Deployment Guide Jan-2017 rev. a



Array Networks eCloud Plug-in User Guide for VMware vRealize Orchestrator (vRO)

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# **1** Introduction

This guide provides information and instructions about installing the eCloud<sup>™</sup> plug-in and configuring eCloud workflows on the VMware vRealize Orchestrator.

## **1.1 Intended Audience**

This guide is intended for datacenter administrators using the VMware vRealize Orchestrator for automated services. It assumes you are familiar with the VMware vRealize environment and APV/vAPV configurations and terminology.

# 2 Overview

The eCloud plug-in is an APV/vAPV plug-in for the VMware vRealize Orchestrator. It allows you to manage APV/vAPV services by providing interaction between the vRealize Orchestrator and APV/vAPV products.

It provides a workflow package for users to perform common tasks on APV/vAPV. Users can also use them to build workflows for their own requirements.

# 2.1 Plug-in Installation

The installation includes two steps: VMware vRealize Orchestrator SOAP plug-in installation and workflow package import.

Note: This guide is based on the VMware vRealize Orchestrator 5.1.1.

You can login and download the VMware vRealize Orchestrator SOAP plug-in 1.0.3 from:

https://my.vmware.com/group/vmware/getdownload?downloadGroup=VCO\_SOAP\_PLUGIN\_103

You can get a copy of Array Networks eCloud package from Array Support.

#### 2.1.1 SOAP Plug-in Installation

 Log into the VMware vRealize Orchestrator Configuration Interface at <u>https://localhost:8283</u> or <u>http://localhost:8282</u>.

**Note:** Read VMware vRealize Orchestrator Server configuration documentation for more details.



Figure 2-1 Log into the VMware vRealize Orchestrator Configuration Interface

EYMware vCenter Orchestrator Configuration - Internet	xplorerX
🚱 🕤 🗢 🚺 https://localhost:8283/config_general/Gene 🔎	🛫 😵 Certificate error  😏 VMware vCenter Orchestrat 🗙 🚺 🏠 🔅
VMware vCenter Orchest	rator Configuration Log out Help
General	Information Install Application Advanced Configuration Change Password Export Configuration I
Network	Install Application
Authentication	Select a file to install:
Database	
Server Certificate	
Licenses	
Startup Options	
Cog Log	
Troubleshooting	
Plug-ins 🔍	Install
Server Status	Copyright © 1998-2013 VMware, Inc. All rights reserved   Patents: <u>http://www.vmware.com/qo/patents</u>

2. In the General area, click the Install Application tab.

#### Figure 2-2 Display the Page to Install the SOAP Plug-in

3. Click the SOAP plug-in.



Figure 2-3 Select the SOAP Plug-in File

Wware vCenter Orchestrator Configuration - In           Image: State of the state of t	nternet ExplorerX General.actior ♀▼ ¥ Certificate error ∳ び Wiware vCenter Orchestrat × ♠ ☆ ♡
VMware vCenter Orch	mestrator Configuration
General ^	Information Install Application Advanced Configuration Change Password Export Configuration Import Configuration
Network	Install Application
Authentication	Select a file to install: 011nplugin-soap-1.0.3-3: Q
Database •	
Server Certificate	
Licenses	
Startup Options	
Log	
Troubleshooting	
Plug-ins •	1
Mail (1.2.1)	
SSH (1.2.0)	install
Server Status	Copyright © 1998-2013 VMware, Inc. All rights reserved   Patents: <u>http://www.vmware.com/ao/patents</u>

## Figure 2-4 Upload the SOAP Plug-in File

4. A SOAP tab appears on the side bar after the SOAP plug-in is installed.



Figure 2-5 Display the Uploaded SOAP Plug-in Information

5. In the **Startup Options** area, click the link **Restart service** to complete the plugin installation.

<b>E</b> VMware vCenter Orchestrator Configur	ation - Internet Ex	splorer	
C C T ttps://localhost:8283/config	g_general/Gener 🔎	r 😵 Certificate error 🤄 🏹 🚺 VMware vCenter Orchestrat 🗙	☆ ☆
VMware vCenter	Orchestr	ator Configuration	Log out Help
General	^	Server startup options	
Network	•	VC0 Server	
Authentication	•	Status Running CRefresh	
Database	•	Start service Stop service	
Server Certificate	•	□ Restart service	
Licenses	•	vCO Configuration Server	
Startup Options	•	<u>Restart the vCO configuration server</u>	
Log			
Troubleshooting			
Plug-ins	•		
Mail (1.2.1)	5		
SSH (1.2.0)	5		
SOAP (1.0.3)	~		
Server Status		Copyright © 1998-2013 VMware, Inc. All rights reserved   Patents: <u>http://www.vr</u>	nware.com/go/patents

Figure 2-6 Restart Service

<b>EVMware vCenter Orchestrator Configuration - Internet</b>	Explorer	
C C C Attps://localhost:8283/config_general/Gener	🔽 😵 Certificate error 🔄 🐓 🥑 VMware vCenter Orchestrat 🗙 📃	☆ 🔅
VMware vCenter Orchest	rator Configuration	Log out Help
General	Server startup options	
Network	☑ Server is restarted.	
Authentication	vCO Server	
Database	Status Running C Refresh	
Server Certificate	Start service Stop service W Restart service	
Licenses		
Startup Options	N Destatible conserver	
	W Kestart the VLU configuration server	
Troubleshooting		
Plug-ins		
Mail (1.2.1)		
SSH (1.2.0)		
SOAP (1.0.3)		
Server Status	Copyright $\otimes$ 1998-2013 VMware, Inc. All rights reserved   Patents: $\underline{http://www.v}$	mware.com/qo/patents

Figure 2-7 Display the Restarted Result

#### 2.1.2 eCloud Package Import

1. Log into the vRealize Orchestrator Client, click the **Inventory** tab and a **SOAP** tab appears on the side bar after the SOAP Plug-in is installed on the VMware vRealize Orchestrator.

