Hosting Controller
Hybrid Cloud Automation

INTEGRATING NEW SMS GATEWAY FOR TWO FACTOR AUTHENTICATION (2FA) IN HC

Version 1.0

www.hostingcontroller.com

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Target Audience

This guide is solely intended for those users who want to integrate their own SMS Gateway with Hosting Controller for achieving two factor authentication (2FA). It is assumed that the integrator has sufficient working knowledge of SQL Server and knows how to add/update records in database. It is also assumed that the integrator is familiar with Microsoft Visual Studio and C#.net and knows how to program in these tools.

Introduction

Hosting Controller is a hybrid cloud control panel, designed to automate all aspects of your business including service provisioning, billing, metering, customer management and on-boarding of new services. It offers a feature whereby administrators can enable 2FA for user logins. When 2FA is enabled, users while logging into the panel must provide two different authentication factors to verify themselves. The first typical factor is the password and the second is a one-time-password (OTP). Only after providing this OTP can they login into the panel. Panel users can receive their OTP through SMS besides other modes. If SMS is selected as the mode to receive OTP, an SMS is sent to the phone number specified in the User Profile. Currently HC only supports Twilio SMS Gateway for sending text messages. If for any reason you don’t want to use Twilio, you may choose to integrate your own SMS Gateway. The objective of the guide is to elaborate the process of integrating your own SMS Gateway in the panel.

Steps for Integrating New Gateway

Integrating a new SMS Gateway involves two major steps; first where you make changes in db for the new Gateway and second where you download an existing C# (class library) project which is implementing an interface from a DLL already shipped with HC, and add your code for SMS sending in it.

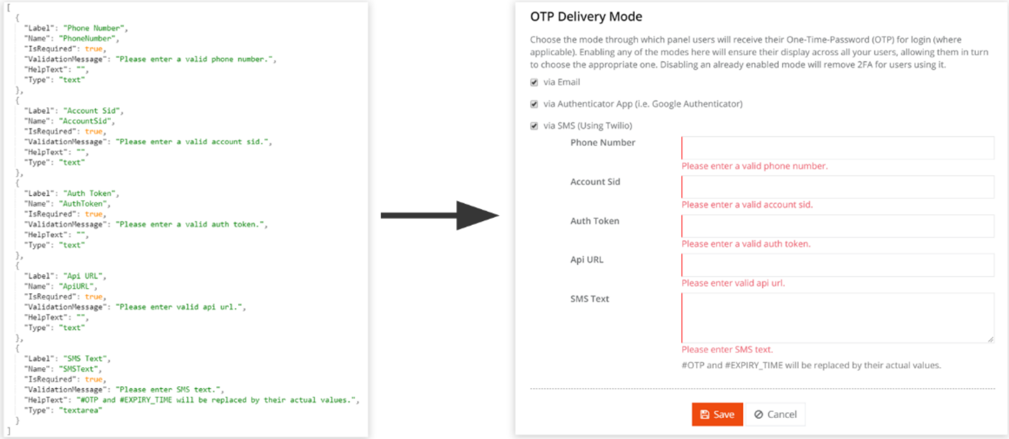
Database Changes

First of all you need to manually add a new record in “tbl2FASetting” for the new Gateway. This table has following columns;

- SystemName
    - A unique identifier for your Gateway.

> NOTE This unique identifier must start with “SMS-” e.g “SMS-MyNewGateway”.
>
> .

- DisplayName
    - Any name to be displayed in panel at 2FA configuration page in control panel.
- AuthSettings
    - This column contains the metadata for the GUI of the new Gateway configuration. For example, for Twilio, data in this column yields following GUI at 2FA configuration page in control panel:



```
[
  {
    "Label": "Phone Number",
    "Name": "PhoneNumber",
    "IsRequired": true,
    "ValidationMessage": "Please enter a valid phone number.",
    "HelpText": "",
    "Type": "text"
  },
  {
    "Label": "Account Sid",
    "Name": "AccountSid",
    "IsRequired": true,
    "ValidationMessage": "Please enter a valid account sid.",
    "HelpText": "",
    "Type": "text"
  },
  {
    "Label": "Auth Token",
    "Name": "AuthToken",
    "IsRequired": true,
    "ValidationMessage": "Please enter a valid auth token.",
    "HelpText": "",
    "Type": "text"
  },
  {
    "Label": "Api URL",
    "Name": "ApiURL",
    "IsRequired": true,
    "ValidationMessage": "Please enter valid api url.",
    "HelpText": "",
    "Type": "text"
  },
  {
    "Label": "SMS Text",
    "Name": "SMSText",
    "IsRequired": true,
    "ValidationMessage": "Please enter SMS text.",
    "HelpText": "#OTP and #EXPIRY_TIME will be replaced by their actual values.",
    "Type": "textarea"
  }
]
```

