

Red Hat 3scale API Management 2.4

Product

Walkthrough of of different product features such as API integration, Analytics, Developer portal, and API environments.

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Abstract

This guide documents product features for Red Hat 3scale API Management 2.4.

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CHAPTER 1. API ANALYTICS

This guide is designed to help you tune your API analytics to track the items you need to know about and to see top applications and trends over time.

Knowing how your API is used is a crucial step for managing traffic, provisioning for peaks, and identifying top users so you can help them achieve greater success with your API.

1.1. PREREQUISITES

Complete the basics of connecting your API to 3scale before using this guide.

The guide assumes that you are using one of the existing 3scale code plugins to perform an integration. You can follow a similar flow with other integration methods. Check the APIcast Overview chapter of the documentation to learn more about the available integration options.

1.2. DETERMINE THE METRICS AND METHODS YOU WANT TO TRACK

3scale acts as an infinitely scalable data repository for your API statistics, and you can track almost any metric for your API. For example:

- *Hits/transactions*: calls to the API. Hits are included by default as metrics on all APIs. Hits can be overall calls to the API or broken out into individual methods on the API.
- Data transfer: quantity of MB/GB of data uploaded and downloaded via the API
- CPU hours: compute time (or some other internal resource) associated with calls to the API
- Results returned: count of the number of records or data objects being returned
- Disk storage: total disk storage in use by an account

You can track more metrics that are relevant to your API. 3scale can track an arbitrary number of metrics and methods, as long as it is a countable quantity that can be incremented over time.

1.3. CREATE YOUR METRICS AND METHODS

After you chose your metrics, register them in the 3scale Admin Portal. Navigate to [your_API_name] > Integration > Methods & Metrics.

Figure 1.1. Create new method

	RED HAT SSCALE	API MANAGEMENT A	Pl: Echo API 🗸					¢	0	•	
N	Overview	Methods & N	letrics								
<u>lahi</u>	Analytics >	Methods									
ŝ	Applications >	Add the methods of this A limits and pricing rules for	PI to get data on their indi	vidual usage. Method efined from within ea	l calls trigger the built-in Hits-metric. Usa ch Application Plan, A method needs to b	ge	Graata now moth	bol			
æ	Subscriptions >	mapped to one or more U API up the count of specifi	e or more URL patterns in the <u>Mapping Rules</u> section of the integration page so specific calls to your nt of specific methods.								
B	ActiveDocs	Method	System Name	Unit	Description	Mapped		O Nev	v meth	od	
F	Integration ~	You have no methods									
	Configuration										
	Methods & Metrics	Motrics									
	Settings	Hits is the built-in metric to track other usage that sho in the <u>Mapping Rules</u> secti	o which all methods report uldn't increase the hit cou on of the integration page	5	Create new metr	ic					
		Metric	System Name	Unit	Description	Mapped		O Ne	w met	ric	
		Hits	hits	hit	Number of API hits	•					

Add metrics and methods to the service. Provide them with a friendly name and a system name, which is used later in your plugin configuration. For more details about creating methods and metrics, see defining your API on 3scale.

1.4. SET UP REPORTING

Once you have configured the 3scale system with the names of the metrics to track, it is time to tweak your plugin setup to report the right metrics. The precise manner of doing this depends on the plugin or integration method in use. By default, the plugins report the **hits** (API transactions) metric only.

Generally speaking, you need to follow these steps.

- 1. The application should pass the appropriate metric/method names to the plugin as determined by the incoming API call. The metric/method value and the increment required is an argument of authorize and/or report methods the plugin exposes.
- 2. You can also report the traffic using the 3scale Service Management API. You can find information about different endpoints in the 3scale APIs ActiveDocs section. 3scale ActiveDocs are available in your Admin Portal under the **Documentation** → **3scale API Docs** section.

When you report traffic for a specific API method, use the method **system name** in the metric argument. This automatically increments the counter both for the method reported and the hits metric.

1.5. CHECK THAT TRAFFIC IS REPORTED CORRECTLY

Once the API and 3scale connection is established, you can send traffic to the API and watch it register on the API Analytics dashboard. You need an existing developer account and an application with API credentials to be able to perform the steps in this section. Follow these steps to create a developer account and get an application with API credentials.

- 1. Open the Getting Started guide.
- 2. Navigate to Audience > Applications > Listing to see the list of existing applications.
- 3. Select an application by clicking on its name.

Figure 1	.2. /	Appli	ications	
----------	-------	-------	----------	--

***	RED HAT SSCALE	API MANAGEMENT	Audience 🗸						4	¢	0	•
2	Accounts >	Applications	S									
æ	Applications 🛛 🗸	Name	State	Account	Service	Plan	Paid? ?	Created At	Traffic On			
L	Listing Alerts		All v		v	v	Ÿ				Searc	h
	Billing >	Metro's App	live	Metro	Echo API	Unlimited	free	October 25, 2018				
Å	Developer Portal >	Feasible Inc.'s App	live	Feasible Inc.	Echo API	Basic	free	October 25, 2018				
		Developer's App	live	Developer	Echo API	Basic	free	September 11, 2018	September 11,	2018		
M	Messages >								🔀 Expo	rt all Ap	plicatio	ons

4. Find the API credentials for the selected application. The credentials depend on the selected authentication type and can be a user key (API key), an application ID and application keys, or a client ID and client secret. For more information about the available authentication modes, see the authentication patterns article.

