# Tezos Workshop (工作坊)

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# Agenda & Goals
# 日程&目标

- Understand the different parts of the Tezos software stack
  - 了解Tezos软件系统的不同模块
- Install and run the separate programs to interact with the Tezos network
  - 通过安装与运行不同的程序来与Tezos网络进行交互
- Create a keypair, receive and send funds
  - 成功创建一对密钥，能够接收与发送funds
- Delegate funds to a baker
  - 能够对baker进行 funds 授权
- Deploy and interact with a smart contract
  - 能够进行智能合约部署与交互
- It's an interactive workshop - we will do all the steps together
  - 请不用担心，这是一个互动式工作坊，我们将一起完成这些所有的步骤
- If you have questions, please ask and we can help
  - 如果有任何问题，请随时提出。

# Setup Phase
# 准备工作

- Understand the function of the *node*, *baker*, *endorser* and *accuser*
  - *需要了解 node，baker，endorser与accuser等角色的作用*
- Understand the responsibility of the *client*, *Galleon* and *Tezbox*
  - *理解client, Galleon 和 Tezbox的职责*
- Install and interact with all of the above
  - 安装并与上述所有角色进行交互

# Tezos Daemons
# Tezos 守护进程

- *tezos-node* - the main program that connects to the network
  - Tezos-node – 网络连接主进程
- *tezos-baker* - uses a private key to sign new blocks
  - Tezos-baker – 利用私钥来对新区块进行签名
- *tezos-endorser* - uses a private key to sign blocks from other bakers
  - Tezos-endorser –利用私钥来对其他baker产生的区块进行签名
- *tezos-accuser* - submits evidence of wrongdoing to the network
  - Tezos-accuser- 向网络提交错误操作的证据

# Tezos Clients
# Tezos 客户端

- *tezos-client* - the cli client that interacts with the network through a *tezos-node*
  - *tezos-client – 是tezos 节点与tezos网络进行交互的命令行客户端(cli)*

- *Galleon* - a ui client that interacts with the network through a *tezos-node*
  - *Galleon – 是tezos 节点与tezos网络进行交互的图形化客户端*
- *Tezbox* - a web ui that interacts with the network through a *tezos-node*
  - *Tezbox – 是tezos 节点与 tezos网络进行交互的网页版客户端*

# System-level dependencies
# 系统依赖

## Ubuntu

*sudo apt-get install -y patch unzip make gcc m4 git g++ aspcud bubblewrap curl bzip2 rsync libev-dev libgmp-dev pkg-config libhidapi-dev*

## MacOS

*None*

# Installing opam, the ocaml package manager
# 安装opam(是ocaml 包管理工具)

Ubuntu & MacOS

*sh <(curl -sL https://raw.githubusercontent.com/ocaml/opam/master/shell/install.sh)*

