Oceana Generic Channel

Configuration, API description

CC R+D

07/29/2022

This describes the configuration and API implementation for the Generic Channel feature.

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REVISED: January 14, 2022

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Licensee shall comply with all applicable laws and regulations, including without limitation those applicable to data privacy, intellectual property, trade secret, and fraud. Licensee is advised that the Technical Information is of U.S. origin and subject to the U.S. Export Administration Regulations (“EAR”) and may be subject to applicable local country import/export laws and regulations. Diversion contrary to U.S. and/or applicable local country law and/or regulation is prohibited. Licensee agrees not to directly or indirectly export, re-export, import, download, or transmit the Technical Information to any country, end user or for any use that is contrary to applicable U.S. and/or local country regulation or statute (including but not limited to those countries embargoed by the U.S. government). Licensee represents that any governmental agency has not issued sanctions against Licensee or otherwise suspended, revoked or denied Licensee's import/export privileges. Licensee agrees not to use or transfer the Technical Information for any use relating to nuclear, chemical or biological weapons, or missile technology, unless authorized by the U.S. and/or any applicable local government by regulation or specific written license. Additionally, Licensee is advised that the Technical Information may contain encryption algorithm or source code that may not be exported to government or military end users without a license issued by the U.S. Bureau of Industry and Security and any other country’s governmental agencies, where applicable.

13.0 WAIVER.

The failure to assert any rights under this Agreement, including, but not limited to, the right to terminate in the event of breach or default, will not be deemed to constitute a waiver of the right to enforce each and every provision of this Agreement in accordance with their terms.

14.0 SEVERABILITY.

If any provision of this Agreement is determined to be unenforceable or invalid, this Agreement will not be rendered unenforceable or invalid as a whole, and the provision will be changed and interpreted so as to best accomplish the objectives of the original provision within the limits of applicable law.

15.0GOVERNING LAW AND DISPUTE RESOLUTION.

15.1 Governing Law. This Agreement and any dispute, claim or controversy arising out of or relating to this Agreement (“Dispute”), including without limitation the formation, interpretation, breach or termination of this Agreement, or any issue regarding whether a Dispute is subject to arbitration under this Agreement, will be governed by New York State laws, excluding conflict of law principles, and the United Nations Convention on Contracts for the International Sale of Goods.

15.2 **Dispute Resolution.** Any Dispute will be resolved in accordance with the provisions of this Section 15. The disputing party shall give the other party written notice of the Dispute in accordance with the notice provision of this Agreement. The parties will attempt in good faith to resolve each controversy or claim within 30 days, or such other longer period as the parties may mutually agree, following the delivery of such notice, by negotiations between designated representatives of the parties who have dispute resolution authority.

15.3 **Arbitration of Non-US Disputes**. If a Dispute that arose anywhere other than in the United States or is based upon an alleged breach committed anywhere other than in the United States cannot be settled under the procedures and within the timeframe set forth in Section 15.2, it will be conclusively determined upon request of either party by a final and binding arbitration proceeding to be held in accordance with the Rules of Arbitration of the International Chamber of Commerce by a single arbitrator appointed by the parties or (failing agreement) by an arbitrator appointed by the President of the International Chamber of Commerce (from time to time), except that if the aggregate claims, cross claims and counterclaims by any one party against the other party exceed One Million US Dollars at the time all claims, including cross claims and counterclaims are filed, the proceeding will be held in accordance with the Rules of Arbitration of the International Chamber of Commerce by a panel of three arbitrator(s) appointed in accordance with the Rules of Arbitration of the International Chamber of Commerce. The arbitration will be conducted in the English language, at a location agreed by the parties or (failing agreement) ordered by the arbitrator(s). The arbitrator(s) will have authority only to award compensatory damages within the scope of the limitations of Section 8 and will not award punitive or exemplary damages. The arbitrator(s) will not have the authority to limit, expand or otherwise modify the terms of this Agreement. The ruling by the arbitrator(s)) will be final and binding on the parties and may be entered in any court having jurisdiction over the parties or any of their assets. The parties will evenly split the cost of the arbitrator(s)' fees, but Avaya and Customer will each bear its own attorneys' fees and other costs associated with the arbitration. The parties, their representatives, other participants and the arbitrator(s) will hold the existence, content and results of the arbitration in strict confidence to the fullest extent permitted by law. Any disclosure of the existence, content and results of the arbitration will be as limited and narrowed as required to comply with the applicable law. By way of illustration, if the applicable law mandates the disclosure of the monetary amount of an arbitration award only, the underlying opinion or rationale for that award may not be disclosed.

15.4 **Choice of Forum for US Disputes.** If a Dispute by one party against the other that arose in the United States or is based upon an alleged breach committed in the United States cannot be settled under the procedures and within the timeframe set forth in Section 15.2, then either party may bring an action or proceeding solely in either the Supreme Court of the State of New York, New York County, or the United States District Court for the Southern District of New York. Except as otherwise stated in Section 15.3 each party consents to the exclusive jurisdiction of those courts, including their appellate courts, for the purpose of all actions and proceedings arising out of or relating to this Agreement.

15.5 Injunctive Relief. Nothing in this Agreement will be construed to preclude either party from seeking provisional remedies, including, but not limited to, temporary restraining orders and preliminary injunctions from any court of competent jurisdiction in order to protect its rights, including its rights pending arbitration, at any time. The parties agree that the arbitration provision in Section 15.3 may be enforced by injunction or other equitable order, and no bond or security of any kind will be required with respect to any such injunction or order.

15.6 Time Limit. Actions on Disputes between the parties must be brought in accordance with this Section within 2 years after the cause of action arises.

16.0 AGREEMENT IN ENGLISH.

The parties confirm that it is their wish that the Agreement, as well as all other documents relating hereto, including all notices, have been and shall be drawn up in the English language only. Les parties aux présentes confirment leur volonté que cette convention, de même que tous les documents, y compris tout avis, qui s'y rattachent, soient rédigés en langue anglaise.

17.0 ENTIRE AGREEMENT.

This Agreement, its exhibits, schedules and other agreements or documents referenced herein, constitute the full and complete understanding and agreement between the parties and supersede all contemporaneous and prior understandings, agreements and representations relating to the subject matter hereof. No modifications, alterations or amendments shall be effective unless in writing signed by both parties to this Agreement.

18. REDISTRIBUTABLE CLIENT FILES.

The list of SDK client files that can be redistributed, if any, are in the SDK in a file called Redistributable.txt.

1 Table of Contents

2 Version History

Date	Revision #	Summary of Changes
December 2017	Version 1.0	Initial Oceana Release 3.4
April 2018	Version 1.1	Minor updates with Oceana 3.4.0.1
April 2018	Version 1.2	Updates with Oceana 3.5, primarily transfer to service and an eventing mechanism for Generic Channel contacts.
July 2018	Version 1.3	Further 3.5 Updates – Social handle, Routepoint being mandatory, Ability to specify to: address, Support for pre-existing context IDs, new authentication mechanism.
August 2018	Version 1.4	Minor updates based on feedback.
Sep 2018	Version 1.5	Minor updates based on feedback (routing to different groups).
Nov 2018	Version 1.6	Minor updates (re passing in WorkRequestID, CoreDataServices secure connection)
March 2019	Version 1.7	Additional parameters for createContact request - Account and CRM ID customer identifiers. [Alignment with Oceana 3.6]
Dec 2019	Version 1.8	Described facility to create Extra Data.
Dec 2020	Version 1.9	Updated supported capacity
Apr 2021	Version 1.10	Comment re CS storage of stored contacts

3 Overview

3.1 Description

The purpose of this guide is to delineate the steps involved in configuring and utilizing the Generic Channel Feature initially productised in Oceana 3.4. The Generic Channel feature allows third-party application developers the ability to queue their own contact-types in the Oceana Contact Centre to available agents. Customers can queue these third-party contact types into the Contact Centre to be routed to skilled idle agents using criteria specified by the application as part of the contact creation.

Users can configure one Generic Channel in Oceana, but it is possible to route different types of contacts by routing to different routepoints or by assigning different sets of attributes to different groups of contacts. So if for example a customer wants to route tickets of types 'Sales' and 'Support', they could create attributes 'Sales' and 'Support', assign these attributes to different sets of agents and create the contacts assigning the appropriate attributes.

At a high level, there are 2 distinct parts that end-customers must develop:
1) Acquiring an authentication token via the Breeze Authorization Service (running on the Oceana Breeze UAC cluster)
2. Consuming the provided API to create/drop Generic Channel contacts via the GenericChannelAPI svar (running on the Oceana Breeze OCP cluster).

Please note it is not permitted to deploy any customer developed Generic Channel API consuming application on a Breeze node that is part of an Oceana deployment. The customer developed software must be deployed on a separate server.

3.2 Contents

The package consists of:

- This guide.
- Installed reference client.
- Source Java code for the installed reference client.