💽 VMware vCenter Orchestrator - Administrator	@ 10.10.1.121	
vmware vCenter Orchestrato	or Run	▼ Admin ▼ Tools ▼ Help ▼ Search for ▼
	General	SOAP
► SSH ► Ø vCenter Server	•	
SOAP	Name	SOAP
	Version	1.0.3
	Description	SOAP plug-in for vCenter Orchestrator
	▼ Messages	Copy to clipboard Insert mark Clear logs

Figure 2-8 Log into the vRealize Orchestrator Client

2. On the **Packages** tab, click the **Import package** button and select the file **com.ArrayNetworks.eCloud.package.** 



Figure 2-9 Select the Package File

VMWARCE vCenter Orchestrator       Design       Image: Admin < Tools < Help < Search for         Image: Search for       Image: Search for         Imag	🗃 YMware vCenter Orchestrator - Administrator @ 10	.10.1.121				
Image: Construction	vmware vCenter Orchestrator	esign 🔻	~← ~ →   ن	Admin 👻   Tools 👻	Help 🕶   🔍 Sear	ch for 🔹
Image: Com.ymware.lbrary.schild         Image: Com.ymware.lbrary.schild         Image: Com.ymware.lbrary.schild         Image: Com.ymware.lbrary.ymd	🖬 🛞 🌚 🧇 🗊 🔊	i so an	Configurations	Resources	Used Pluq-Ins	com.vmware.library Permissions
	com. vmware. Ibrary. Jocking     com. vmware. Ibrary. nal     com. vmware. Ibrary. sql     com. vmware. Ibrary. sch     com. vmware. Ibrary. vcenter     com. vmware. Ibrary. webview     com. vmware. Ibrary. wrdocs     com. vmware. Ibrary. xml     com. vmware. Jbrary. xml     com. vmware. vuli     com. vmware. vuli     com. vmware. veboperator	?	r ackage import int - The package owners certif Continicate Common Name (6 chara Org Organiza Seri Fingerp to you want to import this pac	cate had already been cates min): ddvim2 panization : Array tional Unit : Eng Country : US Valicity : ISSA al Number : DC 86 A6 valicity : IFrom : M valicity : IFrom : M valicity : IFrom : A kage and its associate	cB ar 19, 2014 To : Mar 16, j C EB BC 36 6E 8C F3 C9 i d certificates ?	2024] SA 8B 5A 06 50

Figure 2-10 Import the Package

3. Select all check boxes of package elements to be imported.

😴 VMware vCenter Orchestrator - Administrator	@ 10.10.1.121			_ D ×
vmware <sup>-</sup> vCenter Orchestrato	Design ▼ Č   ← ▼	→ ▼   Admin ▼   Tools	📲 Help 🖛 🛛 🔦 Sear	ch for 🔹
	🜍 Import package			
	com.ArrayNetworks.eCloud0325			У
🔄 🛞 🐚 🥥 词 🔊	C:\Users\Administrator\Downloads\package\com.4	ArrayNetworks.eCloud.pack	age	
	File element	File Path	vCO Server elements	Server Path
om.vmware.library	✔ 🔀 Add an APV [1.0.4]	Array Networks / APV	⇒	
om.vmware.library.locking	🗹 🔅 addSOAPHost [1.0.2]	com.ArrayNetworks.APV	•	<u>S</u>
om.vmware.library.mail	🗹 🔅 getSOAPAuthentication [1.0.2]	com.ArrayNetworks.APV	•	
om.vmware.library.sql	🗹 🔅 updateSOAPHostWithEndpointURL [1.0.0]	com.ArrayNetworks.APV	•	<u>S</u>
om.vmware.library.ssh	🗹 😫 Manage SSL certificates [1.0.1]	Array Networks / APV	•	S -
om.vmware.library.vcenter	🖌 🔀 Add Virtual Service [0.0.1]	Array Networks / APV	⇒	<u>S</u>
om.vmware.library.webview	🗹 🔅 processOutHeaders [1.0.0]	com.ArrayNetworks.APV		9
og com.vmware.library.wfdocs	🗹 🔅 processOutParameters (1.0.0)	com.ArrayNetworks.APV	•	<u>S</u>
og com.vmware.library.xml	🖌 🔀 Remove an APV [1.0.2]	Array Networks / APV	•	<u>S</u>
om.vmware.util	🗹 🔅 removeSOAPHost [1.0.1]	com.ArrayNetworks.APV	•	<u>S</u>
[0]] com.vmware.weboperator	Element will be imported.	🔿 Elemen	t allowed for import, but r	ot imported.
	Unable to import, server version is greated	er or a new 녹 Unable	to overwrite a non-encrvo	ted element with a
	Locked or insufficient access rights.	A Version	not incremented elemen	t
		_		
	Select/Deselect all			P
	Import the values of the configuration set	ings		
		-		▼
			<u>Cancel</u> Import se	elected elements

Figure 2-11 Select the Package Files

4. An eCloud package **com.ArrayNetworks.eCloud** appears on the **Packages** tab.

Figure 2-12 Display the Imported Package



Workflows appear under the Workflows tab.

Figure 2-13 Display the Workflows

## 2.2 SOAP API Configuration

Note: The following configurations are based on APV 8.5 or higher version.

1. Create a user with "soapapi" level.

Equivalent CLI

user <user name> <password> [enable|config|soapapi]

2. Enable the SOAP service. Currently, the SOAP plug-in only supports soapapi level with "https".

```
Equivalent CLI
soapapi on [http|https] [port]
```

### 2.3 Workflows

#### 2.3.1 Basic Management

#### Table 2-1 Basic Management Workflows

Tab	Description
Attach APV	Attach an APV/vAPV's services to the SOAP plug-in's inventory.
Detach APV	Remove an APV/vAPV service from the SOAP plug-in's inventory.
Refresh APV	Refresh an APV/vAPV service. It can be used to refresh APV/vAPV services after the vRO server reboots.
Manage SSL Certificates	This workflow is used by the "Attach APV" workflow to manage SSL certificates on the device. It is not intended to be used by administrators to manage the APV.

