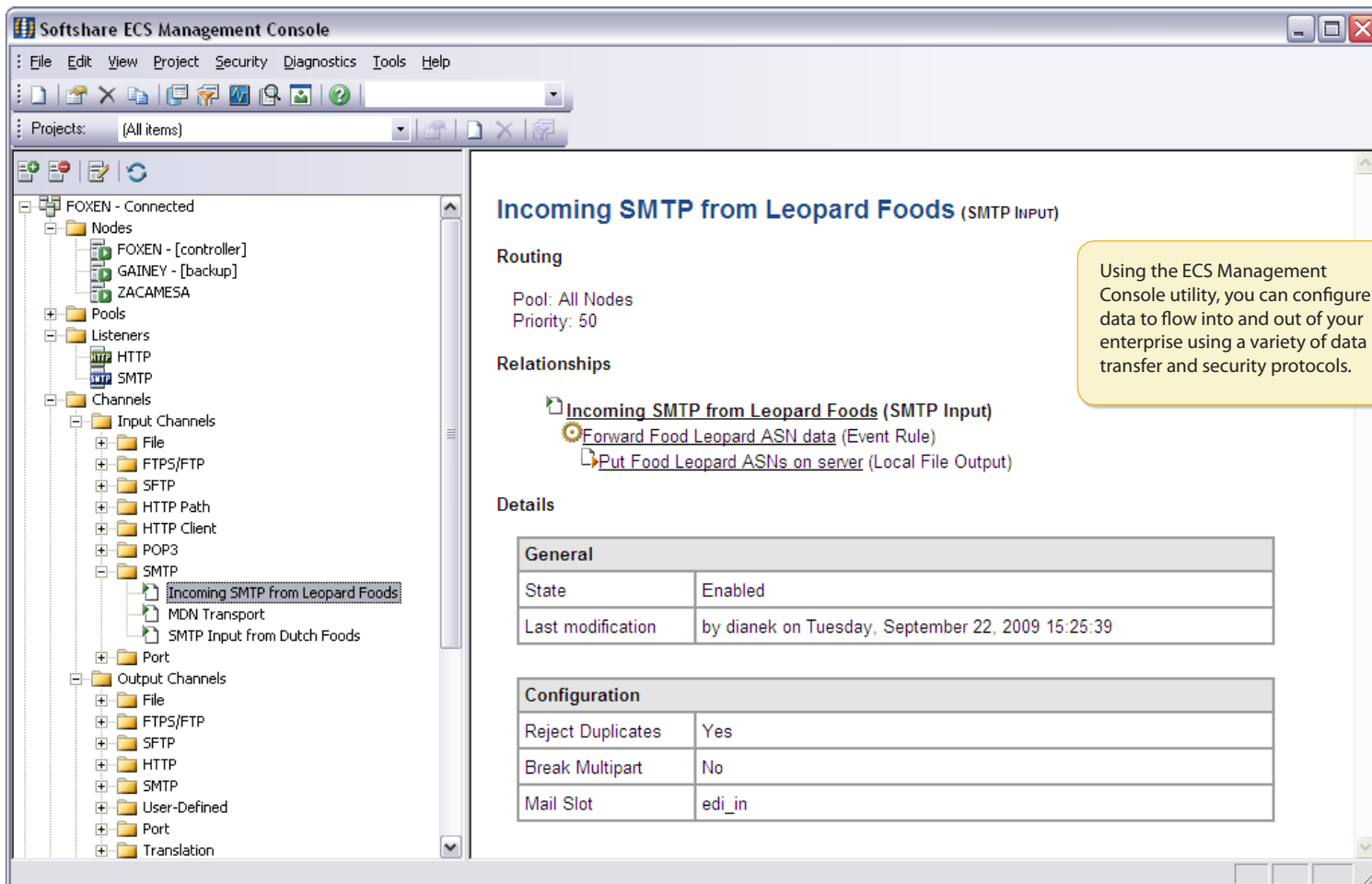
Softshare ECS communicates using a variety of Internet communications, data transfer, and security protocols. You can use ECS to connect directly with your trading partners or you can use Softshare's value-added network in conjunction with ECS.

Protocols

SMTP
 HTTP & HTTPS
 POP3
 FTP, FTP/S & SFTP
 File system
 User-defined (custom command/script)

Standards

IETF EDIINT AS1, AS2 and AS3
 SOAP, SwA
 S/MIME



Data Flow Management

Data flow in Softshare ECS is governed by input channels, output channels, and event rules. All three of these data flow components are configured from ECS' Management Console utility.

