

Groovv

SDK Integration Guide

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Welcome to the SDK Dev Guide

This Getting Started Guide is intended to help Integrators understand Groovv SDK and incorporate it into their point-of-sale experience. A basic understanding of payment card applications and use is assumed – we won't slow you down explaining how a card is processed. We'll just show you how to rapidly inject the processing capability into your product.

CHAPTER 1

Introduction

So you want to process transactions in your point-of-sale?

Total Merchant Services (TMS) provides everything you need to get started running secure payment transactions from your application. We handle the complexity of integration with card swipe equipment, enabling you to run transactions using Ingenico terminals, and then send these transactions to the gateway to be processed using Groovv SDK.

This Getting Started Guide is intended to help Integrators understand Groovv SDK and incorporate it into their point-of-sale experience.

A basic understanding of payment card applications and use is assumed – we won't slow you down explaining how a card is processed. We'll just show you how to rapidly inject the processing capability into your product.

What exactly is Groovv SDK?

Groovv SDK is a library and service which enables you to easily incorporate payment card transactions into your applications and websites. It takes care of talking to a card swiper or terminal, as well as sending your payment to the processor, so you can focus on what you do best – creating great software solutions for your target market. Even better, since it handles the transaction for you, your system never has to worry about protecting sensitive credit card data. You get the benefits of accepting transactions as part of your point-of-sale system, without the risk of storing credit card data. Even better, Groovv SDK is compliant with the rigor and requirements of **Payment Card Industry (PCI) Certification**. All of the complexity is handled for you. You can use a simple, one-line integration to bring the power of secure, encrypted transactions to your customers.

What types of applications does it support?

You may have a point-of-sale that is a desktop application, or one that runs in a browser. Or, if you need to support several users at the same business location, you might have a desktop or browser “client / front-end” which talks to a centralized “back-end” server.

Either way, Groovv SDK can adapt to all of these situations and fit the model that is right for you! We’ll give you a little more detail on how each model works, but whichever you choose, there is an easy-to-use way to incorporate Groovv SDK into the experience.

CHAPTER 2

How it works

Running the application

1 Merchant Point-ofSale

This is where you come in – as an integrator who has created an application which needs to behave as a point-of-sale, or a merchant who needs to use that point-of-sale experience. The application leans on Groovv SDK for the transaction processing actions.

2 Groovv SDK Transactions Library

The “transaction library” is a simple way for your application to add the steps for processing a transaction. It takes care of both ends – working with both the terminal and the processing gateway. You can feed it transaction detail, or ask it to grab that from the terminal or the screen.

3 Groovv SDK Terminal Service

The “terminal service” sits in the background and does the heavy lifting. It connects your computer to the terminal. It can ask the terminal to begin a transaction, and capture the information keyed into the terminal.

Installing the application

1 Groovv SDK Installer

Total Merchant Services provides a complete setup wizard for installing the Terminal Service onto a computer where you need to run your application. The wizard checks for the operating system or software libraries it needs, checks for a network connection to the terminal, and will even walk through a test transaction to make sure everything is working.

2 Groovv SDK Setup API

Total Merchant Services provides a complete setup wizard for installing the Terminal Service onto a computer where you need to run your application. But if you want more control over how that looks or works, we provide a library so that your technical staff can customize their own installer.

Application Models

Your application has a lot of great features. The one feature we want to focus on is processing transactions – that is, the “point-of-sale” (POS) features.

To decide on the best way to use Groovv SDK for the POS part of your solution, you need to consider your “application model,” .

There are four basic application models for any POS application.

Application Model	Runs in a browser?	Installs/Runs on device	Talks to back-end host?	Works with Groovv SDK?
Desktop or Mobile POS		●		●
Web/Browser based POS	●			●
Desktop or Mobile POS Client		●	●	●
Web/Browser based POS Client	●		●	●

Supported Integration Models

There are 3 types of integration model that Groovv SDK supports:

One to One

In this model, Groovv SDK service needs to be installed on each machine. Each machine will talk to the configured terminal. Please make sure that there must be one window machine in between of the integration if the platform is different than the window.

Implementation:

Practice management system or any third party software needs to be configured to point to local ip(127.0.0.1).