OTP Delivery Mode

Choose the mode through which panel users will receive their One-Time-Password (OTP) for login (where applicable). Enabling any of the modes here will ensure their display across all your users, allowing them in turn to choose the appropriate one. Disabling an already enabled mode will remove 2FA for users using it.

☑ via Email

☑ via Authenticator App (i.e. Google Authenticator)

☑ via SMS (Using Twilio)

Phone Number

Please enter a valid phone number.

Account Sid

Please enter a valid account sid.

Auth Token

Please enter a valid auth token.

Api URL

Please enter valid api url.

SMS Text

Please enter SMS text.

#OTP and #EXPIRY_TIME will be replaced by their actual values.

Figure 1: Metadata for the GUI of the new Gateway configuration.

- Add this if you want your Gateway credentials to be filled in and sent to the hook.
- All the properties of JSON are self-explanatory.

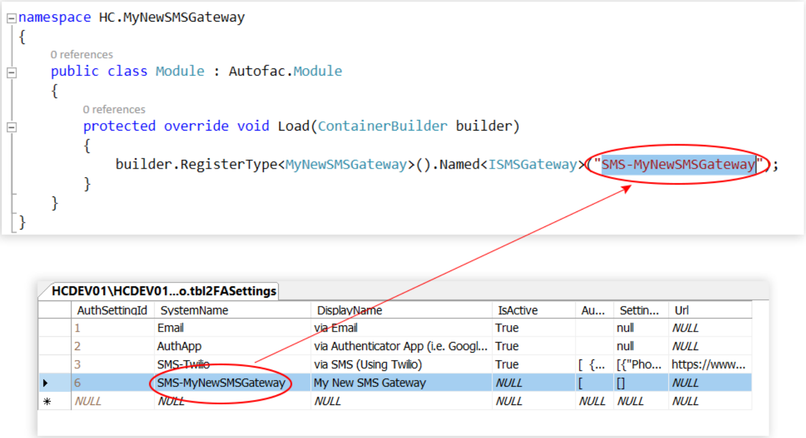
Writing Hook to Send SMS

- Download the skeleton project form here (SMSGatewaySkeleton.zip) and open it in Visual Studio 2015. It's a class library type project.

NOTE Do not update the versions of any NuGet package already added in the skeleton project.

- Add reference to the assembly "HC.Common.Hooks.Interfaces.dll" from /Components folder in HC Installation location and rebuild the project.

- Open file "Module.cs" and update the name as inserted in database for "SystemName" of the new Gateway.



```
namespace HC.MyNewSMSGateway
{
    0 references
    public class Module : Autofac.Module
    {
        0 references
        protected override void Load(ContainerBuilder builder)
        {
            builder.RegisterType<MyNewSMSGateway>().Named<ISMSGateway>("SMS-MyNewSMSGateway");
        }
    }
}
```