Input Channels

Input channels determine where, when, and how ECS retrieves data. Each input channel type has its own unique set of property pages that you will use to set the parameters for the retrieval and processing of data. These parameters, to name just a few, include where and how often ECS retrieves data, whether duplicate data should be processed, data authentication settings, and the actions that will be performed on the data.

Output Channels

Output channels determine where, when, and how ECS delivers data to external recipients or internal applications. ECS can deliver data as soon as it is queued or according to a schedule. As with input channels, output channels have unique sets of property pages for configuring data delivery.

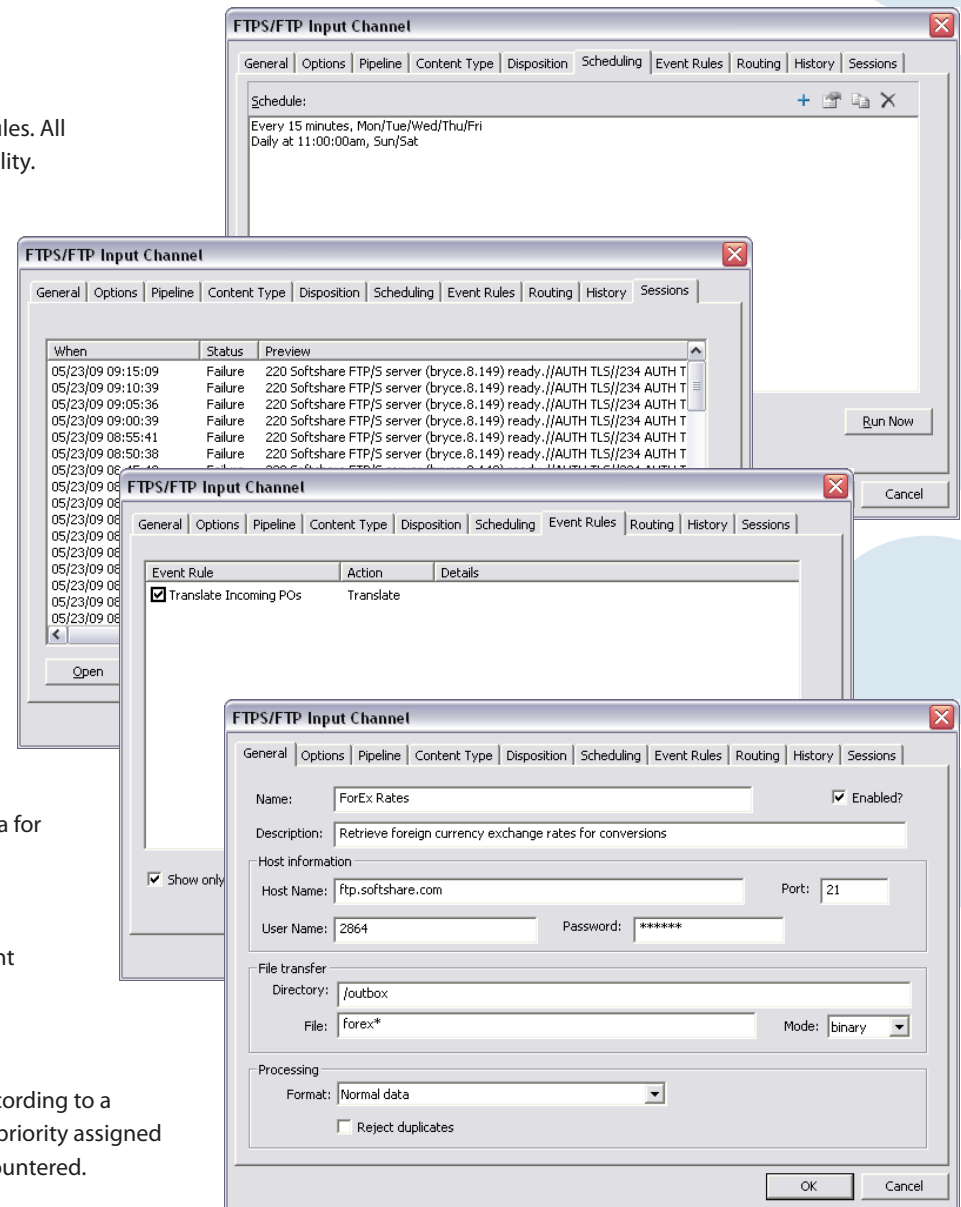
Event-Driven Processing

Event rules determine how data is processed. For example, event rules forward data to output channels, send e-mail messages, and run custom commands and scripts. If Softshare's data translator, Softshare Delta, is installed, event rules also pass data to Delta for translation and integration with your back-end systems.

