



Videoscape Control Suite 3.5.2 Operator Messaging Service Configuration Guide

Introduction

The Cisco Operator Messaging Service (OMS) is a high-availability and high-scalability application in the Cisco Videoscape Control Suite (VCS) group of services that enables service providers to easily preview, publish, search, and manage messages to targeted client devices. This guide provides instructions for configuring OMS.

Document Version

This is formal release number six of this document, which has been updated to reflect VCS 3.5.2 changes.

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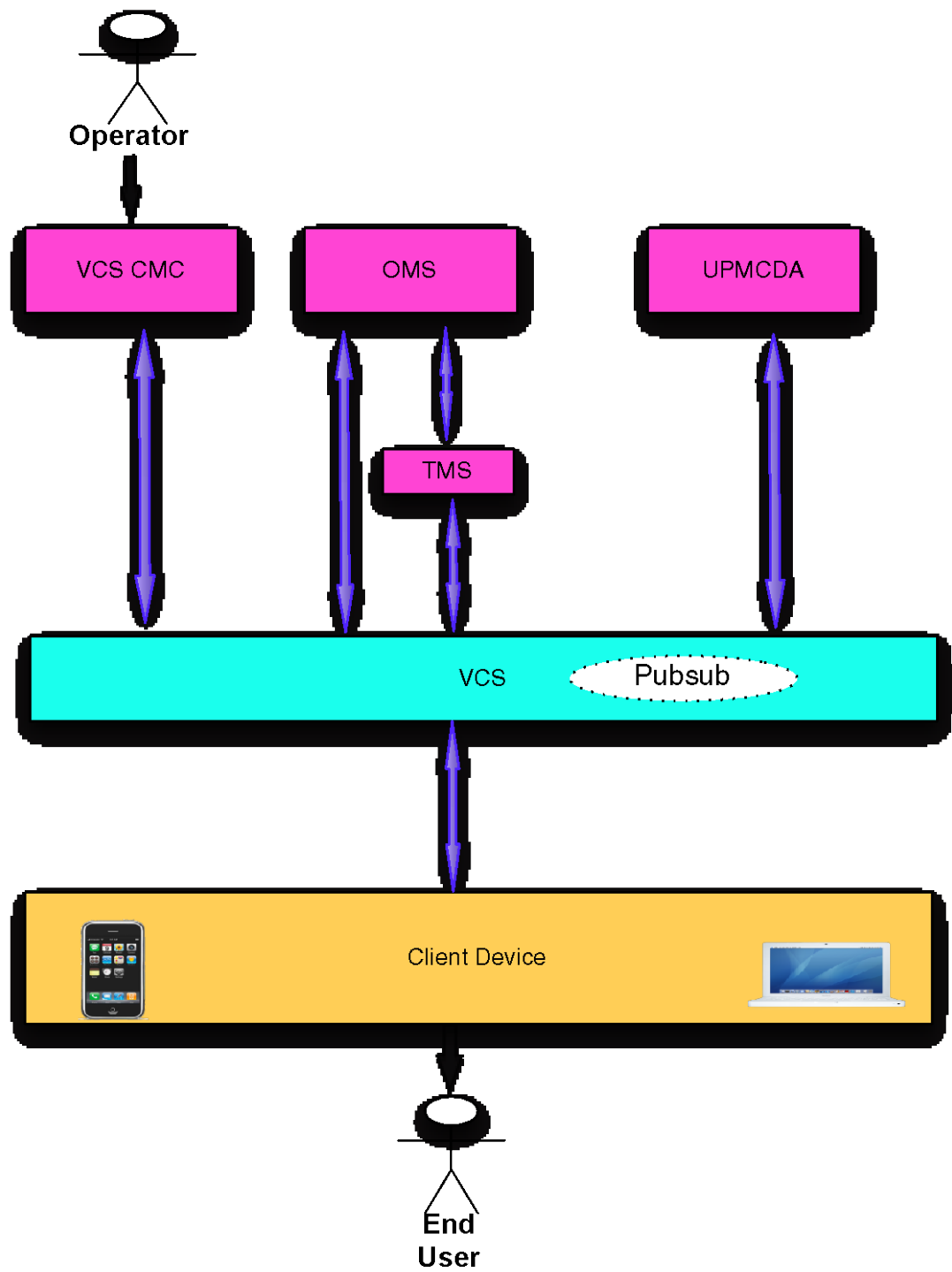
Overview of OMS

The Operator Messaging Service (OMS) is a VCS service that enables the operator to publish real time messages to a group of users/devices or a specific user/device. Examples of the type of messages could be new business information updates, promotions, advertisements, emergency alerts, bills or customized messages tailored to the user's needs. The types of devices could include managed devices, such as set top boxes, or unmanaged devices, such as phones, tablets, and desktop PCs.

