# E2E Automation vDNS w/ CDS Use Case - ONAP-02-Design Time

#### CDS Modeling & amp; Distribution

The CBA and Data Dictionary are explained in the Modelling Concepts page here: Modeling Concepts

CDS will require a main components to be able to build a service instance, Following the instructions below in the following order to onboard the Data Dictionary and CBA Package.

- 1. Load the latest DD.json and run the . dd.sh script in rancher.
- 2. Once this is step is completed, access the CDS UI and upload the latest CBA and execute in the following sequence:
  - a. Enrich
  - b. Save
  - c. Deploy
  - d. if upload via SDC: Click on Download and use the Enriched CBA Package to onboard via SDC Artifact Deployment for the VF Model.



After building the CBA and Data Dictionary, we can use the CDS UI to add the Data Dictionary to CDS, and to deploy the CBA in CDS.

First, we logon to CDS UI using the url http://<onap\_ip\_address>:30497.

Choose Controller Blueprint, select file, and update Metadata, the NEXT.

### Notes:

• The UI currently doesn't throw exception on failures so please have the inspection network view enable.

⊟ Controller Blu	eprint Design Studio
Menu	CBA Metadata
Controller Blueprint	Choose CBA Template file
Resource Definition	2 Browse CBA Template file
	Choose File vdns1461.zip Upload
	3 Enter Metadata details
	Next

≡	Controller Blueprint Design St	udio	
1	CBA Metadata	Controller Blueprint Designer	3 Test
	Choose CBA Template file		
	Browse CBA Template file		
	3 Enter Metadata details		
	Template Author	Author Email	User Groups
	Abdelmuhaimen Seaudi	abdelmuhaimen.seaudi@orange.c	ADMIN, OPERATION
	Template Name	Template Version	Template Tags
		1.v.v	1031, VUINO-CUO, OCALE-OUT, MA
	Save Metadata		
	Next		

Enrich, Save, Publish, and finally Deploy, and you should receive a success notification.

CBA Metadata	2 Controller Blueprint Designer	3 Tes
<b>1</b>	· 1- (	B
	<pre>2 "tosca_definitions_version": "controller_blueprint_1_0_0", 3 * "metadata": {</pre>	
Vulls 1461	4 "template_author": "Abdelmuhaimen Seaudi",	
> Plans	5 "author-email": "abdelmuhaimen.seaudi@orange.com",	
/ 10113	6 "user-groups": "ADMIN, OPERATION", ""complete page". "test"	
> Scripts	8 "template version": "1.0.0".	
	9 "template_tags": "test, vDNS-CDS, SCALE-OUT, MARCO"	
> Templates		
	11 "imports": [{ 12 "file": "Definitions/data types icon"	
> TOSCA-Metadata	13 }.	
	14~ {	
<ul> <li>Definitions</li> </ul>	15 "file": "Definitions/relationship_types.json"	
	$10$ $J_{J}$ 17 + J	
artifact_types.json	18 "file": "Definitions/artifact types.json"	
data tupos ison	19 },	
uata_types.jsuff	20 { } {	
node types ison	22 }.	
1000_() 200.0011	23 - {	
policy_types.json	24 ["file": "Definitions/policy_types.json"	
	25 JJ, 26* "dsl definitions": {	
relationship_types.json	27 - "ipam-1": {	
	28 Troper: "token-auth".	

In ONAP Dublin release, if an error happens, there's no error shown to the user, so we need to show the browser console, in order to see if there's an error while deploying the CBA.

### Notes:

• There are workarounds that we need. — "Naming" - resource-assignment content in the definition file and that needs to be removed.

If we want to add one Dictionary item, we start in the CDS UI home screen, select New Resource.

$\leftrightarrow$ $\rightarrow$ C $\blacktriangle$ Not s	<ul> <li>A Not secure   cds-ui:30497/resource-definition</li> <li>Controller Blueprint Design Studio</li> <li>Menu         <ol> <li>Resource creation Method</li> <li>Resource Definition</li> <li>Choose Resource file</li> </ol> </li> </ul>					
Menu	1 Resource creation Method					
Controller Blueprint						
Resource Definition	1 Choose Resource file					
	Upload Resource File					
	New Resource					
	O Existing Model Resource					
	Proceed					

Paste the Dictionary Definition JSON string and submit.



