

Visión general de la integración con asanetwork

Este documento se ha preparado para dar una visión general del flujo de trabajo de asanetwork y de las tareas a realizar por los programadores del Sistema de Gestión o DMS. La base del documento la ha preparado Axonet Software GmbH, empresa que facilita el soporte técnico a Asanetwork GmbH.

Experiencia práctica:

La implementación de asanetwork en un Sistema de Gestión o DMS depende de:

- . La plataforma y el entorno de programación.
- . La arquitectura del software (cliente/servidor, 3 tier..).
- . Habilidades de programación en la empresa del Sistema de Gestión o DMS.
- . La funcionalidad del interface.

En función a lo anterior los plazos oscilan entre 3 y 12 semanas de una persona.

Interfaces and SDKs for asanetwork

All major platforms and programming environments are supported for asanetwork:

Platform	Environment	Interface	Functionality	Included in base license?	More info
Linux	C/C++	C-Interface	low	Yes	
Linux, Windows	Java	Java Interface	medium	No	http://www.axonet.de/eng/Axo/dl_Java.htm
Windows	C/C++, Delphi	C++	medium	Yes	
Windows	VB, Delphi	ActiveX	high	No	http://www.axonet.de/public_doc/AxClient/AxAwnHelp
Windows	.Net	.Net	high	No	http://www.axonet.de/public_doc/AwnControls.p

Communication

All communication in asanetwork is done with a communication server, called the asanetwork manager.

A communication channel is called an asanetwork service.

A customer order service is used to transport orders.

A data storage service is used to receive test results.

Programmer job

Use and instantiate two asanetwork communication channels, a customer order service and a data storage service.

These objects are used to send and receive data from the network manager. Most interfaces signal receive of data via events.

Creating orders for asanetwork

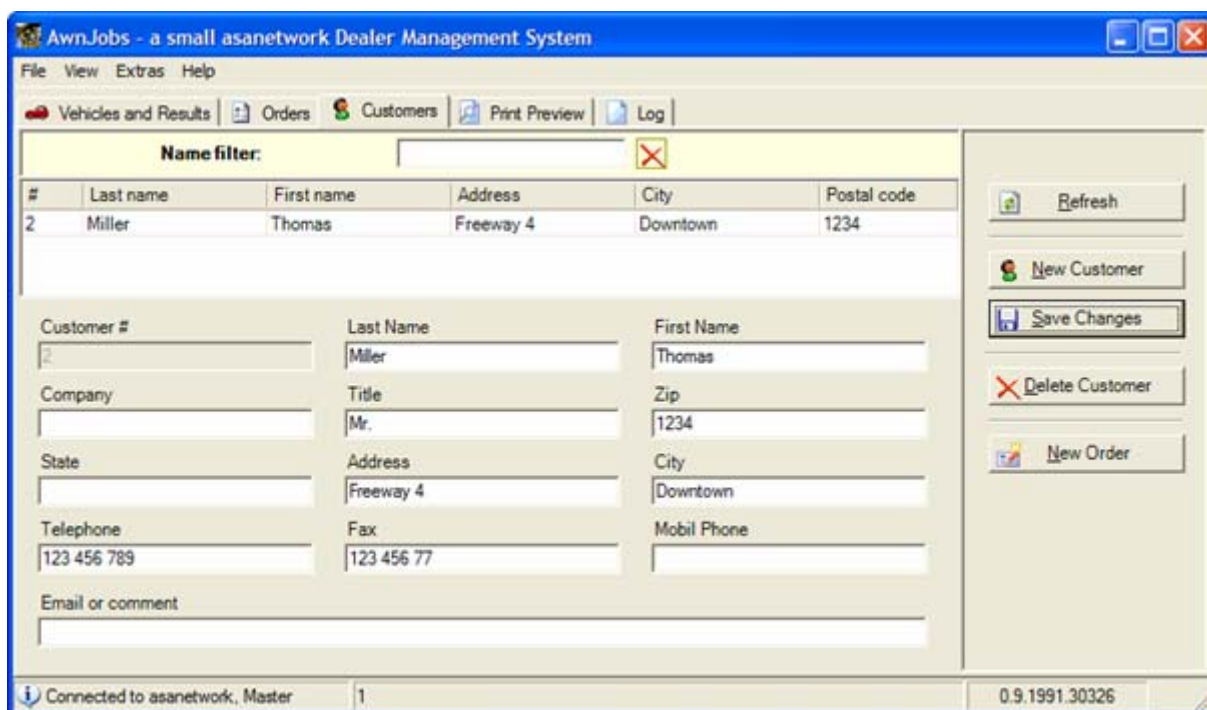
Orders in asanetwork contain customer data, vehicle data and job data. An asanetwork order matches one order line (or order position) in a DMS order.

