

Staggered Order Decomposition

Lab 3.0

20 minutes

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Lab objectives

You will achieve the following objectives:

- Describe the decomposition rule and staggered decomposition process
- Create a product order and decompose that to have required orders using the staggered feature.

Lab Dependency: This is foundational for all subsequent lab exercises. Do not skip.

Scenarios

ServiceNow Order Management system decomposes customer orders to create required product, service, and resource orders to manage and track the fulfillment process.

Until Rome, ServiceNow Order Management supported a one-time order decomposition process triggered at the time of order approval to create required domain orders(product, service, and resource orders) with the available information.

The new staggered decomposition feature can trigger the decomposition process more than once to decompose an order with the latest available information. Suppose the information required to decompose an order is initially not known. In that case, the system will skip the decomposition process. Still, once the information is available, the system will auto-trigger the decomposition process to decompose the order with the available data.

In this exercise, we will create a product order with a sample product offering to see how staggered decomposition works to decompose an order with the user's characteristic value during the order fulfillment process.

Section 1.0 Review sample product offering for staggered decomposition

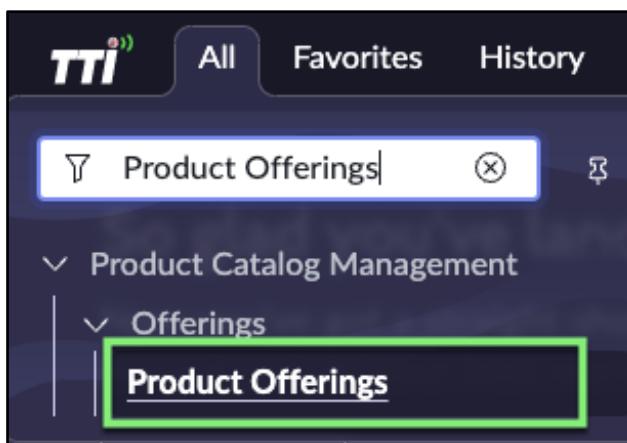
Section 1.1 Review sample product offering for staggered decomposition

This section will review a sample product offering the SD-WAN Bronze Plan available in the product Catalog demo data. This product offering has specifications with decomposition rules which require characteristic values to decompose the order during the order fulfillment process.

The SD-WAN Bonze plan product offering is associated with the SD-WAN service package, which has a relationship to three other product specifications. Let's review the specification relationships and decomposition rules from SD-WAN edge product specifications to other service specifications.

To view the SD-WAN Bronze Plan product offering in the Catalog

1. Login to your OMTE instance with your **admin** user credential.
2. Impersonate user **James Smithson**, Product Catalog manager.
3. Navigate to **All > Product Catalog Management > Offerings > Product Offerings** to view the list of product offerings available in the system.



4. In the product offering list view, select the **number** for the SD-WAN Bronze Plan offering.

Product Offerings			
	Number	Name	Monthly Recurring Charges
All			
<input type="checkbox"/>	PRDOF00001	Premium Unlimited mobile plan	
<input type="checkbox"/>	PRDOF00002	All in one mobile plan starting from \$39...	
<input type="checkbox"/>	PRDOF00003	All in one mobile plan starting from \$49...	
<input type="checkbox"/>	PRDOF00004	Premium SD-WAN Offering	
<input type="checkbox"/>	PRDOF00005	SD-WAN Gold Plan	
<input type="checkbox"/>	PRDOF00006	SD-WAN Bronze Plan	

5. Note that SD-WAN Bronze Plan is associated with the product specification of the SD-WAN Service package. **Open** the product specification record to view the details.

Product Offering
SD-WAN Bronze Plan

Number	PRDOF00006	State
* Name	SD-WAN Bronze Plan	* Offering Catalog
* Product Specification	SD-WAN Service Package	* Distribution Channel
* Contract Term		
Monthly Recurring Charges		
Non Recurring Charges		
* Description		

Product Specification

Number	PRDSP00003	State	Published
* Name	SD-WAN Service Package	Code	
* Description			

6. Select the Specification relationship related list tab on the SD-WAN Service package product specification to see the other three child product specifications. Select **SD-WAN Edge Device** product specification.