If we want to add many Dictionary items, we can create a JSON list of all the dictionary items and save them in a file called dd.json, and then run the dd.sh script below in the same folder where dd.json is located.

#### **Push Data Dictionaries**

```
#!/bin/bash
# Author: abdelmuhaimen.seaudi@orange.com
# Usage: name this script as dd.sh, and put the data dictionaries list JSON as dd.json in the same directory,
and run dd.sh
# dd.sh will read the dictionary list JSON from dd.json, will output to stdout the number of Defintions found,
and will start pushing them one by one to CDS DB
l=`jq '.|length' dd.json`
echo "Found $1 Dictionary Definition Entries"
i=0
while [ $i -lt $1 ]
do
 echo "i = $i"
 d=`jq ".[$i]" dd.json`
 echo $d
 #REPLACE <cds-ui> with the IP Address of ONAP
 curl 'http://<cds-ui>:30497/resourcedictionary/save' -v -X POST -H 'Content-type: application/json' -d"$d"
 sleep 1
 i=$(( $i + 1 ))
done
```

#### **Policy Naming Modeling**

Within the E2E automation provided by CDS, we have a capability that can generate a name for a component, like a VNF or VF Module.

This capability runs with ONAP POLICY component, where POLICY has the rule that will be used to generate the names

The override.yaml file above has an option "preload=true", that will tell the POLICY component to run the push\_policies.sh script as the POLICY PAP pod starts up, which will in turn create the Naming Policy and push it.

To check that the naming policy is created and pushed OK, we can run the commands below.

#### SDNC Naming policy

```
bash-4.4$ curl -k --silent -X POST \
--header 'Content-Type: application/json' \
--header 'ClientAuth: cHl0aG9uOnRlc3Q=' \
--header 'Authoment: TEST' \
-d '{ "policyName": "SDNC_Policy.Config_MS_ONAP_VNF_NAMING_TIMESTAMP.1.xml"}' \
'https://pdp:8081/pdp/api/getConfig'
[{"policyConfigMessage":"Config Retrieved! ",
"policyConfigStatus": "CONFIG_RETRIEVED",
"type":"JSON",
"config":"{\"service\":\"SDNC-GenerateName\",\"version\":\"CSIT\",\"content\":{\"policy-instance-name\":\"
ONAP_VNF_NAMING_TIMESTAMP\",\"naming-models\":[{\"naming-properties\":[{\"property-name\":\"AIC_CLOUD_REGION\"},
{\"property-name\":\"CONSTANT\",\"property-value\":\"ONAP-NF\"}, {\"property-name\":\"TIMESTAMP\"}, {\"property-
value\":\"_\",\"property-name\":\"DELIMITER\"}],\"naming-type\":\"VNF\",\"naming-recipe\":\"
\texttt{AIC\_CLOUD\_REGION|DELIMITER|CONSTANT|DELIMITER|TIMESTAMP\"}, \{ \ \texttt{naming-properties} \ \texttt{:} \ \{ \ \texttt{property-name} \ \texttt{.} \ \texttt{option} \ \texttt{and} 
VNF_NAME\"},{\"property-name\":\"SEQUENCE\",\"increment-sequence\":{\"max\":\"zzz\",\"scope\":\"ENTIRETY\",\"
start-value\":\"001\",\"length\":\"3\",\"increment\":\"1\",\"sequence-type\":\"alpha-numeric\"}},{\"property-
name\":\"NFC_NAMING_CODE\"},{\"property-value\":\"_\",\"property-name\":\"DELIMITER\"}],\"naming-type\":\"
VNFC\",\"naming-recipe\":\"VNF_NAME|DELIMITER|NFC_NAMING_CODE|DELIMITER|SEQUENCE\"},{\"naming-properties\":[{\"
property-name\":\"VNF_NAME\"},{\"property-value\":\"_\",\"property-name\":\"DELIMITER\"},{\"property-name\":\'
VF_MODULE_LABEL\"},{\"property-name\":\"VF_MODULE_TYPE\"},{\"property-name\":\"SEQUENCE\",\"increment-
sequence\":{\"max\":\"zzz\",\"scope\":\"PRECEEDING\",\"start-value\":\"01\",\"length\":\"3\",\"increment\":\"
1\",\"sequence-type\":\"alpha-numeric\"}]],\"naming-type\":\"VF-MODULE\",\"naming-recipe\":\"
VNF_NAME | DELIMITER | VF_MODULE_LABEL | DELIMITER | VF_MODULE_TYPE | DELIMITER | SEQUENCE \" } ] } } ",
"policyName":"SDNC_Policy.Config_MS_ONAP_VNF_NAMING_TIMESTAMP.1.xml",
"policyType": "MicroService",
"policyVersion":"1",
"matchingConditions":{"ECOMPName":"SDNC","ONAPName":"SDNC","service":"SDNC-GenerateName"},
"responseAttributes":{},
"property":null}]
```