Programmer job

Create an asanetwork order object and assign your order number.

Customer data

This is a typical customer data screen:



The screenshot shows a software window titled "AwnJobs - a small asanetwork Dealer Management System". The interface includes a menu bar (File, View, Extras, Help) and a toolbar with icons for Vehicles and Results, Orders, Customers, Print Preview, and Log. A "Name filter" field is present above a table. The table has columns for #, Last name, First name, Address, City, and Postal code, with one row showing: 2, Miller, Thomas, Freeway 4, Downtown, 1234. Below the table is a form with fields for Customer #, Last Name, First Name, Company, Title, Zip, State, Address, City, Telephone, Fax, and Mobil Phone. The fields are populated with: Customer # [empty], Last Name Miller, First Name Thomas, Company [empty], Title Mr., Zip 1234, State [empty], Address Freeway 4, City Downtown, Telephone 123 456 789, Fax 123 456 77, and Mobil Phone [empty]. There is also an "Email or comment" field. On the right side, there are buttons for Refresh, New Customer, Save Changes, Delete Customer, and New Order. At the bottom, a status bar shows "Connected to asanetwork, Master", a page number "1", and a version number "0.9.1991.30326".

#	Last name	First name	Address	City	Postal code
2	Miller	Thomas	Freeway 4	Downtown	1234

Customer # [] Last Name Miller First Name Thomas
Company [] Title Mr. Zip 1234
State [] Address Freeway 4 City Downtown
Telephone 123 456 789 Fax 123 456 77 Mobil Phone []
Email or comment []

Refresh
New Customer
Save Changes
Delete Customer
New Order

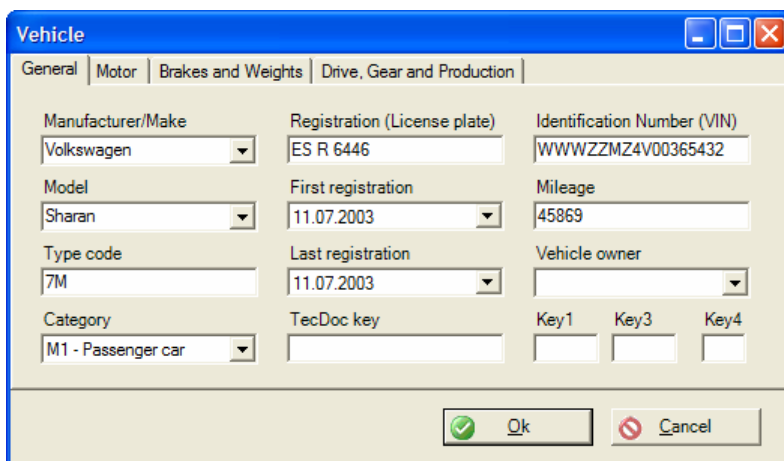
Connected to asanetwork, Master | 1 | 0.9.1991.30326

Programmer job

Pull customer data from your data base and assign this to the order object.

Vehicle data

Again, this is a typical vehicle screen. Most important items are manufacturer, model, type, vehicle identification number, mileage and registration date.



Programmer job

Pull vehicle data from your data base and assign this to the asanetwork order object.

Job = asanetwork order

The most important part of an asanetwork order is the job identifier. This id specifies the device and the task to be performed on that device.

Examples:

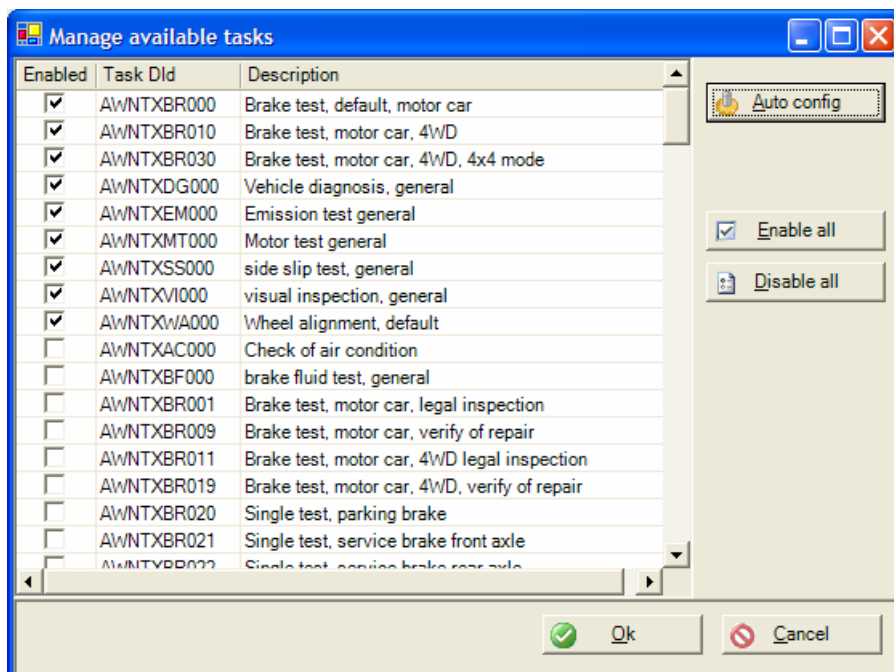
Emission test analyzer	asanetwork ID	AWNTXEM000	-> gas
Brake test stand	asanetwork ID	AWNTXBR000	-> brake test

A complete list of all identifiers (called services in asanetwork) is available here:
http://www.axonet.de/public_doc/asa_services_v15_en.pdf

Programmer job

Here we have two parts: First you have to implement a mapping between asanetwork identifiers and your labor and parts data used for orders. This mapping can then be used to easily create orders.

Hint: You can request a list of known identifiers from your local network manager. So you can enable only these asanetwork services which exist in that workshop location.



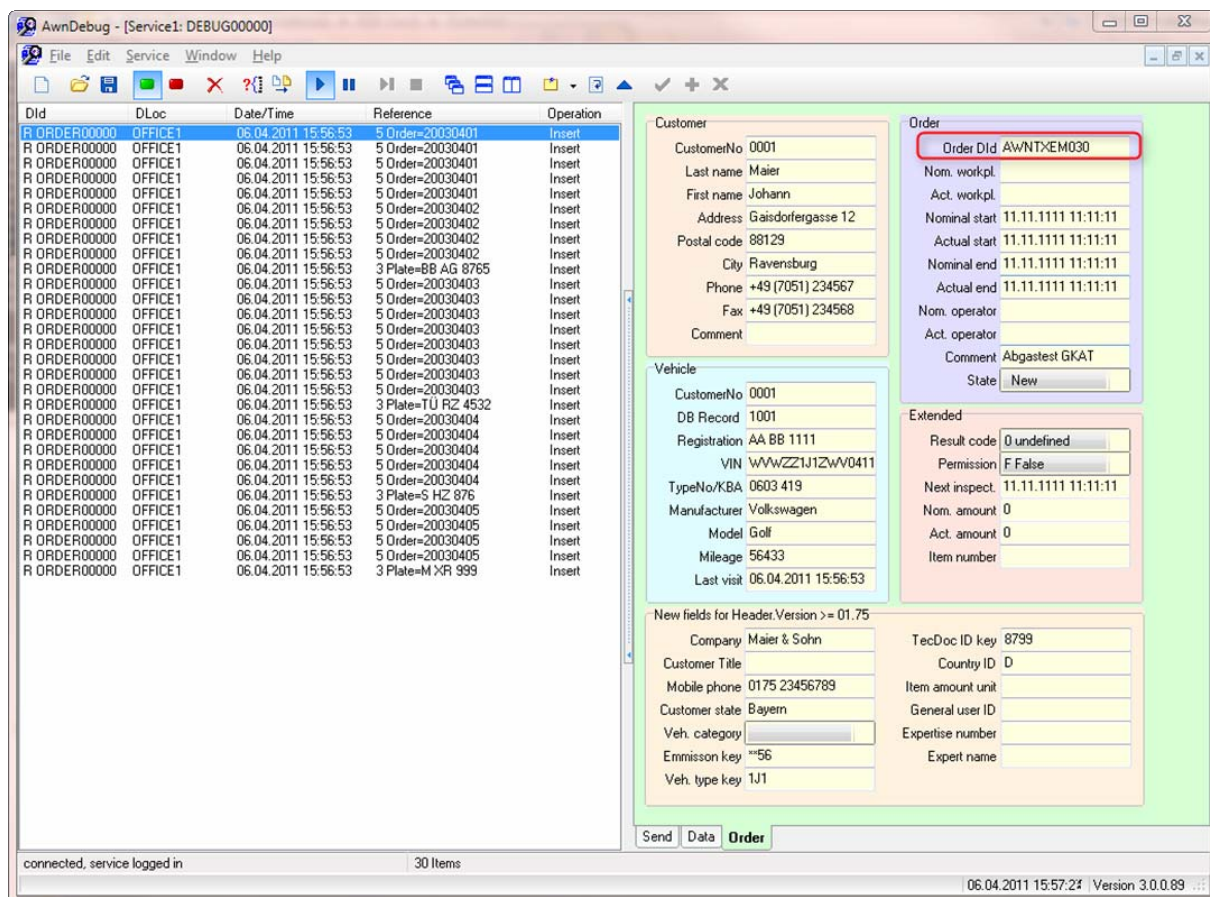
Second part: assign the asanetwork ID of the selected labor or part data to your asanetwork order. This step completes the order. You can now use the communication object and send the order into the network.