Figure 1.3. API credentials

	RED HAT SSCAL	E API MANAGEMENT	API: Echo API 🗸	
N	Overview	Application 'Metro's Application 'Metro's Application 'Metro's Application 'Metro's Application (Metro) (Metro)	pp' <u>Analytics</u>	
<u>.lıl</u>	Analytics >	Metro's Ap	p 🖋 Edit	
&	Applications ~	Account	Metro	
	Listing			
	Application Plans	Description	Default applica	ation created on signup.
æ	Subscriptions >	Service	Echo API	
L.	ActiveDocs	State	Live	Suspend
₽¢C	Integration >	API Credential	s	
			-	
		Application ID	XXXXXXX	
		• Add Custom ke	y	• Add Random key

5. Use these keys to make calls to your API in the normal way (for example, from the command line using cURL or from the browser for API endpoints using the GET method). The precise calls to make depend on the structure of the methods on your API. Traffic from these calls appear in the Analytics section for your API.

Figure 1.4. Analytics usage



1.6. TROUBLESHOOTING

If traffic does not display on the usage charts in the Analytics section, perform the following checks.

• Are authorize/report calls responding correctly?

All plugins call the 3scale Service Management API, which has predetermined response codes. Authorize calls for valid keys should return responses with HTTP code **200**. Report calls should respond with code **202**.

Are there errors in the integration error console? The log of integration errors detected by 3scale can be found in [your_API_name] > Analytics > Integration Errors.

1000	RED HAT 3SCA	LE API MANAGEMENT API: Echo API 🗸	¢ 0	•
1	Verview	Integration Errors		
	M Analytics	Here you can see errors related to your API's integration wit	th 3scale, in particular in calls made to methods of	
	Usage Daily Averages	3scale's Service Management API. Please refer to the <u>API ActiveDocs</u> documentation section of	n using 3scale's Service Management API.	
	Hourly Averages Top Applications	Echo API @ Purge		
	Response Codes Alerts	Time (UTC)	Error	
	Integration Errors	2018-10-26 21:59:09 UTC	application with id="" was not found	
4	S Applications	> 2018-10-26 21:58:45 UTC	application with id="" was not found	
4	Subscriptions	> 2018-10-26 21:58:40 UTC	application with id="" was not found	
	ActiveDocs	2018-10-26 21:58:28 UTC	application with id="" was not found	
		2018-10-26 21:57:45 UTC	application with id="" was not found	
	Integration	> 2018-10-26 21:57:41 UTC	application with id="" was not found	

Figure 1.5. Integration errors

Are the correct metric and method names being used?

The most common reason for failure is that the method and metric names passed in report calls do not correspond to those created in the API settings of your Admin Portal. Check that you are using the correct **system names** for each metric/method.

1.7. CONTROLLING WHO SEES THE ANALYTICS

By default, the usage statistics are visible to the API provider through the Admin Portal and to the developers who created applications through the Developer Portal. (Each developer can see only the usage statistics for their own applications.) You have the ability to hide the analytics views from the Developer Portal. See the Developer Portal section to learn more about customizing the Developer Portal.

1.8. ACCESSING ANALYTICS DATA BY API AND EMAIL REPORTS

Besides the usage graphs in the Analytics section, there are other methods of getting your API's analytics data.

• Analytics API

You can use the 3scale Analytics API. It is a flexible way to extract all the analytics data for your API in either XML or JSON format.

• Daily and weekly traffic reports (SaaS only)

These reports provide the aggregated data about your traffic, including information about new subscribers to your API and top applications. To enable these reports in the **Account Settings** (gear icon) > Personal > Notification Preferences of your Admin Portal, find the weekly aggregate reports and daily aggregate reports check boxes. If enabled, these reports are emailed to the admin user of your 3scale account.

• CSV export (SaaS only)

There is a **download CSV** link on each analytics view page, and you can download the usage statistics in .csv format.

Download CSV image::guides-api-analytics-download-csv.png[width=100px]

CHAPTER 2. API VERSIONING

The 3scale API Management Platform allows API versioning. You have three ways to version your API correctly when you manage your API with 3scale. The following methods are examples of how you could version your API within the 3scale Gateway, which provides extra features due to 3scale's architecture.

2.1. GOAL

This guide is designed to give you enough information to implement an API versioning system within 3scale.

Suppose you have an API for finding songs. Users can search for their favorite songs by different keywords: artist, songwriter, song title, album title, and so on. Assume you had an initial version (v1) of the API and now you have developed a new, improved version (v2).

The following sections describe the three most typical ways of implementing an APR versioning system using 3scale:

- URL versioning
- Endpoint versioning
- Custom header versioning

2.2. PREREQUISITES

Complete the basics of connecting your API to 3scale before using this quick start guide.

2.3. URL VERSIONING

If you have different endpoints for searching songs (by artist, by song title, and so on), with URL versioning you would include the API version as part of the URI, for example:

- 1. api.songs.com/v1/songwriter
- 2. api.songs.com/v2/songwriter
- 3. api.songs.com/v1/song
- 4. api.songs.com/v2/song
- 5. and so on



NOTE

When you use this method, you should have planned since v1 that you were going to version your API.

The 3scale Gateway would then extract the endpoint and the version from the URI. This approach allows you to set up application plans for any version/endpoint combination. You can then associate metrics with those plans and endpoints, and you can chart the usage for each endpoint on each version.

The following screen capture shows 3scale's flexibility.