Activities

Update Copy Delete

Specification Characteristics (1) Specification Relationships (3) Product Offerings (5) Attribute Mappings (1)

Target Type Search

Source Specification = SD-WAN Service Package

Target Type	Target Specification	Relationship Type	Mandatory	Minimum Quantity
Product Specification	SD-WAN Security	Bundles	false	1
Product Specification	SD-WAN Edge Device	Bundles	true	1
Product Specification	SD-WAN Controller	Bundles	true	1

- On the SD-WAN Edge Device Product Specification, select the **Specification Relationship** related list tab to see the relationship between two service specifications and one resource specification.

Target Type	Target Specification	Relationship Type	Mandatory	Minimum Quantity
Service Specification	SD WAN Optimization Service	Realized as	true	1
Resource Specification	Customer Premise SD-WAN Router	Requires	true	1
Service Specification	SD-WAN Routing	Realized as	true	1

- Open the specification relationship records for two service specifications. Select the **preview record icon (i)** for the SD-WAN Optimization service and select **Open Record**.

Relationship Type	Mandatory	Minimum Quantity
Realized as	true	1
Requires	true	1
Realized as	true	1

- On the specification relationship for SD-WAN Edge Device to SD-WAN Optimization service, notice that the decomposition rule has WAN optimization characteristic, which means the value of WAN optimization characteristic is required to decompose an SD-WAN Edge Device product order to SD-WAN optimization service order.

To create the conditions for staggered decomposition, we will not have value for SD-WAN Optimization characteristic value as part of the order creation process; instead, that will be provided later during the order fulfillment process.

Specification Relationship
SD-WAN Edge Device - Realized as - SD WAN Optimization Service

Display Name	SD-WAN Edge Device - Realized as - SD WAN Opt
Source Specification	SD-WAN Edge Device
Target Type	Service Specification
Target Specification	SD WAN Optimization Service
Mandatory	<input checked="" type="checkbox"/>

Activities

[Update](#) [Delete](#)

Decomposition Rules (1)	Quantity Mappings (3)
Specification Relat Search	
Specification Relationship = SD-WAN Edge Device - Realized as - SD WAN Optimization Service	
<input type="checkbox"/> Source Specification SD-WAN Edge Device	Characteristic WAN Optimization (empty)

1 to 1 of 1

10. Similarly, in SD-WAN Edge Product Specification, in the Specification Relationships related list tab, select the **preview record icon (i)** for the SD-WAN routing service specification and select **Open Record**.

Product Specification
SD-WAN Edge Device

Number	PRDSP00005	State	Published
* Name	SD-WAN Edge Device	Code	
* Category	SD-WAN Edge Device	Line	
Type	Service	Cost to Company	
* Start Date	2021-12-25	Composite	<input type="checkbox"/>
End Date	2027-01-24	Installation Required	<input type="checkbox"/>
Owner		Location Specific	<input type="checkbox"/>
* Description	SD-WAN Edge Device		

Specification Relationship

Display Name	SD-WAN Edge Device - Re	* Relationship Type	Realized as
Source Specification	SD-WAN Edge Device	Minimum Quantity	1
Target Type	Service Specification	Default Quantity	1
Target Specification	SD-WAN Routing	Maximum Quantity	10
Mandatory	<input checked="" type="checkbox"/>	Quantity Characteristic	Routing

[Open Record](#)

Product Offerings	Attribute Mappings (5)												
<table border="1"> <thead> <tr> <th>Relationship Type</th> <th>Mandatory</th> <th>Minimum Quantity</th> </tr> </thead> <tbody> <tr> <td>Service</td> <td>Realized as</td> <td>true</td> </tr> <tr> <td>SD-WAN Router</td> <td>Requires</td> <td>true</td> </tr> <tr> <td>SD-WAN Router</td> <td>Realized as</td> <td>true</td> </tr> </tbody> </table>		Relationship Type	Mandatory	Minimum Quantity	Service	Realized as	true	SD-WAN Router	Requires	true	SD-WAN Router	Realized as	true
Relationship Type	Mandatory	Minimum Quantity											
Service	Realized as	true											
SD-WAN Router	Requires	true											
SD-WAN Router	Realized as	true											

