**Application configuration**

**Application DB details**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Application DB Details | | | | |  |
| SOR | Environment | Server Name | User Name | Password |  |
| Dev | 10.255.64.102,1435 | BPM\_DCOM\_USR\_TEST |  |  |
| QA | 10.120.16.124\BPM\_DCOM\_APP\_QA | BPM\_DCOM\_USR\_QA |  |  |
| Prod | 10.120.16.150\BPM\_DCOM\_APP\_PRD | BPM\_DCOM\_USR\_PROD |  |  |

**Prod**

**Application Servers**

AppCluster1\_AppSrv1 gotsvl1371\_Node1: gotsvl1371.volvocars.biz

AppCluster1\_AppSrv2 gotsvl1372\_Node2: gotsvl1372.volvocars.biz

MECluster1\_AppSrv1 gotsvl1371\_Node1: gotsvl1371.volvocars.biz

MECluster1\_AppSrv2 gotsvl1372\_Node2: gotsvl1372.volvocars.biz

SupCluster1\_AppSrv1 gotsvl1371\_Node1: gotsvl1371.volvocars.biz

SupCluster1\_AppSrv2 gotsvl1372\_Node2: gotsvl1372.volvocars.biz

**BPM-Operations**

gotsvl1371.volvocars.biz – DMGR/Node1

gotsvl1372.volvocars.biz – Node2

gotsvl1380.volvocars.biz – Webserver1

gotsvl1381.volvocars.biz – Webserver2

**Versions**

WebSphere Application Server: 8.5.5.8

IBM Business Process Manager: 8.5.7.0

IBM HTTP Server: 8.5.5.0

**Accessing the environment**

Deployment Manager - WebSphere Integrated Solutions Console (ISC)

Prod: <https://gotsvl1371.volvocars.biz:9043/ibm/console/logon.jsp>

**Process Admin Console**

<https://bpm.volvocars.biz/ProcessAdmin/login.jsp>

**Process Portal**

<https://bpm.volvocars.biz/ProcessPortal/login.jsp>

**Mailbox access**

bpmvccop@volvocars.com

**Profile paths**

**gotsvl1380.volvocars.biz IHS**

/opt/IBM/Plugins/logs/webserver1

/opt/IBM/IHS

**gotsvl1381.volvocars.biz IHS**

/opt/IBM/Plugins/logs/webserver2

/opt/IBM/IHS

**gotsvl1371 DMGR/NODE**

/opt/IBM/BPM/v8.5/profiles/Dmgr1

/opt/IBM/BPM/v8.5/profiles/Node1

**gotsvl1372 NODE**

/opt/IBM/BPM/v8.5/profiles/Node2

**Logs**

**Deployment Manager**

/opt/IBM/BPM/v8.5/profiles/Dmgr1/logs/dmgr

**Node1**

/opt/IBM/BPM/v8.5/profiles/Node1/logs/

**Node2**

/opt/IBM/BPM/v8.5/profiles/Node2/logs/

**QA**

gotsvl3182.volvocars.biz – DMGR/Node1

gotsvl3183.volvocars.biz – Node2

gotsvl3184.volvocars.biz – Webserver1

**Versions**

WebSphere Application Server: 8.5.5.8

IBM Business Process Manager: 8.5.7.0

IBM HTTP Server: 8.5.5.0

Accessing the environment

Deployment Manager - WebSphere Integrated Solutions Console QA: https://gotsvl3182.volvocars.biz:9043/ibm/console/logon.jsp

