



Raiden Network Hands-on Workshop

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What will we be doing today?

#1 Introduction to Raiden

#2 Setting up Raiden

#3 API walkthrough

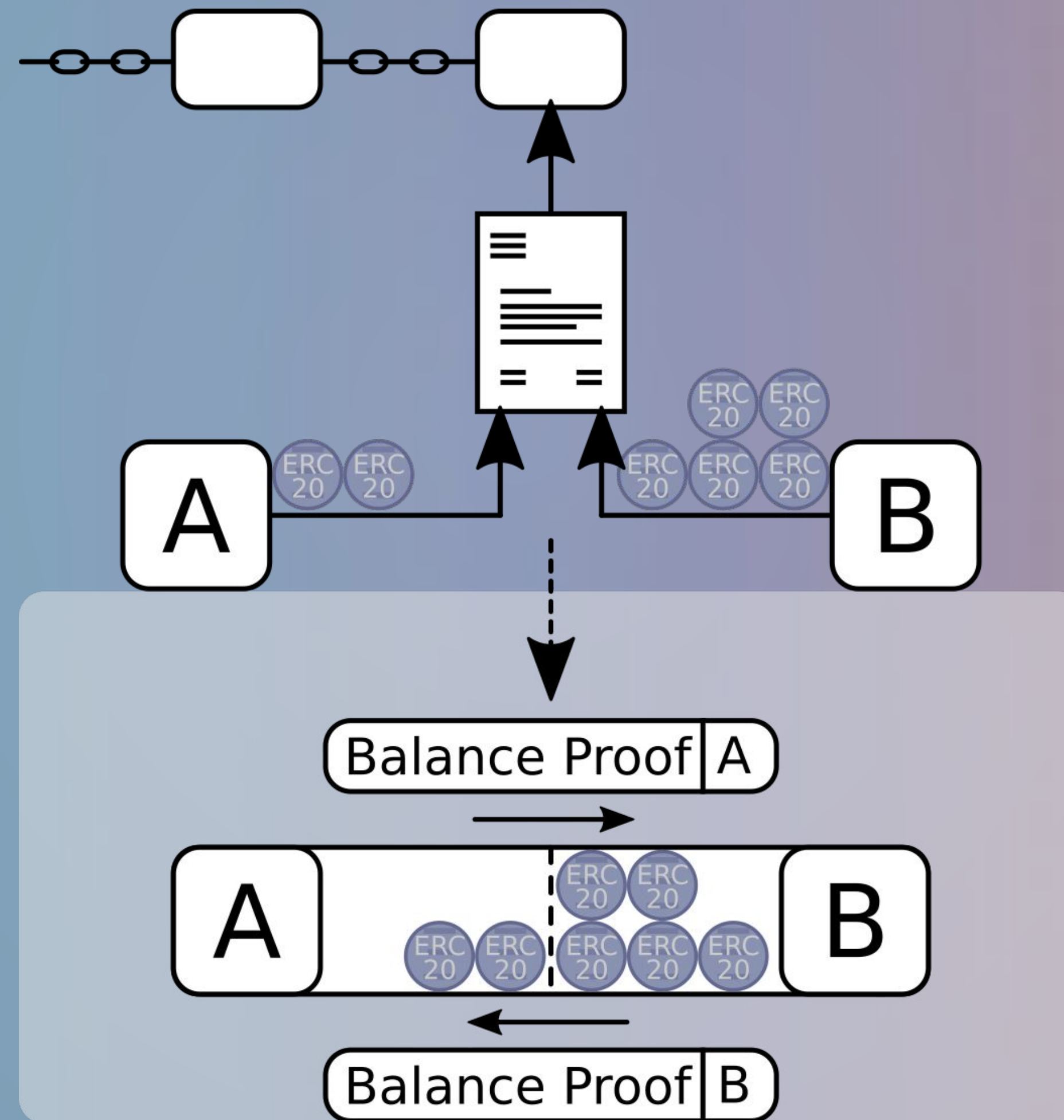
#4 Questions

#5 Interact with Raiden

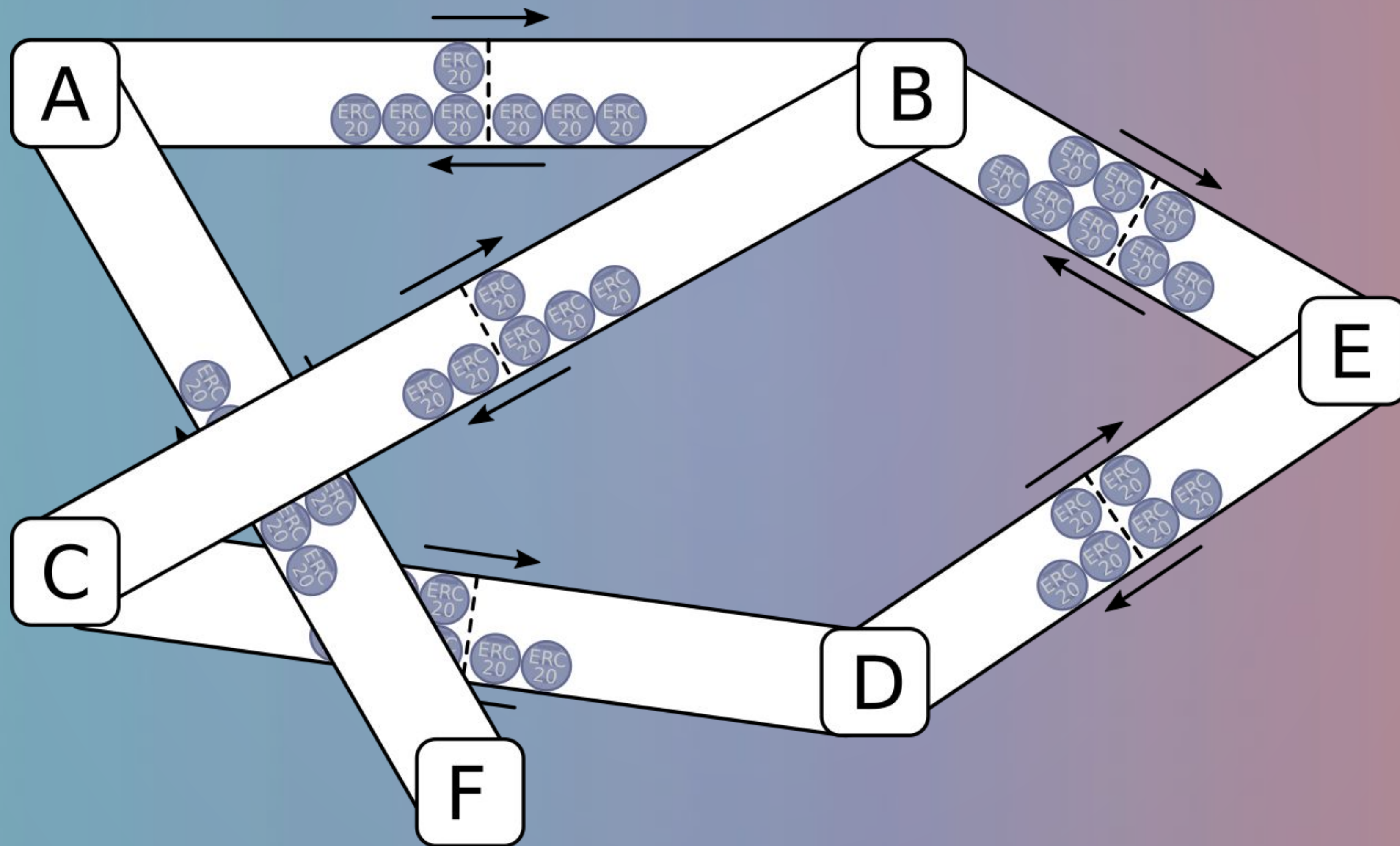
#1 Introduction to Raiden



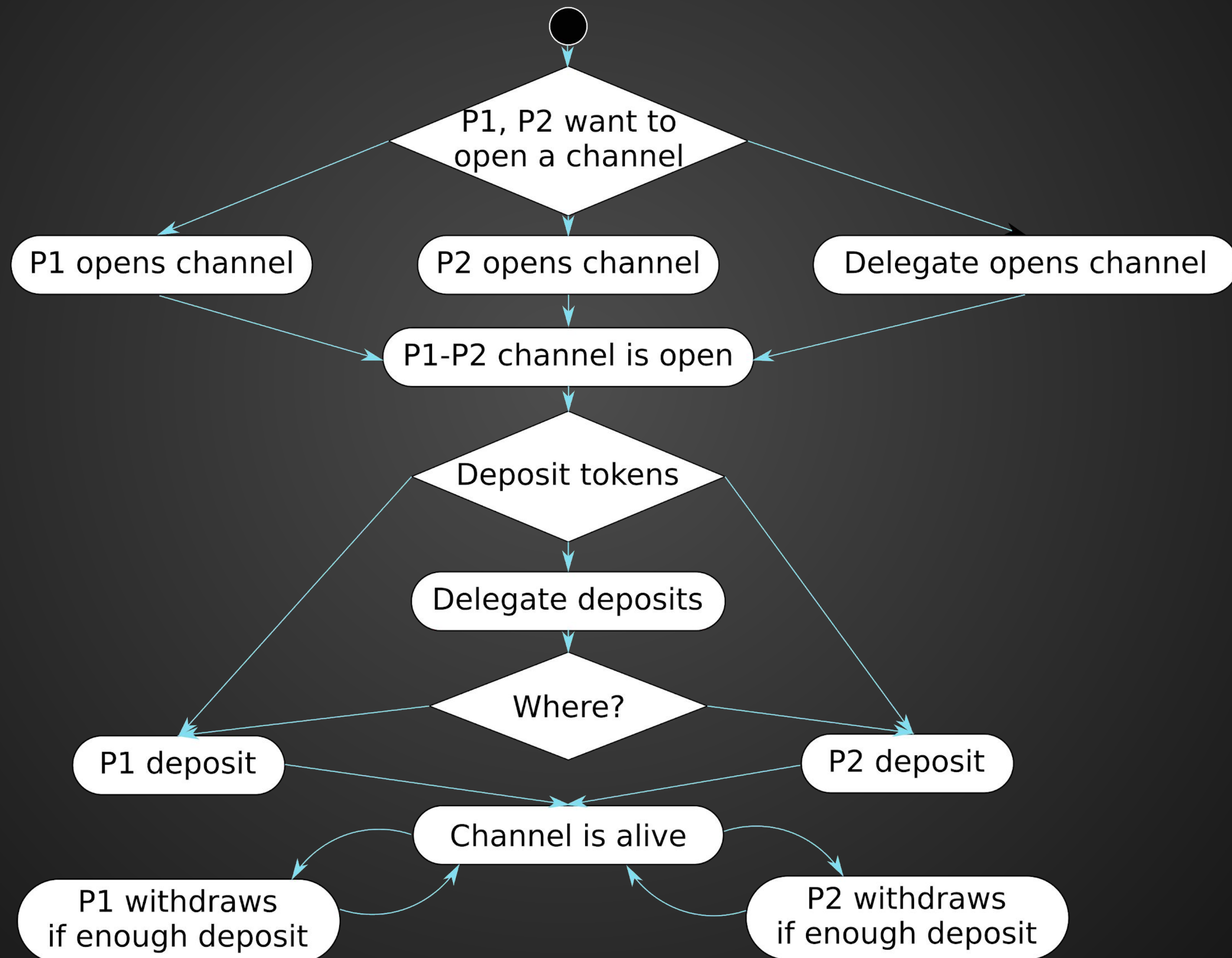
What is a payment channel?



What is a payment channel network?



Channel open/deposit lifecycle



What is the current status of Raiden?

- Internal testing on mainnet
- Strict QA process to ensure high standards
- Bug bounty incoming
- Stay tuned for interesting updates in the near future

Quick show of hands

- Who has previously interacted with Raiden in some extent?

#2 Setting up Raiden

workshop.raiden.network



#3 API Walkthrough

API call overview

- Querying a node
- Querying channels
- Querying channels for specific tokens
- Querying a specific channel
- Querying registered tokens
- Querying partners for token
- Register a token
- Open channel
- Joining a token network
- Depositing to a channel
- Payments
- Payment events
- Closing a channel
- Leaving a token network

Typical channel object

```
{  
  "channel_identifier": 21,  
  "token_network_identifier": "0x2a65Aca4D5fC5B5C859090a6c34d164135398226",  
  "partner_address": "0x61C808D82A3Ac53231750daDc13c777b59310bD9",  
  "token_address": "0xEA674fdDe714fd979de3EdF0F56AA9716B898ec8",  
  "balance": 25000000,  
  "total_deposit": 35000000,  
  "state": "opened",  
  "settle_timeout": 500,  
  "reveal_timeout": 40  
}
```