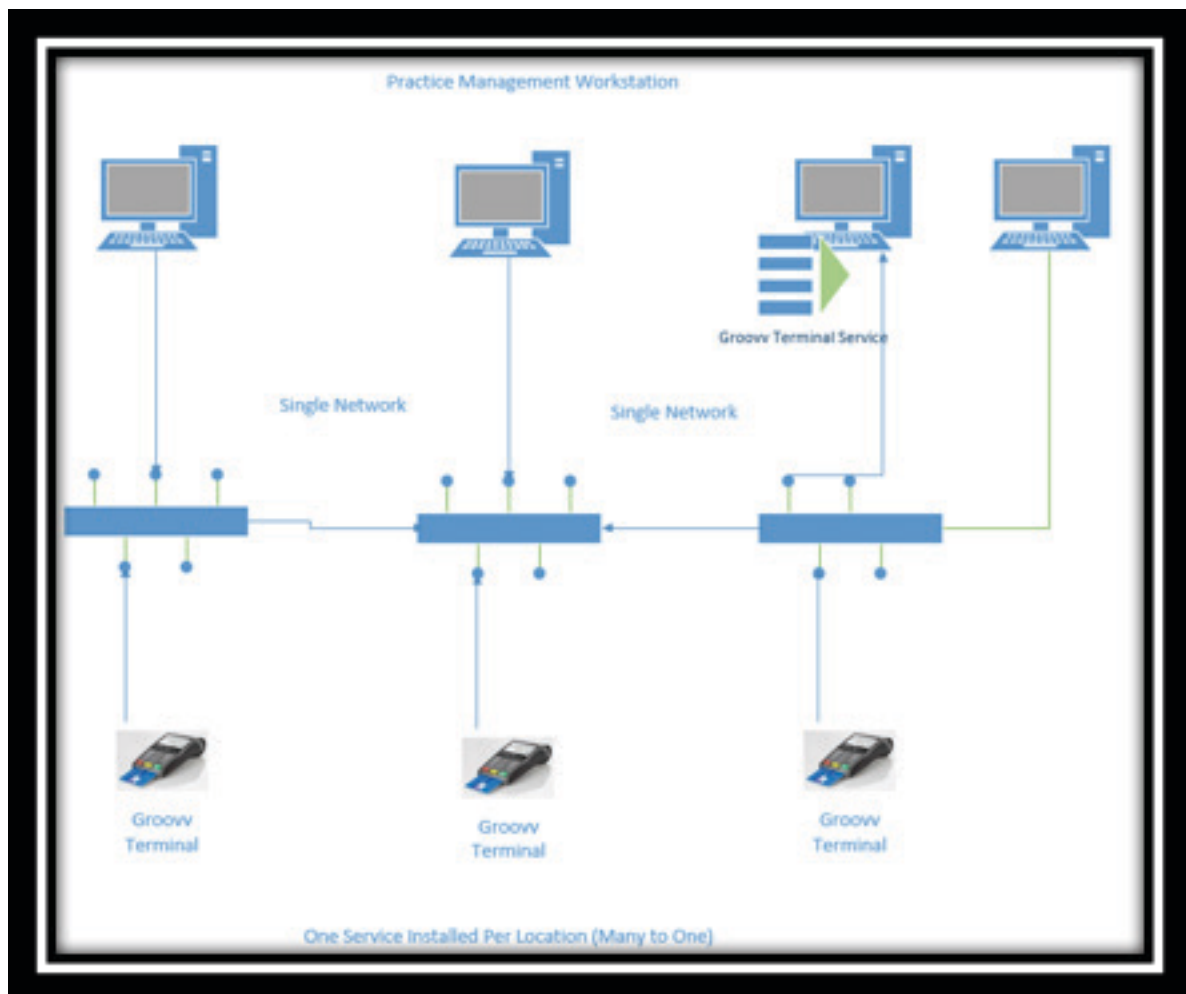
Supported Integration Models

Many to One

In this model, Groovv SDK service will be installed at one machine and it can be accessed by other machines.

Implementation:

Need the POST to the terminal to be able to post to <https://127.0.0.1/TMS> by default but be configurable to go to a different IP for the centralized service.