Process Admin Console

<https://qa-bpm.volvocars.biz/ProcessAdmin/login.jsp>

Process Portal

<https://qa-bpm.volvocars.biz/ProcessPortal/login.jsp>

**Profile paths**

**Gotsvl3184.volvocars.biz IHS**

/opt/IBM/Plugins/logs/webserver1

/opt/IBM/IHS

**Gotsvl3182 DMGR/NODE**

/opt/IBM/BPM/v8.5/profiles/Dmgr1

/opt/IBM/BPM/v8.5/profiles/Node1

**Gotsvl3183 NODE**

/opt/IBM/BPM/v8.5/profiles/Node2

**Logs**

**Deployment Manager**

/opt/IBM/BPM/v8.5/profiles/Dmgr1/logs/dmgr

**Node1**

/opt/IBM/BPM/v8.5/profiles/Node1/logs/

**Node2**

/opt/IBM/BPM/v8.5/profiles/Node2/logs/

**Application Servers**

AppCluster1\_AppSrv1 gotsvl3182\_Node1 gotsvl3182.volvocars.biz

AppCluster1\_AppSrv2 gotsvl3183\_Node2 gotsvl3183.volvocars.biz

MECluster1\_AppSrv1 gotsvl3182\_Node1 gotsvl3182.volvocars.biz

MECluster1\_AppSrv2 gotsvl3183\_Node2 gotsvl3183.volvocars.biz

SupCluster1\_AppSrv1 gotsvl3182\_Node1 gotsvl3182.volvocars.biz

SupCluster1\_AppSrv2 gotsvl3193\_Node2 gotsvl3183.volvocars.biz

**Test**

gotsvl2151.volvocars.biz – DMGR/Node1

gotsvl2154.volvocars.biz – Webserver1

**Versions**

WebSphere Application Server: 8.5.5.8

IBM Business Process Manager: 8.5.7.0

IBM HTTP Server: 8.5.5.0

Accessing the environment

Test:

<https://gotsvl2151.volvocars.biz:9045/ibm/console/logon.jsp>

Process Admin Console

<https://test-bpm.volvocars.biz/ProcessAdmin/login.jsp>

Process Portal

<https://test-bpm.volvocars.biz/ProcessPortal/login.jsp>

Process Centre

<https://test-bpm.volvocars.biz/ProcessCenter/login.jsp>

**Profile paths**

**Gotsvl2154.volvocars.biz IHS**

/opt/IBM/Plugins/logs/webserver1

/opt/IBM/IHS

**gotsvl2151 DMGR/NODE**

/opt/IBM/BPM/v8.5/profiles/Dmgr1

/opt/IBM/BPM/v8.5/profiles/Node1

**Logs**

Deployment Manager

/opt/IBM/BPM/v8.5/profiles/Dmgr1/logs/dmgr

Node1

/opt/IBM/BPM/v8.5/profiles/Node1/logs/

Node2

/opt/IBM/BPM/v8.5/profiles/Node2/logs/

**Application Servers**

AppCluster1\_AppSrv1 gotsvl2151\_Node1 gotsvl2151.volvocars.biz

MECluster1\_AppSrv1 gotsvl2151\_Node1 gotsvl2151.volvocars.biz

SupCluster1\_AppSrv1 gotsvl2151\_Node1 gotsvl2151.volvocars.biz

Order Creation URL’s

1. Car Order Creation – Regular Sales

|  |  |
| --- | --- |
| Test Environment | URL |
| UK | [https://dc-rsales-test.cloudapp.net/uk/buy/sales/design-and-drive](https://apac01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fdc-rsales-test.cloudapp.net%2Fuk%2Fbuy%2Fsales%2Fdesign-and-drive&data=02%7C01%7Ckonkati.r%40hcl.com%7Cbd7f44a86a0d427fe65108d58d9138af%7C189de737c93a4f5a8b686f4ca9941912%7C0%7C0%7C636570577241184914&sdata=9klQclnTblm8bKdQwHjaUpbDSz6FZcrdKBf35zkbDnc%3D&reserved=0) |
| Norway | [https://dc-rsales-test.cloudapp.net/no/buy/sales/design-and-drive](https://apac01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fdc-rsales-test.cloudapp.net%2Fno%2Fbuy%2Fsales%2Fdesign-and-drive&data=02%7C01%7Ckonkati.r%40hcl.com%7Cbd7f44a86a0d427fe65108d58d9138af%7C189de737c93a4f5a8b686f4ca9941912%7C0%7C0%7C636570577241184914&sdata=RpDlrGsNjErV2gD3JulPtIWfHw1hAo9kkT9ZS%2FS2LPI%3D&reserved=0) |
| Netherland | [https://dc-rsales-test.cloudapp.net/nl/buy/sales/design-and-drive](https://apac01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fdc-rsales-test.cloudapp.net%2Fnl%2Fbuy%2Fsales%2Fdesign-and-drive&data=02%7C01%7Ckonkati.r%40hcl.com%7Cbd7f44a86a0d427fe65108d58d9138af%7C189de737c93a4f5a8b686f4ca9941912%7C0%7C0%7C636570577241184914&sdata=c%2BLU4zus39J9h7LXeAQOBqjVNIaEhuiA7G10C51QNQQ%3D&reserved=0) |
|  |  |