In case the policy is missing, we can manually create and push the SDNC Naming policy using the commands below.

#### Create and Push SDNC Naming Policy

```
echo "Create Generic SDNC Naming Policy for VNF"
sleep 2
echo "Create SDNC vFW Naming Policy'
curl -k -v --silent -X PUT --header 'Content-Type: application/json' --header 'Accept: text/plain' --header
'ClientAuth: cHl0aG9uOnRlc3Q=' --header 'Authorization: Basic dGVzdHBkcDphbHBoYTEyMw==' --header 'Environment:
TEST' -d '{
   "configBody": "{ \"service\": \"SDNC-GenerateName\", \"version\": \"CSIT\", \"content\": { \"policy-
instance-name\": \"ONAP_VNF_NAMING_TIMESTAMP\", \"naming-models\": [ { \"naming-properties\": [ { \"property-
name\": \"AIC_CLOUD_REGION\" }, { \"property-name\": \"CONSTANT\",\"property-value\": \"ONAP-NF\"}, { \"
property-name\": \"TIMESTAMP\" }, { \"property-value\": \"_\", \"property-name\": \"DELIMITER\" } ], \"naming-
type\": \"VNF\", \"naming-recipe\": \"AIC_CLOUD_REGION|DELIMITER|CONSTANT|DELIMITER|TIMESTAMP\" }, { \"naming-
properties\": [ { \"property-name\": \"VNF_NAME\" }, { \"property-name\": \"SEQUENCE\", \"increment-sequence\":
{ \"max\": \"zzz\", \"scope\": \"ENTIRETY\", \"start-value\": \"001\", \"length\": \"3\", \"increment\": \"1\",
\"sequence-type\": \"alpha-numeric\" } }, { \"property-name\": \"NFC_NAMING_CODE\" }, { \"property-value\": \"
_\", \"property-name\": \"DELIMITER\" } ], \"naming-type\": \"VNFC\", \"naming-recipe\": \"
VNF_NAME | DELIMITER | NFC_NAMING_CODE | DELIMITER | SEQUENCE \" }, { \"naming-properties \": [ { \"property-name \": \"
VNF_NAME\" }, { \"property-value\": \"_\", \"property-name\": \"DELIMITER\" }, { \"property-name\": \"
VF_MODULE_LABEL\" }, { \"property-name\": \"VF_MODULE_TYPE\" }, { \"property-name\": \"SEQUENCE\", \"increment-
sequence\": { \"max\": \"zzz\", \"scope\": \"PRECEEDING\", \"start-value\": \"01\", \"length\": \"3\", \"
increment\": \"1\", \"sequence-type\": \"alpha-numeric\" } ], \"naming-type\": \"VF-MODULE\", \"naming-
recipe/": \"VNF_NAME|DELIMITER|VF_MODULE_LABEL|DELIMITER|VF_MODULE_TYPE|DELIMITER|SEQUENCE\" } ] } }",
   "policyName": "SDNC_Policy.ONAP_VNF_NAMING_TIMESTAMP",
    "policyConfigType": "MicroService",
   "onapName": "SDNC",
   "riskLevel": "4",
   "riskType": "test",
    "guard": "false",
    "priority": "4",
    "description": "ONAP_VNF_NAMING_TIMESTAMP"
}' 'https://pdp:8081/pdp/api/createPolicy'
echo "Pushing SDNC Naming Policies"
sleep 2
echo "pushPolicy : PUT : SDNC_Policy.ONAP_VNF_NAMING_TIMESTAMP"
curl -k -v --silent -X PUT --header 'Content-Type: application/json' --header 'Accept: text/plain' --header
'ClientAuth: cHl0aG9uOnRlc3Q=' --header 'Authorization: Basic dGVzdHBkcDphbHBoYTEyMw==' --header 'Environment:
TEST' -d '{
  "pdpGroup": "default",
 "policyName": "SDNC Policy,ONAP VNF NAMING TIMESTAMP".
  "policyType": "MicroService"
}' 'https://pdp:8081/pdp/api/pushPolicy'
```