[Service Specification](#) [SD-WAN Routing](#)

11. On the specification relationship for SD-WAN Edge Device to SD-WAN Routing, notice that the decomposition rule has the Routing characteristic, which means the value of Routing characteristic is required to decompose an SD-WAN Edge Device product order to SD-WAN Routing service order.

For this exercise, we will not have value for Routing characteristic value as part of the order creation process; instead, that will be provided at a later stage during the order fulfillment process.

The screenshot shows the 'Specification Relationship' page with the following details:

- Display Name:** SD-WAN Edge Device - Realized as - SD-WAN Routing
- Relationship Type:** Realized as
- Source Specification:** SD-WAN Edge Device
- Target Type:** Service Specification
- Target Specification:** SD-WAN Routing
- Mandatory:**
- Minimum Quantity:** (empty)
- Default Quantity:** (empty)
- Maximum Quantity:** (empty)
- Quantity Characteristic:** Routing

Activities

Buttons: **Update**, **Delete**

Links: **Decomposition Rules (1)**, **Quantity Mappings (3)**

Search bar: **Specification Relatice**, **Search**

Specification Relationship = SD-WAN Edge Device - Realized as - SD-WAN Routing

Source Specification	Characteristic	Characteristic Option
SD-WAN Edge Device	Routing	(empty)

In the next step, let's review the product offering characteristics available for the SD-WAN Bronze Plan product offering.

12. Navigate to **All > Product Offerings** and open the **SD-WAN Bronze Plan** offering.

In the Product Offering Characteristics related list tab, notice that WAN optimization and routing characteristics are unavailable as product offering characteristics. This means these characteristics will not be part of the order capture/API request for this offering but will be available during the order fulfillment process.

Product Offering
SD-WAN Bronze Plan

Number	PRDOF00006
* Name	SD-WAN Bronze Plan
* Product Specification	SD-WAN Service Package
* Contract Term	12 months
Monthly Recurring Charges	\$ 500.00
Non Recurring Charges	\$ 1,000.00
* Description SD-WAN Bronze Plan	

Activities

Product Offering Characteristics (11)

Characteristic	Characteristic Option	Specification	Customer Input Required	Monthly Recur
CPE Type	Physical	SD-WAN Edge Device	true	
CPE Id	(empty)	SD-WAN Edge Device	false	
Tenancy	Base (10 site)	SD-WAN Controller	true	
Tenancy	Advance (50 site)	SD-WAN Controller	true	
Security Type	Advance	SD-WAN Security	true	
CPE Model	ISR	SD-WAN Edge Device	true	
Security Type	Base	SD-WAN Security	true	
CPE Model	ASR	SD-WAN Edge Device	true	
Tenancy	Premium (>50 sites)	SD-WAN Controller	true	
CPE Type	Virtual	SD-WAN Edge Device	true	
Security Type	Premium	SD-WAN Security	true	

13. End impersonation.

Section 2.0 Create and decompose a product order

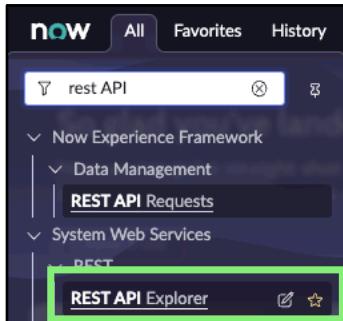
Section 2.1 Create an SD-WAN product order

This section will create a new SD-WAN product order from an API payload for the SD-WAN Bronze Plan offering. (The Product order payload for staggered decomposition is located in a separate document next to this lab in Now Learning).

1. Login to your OMTE instance with your **admin** user credential.
2. Navigate to **All > System Web Services > REST > REST API Explorer**.

