






Using the hypernode ledger: quick start guide

start your server

```
-MacBook-Pro ledger2 % java -jar /Users/shinji/Downloads/ledger/target/ledger-0.0.1-SNAPSHOT.jar
```

if you don't already have a key pair get it on here:

     http://localhost:8080/server/setEncryptionEntityIntegrated

Set Encryption Entity (Integrated)






Paste JSON here:

```
xS5gZkaLXjcrvUu3c7+ctJ3RtcM5ZLBnttVUiG9VbtZuh5XEJu
NaUIId//e/5yBH6ww3h4+5P0VX2DTIm5iZJkYtPaqg7FU/
nn/1+LuLuWa3QECJBQz674iiriMj0b/
l18ZoP+0iuBu8lhY2oJcLMXdhSWo620dQ1ALyZEAf/Fy1d/
jpls3udZB0r2hnQNZP0p7cMQgB3siReDTUc7hziCjELZQ/
Z8ZDppV0St912byD1AW0tpG9yu8uGT32zIYUgypQzRHL0oCaU/
A5BfvLMYHL8f8MgUwLFRm0m9mh0YlpcLwe03em8W4SDYgrW3F1
A3AvyjQP6mkJf4xXnBk7Z0aNLX+aPCl72w979jrN1daZVmz2PC
C8RcwFlUohR7tfi/zzPLm0JLaF2IDbdDDB9xVAgMBAAE="
}
```

Send

OK

now set the desired keys into the server

     http://localhost:8080/server/setEncryptionEntityIntegrated

Set Encryption Entity (Integrated)

Paste JSON here:

```
xS5gZkaLXjcrvUu3c7+ctJ3RtcM5ZLBnttVUiG9VbtZuh5XEJu
NaUIId//e/5yBH6ww3h4+5P0VX2DTIm5iZJkYtPaqg7FU/
nn/1+LuLuWa3QECJBQz674iiriMj0b/
l18ZoP+0iuBu8lhY2oJcLMXdhSWo620dQ1ALyZEAf/Fy1d/
jpls3udZB0r2hnQNZP0p7cMQgB3siReDTUc7hziCjELZQ/
Z8ZDppV0St912byD1AW0tpG9yu8uGT32zIYUgypQzRHL0oCaU/
A5BfvLMYHL8f8MgUwLFRm0m9mh0YlpcLwe03em8W4SDYgrW3F1
A3AvyjQP6mkJf4xXnBk7Z0aNLX+aPCl72w979jrN1daZVmz2PC
C8RcwFlUohR7tfi/zzPLm0JLaF2IDbdDDB9xVAgMBAAE="
}
```

Send

OK

time to create the new ledger (remember to specify account name and connection string, as this is the connection string other servers will use to connect to you)