Three services are connected with OMS: VCS UI (CMC), Targeted Messaging System (TMS) and Client Directory Service (CD). The CMC provides an easy User Interface for the operator to access the OMS functionality. OMS uses VCS service calls to retrieve the account/user/device information from UPM Adaptor (UPM Client Directory Adaptor). OMS leverages the Targeted Messaging System (TMS) to deliver the messages to the end user/device. The OMS Architectural Diagram illustrates the components and their interplay for Operator Messaging Service functionality.

OMS subscribes to the Pubsub node of UPM Adaptor Service to listen to the account/user/device create events to auto subscribe users/devices into the messaging group according to pre-defined grouping rules.

Messages can be created/deleted and updated via the CMC and are stored in the OMS local database. The CMC is then used to publish or send the messages from OMS to the messaging groups or single end users/devices.



Installation and Configuration Requirements

OVS Software Requirements

- The VCS software must be installed. See *Videoscape Control Suite Installation and Upgrade Guide* (part number OL-29939) for details.
 - The following services need to be installed:
 - User Profile Manager (UPM)
 - UPM Adaptor
 - NOSQLCB (formerly Couchbase database)
- Note:** See *Installing COP Files for the Videoscape Control Suite* (part number OL-27753) for details.
- Install Unified Headend (UHE) component Target Messaging Service (TMS), see *CHLIN-RLS-2881 Installation, Configuration and Invocation Guide.doc* for installation and configuration instructions.
 - The NOSQLCB database needs at least 2 GB of RAM available for each node.
 - The NOSQLCB database auto-failover function requires at least three nodes. Three NOSQLCB instances need to exist for the auto-failover function to work.

OVS File Requirements

OVS requires the existence of the following files:

- cisco.conductor-oms-x.x-0-xxxx.cop.sgn
- cisco.conductor-oms-x.x-0-xxxx.tmp.xml
- cisco.conductor-nosqlcb-x.x-0-x.cop.sgn
- cisco.conductor-nosqlcb-x.x-0-x.tmp.xml
- cisco.conductor-upmcda-x.x-0-xxxx.cop.sgn
- cisco.conductor-upmcda-x.x-0-xxxx.tmp.xml

Note: Standalone versions of the following UPM and HornetQ files must be installed instead of the COP versions. See CHLIN-USR-3494+User+Profile+Manager+(UPM).doc and CHLIM-USR-3392 HornetQ ICI.docx for details.

The NOSQLCB and the UPMCDA COP files must both be installed on the system before installing the OVS COP file. See *Installing COP Files for the Videoscape Control Suite* (part number OL-27753) for details.

Install and Configure the UPM and UPM Adaptor Services

Both the UPM and UPM Adaptor services are mandatory for OMS functionality. They both should be installed prior to installing OMS. For detailed installation and configuration steps, see *Installing COP Files for the Videoscape Control Suite* (part number OL-27753).

Note that the name of parameters created through the VCS UI should align with the regular filters' definition in UPM's config.properties file. For example, the following two parameters are created through the OMS UI in the VCS.

- upm.filters.userProfile.metadata.com_cisco_oms.city
- upm.filters.userProfile.metadata.com_cisco_oms.age

Therefore, there must be two regular filter definitions in UPM, as described below:

- upm.filters.userProfile.metadata.com_cisco_oms.city.value = regular1
- upm.filters.userProfile.metadata.com_cisco_oms.age.value = regular2

In UPM, the parameters can be defined in household, device, and userProfile objects. These parameters also define the data and can be a common data of a metadata within a namespace. UPM has defined a set of parameter prefixes for OMS in a configuration file : config.properties. An example follows:

- Account common data prefix: upm.filters.household.\$key;
- Account metadata prefix: upm.filters.household.metadata.\$namespace.\$key;
- User common data prefix: upm.filters.userProfile.\$key;
- User metadata prefix: upm.filters.userProfile.metadata.\$namespace.\$key;
- Device common data prefix: upm.filters.device.\$key;
- Device metadata prefix: upm.filters.device.metadata.\$namespace.\$key;

The default UPM namespace is com_cisco_oms; the \$key can be reset to other names based upon requirements.