Option: Open Rest API Explorer using the below URL in your instance. Please replace the instance name with your lab instance name.

[https://YOURINSTANCE/\\$restapi.do?ns=sn_ind_tmt_orm&service=Product%20Order%20Open%20API&version=&resource_id=2879b1ea53b820102f18ddeff7b1244](https://YOURINSTANCE/$restapi.do?ns=sn_ind_tmt_orm&service=Product%20Order%20Open%20API&version=&resource_id=2879b1ea53b820102f18ddeff7b1244)



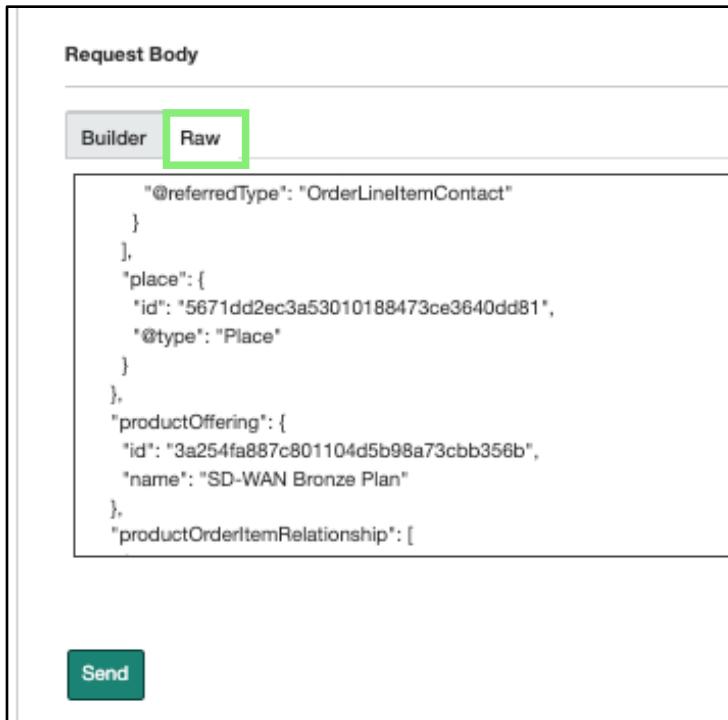
3. Select **Explore**.
4. On the API explorer form, complete the following fields:
 - Namespace: **sn_ind_tmt_orm**
 - API name: **Product Order Open API**
 - API version: **Latest**
5. Then select **Create order (POST)**.

REST API Explorer	
Namespace: sn_ind_tmt_orm API Name: Product Order Open API API Version: latest	Product Order Open API Create Order POST https://sd-nov-131-feb22brn669-001.lab.service-now.com/api/sn_ind_tmt_orm/productorder
List Product Order (GET) Create Order (POST) Get Product Order (GET) Patch Order (PATCH)	Prepare request Query parameters Add query parameter

6. Select the **Raw** tab under Request Body of the REST message and **paste** the copied **payload** into the body. (The Product order payload for staggered decomposition is located in a separate document next to this lab in Now Learning).

File Name: SDWAN_Create_PO_Tokyo

7. Select **Send**, then select **OK** on the popup.



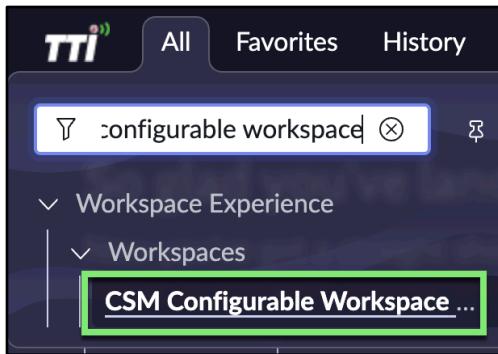
8. Check the Response Code – API request is successful if the response is **201- Created**.