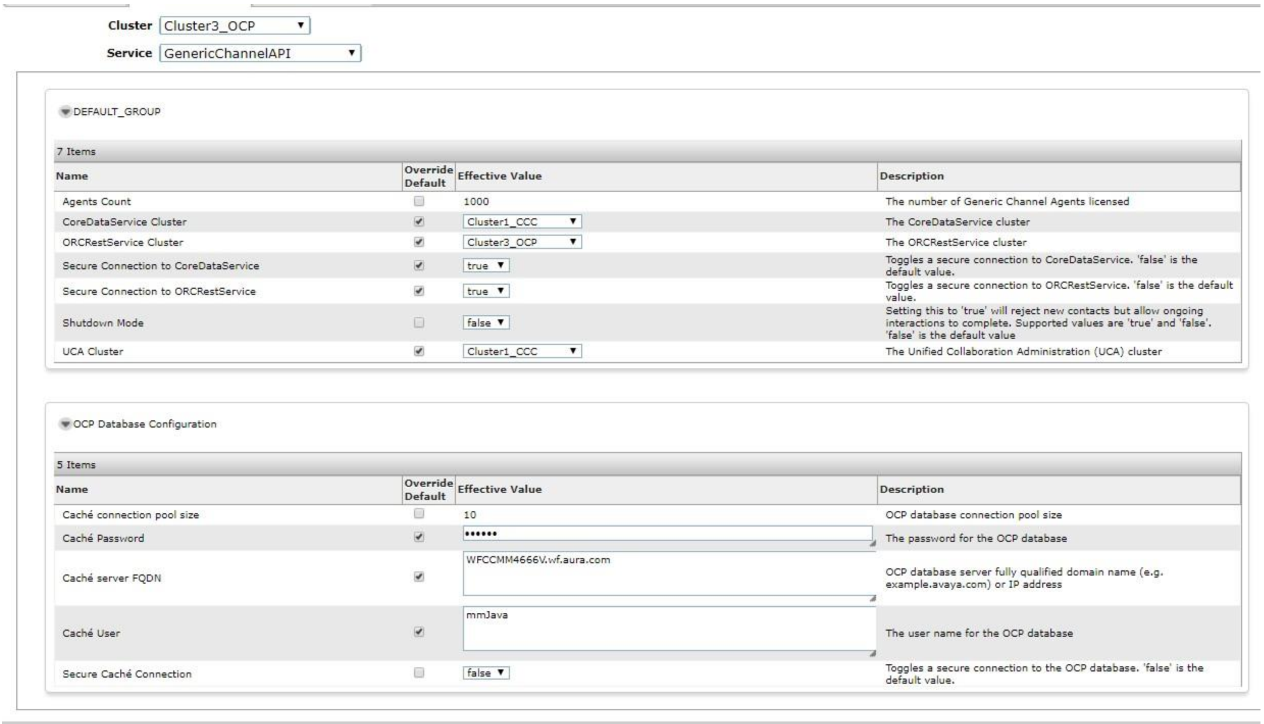
3.3 Related Oceana/Breeze Documentation

- Deploying Avaya Oceana™ Solution.
- External Client Authentication with the Authorization Service (Breeze).
- Eventing Framework documentation component of Breeze APIs.

4 Oceana Configuration

4.1 Svar Configuration

The new GenericChannelAPI svar is deployed on the OCP cluster. Attributes need to be configured here – this is documented in the Oceana Deployment Guide but sample attribute values are displayed here.



Cluster Cluster3_OCP ▼

Service GenericChannelAPI ▼

DEFAULT_GROUP

7 Items

Name	Override Default	Effective Value	Description
Agents Count	□	1000	The number of Generic Channel Agents licensed
CoreDataService Cluster	☑	Cluster1_CCC ▼	The CoreDataService cluster
ORCRestService Cluster	☑	Cluster3_OCP ▼	The ORCRestService cluster
Secure Connection to CoreDataService	☑	true ▼	Toggles a secure connection to CoreDataService. 'false' is the default value.
Secure Connection to ORCRestService	☑	true ▼	Toggles a secure connection to ORCRestService. 'false' is the default value.
Shutdown Mode	□	false ▼	Setting this to 'true' will reject new contacts but allow ongoing interactions to complete. Supported values are 'true' and 'false'. 'false' is the default value
UCA Cluster	☑	Cluster1_CCC ▼	The Unified Collaboration Administration (UCA) cluster

OCP Database Configuration

5 Items

Name	Override Default	Effective Value	Description
Caché connection pool size	□	10	OCP database connection pool size
Caché Password	☑	••••••	The password for the OCP database
Caché server FQDN	☑	WFCCMM4666V.wf.aura.com	OCP database server fully qualified domain name (e.g. example.avaya.com) or IP address
Caché User	☑	mmJava	The user name for the OCP database
Secure Caché Connection	□	false ▼	Toggles a secure connection to the OCP database. 'false' is the default value.

Agent Count : the number of GenericChannel agents licensed.

CoreDataServices Cluster : the IP/FQDN of the cluster hosting the OceanaCoreDataServices svar.

ORCRestService Cluster : the IP/FQDN of the cluster hosting the ORCRestService svar.

Secure Connection to CoreDataervices: This indicates if the connection to OceanaCoreDataService is over http or https.

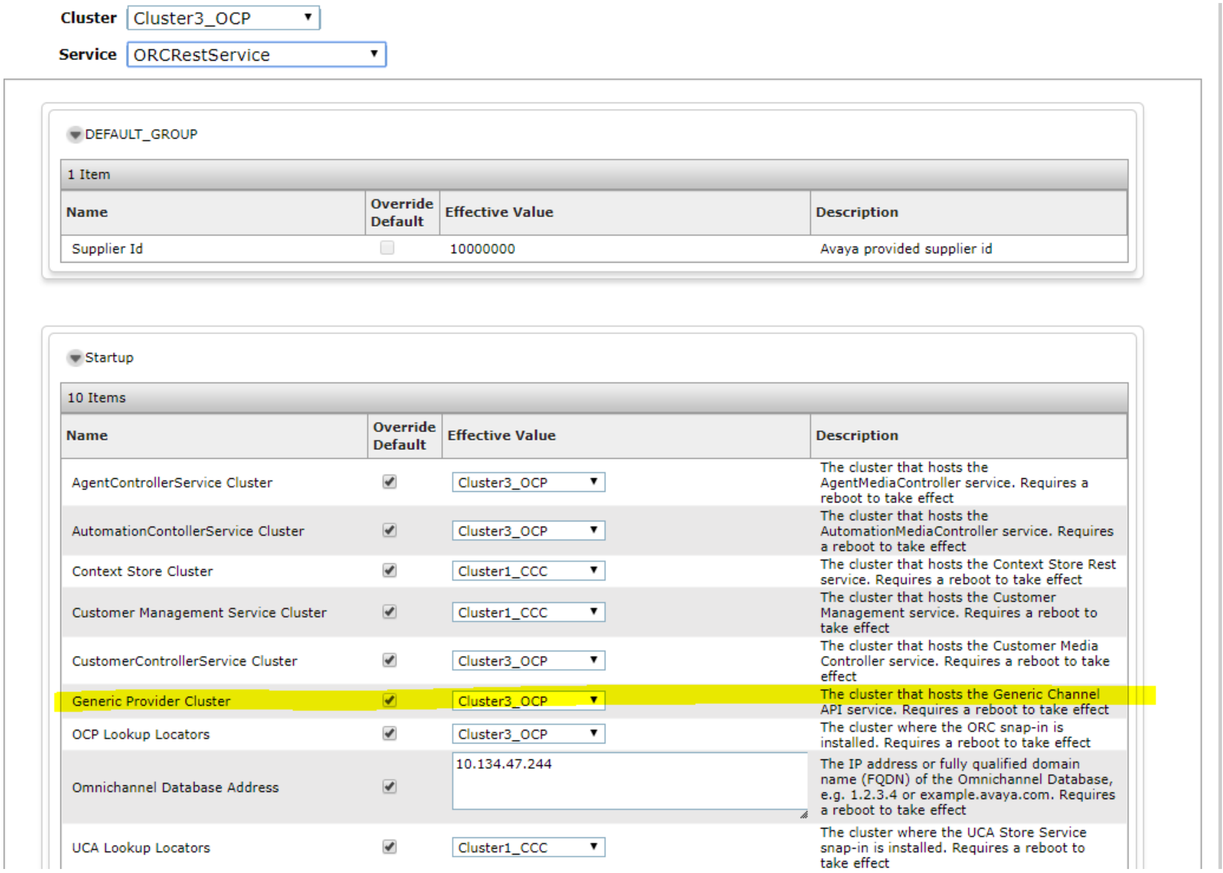
Secure Connection to ORCRestService: This indicates if the connection to ORCRestService is over http or https.

Shutdown Mode: When this is enabled, Oceana will reject any new incoming create requests to create Generic Channel contacts.

UCA Cluster: the cluster where the UCAService is running.

OCP Database Configuration: These database settings refer to the OCP database and connecting to it.

Additionally a new attribute needs to be configured for the ORCRestService SVAR:



Cluster: Cluster3_OCP

Service: ORCRestService

DEFAULT_GROUP

1 Item

Name	Override Default	Effective Value	Description
Supplier Id	□	10000000	Avaya provided supplier id

Startup

10 Items

Name	Override Default	Effective Value	Description
AgentControllerService Cluster	☑	Cluster3_OCP	The cluster that hosts the AgentMediaController service. Requires a reboot to take effect
AutomationContollerService Cluster	☑	Cluster3_OCP	The cluster that hosts the AutomationMediaController service. Requires a reboot to take effect
Context Store Cluster	☑	Cluster1_CCC	The cluster that hosts the Context Store Rest service. Requires a reboot to take effect
Customer Management Service Cluster	☑	Cluster1_CCC	The cluster that hosts the Customer Management service. Requires a reboot to take effect
CustomerControllerService Cluster	☑	Cluster3_OCP	The cluster that hosts the Customer Media Controller service. Requires a reboot to take effect
Generic Provider Cluster	☑	Cluster3_OCP	The cluster that hosts the Generic Channel API service. Requires a reboot to take effect
OCP Lookup Locators	☑	Cluster3_OCP	The cluster where the ORC snap-in is installed. Requires a reboot to take effect
Omnichannel Database Address	☑	10.134.47.244	The IP address or fully qualified domain name (FQDN) of the Omnichannel Database, e.g. 1.2.3.4 or example.avaya.com. Requires a reboot to take effect
UCA Lookup Locators	☑	Cluster1_CCC	The cluster where the UCA Store Service snap-in is installed. Requires a reboot to take effect

This attribute is the cluster on which the Generic Channel API svar is installed.

4.2 Engagement Designer Flow Creation

Please see the section “Deploy Engagement Designer workflows” in the “Deploying Avaya Oceana ™ Solution” guide. A similar approach needs to be followed for the GenericChannel contact type. When the steps are complete, please verify the flow is deployed via the following steps.

