Deployment Instructions:

Deploy both SmartContractPacketFactory.sol and SmartContractFactory.sol with a user account address.

Deploy FrontEnd1 using the addresses of the deployed SmartContractPacketFactory and SmartContractFactory.
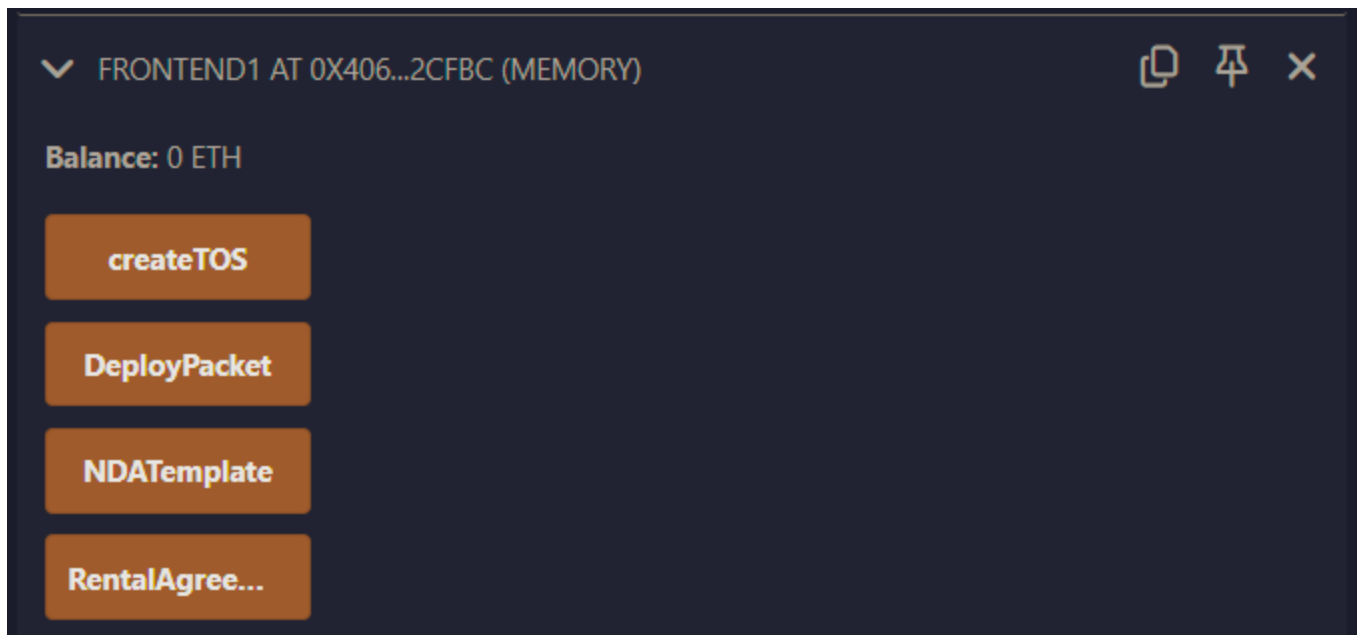
From FrontEnd1, call the createTOS function to create BLOCKCHAIN LEGAL AGREEMENT TERMS OF SERVICE (TOS).

✅ [vm] from: 0x5B3...eddC4 to: FrontEnd1.createTOS() 0x406...2Cfbc value: 0 wei data: 0x4eb...54784 logs: 2 hash: 0x3d1...1e208