Response	
Status code	201 Created
Execution time (ms)	4105
Headers	
Content-Encoding	gzip
Content-Type	application/json

Section 2.2 Decompose an SD-WAN product order

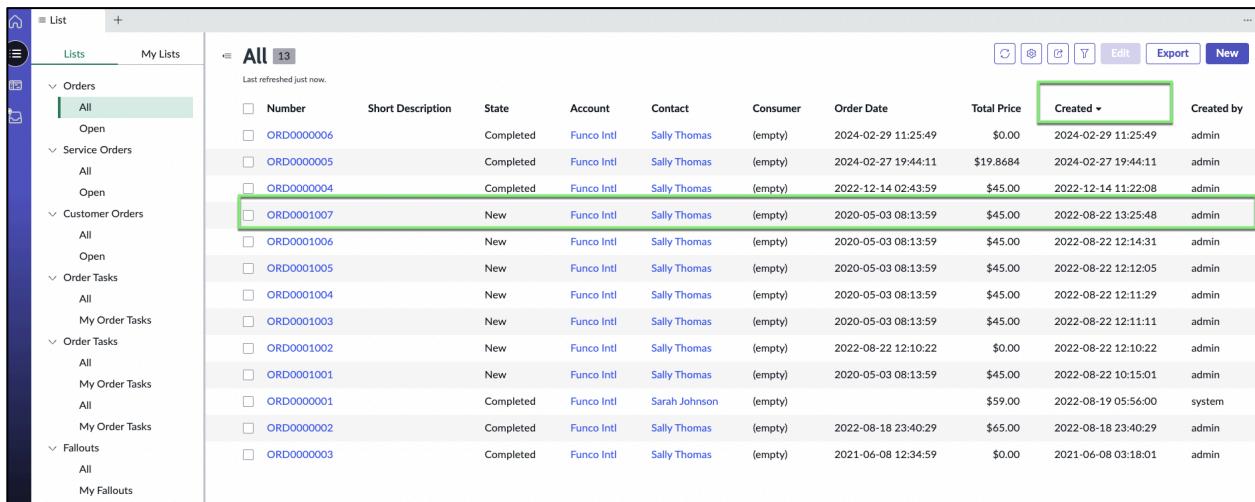
In this section, we will decompose the new SD-WAN product order for the SD-WAN Bronze Plan product offering created with the API payload.

1. Impersonate **Mike Davis**, the Order Fulfillment Manager.
2. Navigate to **All > Customer Order Management > Workspace > CSM Configurable Workspace**.



3. Navigate to **Lists > Customer Orders > All** to see all the customer orders available in the system. Select the newly created **order** from the list.

Note: You may need to add the **Created** column to the List View to see the most recent order.



	Number	Short Description	State	Account	Contact	Consumer	Order Date	Total Price	Created	Created by
	ORD0000006		Completed	Funco Intl	Sally Thomas	(empty)	2024-02-29 11:25:49	\$0.00	2024-02-29 11:25:49	admin
	ORD0000005		Completed	Funco Intl	Sally Thomas	(empty)	2024-02-27 19:44:11	\$19.8684	2024-02-27 19:44:11	admin
	ORD0000004		Completed	Funco Intl	Sally Thomas	(empty)	2022-12-14 02:43:59	\$45.00	2022-12-14 11:22:08	admin
	ORD0001007		New	Funco Intl	Sally Thomas	(empty)	2020-05-03 08:13:59	\$45.00	2022-08-22 13:25:48	admin
	ORD0001006		New	Funco Intl	Sally Thomas	(empty)	2020-05-03 08:13:59	\$45.00	2022-08-22 12:14:31	admin
	ORD0001005		New	Funco Intl	Sally Thomas	(empty)	2020-05-03 08:13:59	\$45.00	2022-08-22 12:12:05	admin
	ORD0001004		New	Funco Intl	Sally Thomas	(empty)	2020-05-03 08:13:59	\$45.00	2022-08-22 12:11:29	admin
	ORD0001003		New	Funco Intl	Sally Thomas	(empty)	2020-05-03 08:13:59	\$45.00	2022-08-22 12:11:11	admin
	ORD0001002		New	Funco Intl	Sally Thomas	(empty)	2022-08-22 12:10:22	\$0.00	2022-08-22 12:10:22	admin
	ORD0001001		New	Funco Intl	Sally Thomas	(empty)	2020-05-03 08:13:59	\$45.00	2022-08-22 10:15:01	admin
	ORD0000001		Completed	Funco Intl	Sarah Johnson	(empty)		\$59.00	2022-08-19 05:56:00	system
	ORD0000002		Completed	Funco Intl	Sally Thomas	(empty)	2022-08-18 23:40:29	\$65.00	2022-08-18 23:40:29	admin
	ORD0000003		Completed	Funco Intl	Sally Thomas	(empty)	2021-06-08 12:34:59	\$0.00	2021-06-08 03:18:01	admin