|  |  |
| --- | --- |
| QA Environment | URL |
| UK | [http://qa2.digitalcommerce.volvocars.com/uk/buy/sales/care-by-volvo](https://apac01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fqa2.digitalcommerce.volvocars.com%2Fuk%2Fbuy%2Fsales%2Fcare-by-volvo&data=02%7C01%7Ckonkati.r%40hcl.com%7Cbd7f44a86a0d427fe65108d58d9138af%7C189de737c93a4f5a8b686f4ca9941912%7C0%7C0%7C636570577241184914&sdata=y%2BRYinpvlXOmD61LodwO%2FH6bsn3TS2yzY3YJ0ch3QGo%3D&reserved=0) |
| Norway | [http://qa2.digitalcommerce.volvocars.com/no/buy/sales/care-by-volvo](https://apac01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fqa2.digitalcommerce.volvocars.com%2Fno%2Fbuy%2Fsales%2Fcare-by-volvo&data=02%7C01%7Ckonkati.r%40hcl.com%7Cbd7f44a86a0d427fe65108d58d9138af%7C189de737c93a4f5a8b686f4ca9941912%7C0%7C0%7C636570577241184914&sdata=kaSbPamSFShGVLmThW1OU5vJn1oTYqMm%2FQA82vPEKS0%3D&reserved=0) |
| Netherland | [http://qa2.digitalcommerce.volvocars.com/nl/buy/sales/care-by-volvo](https://apac01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fqa2.digitalcommerce.volvocars.com%2Fnl%2Fbuy%2Fsales%2Fcare-by-volvo&data=02%7C01%7Ckonkati.r%40hcl.com%7Cbd7f44a86a0d427fe65108d58d9138af%7C189de737c93a4f5a8b686f4ca9941912%7C0%7C0%7C636570577241184914&sdata=e7pvBeX5F3Nfp3zwbbACPl5N%2B5vVijTQccsyar8DK%2F0%3D&reserved=0) |

1. Accessories Order Creation

|  |  |
| --- | --- |
| Test Environment | URL |
| UK | [https://vm-netstcac-cd.northeurope.cloudapp.azure.com/uk/accessories](https://apac01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fvm-netstcac-cd.northeurope.cloudapp.azure.com%2Fuk%2Faccessories&data=02%7C01%7Ckonkati.r%40hcl.com%7Cbd7f44a86a0d427fe65108d58d9138af%7C189de737c93a4f5a8b686f4ca9941912%7C0%7C0%7C636570577241184914&sdata=G%2Fr0xSLS8yD307ghCJgbq3mov4AwRuw8ZE9mL0PRld0%3D&reserved=0) |
| Norway | [https://vm-netstcac-cd.northeurope.cloudapp.azure.com/no/accessories](https://apac01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fvm-netstcac-cd.northeurope.cloudapp.azure.com%2Fno%2Faccessories&data=02%7C01%7Ckonkati.r%40hcl.com%7Cbd7f44a86a0d427fe65108d58d9138af%7C189de737c93a4f5a8b686f4ca9941912%7C0%7C0%7C636570577241184914&sdata=tdqGvxCNHgDhI4gUS9a4APBDa9N3tL7DwDZPzQylV0U%3D&reserved=0) |
| Netherland | [https://vm-netstcac-cd.northeurope.cloudapp.azure.com/nl/accessories](https://apac01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fvm-netstcac-cd.northeurope.cloudapp.azure.com%2Fnl%2Faccessories&data=02%7C01%7Ckonkati.r%40hcl.com%7Cbd7f44a86a0d427fe65108d58d9138af%7C189de737c93a4f5a8b686f4ca9941912%7C0%7C0%7C636570577241184914&sdata=uhBV30KotQQLEcK68wkEOo4j3GCwKBj2zllgxsvLBng%3D&reserved=0) |