http://localhost:8080/server/createNewLedger

Create new Ledger

Paste JSON here:

```
{
  "id": 1,
  "distributedLedgerAccounts": [
    {
      "publicKey": "MIIB0jANBgkqhkiG9w0BAQEFAAACAY8AMIIBigKCAyEAvnHa4H05W7iHobIGp6X9N6eC2MfTP60VAPvtzshapfgiGbdGBqfVIxnfrtZ1LWAjINvaquU9wPgajQfx06M8v/EAj2GNcEfZ+lxu+9ilx/xS5gZkaLXjcrvUu3c7+ctJ3RtcM5ZLBnttVUiG9VbtZuh5XEJUNaUId//e/5yBH6ww3h4+5P0VX2DTIm5iZJkYtPaqg7FU/nn/1+LuLuWa3QECJBQz674iir1Mj0b/118Z0P+0iuBu8lhY2oJcLMXdhSwo620dQ1ALyZEAf/Fy1d/jp1s3udZB0r2hnQNZP0p7cM0gB3s1ReDTuc7hziCjELZQ/Z8ZDppV0St912byD1AW0tpG9yu8uGT32zIYUgypQzRHL0oCaU/A5BfvLMYHL8f8MgUwLFRm0m9mh0YlpcLwe03em8W4SDYgrw3F1A3AvyJQP6mkJf4xXnBk7Z0aNLX+aPCl72w979jrN1daZVmz2PCC8RcwFLUohR7tfi/zzPLm0JLaF2IDbdDDb9xVAgMBAAE=",
      "name": "ACCOUNT1_NAME",
      "amount": "1000.00",

      "validatorNode": "MIIB0jANBgkqhkiG9w0BAQEFAAACAY8AMIIBigKCAyEAvnHa4H05W7iHobIGp6X9N6eC2MfTP60VAPvtzshapfgiGbdGBqfVIxnfrtZ1LWAjINvaquU9wPgajQfx06M8v/EAj2GNcEfZ+lxu+9ilx/xS5gZkaLXjcrvUu3c7+ctJ3RtcM5ZLBnttVUiG9VbtZuh5XEJUNaUId//e/5yBH6ww3h4+5P0VX2DTIm5iZJkYtPaqg7FU/nn/1+LuLuWa3QECJBQz674iir1Mj0b/118Z0P+0iuBu8lhY2oJcLMXdhSwo620dQ1ALyZEAf/Fy1d/jp1s3udZB0r2hnQNZP0p7cM0gB3s1ReDTuc7hziCjELZQ/Z8ZDppV0St912byD1AW0tpG9yu8uGT32zIYUgypQzRHL0oCaU/A5BfvLMYHL8f8MgUwLFRm0m9mh0YlpcLwe03em8W4SDYgrw3F1A3AvyJQP6mkJf4xXnBk7Z0aNLX+aPCl72w979jrN1daZVmz2PCC8RcwFLUohR7tfi/zzPLm0JLaF2IDbdDDb9xVAgMBAAE="
    }
  ],
  "validatorNodeList": [{
    "connectionString": "CONNECTION_STRING",
    "publicKey": "MIIB0jANBgkqhkiG9w0BAQEFAAACAY8AMIIBigKCAyEAvnHa4H05W7iHobIGp6X9N6eC2MfTP60VAPvtzshapfgiGbdGBqfVIxnfrtZ1LWAjINvaquU9wPgajQfx06M8v/EAj2GNcEfZ+lxu+9ilx/xS5gZkaLXjcrvUu3c7+ctJ3RtcM5ZLBnttVUiG9VbtZuh5XEJUNaUId//e/5yBH6ww3h4+5P0VX2DTIm5iZJkYtPaqg7FU/nn/1+LuLuWa3QECJBQz674iir1Mj0b/118Z0P+0iuBu8lhY2oJcLMXdhSwo620dQ1ALyZEAf/Fy1d/jp1s3udZB0r2hnQNZP0p7cM0gB3s1ReDTuc7hziCjELZQ/Z8ZDppV0St912byD1AW0tpG9yu8uGT32zIYUgypQzRHL0oCaU/A5BfvLMYHL8f8MgUwLFRm0m9mh0YlpcLwe03em8W4SDYgrw3F1A3AvyJQP6mkJf4xXnBk7Z0aNLX+aPCl72w979jrN1daZVmz2PCC8RcwFLUohR7tfi/zzPLm0JLaF2IDbdDDb9xVAgMBAAE="
  }],
  "ledgerParameters": {
    "messageUpdateFrequencyPerHour": 30,
    "frameProcessingTimeMilliseconds": 5000,
    "maxConnections": 20,
    "amountRequestedToBeValidator": "1",
    "transactionCost": "0.1",
    "maxTransactionsPerBlock": 1000,
    "transmitRedundancy": 1
  }
}
```

Send

now your system is online.

You can specify other public keys in the new ledger, or if you want to add new people to the system you can make a payment

This is how to make a payment: first configure the client by entering your private and public key

http://localhost:8080/client/setEncryptionEntityIntegrated

Set Encryption Entity (Integrated)

