

Note: The JWT will expire after 2 hours and it is a single time use only.

Pass the JWT token to your front-end for later use.

Step 3: (Client-Side) Initiate your Card Form

Once you have a JWT token, you should generate your card collection form/page to begin the 3D Secure assessment and allow the customer to enter their credit card details at the same time.

Step 4: (Client-side) Configure the 3D Secure Script

Run the Cardinal.configure() function with your desired configuration options. For example:

```
Cardinal.configure({
  timeout: 6000,
  maxRequestRetries: 3,
  logging: {
    level: 'verbose'
  }
});
```

- [Root Level Object](#)
- [Logging Object](#)
- [Button Object](#)
- [Payment Object](#)

Field	Type	Default	Description
timeout	int	8000	The time in milliseconds to wait before a request to Centinel API is considered a timeout

Field	Type	Default	Description
extendedTimeout	int		<p>extendedTimeout is only used in the event of the first request timing out. This configuration allows the merchant to set the timeout (in milliseconds) for subsequent retry attempts.</p> <p>(This configuration would be useful when the merchant wants to set higher timeout values on requests).</p> <p>If the value for the extendedTimeout is set to less than 4000 milliseconds, then the value will be automatically reset to 4000 milliseconds.</p>
maxRequestRetries	int	1	How many times a request should be retried before giving up as a failure.

Field	Type	Default	Description
-------	------	---------	-------------

level	string	off	<p>The level of logging to the browser console. Enable this feature to help debug and implement Songbird.</p> <p>Possible Values:</p> <p>off - No logging to console enabled. This is the setting to use for production systems.</p> <p>on - Similar to info level logging, this value will provide some information about whats occurring during a transaction. This is recommended setting for merchants implementing Songbird</p> <p>verbose - All logs are output to console. This method can be thought of as debug level logging and will be very loud when implementing Songbird, but is the level needed when getting support from the Cardinal team.</p>
-------	--------	-----	---

Field	Type	Default	Description
containerId	string	Cardinal-Payments	The HTML Id value of the container to inject all payment buttons into.

Field	Type	Default	Description

view	string	modal	<p>What type of UI experience to use when Songbird injects payment brand UI elements into the page.</p> <p>Possible Values:</p> <p>modal - Render as a modal window. This view type renders the payment brand over your page, making it feel separate from your page.</p>
------	--------	-------	---

framework	string	Cardinal	<p>What kind of view framework should be used to render the payment brand. If your site is using a supported framework and you have custom styles applied to it, we will use that framework to make keep the consistent look and feel of your site. When using any other frameworks than 'cardinal' your site is responsible for including the framework assets including CSS, JavaScript, and any other additional files needed.</p> <p>Possible Values:</p> <p>cardinal - Use the custom Cardinal view framework built and maintained by CardinalCommerce. Songbird will handle all UI rendering and styles, no additional work is needed.</p> <p>inline - Render inline to the page. This view type embeds the payment brand into the page making it feel like it's a part of your website. View the guide for implementation here: Inline Display Method for 3D Secure</p> <p>bootstrap3 - Use bootstrap 3 modal to render the UI elements. Please note that you are responsible for importing any necessary files for that framework.</p>
-----------	--------	----------	--

<https://verifone.cloud/docs/online-payments/api-integration/server-server-payments-3d-secure-setup-guide/server-server>

Updated: 22-Jul-2024

displayLoading	boolean	false	<p>A flag to enable / disable a loading screen while requests are being made to 3DS Server API services. This can provide feedback to the end user that processing is taking place and they should not try to reload the page, or navigate away.</p> <p>Possible Values:</p> <p>false - Disables the loading screen</p> <p>true - Enables the loading screen</p>
displayExitButton	boolean	false	<p>Will display an X icon in the corner of the modal window to allow for end users to close the authentication modal without completing it. Clicking the close button will result in the payments.validated event to be triggered with a "10011 error, Canceled by user"</p> <p>Possible Values:</p> <p>false - Disables the exit icon on the modal</p> <p>true - Enables the exit icon on the modal</p>

Step 5: (Client-side) Setup Event Listeners

<https://verifone.cloud/docs/online-payments/api-integration/server-server-payments-3d-secure-setup-guide/server-server>

Updated: 22-Jul-2024

payments.setupComplete()

This listener will run after the payment setup has successfully been completed. SetupCompleteData will contain a session ID to be used for the 3DS lookup.

```
Cardinal.on('payments.setupComplete', function(setupCompleteData){?  
  // pass setupCompleteData.sessionId server side to make the lookup API call  
});?
```

payments.validated()