|  |  |
| --- | --- |
| QA Environment | URL |
| UK | [https://qa2.digitalcommerce.volvocars.com/uk/accessories](https://apac01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fqa2.digitalcommerce.volvocars.com%2Fuk%2Faccessories&data=02%7C01%7Ckonkati.r%40hcl.com%7Cbd7f44a86a0d427fe65108d58d9138af%7C189de737c93a4f5a8b686f4ca9941912%7C0%7C0%7C636570577241184914&sdata=tzJgvKe%2B5gQzYfHj0VRMRS0IuU0rk0rii%2FSRm79kxGE%3D&reserved=0) |
| Norway | [https://qa2.digitalcommerce.volvocars.com/no/accessories](https://apac01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fqa2.digitalcommerce.volvocars.com%2Fno%2Faccessories&data=02%7C01%7Ckonkati.r%40hcl.com%7Cbd7f44a86a0d427fe65108d58d9138af%7C189de737c93a4f5a8b686f4ca9941912%7C0%7C0%7C636570577241184914&sdata=KGHtca9aj%2BFL0VA7X4xCmWUk%2BYjvwVK1XzfXgc13%2FfI%3D&reserved=0) |
| Netherland | [https://qa2.digitalcommerce.volvocars.com/nl/accessories](https://apac01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fqa2.digitalcommerce.volvocars.com%2Fnl%2Faccessories&data=02%7C01%7Ckonkati.r%40hcl.com%7Cbd7f44a86a0d427fe65108d58d9138af%7C189de737c93a4f5a8b686f4ca9941912%7C0%7C0%7C636570577241184914&sdata=2JNDRZ3C0Qr09iNkJnumFxxM3eUBY97jY34TRG2yFe4%3D&reserved=0) |

1. Order App

|  |  |
| --- | --- |
| Test Environment | URL |
| UK | [http://test.order.digitalcommerce.volvocars.biz/](https://apac01.safelinks.protection.outlook.com/?url=http%3A%2F%2Ftest.order.digitalcommerce.volvocars.biz%2F&data=02%7C01%7Ckonkati.r%40hcl.com%7Cbd7f44a86a0d427fe65108d58d9138af%7C189de737c93a4f5a8b686f4ca9941912%7C0%7C0%7C636570577241184914&sdata=2av%2BE2u8MoS86lZl%2FWLokJsLhmC%2FRjJ8ntR8clPCIp4%3D&reserved=0) |
| Norway | [http://test.order.digitalcommerce.volvocars.biz/](https://apac01.safelinks.protection.outlook.com/?url=http%3A%2F%2Ftest.order.digitalcommerce.volvocars.biz%2F&data=02%7C01%7Ckonkati.r%40hcl.com%7Cbd7f44a86a0d427fe65108d58d9138af%7C189de737c93a4f5a8b686f4ca9941912%7C0%7C0%7C636570577241184914&sdata=2av%2BE2u8MoS86lZl%2FWLokJsLhmC%2FRjJ8ntR8clPCIp4%3D&reserved=0) |
| Netherland | [http://test.order.digitalcommerce.volvocars.biz/](https://apac01.safelinks.protection.outlook.com/?url=http%3A%2F%2Ftest.order.digitalcommerce.volvocars.biz%2F&data=02%7C01%7Ckonkati.r%40hcl.com%7Cbd7f44a86a0d427fe65108d58d9138af%7C189de737c93a4f5a8b686f4ca9941912%7C0%7C0%7C636570577241184914&sdata=2av%2BE2u8MoS86lZl%2FWLokJsLhmC%2FRjJ8ntR8clPCIp4%3D&reserved=0) |