Figure 2.1. Versioning Plan Feature

Application Plan VI Application	Plan V2
Name* V1	V2
System name* basic System name*	pro
Applications require approval?	Applications require approval?
Set whether or not applications can be created on demand or if approval is required from you before they are activated.	Set whether or not applications can be created on demand or if approval is required from you before they are activated.
Trial Period (days) Trial Period (da	ys)
Setup fee USD Setup fee	0.00 USD
Cost per month USD Cost per month	0.00 USD
Update Application plan	Update Application plan
Metrics, Methods, Limits & Pricing Rules Metrics, M	ethods, Limits & Pricing Rules
Metric or Method (Define) Enabled (? Visible (? Text only (? Metric or Method	(Define) Enabled 🕅 Visible 🗊 Text only 🗊
Hits 00 Pricing (0) al Limits (0) 🖌 🗸 🖌 Hits	G2 Pricing (0) 🖌 Limits (0) 🖌 🖌
author S2 Pricing (0) al Limits (0) 🖌 😫 🖌 author	🖾 Pricing (0) 🎿 Limits (0) 🖌 😫 🖌
song EE Pricing (0) Limits (0) H	🖾 Pricing (0) 🎿 Limits (0) 🖌 😫 🖌
V1 82 Pricing (0) ad Limits (0) V V1	IST Pricing (0) 🖬 Limits (1) 🗱 📫
	😆 Pricing (0) 🚽 Limits (0) 🗳 🗳 🗳
VZ 602 Pricing (0) al Limits (1) A R V2	
vz se pricing (u) uunts (1) PA	
Features (1) a final fill (1) Features (1) Features	
V2 DE Préneg (17) La Lumés (1.) R R V (2 Features Name Description Enabled? O New feature Name	Description Enabled? Offew feature
V2 DE PRONE (1) ALUMES	Description Enabled? Of New Feature
V2 DE PHONE (1) ALUMES	Description Enabled? Offew feature

The only thing left to do is go to **[your_API_name] > Integration > Configuration** in your 3scale Admin Portal and map your URIs to your metrics, as shown in the following diagram.

Figure 2.2. Mapping URIs to metrics

Integration

				ed	it integ	<u>iration se</u>
	Production Deployment Option Authentication	n: APIcast Cloud Gateway n: API Key (user_key)				
e your API ga	ateway in the staging enviro	onment. Once your staging environment is green you can deploy the gateway to	the 3s	cale productio	on envi	ironmen
ng: 3sca	le-hosted to config	ure & test your integration documentation		deployed 🤉	deploy	ment hi
API						
	Private Base URL*	https://echo-api.3scale.net:443				
		Private address of your API that will be called by the API gateway.				
API GATEWAY						
	Public Base URL*	https://api-2445581317188.staging.apicast.io:443				
		Public address of your API gateway in the staging environment. You can use this address to call the API for testing purposes.				
♥ MAPPING R	ULES					
Verb	Pattern		+	Metric or N	4etho	d (<mark>Defi</mark> r
GET *	/V2/		1	v2	٣	/ î
GET 🔻	/V1/		1	V1	٣	/ 8
GET *	/{*}/song		1	Song	٣	/ 8
				Author	Ŧ	1 🛱
GET *	/{*}/author		1	Author		

You now have two different versions of your API, each with different features enabled. You also have full control and visibility on their usage.

If you want to communicate to all of your users that they should move to the API v2, you can send an internal note asking them to do so. You can monitor who makes the move and see how the activity on v1 decreases while the activity on v2 increases. By adding the metric in your authorization calls to 3scale, you can see how much overall traffic is hitting v1 vs. v2 endpoints and get an idea of when it is safe to deprecate v1.

Figure 2.3. Versioning



If some users continue to use v1, you can filter out only those users to send another internal note about switching to v2.

3scale provides a three-step method for sending deprecation notices.

- 1. Navigate to **Audience > Applications > Listing** and filter the list by the application plan that you want to send the deprecation note and click **Search**.
- 2. Click the multiselector to select all of the users for that particular version. New options display and allow you to perform bulk operations, such as **Send email**, **Change Application Plan**, and **Change State**.
- 3. Click **Send email** and follow the steps to send a deprecation notice to those customers who are still under the obsolete version.

The following image provides a visual reference.

	RED HAT SSCALE	API MANAGEME	INT	Audience 🗸						¢	0	å
4	Accounts >	Applica	Applications									
&	Applications ~	Bulk opera	tions									
	Listing Alerts	You have selec	nave selected 3applications and you can make following operations with them:									
	Billing >	Send email	email 3 Send email to owners of selected applications									
#	Developer Portal >	Change applic	Transfer these application plan									
M	Messages >	Change state					Accept, suspend or resume sel	ected applications				
		D Name		State	Account	Service	Plan	Paid? ?	Created At	Traffic On		
				All			Basic 1	v v			Se	earch
		My app		pending	Developer	Echo API	Basic	free	October 26, 2018			
		Feasible In	nc.'s App	live	Feasible Inc.	Echo API	Basic	free	October 25, 2018			
		Developer	's App	live	Developer	Echo API	Basic	free	September 11, 2018	September 11, 2	018	
											t all Appli	cations

Figure 2.4. Sending deprecation note

For each authrep call that is made to an endpoint, you authenticate only once but report twice: once for the endpoint and once for the API version. There is no double-billing because the call can be authenticated only one time. For each call you make to any endpoint of a specific API version, you aggregate the hits on a convenient metric named after the version number (v1, v2, and so on), which you can use to compare full version traffic with each other.