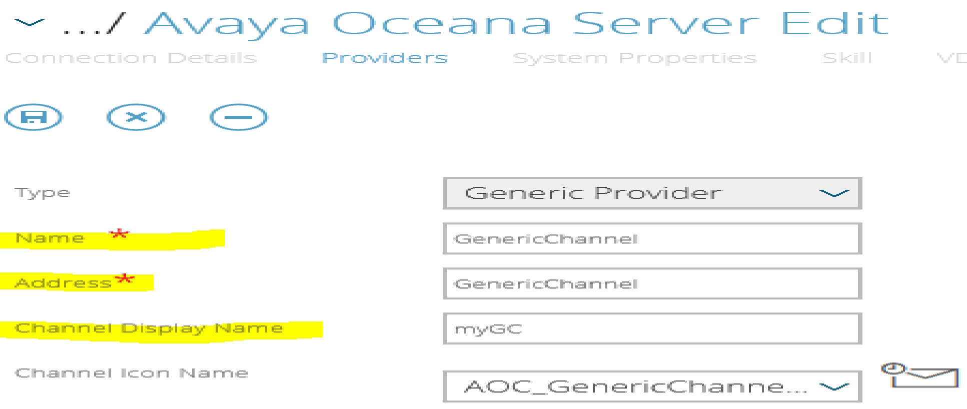
1. In your web browser, enter the following URL to open the Engagement Designer Admin Console: https://<AOC1 FQDN>/services/EngagementDesigner/admin.html.
2. On the Workflows tab, verify that the OceanaGenericAssistedService workflow is available in the list of deployed workflows.
3. In Oceana 3.5 support for transfer to service has been introduced, so there is an additional flow that needs to be deployed (OceanaGenericTransfer).

5 Oceana Generic Channel Configuration via ACM

5.1 Configure provider in ACM

Initial steps are to configure the provider in ACM.

On ACM, go to Configuration - Oceana - Server Details [select the UCA server] - Providers and Create a new Generic Channel Provider. Note: the value for Name must be GenericChannel.

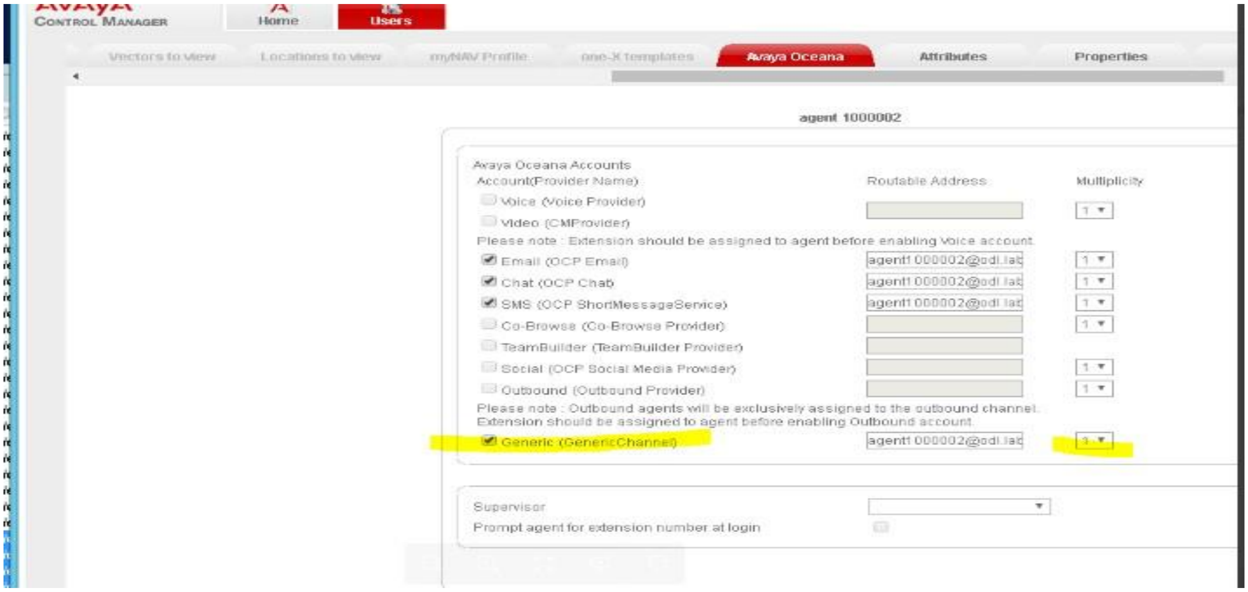


Type	Generic Provider
Name *	GenericChannel
Address*	GenericChannel
Channel Display Name	myGC
Channel Icon Name	AOC_GenericChanne…

To make the new GenericChannel Provider available to agents, you must restart all the clusters.

5.2 Assign Contact Type to Agents

On ACM – go to Users - Select an individual user - Select Avaya Oceana - and assign the GenericProvider Type with the desired multiplicity level.



agent 1000002

Avaya Oceana Accounts

Account(Provider Name)	Routable Address	Multiplicity
□ Voice (Voice Provider)		1 ▾
□ Video (CMProvider)		

Please note : Extension should be assigned to agent before enabling Voice account.

Account(Provider Name)	Routable Address	Multiplicity
☑ Email (OCP Email)	agent1000002@odl.lab	1 ▾
☑ Chat (OCP Chat)	agent1000002@odl.lab	1 ▾
☑ SMS (OCP ShortMessageService)	agent1000002@odl.lab	1 ▾
□ Co-Browse (Co-Browse Provider)		1 ▾
□ TeamBuilder (TeamBuilder Provider)		
□ Social (OCP Social Media Provider)		1 ▾
□ Outbound (Outbound Provider)		1 ▾

Please note : Outbound agents will be exclusively assigned to the outbound channel. Extension should be assigned to agent before enabling Outbound account.

Account(Provider Name)	Routable Address	Multiplicity
☑ Generic (GenericChannel)	agent1000002@odl.lab	1 ▾

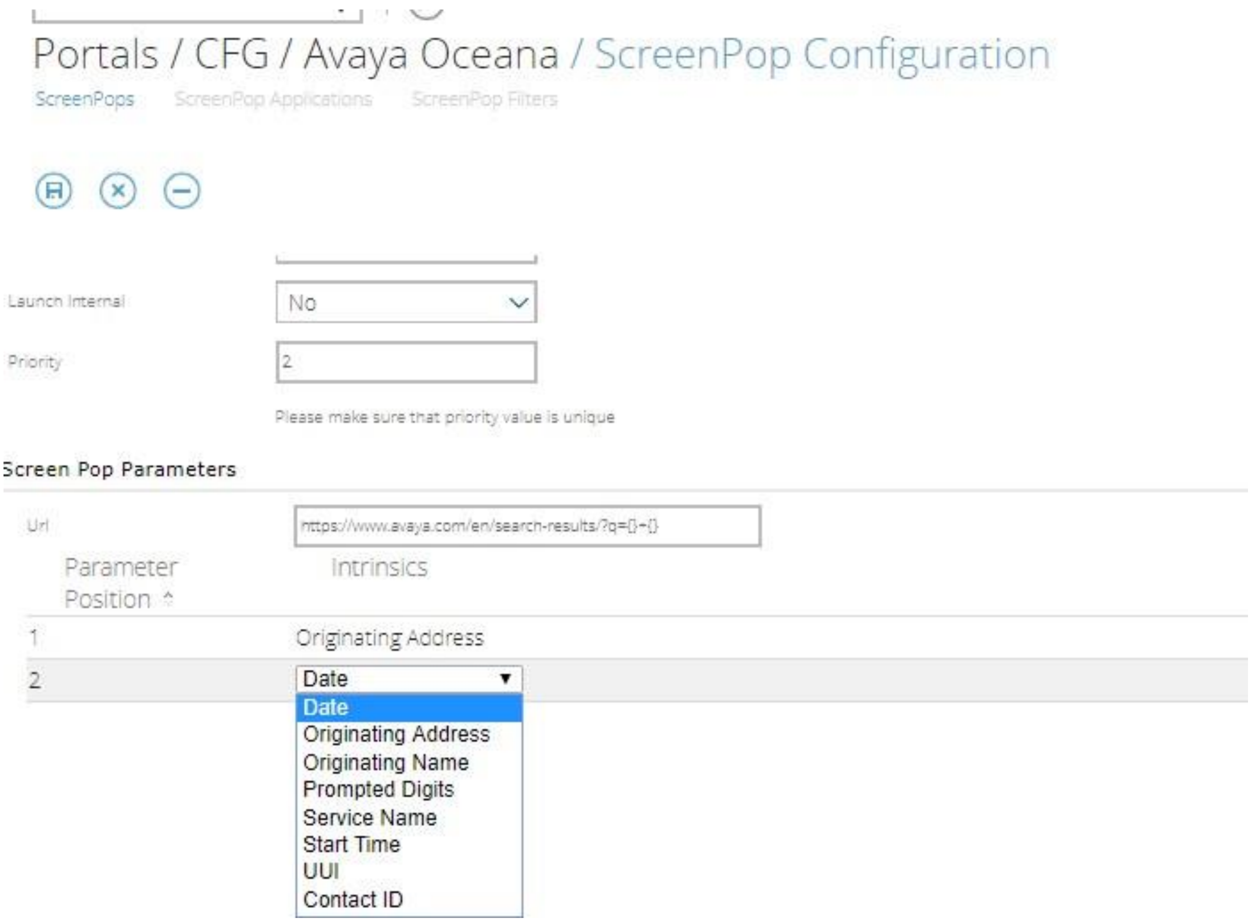
Supervisor ▾

Prompt agent for extension number at login □

5.3 Configure screen-pops, disposition code, work codes

If desired, channel specific disposition codes and work codes can be configured. Screenpops can be configured to handle the media of the GenericChannel contact (Oceana is not involved in the transport of media for GenericChannel contacts).

On ACM-Portals, Configuration, Oceana, Screenpop Configuration



Portals / CFG / Avaya Oceana / ScreenPop Configuration

Launch Internal: No

Priority: 2

Please make sure that priority value is unique

Screen Pop Parameters

Url: https://www.avaya.com/en/search-results/?q={}-{}

Parameter Position ^	Intrinsics
1	Originating Address
2	Date

Note Contact ID is now available as a screen-pop parameter, this is the unique identifier passed in for contact create requests.

5.4 Context Store Data Storage Configuration

If customers are planning to re-open closed Generic Channel contacts, care should be taken with the value set for the Context Store Manager “EDM: Keep closed contacts” attribute particularly if extra contextual information is passed into Oceana with the initial contact create request.

6 Client Authentication via the Breeze Authorization Service

6.1 Authentication Mechanisms

Generic Channel clients use the Breeze Authorization service to authenticate.

There are two mechanisms that can be adopted here:

1) A confidential client based approach.

2) An optional public client based approach(new with Oceana 3.5).