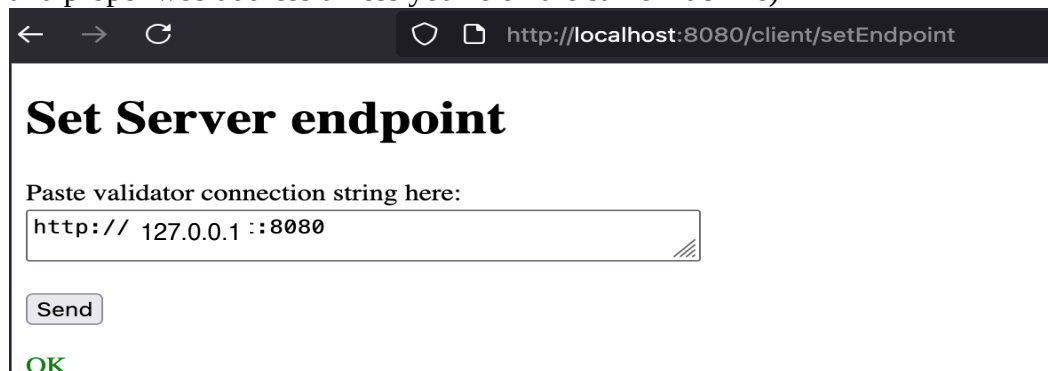
Paste JSON here:

```
{
  "privateKey":
  "MIIG/
wIBADANBgkqhkiG9w0BAQEFAASC BukwggblAgEAAoIBgQC+cd r
gdDlbuIehsganpf03p4LYx9M/ rRUA+
+30yFql+CIzt0YGP9UjGd9G1nWVYCMg29qq5T3A+BqNB/
HTozy/8QCPYY1wR9n6XG772KXH/
FJKBmRoteNyu9S7dzv5y0ndG1wz lksGe21VSIb1Vu1m6HlcQm4
1pQh3/97/nIEfrDDeHj7k/RVfYNMibmJkmRi09qqDsVT+ef/
X4u4u5ZrdAQIkFDP rviKKuIyM5v+XXxmg/46K4G7yWFjag lwsX
```

Send

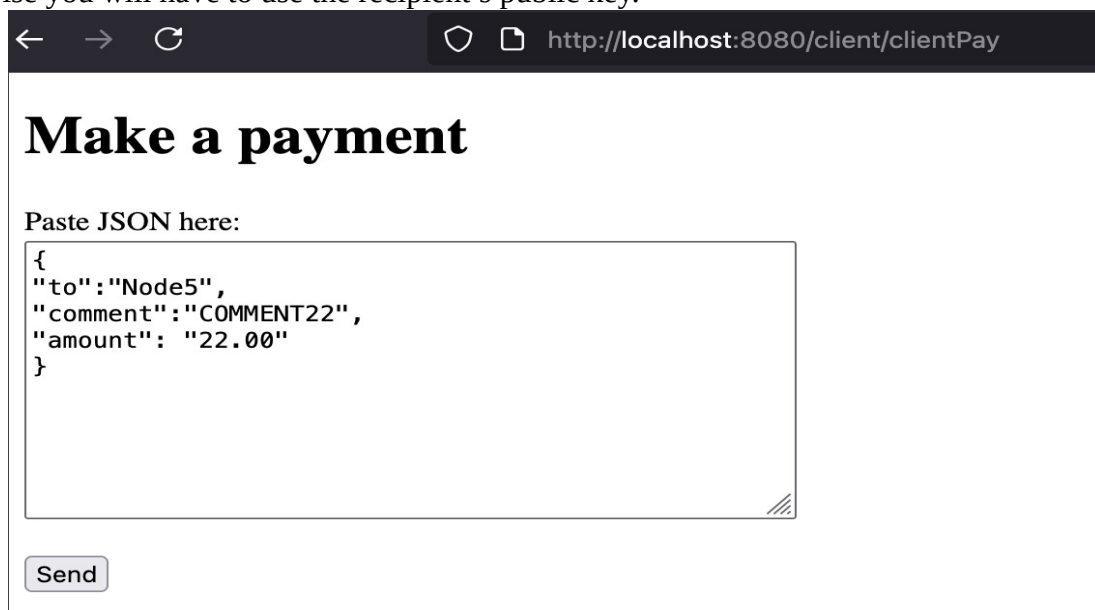
Already Started

and then set the target server (in this case I'm using localhost but you will likely use a different server with a proper web address unless you're on the same machine)



A web browser window showing the 'Set Server endpoint' page. The address bar displays 'http://localhost:8080/client/setEndpoint'. The page has a title 'Set Server endpoint' and a label 'Paste validator connection string here:'. Below the label is a text input field containing 'http:// 127.0.0.1 ::8080'. A 'Send' button is located below the input field. At the bottom left, there is a green 'OK' status indicator.

now you can make a payment. If the recipient exists already you can use the name in the to field, otherwise you will have to use the recipient's public key.