Payments Validated allows you to capture the different outcomes of the flow and handle them accordingly.

```
Cardinal.on("payments.validated", function (data, jwt) {?  
  ??? switch(data.ActionCode){??  
  ????? case "SUCCESS":??  
  ????? // Handle successful transaction, send JWT to backend to verify??  
  ????? break;??  
  
  ????? case "NOACTION":??  
  ????? // Handle no actionable outcome??  
  ????? break;??  
  
  ????? case "FAILURE":??  
  ????? // Handle failed transaction attempt??  
  ????? break;??  
  ??????  
  
  ????? case "ERROR":??  
  ????? // Handle service level error??  
  ????? break;??  
  ? }??  
  });?
```

Response Data and Outcome definitions

Type	Description
------	-------------


```
<input type="text" data-cardinal-field="AccountNumber" id="creditCardNumber" name="creditCardNumber" />
```

Option 2: Event Based

The bin.process event is the recommended BIN Detection implementation. It provides you, or integrator, the greatest flexibility to initiate device profiling wherever they prefer in their purchase flow. It is best practice to initiate bin.process immediately upon receiving the customer's card number. Whenever possible, provide a minimum of the first 9 BIN digits of the customer's card number on bin.process. Merchants that provide fewer than the first 9 digits are at risk of running the incorrect issuer Method URL.

Example:

```
Cardinal.trigger("bin.process", '1234567894561237')
  .then(function(results){
    if(results.Status) {
      // Bin profiling was successful. Some merchants may want to only move forward with authentication if profiling
      // was successful
    } else {
      // Bin profiling failed
    }
    // Bin profiling, if this is the card the end user is paying with you may start the CCA flow at this point or
    // send the lookup request
    Cardinal.start('cca', myOrderObject);
  })
  .catch(function(error){
    // An error occurred during profiling
  })
```

Note: You may have to trigger the bin events more than once if the end user is able to change their card number at the point where Songbird is integrated. Songbird will only profile any given bin a single time, once profiling is completed Songbird will return a success status. It is important that BIN Detection is completed on the final card used for the purchase.

The event will resolve when bin profiling was successful or failed with a JSON object describing the outcome.

Step 8: (Client-side) Collect the sessionId

The sessionId is a unique ID which represents the device profile of the web user. This is used as part of the 3D Secure Authentication process.

<https://verifone.cloud/docs/online-payments/api-integration/server-server-payments-3d-secure-setup-guide/server-server>

Updated: 22-Jul-2024

If the setup was successful, the event listener in [Step 4](#), `payments.setupComplete()`, will be triggered, and return the session ID.

Within the response of `setupCompleteData`, there will be a value called `sessionId`:

```
setupCompleteData.sessionId
```

Returns:

```
0_6e0fedb-d642-47d1-88e2-b12a59ffe39e
```

Step 9: (Client-side) Collect Card Details with Verifone.JS

Use the [Verifone.js](#) script to securely encrypt the card details before transmitting it to Verifone.

[Collect your Secure card capture key](#), and set this to a variable, for example:

```
const encryptionKey = '{Secure Card Capture Key}';
```

Capture the cardholder details from the front-end and set this up as an object:

```
const card = {  
  ??? "cardNumber": form.cardNumber.value,?  
  ??? "expiryMonth": form.expiryMonth.value,?  
  ??? "expiryYear": form.expiryYear.value,?  
  ??? "cvv": form.cvv.value,?  
  ? };
```

Then call the verifone encryption method, passing in both the `cardDetails` and `encryptionKey` as parameters.

Calling the method:

```
verifone.getEncryptedCardDetails(card, encryptionKey)?
```

This method returns a Promise containing the `encryptedCard` field.

```
verifone.getEncryptedCardDetails(card, encryptionKey).then(data => console.log(data.encryptedCard));?
```