6.2 Confidential Client Authentication

This connection mechanism is described in detail at https://www.devconnectprogram.com/fileMedia/download/3049b344-b223-4644-a06f-fef6d220091d but the step involved are outlined below.

Pre-requisites for these configuration steps are to have Openssl and the Java Keytool application installed on the system you plan to utilize for Generic Channel creation and removal. Openssl is freely available on the internet and binaries for different platforms are available. The Keytool application comes as part of the standard Java JDK install.

6.2.1 Authentication Steps

Note: it is highly recommended to use the same password for all passwords required below. [Note in the example below the generated files are all created in the local directory]

1. As the Breeze Authorization Service expects valid signed JSON Web Tokens from clients to authenticate them, a client would first need to have a private key. Openssl is used here to generate an example key pair:

```
# Generates a key pair for the application
 openssl genrsa -aes256 -out client.key 2048
```

2. Next, generate a CSR to get it signed by a CA:

```
# Generates a CSR using the above key
 openssl req -x509 -sha256 -new -key client.key -out client.csr
```

3. You will be asked to enter a few fields (for creating the CSR and DN), an example is shown below:
Country Name (2 letter code) [AU]: State or Province Name (full name) [Some-State]: Locality Name (e.g., city) []: Organization Name (e.g., company) [Internet Widgits Pty Ltd]: Organizational Unit Name (e.g., section) []: Common Name (e.g. server FQDN or YOUR name) []: Email Address []:

4. Once the CSR is generated, get it signed by a CA. One approach could be to self-sign the CSR:

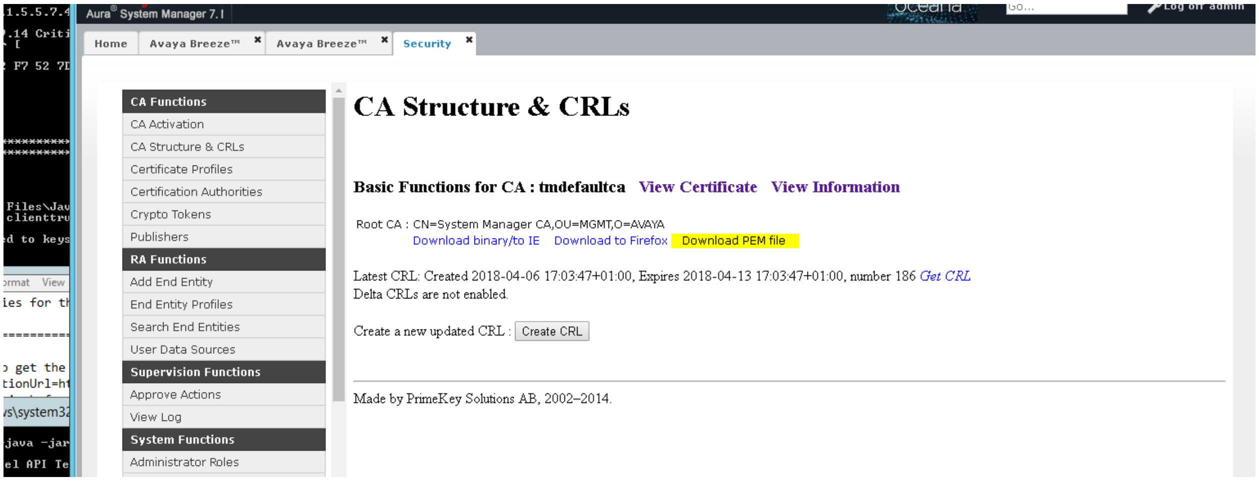
```
# Self-sign the CSR
openssl x509 -sha256 -days 3652 -in client.csr -signkey client.key -out client.crt
```

Take a note of client.crt - This certificate will be used further while adding an external client in SMGR

5. Next, create a PKCS#12 store out of the generated key and certificate:
# Takes the cert and the private key to create a PKCS#12 keystore openssl pkcs12 -export -name clientcert -in client.crt -inkey client.key -out keystore.p12

6. This step converts the PKCS#12 store to a Java KeyStore:
# Converts a PKCS#12 store to JKS keytool -importkeystore -destkeystore clientkeystore.jks -srckeystore keystore.p12 -srcstoretype pkcs12 -alias clientcert

7. Download the SMGR CA Cert which is Active and is the one which is trusted by the Breeze node onto the local machine where these steps are being carried out and copy to the current folder.
This is available to download from SMGR at:



CA Structure & CRLs

Basic Functions for CA : tmdefaultca

Root CA : CN=System Manager CA,OU=MGMT,O=AVAYA

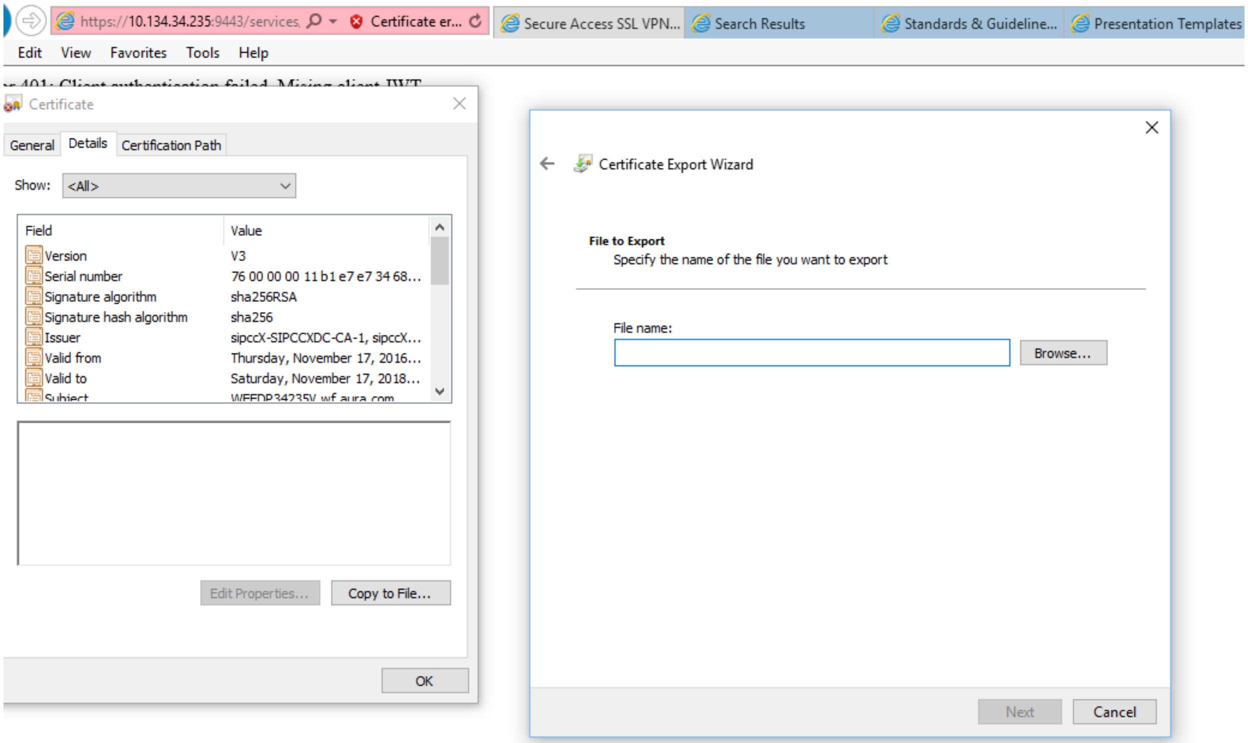
Latest CRL: Created 2018-04-06 17:03:47+01:00, Expires 2018-04-13 17:03:47+01:00, number 186
Delta CRLs are not enabled.

Create a new updated CRL :

Made by PrimeKey Solutions AB, 2002–2014.

Alternatively,download the cert using following command:
openssl s_client -servername LabFQDNorIP -connect LabFQDNorIP:9443/services/AuthorizationService/token </dev/null | sed -ne '/-BEGIN CERTIFICATE-/,/-END CERTIFICATE-/p' >/home/USER/SystemManagerCA.cacert.pem

Finally this certificate can also be found by browsing with IE to the URL of the UCA cluster in the Oceana environment (e.g. https://<FQDN:9443>/services/AuthorizationService/token) where the Authorization Service is running and viewing and downloading the certificate. This approach was tested using the DER encoded binary X.509 (.CER) format in the Export File Format screen.



Field	Value
Version	V3
Serial number	76 00 00 00 11 b1 e7 e7 34 68...
Signature algorithm	sha256RSA
Signature hash algorithm	sha256
Issuer	sipccX-SIPCCXDC-CA-1, sipccX...
Valid from	Thursday, November 17, 2016...
Valid to	Saturday, November 17, 2018...
Subject	WFFDP34235V.wf.aura.com

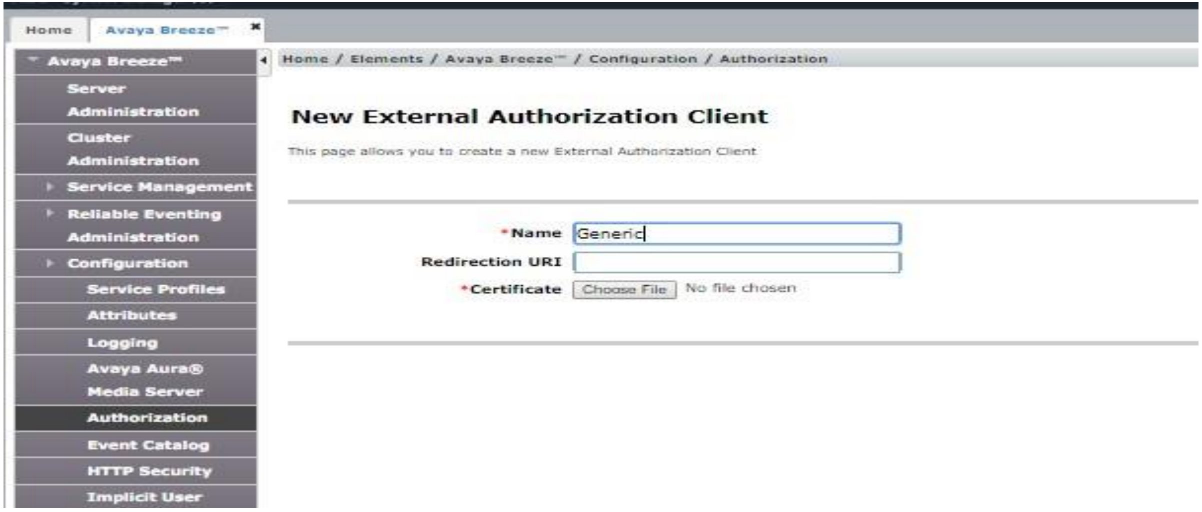
File to Export
Specify the name of the file you want to export