4. On the customer order form, navigate to **Order Line Items** related list and select the order line item **number** for the SD-WAN Edge Device order line item.

Number	Product Specification	Location	Ordered Quantity	Order Line Action	State
ORDL0001023	SD-WAN Controller	3000 Main Street, Santa Clara, CA	1	Add	New
ORDL0001024	SD-WAN Edge Device	3000 Main Street, Santa Clara, CA	1	Add	New
ORDL0001025	SD-WAN Security	3000 Main Street, Santa Clara, CA	1	Add	New
ORDL0001022	SD-WAN Service Package	3000 Main Street, Santa Clara, CA	1	Add	New

5. Select the Order Characteristics tab on the SD-WAN Edge Device order line item form.

Notice only two characteristics CPE Model and CPE Type, are available. We have only not received the value of WAN optimization and Routing characteristics from the order capture system, which is required to decompose the SD-WAN Edge product order to service orders.

Number	Specification	Characteristic	Previous Characteristic Value	Characteristic Value	Characteristic Option
ORC000001032	SD-WAN Edge Device	CPE Model		ASR	ASR
ORC000001033	SD-WAN Edge Device	CPE Type		Physical	Physical

6. Select the **Details** tab. To trigger the order enrichment and decomposition process, select **Approve** UI action available on the customer order form.

7. Navigate to Order Line Items related list and select the order line item **number** for SD-WAN Edge Device.

Number	Product Specification	Location	Ordered Quantity	Order Line Action	State	Parent Line Item
ORDL0001023	SD-WAN Controller	3000 Main Street, Santa Clara, CA	1	Add	In Progress	ORDL0001022
ORDL0001024	SD-WAN Edge Device	3000 Main Street, Santa Clara, CA	1	Add	In Progress	ORDL0001022
ORDL0001025	SD-WAN Security	3000 Main Street, Santa Clara, CA	1	Add	In Progress	ORDL0001022
ORDL0001022	SD-WAN Service Package	3000 Main Street, Santa Clara, CA	1	Add	In Progress	(empty)

8. On the Order Characteristics related list, notice that, as part of the order enrichment process, all characteristics of the SD-WAN Edge Device have been added to the list, including WAN optimization and Routing characteristics. Still, these characteristics are yet to have any value.

Note: Refresh the list if you don't see all characteristics in the list.

Number	Specification	Characteristic	Previous Characteristic Value	Characteristic Value	Characteristic Option
ORC000001032	SD-WAN Edge Device	CPE Model		ASR	ASR
ORC000001033	SD-WAN Edge Device	CPE Type		Physical	Physical
ORC000001038	SD-WAN Edge Device	CPE Id			(empty)
ORC000001039	SD-WAN Edge Device	Routing			(empty)
ORC000001040	SD-WAN Edge Device	WAN Optimization			(empty)
ORC000001041	Customer Premise SD-WAN Router	CPE Type		Physical	Physical
ORC000001042	Customer Premise SD-WAN Router	Edge Router Id			(empty)

- Select the **Product orders** tab available on the SD-WAN Edge Device order line item to see the product order created as a part of the order decomposition process and open the **product order**.