Response:

```
LS0LS1CRUdJTIbQR1AgTUVTU0FHRS0tLS0tDQpWZXJzaW9uOiBPCGVuUEdQLmpzIHY0LjEwLjkNCkNvbW11bnQ6IGh0dHBzOi8vb3BlbnBncGpzLm9yZw0KDQp3WDREWGTjZjFmWdHOU1TQWdNRWlxSEZUNytUbXNDc2k3aDNmeW02eEtDb1NzK0RYZFNnb1NDaFNsZEENC1JLcXRzSmlJNmtpeU9JYzdnRmdBV3J3eVlCL111REI3S2R3TG0xdU5LbzhYYkREOWNBaFZTcFBrOEpvvg0KaFpLa09ERXhSaWJEeFBWQnM0czVWV2Nub11HOVBOZzI2VXgxeXRRMGxxVVo4dTBLVm03U3JRRjRHZHYwDQpNeXA2NnAvNmJlc3cwT09iTU85TlBqd3ZFRldtWG9yTnhQM2tVZ0xYU1JJN2s4M01XNjd1TVErMFBudTUNCjNGZG5LcjQyb1JTaHdYSE1FZ1pUckZmbkxGUE9ha3N1Y1NKd016WGVRTUZKSvhzQVFLY1N6RVhJYmZFeg0Ka2JUWm91TEFWTjhm0RoUHRMaS9UcGI4NGVtZ04zY3UyNjNoVD1LQmRqcGd4bCtIQXNEekVtUjBncUR5DQpzRfOvVDU1bHVhTjhTUzJ6cHJEWXNyOWcyV0Jhem10Yk8xYU80Y31nMzk3RQ0KPvdZdtINCi0tLS0tRU5EIFBHUCBNRVNTQudFLS0tLS0NCg==???
```

Note: These are the card details encrypted . Pass this to your back end for processing payments.

Step 10: (Server-side) Perform a 3DS Lookup

API Reference: <https://verifone.cloud/api-catalog/3d-secure-api#tag/V2/operation/postV2Lookup>

Make a POST request to Verifone using the encrypted card, device info (sessionId) and other data points to receive the 3D Secure Response.

Request Method: POST

URL: <https://cst.test-gsc.vfims.com/oidc/3ds-service/v2/lookup>

Body:

```
{??
  ??? "amount": 100,??
  ??? "billing_first_name": "first_name",??
  ??? "billing_last_name": "last_name",??
  ??? "billing_address_1": address line 1",??
  ??? "billing_city": "City",??
  ??? "billing_country_code": "AU",??
  ??? "encrypted_card": "{{EncryptedCardValue==}}",??
  ??? "public_key_alias": "{{public_key}}",??
  ??? "currency_code": "{{currency}}",??
  ??? "device_info_id": "0_6e00fedb-d944-47d1-89e2-b12a59ffe39x",??
  ??? "email": "email@verifone.com",??
  ??? "merchant_reference": "Order number 1234",??
  ??? "threeds_contract_id": "{{3DS Contract ID}}"?
}
```

<https://verifone.cloud/docs/online-payments/api-integration/server-server-payments-3d-secure-setup-guide/server-server>

Updated: 22-Jul-2024

Response:

```
{??
  ??? "acs_transaction_id": "9d08e1ba-0240-4283-813a-a3772d80de0e",??
  ??? "acs_url": "{ACS_URL}",??
  ??? "authentication_id": "c923575f-86e4-45cf-9a43-d1ede3da3ac1",??
  ??? "challenge_required": "N",??
  ??? "card_brand": "Visa",??
  ??? "ds_transaction_id": "e3b59e11-5863-4c4a-aa34-cc13bab4f320",??
  ??? "eci_flag": "07",??
  ??? "enrolled": "Y",??
  ??? "error_no": "0",??
  ??? "order_id": "8001840452769160",??
  ??? "pares_status": "C",??
  ??? "payload": "
eyJtZXNzYWdlVHlwZSI6IkNSZXEiLCJtZXNzYWdlVmVyc2lvbiI6IjIuMi4wIiwidGhyZWVEU1NlcnZlclRyYW5zSUQiOiJiZDYwNjk0OC0yNzF1
LTQ3MGEtYTI2OC0zOWNjZWJmMmQzNTEiLCJhY3NUcmFuc01EiJoiOWQwOGU2YmEtMDI0MC00MjgzLTgxmM2EtYTM3NzJkODBkZTB1IiwiaY2hhbGx1
bmdlV2luZG93U2l6ZSI6IjAyIn0",??
  ??? "signature_verification": "Y",??
  ??? "threads_version": "2.2.0",??
  ??? "transaction_id": "mm1WQNPXlhUnAYGyjNY1"??
}
```

Step 11A: (Server-side) Successful 3D Secure Lookup

If the lookup attempt was successful, and the details provided match the card holder details on record, the field **“pares_status”** will be **“Y”**.

You can proceed directly to [Step 12](#) to perform a payment using the details from the lookup request.

Step 11B: (Client-side) Pares_status = “C” Continue to the authentication step

In some cases, a one-time pin or “Step-up” challenge is required to authenticate the customer.

Cardinal.continue will only work after the payments.setupComplete event has been triggered.