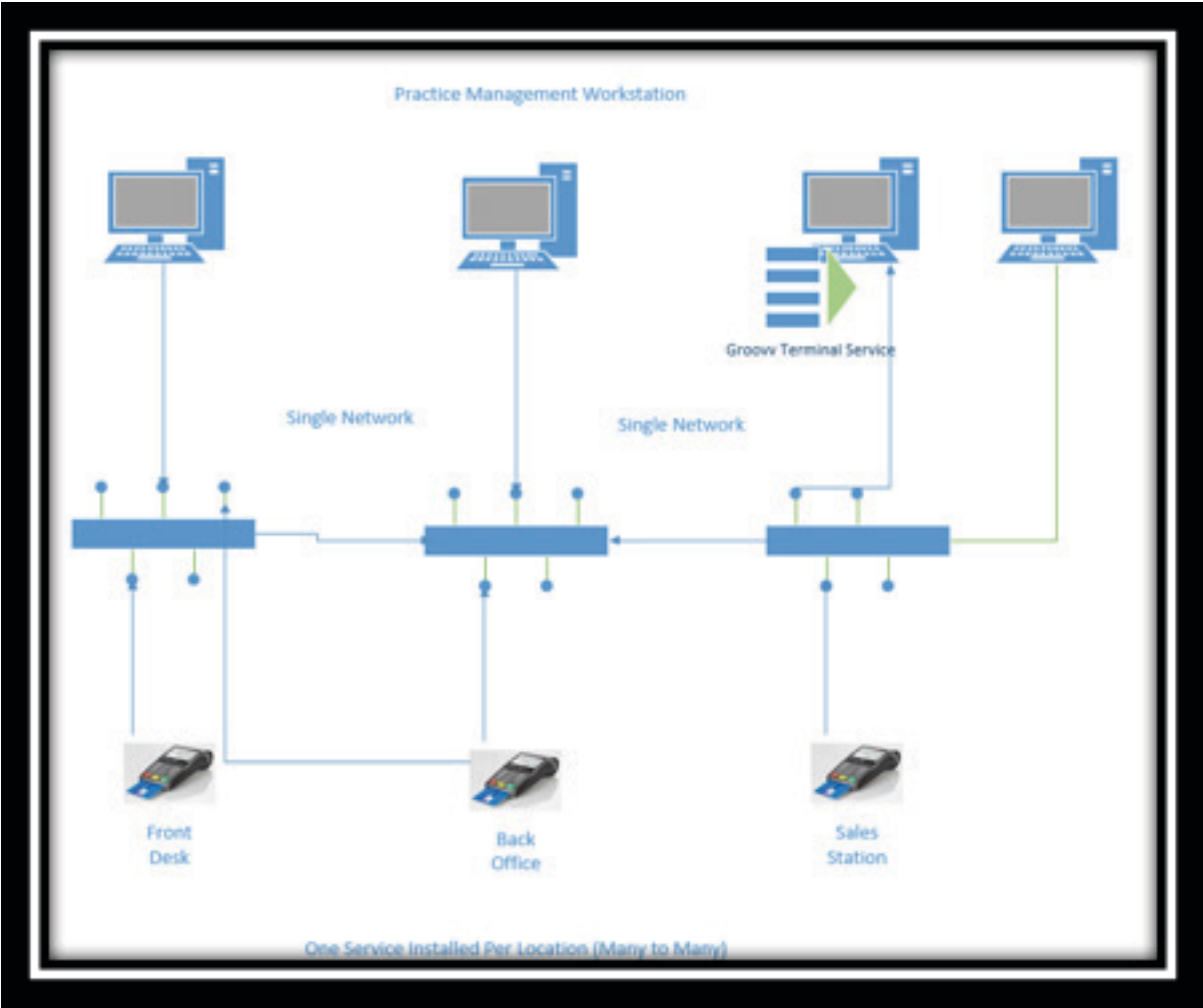
Supported Integration Models

Many to Many

In this model, In this model, Groovv SDK service will be installed at one machine and it can be accessed by other machines.

Implementation:

Need the POST to the terminal to be able to post to <https://127.0.0.1/TMS> by default but be configurable to go to a different IP for the centralized service. Need the POST to the terminal to be able to specify terminal name to go to.



CHAPTER 3

Payment Features & Compatibility

Your application has a lot of great features. The one feature we want to focus on is processing transactions – that is, the “point-of-sale” (POS) features. To decide on the best way to use Groovv SDK for the POS part of your solution, you need to consider your “application model,” .