File name:

8. Next, import this certificate into a Java trust store:
# Import SMGR CA cert onto a trust store keytool -import -noprompt -alias smgrca -keystore clienttruststore.jks - file SystemManagerCA.cacert.pem -storepass password

9. The following files are of interest in further steps:
client.crt - Certificate to be used while provisioning the external client in SMGR clientkeystore.jks - The client keystore clienttruststore.jks - The client truststore

10. Go to Breeze > Configuration > Authorization > Client tab > Select New:



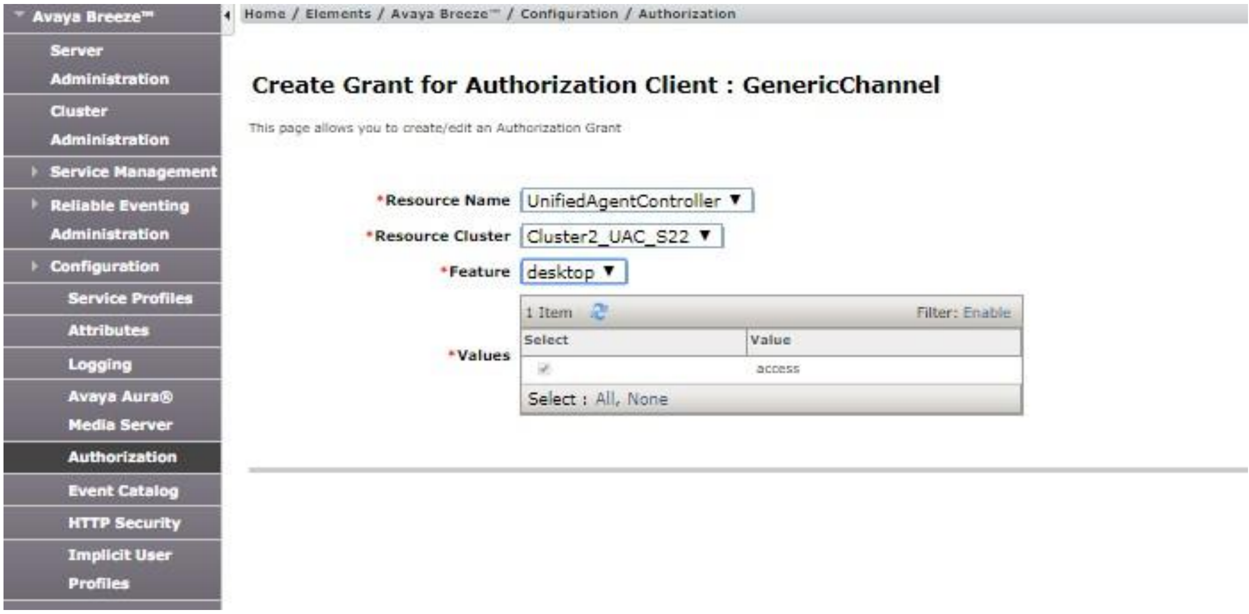
New External Authorization Client

This page allows you to create a new External Authorization Client

*Name: Generic
Redirection URI:
*Certificate: No file chosen

and load the certificate created above.

11. Assign a grant to this authorization client.



Create Grant for Authorization Client : GenericChannel

This page allows you to create/edit an Authorization Grant

*Resource Name: UnifiedAgentController
*Resource Cluster: Cluster2_UAC_S22
*Feature: desktop
*Values

1 Item — Filter: Enable

Select	Value
☑	access

Select : All, None

6.2.2 Sample code for Access to authorization Token

The following is sample Java code to access the authorization token:

```
KeyStore clientKeyStore = KeyStore.getInstance("JKS");
clientKeyStore.load(new FileInputStream("keystore_location"), "pass-word".toCharArray());

KeyStore clientTrustStore = KeyStore.getInstance("JKS");
clientTrustStore.load(new FileInputStream("truststore_location"), "pass-word".toCharArray());

AuthorizationClientHelper clientHelper = new AuthorizationClientHelper.Builder()
.tokenEndpoint("https://<FQDN:9443>/services/AuthorizationService/token") .clientIdentifier("client_id")
.keyStore(clientKeyStore, "keystore_password", "key_alias") .trustStore(clientTrustStore) .build();

AccessToken token = clientHelper.getAccessToken();
```

There are a few things which this code is doing before making a call to get an access token:
The first two lines prepare the client keystore. The keystore_location would be the absolute path of "clientkeystore.jks" which was created in Step 6 in the previous section.

The next two lines load the client truststore. The truststore_location would be the absolute path of "clienttruststore.jks" created in Step 8 of the previous section.

The builder requires these arguments (in exact order):

- The Authorization Service token endpoint location
- Client identifier got from Step 11 in the previous section.

- Keystore initialized on the first two lines with the key alias mentioned in Step 6 command of the previous section.
- Truststore initialized in the third and fourth lines.

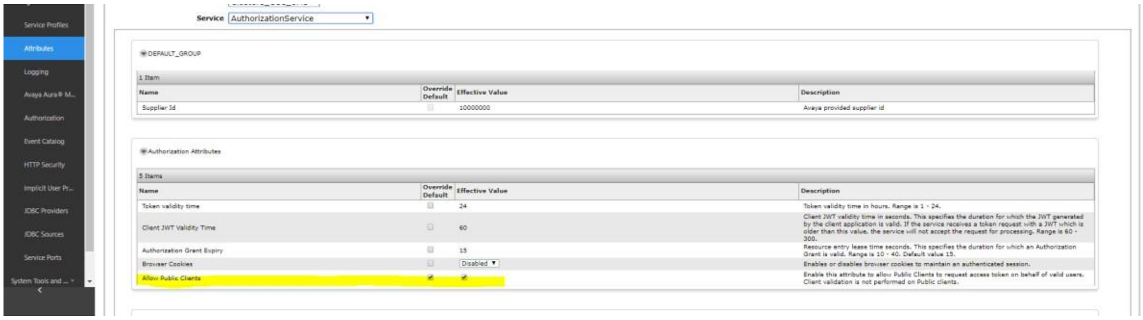
Note: Please note that currently the time on the client PC must match the time on the Breeze Node that you are authenticating against. Please note that currently it is advisable to use the IP address instead of the FQDN of the Breeze cluster you are authenticating against.

Note: Please also note that the tokens provided by the Authorization Service are of defined time duration and consuming clients will need to deal with this timeout in their implementation.

Note: Please note that if you are using domains that are not listed at http://data.iana.org/TLD/tlds-alpha-by-domain.txt (e.g domains like .local), you will need to enter the IP address instead of the FQDN as the authorization endpoint. The authorization code only supports domains in the list referenced above.

6.3 Public Client Authentication

Support for public clients is not enabled by default. This is administrable via a service attribute on Authorization Service.



Service: AuthorizationService

DEFAULT_GROUP

1 Item

Name	Override Default	Effective Value	Description
Supplier Id	□	10000000	Avaya provided supplier id

Authorization Attributes

5 Items

Name	Override Default	Effective Value	Description
Token validity time	□	24	Token validity time in hours. Range is 1 - 24.
Client JWT Validity Time	□	60	Client JWT validity time in seconds. This specifies the duration for which the JWT generated by the client application is valid. If the service receives a token request with a JWT which is older than this value. the service will not accept the request for processing. Range is 60 - 300.
Authorization Grant Expiry	□	15	Resource entry lease time seconds. This specifies the duration for which an Authorization Grant is valid. Range is 10 - 40. Default value 15.
Browser Cookies	□	Disabled ▾	Enables or disables browser cookies to maintain an authenticated session.
Allow Public Clients	☑	☑	Enable this attribute to allow Public Clients to request access token on behalf of valid users. Client validation is not performed on Public clients.

When this is administered to true, a client which doesn't provide its authorization details in Authorization header is treated as a public client.

Public clients do not request for client scopes in the token request. In case a public client requests for the same, the request is rejected.

The user's credentials are then provided in the requested body. An example is shown below:

```
POST <HOST>/services/AuthorizationService/token HTTP/1.1
Content-Type: application/x-www-form-urlencoded

grant_type=password&
username=johndoe&
password=EyT54Jut
```

Note - There is no Authorization header present in the request.

This request returns a token which can then be used in Generic Channel requests (as per the token described in section 6.2.2).

7 API Functions

The API supports functions for the creation and dropping of Generic Channel contacts and 2 helper functions to return the available attributes and Routepoints available in the system. For each of the methods supported, the authorization token retrieved from the Breeze Authorization service above must be passed as a parameter. Requests will be rejected if the passed in authorization token is invalid.

7.1 CreateContact

https://FQDN_or_IP/services/GenericChannelAPI/api/createcontact

Support Post method

This supports passing in of Customer PhoneNumber, EmailAddress, social handle, a list of attributes, a Routepoint and the actual contact ID. This contact ID is what will be made available for screenpop and WidgetAPI on Workspaces.

Sample JSON for this is:

```
{{"identifier":"emailAddress","emailAddress":"Sprint46@demoAvaya.com","destinationAddress":"testD
estinationAddress","contactID":"test2018Jul24155318702","routePoint":"SystemDefaultDigitalRoutepoi
nt","attributes":"Location.GalwayE,Language.English","ssoToken":"eyJhbGciOiJSUzI1...","socialHandle":"
sprint46demo","socialPlatform":"twitter", "workRequestID":"" }}
```

Please note that the attribute here is just a sample value – for the contact to route successfully there must be an available agent with the GeneriChannel contact type and the entered attribute(s) assigned to them.

Please note the system enforces uniqueness of ContactID in the contacts that are currently in queue or active at agents. The system will not allow creation of a contact with a ContactID that is already in queue or active at an agent.