#### > Attach APV

1. Right click the Attach APV workflow and select Start workflow.

Mware vCenter Orchestrator - Administrator @ 10.10.1.121  MWare vCenter Orchestrator Run		Admin - Tools - Help - G Search for
▲ Caministrator @ 10.10.1.121	Parameters Refe General I	Attach APV rences Workflow Tokens Events Permissions nputs Outputs Schema Presentation
Array Networks     Array Networks     Array Networks     Array     Besic Management     Start workflow     Besic Management     Add Group     Add Group     Add Group     Add Group     Add Group     Add Group     Add Reals     Besic Management     Add Reals     Besic Management     Start workflow     Manage St     Ma	Ctrl+R n Ctrl+S ow icon ermissions restart behav	Attach APV  Attach
Associate H     Locking     Acto Scaling     Delete Group     Delete Group     Delete Group     Delete Group     Delete Group     Delete Heatt     Delete Reat     Delete Virus     Delete Virus     Delete Virus     Delete all finished workflow runs     Delete Xirus	Delete	Attach an APVIvAPV's services to the plug-in's inventory.
Edit access rights	Ctrl+E	

Figure 2-14 Attach APV

2. Specify the APV parameters.

Name: Specify the name of the APV instance.

Host IP Address: Specify the IP address of the APV instance. It will be used for the communication between the vRealize Orchestrator and APV.

Connection timeout: Specify the connection timeout value in seconds. The default value is 30 seconds.

1 Attach an APV 1a APV host	Add an APV host
2 APV authentication	★ APV Host Name
2a User soapapi credentials	apv_demo
	★IP Address
	10.10.54.100
	Connection Timeout (in seconds)
	30.0
	Request Timeout (in seconds)
	60.0
	_
	L 1

Request timeout: Specify the request timeout value in seconds. The default value is 60 seconds.

Figure 2-15 Specify the APV Parameters

3. Select "Shared Session" from the **Session Mode** drop-down list. Fill out the soapapi user login information and click the **Submit** button.

Start Workflow : Attach APV	×
1 Attach an APV 1a APV host 2 APV authentication	* Session Mode Shared Session
2a User soapapi credentials	★ User Name for soapapi on APV
	soapAdmin
	★ Password for soapapi on APV
	2.2.2.2.2
	+
	Cancel Back Next Submit

### Figure 2-16 Fill out the Soapapi Configuration

4. You can see four services are created under vRealize Orchestrator Inventory for "apv\_demo", as shown in the following table.

Table	2-2	Created	Services
-------	-----	---------	----------

apv_demo_group	Group
apv_demo_health	Health Check
apv_demo_rs	Real service
apv_demo_vs	Virtual service

● Wiware vCenter Orchestrator - Administrator ⊕ 10.10.1.121 VMWare vCenter Orchestrator Design ▼		U   ← ▼ → ▼   Admin ▼   Tools ▼   Help ▼   🧠 Search for	· N
	General	SOA	NP.
<ul> <li>E SSH</li> <li>⊘ vCenter Server</li> <li>→ apv_demo_group</li> <li>→ apv_demo_neath</li> <li>→ apv_demo_rs</li> <li>→ apv_demo_vs</li> <li>&gt; SoL Plug-in</li> </ul>	Version Description	SOAP 1.0.3 SOAP plug-in for vCenter Orchestrator	4
	▼ Messages	Copy to clipboard Insert mark Clear logs	

Figure 2-17 Display the Information of the Created APV Services

> Detach APV

ware vCenter Orchestrator - Administrator ⊛ 10.10.1.121 <b>m</b> Ware vCenter Orchestrator <mark>Run</mark>	▼ U   ← ▼ → ▼   Admin ▼   Tools ▼   P	Help -   🔍 Search for -
Administrator @ 10.10.1.121 Run Detach APV Administrator @ 10.10.1.121 Run Detach APV Array Networks V Array Networks V Array Networks Array Attach APV Attach APV Detach APV Detach APV 1 D 1	Parameters References Workflow General Inputs Outputs rkflow : Detach APV etach an APV service a Choose the APV service Not set	Detach AP Tokens Events Permissions Schema Presentation
<ul> <li>Manage SSL Certificates</li> <li>Retresh APV</li> <li>SLB</li> <li>Add Group Member</li> <li>Add Heath Check</li> <li>Add Real Service</li> <li>Add Real Service</li> <li>Add Real Service</li> <li>Add Real Service</li> <li>Add Scaing</li> <li>Delete Group</li> <li>Delete Group</li> <li>Delete Heath Check</li> <li>Delete Policy</li> <li>Delete Policy</li> <li>Delete Service</li> <li>Delete Service</li> <li>Delete Group</li> <li>Delete Group</li> <li>Delete Group Member</li> <li>Delete Group Member</li> <li>Delete Group Member</li> <li>Delete Group Member</li> <li>Delete Policy</li> <li>Delete Service</li> </ul>	<ul> <li>Select (SOAP:Host )</li> <li>SOAP</li> <li>SOAP</li> <li>maxpy_demo_group</li> <li>maxpy_demo_rs</li> <li>maxpy_demo_rs</li> <li>choose the service to detach</li> </ul>	Host - apv_demo_group Custom properties General Name WSDL URI WSDL content provided man
Delete Virkus Service CD Dissociate Heath Check CD Cet All Groups		Cancel Select

Figure 2-18 Detach APV

> Refresh APV



Figure 2-19 Refresh APV

#### 2.3.2 SLB Workflows

#### Table 2-3 Virtual Service

Add Virtual Service	This workflow allows users to create virtual services for load balancing operations and protocols.
Delete Virtual Service	This workflow allows users to remove the specified virtual service from load balancing protocols along with all associated policies.
Get All Virtual Services	This workflow is used to display all virtual service information, which includes virtual service names, virtual service protocols, virtual service IP addresses, virtual service IP ports, whether ARP is enabled or not, policy information, proxy mode information and maximum connections per second limitation.
Get Virtual Service Info	This workflow is used to display the specified virtual service information. It includes the same categories from "Get All Virtual Services".
Get Virtual Service Statistics	This workflow is used to display the specified virtual service statistics information, which includes maximum connections, current open connections, total connections, total bytes in, total bytes out, total packets in and total packets out.