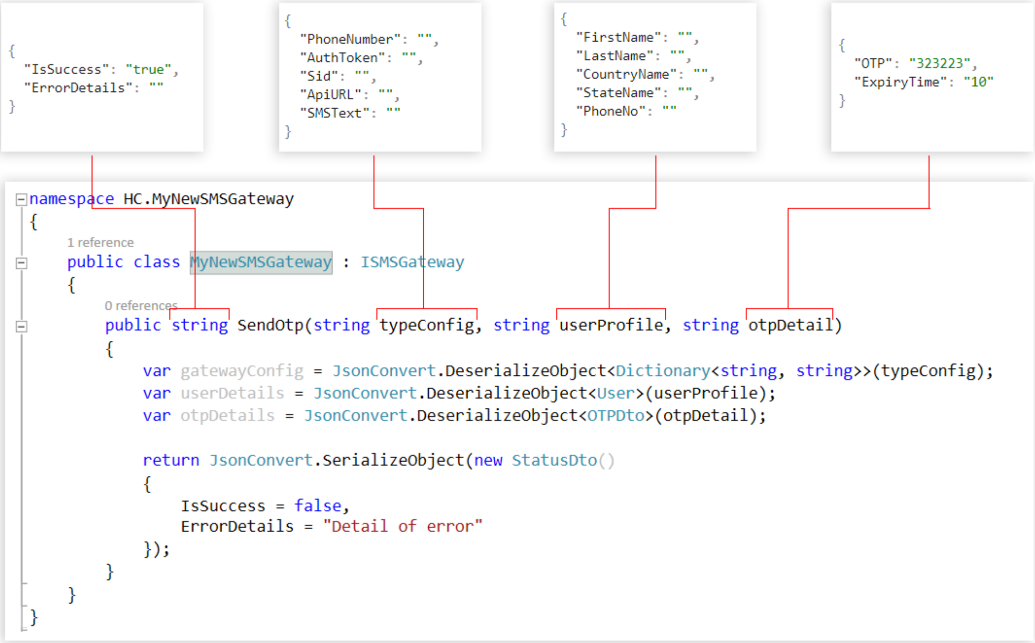
HCDEV01\HCDEV01...o.tbl2FASettings

	AuthSettingId	SystemName	DisplayName	IsActive	Au...	Settin...	Url
	1	Email	via Email	True		null	NULL
	2	AuthApp	via Authenticator App (i.e. Googl...	True		null	NULL
	3	SMS-Twilio	via SMS (Using Twilio)	True	[{...	[{"Pho...	https://www...
▶	6	SMS-MyNewSMSGateway	My New SMS Gateway	NULL	[	[]	NULL
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Figure 2: Updated name as inserted in database for "SystemName" of the new Gateway.

- ○ Here you are just naming your implementation of "ISMSGateway".
- ○ "SystemName" in db and component name here must be exactly the same, otherwise it will not be loaded by HC.

- Open "MyNewSMSGateway.cs" file and add the required code in the body of the method. The inputs and output of "SendOtp" method are illustrated below:



```
{
  "IsSuccess": "true",
  "ErrorDetails": ""
}
```

```
{
  "PhoneNumber": "",
  "AuthToken": "",
  "Sid": "",
  "ApiURL": "",
  "SMSText": ""
}
```

```
{
  "FirstName": "",
  "LastName": "",
  "CountryName": "",
  "StateName": "",
  "PhoneNo": ""
}
```

```
{
  "OTP": "323223",
  "ExpiryTime": "10"
}
```

```
namespace HC.MyNewSMSGateway
{
    1 reference
    public class MyNewSMSGateway : ISMSGateway
    {
        0 references
        public string SendOtp(string typeConfig, string userProfile, string otpDetail)
        {
            var gatewayConfig = JsonConvert.DeserializeObject<Dictionary<string, string>>(typeConfig);
            var userDetails = JsonConvert.DeserializeObject<User>(userProfile);
            var otpDetails = JsonConvert.DeserializeObject<OTPDto>(otpDetail);

            return JsonConvert.SerializeObject(new StatusDto()
            {
                IsSuccess = false,
                ErrorDetails = "Detail of error"
            });
        }
    }
}
```

Figure 3: Inputs and output of the SendOtp method.

- The first param “typeConfig” contains the Gateway credentials saved from the configuration page.
- The second param “userProfile” contains user detail information in JSON format.
- The third param “otpDetail” contains information of OTP and its expiry time in minutes.
- Response should be in JSON having two properties “IsSuccess” and “ErrorDetails”. If SMS is sent successfully then IsSuccess should be “true” otherwise it should be “false”. Set “ErrorDetails” for login purposes in case of error.

Rebuilding Project

Once done, rebuild the project and copy the Output DLL (and any other dependent DLL) in /Components folder in HC Installation location.

> NOTE Your output DLL must start with “Hook” e.g “HookMyNewGateway.dll”.

That’s it, restart HC API app pool and you are good to test your new integration.

Contact Us

In case of any ambiguity/query regarding integration of new SMS Gateways, please feel free to contact us at support@hostingcontroller.com.