|  |  |
| --- | --- |
| QA Environment | URL |
| UK | [http://qa.order.digitalcommerce.volvocars.biz/](https://apac01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fqa.order.digitalcommerce.volvocars.biz%2F&data=02%7C01%7Ckonkati.r%40hcl.com%7Cbd7f44a86a0d427fe65108d58d9138af%7C189de737c93a4f5a8b686f4ca9941912%7C0%7C0%7C636570577241184914&sdata=odwjeZQY0Mqq1ASjcNpQtvYlM9%2Fi60BC%2BkF0Yv5nDhI%3D&reserved=0) |
| Norway | [http://qa.order.digitalcommerce.volvocars.biz/](https://apac01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fqa.order.digitalcommerce.volvocars.biz%2F&data=02%7C01%7Ckonkati.r%40hcl.com%7Cbd7f44a86a0d427fe65108d58d9138af%7C189de737c93a4f5a8b686f4ca9941912%7C0%7C0%7C636570577241184914&sdata=odwjeZQY0Mqq1ASjcNpQtvYlM9%2Fi60BC%2BkF0Yv5nDhI%3D&reserved=0) |
| Netherland | [http://qa.order.digitalcommerce.volvocars.biz/](https://apac01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fqa.order.digitalcommerce.volvocars.biz%2F&data=02%7C01%7Ckonkati.r%40hcl.com%7Cbd7f44a86a0d427fe65108d58d9138af%7C189de737c93a4f5a8b686f4ca9941912%7C0%7C0%7C636570577241184914&sdata=odwjeZQY0Mqq1ASjcNpQtvYlM9%2Fi60BC%2BkF0Yv5nDhI%3D&reserved=0) |

|  |  |
| --- | --- |
| Test Environment | URL |
| UK / NL / NO | [http://order.digitalcommerce.volvocars.biz/](https://apac01.safelinks.protection.outlook.com/?url=http%3A%2F%2Forder.digitalcommerce.volvocars.biz%2F&data=02%7C01%7Ckonkati.r%40hcl.com%7Cbd7f44a86a0d427fe65108d58d9138af%7C189de737c93a4f5a8b686f4ca9941912%7C0%7C0%7C636570577241184914&sdata=ILbyo%2FitJUN9wHCqqo3ZR%2FPlSgLZ0H6KBy%2FcHhbt%2B%2Bg%3D&reserved=0) |

**Regular Sales link to SiteCore (customer order) flows**

TEST Environment:

UK: <http://dc-rsales-test.cloudapp.net/uk/buy/sales/design-and-drive>

NO: <http://dc-rsales-test.cloudapp.net/no/buy/sales/design-and-drive>

QA Environnent:

UK: <http://qa2.digitalcommerce.volvocars.com/uk/buy/sales/care-by-volvo>

<https://qa2.digitalcommerce.volvocars.com/uk/buy/sales/design-and-drive>

NO: <http://qa2.digitalcommerce.volvocars.com/no/buy/sales/care-by-volvo>

**Regular Sales link to Order App**

TEST Environment:

All markets (login user id set what market) : <https://test.order.digitalcommerce.volvocars.biz/>

QA Environment:

All markets (login user id set what market) : <https://qa.order.digitalcommerce.volvocars.biz/>

**Error Monitoring Tool:**

Process Application: Platform Monitoring

BPD: Error Monitoring

UCA’s: Prod, QA

Service used: update DB FetchErrorCodes

Exception Handling: Support Coach

External jar: ErrorMonitor.jar

External Service: GetErrorDetails

**Implementation:**

* We are fetching error Codes from A specific logfile location that would be decided based on the ENV Variable which comes as an input from the UCA can be Either PROD or QA.
* Forming the Logfile Location in the LogLocation Script.
* Error Codes are being fetched from the specified Location using the External Jar.
* ErrorCodes are parsed in Parse Script
* Updating those codes in the Maria DB by Splitting ErrorCode, Description, Timestamp
* Sending an alert with Error Details to [logMonitor@gotsvl1372.volvocars.biz](mailto:logMonitor@gotsvl1372.volvocars.biz) with respect to Environment.
* Handling exceptions Through Support Coach.