Open channel

```
PUT /api/1/channels HTTP/1.1
```

```
Host: localhost:5001
```

```
Content-Type: application/json
```

```
{  
  "partner_address": "0x61C808D82A3Ac53231750daDc13c777b59310bD9",  
  "token_address": "0xEA674fdDe714fd979de3EdF0F56AA9716B898ec8",  
  "total_deposit": 3500,  
  "settle_timeout": 500  
}
```


Example response

HTTP/1.1 200 OK

Content-Type: application/json

```
{
  "token_network_identifier": "0xE5637F0103794C7e05469A9964E4563089a5E6f2",
  "channel_identifier": 20,
  "partner_address": "0x61C808D82A3Ac53231750daDc13c777b59310bD9",
  "token_address": "0xEA674fdDe714fd979de3EdF0F56AA9716B898ec8",
  "balance": 2500,
  "total_deposit": 3500,
  "state": "opened",
  "settle_timeout": 500,
  "reveal_timeout": 30
}
```

Querying channels

```
GET /api/1/channels HTTP/1.1  
Host: localhost:5001
```

Example response

HTTP/1.1 200 OK

Content-Type: application/json

```
[
  {
    "token_network_identifier": "0xE5637F0103794C7e05469A9964E4563089a5E6f2",
    "channel_identifier": 20,
    "partner_address": "0x61C808D82A3Ac53231750daDc13c777b59310bD9",
    "token_address": "0xEA674fdDe714fd979de3EdF0F56AA9716B898ec8",
    "balance": 25000000,
    "total_deposit": 35000000,
    "state": "opened",
    "settle_timeout": 100,
    "reveal_timeout": 30
  }
]
```


Querying specific channels

```
GET /api/1/channels/(token_address) HTTP/1.1
```

```
Host: localhost:5001
```

```
GET /api/1/channels/(token_address)/(partner_address) HTTP/1.1
```

```
Host: localhost:5001
```

Depositing to a channel

```
PATCH /api/1/channels/(token_address)/(partner_address) HTTP/1.1
```

```
Host: localhost:5001
```

```
Content-Type: application/json
```

```
{  
    "total_deposit": 1000  
}
```

Example response

HTTP/1.1 200 OK

Content-Type: application/json

```
{
  "token_network_identifier": "0xE5637F0103794C7e05469A9964E4563089a5E6f2",
  "channel_identifier": 20,
  "partner_address": "0x61C808D82A3Ac53231750daDc13c777b59310bD9",
  "token_address": "0xEA674fdDe714fd979de3EdF0F56AA9716B898ec8",
  "balance": 2500,
  "total_deposit": 4500,
  "state": "opened",
  "settle_timeout": 500,
  "reveal_timeout": 30
}
```


Payments

POST /api/1/payments/(token_address)/(target_address) HTTP/1.1

Host: localhost:5001

Content-Type: application/json

```
{  
  "amount": 200  
}
```

Example response

HTTP/1.1 200 OK

Content-Type: application/json

```
{  
  "initiator_address": "0xEA674fdDe714fd979de3EdF0F56AA9716B898ec8",  
  "target_address": "0x61C808D82A3Ac53231750daDc13c777b59310bD9",  
  "token_address": "0x2a65Aca4D5fC5B5C859090a6c34d164135398226",  
  "amount": 200,  
  "identifier": 42  
}
```

Payment events

```
GET /api/1/payments/(token_address)/(target_address) HTTP/1.1  
Host: localhost:5001
```