The default configuration segment of filters for OMS is:

#REGULAR FILTER

upm.filters.household.metadata.com_cisco_oms.accountkey1.value = regular1

upm.filters.household.metadata.com_cisco_oms.accountkey2.value = regular2

upm.filters.household.region = regular3

upm.filters.device.metadata.com_cisco_oms.devicekey1.value = regular1

upm.filters.device.metadata.com_cisco_oms.devicekey2.value = regular2

upm.filters.device.deviceType = regular3

upm.filters.device.serialNo = regular4

upm.filters.userProfile.metadata.com_cisco_oms.userkey1.value = regular1

upm.filters.userProfile.metadata.com_cisco_oms.userkey2.value = regular2

Configure the NOSQLCB Database Server

Details for configuring and installing the NOSQLCB database server are found in the following documents:

- *Installing COP Files for the Videoscape Control Suite* (part number OL-27753)
- *Videoscape Control Suite Installation and Upgrade Guide* (part number OL-29939)

Install the Operator Messaging Service

Details for installing the OMS are found in the following documents:

- *Installing COP Files for the Videoscape Control Suite* (part number OL-27753)
- *Videoscape Control Suite Installation and Upgrade Guide* (part number OL-29939)

The Workflow of OMS

Create a Rule Parameter

- 1 Log on to the management console.
- 2 Choose **Services > Operator Messaging System > Rule Parameter**.



Operator Messaging System

[Rule Parameters](#)

[Group Rules](#)

[Groups](#)

[Messages](#)

[Historic Messages](#)

- 3 Click **Add**. The Add Rule Parameter window appears.
- 4 Use the accompanying example to configure the parameter.

Rule Parameters

Add Rule Parameter

Name * :

?

Description :

STB device type

?

Type * :

List

▼

Value List * :

STB

?

Save

Reset

Cancel

Notes:

- Click the question mark for acceptable entries for each field.
- At any time, you may click **Reset** or **Cancel**. Reset clears the fields. Cancel returns you to the previous screen without saving changes.
- **Name**—Enter the name of the parameter you are creating.
- **Description**—Enter a brief description of the parameter.
- **Type**—Choose String or List. A string can be defined by a user. A list will force a user to choose from a list of options.
 - **Value List**—If the Type field is set to List, enter the values that are acceptable for this parameter.
 - **Default Value**—If the Type field is set to String, enter a default value for this parameter.

5 Click **Save**.

Note: The name of the new Rule Parameter must match the rule metadata in the corresponding namespace of the Client Directory.

Result: The new Rule Parameter is listed in the Rule Parameter List.

Rule Parameters

Rule Parameter List

	Parameter Name	Description	Type	Value
1	<input type="radio"/> upm.filters.household.metadata.com_cisco_oms.city		List	Brussels;Limburg
2	<input type="radio"/> upm.filters.device.metadata.com_cisco_oms.postalCode3	test more char	List	1050;1060;1140;1150;1160;1180
3	<input type="radio"/> upm.filters.userProfile.region	test	String	Atlanta
4	<input type="radio"/> upm.filters.device.metadata.com_cisco_oms.province		List	Brabant;Limburg;Namur
5	<input type="radio"/> upm.filters.device.metadata.com_cisco_oms.city		List	Brussels;Limburg
6	<input type="radio"/> upm.filters.household.metadata.com_cisco_oms.country		List	Europe;US
7	<input type="radio"/> upm.filters.device.metadata.com_cisco_oms.postalCode1	generated by python script	List	1;2;3;4;5;6;7;8;9;10;11;12;13;14
8	<input type="radio"/> upm.filters.device.deviceType	STB device type	List	STB

Create a Rule

- 1 Log on to the management console.
- 2 Choose **Services > Operator Messaging System > Group Rules**.
- 3 Click **Add**.
- 4 Use the accompanying example to configure the Add Rule window.

Group Rules

Add Rule

Name *: ?

Description: ?

Parameter *:

Operation *:

Parameter Type *:

Value *:

Notes:

- Click the question mark for acceptable entries for each field.
- At any time, you may click **Reset** or **Cancel**. Reset clears the fields. Cancel returns you to the previous screen without saving changes.
- **Name** – Enter the name of the parameter that you are creating.
- **Description** – Enter a brief description of the parameter.
- **Parameter** – Choose the parameter you want to associate with this group rule.
- **Operation** – Choose the operation that this rule will invoke.
- **Parameter Type** – Choose String or List. A string can be defined by a user. A list will force a user to select from a list of options.