Testing

For testing your asanetwork implementation we offer 2 test tools, AwnDebug and TestClient.

AwnDebug

AwnDebug allows you to trace the data flow in asanetwork. A typical trace looks like this:



The screenshot shows the AwNDebug application window with the following components:

- Table:** A table with columns: DId, DLoc, Date/Time, Reference, and Operation. It lists multiple 'Insert' operations for various order IDs and vehicle data.
- Customer Panel:** Fields for CustomerNo (0001), Last name (Maier), First name (Johann), Address (Gaisdorfergasse 12), Postal code (88129), City (Ravensburg), Phone (+49 (7051) 234567), Fax (+49 (7051) 234568), and Comment.
- Vehicle Panel:** Fields for CustomerNo (0001), DB Record (1001), Registration (AA BB 1111), VIN (WVWZZ1J1ZWW0411), TypeNo/KBA (0603 419), Manufacturer (Volkswagen), Model (Golf), Mileage (56433), and Last visit (06.04.2011 15:56:53).
- Order Panel:** Fields for Order DId (AwNTXEM030), Nom. workpl., Act. workpl., Nominal start/end, Actual start/end, Nom. operator, Act. operator, Comment (Abgastest GKAT), and State (New).
- Extended Panel:** Fields for Result code (0 undefined), Permission (F False), Next inspect. (11.11.1111 11:11:11), Nom. amount (0), Act. amount (0), and Item number.
- New fields for Header, Version >= 01.75:** Fields for Company (Maier & Sohn), Customer Title, Mobile phone (0175 23456789), Customer state (Bayern), Veh. category, Emmission key ('56), Veh. type key (1J1), TecDoc ID key (8799), Country ID (D), Item amount unit, General user ID, Expertise number, and Expert name.


You can easily identify the 3 main areas: Customer data, vehicle data and order (job) data. There are additional fields for extended vehicle and customer data when required.

The red box highlights the asanetwork identifier.

TestClient

This is a simulator for workshop equipment. You can select, start and finish orders:

asanetwork TestClient - 1950

Datei Auftragsbearbeitung Optionen Hilfe


Auftrag	Pos.	Status	Fahrzeug	Beschreibung
20030401	10		AA-BB 1111	Abgastest GKAT
20030401	20		AA-BB 1111	Bremsenprüfung
20030401	30		AA-BB 1111	Spurprüfung
20030401	40		AA-BB 1111	Radaufhängung prüfen
20030402	10		BB-AG 8765	Abgasuntersuchung geregelter Kat
20030402	60		BB-AG 8765	Achsvermessung
20030403	10		TÜ-RZ 4532	Abgastest ungeregelter Kat
20030403	20		TÜ-RZ 4532	Bremsentest
20030403	30		TÜ-RZ 4532	Spurprüfung
20030403	40		TÜ-RZ 4532	Stossdämpferprüfung
20030403	60		TÜ-RZ 4532	Achsvermessung
20030404	10		S-HZ 876	Abgasuntersuchung Diesel
20030404	20		S-HZ 876	Bremsenprüfung
20030405	10		M-XR 999	Abgasuntersuchung mit OBD
20030405	40		M-XR 999	Fahrwerktest

Angemeldet, Auftrag neu, Kunde: Johann Maier, Volkswagen, Golf Version 2.1.0.96


What happens in the workshop?