Typically, event rules are tied to input channels, telling ECS what to do with data when it arrives. But event rules can also be associated with output channels and even other event rules to initiate chains of events upon the completion (or failure) of deliveries or events.

Prioritization

For standard and enterprise edition users, data flow prioritization can be established according to a task's importance to your organization. Every incoming batch receives a priority via the priority assigned to its input channel. As the batch moves through ECS, it retains the highest priority encountered.



FTP Input Channel Properties

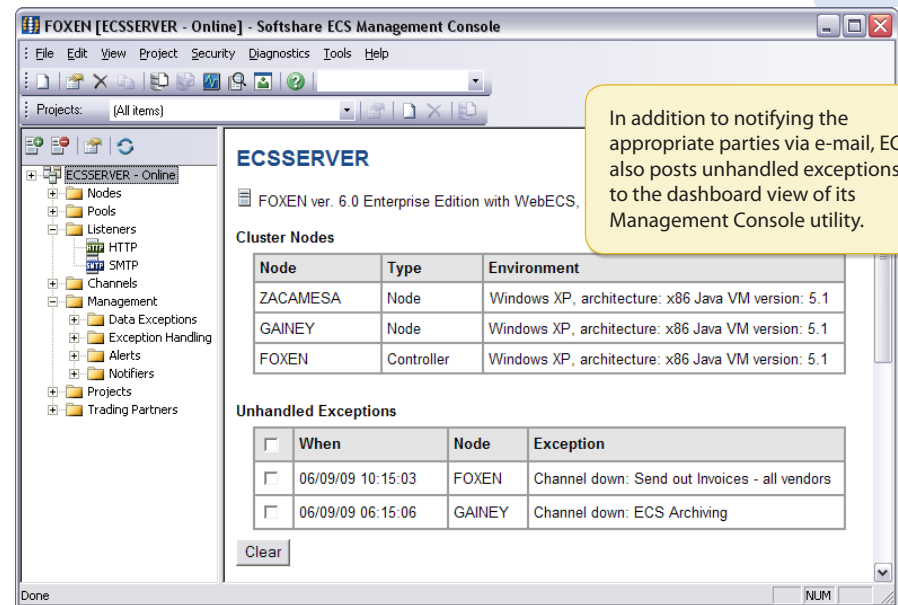
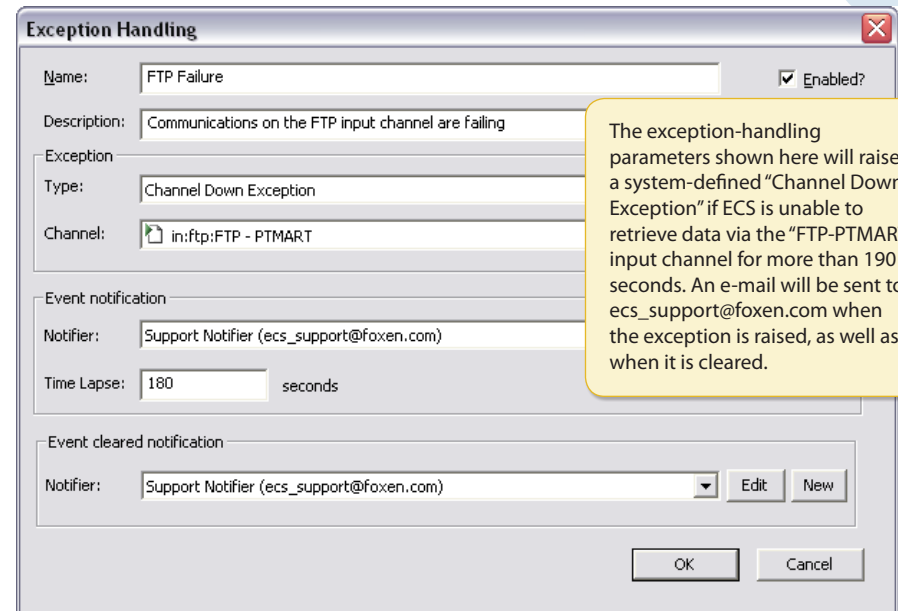
Exception Handling

Some errors require immediate attention. For example, the failure of an important delivery could have a serious impact on your business operations if it goes unnoticed. To ensure that critical errors are brought to your attention in real time, you can configure Softshare ECS to notify you when a particular type of error (i.e. exception) occurs.