2.4. ENDPOINT VERSIONING

You have the endpoint change for each version (api.cons.com/author_v1) with endpoint versioning. The gateway extracts the endpoint and the version from the endpoint itself. This method , as well as the previous method, allows the API provider to map external URLs to internal ones.

The endpoint versioning method can only be performed with the on-premise deployment method as it requires a URL rewrite using the LUA scripts that are provided as part of the on-premise configuration.

EXTERNAL		INTERNAL
api.songs.com/songwriter_v1	could be rewritten to	internal.songs.com/search_by_so ngwriter
api.songs.com/songwriter_v2	could be rewritten to	internal.songs.com/songwriter

Almost everything (mapping, application plans features, and so on.) works exactly the same as in the previous method.

2.5. CUSTOM HEADER VERSIONING

With custom header versioning, you use a header (that is, "x-api-version") instead of the URI to specify the version.

The gateway then extracts the endpoint from the path and the version from the header. Just as before, you can analyze and visualize any combination of path/version that you want. This approach has several inconveniences, regardless of the API management system you use. See API versioning methods, a brief reference for more information. Here are a few pointers on how 3scale works.

- Just like the previous method, custom header versioning can only be applied to on-premise hosted APIs because it requires some parsing/processing of the request headers to correctly route the authrep calls. This type of custom processing can only be done using Lua scripting.
- With this method, the fine-grained feature separation of the previous methods is much harder to achieve.
- One of the biggest advantages of using this methodology, and the main reason some API providers choose it, is because the URL and endpoints of your customers will never change. When a developer wants to switch from one API version to another, they only have to change the header. Everything else works the same.

CHAPTER 3. GETTING STARTED

By the end of this guide, your API traffic will be protected by API keys, tracked, and monitored by 3scale with basic rate limits and controls in place. A fictional "Echo API" serves as an example, which you can substitute with your own API.

Getting your API up and running with 3scale is straightforward and easy to accomplish by following the steps here. You'll get traffic flowing and monitored as well as be able to issue rate-limited developer keys.

Remember that if you have a production API, you should do this in a staging/non-production environment initially to avoid disruption for existing API users.

3.1. PREREQUISITES

This tutorial assumes that you are using a 3scale SaaS account and have access to the Admin Portal.

To run this example you can use a simple test API called "Echo API" hosted at https://echoapi.3scale.net.

You'd need to have a simple application, for example "Curious echo," which will call the API. This may be as simple as a command line call, a mobile app, or any code that can call a remote server.



3.2. CONNECTING ECHO API TO 3SCALE

In order to connect Echo API to 3scale, you need to follow three simple steps:

- 1. Access your 3scale Admin Portal and set up your first plans and metrics and your first API keys.
- 2. Integrate your API with 3scale using the API gateway in the staging environment (for development only).

3. Map your API endpoints to 3scale methods and metrics.

3.2.1. Step 1: Define your API and create your first API key

Your 3scale Admin Portal (http://YOURDOMAIN-admin.3scale.net) provides access to a number of configuration features. For now, focus on getting the minimum setup required to deploy your API:

- 1. Define your API: Add the metrics and methods.
- 2. Configure any limits you may wish to impose on API usage.
- 3. Head to **Audience > Accounts > Listing** to create a new developer account and API credentials.

3.2.1.1. 1. Define your API: Add metrics and methods

Here you can add as many methods and metrics as you need. By default, they'll be available in all plans of your service.

	RED HAT'3SCALE	API MANAGEMENT A	Pl: Echo API 🗸				٥	0		
	Overview	Methods & M	letrics							
	Analytics >	Methods								
	Applications >	Add the methods of this A	PI to get data on their indi	vidual usage. Metho	d calls trigger the built-in Hits-metric. Usa	ge	Over the many months			
ŝ	Subscriptions >	mapped to one or more U API up the count of specifi	one or more URL patterns in the <u>Mapping Rules</u> section of the integration page so specific calls to your count of specific methods.							
Ľ	ActiveDocs	Method	System Name	Unit	Description	Mapped		D New r	nethod	
۶	Integration ~	You have no methods								
L	Configuration Methods & Metrics Settings	Metrics								
		<i>Hits</i> is the built-in metric to track other usage that sho in the <u>Mapping Rules</u> secti	which all methods report uldn't increase the hit cou on of the integration page	;	Create new metric	9				
		Metric	System Name	Unit	Description	Mapped		O New	metric	
		Hits	hits	hit	Number of API hits	•				

For more details about how to add methods and metrics, you can check out our documentation page about /docs/access-control/api-definition-methods-metrics[defining your API on 3scale].

For this simple test, add just two methods under "hits" with system names:

- gethello
- getgoodbye

	RED HAT SSCALE	API MANAGEMENT API: Echo API 🗸 🕹 🚱 🛔	2
N	Overview	New Method	
<u>[111]</u>	Analytics >		
æ		Friendly name	
~~~	, pp. addition	Get Hello	
æ	Subscriptions >	e.g. Create new user	
		System name	
ľ	ActiveDocs	get_hello	
		e.g. users/create or create_user. Spaces are not permitted.	
r	Integration ~	Description	
	Configuration	This is the Hello method	
	Methods & Metrics		
	Settings		
Ī			
		Create Method	

#### 3.2.1.2. 2. Configure any limits you wish to impose on API usage

In addition to creating the metrics/methods, you can also add limits to any of the API usage metrics under each plan. Let's create a new application plan for this example. Navigate to **[your_API_name] > Overview > Create Application Plan**.

	RED HAT SSCALE	API MANAGEMENT API: Echo API 🗸	¢ 0 \$
N	Overview	Foobar App from Developer	
ш	Analytics >	Metro's App from Metro	Configuration Matheds and Sottings
R	A 1:	tester inc's App from tester inc	<u>Computation</u> , <u>Methods</u> and <u>Settings</u>
669	Applications		Integrated through APIcast
æ	Subscriptions >	Latest alerts	Authenticated by API key
ß	ActiveDocs	There are no alerts	ID for API calls is <b>2</b> and system name is <b>api</b>
	Integration >		Users <b>can</b> manage application keys
	-		Users <b>can</b> manage applications
		Published <u>Application Plans</u> Create Application Plan	Users can <b>request plan change</b>
		Basic - 2 applications	Users cannot select a plan when creating an application
		Unlimited - 4 applications	
		Plan A - 0 applications	
		You have <u>4 application plans</u> (3 published) with a total of <u>6 live applications</u> .	

In the form that opens, specify the desired name – for example "HelloEchoTest" – and the system name. Then click on **Create Application Plan** button.

	RED HAT SSCALE	API MANAGEMENT API: Echo API 🗸	٥	0	•
N	Overview	Create Application Plan			
<u>[.11]</u>	Analytics >				
	A	Name			
<b>6</b> 0	Applications	Echo Test			
	Listing				
	Application Plans	System name			
		echo_test			
ŝ	Subscriptions >	Only ASCII letters, numbers, dashes and underscores are allowed.			
115	ActiveDocs	Applications require approval?			
8	ActiveDocs	set whether or not applications can be created on demand or if approval is required from you before they are activated.			
₽ ^C	Integration >				
					_
		Cr	eate Applic	ation Pla	in

After the previous step, you should see the list of application plans. Click on the "HelloEchoTest" plan to create limits for the metrics and methods. You should be able to see all the metrics and methods that you defined in the previous step. Click on the "Limits" icon under any metric or method. Adding a limit to the Hits metric applies the rule across all the methods under Hits; adding limits to a method only applies to that method. You can create different plans with different limits later on.

	RED HAT SSCALE	API MANAGEMENT	API: Echo API 🗸				¢ Ø	4
N	Overview	Metrics, Meth	ods, Limits & Pricing	Rules Add limits				
<u>l</u>	Analytics >	Metric or Method (D	efine)	4	Enabled 🕐	Visible 🥐	Text or	ıly (
&	Applications 🗸 🗸	Hits	Pricing (0)	ll Limits (0)	0	ø		0
	Listing Application Plans	Usage Limits 💿				O New usage	limit © Close	
æ	Subscriptions >	Period	Value					
ľ	ActiveDocs	foo	Pricing (0)	l Limits (0)	Ø	0		Ø
æ								

Limits restrict the number of API calls an application on this plan can do per minute/hour/day/etc.

#### 3.2.1.3. 3. Create a new developer account and API credentials

Go to Audience > Accounts > Listing and click on the create button.

	RED HAT SSCALE	API MA		Audience 🗸					¢	0	*
=	Accounts	Ac	counts				Create nev	v develope	r account		
	Listing Account Plans		Group/Org.	Admin	Signup Date	Plan	Apps	State		O Cre	ate
	Subscriptions	Sear	ch for Group/Org.,	User login, First name,	L		~		v	Sear	ch
	SETTINGS Usage Rules Fields Definitions		Developer	John Doe	11 Sep, 2018	Default (custom)	3	Pending		🗸 Аррі	ove
æ	Applications >								🖹 Export	all Acco	unts

Fill in some information for the new developer who will access the API.

<b>.</b>	RED HAT SSCALE	API MANAGEMENT Audience 🗸	٥	0	å
	Accounts ~	Create new Account			
	Listing	USER INFORMATION			
	Account Plans				
	Subscriptions	Username			
		curious			
	Settings				
	Usage Rules	Email			
	Fields Definitions	curious@3scale.net			
		Deceivered			
66	Applications >	r 455W010			
	Billing >				
å	Developer Portal >				
		Organization/Group Name			
	Messages >	Curious Echo			
				Crea	te

Once you click create, select the new account from the list to go to the home page.

The account area lists all the companies and developers signed up to use the API. New companies can be added from the dashboard, from the API, or by self-service signup on the developer portal.

When you create a new developer account, you will also be creating a new application for that account.

<b>\$</b>	RED HAT SSCALE AF	PI MANAGEMENT Audiend	ie 🗸				٠	0	*
-	Accounts 🗸 🗸	Account 'Metro' : <u>1 Application</u>   <u>1</u>	User   0 Invitations   0 Group I	Memberships   0 Invoices   1	1 Service Subscription				
	Listing Account Plans	Account: Metro	🖋 Edit						
	Settings	Organization/Group Name	Metro	⊠ Send message	Account Plan: Defa	ult an			
	Usage Rules Fields Definitions	Administrator	metro (metro@webtypes.	com)					
		Signed up on	October 25, 2018 19:46		Application	Application			
æ	Applications >	Status	Created		Application				
	Billing >				Name	Metro's App			
		Billing Status			Service	Echo API			
ā.	Developer Portal >			Disable	Plan	Unlimited			
	Messages >	Credit Card details are not	stored		State	Live			
									lits
		<ul> <li>Monthly charging is enabled.</li> </ul>		Disable				Hits	
								0 hits	

Applications will each have a unique key to access the API. To find that key, click on the application name and check the API credentials section.

	RED HAT SSCALE	API MANAGEMENT API: E	cho API 🗸			٥	0	*
N	Overview	Application 'My app'   <u>Analyti</u>	<u>cs</u>					
	Analytics >	My app 🖌 Edit						
&	Applications ~	Account	Developer		Application Plan: Basic			
	Listing Application Plans	Description	my app		Convert to a Custom Plan			
ŝ	Subscriptions >	Service	Echo API		Features			
В	ActiveDocs	State	Pending	Accept or Reject	Unlimited Greetings		6	)
					24/7 support		0	)
J.C.	Integration >	API Credentials			Unlimited calls		6	)
		Application ID	92fbd235					
		Application key	XXXXXXXXX		Change Plan			٦
		Add Custom key		Add Random key	Unlimited		•	]
<ul> <li>Analytics &gt;</li> <li>Applications </li> <li>Listing </li> <li>Application Plans</li> <li>Subscriptions &gt;</li> <li>ActiveDocs</li> <li>Integration &gt;</li> </ul>								
		Usage in last 30 Day	'S			Chang	ge Plan	
				Hits				'
				0 hits				

These are the keys the "Curious Echo" app will use to call the Echo API. Lastly, on the right-hand side of the application details page (see screenshot above), select the **change plan** dropdown and select the plan you created and named earlier ("Echo Test" in the example) and confirm the change. This applies the new plan to this application.