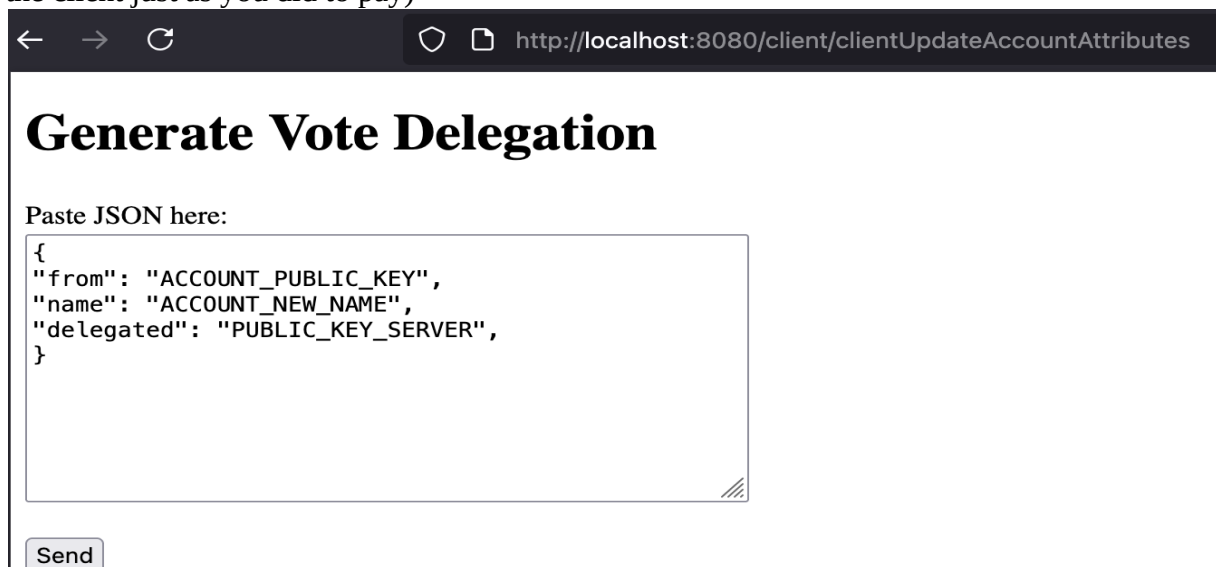


A web browser window showing the 'Make a payment' page. The address bar displays 'http://localhost:8080/client/clientPay'. The page has a title 'Make a payment' and a label 'Paste JSON here:'. Below the label is a text area containing a JSON object:

```
{
  "to": "Node5",
  "comment": "COMMENT22",
  "amount": "22.00"
}
```

. A 'Send' button is located below the text area.

To change the account parameters of an account (you need to follow the steps to be the authenticated in the client just as you did to pay)



A web browser window showing the 'Generate Vote Delegation' page. The address bar displays 'http://localhost:8080/client/clientUpdateAccountAttributes'. The page has a title 'Generate Vote Delegation' and a label 'Paste JSON here:'. Below the label is a text area containing a JSON object:

```
{
  "from": "ACCOUNT_PUBLIC_KEY",
  "name": "ACCOUNT_NEW_NAME",
  "delegated": "PUBLIC_KEY_SERVER",
}
```

. A 'Send' button is located below the text area.

