



EOSIO Development Environment

cc32d9 / Europechain

CDT (Contract Development Toolkit)

- <https://github.com/EOSIO/eosio.cdt> → Releases



EOSIO Software Suite

- <https://github.com/EOSIO/eos> → Releases



EOSIO Web IDE

- <https://github.com/EOSIO/eosio-web-ide>





Public EOSIO Testnets

- Jungle 2.0 <https://monitor.jungletestnet.io/>
- Kylin <https://www.cryptokylin.io/>
- Telos testnet (coming soon)

Compiling a contract

```
# Example contract: https://github.com/cc32d9/eos.watchdoggiee
```

```
$ eosio-cpp watchdoggiee.cpp
```

```
$ ls -al
```

```
-rw-rw-r-- 1 cc32d9 cc32d9 3369 Nov  2 22:10 watchdoggiee.abi  
-rw-rw-r-- 1 cc32d9 cc32d9 3003 Oct 27  2018 watchdoggiee.cpp  
-rwxrwxr-x 1 cc32d9 cc32d9 14820 Nov  2 22:10 watchdoggiee.wasm
```

Creating a private key

```
$ cleos wallet create -n training01 --to-console
Creating wallet: training01
Save password to use in the future to unlock this wallet.
Without password imported keys will not be retrievable.
"PW5K53LbYpGQgZcKvgdLSYfHmDmoyvbVSFwSnu5NstRCc9QAWRh6e"

$ cleos create key --to-console
Private key: 5KfQV9M1GSQJ3G8Z9ThaB1fT*****
Public key: EOS8T8HVXABDqauhKg2hR3SjM9zbENPvA8KrYfsirG4oHX7QVVi9a

$ cleos wallet import -n training01
private key: imported private key for:
EOS8T8HVXABDqauhKg2hR3SjM9zbENPvA8KrYfsirG4oHX7QVVi9a

$ cleos wallet lock -n training01
Locked: training01

$ cleos wallet keys
Error 3120003: Locked wallet
Ensure that your wallet is unlocked before using it!
Error Details:
You don't have any unlocked wallet!
```

Creating a Jungle account

```
# Open https://monitor.jungletestnet.io/
# "Create Account" →
#   Account name: training1111
#   Owner Public key: EOS8T8HVXABDqauhKg2hR3SjM9zbENPvA8KrYfsirG4oHX7QVVi9a
#   Active Public key: EOS8T8HVXABDqauhKg2hR3SjM9zbENPvA8KrYfsirG4oHX7QVVi9a
# "Faucet" →
#   Account name: training1111
# This will send 100 EOS to the account

$ alias jcleos='cleos -v -u http://jungle2.cryptolions.io'

$ jcleos get account training1111
created: 2019-11-02T22:21:21.500
permissions:
    owner      1:      1 EOS8T8HVXABDqauhKg2hR3SjM9zbENPvA8KrYfsirG4oHX7QVVi9a
    active     1:      1 EOS8T8HVXABDqauhKg2hR3SjM9zbENPvA8KrYfsirG4oHX7QVVi9a
memory:
    quota:      5.366 KiB    used:      3.365 KiB
```


Buying RAM

```
$ cleos wallet unlock -n training01 --password
PW5K53LbYpGQgZcKvgdLSYfHmDmoyvbVSFwSnu5NstRCc9QAWRh6e
Unlocked: training01

$ cleos wallet keys
[
  "EOS8T8HVXABDqauhKg2hR3SjM9zbENPvA8KrYfsirG4oHX7QVVi9a"
]

$ jcleos system buyram training1111 training1111 "100.0000 EOS"
executed transaction: 4d301e2e43d08407cffe66397b8e6c82f02b3a4a037a840e1265b85be4f262b
128 bytes  374 us

$ jcleos get account training1111
created: 2019-11-02T22:21:21.500
permissions:
  owner      1:      1 EOS8T8HVXABDqauhKg2hR3SjM9zbENPvA8KrYfsirG4oHX7QVVi9a
  active     1:      1 EOS8T8HVXABDqauhKg2hR3SjM9zbENPvA8KrYfsirG4oHX7QVVi9a
memory:
  quota:     98.82 KiB   used:      3.49 KiB
```

Uploading a contract

```
$ jcleos set contract training1111 ./ watchdoggiee.wasm watchdoggiee.abi
Reading WASM from /home/cc32d9/build/watchdoggiee/watchdoggiee.wasm...
Publishing contract...
Error 3080001: Account using more than allotted RAM usage
Error Details:
account training1111 has insufficient ram; needs 152278 bytes has 101196 bytes
Stack Trace:
resource_limits.cpp:215 verify_account_ram_usage

# RAM on Jungle is too expensive, so 100 EOS was too little to buy enough RAM.
# Helping from my other account:

$ cleos wallet unlock -n testnet

$ jcleos system buyram cc32dninexxx training1111 -k 200
executed transaction: 746922792c96c104b877bd475b633a0786bf805c263d7f6a2b9676496773cee7
112 bytes 407 us
# eosio <= eosio::buyrambytes
{"payer":"cc32dninexxx","receiver":"training1111","bytes":204800}
# eosio.token <= eosio.token::transfer
{"from":"cc32dninexxx","to":"eosio.ram","quantity":"212.9363 EOS","memo":"buy ram"}
```

Uploading a contract (2)

```
$ jcleos set contract training1111 ./ watchdoggiee.wasm watchdoggiee.abi

$ jcleos set contract training1111 ./ watchdoggiee.wasm watchdoggiee.abi
Reading WASM from /home/cc32d9/build/watchdoggiee/watchdoggiee.wasm...
Publishing contract...
executed transaction: ef1910c2b0b2a00cb483e0dc869371d08added0b926a537c93be015e7eb72a58
6304 bytes  717 us
#          eosio <= eosio::setcode
{"account":"training1111","vmtype":0,"vmversion":0,"code":"0061736d0100000001a6011c600000
60047f7e7e7...
#          eosio <= eosio::setabi
{"account":"training1111","abi":"0e656f73696f3a3a6162692f312e31000607636f756e746572000206
73656e64657...
warning: transaction executed locally, but may not be confirmed by the network yet
]

]
```

Testing a contract

```
$ jcleos push action training1111 ping '["training1111", "cc32dninexxx", "thanks for RAM"]' -p training1111@active
executed transaction: bbd5c9ff020b3c3888631b2c5e468589185b0866e36e7cd15dd7393e35044832
128 bytes  318 us
# training1111 <= training1111::ping
{"from":"training1111","to":"cc32dninexxx","memo":"thanks for RAM"}
# cc32dninexxx <= training1111::ping
{"from":"training1111","to":"cc32dninexxx","memo":"thanks for RAM"}
warning: transaction executed locally, but may not be confirmed by the network yet
]
```