All asanetwork enabled workshop equipment listens for orders. Each device compares the asanetwork order identifier with the internal identifiers. When they match, the order is stored in a list. The workshop mechanic can now select his car from such a list:

SDL260 asanetwork orders Demo version

Select job with the arrow keys.
Accept job with >>

Job	Status	Reg. number	Customer	Job item
50614002/1		ES R 6446		Brake test, default,
50614002/3		ES R 6446		side slip test, gener

Cancel Add Update History Cancel job Return Contin.
 ESC F2 F3 F5 F7 F11 F12







He will see the data automatically assigned to his

SDL260 Entry of customer data Demo version

Select an input field with the up/down arrow keys.
Enter customer data. Then continue with >>

Name			
First name			
Street			
Town & Postcode			
Vehicle make	Volkswagen		
Vehicle model	Sharan		
Reg. number	ES R 6446	Job number	50614002/1
Odometer	45869	Customer No.	
Max total wt kg		Chassis no.	WWWZZMZ4V00365432
Comments			

job

Cancel ESC ⬆		Park brk. op. F3 	Examiner F4 	Delete F5 	New customer F6 		Help F8 	Return F11 ⬅	Contin. F12 ➡
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At this point, the test equipment will transfer the order back to the DMS and set the order state to active (=process in work).

Programmer job

You have to handle and update the order states internally.

You have to respond to queries from the test equipment asking for a certain order.

You can optionally visualize the order state and progress:

AwnJobs - a small asanetwork Dealer Management System

File View Extras Help

Vehicles and Results Orders Customers Print Preview Log

Vehicle registration filter:

#	Created	State	Vehicle	Mileage	Customer	O
50614002	14.06.2005	Active	ES R 6446	45869		

Refresh

New Order

Edit Order

Delete Order

Close Order

Show closed orders

Tasks details

#	Print	State	Task	Started	Finished	Result
1	<input checked="" type="checkbox"/>	Active	Brake test, default, motor car	14.06.2005 18:44		
2	<input checked="" type="checkbox"/>		Emission test general			
3	<input checked="" type="checkbox"/>	Active	side slip test, general	14.06.2005 18:44		

Add Result

Select all

Deselect all

Print Preview

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When the test is finished, most workshop equipment shows a results screen, here we have a screen of a test lane:

ES R 6446		14.06.2005 / 18:49:56		BOSCH test line		Demo version	
Rolling friction	N	175	3	180	119	3	122
Out-of-roundness	%	3	5	5	8		
Max. braking force	N	2430	4	2532	1430	3	1476
Braking force at max diff	N	2430	4	2532	1430	3	1476
Operating pressure	N	332	----	370	----	890	----
Braking effect	%	73		47		21	
Total braking effect	%	60				10	
Axle weight	kg	696		636			
Road adherence	%	38	5	40	75	15	88
Side slip	m/km	-6.9		+15.0			

The order is closed when the user presses F5 (Save) in this example. Again the order is sent back to the DMS and has now a state of finished or

SDL260		asanetwork orders		Demo version	
Select job with the arrow keys. Accept job with >>					
Job	Status	Reg. number	Customer	Job item	
50614002/1	done	ES R 6446		Brake test, default,	
50614002/3	done	ES R 6446		side slip test, gener	

done:

Results are transmitted on a different communication channel and received via the data storage service.

Result data inside is based on XML. A description of the format is available here:

http://www.axonet.de/public_doc/xml_v30_en.pdf

Result XML can be visualize with the asanetwork viewer. The viewer is a Windows application and is available free for download here:

http://www.axonet.de/eng/down/dl_viewer.htm

Programmer jobs

Receive result data and store with order and vehicle reference for later processing (printing).

Implement viewing and printing of results using the external viewer application.


Handle order state (similar to active, here now finished). A finished order is no longer available for a query from the devices.

Closing orders in your DMS requires that all orders are also deleted in asanetwork.

AwnJobs - a small asanetwork Dealer Management System

File View Extras Help

Vehicles and Results Orders Customers Print Preview Log

Vehicle registration filter: 

#	Created	State	Vehicle	Mileage	Customer	O
50614002	14.06.2005	Active	ES R 6446	45869		

Refresh

New Order

Edit Order

Delete Order

Close Order

Show closed orders

Tasks details

#	Print	State	Task	Started	Finished	Result
1	<input checked="" type="checkbox"/>	Finished	Brake test, default, m	14.06.2005 18:44	14.06.2005 18:56	Test completed!
2	<input checked="" type="checkbox"/>		Emission test general			
3	<input checked="" type="checkbox"/>	Finished	side slip test, general	14.06.2005 18:44	14.06.2005 18:56	Test completed!

Add Result

Select all

Deselect all

Print Preview

Connected to asanetwork, Master Für mindestens einen erforderlichen Parameter wurde kein Wert angegeben. 0.9.1991.30326