ECS supports several types of exceptions:

- **System-defined exceptions.** These are common types of errors that ECS users universally want to know about such as delivery failures, server failures, or Softshare Delta mapping failures.
- **User-defined data exceptions.** ECS Standard and ECS Enterprise users can also create user-defined data exceptions, which monitor the absence of data. For example, you could configure an exception to check for the arrival of monthly production schedules; if a schedule didn't arrive within so many hours or days of its expected arrival time, ECS would raise the custom data exception, alerting you to the missing data whose absence might otherwise go unnoticed due to its infrequency.
- **User-defined Delta exceptions.** Delta users can identify mapping conditions that cause user-defined Delta exceptions to be raised in ECS. Unlike ECS' system-defined mapping exceptions, which specifically look for mapping errors, user-defined Delta exceptions can be raised when any type of mapping condition is met. For example, you could create a Delta exception that looked for line item quantities in excess of 1000.

When the conditions of an exception are met during ECS processing, ECS looks to the exception-handling parameters you've defined for that exception. These parameters include how long ECS should wait before raising the exception, as well as who should be notified of the exception (both when it's raised and when it's cleared).



Data Viewing & Tracking

All data that passes through Softshare ECS is stored in the ECS data repository. You can view, copy, restage, or restore this data using the Data Administrator utility that ships with ECS. To easily find the data you're looking for, Data Administrator lets you filter data in the ECS repository by a number of criteria—used alone or in combination—including retrieval date, input channel, output channel, and delivery status. In addition, you can search for EDI and XML data using document-specific criteria such as document type, interchange control number, and sending or receiving trading partner. When data displays in Data Administrator, not only do you see a wide variety of helpful data attributes, but also the processes applied to the data as it moved through ECS. For example, an arriving batch of data forever remains associated with the event rule(s) it triggers and the output channel(s) used to move data through the enterprise.

The screenshot shows the FOXEN - Data Administrator application window. The main pane displays a table of data batches with the following columns: Created, Source, Title, Size (Bytes), Status, Batch Sender, Batch Receiver, and Batch ID. The data is filtered to show 10 batches from 6/15/2009. The lower pane shows a detailed view of a batch with the following information:

| Status | Sender | Receiver | Control |
|--------|----------------------------|-----------------------|-----------|
| None | ZZ,DUTCHFOOD (Dutch Foods) | ZZ,2040 (Wiki Wafels) | 000000858 |

Navigation tabs at the bottom include Deliveries, Logging, Tracking (selected), Conversation, and Attachments. The status bar at the bottom left reads "Ready."

For each batch of received data, Data Administrator's upper pane displays up to ten data attributes including the batch's arrival date, retrieval method, and sending/receiving trading partners. The lower pane displays the batch's associated deliveries, log entries, tracking details, and attachments.

Security

Softshare ECS supports the key aspects of security including access control, privacy, session security, and non-repudiation.