To connect as a server into an existing ledger:



Set Encryption Entity (Integrated)

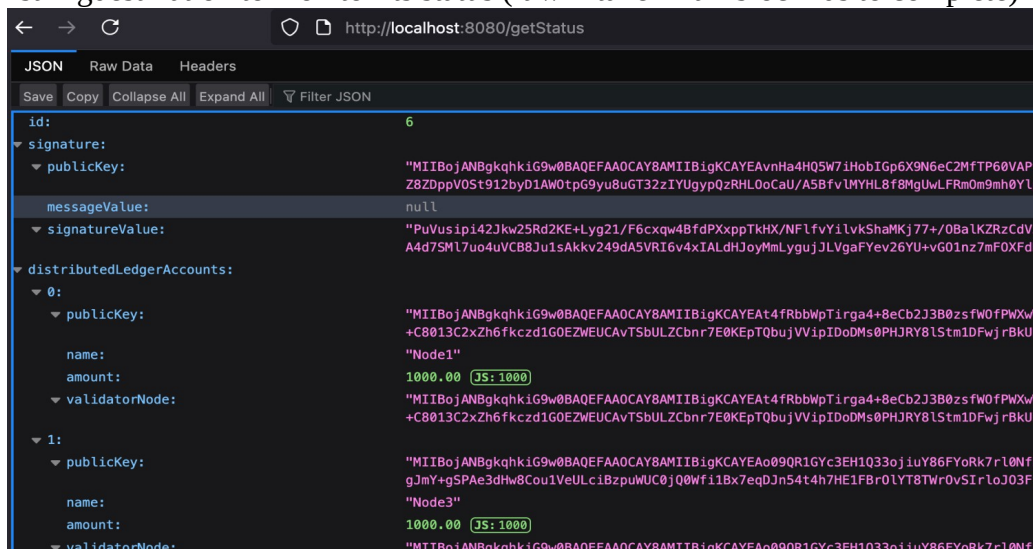
Paste JSON here:

```
{
  "privateKey":
  "MIIG/
  AIBADANBgqhkiG9w0BAQEFAASCByYwggbiAgEAAoIBgQC3h9F
  ttal0KuBrj7x4JvYncHT0x9Y589ZfBZlg9nLpS3HWrs1mdwP9S
  YsmxHqlfL3ZsirBzbQFgfM4KLvDT4zThyM/
  qTnCOG2HcBco3KJUwkKUww18601rdsK645A0gbPJTftSiKHE6/
  ZigRf19E0owX7jcj fDhN+gLTp4gkLGYfHoHp4GiTRElQbn5Rxxk
  3Decy2Z0wpw86G5NxsAkxySLitS59ULu4gCL024beQuv9xbau
  3fud0AUrzEkzoV8BijgVj cAaDMaTv/4LzTXcLbFmHp+RzN3UY#
```

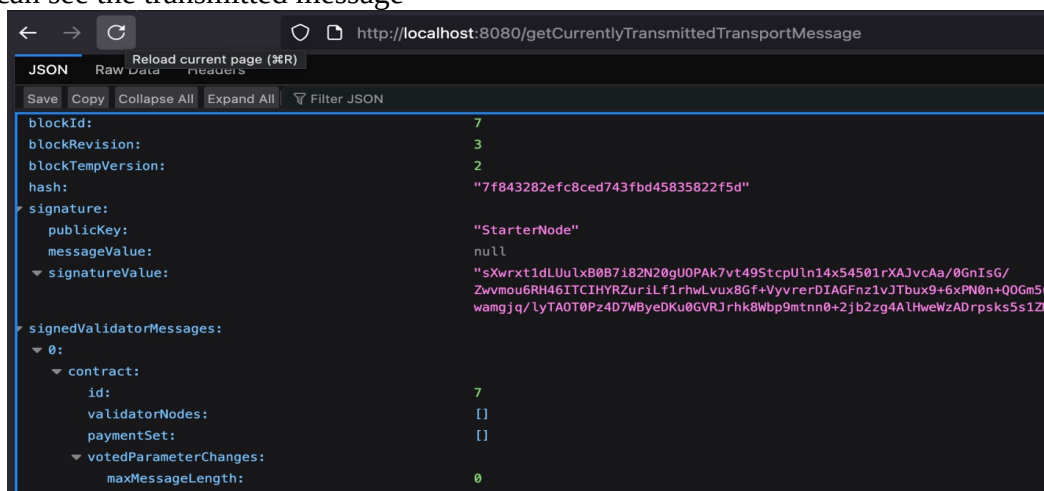
Send

then join the existing ledger (use the string others will use to connect to you, I'm using localhost as I'm testing locally but to use it for real you will have to specify reachable addresses)

