

Top 19 SOAP Interview Questions

by Alex Jones · Jul. 23, 18 · Integration Zone · Opinion

CRM integration has become the cornerstone to meeting initiatives across organizations. Explore the top 6 value-driven Salesforce CRM integrations ebook.

SOAP (Simple Object Access Protocol) is a technological specification designed to support Web services interface with other systems; without it, the Web services are unable to cross operate systems and platforms and often lack interoperability. Besides REST, SOAP has become increasingly popular for developers working on system integration based projects. For such reasons, it would be very useful for both freshers and senior professionals in the field to expand their general knowledge in SOAP API.

To help you learn more about SOAP under time constraints, either for technical interviews or for a new upcoming role, we have collected a comprehensive list related to common SOAP testing interview questions and answers. We do recommend you to spend some time reading through the list to ace the job interviews or well prepare for your new projects.

1. What are SOAP Web services?

SOAP is defined as an XML-based protocol. It is known for designing and developing web services as well as enabling communication between applications developed on different platforms using various programming languages over the Internet. It is both platform and language independent.

2. How does SOAP work?

SOAP is used to provide a user interface that can be accessed by the client object, and the request that it sends goes to the server, which can be accessed using the server object. The user interface creates some files or methods consisting of server object and the name of the interface to the server object. It also contains other information such as the name of the interface and methods. It uses HTTP to send the XML to the server using the POST method, which analyzes the method and sends the result to the client. The server creates more XML consisting of responses to the request of user interface using HTTP. The client can use any approach to send the XML, like the SMTP server or POP3 protocol to pass the messages or reply to queries.

3. When to use SOAP API?



Scaling Process Automation Enterprise-Wide Through Citizen Development

Use different calls, you can also use the SOAP API to manage password, etc. With the partnership holder between IT and the business by using any language that supports web services

- Obtain ongoing support from senior leadership

4. How do users utilize the facilities provided by SOAP?

- PutAddress(): It is used to enter an address in the webpage and has an address instance on the SOAP call.
- PutListing(): It is used to allow the insertion of a complete XML document into the web page. It receives the XML file as an argument and transports the XML file to XML parser liaison, which reads it and inserts it into the SOAP call as a parameter.
- GetAddress(): It is used to get a query name and gets the result that best matches a query. The name is sent to the SOAP call in the form of text character string.
- GetAllListing(): It is used to return the full list in an XML format.

5. What is the major obstacle users faced when using SOAP?

When using SOAP, users often see the firewall security mechanism as the biggest obstacle. This blocks all the ports leaving few like HTTP port 80 and the HTTP port used by SOAP that bypasses the firewall. The technical complaint against SOAP is that it mixes the specification for message transport with the specification for message structure.

6. What are the various approaches available for developing SOAP-based web services?

There are two different methods available for developing SOAP-based web services, which are explained below:

- Contract-first approach: the contract is first defined by XML and WSDL, and then Java classes are derived from the contract.
- Contract-last approach: Java classes are first defined, and then the contract is generated, which is normally the WSDL file from the Java class.

“Contract-first” method is the most popular approach.

7. What are the elements of a SOAP message structure?

It is a common XML document that contains the elements as a SOAP message

- Envelope: It is an obligatory root element that translates the XML document and defines the beginning and end of the message.
- Header: It is an optional item which contains information about the message being sent.
- Body: It contains the XML data comprising the message being sent.
- Fault: It provides the information on errors that occurred while during message processing.

8. What are the max rules for a SOAP message?



Scaling Process Automation Enterprise-Wide Through Citizen Development

- XML must be used
- Focus on the partnership model between IT and the business
- Select an intuitive process automation platform that people like to use
 - Obtain ongoing support from senior leadership
- Encoding namespace must be used

[Download Free PDF](#)

- Must not consist of a DTD reference
- Must not have XML processing instruction

9. What is the transport method in SOAP?

Application layer and transport layers of a network are used by SOAP; HTTP and SMTP are the valid protocol of the application layer used as the transport for SOAP. HTTP is more preferable, since it works well with the current Internet infrastructure, in particular with firewalls.

The SOAP requests can be sent using an HTTP GET method while the specification only contains details about HTTP POST.

10. What are some important characteristics of a SOAP envelope element?

- SOAP message has a root Envelope element
- Envelope is an obligatory part of the SOAP message.
- If an envelope includes a header element, it should not contain more than one.
- Envelop version will change if the SOAP version changes.
- The SOAP envelope is indicated by the prefix ENV and the envelope element.
- The optional SOAP encoding is also specified using a namespace and the optional encoding style element.