- **Value**—If the Parameter Type field is set to List, choose the value that you want to be the default. If the Parameter Type field is set to String, the predefined default appears.

- 5 Click **Save**. The new rule is listed in the Group Rule List.

Group Rules

Group Rule List

Show

	Name	Parameter	Operation	Value	Parameter Type	Description
1	<input type="radio"/> Brabant_dev_provi...	upm.filters.device.metadata.com_cisco_oms.province	EqualTo	Brabant	List	
2	<input type="radio"/> Brussels_City	upm.filters.household.metadata.com_cisco_oms.city	EqualTo	Brussels	List	
3	<input type="radio"/> Brussels_dev_city	upm.filters.device.metadata.com_cisco_oms.city	EqualTo	Brussels	List	
4	<input type="radio"/> Devices_STB	upm.filters.device.deviceType	EqualTo	STB	List	Device STB

Create a Group

- 1 Log on to the management console.
- 2 Choose **Services > Operator Messaging System > Groups**.
- 3 Click **Add**.
- 4 Use the accompanying example to configure the Add OMS Group window.

Groups

OMS Group

Name*: ?

Description: ?

Available Rules

- Brabant_dev_province:upm.filters.device.metadata.com_cisco_oms.province=Brabant
- Brussels_City:upm.filters.household.metadata.com_cisco_oms.city=Brussels
- Brussels_dev_city:upm.filters.device.metadata.com_cisco_oms.city=Brussels
- Europe_Ctry:upm.filters.household.metadata.com_cisco_oms.country=Europe
- Limburg_dev_province:upm.filters.device.metadata.com_cisco_oms.province=Limburg
- Namur_dev_province:upm.filters.device.metadata.com_cisco_oms.province=Namur
- nc_1150:upm.filters.device.metadata.com_cisco_oms.postalCode3=1050

Selected Rules*

- Devices_STB:upm.filters.device.deviceType=STB

Notes:

- Click the question mark for acceptable entries for each field.
- At any time, you may click **Reset** or **Cancel**. Reset will clear the fields. Cancel will return you to the previous screen without saving changes.

- **Name**—Enter the name of the group you are creating.
- **Description**—Enter a brief description of the group.

- 5 Click **Add** and **Remove** to create a list of Selected Rules that you want to apply to this group.
- 6 Click **Save** to add the rules parameter. The rule parameter appears in the Rule Parameter List. The group is created. OMS subscribes existing users with matching criteria to the new group.

Install the Operator Messaging Service

Groups

OMS Group List				
Add Delete List Subscriber				
	Group Name	Create Time	Rules	Status
1	<input type="radio"/> Group_devicetype_STB	2014/12/15 10:34:59	Device_stb_1500:upm.filters.device.deviceType=STB;	Normal
2	<input type="radio"/> Limburg_dev_province	2014/10/16 11:57:47	Limburg_dev_province:upm.filters.device.metadata.com_cisco_oms.province=Limburg;	Normal
3	<input type="radio"/> reggroup	2014/11/26 14:37:55	regrule:upm.filters.device.deviceType=ipad;	Normal

Click **List Subscriber** to list the subscribers in this group.

Groups

Subscriber List[Group Name: Group_devicetype_STB]			
Back			
	Device ID	Device JID	Parameters
1	<input type="radio"/> 1000146	hh146@stbs.voo.com/1000146	upm.filters.device.metadata.com_cisco_oms.postalCode1=147;upm.filters.device.deviceType=STB;upm.filters.device.operateStatus=INACTIVE;upm.filters.device.createTime=2014-10-16T19:37:22Z;
2	<input type="radio"/> 147	hh147@stbs.voo.com/147	upm.filters.device.metadata.com_cisco_oms.postalCode1=148;upm.filters.device.deviceType=STB;upm.filters.device.operateStatus=INACTIVE;upm.filters.device.lastModifiedTime=2014-10-16T19:37:22Z;
3	<input type="radio"/> 1000147	hh147@stbs.voo.com/1000147	upm.filters.device.metadata.com_cisco_oms.postalCode1=148;upm.filters.device.deviceType=STB;upm.filters.device.operateStatus=INACTIVE;upm.filters.device.lastPresenceOfflineTime=-1;

Note: You can also select a specific user for reviewing detailed parameter information.