The contactID, ssoToken and a customer identifier, (be that email address/telephone number/social handle&platform/account type&ID/crmId),Routepoint fields must be specified. The "identifier" field allowed values are "emailAddress","telephoneNumber","social", "account", "crmId".

If these fields are not present the contact create request will be rejected.

Other fields are optional, but not specifying any attributes would lead to routing based on Generic Channel contact type only.

Please note when passing in ContactID values only alphanumeric characters are permitted.

Additional features in Oceana 3.5

Routepoint as a mandatory field is a breaking change introduced in Oceana 3.5. A default Routepoint – SystemDefaultDigitalRoutepoint is now present on all Oceana installations.

Oceana 3.5 introduced support for a social handle to be a customer identifier – this is specified via two parameters – socialHandle and socialPlatform.

The Oceana 3.5 release also introduced support for passing in an existing WorkRequestID/ContextID as a parameter in the createContact request. This allows users to prepopulate information into ContextStore which is then merged with the other parameters that are passed in with the createContact request. This will allow the consumer of the GenericChannel API to insert supporting contextual information into Oceana prior to CreateContact and then to correlate the CreateContact request with this ContextID. The parameter used to pass this parameter into the request is “workRequestID” (as per above).

Additional features in Oceana 3.6

Customer Identifiers:

Note, with Oceana 3.6, Oceana now also supports passing in Account/CRM details as the customer identifier. Please note that to pass in account details, two parameters must be supplied – acccountID and accountType.

Sample JSON:

```
{{"identifier":"account","accountID":"123435","accountType":"ACCOUNT_ID","contactID":"test2018Jul24155318702","routePoint":"SystemDefaultDigitalRoutepoint","attributes":"Location.GalwayE,Language.English","ssoToken":"eyJhbGciOiJSUzI1...","socialHandle":"sprint46demo","socialPlatform":"twitter", "workRequestID":"" }}
```

The accountType specified needs to exist in the Oceana OCP Database – these account type are populated via the Oceana Customer Management Tool (OCMT). Attempts to create a contact with a non-existent account type will be rejected.

To pass in CRM details, a crmID must be supplied in the createContact request:

Sample JSON:

```
{{"identifier":"crmId","crmId":"123435",routePoint":"SystemDefaultDigitalRoutepoint","attributes":"Location.GalwayE,Language.English","ssoToken":"eyJhbGciOiJSUzI1...","socialHandle":"sprint46demo","socialPlatform":"twitter", "workRequestID":"" }}
```

Priority:

Generic Channel supports passing in priority as an optional parameter in createContact requests.

Priority is a numeric value which can be between 1 and 10. It can be used by Oceana to route contacts with order of importance.

Sample JSON:

```
{"crmId":"123456_789","identifier":"crmid","destinationAddress":"testDestinationAddress","contactID":"RND2019Mar23131107713","extraData":"","routePoint":"SystemDefaultDigitalRoutepoint","attributes":"Location.Inhouse,Language.English","ssoToken":"eyJhbGciOiJSUzI1...","priority":"10","workRequestID":""}
```

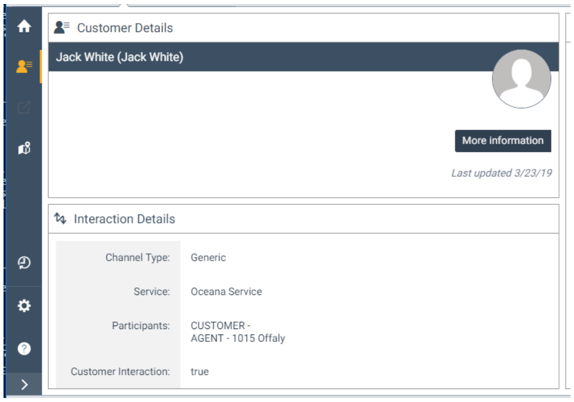
First/Last Name parameters:

It is also possible to pass in the first and last names of the customer creating the contact as optional parameters in the createContact request:

Sample JSON:

```
{"identifier":"crmid","lastName":"White","destinationAddress":"testDestinationAddress","contactID":"RND2019Mar23132900806","extraData":"","isUseRPAsCalledParty":"true","priority":"10","crmId":"123456_789","firstName":"Jack","routePoint":"SystemDefaultDigitalRoutepoint","attributes":"Location.Inhouse,Language.English","ssoToken":"eyJhbGciOiJSUzI1...","workRequestID":""}
```

These will appear in Workspaces in the customer details display:



Customer Details

Jack White (Jack White)

Last updated 3/23/19

Interaction Details

Channel Type: Generic

Service: Oceana Service

Participants: CUSTOMER -
AGENT - 1015 Offaly

Customer Interaction: true

ExtraData being passed into ContextStore:

It is possible to pass in extra data with the contact creation request that will be stored with the context in the Context Store. This data can be exposed to Agents using Workspaces if bespoke Workspaces widgets are developed accessing the Context Store data.

Sample JSON:

```
{"identifier":"emailAddress","lastName":"Pale","destinationAddress":"testDestinationAddress","contactID":"Contact1234","extraData":"extraData:mytestExtraData","isUseRPAsCalledParty":"true","priority":"1","firstName":"Jack","emailAddress":"enda@edtest1.com","routePoint":"SystemDefaultDigitalRoutepoint","overwriteContextDetails":"false","ssoToken":"eyJhbGciOiJSUzI1...","workRequestID":"MyContextID"}
```

Note the WorkRequestID is being passed in with the contact creation request and the format of the data is a key value pair.

7.2 DropContact

https://FQDN_or_IP services/GenericChannelAPI/api/dropcontact - supports POST method.

Sample JSON:

{{"contactID":"850000000","ssoToken":"eyJhbGciOiJSUzI1NiJ9.eyJzdWIiOiI0bWJSTmJrVFEzUzR5WGhQcy
01R25nIiwiY2xpZW50U2NvcGVMaXN0IjpbeyJmZWF0dXJlTmFtZSI6IlVuaWZpZWRBZ2VudENvbnRyb2xsZX
IuZGVza3RvcCIsImZlYXR1cmVWYWx1ZXMiOlsiYWNjZXNzIl0sImNsdXN0ZXJJZCI6NzEwMX1dLCJpc3MiOiIw
OWZkMmQ4MC1jY2UyLTRlZDQtYjY3Yi01NTYyZjljNDc4N2IiLCJleHAiOjE1MTExMjUyODksImlhdCI6MTUx
MTAzODg4OSwianRpIjoiMWMzZTU0Y2QtMDRmZS00YTNhLWE5MTItMDZiYjQ4N2YxNGRmIn0.R3bSSMI
NB6AZ3oPrazcuX - 1845EUttrOz01 -
Rr2m0TaNg1hgvv3tbiqsjCOVBsbe4CNUhL8U5qElqHoDIy2feXxFFURH3NH3aJ1IAxtEwFAao6V6s_yrqMmB
sLoPkJgJ2OlHHO2jQ2ZvVRDB -
wH4MStkqdhwNsc04YM3aFnALvrdMejDk1MhOPlcWshLrMy3MVNmOv_f0YH5FZRnWFYgvV1lWPVOHW
Kg3HFRUobpRij9LEd_ps1XuWnxPnKmmaQsxq4cleHB_iMNoHbHm315PwCi_QNEPGYLriIFhonTnlPv5dfvm
gwrAwTltEfoNmA1aqu9sgqvnj5mecf5I7KQug"}}

Please note that the DropContact command drops the contact at all phases of routing – i.e. if the contact is in queue waiting for an agent, alerting at an agent or active at an agent, the contact will be dropped.

7.3 GetAttributes

https://FQDN_or_IP services/GenericChannelAPI/api/getlistofattributes – supports Post method

1 parameter – the authorization token

7.4 GetRoutepoints

https://FQDN_or_IP services/GenericChannelAPI/api/getlistofroutepoints - Supports POST method

1 parameter – the authorization token

7.5 Sample code:

The code below is in C# and is designed to show example usage of the API.

7.5.1 CreateContact

```
static void createContact(RestClient Client2,string token, string contactID)
        {
            try
            {
                var request2 = new
              RestRequest("services/GenericChannelAPI/api/createcontact", Method.POST);
                request2.AddHeader("Content-Type", "application/json");
                JsonObject jS1 = new JsonObject();
                jS1.Add("contactID", contactID);
                jS1.Add("ssoToken", token);
                jS1.Add("emailAddress", "mMouse@avaya.com");
                jS1.Add("telephoneNumber", "5566777");
                jS1.Add("identifier", "emailAddress");
                jS1.Add("routePoint","myGenericRP2");
                jS1.Add("attributes", "Location.Inhouse");
                jS1.Add("workRequestID", "PreviouslyCreatedWRID");
                request2.AddJsonBody(jS1);
                IRestResponse response2 = Client2.Execute(request2);
                var content2 = response2.Content; // raw content as string
                log.Debug("Create" + contactID + " Output: " + content2);
            }
            catch(Exception ex1)
            {
                log.Debug(ex1.Message);
            }
        }
```

7.5.2 Drop Contact:

```
  static void dropContact(RestClient Client2,string token, string contactID)
        {
            try
            {
                var request2 = new
RestRequest("services/GenericChannelAPI/api/dropcontact", Method.POST);
                request2.AddHeader("Content-Type", "application/json");

                JsonObject jS1 = new JsonObject();
                jS1.Add("contactID", contactID);
                jS1.Add("ssoToken", token);

                request2.AddJsonBody(jS1);
                IRestResponse response2 = Client2.Execute(request2);
                var content2 = response2.Content; // raw content as string
                log.Debug("DR" +contactID + " Output: " +content2);
            }
            catch (Exception ex)
            {
                log.Debug(ex.Message);
            }
        }
```

7.5.3 Attributes:

```
static void getListOfAttributes(RestClient Client2, string token)
        {
            try
            {
                var request2 = new
RestRequest("services/GenericChannelAPI/api/getlistofattributes", Method.POST);
```

```
            request2.AddHeader("Content-Type", "application/json");

            JsonObject jS1 = new JsonObject();
            jS1.Add("ssoToken", token);
            request2.AddJsonBody(jS1);
            IRestResponse response2 = Client2.Execute(request2);
            var content2 = response2.Content; // raw content as string
            log.Debug("GetAttributes" + " Output: " + content2);

        }
        catch (Exception ex)
        {
            log.Debug(ex.Message);
        }
    }
```