11. What are the major functionalities provided by the SOAP protocol class?

The SOAP protocol is used to provide simple access methods for all the applications available on the Internet, providing the following functionalities:

- Call: A class which provides the main functionality for a remote method for which a call is needed. It is used to create the call() and to specify the encoding style of the registry that will be assigned when if necessary. This call() function is used by the RPC call, which represents the options of the call object.
- Deployment Descriptor: A class used to provide the information about the SOAP services. It enables easy deployment without the need for other approaches.
- DOM2 Writer: A class that serializes and uses DOM node as XML string to provide more functionalities.
- RPC Message: A class used as the base class that calls and replies to the request submitted to the server.
- Service Manager: A class that provides, lists and then outputs all SOAP services.

12. What are the web relation functionalities provided by SOAP protocol?



Scaling Process Automation Enterprise-Wide Through Citizen Development

Provides the functionality of the POST method to safely meet the requirements.

An argument for the partnership between the client and the server. Download Free PDF

- Select an intuitive process automation platform that people like to use
- Response: it is an object that represents an RPC reply from both client and server, but the result will not be displayed until after the method call.
- Obtain ongoing support from senior leadership

- **TCPTunnel**: It is an object that provides the ability to listen on a specific port and to forward all the host and port names.
 - **TypeConverter**: It helps to convert an object of one type into another type and this is called using the class in the form object.

13. How does the message security model allow the creation of SOAP more secure to use?

The security model includes the given security tokens. These tokens comprise digital signatures for protection and authentication of SOAP messages. Security tokens can be used to provide the bond between authentication secrets or keys and security identities. Security token uses the authentication protocols and an X.509 certificate to define the relationship between the public key and identity key. The signatures are used to verify the messages and their origin, generate knowledge to confirm the security tokens to bind the identity of a person to the identity of the originator. Security model prevents different attacks and can be used to protect the SOAP architecture.

14. What is the difference between the top-down and bottom-up approaches in SOAP Web services?

- Top-down SOAP Web services include creating WSDL document to create a contract between the web service and the client, with a required code as an option. This is also known as the Contract-first approach. The top-down approach is difficult to implement because classes must be written to confirm the contract defined in WSDL. One of the benefits of this method is that both the client and server code can be written in parallel.
 - Bottom-up SOAP web services require the code to be written first and then WSDL is generated. It is also known as the Contract-last approach. Since WSDL is created based on the code, the bottom-up approach is easy to implement and client codes must wait for WSDL from the server side to start working.

15. What are the advantages of SOAP?

- SOAP is both platform and language independent.
 - SOAP separates the encoding and communications protocol from the runtime environment.
 - Web service can retrieve or receive a SOAP user data from a remote service, and the source's platform information is completely independent of each other.
 - Everything can generate XML, from Perl scripts through C++ code to J2EE app servers.
 - It uses XML to send and receive messages.
 - It uses standard internet HTTP protocol.
 - SOAP runs over HTTP; it eliminates firewall problems. When protocol HTTP is used as the protocol call will be made as a standard HTTP request and the RPC response will be a standard HTTP reply.
 - SOAP is both platform and language independent. It can be used across different platforms and programming languages. It is a standard for distributed computing.
 - SOAP is a protocol to move information in a distributed and decentralized environment.

- SOAP is independent of the transport protocol and can be used to coordinate different protocols.

16. What are the disadvantages of SOAP?

SOAP is typically significantly slower than other types of middleware standards, including CORBA, because SOAP uses a detailed XML format. A complete understanding of the performance limitations before building applications around SOAP is hence required.

SOAP is usually limited to pooling and not to event notifications when HTTP is used for the transport. In addition, only one client can use the services of one server in typical situations.

If HTTP is used as the transport protocol, firewall latency usually occurs since the firewall analyzes the HTTP transport. This is because HTTP is also leveraged for Web browsing, and so many firewalls do not understand the difference between using HTTP within a web browser and using HTTP within SOAP.

SOAP has different support levels, depending on the supported programming language. For instance, SOAP is supported in Python and PHP is not as powerful as it is in Java and .NET.