Update Virtual Service	This workflow allows users to update the specified virtual service. It will remove all associated policies on the virtual service.
Add Policy	This workflow allows users to set a policy to associate a virtual service with a group. The policy includes default, backup, insert cookie and persistent cookie.
Delete Policy	This workflow allows users to remove the specified SLB policy.

#### Table 2-4 Real Service

Add Real Service	This workflow allows users to create real services. The real service must be created before it can be added to any SLB group.
Delete Real Service	This workflow allows users to remove the specified real service with the given name. If the real service is a member of any groups, it will be removed from those groups as well.
Get All Real Services	This workflow is used to display all real service information, which includes real service names, real service protocols, real service IP addresses, real service IP ports, maximum number of connections and whether a real service is enabled or not.
Get Real Service Info	This workflow is used to display the specified real service information. It includes the same categories from "Get All Real Services".
Get Real Service Statistics	This workflow is used to display the specified real service statistics information, which includes maximum connections, current open connections, outstanding request count, total hits, total bytes in, total bytes out, total packets in and total packets out.
Update Real Service	This workflow allows users to update the specified real service. If the real service is a member of any groups, it will be removed from those groups.

#### Table 2-5 Group

Add Group	This workflow allows users to create an
	SLB group and specify a specific load
	balancing algorithm for the group.
Delete Group	This workflow allows users to remove an
	SLB group.
Get All Groups	This workflow is used to display all group
	Information, which includes group names,
	for the methods, accepted virtual
	services group member pames group
	member weight and associated health
	checks.
Get Group Info	This workflow is used to display the
·	specified group service information. It
	includes the same categories from "Get All
	Groups".
Update Group	This workflow allows users to update the
	specified aroup service. It will remove all
	specified group service. It will remove all
	associated policies on the group service
	associated policies on the group service and all group members in the group.
Add Group Member	associated policies on the group service and all group members in the group. This workflow allows users to add a real
Add Group Member	associated policies on the group service and all group members in the group. This workflow allows users to add a real service to an SLB group.
Add Group Member Delete Group Member	associated policies on the group service and all group members in the group. This workflow allows users to add a real service to an SLB group. This workflow allows users to remove a
Add Group Member Delete Group Member	<ul> <li>associated policies on the group service and all group members in the group.</li> <li>This workflow allows users to add a real service to an SLB group.</li> <li>This workflow allows users to remove a real service from a group.</li> </ul>
Add Group Member Delete Group Member Update Group Member Weight	<ul> <li>associated policies on the group service and all group members in the group.</li> <li>This workflow allows users to add a real service to an SLB group.</li> <li>This workflow allows users to remove a real service from a group.</li> <li>This workflow allows users to update the unight of the appailing group member.</li> </ul>
Add Group Member Delete Group Member Update Group Member Weight	<ul> <li>associated policies on the group service and all group members in the group.</li> <li>This workflow allows users to add a real service to an SLB group.</li> <li>This workflow allows users to remove a real service from a group.</li> <li>This workflow allows users to update the weight of the specified group member.</li> </ul>
Add Group Member Delete Group Member Update Group Member Weight Associate Health Check	<ul> <li>associated policies on the group service and all group members in the group.</li> <li>This workflow allows users to add a real service to an SLB group.</li> <li>This workflow allows users to remove a real service from a group.</li> <li>This workflow allows users to update the weight of the specified group member.</li> <li>This workflow allows users to associate the group health check condition with the</li> </ul>
Add Group Member Delete Group Member Update Group Member Weight Associate Health Check	<ul> <li>associated policies on the group service and all group members in the group.</li> <li>This workflow allows users to add a real service to an SLB group.</li> <li>This workflow allows users to remove a real service from a group.</li> <li>This workflow allows users to update the weight of the specified group member.</li> <li>This workflow allows users to associate the group health check condition with the specified group.</li> </ul>
Add Group Member Delete Group Member Update Group Member Weight Associate Health Check	<ul> <li>specified group service. It will remove all associated policies on the group service and all group members in the group.</li> <li>This workflow allows users to add a real service to an SLB group.</li> <li>This workflow allows users to remove a real service from a group.</li> <li>This workflow allows users to update the weight of the specified group member.</li> <li>This workflow allows users to associate the group health check condition with the specified group.</li> </ul>
Add Group MemberDelete Group MemberUpdate Group Member WeightAssociate Health CheckDissociate Health Check	<ul> <li>specified group service. It will remove all associated policies on the group service and all group members in the group.</li> <li>This workflow allows users to add a real service to an SLB group.</li> <li>This workflow allows users to remove a real service from a group.</li> <li>This workflow allows users to update the weight of the specified group member.</li> <li>This workflow allows users to associate the group health check condition with the specified group.</li> <li>This workflow allows users to remove the association of the group health check</li> </ul>
Add Group MemberDelete Group MemberUpdate Group Member WeightAssociate Health CheckDissociate Health Check	<ul> <li>associated policies on the group service and all group members in the group.</li> <li>This workflow allows users to add a real service to an SLB group.</li> <li>This workflow allows users to remove a real service from a group.</li> <li>This workflow allows users to update the weight of the specified group member.</li> <li>This workflow allows users to associate the group health check condition with the specified group.</li> <li>This workflow allows users to remove the association of the group health check condition with the specified group.</li> </ul>

### Table 2-6 Group and Virtual Service

Get Group Statistics	This workflow is used to display the
	specified group statistics information, which
	includes group current open connections,
	group total connections, group total bytes
	in, group total bytes out, group total
	packets in and group total packets out.