**Application:**

**Volvo On call**

Volvo On call is mainly used for extending the Subscriptions. If the user has to enable the subscription for his CAR he need to go through the process. There are two subscription periods

1. 12 Months
2. 24 Months

UI will validate the information provided by the customer based on the VIN number whether the car is eligible for extending the subscriptions or not.

There are mainly three systems involved in the process from BPM end. Below are details

1. TSP
2. SAP
3. VAPI

TSP System:-

TSP system is used to get the details of subscription period and it will activate the subscription.

SAP System:-

SAP System is used to generate the Invoice of the Subscriptions that are enabled by TSP system and send it to the end customer.

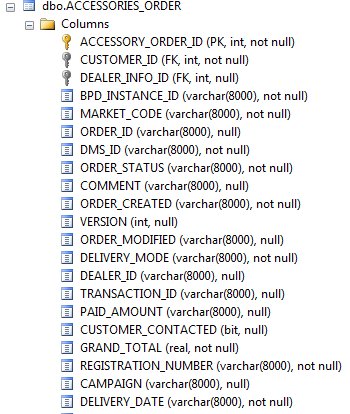
VAPI System:-

VAPI is intermediate layer between BPM and UI.

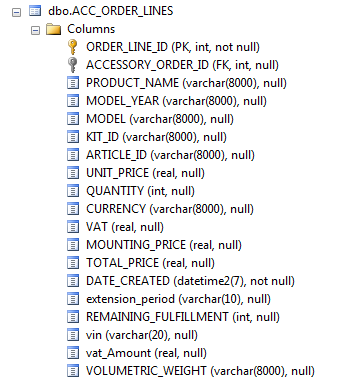
**Database Model:-**

Two tables will be used for storing the data in BPM. Below are details for the same.

1. ACCESSORIES\_ORDER which stores all the details of the order with delivery mode as “VolvoOnCall” as accessories and VOC is using same table



1. ACC\_ORDER\_LINES which stores all the product details with VIN number, helps in identifying the subscription of car and extend through this number



1. **BPM Flow:-**

Receive invoice from SAP

Receive New order from vAPI

Activate Subscription - TSP

Send to SAP

Send Invoice mail to customer

* 1. Receive New Order from VAPI: Once the user submits the subscription extension from VOC Sitecore screen, the details will be sent to WCS, WCS calls VAPI, VAPI will send details to BPM and BPM will process them and create instance for the same.
  2. Activate Subscription- TSP : BPM will send data to TSP to activate subscription through VAPI and TSP will validate the VIN number and extend the subscription and will send response to BPM.
  3. Send to SAP : BPM, after validating Data, the data will be sent to SAP for processing invoice and storing the details and will wait till it gets the response from SAP for invoice. The invoice will be sent to BPM as encrypted base 64.
  4. Send Invoice to customer : The invoice will be sent to customer as mail through VAPI from BPM.

1. **IID Methods:**
   1. PostVOC order: for processing new order, vAPI will call bPM
   2. ActivateTSP – Activates the subscription by calling TSP
   3. SendSAPInvoice – Will send to SAP for processing invoice
   4. sendInvoiceemail – Will send invoice email to customers through vAPI.