17. What are the differences between SOAP and REST?

SOAP	REST
<p>SOAP is a protocol. SOAP was designed with a specification.</p> <p>It includes a WSDL file which has the required information on what the web service does in addition to the location of the web service.</p>	<p>REST is an Architectural style in which a web service can only be treated as a RESTful service if it follows the constraints of being:</p> <ul style="list-style-type: none"> • Client Server • Stateless • Cacheable • Layered System • Uniform Interface
<p>SOAP cannot make use of REST since SOAP is a protocol and REST is an architectural pattern.</p>	<p>REST can make use of SOAP as the underlying protocol for web services, because in the end it is just an architectural pattern.</p>
 <p>Scaling Process Automation Enterprise-Wide Through Citizen Development</p> <p>Workflow Hero: Scaling Process Automation Enterprise-Wide Through Citizen Development</p>	<p>Scaling Process Automation Enterprise-Wide Through Citizen Development</p> <p>REST permits many different download formats PDF</p> <ul style="list-style-type: none"> • Focus on the partnership model between IT and the business • Select an intuitive process automation platform that people like to use • Obtain ongoing support from senior leadership

SOAP based reads cannot be cached.	REST reads can be cached.
SOAP is like custom desktop application, closely connected to the server.	A REST client is just like a browser and uses standard methods. An application has to fit inside it.
SOAP is slower than REST.	REST is faster than SOAP.
It runs on HTTP but envelopes the message.	It uses the HTTP headers to hold meta information.

18. SOAP or Rest APIs, which method to use?

SOAP is the heavyweight choice for Web service access. It provides the following advantages when compared to REST:

- SOAP is not very easy to implement and requires more bandwidth and resources.
- SOAP message request is processed slower as compared to REST and it does not use web caching mechanism.
- WS-Security: While SOAP supports SSL (just like REST) it also supports WS-Security which adds some enterprise security features.
- WS-AtomicTransaction: Need ACID Transactions over a service, you're going to need SOAP.
- WS-ReliableMessaging: If your application needs Asynchronous processing and a guaranteed level of reliability and security. Rest doesn't have a standard messaging system and expects clients to deal with communication failures by retrying.
- If the security is a major concern and the resources are not limited then we should use SOAP web services. Like if we are creating a web service for payment gateways, financial and telecommunication related work, then we should go with SOAP as here high security is needed.

REST is for the most part and is more flexible. It has the following advantages when compared to SOA:

Scaling Process Automation Enterprise-Wide Through Citizen Development



- Focus on the partnership model between IT and the business
- standard HTTP, it is much simpler.
- Select an intuitive process automation platform that people like to use
- REST is easier to implement, requires less bandwidth and resources.

[Download Free PDF](#)

- REST permits many different data formats whereas SOAP only permits XML.
- REST allows better support for browser clients due to its support for JSON.
- REST has better performance and scalability. REST reads can be cached, SOAP-based reads cannot be cached.
- If security is not a major concern and we have limited resources. Or we want to create an API that will be easily used by other developers publicly then we should go with REST.
- If we need Stateless CRUD operations then go with REST.
- REST is commonly used in social media, web chat, mobile services and Public APIs like Google Maps.
- RESTful service returns various MediaTypes for the same resource, depending on the request header parameter "Accept" as application/xml or application/json for POST and /user/1234.json or GET /user/1234.xml for GET.
- REST services are meant to be called by the client-side application and not the end user directly.
- ST in REST comes from State Transfer. You transfer the state around instead of having the server store it, this makes REST services scalable.

19. What are the factors that help to decide which style of Web services — SOAP or REST — to use?

Generally, REST is preferred due to its simplicity, performance, scalability, and support for multiple data formats.

However, SOAP is favorable to use where service requires an advanced level of security and transactional reliability.

But you can read the following facts before opting for any of the styles.

- Does the service expose data or business logic? REST is commonly used for exposing data while SOAP for logic.
- Requirement from clients or providers for a formal contract. SOAP can provide contract via WSDL.
- Support multiple data formats.
- Support for AJAX calls. REST can apply the XMLHttpRequest.
- Synchronous and asynchronous calls. SOAP enables both synchronous/ asynchronous operations whereas REST has built-in support for synchronous.
- Stateless or Stateful calls. REST is suited for stateless operations.
- Security. SOAP provides a high level of security.
- Transaction support. SOAP is good at transaction management.
- Limited bandwidth. SOAP has a lot of overhead when sending/receiving packets since it's XML based, ~~requires a SOAP~~ mostly built using JSON.



Scaling Process Automation Enterprise-Wide Through Citizen Development

T-based application development, implementation, and maintenance. [Download Free PDF](#)

- Select an intuitive process automation platform that people like to use
- Obtain ongoing support from senior leadership

Though SOAP API questions may vary widely depending on the positions you apply for, we hope our list would benefit you all by giving you general understandings of API testing and helping you to plan ahead for the technical interviews or get ready for your upcoming role or projects related to SOAP testing.

