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://gi cd ilp-spsp-invoice- npm install</pre>		nterle	edger	js/i	ilp-s	spsp	-in	voic	e-se	rver.	git		
<pre>f. Restore your path and st export PATH=/usr/loca pm2 start "moneyd loo pm2 start index.js pm2 status index.js s</pre>	al/sbin:/u cal"	sr/loo	cal/b				n:/	usr/l	bin:	/sbin	:/bi	n:\$PATH	
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	Click to expan	d											

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

k Advanced	 Access - Content - System - Tools - 	
Search preferences	Preference Filters	D
Search preferences	Basic	Р
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General Settings	Unavailable	Н
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Click to expand

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

Additional features	
Spreadsheet	090
Directory	00
Draw (SVG edit)	
Payment and Acc	ounting
Tiki user credits	00
Accounting	00
Payment	000
Mail and Sharing	
Social networks	
Share	□ @ <u>∧</u> ○
Webmail	09
Mail-in	

Click to expand

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.

1	Profile name	Repository	Profile type
files	Shopping_Cart	profiles.tiki.org	beta, Full profile (out of the box & ready to go), 12.x, 13.x, Available i
in Features	applied		Profiles Wizard (12+), 14.x, 15.x, 16.x, 17.x, 18.x, 19.x, 20.x, 21.x, 22.x
cellaneous	Currency initials		XRP
ers & Community			
anced	PayPal Business ID		unknown
	Currency symbol		XRP
			Forget and Re-apply
			Preview Changes A version of this profile is already
			applied.
	Info		
		of this profile was	nd the corresponding basic payment system. Tested to work with Tiki1: "TikiKart", which has been kept internally for the naming of the objects
		roducts list page	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	≡ Payments		Apply
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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	
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Bellow fill in the ILP server base url as http://localhost:6000 and the ILP bearer token as test and Apply the settings

Miscellaneous	PayPal	
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 method	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	ILP bearer token	
Banners	ILP bearer token	test
Users & Community		
Advanced	Enforce SSL	
Auvanceu	ILP Asset scale	9
		0
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	Cclite	
	Tiki user credits	

Click to expand

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

Copyright Purgent Advanced Shopping Cat Purgins Shopping Total Purgent Purgins Shopping Total Purgin Addia to cart IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	Meta Tags Workspaces	Payment • Payment settings III Payments	Apply
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		Plugin Payment	
Click to expand		Арр	
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Step 4 - Test an order

Add a product to your cart, click Check- Payments Witi - File Gateries - Trackes - Setting -	Payment Request Cart Check-Out (admin) Payment Status Status: Outstanding 1 5.00 XRP Amount remaining: 5.00 XRP Amount remaining: 5.00 XRP Payment request tiltater 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://ocalheuts.t6000/07767e2ba-d356-4cb7-901b-8d96350e2887 Cleck Payment	Last-Visited Pages 1. cart products 2. HomePage	ent
	Check Payment Enter a Manual Payment XRP Note		
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

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

Related

- Web Monetization
- PluginCoil

A special thank you

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