It will take a while for your request to be processed, so watch the transmitted message of the connectionstringdestination to monitor its status (it will take 2 full block ids to complete)



you can use the getStatus to verify that the server is running correctly and you can see the transmitted message



to vote for different parameters or to reassign the values of a particular account you can vote to do so by calling /changeVotedParameters. It will need the majority of votes to agree on a changeset before it is applied

←

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http://localhost:8080/server/changeVotedParameters

✦

📄

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☆

Change Voted Parameters

Paste JSON here:

```
{
  "messageUpdateFrequencyPerHour": 30,
  "frameProcessingTimeMilliseconds": 5000,
  "maxConnections": 20,
  "amountRequestedToBeValidator": "1",
  "transactionCost": "0.1",
  "maxTransactionsPerBlock": 1000
  "distributedLedgerAccountReassignProposals": [
    {
      "publicKey": "MIIBojANBgkqhkiG9w0BAQEFAAACAY8AMIIBigKCAYEaunH4nCceRoBkLW1Ec0j4pLIxBnUVH6LcPRk2s5wG0rW8SP7gdMHH2wywh7fVTH8Gwo0VLr/9Wz1kyS8Gwm3X0TmLX0YEyz1ogHBSy4Sp2cDls5XMX9ct4SssMoz6EU+tkHcNYHyM0KUd8hvynrT7YTBcXSWJKmz+Wez1K93wb+jV6pi4tH9x0+4fyxq38Z3z/MK7U/D00ne0CMQGB7KH0qUrTG6ZEB57X4h1fr0mmwvBqnQiGDDdsVf+yHJEvpPJjoCshg8l303TxqZutzEup7D2tPDKkm8xmRGL1FqoWaHoa86urW1+J0rIpaUhuJLZWgGUuKv6yyF47MdKV4PbQMDmbHAXhLM81wbnnv7nYpNI0wTA930XjHPfKH2EKCP2a7U/qz9H60e7lKyD9oxkbcDXXU2+bbt094mgBPsIewhspBuUWyqgXeJo8ByI73j6ynow0vIc7v8EHRuLPgAZl2/zmXuwIChYf46w8auNeMV68aNll+AuIIE5SGy3kHRagMBAAE=",
      "name": "SHINJI",
      "amount": "1000.00",

      "validatorNode": "MIIBojANBgkqhkiG9w0BAQEFAAACAY8AMIIBigKCAYEaunH4nCceRoBkLW1Ec0j4pLIxBnUVH6LcPRk2s5wG0rW8SP7gdMHH2wywh7fVTH8Gwo0VLr/9Wz1kyS8Gwm3X0TmLX0YEyz1ogHBSy4Sp2cDls5XMX9ct4SssMoz6EU+tkHcNYHyM0KUd8hvynrT7YTBcXSWJKmz+Wez1K93wb+jV6pi4tH9x0+4fyxq38Z3z/MK7U/D00ne0CMQGB7KH0qUrTG6ZEB57X4h1fr0mmwvBqnQiGDDdsVf+yHJEvpPJjoCshg8l303TxqZutzEup7D2tPDKkm8xmRGL1FqoWaHoa86urW1+J0rIpaUhuJLZWgGUuKv6yyF47MdKV4PbQMDmbHAXhLM81wbnnv7nYpNI0wTA930XjHPfKH2EKCP2a7U/qz9H60e7lKyD9oxkbcDXXU2+bbt094mgBPsIewhspBuUWyqgXeJo8ByI73j6ynow0vIc7v8EHRuLPgAZl2/zmXuwIChYf46w8auNeMV68aNll+AuIIE5SGy3kHRagMBAAE="
    },
    {
      "publicKey": "MIIBojANBgkqhkiG9w0BAQEFAAACAY8AMIIBigKCAYEak5GJ451dsBR9rPqxDmWE0ab/FVIYItP208JHjCe6Pfvf+73vJuXIRLs+yZxohAp+..."
    }
  ]
}
```

Send

this is a very basic user interface, a GUI expert could surely improve on this and they're encouraged to do so and publish their changes under the AGPL license, so that the whole community can benefit.

To send public and private keys to someone else is very bad practice, so always run your own client on your own device and never connect to someone else's client that is not open source and not running directly on devices you control