7.5.4 Routepoints:

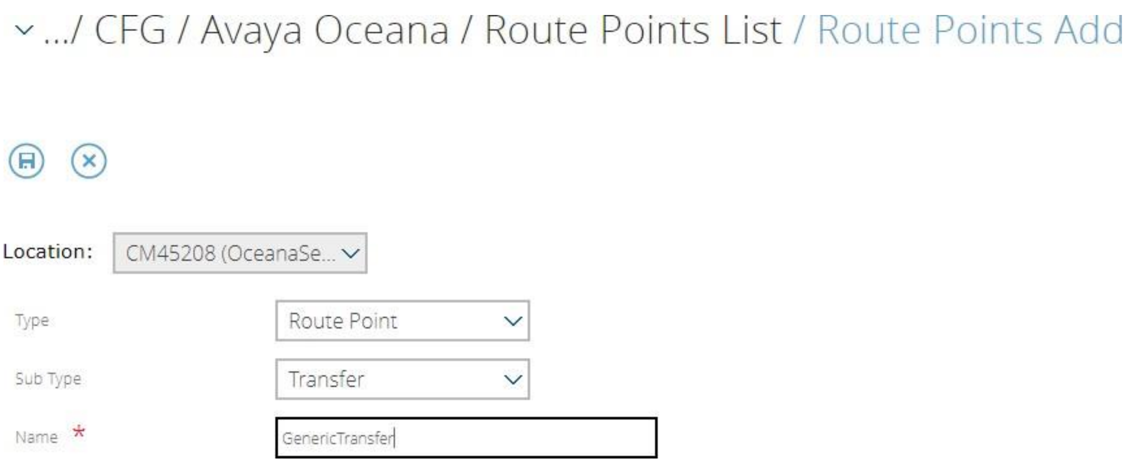
```
static void getListOfRoutepoints(RestClient Client2, string token)
    {
        try
        {
            var request2 = new
RestRequest("services/GenericChannelAPI/api/getlistofroutepoints", Method.POST);

            request2.AddHeader("Content-Type", "application/json");

            JsonObject jS1 = new JsonObject();
            jS1.Add("ssoToken", token);
            request2.AddJsonBody(jS1);
            IRestResponse response2 = Client2.Execute(request2);
            var content2 = response2.Content; // raw content as string
            log.Debug("GetAttributes" + " Output: " + content2);

        }
        catch (Exception ex)
        {
            log.Debug(ex.Message);
        }
    }
```

8 Transfer to Service for Generic Channel

With the launch of Oceana 3.5, support for transfer to service for Generic Channel has been introduced.

There are a number of steps in ACM required for this (same approach as being used for other channel types).

Initially, a transfer Routepoint must be created- ACM-> Configuration -> Oceana -> Route Points-> Add

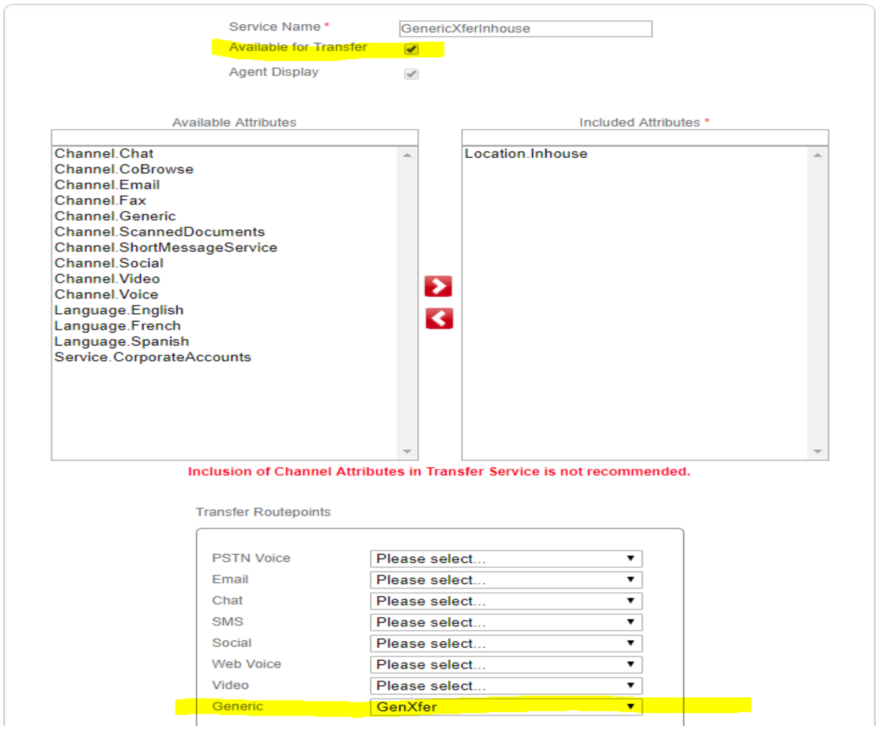


⌄ .../ CFG / Avaya Oceana / Route Points List / Route Points Add

Location: CM45208 (OceanaSe...

Type	Route Point
Sub Type	Transfer
Name *	GenericTransfer

Then a transfer to service service must be created. ACM -> Oceana ->WorkAssignment -> Services



Service Name * GenericXferInhouse

Available for Transfer ☑

Agent Display ☑

Available Attributes:

Channel.Chat
Channel.CoBrowse
Channel.Email
Channel.Fax
Channel.Generic
Channel.ScannedDocuments
Channel.ShortMessageService
Channel.Social
Channel.Video
Channel.Voice
Language.English
Language.French
Language.Spanish
Service.CorporateAccounts

Included Attributes *:

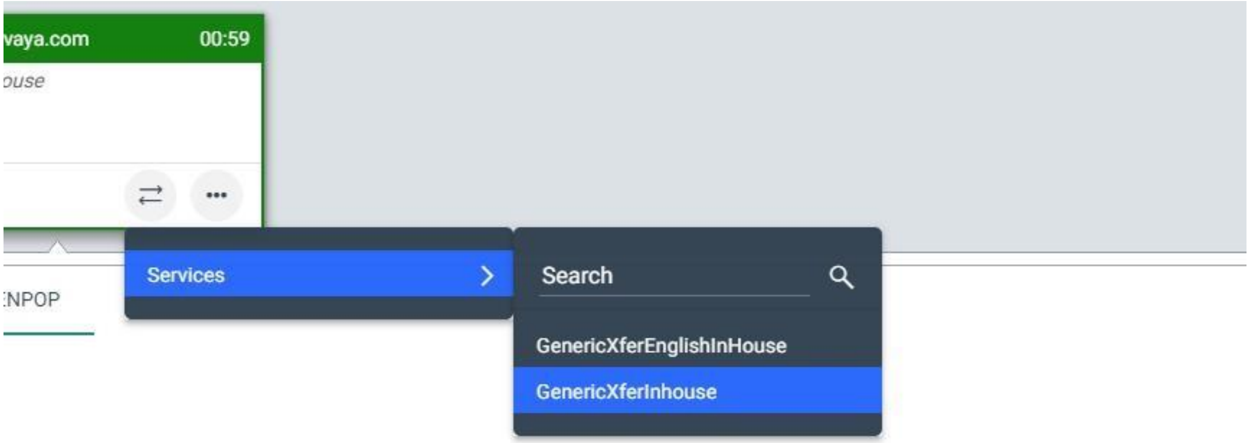
Location.Inhouse

Inclusion of Channel Attributes in Transfer Service is not recommended.

Transfer Routepoints

PSTN Voice	Please select...
Email	Please select...
Chat	Please select...
SMS	Please select...
Social	Please select...
Web Voice	Please select...
Video	Please select...
Generic	GenXfer

When an agent answers a Generic Channel contact after the transfer service has been created, the agent will have the option to transfer the contact to service.

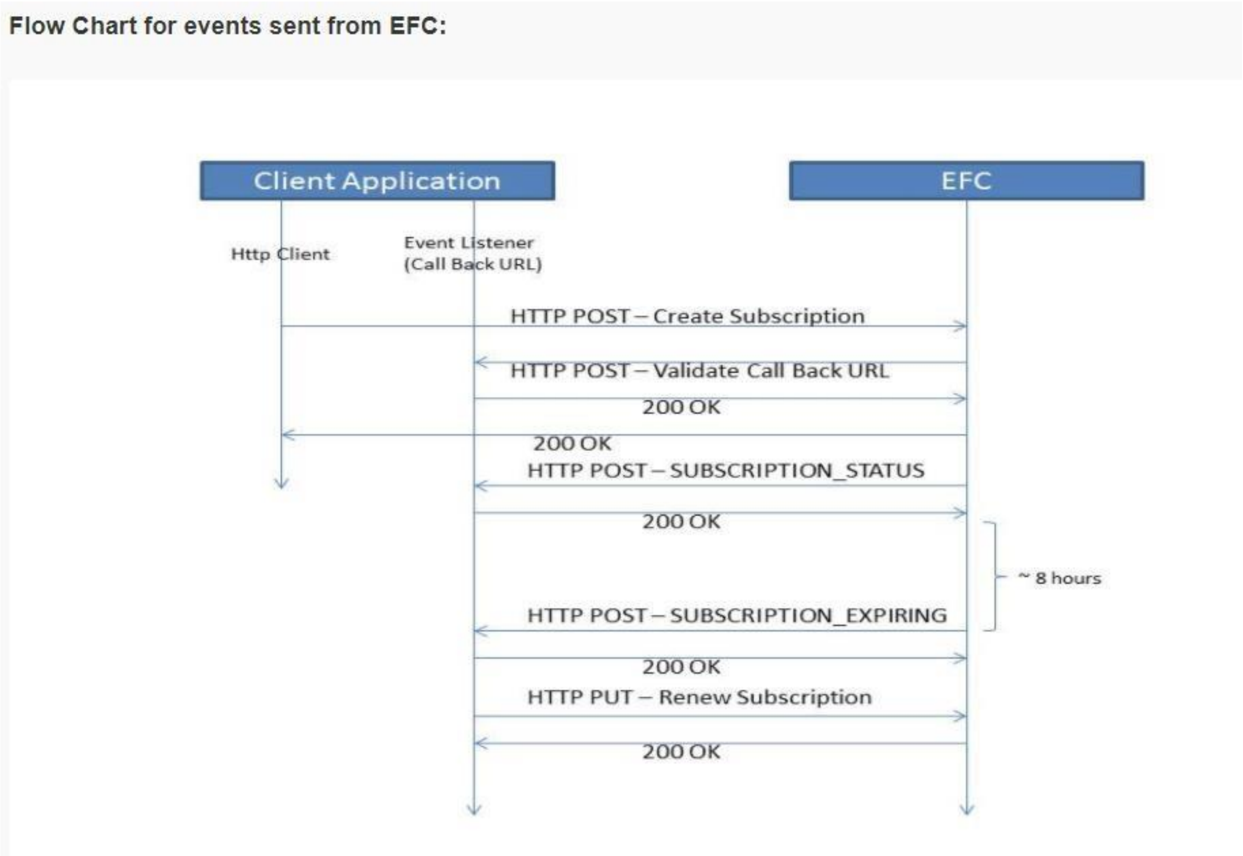


9 Subscribing for Generic Channel Events

With Oceana 3.5, Avaya is documenting a method for client to subscribe for events related to the life cycle of Generic Channel contacts (e.g. Contact Routed, Contact Answered, Contact Ended etc.).