You have now configured the management system for your first application.

#### 3.2.2. Step 2: Integrate via API gateway in the staging environment

#### Once you sign into your 3scale account, go to [your_API_name] > Integration > Configuration.

۲	RED HAT SSCALE A	API MANA	AGEMENT API: E	Echo API 🗸				٥	0 🌡
N	Overview								
600	Analytics >	<b>.</b>	API						?
æ	Applications >		Private Base URL https://echo-api.3s	cale.net:443					
æ	Subscriptions >		Private address of your	API that will be called by the API gateway.					
B	ActiveDocs	<del></del>	API GATEWAY						?
		1	Staging Public Base	URL					
æ	Integration ~		https://api-3scale-a	picast-staging.poc-sd.staging.3sca.n	et:443				
	Configuration		Public address of your	API gateway in the staging environment.					
	Methods & Metrics		Production Public Ba	ase URL					
	Settings		https://api-3scale-a	apicast-production.poc-sd.staging.3se	ca.net:443				
			Public address of your	API gateway in the production environmer	t.				
			▼ MAPPING RULES						(?)
			Verb	Pattern		+	Metric or Method (Define)		
			GET	/hello		1	gethello	e 🖉 🕅	
			GET	/goodbye		1	getgoodbye	e 🖉	
								O Add Mappi	ing Rule
			AUTHENTICATION  POLICIES  CLIENT  API test GET request /hello Optional GET request tcredentials of the first li cur1 "https://ap user_key=ae6addc	SETTINGS a API gateway endpoint. We will use this c ve application. You can try it yourself by co i-3scale-apicast-staging.poc-sd f717637d23cd3555429cafbbd"	all to validate your API gateway setu pying the following command into yo I.staging.3sca.net:443/hell	p using our shell:			
		Connecti	on between client, gate	way & API is working correctly as <u>reflec</u>	ted in the analytics section.		Update & te ← Back to I	st in Staging Envi	ironment

Set the address of your API backend in the staging environment. This is the address of the server where your API is running. Now you can input a valid resource path for your API, which will be used to validate the API gateway in the staging environment. After that, hit **update & test staging configuration**. If everything goes well, you will see a green vertical line in the staging area and the full test call made to verify connection. It will look like this:

#### curl "https://api-xxx.staging.apicast.io/hello?user_key=USER_KEY"

USER_KEY is the key of one of the sample applications that were created when you first logged into your 3scale account. (If you missed that step, just create a developer account and an application within that account.)

Try it without app credentials, then with incorrect credentials. Then once authenticated, try to send API calls within and over any rate limits that you've defined.

#### 3.2.3. Step 3: Capture traffic for specific methods

By default you start with a very simple mapping rule.

✓ MAPPING RUL	23		(?
Verb	Pattern	+	Metric or Method (Define)
GET 🛟	1	1	hits 🔶 🖋 🛍
			O Add Mapping Rule

This rule says that any **GET** request that starts with "/" will increment the metric **hits** by 1. You will most likely remove this rule since it's too generic. You can learn more about how to manage Mapping rules on this documentation page.

The mapping rules define which metrics (and methods) you want to report depending on the requests to your API. For instance, below you can see the rules for the Echo API.

▼ MAPPING RUL			(?	
Verb	Pattern	+	Metric or Method (Define)	
GET 🛊	/hello	1	gethello 🗘 🖉 🖻	
GET 🜲	/goodbye	1	getgoodby 🕈 🖋 🛍	
			O Add Mapping Rule	

You're matching the API endpoints with the methods, which you defined earlier in application plans.

- /hello
- /goodbye

Now you can repeat traffic testing for the mapped methods and check their traffic in the **Analytics** section of your Admin Portal.

#### 3.3. CONGRATULATIONS!

Your API is now connected to 3scale. You can now apply API management features to manage and track your API traffic!

#### 3.4. WHAT'S NEXT?

Now that you've tested your integration with 3scale in a staging environment, you can select a production deployment option. Find more information about the APIcast gateway in the following documentation:

- APIcast overview
- Advanced APIcast configuration

### **3.5. CLOSING THE LOOP**

In the example, new API credentials were generated from the Admin Portal to keep things simple. Once you've set up a developer portal, new developers can use the it to automatically create accounts and receive their credentials.

### 3.6. HELP

If you have trouble setting up your API, head over to the troubleshooting tutorial.

# **CHAPTER 4. ZERO TO HERO DEVELOPER PORTAL**

Most best practice reviews of API deployments agree that a well structured developer portal and great documentation are key elements to assure adoption. Your developer portal is not only a source of documentation. It is also your main hub to manage interactions with developers and for developers to access to their API keys in a secure way.

## 4.1. GOAL

By the end of this tutorial, you'll have a developer portal up and running to promote your API, allow developers sign up for accounts, and access their API keys.

### 4.2. PREREQUISITES

There are a few other areas for you to set up that are interdependent with the portal. You can take care of them before or after:

- Set up your application plans so you have access rights configured for the API keys that you'll issue.
- Configure your developer signup flows –, which can be anywhere on the spectrum from self-service, to approval required, to invite only (with signups disabled).
- Setu p a custom domain for your portal (optional) – This can have a lead time of 1-2 weeks and is normally done at the same time you create a custom outbound email address.

### 4.3. STEP 1: PLAN YOUR PORTAL CONCEPT

Before you even open the 3scale CMS, it's a good idea to plan out the concept for your portal. The better organized you are, the more efficiently you'll be able to complete these steps.

The most important elements to plan out are your:

- Site map a skeleton of what the portal structure will be
- Top menu bar the navigation that will be repeated on every page
- Side menu bars for access to individual pages within each section
- Page layout guidelines to give your portal a consistent look and feel

### 4.4. STEP 2: SET UP YOUR CMS EDITING ENVIRONMENT

The best setup of your editing environment has proven to be:

- A tab showing *yourcompany-admin.3scale.net/p/admin/cms* logged in with your admin credentials, which gives access to CMS for the portal
- Second tab pointing to *yourcompany.3scale.net*, the public view of your portal (if you access this though the Site link, you don't have to worry about the access code)

In the Admin Panel, you can see all your developer portal's elements in the left sidebar:



### 4.5. STEP 3: DEFINE PAGE LAYOUT TEMPLATES

The general idea is to define a separate layout for each of the different page styles in your portal. There is one standard layout called "main layout" when you start. It's best not to make any changes to this until you are quite expert at using the CMS because this is used by all the system-generated pages. Usually you'll want to have a unique style for the home page of your portal.

1. The main layout template will be a starting point for your customizations. Create a new layout, and copy/paste the content of main layout into it.

( <b>1</b> )	RED HAT SSCALE	API MANAGEMENT Audience	/	٠	0	۵
4	Accounts >	😔 All 🔒 My 🕸 3scale	New layout	New La	yout	•
đ	Applications >	All 🐚 🗞 🔥 🗁 🖪				_
E	Billing >	Root	Title Home Layout			
ė	L Developer Portal 🗸	Beers and lemons Documentation	System name			
	Content	ြို Homepage	home_layout			
	Drafts	B table				
	Redirects		Process Liquid tags and drops?			
	Groups	Show				

2. Remove the sidebar menu by deleting this line from your "home layout":



### 4.6. STEP 4: CREATE YOUR PAGE HIERARCHY

1. Begin at the root level in the site map, and add a new section for each of your top menu items (add sections by expanding the "new" button on the righthand side). Assign a title, parent section, and the path.

All     My     3scale       All     My     3scale       All     My     3scale       ilter     Iter.     Iter.       to Content Found ayouts     Iter.     Iter.       b Error layout     Iter.     Iter.       Waln layout     Iter.     Iter.       to Partials     Iter.     Iter.	New section Title Parent Partial path	Documentation Public . Root /docs	New Section
ortlets Io Portlets Found	Contents	Drag & drop pages, sections and files here	Create Section

2. Similar to adding a section, add a page. Choose the desired section in order to structure your URL paths consistently. Next, select the layout that the page will be using. After completing the page content, hit "create page". If you are writing a lot of content, you may prefer to use a markup language like Textile or Markdown, which you can select in the advanced page settings.

	RED HAT SSCALE A	API MANAGEMENT Audience	× • • • *
8	Accounts >	<table-cell> All 🌲 My 🌣 3scale</table-cell>	New page
ŝ	Applications >	All 🐚 🗞 🏟	
	Billing	Root	Title Request a demo
		Beers and lemons	
4	Developer Portal 🗸	Documentation	Section
	Content	🗅 Homepage	✓ . Root
	Drafts	🗅 Lalala	- Services
	Groups	Show	
12.5 *	Feature Visibility	Account	I mages I Password
	ActiveDocs	& Show	- Login   Sianup
	Visit Portal	& Edit	Messages
		Account Plans	Inbox
	Legal Terms Signup	Index	- Stats
	Service Subscription	Deplication Alerts	
	New Application	Index	Account Plans   Account
	Settings	Applications	Users   User
	Domains & Access	& Show	Search   Invitations
	SSO Integrations	Choose service	- Payment Gateway
	Forum Settings	🌣 Edit	- Invite signups
	Docs	Index	- How it works
	Liquid Reference	New	Handler
		🗁 css	Po voji jiso anv markup langijano?
	Messages >	🗋 bootstrap.css	nn Ann nac anà unaimh naititeaga.
		🗅 default.css	Create Page
		🕒 alane widget overrides ess	

3. View the draft preview and refine the page content until you are happy and ready to publish it.

🔾 All 🔒 My 🔅 3scale				New Page
	Page Interactive	Docs		
ter	Title*	Interactive Docs		
- Poot				
Root Preventation	Section*	I— Documentation 📀		
index html	Path*			
- Index.ntm	ratin_	/interactive-docs		
Show		Does not depend on a selected section.		
a show	Lavout	Main lavout		
Empty				
P Account Plans	Advanced options			
A Index				
Application Alexts	Draft Publishe	d Versions 🛃 Popup		
a Index	11			
Chow				
Choose capiles				
Section				
A Index				
A New				
default css				
	Demo			
	Fage			
Interactive Doce				
A BErrors				
Eorbidden	Delete <b>D</b> Revert		Preview 👻 Publis	sh 🔻 Save
i i orbiduen			Hide	
Internal server error			-	

- 4. Repeat for all pages in the section.
- 5. Then repeat for all sections in the site.

### 4.7. STEP 5: EDIT YOUR PAGE HEADERS

All repetitive page elements such as headers and footers are defined in the portal CMS section called "partials". If you have only one layout, or very few of them, you can omit this step and include the header and footer inside the layouts code. However, remember to customize these elements in the layout. For example, the default "menu" partial should be edited to reflect your site map.

	RED HAT SSCALE	API MANAGEMENT Audience 🗸		¢ 0 \$
4	Accounts >	Image: All Image	Built-in partial 'login/sso'	New Partial 🔫
ŝ	Applications >	login	System name	
	Billing >	E Root	login/sso	
#	Developer Portal	& New		
	Content		Draft Published	Versions
	Drafts	Layouts		
	Redirects	No Layouts Found	1 {% unless user.oauth2? %}	
	Groups		<pre>2 <ul class="list-auth-provider row list-unstyled"></ul></pre>	
	Groups	Destiele	<pre>3 {% for auth_provider in site.authentication_providers %}</pre>	
	Feature Visibility	Partials	4 <li class="col-md-offset-4 col-md-6"></li>	
	ActiveDocs	🎰 login/sso	5 <a class="btn btn-default auth-provider auth-provider-{{auth_provider.</p>	.kind}}" href="
	C Visit Portal	Portlets	<pre>{(autn_provider.autnorize_url))** 6</pre>	[{ auth_provider. <i>name</i>
	LEGAL TERMS	No Portlets Found		
	Signup		9 {% endfor %}	
	Service Subscription		10	
	New Application		11 (% endunless %) 12	
	Settings			
	Domains & Access		つ Revert	Publish Save 🗸

### 4.8. STEP 6: POPULATE IMAGES AND OTHER ASSETS INTO THE CMS

For images or other files, first load the files into the content library, then insert a link into your text content.

1. Select New File in order to choose your file, and identify where you will save it on your site.

- 2. Copy the URL to the image
- 3. Now you can add your HTML or <a> tag, and paste in the URL for your image.

	RED HAT SSCALE	API MANAGEMENT		¢ 0 å
	Accounts >	😪 All 🛔 My 🔅 3scale	Upload File	New File 👻
ŝ	Applications >	All 🖿 🗞 🔥 🗁 🖋 Filter		
	Billing >	Root	Section . Root	
	Developing Destat	Beers and lemons		
Ť.	Developer Portal	Documentation	Path	
	Content	🗅 Homepage	/	
	Drafts Redirects	🗅 Lalala	Downloadable     Checked sets the content-disposition to 'attachment '	
	Groups	Show	checked sets the content-disposition to attachment.	
	Feature Visibility	🗁 Account	Attachment	
	ActiveDocs	Show		
	Visit Portal	🌣 Edit	Tag list	
	Locu Trave	Discount Plans		
	Signup	🌣 Index		
	Service Subscription	Application Alerts		
	New Application	🌣 Index		Create File

#### 4.9. STEP 7: FULLY CUSTOMIZE YOUR BRANDING WITH CSS

There is a default stylesheet called default.css, which is quite large and complex. Rather than extend this, it's better to create your own stylesheet with your own customizations to overwrite the defaults.

You can create a new stylesheet the same way you create a page – just remember to choose an appropriate MIME content type in the advanced page settings. Then add the link to your custom CSS in your layout templates after the link to default.css, for example:

```
<link rel="stylesheet" href="/stylesheets/custom.css" />
```

#### 4.10. STEP 8: GO LIVE

The final task is to view the entire portal site and check all the workflows. You can publish each page or all of the pages in the Changes section. Once you're happy with everything, make a final check that all pages have been published.

Now you're ready to remove any access code for the portal:

۲	RED HAT SSCALE	API MANAGEMENT Audience 🗸
ŝ	Applications >	Domains & Access
	Billing >	
		ACCESS CONTROL
a a a a a a a a a a a a a a a a a a a	Developer Portal	Developer Portal Access Code
	Content	<no access="" code=""></no>
	Drafts	The access code hides your site from the world, but allows you to share access to a select few users during setup. Add
	Redirects	text to the field to enable the screen. Delete the text to open the site to the world.
	Groups	
	Feature Visibility	DOMAINS
	ActiveDocs	
		Developer Portal Site
	Visit Portal	XXXXXXXX
		You can change the domain of your Developer Portal to your own domain, for instance
	LEGAL TERMS	https://developer.example.com. To do so, <u>add a route on opensmit</u> and then indicate the new domain here.
	Signup	Outgoing Email
	New Application	XXXXXXXXX
		You can change the domain of the email address received by your users, for instance api@example.com
	Settings	
	Domains & Access	
	Spam Protection	
	SSO Integrations	
	Forum Settings	

Congratulations! Your developer portal is now live and ready to help build your developer community.