Groups

Subscriber List[Group Name: Group_devicetype_STB]			
Back			
	Device ID	Device JID	Parameters
1	<input type="radio"/> 1000146	hh146@stbs.voo.com/1000146	upm.filters.device.metadata.com_cisco_oms.postalCode1=147;upm.filters.device.deviceType=STB;upm.filters.device.operateStatus=INACTIVE;upm.filters.device.createTime=2014-10-16T19:37:22Z;
2	<input type="radio"/> 147	hh147@stbs.voo.com/147	upm.filters.device.metadata.com_cisco_oms.postalCode1=148;upm.filters.device.deviceType=STB;upm.filters.device.operateStatus=INACTIVE;upm.filters.device.lastModifiedTime=2014-10-16T19:37:22Z;
3	<input type="radio"/> 1000147	hh147@stbs.voo.com/1000147	upm.filters.device.metadata.com_cisco_oms.postalCode1=148;upm.filters.device.deviceType=STB;upm.filters.device.operateStatus=INACTIVE;upm.filters.device.lastPresenceOfflineTime=-1;

Detailed Parameter Information

```
upm.filters.device.metadata.com_cisco_oms.postalCode1=147;
upm.filters.device.deviceType=STB;
upm.filters.device.operateStatus=INACTIVE;
upm.filters.device.createTime=2014-10-16T19:37:22Z;
upm.filters.device.lastModifiedTime=2014-10-16T19:37:22Z;
upm.filters.device.lastPresenceOfflineTime=-1;
upm.filters.device.lastPresenceOnlineTime=-1;
upm.filters.device.jid=hh146@stbs.voo.com/1000146;
upm.filters.device.presenceStatus=OFFLINE;
upm.filters.device.type=MANAGED;
```

Process Messages

List Messages

- 1 Log on to the management console.
- 2 Choose **Services > Operator Messaging System > Messages**. The system lists all message files on the FTP server.

Messages

Message List			
Create Delete Preview/Update Publish to Group Send to User Send to Device			
			Show All
	File Name	Last Modify Time	Size(Byte)
1	<input type="radio"/> example26.xml	Thu Sep 11 14:59:02 EDT 2014	48
2	<input type="radio"/> omstestmsg.xml	Wed Apr 02 09:40:28 EDT 2014	48
3	<input type="radio"/> TestMessage	Mon May 12 13:14:54 EDT 2014	48

Create Messages

- 1 Click **Create** in the Message List menu. A blank message displays at the bottom of the list of messages.

Create Message

File Name

Sender

Expire Time

Type

Description

Title

Sender Name

Priority

Scope

Payload

Save

Reset

Cancel

- 2 Enter the following information to create a message:
 - **File Name** – Any file name with an .xml file extension.
 - **Title** – The title of the message; the maximum allowed is 511 bytes.
 - **Sender** – The senderJID; OMS validates the JID format in the code.
 - **Sender Name** – Name of the sender of the message that the client can display on the screen.
 - **Expire Time** – Format: yyyy-mm-ddThh:mm:ss[+-]hh:mm.
 - **Priority** – 0 - 9 with 0 being the highest, and 9 being the lowest.
 - **Type** – Reserved for future use. The default type is the same as the PubSub node name.
 - **Scope** – Reserved for Test, Public, Restricted, Private, and so on.
 - **Description** – Enter a brief description; the maximum allowed is 4095 bytes. Binary format is not supported.
 - **Payload** – Enter the message body; the maximum allowed is 4095 bytes. Binary format is not supported.
- 3 Click **Save**.

Delete Messages

- 1 In the Message List, select a message to delete.
- 2 Click **Delete**.
- 3 In the confirmation message, click **OK**.

Preview/Update Message

- 1 In the Message List, select a message to preview or update.
- 2 Click **Preview/Update**. A preview window appears.

Message Preview : example21.xml
Valid Message Format !

File Name	example21.xml	Title	Title 1
Sender	pubsubadmin@oms.oom.com	Sender Name	Mark Smith
Expire Time	2015-12-17T14:57:00+08:00	Priority	3
Type	Promotion	Scope	Public
Description	XML encoded content.		
		Payload	XML encoded payload.

Save Post Cancel

- 3 Make any required changes.
- 4 Click **Save**.
- 5 In the confirmation message, click **OK**.

Publish Messages

- 1 Click to select a message in the Message List.

Messages

Message List

Create Delete Preview/Update Publish to Group Send to User Send to Device Show All

	File Name	Last Modify Time	Size(Byte)
1	example26.xml	Thu Sep 11 14:59:02 EDT 2014	48
2	omstestmsg.xml	Wed Apr 02 09:40:28 EDT 2014	48
3	TestMessage	Mon May 12 13:14:54 EDT 2014	48

- 2 Click **Publish to Group**. The Group List window opens.