The screenshot shows a list view of product orders. The top navigation bar includes 'List', 'ORD0001007', 'Details', 'ORDL0001024', and tabs for 'Product Orders (1)' (which is highlighted with a green box), 'Order Tasks', and 'Order Orchestration'. Below the tabs is a table with columns: Number, Short description, Priority, State, Assignment group, and Assigned to. One row is visible: PO0001003, Product Order for SD-WAN Edge Device, 3 - Moderate, Draft, (empty), (empty).

On the SD-WAN Edge Device product order, notice that there is no service order tab, as no service order is created from the decomposition process, as the decomposition process could not evaluate the decomposition rules as the associated characteristics "WAN optimization" and "Routing" are yet to have the required value.

The screenshot shows the 'Product Order' details for PO0001003. The main panel displays fields like Number (PO0001003), State (Draft), Account (Funco Int'l), Primary Contact (Sally Thomas), Order Line Item (ORDL0001024), Location (3000 Main Street, Santa Clara, CA), and Parent (PO0001001). A 'Compose' section on the right allows for note-taking. The 'Activity' sidebar on the right shows system details: System (Field Changes + 2022-08-22 13:37:17), Parent (PO0001001), Order Line Item (ORDL0001024), State (Draft), Opened by (Empty), and a 'Show more' link.

- Navigate to **Product Order Characteristic Values** tab and open the WAN Optimization product order characteristic by selecting the order characteristic **number**.

Number	Specification	Characteristic	Previous Characteristic Value	Characteristic Value	Characteristic Option	Order Line Item
ORC000001032	SD-WAN Edge Device	CPE Model		ASR	ASR	ORDL0001024
ORC000001033	SD-WAN Edge Device	CPE Type		Physical	Physical	ORDL0001024
ORC000001038	SD-WAN Edge Device	CPE Id		(empty)	(empty)	ORDL0001024
ORC000001039	SD-WAN Edge Device	Routing		(empty)	(empty)	ORDL0001024
ORC000001040	SD-WAN Edge Device	WAN Optimization		(empty)	(empty)	ORDL0001024

11. On the WAN optimization form, select **Base** from the available list in the characteristic option field and choose **Save**.

Once the WAN optimization value is submitted, the staggered decomposition process will decompose the SD-WAN Edge Device product order.

12. To see the decomposed service orders, select the **Product Order** tab for **SD-WAN Edge Device > Service Orders** related to the list. Select **Save** to reload the form.

Number	Short description	Priority	State	Assigned to	Task type
SO0001003	Service Order for SD WAN Optimization Service	3 - Moderate	Draft	(empty)	Service Order

13. Similarly, if we provide value for routing characteristics, the staggered decomposition process will pick that value to create a service order for the routing service. To assign a routing value, navigate to the **Product Order Characteristics Values** tab, and select the order characteristic **number** for the **Routing** characteristic.

Number	Specification	Characteristic	Previous Characteristic Value	Characteristic Value	Characteristic Option	Order Line Item
ORC000001032	SD-WAN Edge Device	CPE Model	ASR	ASR	ASR	ORDL0001024
ORC000001033	SD-WAN Edge Device	CPE Type	Physical	Physical	Physical	ORDL0001024
ORC000001038	SD-WAN Edge Device	CPE Id		(empty)	(empty)	ORDL0001024
ORC000001039	SD-WAN Edge Device	Routing		(empty)	(empty)	ORDL0001024
ORC000001040	SD-WAN Edge Device	WAN Optimization	Base	Base	Base	ORDL0001024

14. Select **Base** in the characteristic option field on the routing order characteristic form and then **Save**.

15. Select the **Service Orders** tab on the SD-WAN Edge Device Product Order and observe that the service order is created for the SD-WAN Routing service. (Refresh the list if needed)

Number	Short description	Priority	State	Assigned to	Task type
SO0001003	Service Order for SD WAN Optimization Service	3 - Moderate	Draft	(empty)	Service Order
SO0001004	Service Order for SD-WAN Routing	3 - Moderate	Draft	(empty)	Service Order



Congratulations! You have completed this lab.