Cardinal.continue is suggested to be run later in the flow if payments.setupComplete is not triggered yet.

Example:

<https://verifone.cloud/docs/online-payments/api-integration/server-server-payments-3d-secure-setup-guide/server-server>



Updated: 22-Jul-2024

```

Cardinal.continue('cca',??
{??
?"AcsUrl": "{ACS_URL}",??
??? "Payload":
"eyJtZXNzYWdlVHlwZSI6IkNSZXEiLCJtZXNzYWdlVmVyc2lvbiI6IjIuMi4wIiwidGhyZWVEU1NlcnZlclRyYW5zSUQiOiJiZDYwNjk0OC0yNzF
lLTQ3MGEtYTI2OC0zOWNjZWJmMmQzNTEiLCJhY3NUcmFuc01EiJoiOWQwOGU2YmEtMDI0MC00MjgzLTgxm2EtYTM3NzJkODBkZTB1IiwiaY2hhbGx
lbmdlV2luZG93U2l6ZSI6IjAyIn0"??
?},??
?{??
??? "OrderDetails":{??
???????? "TransactionId" : "mm1WQNPXlhUnAYGyjNY1"??
???????????????????? }??
???????? }??
);?

```

This will present the 3D Secure modal window to the customer:

Purchase Authentication

We have sent you a text message with a code to your registered mobile number ending in 5329.

You are paying VeriFone the amount of 10.00 using card *****1111.

(OTP: 1234)

Enter your code below

Enter Code Here

Trustlist this merchant.

<https://verifone.cloud/docs/online-payments/api-integration/server-server-payments-3d-secure-setup-guide/server-server>

Updated: 22-Jul-2024

This will result in a liability shift off the merchant.

If "PResStatus" is one of the following:

"N" - Failed

"U" - Unavailable

"R" - Rejected

"C" - Challenge required (Temporary status)

Or a blank value

Or "SignatureVerification" is:

"N" - Signature verification is invalid

OR "enrolled" is:

"N" - Cardholders bank is not participating in 3D Secure

"U" - Enrollments status unavailable

"B" - Enrollment status was bypassed

The liability of the transaction will remain with the merchant.

Note: This is not a complete guarantee of liability shift. The information presented in this document is based on published Card Associations (Visa, Mastercard, AMEX, ProtectBuy, and JCB) Operating Rules and Regulations, and may be subject to change.

Step 12: (Server-side) Perform a Server-To-Server Payment with 3D Secure

Using the data from the lookup and if applicable, the step-up challenge response, you may perform a 3D Secure authenticated payment. See the example API request below:

API Reference <https://verifone.cloud/api-catalog/verifone-ecommerce-api#tag/Ecom-Payments>

Request method: POST

URL: <https://cst.test-gsc.vfims.com/oidc/api/v2/transactions/card>

Example API Request :

```
{??  
? ? "currency_code": "{{currency}}",??  
? ? "amount": 1000,??
```

<https://verifone.cloud/docs/online-payments/api-integration/server-server-payments-3d-secure-setup-guide/server-server>

Updated: 22-Jul-2024

```

? ? "merchant_reference": "VF Test",??
? ? "payment_provider_contract": "{{ppc}}",??
? ? "card_brand": "VISA",??
? ? "public_key_alias": "{{key_alias}}",??
? ? "encrypted_card":
"LS0tLS1CRUdJTiBQR1AgTUVTU0FHRS0tLS0tDQpwZlZaW9uOibPcGVuUEdQLmpzIHY0LjEwLjkNckNvbW1lbnQ6IGh0dHBzOi8vb3BlbnBncGp
zLm9yZw0KDQp3WDREcTivejFNVU0rTTRTQWdNRWltUTN0UERDMUVGVThHb3l5a2sxMnBQSlQ2ZVZkxUisveU1PTWhnZVUNCmkyd1BlYwd0ZU4vRXV
oazRYV6WHQ1Q29BU2JubmkvK1A2bG5vRUVQcC9wYlREcFNZMEIvTnJaOWU4RQ0Ktm91a0dSukdLRDBpQUdUek01Z0RRRk1BU3UydHZsSkNPR1l
rRUFESzh1OUVmrkt0ZTdyU3JRRk90ajlVDQpaQXN1Nkc2b3RPyVI4NGtobi9VMjArMmQrQnoxVGM2TWZBeHBVTRQOHpwUvJsWWh2Y3ZMWjNQUDB
BK1gNcmhpckdUQnJCYzViWd1RNnhQalRmcFlqQ0U0Y0NnTEFCcmdzNkhFZlJ3ZE1URXBmR0hbZ2V0c0xpcVRkYQ0KTGxxZmVtQW4rUWdrUDZCeTd
NSXZTZW3WTM3MXVqRUyxaW1RMct0NlhBb09zTjMrbl1MRkZPeFRkSkc5DQpDM3FZYmlQR1VWUFFsVHB2V1Z4S0dNV1RmV1hLdEttLy9kMklqa3l
ONkI4ag0KPVZseGwNci0tLS0tRU5EIFBHUCBNRVNTQUdFLS0tLS0NCg==",??
? ? "threed_authentication": {??
? ? ? ? "eci_flag": "05",??
? ? ? ? "enrolled": "Y",??
? ? ? ? "cavv": "AAIBBYNoEwAAACcKhAJkdQAAAA=",??
? ? ? ? "pares_status": "Y",??
? ? ? ? "threeds_version": "2.2.0",??
? ? ? ? "ds_transaction_id": "4eaal0ef-e5e4-4b4c-8aef-29439e450b60",??
? ? ? ? "signature_verification": "Y",?
? ? ? ? "error_desc": "Success",??
? ? ? ? "error_no": "0"?
? ? }
}??