Many extended payment features supported by newer terminals are available as well, such as:

- EMV Chip
- EMV Signature
- Contactless / NFC reader
- PIN Entry
- Signature Capture
- On-Line / Off-Line PIN

And, of course, it allows you to convey the information needed for major industry categories like:

- Retail
- Restaurant
- Lodging

Payment Features

GROOVV SDK supports the full range of payment card activities:

Pre-Auth	Authorize the transaction, but transaction will not settle until captured
Auth-Capture	Capture the pre-auth, so that it will settle, possible with an adjusted amount
Voice-Auth	Record an authorization which was made over the phone to the processor
Sale	Auth and capture within one transaction
Credit (Refund)	Refund the transaction amount to the card-holder
Void	Cancel the transaction from the batch, before it settles (void is not possible after settlement)
Batch Close	Close and settle the batch (or let it settle automatically)

Compatibility

Languages:

Groovv SDK Transaction Library is available for C#, Java, Android, or iOS.

Browsers:

Groovv Services is compatible with all major versions of Internet Explorer, Edge, Chrome and Firefox, and recent versions of Safari.

Operating System:

Groovv Services can be used on Windows XP, 10, 8, or 7.

CHAPTER 4

Sample Code

Total Merchant Services provides an efficient service-based solution for using a local terminal via a web browser to process transactions for a browser-based client application. If you are adding transaction processing into a web-based application using a local terminal, this version is appropriate for you. The below gives you sample code for using this version:

Sample Code for C# calling via XmlHttp

The below uses XMLHTTP to call for the transaction. This is an efficient way to transfer data between a client and server, without causing a full page refresh. For more information, see [XMLHttpRequest Reference](#). This is the preferred method for integrating to a web application. Note: Sample IP below "https://127.0.0.1:5020/TMS/" may change in the client-server model.

```
{
    var xmlHTTP;

    if (window.XDomainRequest)
    {
        xmlHTTP = new XDomainRequest();

        xmlHTTP.onload = function()
        {
            processResponse(xmlHTTP.responseText)
        };

        xmlHTTP.open("post", "https://127.0.0.1:5020/TMS/", true);
        xmlHTTP.send('{ "Amount" : 0.02,
            "ReferenceNumber" : "",
            "TransactionType" : 0 }');
    }
}
```

C# calling via XmlHttp (*Continued*)

```
else if (window.XMLHttpRequest)
{
    xmlHTTP = new XMLHttpRequest();

    xmlHTTP.onreadystatechange = function()
    {
        if (xmlHTTP.readyState == XMLHttpRequest.DONE)
        {
            if (xmlHTTP.status == 200)
            {
                processResponse(xmlHTTP.responseText);
            }
            else
            {
                alert('An error occurred trying to process the request.');
```

```
            }
        }
    }

    xmlHTTP.open("post", "https://127.0.0.1:5020/TMS/", true);
    xmlHTTP.setRequestHeader("Content-type",
"application/json; charset=UTF-8");
    xmlHTTP.send('{ "Amount" : 0.02,
"ReferenceNumber" : "",
                    "TransactionType" : 0}');
```

```
}
```


C# calling via XmlHttp (*Continued*)

```
else
{
    alert('Call to terminal failed.');
```

return;

```
}
```

Sample Response that GROOVV service will return:

Groovv SDK sends the JSON data for the each successful or failure transactions. Integrator needs to save the data for their reference purpose.

Sample JSON Data:

```
{
  "AuthCode": "000015",
  "CardBalance": 0,
  "CardPresenceType": null,
  "CardType": "Visa",
  "CashBackAmount": 0,
  "ClerkID": null,
  "CustomerAccountNO": "6781",
  "EntryMode": "MagneticStrip",
  "ErrorMessage": null,
  "GiftCardReferenceNumber": null,
  "HostResponseISOCODE": 0,
  "HostValidationCode": "0001",
  "InvoiceNumber": "1",
  "IsApproved": true,
  "IsError": false,
  "OrderNumber": null,
  "OriginalTransactionType": null,
  "ReferenceNumber": "1",
  "RequestAmount": 0.01,
  "ResponseAmount": 0.01,
  "ResponseCode": "000",
  "ResponseMessage": "AP",
```

```
    "SurchargeAmount": 0,  
    "TaxAmount": 0,  
    "TerminalID": "88014097496904",  
    "TicketNumber": 0,  
    "TipAmount": 0,  
    "TotalAmount": 0.01,  
    "TransactionDate": null,  
    "TransactionID": "006085567810001",  
    "TransactionSequenceNO": null,  
    "TransactionStatus": "Approved",  
    "TransactionType": null,  
    "VerboseMessage": "TransactionStatus: Approved\u000d\u000aResponseAmount:  
0.01\u000d\u000aAuthCode: 000015\u000d\u000aTransactionID: 006085567810001\  
\u000d\u000a\u000d\u000a",  
    "VoucherNumber": null  
}
```