**Accessories:**

**Accessories: -**

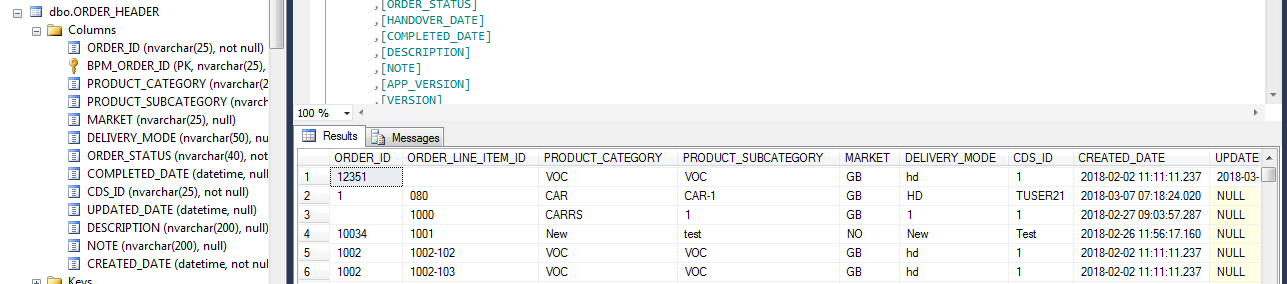
Accessories Application is used to Order the Accessories of the Volvo cars when the Car parts are need to be replaced.

* Customer will order accessories through UI by using URL’s.
* Once the order is placed in UI the instance for it will be created then after fifteen minutes the order will appear in BPM.
* Order app will display all the Accessory orders for that particular market.
* Order status would be dependent on the mode of delivery (home delivery/dealer pickup ).

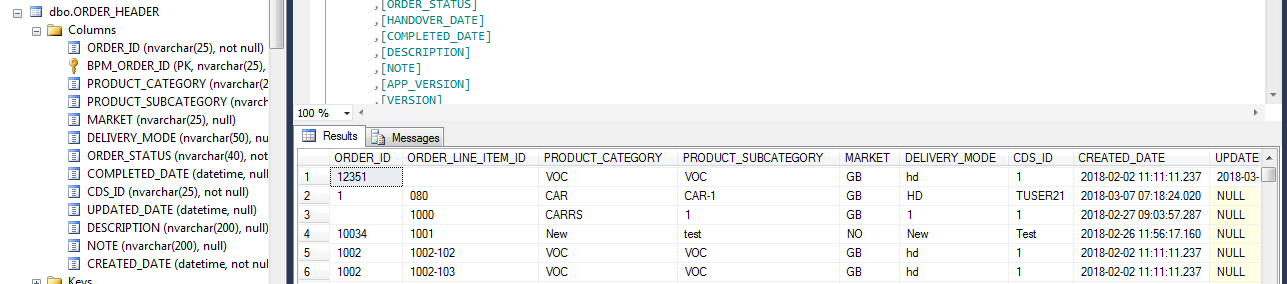
**Database Model: -**

Below are 2 accessories tables which stores data in BPM:

1)ORDER\_HEADER \_Table: It will store Order Details



2) ORDER\_LINE\_ITEM Table : it will store Car accessories Details.



**There are two ways to deliver the order:-**

1. Home delivery.
2. Dealer Pickup.

**Note**: All accessories orders will be automatically stored in the order App tool.

The NSCs will get access to the Order App tool to monitor and secure progress of orders.

**BPM Flow:-**

Home delivery

Receives order

CRM

Delivery mode

Add to CRM

Dealer pickup

Receives order:

* BPM will receive the OREDR from site core.
* At CRM decision step, it will check if the market is NL or not , if it is NL it will go to ADD to CRM step else it will go to next step .
* Now it will check the Delivery type, whether it’s home delivery or Dealer pick up.
* Product will be delivered to customer based on the delivery mode he/she selects.
* The order will be opened for 14days which is called regret Period , later on status will be shown as order completed.

**Home Delivery**:-

not yet Implemented

**Dealer Pickup:-**

**3 activities take place in Dealer pickup step :**

1. **Putorder in DMS:**

Order id will be compared with DMS ID In this step and Details will be mapped.

1. **Contact Customer:**

Dealer will contact the customer based on customer requirement he will proceed further.

1. **Delivery Handover:**

Customer will receive the Order.

**There are 4 process Apps’s for Accessories:**

* + - * 1. DCACCPA
        2. DCAAIPA
        3. DCIIPA
        4. EXTRD