#### SDC Modeling & amp; Distribution

# Introduction

The purpose of this article is to describe the vDNS use case distribution in Dublin Release.

# What's new

The Controller Blueprint Archive CBA is a zip archive that hosts all the service model related artifacts (heat templates, blueprints, vtl templates, workflows, etc ... ) that can enable ONAP to assign and instantiate the service.

Controller Design Studio CDS should receive a notification when a new service model is distributed by SDC, and then CDS will download the CBA CSAR file and deploy it.

# Distribution of a VNF CBA

Login to ONAP as Designer (cs0008/demo123456!), and click on SDC application.

## Part 1 - Create a New Virtual Software Product

In SDC, select the ONBOARD button > click on Create New VSP button > fill in the Name, Vendor, Category, Description and select the Network Package for on-boarding procedure as illustrated below.

SDC ON	BOARD			
ACTIVE ITEMS		WORKSPACE	ONEOARD CATALOG	
			New Software Product	×
			* Name	
U VLM			VDNS CDS Software Product	
∧ PERMISSIONS		+ CREATE	*Vendor	
Owner			ONAP-E T	
Contributor			* Category	
ONBOARDING PROCEDURE		T CREATE P	Abstract (Generic)	
Network Packa	age			
Manual			ONBOARDING PROCEDURE	
			Network Package	
			O Manual	
				CREATE

Once the forum is populated for New Software Product click on Create.

In Software Product Details Screen in SDC, the users must populate the license information and the software product. For the vLB CDS use case the software product for the heat package is obtain from the following link: vLB CDS HEAT PACKAGE.

Once the for License and Software Product Attachment is populated then click on the Submit button.

SDC v.1.4.1 ONBOARD	ONAP-E     Software Products     123     Overview     Versions Page	× 8	
Overview General	SOFTWARE PRODUCT DETAILS	SOFTWARE PRODUCT ATTACHMEN	Sino Skare Resert
Process Details Networks Validation Validation Results Activity Log	123 Vendar Description ONAP-E 123 Category Abstract (Generic) License Agreement Missing	Drag & drop for upload or SELECT FILE	Search in Repository Q

Part 2 - Create VF Model and Certify

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		Manage Support			•	🡤 Carlos	English
1	Home					What are you looking for?	
A	K	Applications					Sort by:
	Application Catalog		Select applications				
	Widget Catalog	SDC	Click here to personalize this applications page +				

Click on the Import VSP from the HOME page.

From the list of VSP, select the Specific vLB CDS VSP for IMPORT to create the VF in SDC.



We fill in the VF name and description, etc ..., and click "Create".

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	Manage Support			P	<b>Carlos</b>	Englis	h
Home SDC	×				What are you looking	) for?	
SDC v.1.4.0 HOME ► V	F: CDS-VNF-TEST > Ger	neral 🕨					
CDS-VNF-TEST	IN DESIGN					Create	×
General Deployment Artifact Information Artifact	General				Save	C	
TOSCA Artifacts Composition Operation Activity Log	R Catego	/NF-TEST pry ork Elements	<b>•</b>	* Contact ID: cs0008 * Vendor vendor			
Deployment Properties Assignment Req. & Capabilities	Tags CDS-VNF-TES	T		* Vendor Release           1.0           Vendor Model Number			
	* Description <u>CDS VNF</u> TEST						

### Click on "Deployment Artifact", then "Add other arifacts", and select the vDNS.zip CBA.

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	Manage Support		English
Home SDC	×		What are you looking for?
SDC v.1.4.0 HOME ► V	F: CDS-VNF-TEST > Deployme	ent Artifact 🔹 🕨	
CDS-VNF-TEST	V0.1 V0.1 V0.1 V0.1 V0.1 V0.1 V0.1 V0.1	COUT	Certify Check in 📩 🗙
General Deployment Artifact	Deployment	Artifact	
Information Artifact			+ Add
TOSCA Artifacts	Name	Type Deployment Version	UUID
Composition		timeout	
Operation			
Activity Log		There are no deployment artifacts display	to
Deployment			
Properties Assignment		(+) Add Other Artifact	
Req. & Capabilities			



Check the artifact is uploaded OK, and click on "Certify".