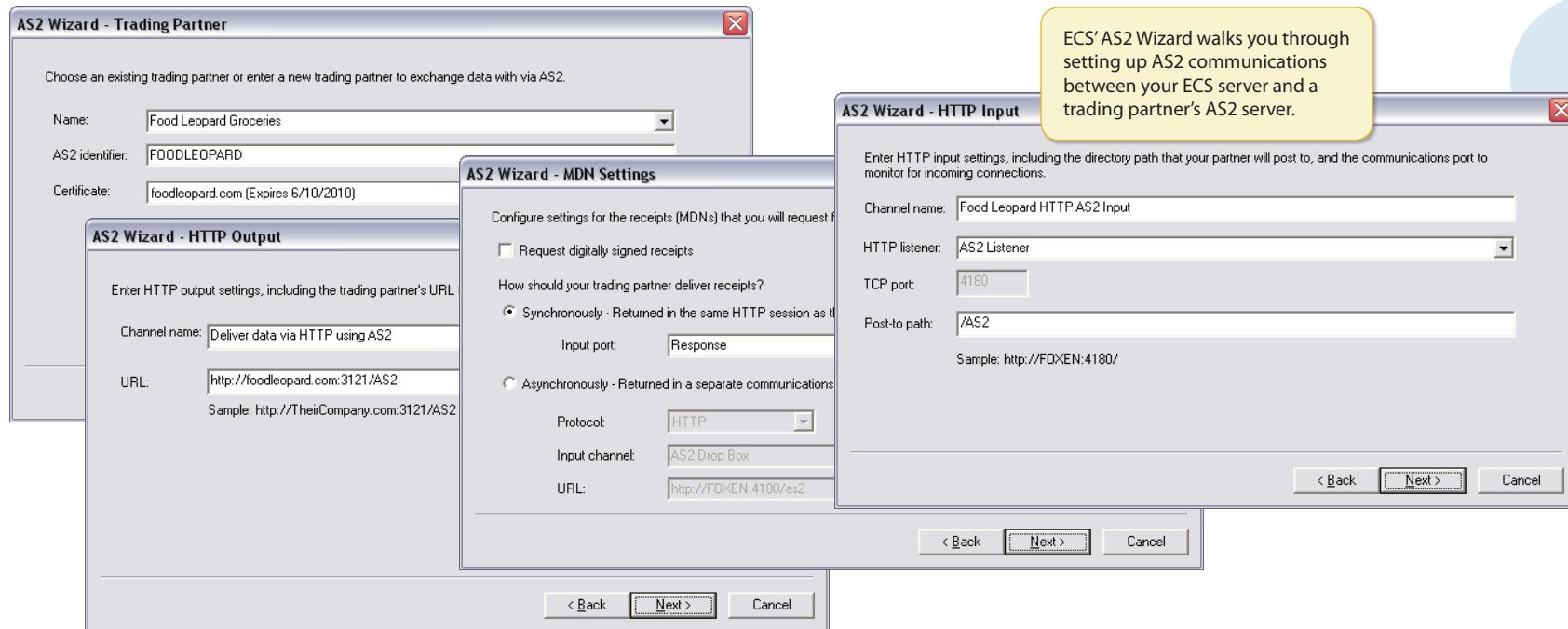
Access Control

ECS manages user access to its various utilities via four predefined roles:

- **Restricted users.** Read-only access to the ECS database.
- **Standard users.** Read and write access to the ECS database.
- **Power users.** Read, write, and delete access to the ECS database.
- **Administrators.** Unrestricted access to the ECS database, including the ability to manage other user accounts.

Data Security

To ensure the integrity and non-repudiation of your data, Softshare ECS fully supports S/MIME security, including certificate management, document encryption, digital signatures, and message disposition notifications (MDNs). ECS also fully supports the EDIINT AS1, AS2, and AS3 security specifications, which are built upon S/MIME security features. Throw in SSL/TLS session-level security for FTP, HTTP, and SMTP communications and your data is secure from every angle.