*opam init --compiler=4.06.1*

*eval $(opam env)*

# Install the daemons and clients
# 安装守护进程以及客户端

Ubuntu & MacOS

*git clone -b betanet https://gitlab.com/tezos/tezos.git*

*cd tezos*

*make build-deps*

*eval $(opam env)*

*make*

# Run the *tezos-node* and *tezos-client*
# 运行 *tezos-node*与 *tezos-client*

Ubuntu & MacOS

*./tezos-node identity generate 26.*

*./tezos-node run --rpc-addr 127.0.0.1:8732 --connections 10*

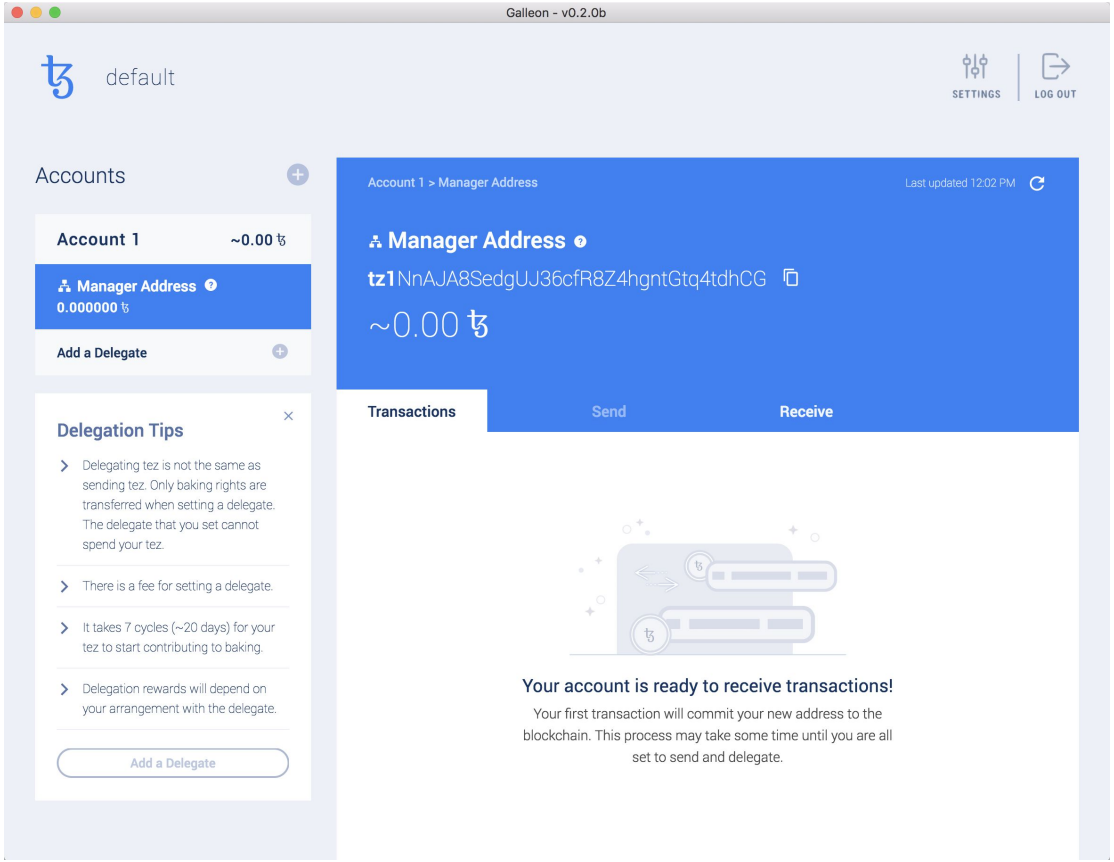
*./tezos-client bootstrapped*

*./tezos-client -A betanet.tezos.cryptium.ch bootstrapped*

# Install Galleon
# 安装 Galleon

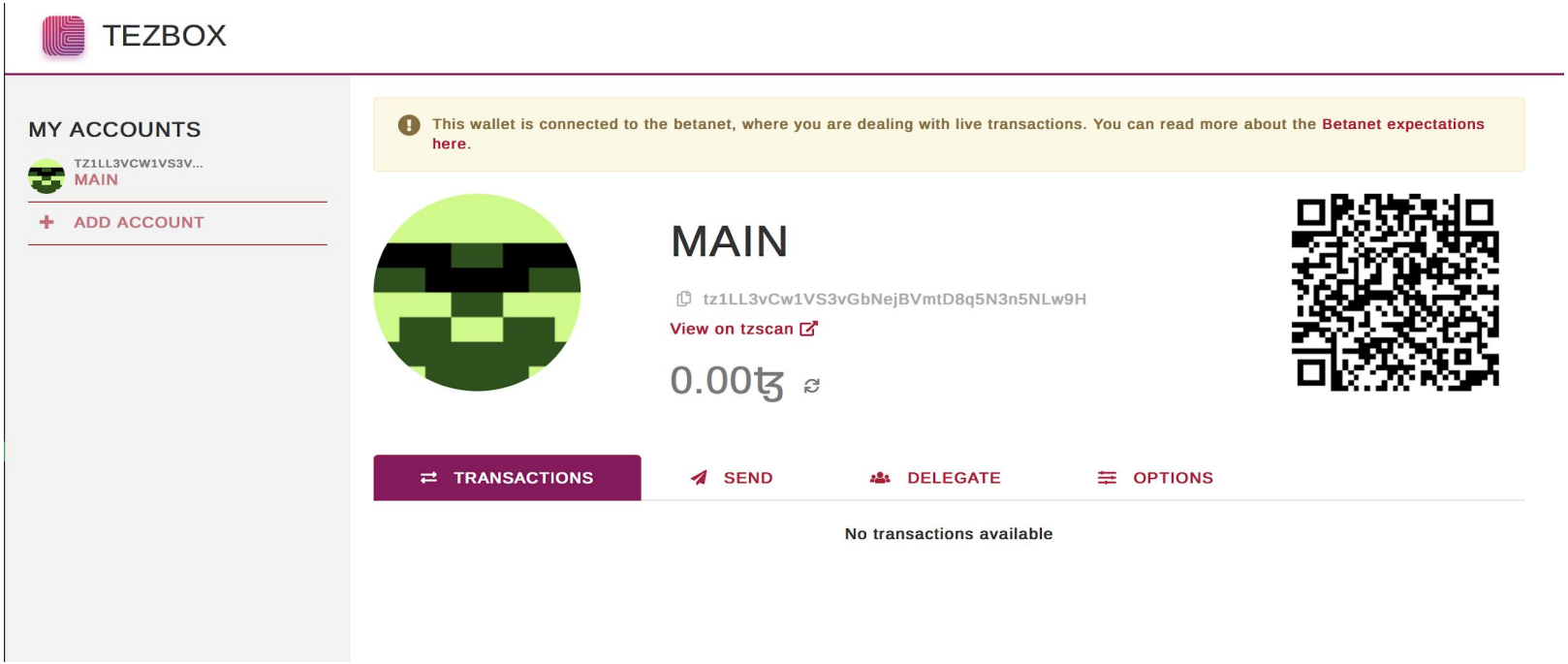
## Ubuntu & MacOS

- Download the binaries for your platform from here: https://github.com/Cryptonomic/Deployments/wiki/Galleon:-Releases



# Use TezBox
# 使用TezBox

- https://tezbox.com



# Beginning Phase
# 开始

- Generate a keypair
  - 产生密钥对
- Transfer funds between two separate accounts
  - 在不同账户之间交换funds
- Originate an account
  - 账户溯源
- Delegate to a baker of your choice
  - 在你选择下进行baker委托

# Create a keypair for Tezos using *tezos-client*
# *使用tezos-client命令为Tezos生成密钥对*

*./tezos-client -A betanet.tezos.cryptium.ch gen keys <key_name> -s ed25519 --encrypted*

*./tezos-client -A betanet.tezos.cryptium.ch list known addresses*

- You can also use Galleon or Tezbox, but we recommend everyone to get familiar with the command line
  - 你也可以使用Galleon或者 Tezbox，不过我们推荐每个人要熟悉命令行

# Check your balance
# 检查你的Balance

- Post your XTZ address into our WeChat group
  - 在我们的微信群中发布你的XTZ地址(群二维码见右侧)

- Check whether you have received 1 XTZ
  - 检查你的账户是否收到了1 XTZ
    - *./tezos-client -A betanet.tezos.cryptium.ch get balance for <key_name>*