Add a comment, and submit, you should receive a success notification, and we are back in SDC Home Screen.

### Part 3 - Create Service Model, Certify and Distribute

Now, let's create a new service model, and add the newly created VF (including CBA artifact) to the new service model. Click on "Add Service"



Add service name and description, and click on "Create". Choose Instantiation Type: Macro.

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ONAP Portal	Manage Support	Carlos English	
Home SDC	×	What are you looking for?	
SDC v.1.4.0 HOME ▷ S	ERVICE: CD > General >		
CD	🕐 IN DESIGN	Create	
General	Conoral		
TOSCA Artifacts	General		
Composition		Save Ca	
Operation	* Name	* Contact ID:	
Activity Log	CDS-VNF-TEST	cs0008	
Management Workflow	S * Category	* Project Code:	
Network Call Flow	Network L4+	▼ 123456	
Deployment	Tags	Ecomp Generated Naming	
Properties Assignment		true •	
Req. & Capabilities	CDS-VNF-TEST	Naming Policy	
Monitoring	* Description	Service Type	
	CDS VNF TEST		

Click on "Composition", and drag the VF we created from the palette on the left onto the canvas in the middle.



Click on Properties Assignments, then click on the service name, e.g. "CDS-VNF-TEST" from the right bar.

Type "sdnc" in the filter box, and add the sdnc\_model\_name, sdnc\_model\_version, and sdnc\_artifact\_version, and click "Save".

Home SDC	×					What are you looking for?			
NAME     Portal     Manage     Support     Properties     Assignment     *       Home     SDC     X     What are you looking for?       SDC     X     What are you looking for?       SDC     X     What are you looking for?       SDC     X     State stat									
CDS-VNF-TEST V1.1 * IN DESIGN CHECK OUT									
General TOSCA Artifacts Composition Operation	Properties Assign	Policies		sdnc Q 7	Declare Input Declare Policy	+ Add Property			
Activity Log	Property Name	Туре	ES	Value	Discard Save	Composition Property Structure			
Management Workflow	R CDS-VNF-TEST 0					CDS-VNF-TEST			
Network Call Flow	sdnc_model_version	string		1.0.0		SELF			
Deployment	sdnc_artifact_name	CDS-VNF-TEST 0							
Req. & Capabilities	sdnc_model_name	string		test					
Monitoring									

Type "skip" in the filter box, and set "skip post instantiation" to FALSE, then click "Save".

Then, click on "Submit for Testing".

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	Manage Support										P 🗜 Ca	arlos	E
Home SDC	: ×										What	are you look	ing for?
SDC v.1.4.0 HOME ► S	SERVICE: CDS-VNF-TEST	Properties As	signment	Þ									
CDS-VNF-TEST	V1.2 * 11 DE	SIGN CHECK OUT									ubmit for Testing	Che	ck in
General TOSCA Artifacts	Proper	ties Assignr	nent										
Operation	Propertie	s Inputs	Policie	S		skip	۹	Declare Input	Declare Policy			+ A	Add Property
Activity Log	Property Na	me	т	ype	ES	Value		Discard	Save	Composition	Property S	Structure	
Management Workflow	R CDS-V	NF-TEST 0								CDS-VNF-TEST			
Network Call Flow	skip_po	t_instantiation_configur	ation b	oolean		FALSE			•	- SELF	/		
Deployment										CDS-VN	IF-TEST 0		
Properties Assignment													