The mechanism being used is the Eventing Framework feature already utilised inside Oceana for event generation between Oceana Internal components.

This is the flow that is used for the client to subscribe to the EF:



Flow Chart for events sent from EFC:

Client Application
EFC
Http Client
Event Listener
(Call Back URL)
HTTP POST – Create Subscription
HTTP POST – Validate Call Back URL
200 OK
200 OK
HTTP POST – SUBSCRIPTION_STATUS
200 OK
~ 8 hours
HTTP POST – SUBSCRIPTION_EXPIRING
200 OK
HTTP PUT – Renew Subscription
200 OK

This operates by passing in a URL to which the EF sends the events that the client has subscribed for. Thus the client needs to have a httpServer running at the URL specified that will return 200 ok to requests.

Note – the client machine must allow the events from Oceana pass through so it, so there may be configuration required from a firewall perspective to allow this network traffic through.

For more information on this, please review the Eventing Framework information available from Devconnect at:

https://www.devconnectprogram.com/site/global/api-refs/breeze-3_5/index.html

A sample subscription would be:

{{"callbackContentType":"application/json","callbackUrl":"http://XX.YY.ZZ.WW:1234/","family":"OmniCenter"}}

Sample C# code:

```
  public static void StartEventSubscription()
        {
            try
            {
                log.Debug("*********************Start Event Subscription
******************************");

                string strEFIPAddress =
ConfigurationManager.AppSettings["EVENT_CONNECTOR_HOST"];

                string strFormattedEFAddress = "http://" + strEFIPAddress + "/";

                var client1 = new RestClient(strFormattedEFAddress);


                var request2 = new
RestRequest("services/EventingConnector/subscriptions", Method.POST);
                request2.AddHeader("Content-Type", "application/json");


                string strEventFamily = ConfigurationManager.AppSettings["EVENT_FAMILY"];
                string strCallbackIP =
ConfigurationManager.AppSettings["EVENT_CALLBACK_SERVER"];
                string strCallbackPort =
ConfigurationManager.AppSettings["EVENT_CALLBACK_PORT"];

                string strCallbackURL = "http://" + strCallbackIP + ":" + strCallbackPort
+ "/";

                Thread work = new Thread(new ParameterizedThreadStart(startHttpServer));
                work.Start(strCallbackURL);

                //wait 5 seconds after starting the webserver before requesting the
subscription
                Thread.Sleep(5000);
                JsonObject jS1 = new JsonObject();
                jS1.Add("callbackContentType", "application/json");
                jS1.Add("callbackUrl", strCallbackURL);
                jS1.Add("family", strEventFamily);


                request2.AddJsonBody(jS1);
                IRestResponse response2 = client1.Execute(request2);
                var content2 = response2.Content; // raw content as string

                if (content2.Contains("subscription"))
                {
                    Console.WriteLine("Created a subscription");
                }
            }
            catch (Exception ex12)
            {
                Console.WriteLine(ex12.Message);
            }
        }
```

App.config extract matching the above:

```
 <!-- IP Address of EF server-->
   <add key="EVENT_CONNECTOR_HOST" value="10.134.47.209"/>
   <!-- IP Address of EF server-->
   <add key="EVENT_FAMILY" value="OmniCenter"/>
     <!-- IP Address of Callback server-->
   <add key="EVENT_CALLBACK_SERVER" value="135.60.160.198"/>
   <!-- Callback server port-->
   <add key="EVENT_CALLBACK_PORT" value="2221"/>
   <!-- EventMetaDataFiltering-->
   <add key="EVENT_METADATA_FILTERING" value="channelType = Generic"/>
```

10 Shutdown behavior

Please note that the GenericChannel svar supports the concept of a shutdown mode of operation controlled via an svar attribute. If shutdown mode is enabled, new contact create requests are rejected. Note that contact drop requests are processed whilst this mode is enabled. This mode could be enabled prior to a planned shutdown to help 'drain' all Generic Channel contacts from Oceana.

If there are any Generic Channel contacts present in a queueing state or active at agents and the OCP cluster is rebooted, these contacts will be re-queued when the OCP cluster comes back up.

11 Sample Client

The sample client provides a mechanism to test the functionality provided by the API.

Please note that the steps in chapter 6 above regarding authorization need to be performed on the machine where the test client is to be run. The test is written in Java so there is a requirement that java be installed on the machine running the test client. Note the operation of this client has been verified with Java 1.8.

The client is invoked via the command:

```
java.exe -jar GenericChannelTestClient-11.0-SNAPSHOT.jar -p test.properties
```

where the test.properties contains all the details of the clusters that the client is connecting to and also details the certs involved. Launching the sample clients puts the user into a command line environment with assorted options.

Please review the Readme.txt in the client folder for more information on the available commands.

11.1 Sample client commands

11.1.1 GetToken

If the certs have been configured and the test.properties file populated properly – a token can be acquired using the following command:

```
getToken
```

Similarly, if public client authentication is configured, a token can be acquired using:

```
getPublicToken
```

11.1.2 Create

```
usage: create -n integer [-r integer] [>|>> file]

    create [-r integer] << file

    create contactId
```

options:

```
 -n <integer> Number of contacts to create

 -r <integer> Request rate in contacts per second, default is 1
```

So, for example to create 3 contacts, issue the command create –n,3

11.1.3 Drop

```
usage: drop [-r integer] << file
```

drop contactId

options:

-r <integer> Request rate in contacts per second, default is 1

11.1.4 Attributes

This returns all the available attributes.

11.1.5 Routepoints

This returns all the available Routepoints.

11.1.6 Event subscriptions

Usage : events –s new

This creates a new subscription to the event parameters defined in the properties file.

Usage : events

This pumps the received events to the screen.

Usage : events –s del

This deletes the event subscription.

11.1.7 Pass in Existing WorkRequestID

Usage: create -c ExistingContext -i NewContact

where the -c passes in an Existing Context/WorkRequestID

12 Troubleshooting

A basic test would be to see if the same problem exists with the reference client provided.

A new logfile is created for the GenericChannelAPI svar. This is found at /var/log/Avaya/dcm/services/GenericChannel on each node the GenericChannelAPI svar is deployed on.

The GenericChannelAPI calls directly into the ORCRestService API so the ORCRestService logs would be useful to investigate in the event of an error.

For contact routing the standard Oceana logs – UCM, Engagement Designer, WAE, Contact Center Service would be worthy of examination – Opening the instances of the GenericChannel flow in Engagement Designer would also be useful.

For authentication issues, an examination of the AuthorizationService logs on the UAC nodes would be useful. Examination of the contents of the clienttruststore and clientkeystore using the keytool –list command would be important. Examine carefully if the cert from UAC node is present in the client trust store. Please note as per described above that the time on any client machine needs to be synched exactly with the time on the Breeze UCA nodes where the Authorization Service is running.

For evening framework issues, an examination of the eventing connector logs would be useful. An examination of the logs of the local httpserver would also be useful.

13 Limitations of currently implemented solution

1) Oceana only supports 1 Generic Channel provider per customer site but customers can differentiate between groups of contacts by assigning different attributes to different sets of contacts (and also configuring different screenpops for these different sets of attributes).
2) No transport of media for Generic Channel contacts is supported – customers need to handle media themselves.
3) No support for hold/unhold/transfer to user/conference/coach/observe/barge-in of Generic Channel contacts. Capabilities will be defined and be unchangeable ie agents can answer, transfer to service and drop Generic Channel contacts.
4) An individual agent can only be connected to Oceana via Workspaces OR a custom client – the same agent cannot be connected via simultaneous Workspaces and custom clients. Note Oceana will support Workspaces and custom clients for different agents at the same customer site. So if a customer wants to write a custom client for handling Generic Channel contacts in a particular manner, the custom client will need to handle all contact types if the agent has more than one channel type assigned to them.
5) Oceana has implemented limits on rate of contact creation and numbers of Generic Channel contacts in the system - these are dependent on the GenericChannel svar attribute regarding number of Generic Channel agents licensed.

Oceana 3.6	**On-Prem only**	**On-Prem only**	**AWS and On-Prem**	
Capacity Metric	3000 Agent Oceana footprint	2000 Agent Oceana footprint	1000-Agent Oceana Footprint	100-Agent Oceana Footprint
Max supported generic channel contacts per hour (Assumes no other channel is active)	12000	12000	6000	600
Max Number of concurrent generic channel sessions per agent	3	3	3	3
Max Number of Active generic channel Agents	3000	2000	1000	100
Max queued generic channel contacts	10000	10000	10000	1000
Max allowed rate of incoming create/drop contact requests per node	10	10	10	4

6) No out-of-the-box support for integration with Generic Channel desktop contact recording solutions. Customers have the facility to create their own widgets and screen-pops/desktop clients.
7) No support of additional information other than the Contact ID being passed in to the contactCreate command – this limitation is tempered by the possibility of passing in a pre-existing ContextID in to the createContact request.

LAST PAGE