Interledger Protocol Payments

Interledger Protocol (ILP) payments is a new feature coming in Tiki 24. Interledger is an open and inclusive payments network which **does not utilize a blockchain**. The Interledger Protocol is an open protocol suite for sending payments across different ledgers.

How does Interledger Protocol (ILP) work?

The Interledger Protocol is a set of rules that define how nodes should send value over the Interledger network. A single aggregate payment from source to destination is split into multiple ILP packets. Each ILP packet contains transaction information, which is private to the nodes participating in the transaction. The sender constructs and sends a Prepare packet as a request to the connecting router. The routers forward the packet until it reaches the receiver. The receiver then accepts or rejects the packet by sending a Fulfill packet or a Reject packet as the response. The routers relay the response from the receiver back to the sender. When the sender receives a Fulfill packet, it knows that the packet was successfully delivered to the receiver. The sender then continues to send the remaining Prepare packets until the value is fully transferred. You can read the whitepaper here.

Why use Interledger Protocol (ILP)?

- Simplicity for end-users to transfer value over different networks
- Speed over traditional payment rails
- Reduced cost as competition to connect networks grows and incentivizes lower prices
- Trustworthiness as tracking transactions and all-or-nothing (atomic) transactions guarantee that the value does not get lost due to fees and returns
- Packetizing value splitting up larger transfers into many lower-value packets which increases the network's efficiency, security and interoperability

How to do Interledger Protocol (ILP) payments using Tiki?

Explained below is the step by step guide to implement Interledger Protocol (ILP) payments in Tiki assuming there is a working domain already setup, in this example with the following characteristics:

- Domain name ilp.*
- Path of your home /home/ilp/
- Username ilp
- Database name ilp
- Some strong passwords

Step 1 - Getting and installing a compatible Tiki instance:

At the date of this writing you have to use a specific 24.x version; it will be merged to master soon and available via Tiki Manager.

Step 2 - Running the ILP moneyd local test network and the ILP SPSP Invoice Server

MoneyD allows you to run an isolated local test network for development. The ILP SPSP is a basic protocol for exchanging payment information between payee and payer to facilitate payment over Interledger. In our case Tiki is the client, that talks to the SPSP server.

a. Navigate one level up your website directory cd ...

b. Create a directory where we will get the tools and enter it mkdir ilp-tools && cd ilp-tools

```
c. Export the path so you can run npm commands as your user
wget https://nodejs.org/dist/v14.17.5/node-v14.17.5-linux-x64.tar.gz
tar zxvf node-v14.17.5-linux-x64.tar.gz
export PATH=/home/ilp/ilp-tools/node-v14.17.5-linux-x64/bin:$PATH
```

d. Install moneyd and the PM2 daemon process manager via npm npm install moneyd npm install pm2

e. Finally install the ilp-spsp server

<pre>git clone https://git cd ilp-spsp-invoice-s npm install</pre>	thub.com/i server	nterle	edger	js/i	lp-s	psp.	-in	voice	e-se	rver.	git		
<pre>f. Restore your path and st export PATH=/usr/loca pm2 start "moneyd loc pm2 start index.js pm2 status index.js st</pre>	art moneyd a al/sbin:/u cal" hould print a	and PM2 sr/loc n "onlir	2 cal/b ne" gre	in:/u	usr/ atus	sbir	n:/	usr/l	oin:	/sbin	:/bi	n:\$PATH	
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	Click to expa	nd											

Step 3 - Setup the Tiki ILP payment feature and a basic cart

Head to your Tiki instance **Settings > Control panels** and **Set as my default** the "Advanced" and "Experimental" filters to have all the options available

dity Advanced	★ Access ★ Content ★ System ★ Tools ★	
Cooreb proferences	Preference Filters	Dyr
Search preferences	Basic	Per
🛪 Control Panels	Advanced	Sea
💥 Global Setup	Experimental	
General Settings	Unavailable	HTI
ර් Features	Deprecated	Are
🗱 Wizards	Set as my default	Tiki
🖬 Look & Feel 🔤		Ter
➡ Registration & Log in	Rebuild Admin Index	Ter
A Modules	Control Panels	Wat

Click to expand

Navigate to **Global setup > Features** and activate the **Payment** feature

Additional features	
Spreadsheet	00
Directory	09
Draw (SVG edit)	0
Payment and Acc	ounting
Tiki user credits	
Accounting	
Payment	0C0
Mail and Sharing	
Social networks	
Share	0 🕰 🖸
Webmail	00
Mail-in	00

In **Global setup** > **Profiles** search for Shopping_Cart, click the result, fill **Currency initials** and **Currency symbol** as XRP and **Apply**. You now have a basic shop.