#### Table 2-7 Health Check

Add Health Check	This workflow allows users to create a group health check condition which can be associated with several groups.
Delete Health Check	This workflow allows users to remove the specified group health check condition.

Get All Health Checks	This workflow is used to display all health check information, which includes health check names, health check types, interval, timeout, response times for up, response times for down and parameters for HTTP health check request.
Get Health Check Info	This workflow is used to display the specified health check service information. It includes the same categories from "Get All Health Checks".
Update Health Check	This workflow allows users to update the specified health check service. It will remove all the associations with SLB groups on the health check.

# 2.4 Typical User's Scenarios

## 2.4.1 SLB Configuration



Figure 2-20 SLB Topology Example

- > Add a Virtual Service
- 1. Right click the Add Virtual Service workflow and select Start workflow.

Mware vCenter Orchestrator - Administrator @ 10.10.1.121 VMWare vCenter Orchestrator Run	▼   Admin <del>▼</del>   Too	ols •   Help •   🔦 Se	arch for 🔹
	▶ 🕲 👌 🦯		Add Virtual Service
☆ 🖪 😔 🔂 🔗	Workflow Toker	ns Events	Permissions
Administrator @ 10.10.1.121	Presentation	Paramete	rs References
▼ Array Networks ▼ APV	General	Inputs Outputs	Schema
Gasic Management     SLB	•		A
Add Group	Name	Add Virtual Service	)
Add Group member	Version	0.0.1	Show version
Add Real Service	Workflow icon		)
Add Virtual Service Start workflow  Associate Health Cr  Delete Group  Delete Group Membe Start last workflow ru  Delete Health Check	Ctrl+R	Check signature	Add to package 🗹 Edit cont
Delete Policy Schedule workflow.	. Ctri+S	Resume workflow run	
Delete Real Service Delete Virtual Servic Dissociate Health Cr Duplicate workflow Cr Dissociate Health Cr School Schoo		Add SLB Virtual Service	•
Get All Groups X Delete	Delete		Ť
Get All Health Check Locking	•		
References		6	

Figure 2-21 Start the Workflow

2. Select APV Service.

Start Workflow : Add Virtual Service		×
1 Choose the service 1a APV service 2 Add virtual service 3a Virtual service		
Select (SUAP-nust )	Heat any d	
	nost - apv_u	emo_vs
۵. The second	General Custom properties	
V 🕷 SOAP		
►  apv_demo_group	•	
► muno apv_demo_neanth ► muno apv_demo_rs	Name	apv_c
► 🚾 apv_demo_vs	WSDL URI	https:
	WSDL content provided manually	false
		xml<br <wsd< th=""></wsd<>
		×mins
	•	xmins
	Cancel	Select
	Cancel Back Next	Submit

Figure 2-22 Select a Virtual Service

The Virtual Service name should end with "\_vs".

Start Workflow : Add Virtual Service	×
1 Choose the service 1a APV service 2 Add virtual service 2a Virtual service inputs	* APV Virtual Service (* apv_demo_vs * * * * * * * * * * * * * * * * * * *
	Cancel Back Next Submit

Figure 2-23 Display the Selected Virtual Service

3. Specify parameters of the virtual service.

Virtual Service Name: Specify the name of the virtual service.

Virtual Service Protocol: Specify the protocol of the virtual service. The protocol value can be PROTOCOL\_HTTP, PROTOCOL\_HTTPS, PROTOCOL\_TCP or PROTOCOL\_TCPS.

**Note**: PROTOCOL\_HTTPS and PROTOCOL\_TCPS are not supported in this version.

Virtual Service IP, port: Specify the IP and port of the virtual service.

Arp On/Off: Specify whether to support the Address Resolution Protocol (ARP). By default, the ARP protocol is supported.

Maximum Connections: Specify the maximum connections. The default value is 0.

Start Workflow : Add Virtual Servic	e X
1 Choose the service	
2 Add virtual service	* Virtual Service Name
2a Virtual service inputs	apv_demo_vs
	Virtual Service Protocol
	PROTOCOL_HTTP
	* Virtual Service IP
	10.10.54.102
	* Virtual Service Port
	80
	arp On/Off
	● Yes ○ No
	★ Maximum Connections (0 for unlimited)
	0
	_
	Cancel Back Next Submit

Figure 2-24 Specify Parameters of the Virtual Service

#### > Add a Real Service

1. Right click the Add Real Service workflow and select Start workflow.

VMware vCenter Orchestrator - Administrator @ 10.10.1.121	▼   Admin <del>▼</del>   <sup>-</sup>	rools	Is 🕶   Help 🕶   🔍 Search for 🛛 💌
	Vorkflow Tol	kens	Add Real Service s Events Permissions Parameters References
Administrator @ 10.10.1.121      Array Networks      Apv      Basic Management	General	I	Inputs Outputs Schema
SLB     Add Group     Add Group Member     Add Health Check     Add Policy	Name     Version		Add Real Service
Add Real Service      Add Virtual Service      Adsociate Health     Start workflow as      Delete Group      Start last workflow run	Ctrl+R		Check signature
Delete Group Mem Schedule workflow	Ctrl+S	rior	View contents Add to package Edit cont Resume workflow run
Delete Virtual Serv Duplicate workflow	Delete		Add SLB Real Service
Get All Groups Get All Health Che References			

Figure 2-25 Start the Workflow

2. Select APV Service.

👩 Start Workflow : Add Real Service		×
1 Choose the service 1a APV service 2 Add real service	* APV Real Service	
2a Real service inputs		
	( SOAP:Host ) Host - apv_d General Custom properties	emo_rs
▼ <b>(0</b> . SOA ▶ ∰ 8 ▶ ∰ 8	P pv_demo_group pv_demo_health Name	apy
	pv_demo_rs pv_demo_vs WSDL URI	https:
	WSDL content provided manually	false
		≺?xml ≺wsd
		xmins
	Cancel	Select
	Cancel Back Next	Submit

Figure 2-26 Select a Real Service

The service name should end with "\_rs".