### Login as Tester (jm0007/demo123456!) and accept the new service.

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	Manage Support	P 👤 Joni English				
Home SDC	What are you looking for?					
SDC v.1.4.0 HOME → SERVICE: CDS-VNF-TEST → General →						
CDS-VNF-TEST	V0.1 T IN TESTING	Accept Reject Cancel X				
General TOSCA Artifacts	General					
Composition Operation Activity Log	* Name CDS-VNF-TEST * Category	* Contact ID: cs0008 * Project Code:				
Management Workflow	Network L4+	v 123456				
Network Call Flow Deployment Properties Assignment	Tags CDS-VNF-TEST	Ecomp Generated Naming true Naming Policy				
кеq. & Capabilities	* Description	Service Type				

Login as Governor (gv0001/demo123456!) and approve for distribution.

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ONAP Portal	Manage Support			•	👤 David	English	
Home SDC X					What are you loo	king for?	
SDC v.1.4.0 HOME ► SI	ERVICE: CDS-VNF-TEST	► General ►			1		
CDS-VNF-TEST	V1.0 V1.0 V1.0	NG FOR DISTRIBUTION			Approve	Reject	×
General TOSCA Artifacts	Gene	eral					
composition		* Name		* Contact ID:			
Operation		CDS-VNF-TEST		cs0008			
Activity Log	S	* Category		* Project Code:			
Management Workflow		Network L4+	•	123456			
Network Call Flow	Tags			Ecomp Generated Nami	ng		
Deployment				true		*	
Properties Assignment	CDS-VNF-TEST		Naming Policy				
Req. & Capabilities	* Description		Service Type				
	CDS VNI	TEST					

Login as Operator (op0001/demo123456!) and click on "Distribute".

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ONAP Portal	Manage Support	English				
Home SDC	What are you looking for?					
SDC v.1.4.0 HOME → SERVICE: CDS-VNF-TEST → General →						
CDS-VNF-TEST	V1.0 V1.0 V1.0 V1.0 V1.0 V1.0 V1.0 V1.0	Distribute Monitor X				
General TOSCA Artifacts	General					
composition	* Name	* Contact ID:				
Operation	CDS-VNF-TEST	cs0008				
Activity Log	S * Category	* Project Code:				
Management Workflow	Network L4+	123456				
Network Call Flow	Tags	Ecomp Generated Naming				
Distribution		true				
Deployment	CDS-VNF-TEST	Naming Policy				
Properties Assignment		Sandea Tuna				
Req. & Capabilities	* Description CDS VNF TEST					

Click on "Monitor" to check the progress of the distribution, and check that all ONAP components were notified, and downloaded the artifacts, and deployed OK.

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English Manage Support							
Home SDC	What are you looking for?						
SDC v.1.4.0 HOME > SERVICE: CDS-VNF-TEST > Distribution >							
CDS-VNF-TEST	V1.0 * DISTRIBUTED	Redistribute Monitor X					
General TOSCA Artifacts Composition	Distribution						
Operation	DISTRIBUTION [1]	Search Q (5					
Activity Log Management Workflow	Distribution ID         User id: 0 f60e2776-f11a-4e0e-b8dd-0dd5f6bbbb72         TimeUTCI: 0 per P(op0001)         TimeUTCI: 0 5/09/2019 10:49AM	Distributed					
Network Call Flow	Total Artifacts: 15 Notified: 5 Downloaded: 4 Deployed: 4 ONt Notified: 10	Deploy Errors: 0 Download Errors: 0					
Distribution Deployment	SO-COpenSource-Env11 3 Notified: 1 Downloaded: 1 Deployed: 1 Not Notified: 2	Deploy Errors: 0 Download Errors: 0					
Properties Assignment	V aal-ml 3 Notified: 1 Downloaded: 1 Deployed: 1 • Not Notified: 2 Deploy Errors: 0 Download Errors: 0						
Req. & Capabilities	✓ sdc-COpenSource-Env11-sdnc-dockero 3 Notified:1 Downloaded:1 Deployed:1 ● Not Notified:2	Deploy Errors: 0 Download Errors: 0					
	policy-id 3 Notified:1 Downloaded:1 Deployed:1      Not Notified:2	Deploy Errors: 0 Download Errors: 0					
	v     cds 3     Notified: 1     Downloaded: 0     Deployed: 0     Not Notified: 2     Deploy Errors: 0						