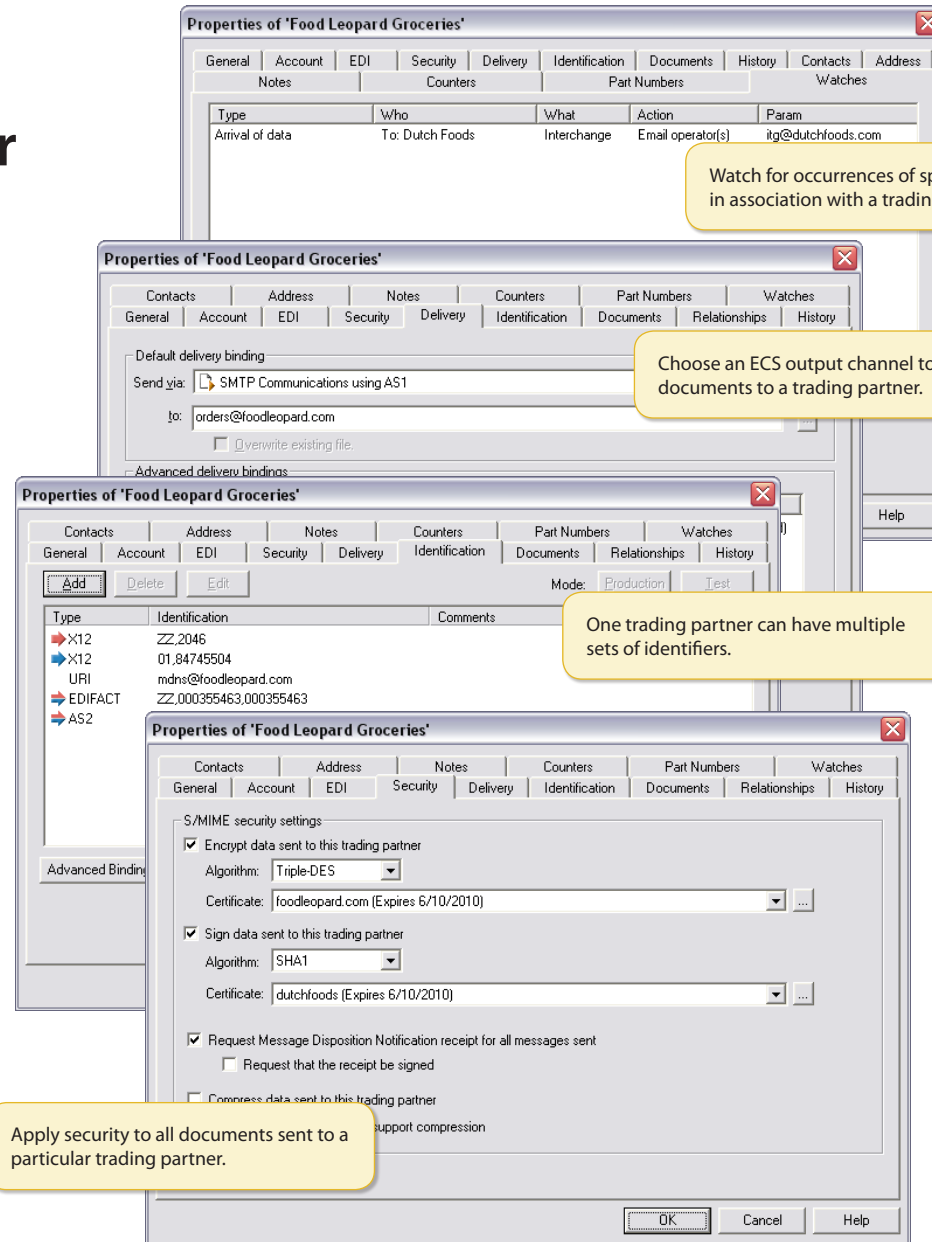


Trading Partner Manager

Using Trading Partner Manager (TPM), a utility that ships with Softshare ECS, you can store a wide variety of information for your trading partners such as sender and receiver IDs, security settings, and EDI formatting requirements. In addition to managing trading partners from this utility, you'll also use TPM to manage all ECS user accounts.

By storing sender and receiver IDs in TPM, ECS is able to cross-reference the IDs found in incoming and outgoing data and substitute them for your trading partners' names when tracking the data in the Data Administrator utility or generating management reports. In addition, ECS uses the sender and receiver IDs to watch for data that meets the criteria of any event rules that may be assigned to a trading partner's TPM record.

When Softshare Delta, Softshare's data translator, is run in conjunction with ECS, TPM helps determine the maps that are run against arriving data, functional acknowledgment generation procedures, the sender and receiver IDs that are applied to outgoing documents, and the ECS output channels that outgoing documents are handed off to, to list just a few of its roles in an ECS/Delta environment.



Integration With Softshare Delta

Pair Softshare ECS with Softshare Delta, our data translator, and you have an enterprise application integration (EAI) solution capable of coordinating the many diverse applications, databases, and e-commerce formats found in your enterprise. In this role as middleware, the two applications work seamlessly together, with ECS delivering data to Delta for translation and then picking it up again for delivery to external trading partners or internal back-end systems. When ECS passes arriving EDI or XML data to Delta, Delta uses the data's content to automatically determine the appropriate map(s) to run. In addition, you can establish map execution schedules from ECS.

When Delta and ECS are run in tandem, you'll have the following additional capabilities, technologies, and features at your fingertips:

- Automated application-to-application integration
- Automated e-commerce-to-application integration
- XML data tracking
- Web services*
- Extensive solution management*

*Requires the enterprise version of Delta