JSON Response Data Field Definitions:

AuthCode	Authorization code returned	VerboseMessage	Verbose Message
ErrorMessage	Error message if any	CardType	Card Type Debit = 0, Visa = 1, Mastercard = 2, Amex = 3, Dinerclub = 4, Discover = 5, Jcb = 6, Unionpay = 7, OtherCredit = 8, Gift = 9, Cash = 10, EbtFoodStamp = 11, EbtCashBenefit = 12
IsApproved	Approval flag	CardBalance	Card Balance
IsCVVMatched	Not used	CardPresenceType	Card Present
IsError	Error flag	CashBackAmount	Cash Back Amount
IsZipMatched	Not used	EntryMode	Entry Mode MagneticStrip = 0, Insert = 1, Tap = 2, ManualEntry = 3, ChipFallbackToSwipe = 4, ChipFallbackToManual = 5, CardNotPresentManual = 6
OrderNumber	Order number		
RequestAmount	Request Amount		
ResponseAmount	Response Amount		
ResponseCode	Response Code		
ResponseMessage	Response Message		
TransactionID	Transaction ID		

JSON Response Data Field Definitions: *(Continued)*

CustomerAccountNO	Last 4 of card
GiftCardReferenceNumber	Gift Card Reference Number
HostResponseISOCode	HostResponseISOCode
HostValidationCode	HostValidationCode
InvoiceNumber	Invoice Number
TransactionType	TransactionType -> sale/void/refund
OriginalTransactionType	OriginalTransactionType
ReferenceNumber	Reference Number
SurchargeAmount	Surcharge Amount
TaxAmount	Tax Amount
TerminalID	Terminal ID
TicketNumber	Ticket Number

JSON Response Data Field Definitions: *(Continued)*

TotalAmount	TotalAmount
TipAmount	TipAmount
TransactionSequenceNO	Transaction Sequence NO
VoucherNumber	Voucher Number
TransactionStatus	Transaction Status Approved = 0, PartialApprove = 1, DeclineByHostOrCard = 10, CommunicationError = 11, CancelledByUser = 12, TimeoutOnUserInput = 13, FunctionNotCompleted = 14, BatchEmpty = 15, DeclinedByMerchant = 16, TransactionRecordNotFound = 17, InvalidEcrParameter = 30, BatteryLow = 31, CashDrawerSuccess = 40, CashDrawerFailed = 41, LastMessageNotAvailable = 91, TerminalNotAvailable = 95, ReceiptInformation = 99

Transaction Type to Call

Integrator can use below transaction types to perform several payment activities.

Sale	0
Void	1
Refund	2
PreAuth	3
PostAuth	4
ForceAuth	5
CardBalanceInquiry	6
AuthOnly	7
None	8
Settlement	9
AutoSettlement	10
ReprintReceipt	11

DetailReport	12
SummaryReport	13
EmvLastTransactionReport	14
ClerkSummaryReport	15
ParametersReport	16
OpenAuth	17
RecentError	18
ActivityReport	19
ClerkIdList	20
EmvParameters	21
EmvStatistic	22
EmvPublicKey	23

Transaction Type to Call

TerminalInfo	24
TerminaleExtInfo	25
IssuanceReload	26
Activation	27
BlockActivation	28
Redemption	29
AddTip	30
ForceIssuance	31
ForceActivation	32
ForceRedemption	33
Deactivation	34
BlockDeactivation	35

Reactivation	36
ZeroGiftCardBalance	37
BlockReactivation	38
CashdrawerStatus	39
CashdrawerOpen	40
CashdrawerCapability	41
RecallLastTx	42
PrintingStatus	43

What next?

If you have additional questions or need support, please reach out to us at: SDKSupport@groovv.com or **747-888-9105**.

Once you've selected the best version for your application, you'll need to run the installer on your development or test system(s), and then use the provided samples to incorporate similar calls into your application.

Also, you'll need to supply your merchants with the installer and the installation guide so that they, too, can set up their computer to start working with Groovv SDK. (OR you would use the Groovv SDK Setup API to incorporate the install steps into your own installer, and the instructions into your guide.)

The latest installer, sample code and documentation can be downloaded from DropBox at: [Groovv SDK Download](#).

We look forward to working with you!