Start Workflow : Add Real Service	×
1 Choose the service 1a APV service 2 Add real service 2a Real service inputs	* APV Real Service (*) apv_demo_rs
	Cancel Back Next Submit

Figure 2-27 Display the Selected Real Service

3. Specify parameters of the real service.

Real Service Name: Specify the name of the real service.

Real Service Protocol: Specify the protocol of the real service. The protocol value can be PROTOCOL\_HTTP, PROTOCOL\_HTTPS, PROTOCOL\_TCP or PROTOCOL\_TCPS.

Note: PROTOCOL\_HTTPS and PROTOCOL\_TCPS are not supported in this version.

Real Service IP, port: Specify the IP and port of the real service.

Maximum Connections: Specify the maximum connections. The default value is 1000.

Enable: Enable or disable the real service.

Start Workflow : Add Real Service	×
1 Choose the service ✓ 1a APV service 2 Add mode service	* Real Service Name
2 Add real service 2a Real service inputs	* Real Service Protocol
	Real Service IP
	10.1.1.101
	* Real Service Port 80
	* Maximum Connections
	Enable
	Yes Ves No
	Cancel Back Next Submit

Figure 2-28 Specify Parameters of the Real Service

4. Configure the second real service (10.1.1.102) by the same steps.

Start Workflow : Add Real Service	×
1 Choose the service ✓ 1a APV service 2 Add real service	* Real Service Name apv_demo_rs2
2a Real service inputs	* Real Service Protocol PROTOCOL_HTTP
	* Real Service IP 10.1.1.102
	* Real Service Port
	* Maximum Connections
	•
	Cancel Back Next Submit

Figure 2-29 Configure the Second Real Service

#### > Add a Group

1. Right click the Add Group workflow and select the Start workflow sub-tab.

VMware vCenter Orchestrator - Administrator @ 10.10.1.121				-0
vmware vCenter Orchestrator Run	🗸   Admir	- Tools	s 🕶   Help 👻   🕓 Seard	ch for 🔹
	. ا ا	1		Add Group
1 🖪 😔 🖻 🔗	Workflo	w Tokens	Events	Permissions
🔻 🤜 Administrator @ 10 10 1 121	Presen	tation	Parameters	References
▼ □ Array Networks	Ganaral		nnute Outpute	Sebomo
▼ □ APV	General		inputs Outputs	outerna
🕨 🧰 Basic Management				
V 🖾 SLB	•			4
Add Group	Ctrl+R		Add Group	
Add Group Start workflow as	Curre		Add oroup	
Add Pelicy Start last workflow run			0.0.1	Show version
Add Real S     Add Real S     Add Real S	054.0	12		
Add Virtual	Cul+S			ľ
Associate H Schedule Worknow As			Check signature	
Delete Grou 🕑 Move workflow				
Delete Groute Duplicate workflow		ions	View contents 🗹 Add	l to package 🗹 Edit cont
Delete Peter		habaviar	Pagema worldlaw sup	
Delete Real	Delete	benavior	Resume worknow run	
Delete Virtu Locking	Þ		Add SLB Group	
🔝 Dissociate i References	•			
🔀 Get All Grov 🧭 Validate workflow				
Get All Grou 🔞 Show version history				
Generate documentation				
Pelete all finished workflow	nins			

Figure 2-30 Start the Workflow

#### 2. Select **APV Service.**

🧿 Start Workflow : Add Grou	lb				×
1 Choose the set 1a APV service 2 Add group	APV Group Service				
2a Group inputs	Select ( SOAP:Host )				×
				Host - apv_demo	_group
	@P		General	Custom properties	
	V 🛃 SOAP				<b>A</b>
	► 🚾 apv_demo_group		-		
	►  apv_demo_neath ►  apv_demo_rs		Name		apv_c
	▶ <mark>∭ung</mark> tapv_demo_vs	n	WSDL UR		https:
			WSDL con	tent provided manually	false
					xml<br <wsd< th=""></wsd<>
					×mins
			T	,	hins
				Cancel	Belect
			Cancel	Back Next	Submit

Figure 2-31 Select Group

The service name should end with "\_group".

Start Workflow : Add Group	×
1 Choose the service 1a APV service 2 Add group 2a Group inputs	* APV Group Service (*) apv_demo_group (*)
	Cancel Back Next Submit

Figure 2-32 Display the Selected Group

3. Specify group parameters.

Group Name: Specify the name of the group.

Group Method: Specify the group method. The method can be LB\_ROUND\_ROBIN, LB\_LEAST\_CONNECTION, LB\_SHORTEST\_RESP\_TIME, LB\_HASH\_IPADDR, LB\_HASH\_COOKIE, LB\_INSERT\_COOKIE or LB\_PERSISTENT\_IPADDR. (Some of the methods may have additional parameters. The configuration dialog box may vary with the group method the user chooses.)