Example response

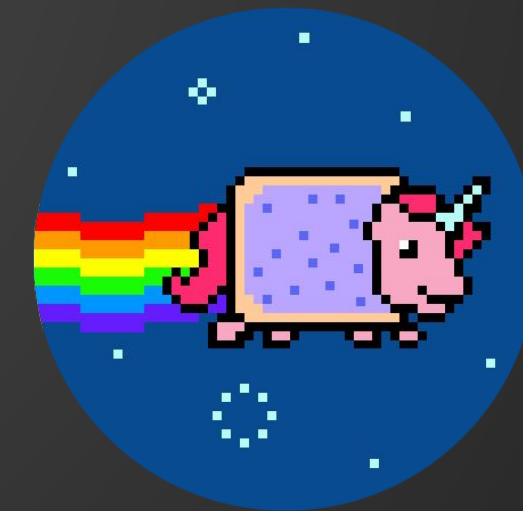
HTTP/1.1 200 OK

Content-Type: application/json

```
[
  {
    event: "EventPaymentReceivedSuccess",
    amount: 5,
    initiator: "0x82641569b2062B545431cF6D7F0A418582865ba7",
    identifier: 1
  },
  {
    event: "EventPaymentSentSuccess",
    amount: 35,
    target: "0x82641569b2062B545431cF6D7F0A418582865ba7",
    identifier: 2
  },
  {
    event: "EventPaymentSentSuccess",
    amount: 20,
    target: "0x82641569b2062B545431cF6D7F0A418582865ba7",
    identifier: 3
  }
]
```




#4 Questions?



#5 Interact with Raider

workshop.raiden.network





0 payments



2 payments

Let's play!



0 payments



0 payments



Try it yourself.

Test Red Eyes on the testnet and watch out for the mainnet launch and the bug bounty!

Download the latest version here:
<https://github.com/raiden-network/raiden/releases/>



Thank you and let's keep in touch!

Follow Raiden

// Twitter: **@raiden_network**

// Website: **raiden.network**



Querying our node

```
GET /api/1/address HTTP/1.1  
Host: localhost:5001
```

Example response

HTTP/1.1 200 OK

Content-Type: application/json

```
{  
  "our_address": "0x2a65Aca4D5fC5B5C859090a6c34d164135398226"  
}
```


Joining a token network

```
PUT /api/1/connections/0x2a65Aca4D5fC5B5C859090a6c34d164135398226
```

```
HTTP/1.1
```

```
Host: localhost:5001
```

```
Content-Type: application/json
```

```
{  
  "funds": 5000  
}
```

Closing a channel

PATCH

/api/1/channels/0xEA674fdDe714fd979de3EdF0F56AA9716B898ec8/0x61C808D82A3
Ac53231750daDc13c777b59310bD9 HTTP/1.1

Host: localhost:5001

Content-Type: application/json

```
{  
  "state": "closed"  
}
```

Example response

HTTP/1.1 200 OK

Content-Type: application/json

```
{
  "token_network_identifier": "0xE5637F0103794C7e05469A9964E4563089a5E6f2",
  "channel_identifier": 20,
  "partner_address": "0x61C808D82A3Ac53231750daDc13c777b59310bD9",
  "token_address": "0xEA674fdDe714fd979de3EdF0F56AA9716B898ec8",
  "balance": 2500,
  "total_deposit": 4500,
  "state": "closed",
  "settle_timeout": 500,
  "reveal_timeout": 30
}
```

Querying registered tokens

```
GET /api/1/tokens HTTP/1.1
```

```
Host: localhost:5001
```


Example response

HTTP/1.1 200 OK

Content-Type: application/json

```
[  
  "0xEA674fdDe714fd979de3EdF0F56AA9716B898ec8",  
  "0x61bB630D3B2e8eda0FC1d50F9f958eC02e3969F6"  
]
```

Querying partners for token

```
GET /api/1/tokens/0x61bB630D3B2e8eda0FC1d50F9f958eC02e3969F6/partners
HTTP/1.1
Host: localhost:5001
```

Example response

HTTP/1.1 200 OK

Content-Type: application/json

```
[
  {
    "partner_address": "0x2a65aca4d5fc5b5c859090a6c34d164135398226",
    "channel":
"/api/<version>/channels/0x61C808D82A3Ac53231750daDc13c777b59310bD9/0x2a
65aca4d5fc5b5c859090a6c34d164135398226"
  }
]
```

Querying channels for a specific token

```
GET /api/1/channels/0xEA674fdDe714fd979de3EdF0F56AA9716B898ec8 HTTP/1.1  
Host: localhost:5001
```


Example response

HTTP/1.1 200 OK

Content-Type: application/json

```
[
  {
    "token_network_identifier": "0xE5637F0103794C7e05469A9964E4563089a5E6f2",
    "channel_identifier": 20,
    "partner_address": "0x61C808D82A3Ac53231750daDc13c777b59310bD9",
    "token_address": "0xEA674fdDe714fd979de3EdF0F56AA9716B898ec8",
    "balance": 25000000,
    "total_deposit": 35000000,
    "state": "opened",
    "settle_timeout": 100,
    "reveal_timeout": 30
  }
]
```