Profile r	ame Repository	Profile type
Shoppin	Cart profiles.tiki.org	beta. Full profile (out of the box & ready to go). 12.x. 13.x. Available in
applied		Profiles Wizard (12+), 14.x, 15.x, 16.x, 17.x, 18.x, 19.x, 20.x, 21.x, 22.x
Curren	cy initials	XRP
PayPal	Business ID	unknown
Curren	cy symbol	XRP
		Fornet and Re-apply
		Preview Changes
		A version of this profile is already
		applied.
Info		
IIIIC		
+. The referen	ofile provides a Shopping Cart a former name of this profile was ced by the profile.	nd the corresponding basic payment system. Tested to work with Tiki12("TikiKart", which has been kept internally for the naming of the objects
	Products list nage	Single Product Page

Click to expand

Click on the link near the check button or navigate via the right menu to **Miscellanous > Payment** and select Inter Ledger Protocol as the **Payment system**, XRP for **Currency**, check **User can only see own outstanding payments**, and **User can only see own past or cancelled payments**

Control Panels	i≣ Payments		Apply
Global Setup	Payment Advanced Shopping Cart	Plugins Shipping	No Tab
Main Features			
Miscellaneous			
Meta Tags	Choose payment system		×
Workspaces	You can use only one payment method: Pa PayPal is working at the moment. See PayP	yPal or Cclite or Tiki User Credits al.com	
Copyright	Cclite: Community currency accounting for	local exchange trading systems (LETS). See sourceforge.net	
Payment	Tiki User Credits: Requires this other featur	e to be configured	
Maps	Payment system	Inter Ledger Protocol	
Video	Payment system		
Print Settings		PayPal: see PayPal.com - Cclite: Community currency	
Semantic Links		100	
Feeds	Currency	XRP	
Banners		0.5	
	Default acceptable payment	30	days
users a community	delay	0	
Advanced	Wiki page with manual payment		
	instructions	0 🛇	
	User can only see own outstanding payments	€0	
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Click to expand

Bellow fill in the ILP server base url as http://localhost:6000 and the ILP bearer token as test and Apply the settings

Wiscenaneous		
Meta Tags	Inter Ledger Protoc	ol payment module
Workspaces		
Copyright	A Experimental	:
Payment	Inter Ledger Protocol pay	ment is currently experimental, you need to toggle the experimental
Maps	settings to be able to use	You will need to set the URL and Token to be able to setup as payment
Video	method	
Print Settings	ILP server base url	http://localhost:6000
Semantic Links		05
Feeds	II P bearer token	test
Banners		05
Users & Community	Enforce SSI	
Advanced		
	ILP Asset scale	9
		0
	Israel Post payment	t module
	Cclite	
	Tiki user credits	

Click to expand

Click the Plugins tab, fill Plugin Add to cart, Plugin Member Payment and Plugin Payment

Pugins Pugin Add to cart Pugin Add to cart Pugin Add to cart Pugin Adjust Inventory Pugin Callect Anonymous Shopper Pugin Callect Anonymous Shopper	Main Features Miscellaneous Meta Tags Workspaces Copyright	Payment ● Payment settings I = Payments Payment Advanced Shopping Carr	Apply Plugins Shipping No Tabs	
Plugin Agust Inventory Plugin Extend Cart Inventory Hold Plugin Member Payment Plugin Collect Anonymous Shopper Info Click to expand	End Payment Maps ■* Video Print Settings ← Semantic Links	Plugins Plugin Add to cart	■0 2 0	
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Step 4 - Test an order

Add a product to your cart, click **Check-out** in the right panel to obtain the ILP pointer for the payment

Categories	Payment Request	Last-Visited
Payments	Cart Check-Out (admin)	Pages
Wiki +		
File	Payment Status	1. cart products
Galleries +		2. Homerage
Trackers -	Status: Outstanding	
	ID Product Quantity Unit Price	
Settings +		
	3 Wise Book 1 5.00	
	Leikid answet	
	Amount: 5.00 XRP	
	Payment request initiated: 2021-08-26	
	Payment request due: 2021-09-25	
	Pay with Inter Ledger Protocol	
	Use the ILP pointer to process the payment. Refresh the this page after complete the payment.	
	http://localhost:6000/0787e2ba-d358-4cb7-901b-8d96350e2887	
	Check Payment	
	Enter a Manual Payment	
	XRP	

Click to expand

Copy the link, and back at the command line send 5XRP ilp-spsp send -a 5 -p http://localhost:6000/0787e2ba-d358-4cb7-901b-8d96350e2887 should respond with amount sent ie "sent 5 units!"

Reload the page or **Check Payment** and your payment will be confirmed

•		
System Menu	Payment 🛛 🗡	Your Cart
Home Search	Payment Request Cart Check-Out (admin)	Your cart is empty
Categories Payments	Payment Status Status: Past	Last-Visited Pages
Wiki ♥ File Galleries ♥	ID Product Quantity Unit Price 3 Wise Book 1 5.00	1. cart product 2. HomePage
Trackers 👻 Settings 👻	Paid amount: 5.00 XRP Payment Details 1.500 XRP was paid on 2021-08-26	
	Payment information	

Related

- Web Monetization
- PluginCoil

A special thank you

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- $\bullet\ https://community.webmonetization.org/tikiilp/tiki-ilp-integration-and-monetization-final-grant-report-9 ge$
- $\bullet\ https://community.webmonetization.org/tikiilp/tiki-ilp-integration-and-monetization-grant-report-1-2b4a$