05	tart Workflow : Add Group	X
~	1 Choose the service 1a APV service 2 Add group	★ Group Name apv_demo_group
	2a Group inputs	★ Group Method
		_
		Cancel Back Next Submit

Figure 2-33 Specify Group Parameters

# > Add Group Member

1. Right click the Add Group Member workflow and select Start workflow.

Mware vCenter Orchestrator - Administrator @ 10.10.1.121	▼   Admin ▼   To	ols <b>-</b>   Help -   🔍 Se	earch for
Administrator @ 10.10.1.121	Vorkflow Toke Presentation General	ns Events Paramete Inputs Output:	Add Group Member Permissions ers References s Schema
Basic Management     SLB     Add Group     Add Group Member     Add Health Check     Start workflow	• Name Ctrl+R	Add Group Member	E Show version
Add Policy      Add Real Service      Add Virtual Service      Adsociate Health Ch     Delete Group      Delete Group      Market Market      Market Workflow      Market Workflow	n Ctrl+S s	Check signature	]
Delete Group Membe Workflow     Delete Health Check     Delete Policy     Delete Real Service     Delete Virtual Service     Delete	Delete	View contents  View contents	Add to package 🗹 Edit conf _B Group
Dissociate Health Ch     LOCKing     Get All Group Membe     References     Get All Groups     Get All Health Check     Show version history	• •	-	, , , , , , , , , , , , , , , , , , ,

Figure 2-34 Start the Workflow

2. Select **APV Service**.

🜀 Start Workflow : Add Group Member				×
1 Choose the service 1a APV service	APV Group Service			
2 Add group member	(Not set			
2a Group mer <mark>O Select ( SO</mark>	AP:Host )			×
			Host - apv_dem	o_group
- A A A A A A A A A A A A A A A A A A A		Genera	Custom properties	
▼ 🕵 SOAP	demo group	•		-
►  apv_ ►  apv_	≵emo_health ≾emo_rs	Name		apv_c
►  apv_o	demo_vs	WSDL	URI	https:
		WSDL	content provided manually	false
				xml<br ≺vvsd
				×mins
			Cancel	Select
		Cance	el Back Next	Submit

Figure 2-35 Select Group

The service name should end with "\_group".

Start Workflow : Add Group Member	×
1 Choose the service 1a APV service 2 Add group member 2a Group member inputs	APV Group Service  apv_demo_group
	Cancel Back Next Submit

Figure 2-36 Display the Selected Group

3. Specify parameters of the group member.

Group Name: Specify the name of the group.

Real Service Name: Specify the name of the real service. This will be the new member added into the group.

Weight:	Specify	v the	weight.	The	default	value	is	1.
vvoignit.	Opcon.	,	worgin	1110	aoraan	valuo	10	••

Start Workflow : Add Group Member	×
1 Choose the service 1a APV service 2 Add group member 2a Group member inputs	* Group Name apv_demo_group * Real Service Name apv_demo_rs1 * Weight 1
	Cancel Back Next Submit

Figure 2-37 Specify Parameters of the Group Member

4. Add the second real service to the same SLB group.

<b>O</b> Start Workflow : Add Group Member	×
<ul> <li>Start worknow Add Group Heriber</li> <li>1 Choose the service</li> <li>1a APV service</li> <li>2 Add group member</li> <li>2a Group member inputs</li> </ul>	* Group Name apv_demo_group * Real Service Name apv_demo_rs2 * Weight 1
	Cancel Back Next Submit

Figure 2-38 Add the Second Group Member

- > Add Policy (Default)
- 1. Right click the **Add Policy** workflow and select **Start workflow**.

VMware vCenter Orchestrator - Administrator @ 10.10.1.121			/		
vmware vCenter Orchestrator Run	🗸   Admi	n 🗝 🕇 Tool:	s ▼  Help ▼	Search	i for 🔹
	۵ 🕞 🔺	1			Add Policy
🟠 🖪 😔 🔂 🔗	Workfl	ow Tokens	Eve	ents	Permissions
🗴 🔜 Administrator @ 10.10.1.121	Prese	ntation	P	arameters R	eferences
Array Networks     APV	General		nputs	Outputs	Schema
Easic Management					
V SLB	-				*
Add Group	Name		Add Policy		
Add Group Wember				_	(Barrows)
Add Policy	Version		0.0	. 0	Show version
Add Real S Start workflow	Ctrl+R	n			
Add Virtua Start workflow as					
Associate Start last workflow run			Check sign	ature	
Delete Gro Schedule workflow As	Ctrl+S	sions	View conte	ents 📝 Add t	o package 📝 Edit cont
Delete Polic Diversitate workflow		t behavior	Resume workt	low run	
Delete Virti o Export workflow			Add SLB Polic	y (Default, Ba	ickup, Insert Cookie,
Dissociate 🗙 Delete	Delete		Fersistent Co	okie)	
Get All Gro Locking	•				
Get All Hea References	•				7.
🖉 Validate workflow					

Figure 2-39 Start the Workflow

2. Select APV Service.

🕤 Start Workflow : Add Policy				x
1 Choose the service 1a APV service 2 Add policy	APV Virtual Service			
2a Policy inpu 🚺 Select ( S	60AP:Host )			×
			Host - apv_de	emo_vs
- The second sec		General	Custom properties	
▼ 🔞 SOAP				<b></b>
► total apv ► total apv	_demo_group _demo_health	Name		apy c
► ∰ong apv	_demo_vs	WSDLUR	1	https:
		WSDL cor	ntent provided manually	false
				xml<br <wsd< th=""></wsd<>
				xmins
		•	)	xmins
			Cancel	Belect
		Cancel	Back Next	Submit

Figure 2-40 Select the APV Service

The service name should end with "\_vs".

Start Workflow : Add Policy	X
1 Choose the service 1a APV service 2 Add policy 2a Policy inputs	APV Virtual Service
	Cancel Back Next Submit

Figure 2-41 Display the Selected Virtual Service

3. Specify policy parameters.

Virtual Service Name: Specify the name of the virtual service.

Group Name: Specify the name of the group.