# Originate and transfer to a contract account
# 发起并转移到合约账户

- Create a new contract account
  - 创建一个新的合约账户

- *./tezos-client -A betanet.tezos.cryptium.ch originate contract <contract_name> for <key_name> --delegatable*

- *./tezos-client -A betanet.tezos.cryptium.ch transfer 1 from <key_name> to <contract_name> --fee 0.0*

# Delegate to a baker of your choice
# 向你选定的baker授权

- Set the *delegate* flag on your contract (originated) account
  - 对你的合约(发起方)账户设置delegate标签

- Find your favourite baker
  - 找到你喜欢的baker
    - https://www.mytezosbaker.com
    - http://tzscan.io/delegation-services

- *./tezos-client -A betanet.tezos.cryptium.ch add address cryptium tz1eEnQhbwf6trb8Q8mPb2RaPkNk2rN7BKi8*
- *./tezos-client -A betanet.tezos.cryptium.ch set delegate for <contract_name> to <delegate>*

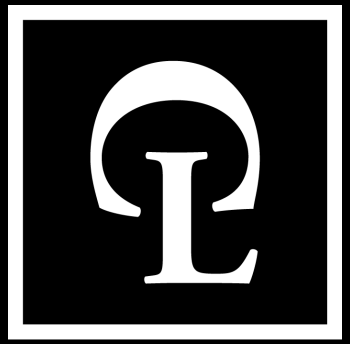
# Deploy your first smart contract
# 部署你的第一个智能合约

# Your first smart contract in Michelson

```
code {
   CAR;
   IMPLICIT_ACCOUNT;
   DIP {UNIT};
   PUSH mutez 1000;
   UNIT;
   TRANSFER_TOKENS;
   DIP {NIL operation};
   CONS;
   PAIR
};
parameter key_hash;
storage unit;
```

# Deploy your own

- Download the source: https://tinyurl.com/ybza4axm
- Save to **free.tz**
- Deploy a new instance
  - tezos-client originate contract [alias] for [account] transferring [qty] from [account] running ./free.tz --fee 0.0
- Call an existing instance
  - tezos-client transfer 0.0 from [account] to [alias] --fee 0.0 --arg '"[address]"'
- Customize it!
  - Change the amount of Tezzies sent
  - Only allow a particular account to withdraw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