Wish you all luck and confidence in your testing career! Any suggestions would be more than welcomed to make our list better and more adequate to all testers.

Sync, automate, and notify lead to customer changes across marketing, CRM, and messaging apps in real-time with the Cloud Elements eventing framework. Learn more.

Like This Article? Read More From DZone



Xamarin.Forms — Computer Vision API Using Cognitive Service



Build a Scheduler Slackbot in 30 Minutes!



The Importance of Naturalness in NLP



**Free DZone Refcard
Foundations of RESTful Architecture**

Topics: [SOAP API](#) , [SOAP WEB SERVICES](#) , [SOAP TUTORIAL](#) , [ARTIFICIAL INTELLIGENCE](#) , [MACHINE LEARNING](#) , [INTERVIEW QUESTIONS](#)

Opinions expressed by DZone contributors are their own.

Integration Partner Resources

[Building a Modern Enterprise Data Architecture](#)

[MapLogic](#)

|

[The Buyer's Guide to Application and Data Integration](#)

[MapLogic](#)

|

[The Definitive Guide to API Integrations: Explore API Integrations Below the Surface \[eBook\]](#)

[Cloud Elements](#)

|

[The State of API Integration 2018 \[Report\]](#)

[Cloud Elements](#)



Scaling Process Automation Enterprise-Wide Through Citizen Development

Focus on the partnership model between IT and the business

[Download Free PDF](#)

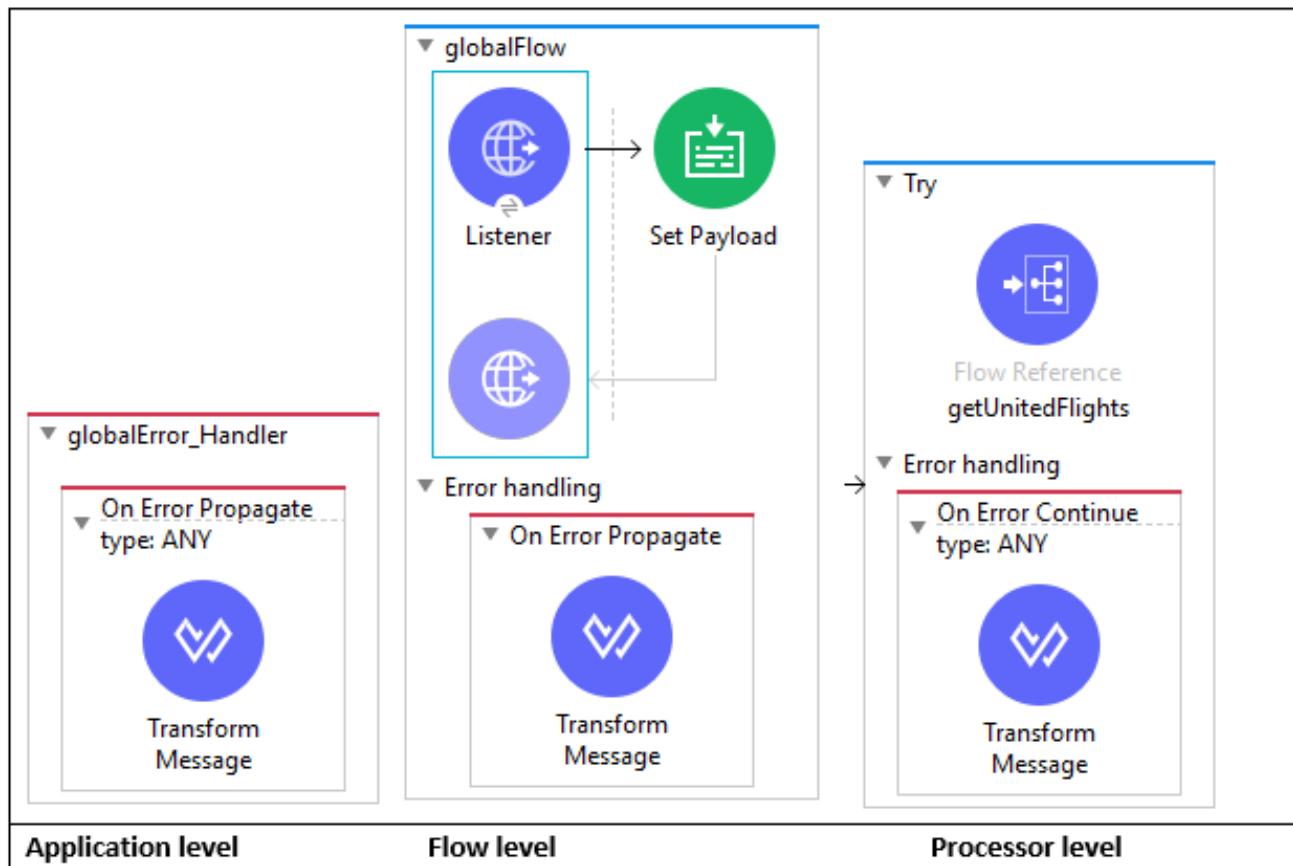
**E
anding in Mule**
by Manish Chanchlani · Sep 18, 18 · [Integration Zone](#) · [Tutorial](#)