Install the Operator Messaging Service

- 3 Select a message.

Group List

[Send](#)

	Group Name	Create Time	Rules	Description
1	<input checked="" type="radio"/> A_SHANGHAI	2014/06/16 14:07:19	DeviceMetadata:upm.filters.device.metadata.com_cisco_oms.region...	test metadat
2	<input type="radio"/> AtlantaRegionGroup	2014/04/01 11:10:44	RegionGroup:upm.filters.userProfile.region=atlanta;	test

- 4 Choose **Send**. A notification window should open that indicates that the message published successfully.

Send Messages

- 1 Click to select a message in the Message List.

Messages

Message List

[Create](#) [Delete](#) [Preview/Update](#) [Publish to Group](#) [Send to User](#) [Send to Device](#)

	File Name	Last Modify Time	Size(Byte)
1	<input checked="" type="radio"/> example26.xml	Thu Sep 11 14:59:02 EDT 2014	48
2	<input type="radio"/> omstestmsg.xml	Wed Apr 02 09:40:28 EDT 2014	48
3	<input type="radio"/> TestMessage	Mon May 12 13:14:54 EDT 2014	48

- 2 Click **Send to User**. A window for you to specify the User ID appears.

Please input the user ID to send to

User ID:

[Send](#) [Reset](#)

- 3 Type the **User ID** of the user to whom you want the message sent and then click **Send**.

Please input the user ID to send to

User ID:

[Send](#) [Reset](#)

Result: A notification window appears that indicates that the message was sent successfully to the user.

View Historical Messages

- 1 Log on to the management console.
- 2 Choose **Services > Operator Messaging System > Historic Messages**. The system lists all historical messages, sorted by **Send Time**.

Historic Message List

	Send Time	Result	Title	Receiver
<input type="radio"/>	2012/08/22 10:13:30	Success		group01_user1...
<input type="radio"/>	2012/08/22 10:09:07	Success		group01
<input type="radio"/>	2012/08/21 16:05:53	Success	这是一个中文标题	group02
<input type="radio"/>	2012/08/20 22:00:44	Success	A title of message	group01
<input type="radio"/>	2012/08/20 20:03:48	Success		group01
<input type="radio"/>	2012/08/20 16:56:53	Success	这是一个中文标题	group02

- 3 Click to highlight a message. The Message Information window opens for the selected message.

Message Information

File Name:

chinese_msg.xml

Description:

这是一段中文的内容。 With English.

Payload:

这是一段中文的payload.

Import Messages

OMS no longer uses the FTP server. Instead, VCS Version 3.5 includes a tar file which is used to import messages into the NOSQLCB database.

- 1 Install the rootaccess cop file onto the OMS service node.
- 2 Change the working directory to /opt/cisco/oms/bin.
- 3 Open the tar file:
tar xvf omsimport.tar
- 4 Change the working directory to the message import directory.

- 5 Run the OMS storage import script.

```
./omsStorageImport.sh -s <IP of the FTP server> -u <FTP  
server user login> -p <FTP server password> -d <FTP server  
OMS message storage directory> -o <Message Infrastructure  
server IP>
```

Example:

```
./omsStorageImport.sh -s 209.165.200.201 -u username -p  
password -d MSG_DIR -o 209.165.200.211
```

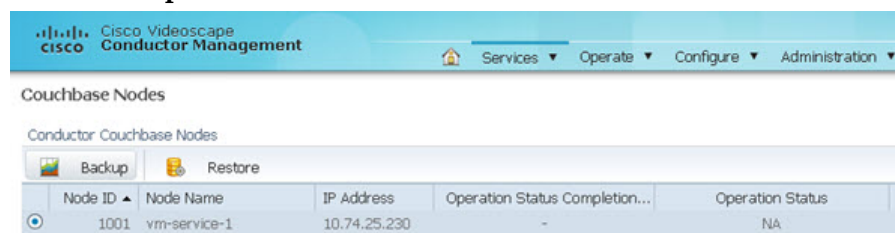

Back Up and Restore OMS Data

OMS stores data in both NOSQLCB and VCS Msginfra Postgres/Oracle format. To back up or restore OMS data, you must complete the following operations in order:

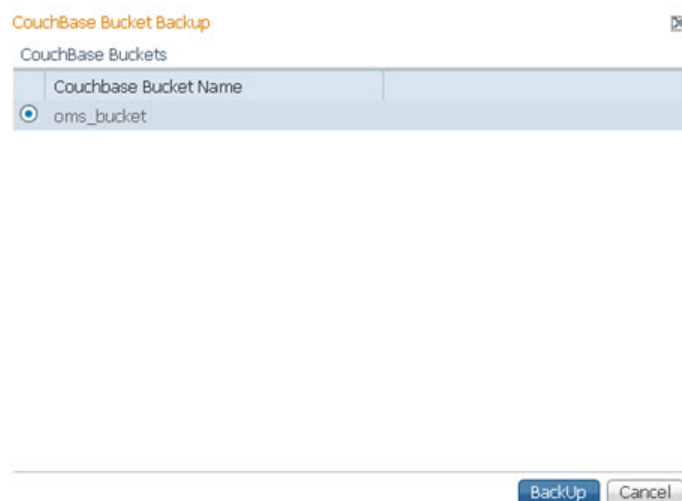
- 1 Back up NOSQLCB data from the CMC
- 2 Back up Msginfra data stored in the Postgres/Oracle database.
- 3 Restore Msginfra data stored in the Postgres/Oracle database.
- 4 Restore NOSQLCB data from the CMC.

Back Up NOSQLCB Data

- 1 Log on to the management console.
- 2 Choose **Services > nosqlcb > Operations**.
- 3 Select the Couchbase node that you want to back up.
- 4 Click **Backup**.



- 5 Click **oms_bucket**.
- 6 Choose **Backup**.



Back Up Msginfra Data

Back Up Msginfra Data Stored in Oracle

An external Oracle utility is used to back up and restore Msginfra data stored in Oracle. Contact Oracle for the procedures.

Restore Msginfra Data

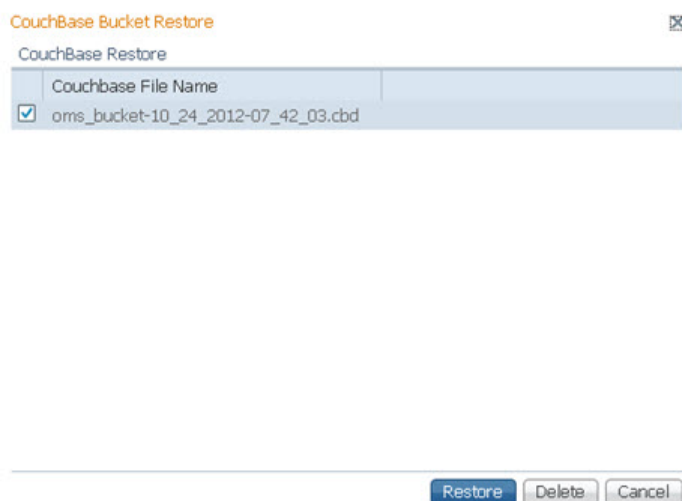
Restore Msginfra Data Stored in Oracle

An external Oracle utility is used to back up and restore Msginfra data stored in Oracle. Contact Oracle for the procedures.

Restore NOSQLCB Data

- 1 Log on to the management console.
- 2 Choose **Services > nosqlcb > Operations**.
- 3 Select the Couchbase node that you want to restore.
- 4 Click **Restore**.
- 5 Select the bucket that you want to use for the restoration.

Note: In the *Back Up NOSQLCB Data* (on page 17) procedure, we used the oms_bucket.



CouchBase Restore	
<input checked="" type="checkbox"/>	oms_bucket-10_24_2012-07_42_03.cbd

Restore Delete Cancel

OMS Sample Message

```
<oms xmlns='http://conductor.cisco.com/oms/1.0'>
  <sender>pubsubadmin@oms.ocn.com</sender>
  <senderName>User1</senderName>
  <expireTime>2012-12-17T14:57:00+08:00</expireTime>
  <priority>3</priority>
  <type>Promotion</type>
  <scope>Public</scope>
  <title>A title of message</title>
  <description>
    XML encoded content.
  </description>
  <payload>
    XML encoded payload.
  </payload>
</oms>
```

Notes:

- **sender: senderJID**—The OMS validates the JID format in the code.
- **senderName**—The name of the sender that the client can display on the screen.
- **expireTime**—ISO 8601 format, UTC + timezone. The client will not display the message if it has expired.
- **priority**—0 through 9. 0 is the highest; 9 is the lowest.
- **type**—Reserved for the future. The default type is the same as the Pubsub node name.
- **scope**—Reserved for Test, Public, Restricted, Private, and so on.
- **title**—Maximum allowed is 511 bytes.
- **description**—Maximum allowed is 4095 bytes. Binary format is not supported.
- **payload**—Maximum allowed is 4095 bytes. Binary format is not supported.