Ös	tart Workflow : Add Policy	×
~	1 Choose the service 1a APV service 2 Add policy 2a Policy inputs	* Virtual Service Name apv_demo_vs * Group Name apv_demo_group * Policy Type Default
		Cancel Back Next Submit

Figure 2-42 Specify Policy Parameters

## 2.4.2 Group Health Check

#### > Add Health Check

1. Right click the Add Health Check workflow and select Start workflow.

Mware vCenter Orchestrator - Administrator ⊛ 10.10.1.121 mWare vCenter Orchestrator Run	▼   Admin ▼   1	ool	s <b>~  </b> Help <b>~  </b> 🔦 Se	arch for 🗸
	▶ 😪 🁌 🧷			Add Health Check
1 🖪 🝚 🔂 🔗	Workflow Tol	ens	Events	Permissions
Administrator @ 10.10.1.121	Presentation		Paramete	rs References
▼ □ Array Networks ▼ □ APV	General	1	nputs Outputs	Schema
► Basic Management ▼ SLB	(-			
🕨 🛃 Add Group	•	_		
Add Group Member	Name		Add Health Check	
Add Health Check	Ctrl+R		0.0.1	E Show version
Add Folicy      Add Folicy      Add Real Service      Start workflow as      Add Virtual Service      Start last workflow run				
Associate Health	Ctrl+S		Check signature	
Delete Group Mem	l		View contents V	Add to package 📝 Edit conf
Delete Heatth Ched Duplicate workflow		ior	Resume workflow run	
Delete Real Service Seport workflow			Add SLB Health Check	
Dissociate Health 0	Delete			
Get All Group Mem Locking	•			
Get All Groups References	•			
🔛 Get All Health Chei 🔗 Validate workflow				
👘 Show version history				

Figure 2-43 Start the Workflow

2. Select APV Service.

👩 Start Workflow : Add Health Check 🛛 🛛 🔀				
1 Choose the service 1a APV service 2 Add health check	AP∨ Heatth Check Service Not set			
2a Health che 💽 Select ( SO	AP:Host )			×
			Host - apv_demo	health
<b>P</b>		General	Custom properties	
🔻 d SOAP				<b>A</b>
► 🔤 apv_d	emo_group	-		
► <mark>bund</mark> apv_d	emo_health	Name		apv_c
► <u>m</u> apv_d	emo_vs	WSDL U	RI	https:
		WSDL c	ontent provided manually	false
				xml<br <wsd< th=""></wsd<>
				xmins
		•		
			Cancel	Belect
		Cancel	Back Next	Submit

Figure 2-44 Select Health Check

The service name should end with "\_health".

💽 Start Workflow : Add Health Check 🛛 🛛 🔀		
Start Workflow : Add Health Check 1 Choose the service 1a APV service 2 Add health check 2a Health check service i	APV Health Check Service	
	Cancel Back Next Submit	

Figure 2-45 Display the Selected Health Check

3. Specify parameters of the health check.

Health Check Name: Specify the name of the health check.

Health Check Type: Specify the type of the health check. The type can be HCTYPE\_ICMP, HCTYPE\_TCP, HCTYPE\_TCPS, HCTYPE\_HTTP or HCTYPE\_HTTPS. (If the users select HCTYPE\_HTTP or HCTYPE\_HTTPS, there will be one more configuration dialog box for additional parameters.)

<mark>O</mark> S	tart Workflow : Add Health Check	×
<ul> <li>● 5</li> <li>✓</li> </ul>	tart Workflow : Add Health Check  1 Choose the service 1a APV service 2 Add health check 2a Health check service i	Health Check Name     apv_demo_hc     Health Check Type     HCTYPE_ICMP     V     Health Check Interval (in seconds)     30     Maximum Number of Seconds to Wait before Timeout (in seconds)
		Maximum Number of Seconds to Vvait before Timeout (in seconds) 3     Maximum Number of Retries before Mark Down 3     Maximum Number of Retries before Mark Up 3
		Cancel Back Next Submit

Figure 2-46 Specify Parameters of the Health Check

- > Associate Health Check
- 1. Right click the **Associate Health Check** workflow and select **Start workflow**.



Figure 2-47 Start the Workflow

2. Select APV Service.

🕤 Start Workflow : Associate Health Check 🛛 🛛 🛛 🛛					
1 Choose the service 1a APV service	APV Group Service				
2 Associate health check					
2a Associate hea Oselect (S	OAP:Host )				×
				Host - apv_demo	_group
Ĩ			General	Custom properties	
▼ 🔞 SOAP	demo aroun		-		-
► apv ► apv	_demo_health _demo_rs		Name		apv_c
► 🚋 apv_	_demo_vs	0	WSDL UR	I	https:
			WSDL cor	itent provided manually	false
					xml<br ≺wsd
					×mins
			-t	,	
				Cancel	Belect
<u>.</u>					
			Cancel	Back Next	Submit

Figure 2-48 Select Group

The service name should end with "\_group".

Start Workflow : Associate Health Check		
1 Choose the service 1a APV service 2 Associate health check 2a Associate health check	APV Group Service	
	Cancel Back Next Submit	

## Figure 2-49 Display the Selected Group

3. Specify parameters of the group health check.

Group Name: Specify the name of the group.

Health Check Name: Specify the name of the group health check.

O Start Workflow : Associate Health Check			
~	1 Choose the service 1a APV service 2 Associate health check	* Group Name apv_demo_group	
		* Health Check Name apv_demo_hc	
		+	
		Cancel Back Next Submit	

Figure 2-50 Specify Parameters of the Group Health Check

# **About Array Networks**

Array Networks is a global leader in application delivery networking with over 5000 worldwide customer deployments. Powered by award-winning SpeedCore software, Array application delivery, WAN optimization and secure access solutions are recognized by leading enterprise, service provider and public sector organizations for unmatched performance and total value of ownership. Array is headquartered in Silicon Valley, is backed by over 250 employees worldwide and is a profitable company with strong investors, management and revenue growth. Poised to capitalize on explosive growth in the areas of mobile and cloud computing, analysts and thought leaders including Deloitte, IDC and Frost & Sullivan have recognized Array Networks for its technical innovation, operational excellence and market opportunity.

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