```

Response:

```

{?
? ? "id": "3e5baa3a-cdcd-4b0a-b23d-9b4c0528ca62",?
? ? "payment_provider_contract": "d1f0f6ab-1d40-44ae-b16b-8f09fe6fd77f",?
? ? "amount": 1000,?
? ? "blocked": false,?
? ? "merchant_reference": "VF Test",?
? ? "payment_product": "CARD",?
? ? "status": "AUTHORIZED",?
? ? "arn": "SIMULATORBCLDCG4DGS5MSDEV46JV",?
? ? "scheme_reference": "170320243e5baa3acdcd4b0ab23d9b4c0528ca62",?

```

```
? ? "created_by": "7b360b69-1787-40dd-ac56-fb3b8b93f230",?  
? ? "cvv_present": true,?  
? ? "cvv_result": "4",?  
? ? "stored_credential": {},?  
? ? "details": {?  
? ? ? ? "auto_capture": true?  
? ? },?  
? ? "reason_code": "00",?  
? ? "shopper_interaction": "ECOMMERCE",?  
? ? "stan": "157449",?  
? ? "threed_authentication": {?  
? ? ? ? "eci_flag": "05",?  
? ? ? ? "enrolled": "Y",?  
? ? ? ? "cavv": "AAIBBYNoEwAAACcKhAJkdQAAAA=",?  
? ? ? ? "pares_status": "Y",?  
? ? ? ? "threads_version": "2.2.0",?  
? ? ? ? "ds_transaction_id": "4eaa10ef-e5e4-4b4c-8aef-29439e450b60"?  
? ? },?  
? ? "reversal_status": "NONE",?  
? ? "additional_data": {?  
? ? ? ? "initiator_trace_id": "157449"?  
? ? },?  
? ? ? ? "card_details": {?lia  
? ? ? ? "masked_card_number": "411111****1111",?  
? ? ? ? "expiry_year": 2030,?  
? ? ? ? "expiry_month": 12?  
? ? },?  
? ? "balance_amount": 0?  
}?
```

Your Server-to-server, 3D Secure Authenticated transaction is now complete.

Additional steps

Refund a transaction

<https://verifone.cloud/docs/online-payments/api-integration/server-server-payments-3d-secure-setup-guide/server-server>

Updated: 22-Jul-2024

Depending on your [supported acquirer](#) and according to the settlement time. A payment can be [Refunded fully or partially via Verifone Central](#), or via the [Ecommerce API](#) using the [Refund Payment API Call](#).

Notification methods

[Set up Notifications in Verifone Central](#) to receive transaction events via email or webhook URL's. Leverage notifications to receive transaction results to different systems at the time of payment.

Advanced Payment flow with Preauthorization

To perform a preauthorization, two fields need to be specified in the payment request in Step 12:

capture_now : false

auth_type : "PRE_AUTH"

Once the Preauth is authorized, it can be [Captured for settlement](#), or [cancelled \(Voided\)](#) using Payment actions through Verifone Central or the [eCommerce API](#).

Adding Tokenization

[Set up a token scope in Verifone Central](#) to set up a "Vault" with Verifone to store tokens. [Request a token](#) by adding the "Token_preference" object to your API request.

Adding Stored credentials

After setting up Tokenization, use the [Stored Credential Framework](#) to send MIT or CIT-approved transactions.