OMS Restrictions

Message File

- The **ExpireTime** field in the message file must be in ISO-8601 format. The format should follow the ISO-8601 standard: yyyy-MM-dd'T'HH:mm:ssZ.
- The fields that permit Chinese characters are: **senderName**, **title**, **description**, and **payload**.

Chinese Support

- The fields that permit Chinese characters are: value of rule parameters, rule value, descriptions for rule parameters, rules, and groups.
- The fields that disallow Chinese characters are: name of rule parameters, rules, and groups. The User ID, imported by the Client Directory, also does not support Chinese, such as '中文User01@cisco.com'.

OMS UI

- The OMS UI does not support the back/forward button on the browser. It provides its own button to support the back/forward operation.
- The OMS UI does not support the refresh button on the browser. It provides its own button to support the refresh operation.
- The display time format is UTC. The system can automatically adjust the time display format. For China, the display format is "yyyy/mm/dd hh:mm:ss".
- The listSubscribe operation only supports sorting the subscriber by User ID.
- The OMS UI will display "no data available" in a table when the OMS service returns an error or a request timeout. If the table shows "no data available", confirm whether there is an internal error or if there really is no data to return.
 - Check the OMS service status in the Message Infrastructure page—**Service Instance Management**.
 - Check the NOSQLCB status via the Couchbase Management page.

OMS Rules

- An OMS rule cannot be deleted if it is in use by any OMS group.
- An OMS rule parameter cannot be deleted if it is in use by any OMS rule.

OMS Service

- The OMS configures itself to use hash from algorithms for service-load balance. The algorithm must not change after installation.
- The OMS service can process a Pubsub notification, such as a user add/update/delete event from the Client Directory, even if the OMS service instance is disabled.

Parameter Name

- The name of a parameter depends upon the filters defined in the UPM service for OMS. If a name is not defined in the UPM service, groups using the parameter name will display an error status.

Number of Parameters

- The number of parameters supported by OMS depends upon how many dedicated keys of the UPM service are used for OMS. The default number is 2.

UPM Restrictions

The OMS depends upon the UPM service for retrieving user data. If you want to upgrade to a newer version of the UPM service, you must make sure that the UPM configuration file has not changed. If your UPM configuration file will change, back up the UPM configuration file before upgrading and then apply the changed items to the UPM configuration file after the upgrade.

NOSQLCB Restrictions

The OMS stores data in the NOSQLCB server. The following is a list of restrictions that pertain to the NOSQLCB server:

- The auto-failover feature is only available when one cluster has at least three NOSQLCB servers.
- The auto-failover feature does not support a double-failure scenario. For example, in a three-node cluster, if one server is down, the two remaining servers are the minimum configuration required for high availability. If an additional node fails, data loss can occur.

- After auto-failover, the operator must rebalance the cluster from the UI.
Example: Server Nodes >Pending Rebalance
- Key values:
 - The maximum length is 250. Names for each table are limited to 250 characters.
Notes:
 - The Java SDK will throw an exception (report an error) if more than 250 characters are used.
 - Chinese characters are not permitted.
 - The following key characters can be used:
String key = +abcdefghijklmnopqrstuvwxyz0123456789-!@#\$%^&*());!;?><
- The NOSQLCB database cannot recover if two nodes fail at the same time.

Appendix A: Running the profileConverter Script

These instructions describe how to convert PubSubs into TMS profiles.

- 1 Install OMS Version 3.5.x.x.
- 2 From the `/opt/cisco/oms/bin` directory, untar the `omsprofile.tar` file.
- 3 From the `/opt/cisco/oms/bin/converter` directory, run the `profileConverter` script.
`./profileConverter.sh -o <IP address of MsgInfra>`

Example:

```
./profileConverter.sh -o 10.90.185.219
```

- 4 Verify the following items:
 - The PubSubs from Step 2 are owned by TMS.
 - They have "OMS-" prepended to their names.
 - The appropriate JIDs are subscribed to them.

Note: The OMS error logs will report error nodes, which are nodes that had issues when created by TMS, or nodes that had all of their JIDs subscribed.

For Information

If You Have Questions

If you have technical questions, contact Cisco Services for assistance. Follow the menu options to speak with a service engineer.



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