Select an intuitive process automation platform that people like to use
Obtain ongoing support from senior leadership

SnapLogic is the leading self-service enterprise-grade integration platform. Download the 2018 GartnerMagic Quadrant for Enterprise iPaaS or play around on the platform, risk free, for 30 days.

The new Error Handling is one of the major changes introduced in Mule 4. It's better and more efficient. Although it may seem complex to some, it's made complex for good.

To begin with, the message exceptions can now be handled at 3 different levels i.e. application, flow, and processor levels, as shown below.



The handlers written at the application level are global handlers, which can be used to handle the errors thrown by any flow, which doesn't have its own error handling.

If there is no error handling written at any of the levels, the Mule Default Error Handler is used, which stops the execution of the flow and logs the exception.

The Mule Default Error Handler is not configurable but, can be replaced by our own Global error handler by creating a Configuration global element.

All About Objects Scaling Process Automation Enterprise-Wide Through Citizen Development

Every organization, creates an Error object named as follows — Namespace (e.g. HTTP) and Identifier (e.g. BAD_REQUEST).

Focus on the partnership model between IT and the business

Download Free PDF

- Select an intuitive process automation platform that people like to use
- Obtain ongoing support from senior leadership

Eg. HTTP: BAD_REQUEST, WSC: CONNECTIVITY, VALIDATION: INVALID_BOOLEAN

Each error object has 2 properties:

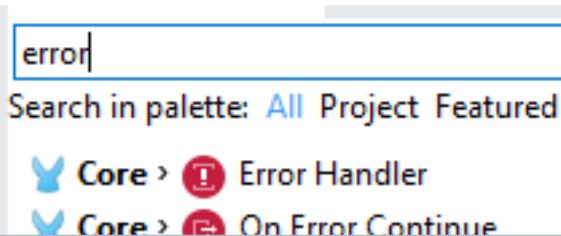
- `error.errorType` — an object holding the Namespace and identifier
- `error.description` — a string holding the error message

All the errors follow a Hierarchy as shown below. "ANY" is the most Generic parent.

```
{  
    "parentErrorType": {  
        "parentErrorType": {  
            "parentErrorType": {  
                "parentErrorType": null,  
                "namespace": "MULE",  
                "identifier": "ANY"  
            },  
            "namespace": "MULE",  
            "identifier": "VALIDATION"  
        },  
        "namespace": "VALIDATION",  
        "identifier": "VALIDATION"  
    },  
    "namespace": "VALIDATION",  
    "identifier": "INVALID_BOOLEAN"  
}
```

About Error Handler Scopes

There are two error handler scopes in Mule 4, i.e., On Error Continue and On Error Propagate, which can be used to handle different kind of errors at all three levels.



Scaling Process Automation Enterprise-Wide Through Citizen Development



The **ON ERROR CONTINUE** scope always returns a success response to the next level, while the **ON ERROR PROPAGATE** always propagates the error to the next level and returns an **error** response to the next level.

[Download Free PDF](#)

Each scope can have one or more message processors.

About Global Handlers

To handle errors at the application level, add an error handler in the global.xml (or simply outside a flow).

Then, create a Configuration element in the global elements, which sets the Global Error Handler as the Default Error Handler.

The screenshot shows the Mule Studio interface. At the top, there's a toolbar with icons for Save, Undo, Redo, and others. Below the toolbar, the title bar says "global". The main workspace contains a configuration element named "globalError_Handler". Inside this element, there is a sub-element "On Error Propagate" with the type set to "ANY". Below this, there is a "Transform Message" component icon. At the bottom of the workspace, there are tabs for "Message Flow", "Global Elements", and "Configuration XML". In the bottom right corner of the workspace, there's a "Configuration" section with a "General" tab selected. The "General" tab has a description: "Use this element to specify defaults and general settings for the Mule instance." Below the description, there are tabs for "General", "Notes", and "Settings". Under the "Settings" tab, there is a "Default Error Handler" dropdown menu, which is currently set to "globalError_Handler".

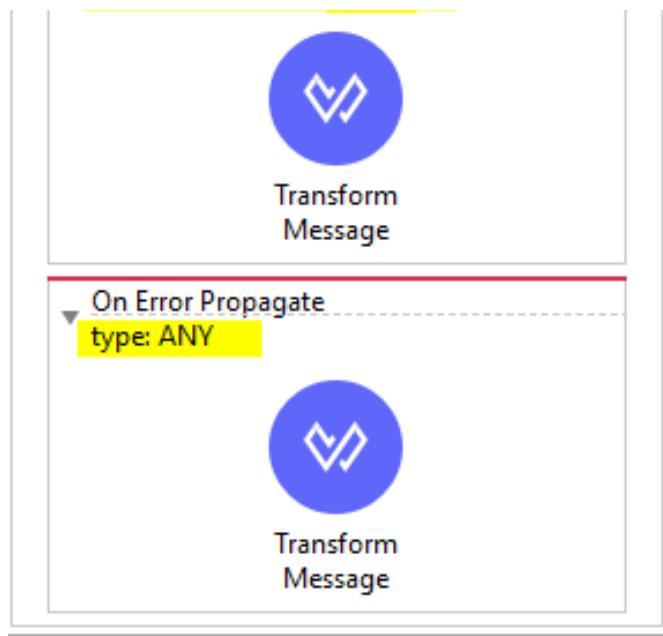
To create a generic handler for handling all the errors, specify the TYPE as “ANY” in the error scope of the Global Handler. To handle multiple errors, different type, or errors separately, specify the errorType of the error in the Type box of the error scope.



Scaling Process Automation Enterprise-Wide Through Citizen Development

- Focus on the partnership model between IT and the business
- Select an intuitive process automation platform that people like to use
- Obtain ongoing support from senior leadership

[Download Free PDF](#)



The error will be handled by the first scope, which meets the `errorType`.

About Flow Level Handlers

Flow level handlers can be added to regular Flows and private flows, but not to Subflows.

If an error that is thrown in the flow, doesn't find a matching scope for its `errorType` in the Flow's error scopes, it DOES NOT go to the application level handler, instead, it uses the Mule Default Error Handler.

About Processor Level Handlers

To handle the errors at the processor level, add one or more processors into a Try Scope and handle it using the On Error Propagate or On Error Continue Scopes.

The error scopes at the processor level take precedence over flow-level scopes. Flow-level scopes take precedence over application-level scopes.

It would be a good idea to have an error scope with Type specified as ANY in each level to avoid getting unexpected errors propagated to next levels.

Finally, the most important and challenging part of the new error handling is to choose between On Error Propagate and On Error Continue Scopes. Select them according to the business requirement or logic. For eg.: If you want the child flow to return a success to parent flow so that the parent flow continues, use On Error Continue. Similarly, use On Error Propagate when you may want the error to be propagated from child flow to parent flow and return an error response.



Scaling Process Automation Enterprise-Wide Through Citizen Development

With our integration platform you can save millions of dollars, increase integrator productivity by 5X, and reduce implementation time to value by 90%. Sign up for our risk-free 30-day trial!

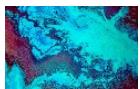
- Obtain ongoing support from senior leadership

Scaling Process Automation Enterprise-Wide Through Citizen Development

Focus on the partnership model between IT and the business. Select an intuitive process automation platform that people like to use.

[Download Free PDF](#)

Like This Article? Read More From DZone



[How to Integrate SalesForce With Mule](#)



[What Are Anypoint Validations With Mulesoft?](#)



[Connecting Salesforce With MuleSoft](#)



[Free DZone Refcard
Foundations of RESTful
Architecture](#)

Topics: MULESOFT, INTEGRATION, TUTORIAL

Opinions expressed by DZone contributors are their own.



Scaling Process Automation Enterprise-Wide Through Citizen Development

- Focus on the partnership model between IT and the business
- Select an intuitive process automation platform that people like to use
- Obtain ongoing support from senior leadership

[Download Free PDF](#)