status	0x1 Transaction mined and execution succeed
transaction hash	0x3d179e4b2c5f40b5db7eae0d1da3998dc940e0e908d3a9910c3694cb0fc1e208
block hash	0x0e73c174f5884e88b81020b567d5da93dd896835fda392ada47967183886bba4
block number	207
from	0x5B38Da6a701c568545dCfcB03FcB875f56beddC4
to	FrontEnd1.createTOS() 0x406AB5033423Dcb6391Ac9eEEad73294FA82Cfbc
gas	4878705 gas
transaction cost	4242352 gas
execution cost	4221288 gas
input	0x4eb...54784
decoded input	{}
decoded output	{ "0": "address: 0x6305CdCd11C0dE34Fe5092EB83C8507F40581eD1" }
logs	[

```
{
    "from": "0x6305CdCd11C0dE34Fe5092EB83C8507F40581eD1",
    "topic": "0x749db2f60504ce8efa882e6faa3d82a04eaf97c42c09c1516ed1881098813bd9",
    "event": "Contract",
    "args": {
        "0": "Contract Created",
        "1": "BLOCKCHAIN LEGAL AGREEMENT TERMS OF SERVICE (TOS)",
        "2": "0x6305CdCd11C0dE34Fe5092EB83C8507F40581eD1",
        "kind": "Contract Created",
        "name": "BLOCKCHAIN LEGAL AGREEMENT TERMS OF SERVICE (TOS)",
        "Contract": "0x6305CdCd11C0dE34Fe5092EB83C8507F40581eD1"
    }
},
{
    "from": "0x6305CdCd11C0dE34Fe5092EB83C8507F40581eD1",
    "topic": "0x749db2f60504ce8efa882e6faa3d82a04eaf97c42c09c1516ed1881098813bd9",
    "event": "Contract",
    "args": {
        "0": "Contract Terms Updated",
        "1": "BLOCKCHAIN LEGAL AGREEMENT TERMS OF SERVICE (TOS)",
        "2": "0x6305CdCd11C0dE34Fe5092EB83C8507F40581eD1",
        "kind": "Contract Terms Updated",
        "name": "BLOCKCHAIN LEGAL AGREEMENT TERMS OF SERVICE (TOS)",
        "Contract": "0x6305CdCd11C0dE34Fe5092EB83C8507F40581eD1"
    }
}
]
```

From SmartContractPacketFactory, call updateTOS with the deployed BlockchainTOS address.

From FrontEnd1, call DeployPacket and retrieve SmartContractPacket contract address.

✅ [vm] from: 0x5B3...eddC4 to: FrontEnd1.DeployPacket() 0x406...2Cfbc value: 0 wei data: 0xbda...b3504 logs: 2 hash: 0x126...950a3

status   0x1 Transaction mined and execution succeed

transaction hash   0x126612612ddfa2b79578148ed575c7705659e65df5390c6a3be58755ab1950a3 ⎘

block hash   0x8d48dca60c78ef2aa70027ab4bbed4af3c29ce65f6959614771e7c49f7fac2c3 ⎘

block number   209 ⎘

from   0x5B38Da6a701c568545dCfcB03FcB875f56beddC4 ⎘

to   FrontEnd1.DeployPacket() 0x406AB5033423Dcb6391Ac9eEEad73294FA82Cfbc ⎘

gas   1579343 gas ⎘

transaction cost   1373341 gas   ⎘

execution cost   1352277 gas   ⎘

input   0xbda...b3504 ⎘

decoded input   {} ⎘

decoded output   {} ⎘

logs   [
                                    {
                                        "from": "0xbd5b354220B250DF257ed5e988Fe8FE81CdB6235",
                                        "topic": "0x58dfd922bc9f90991fbdec28c5f1cbbd4533fa7c82d022181f2503f895240ec0",
                                        "event": "Packet",
                                        "args": {
                                                "0": "Packet Created",
                                                "1": "Joslin, Owen & Joslin, William - Packet",
                                                "2": "0xbd5b354220B250DF257ed5e988Fe8FE81CdB6235",
                                                "kind": "Packet Created",
                                                "name": "Joslin, Owen & Joslin, William - Packet",
                                                "Contract": "0xbd5b354220B250DF257ed5e988Fe8FE81CdB6235"
                                        }
                                    },
                                    {
                                        "from": "0xbd5b354220B250DF257ed5e988Fe8FE81CdB6235",
                                        "topic": "0x58dfd922bc9f90991fbdec28c5f1cbbd4533fa7c82d022181f2503f895240ec0",
                                        "event": "Packet",
                                        "args": {
                                                "0": "Packet Contracts Updated",
                                                "1": "Joslin, Owen & Joslin, William - Packet",
                                                "2": "0xbd5b354220B250DF257ed5e988Fe8FE81CdB6235",
                                                "kind": "Packet Contracts Updated",
                                                "name": "Joslin, Owen & Joslin, William - Packet",
                                                "Contract": "0xbd5b354220B250DF257ed5e988Fe8FE81CdB6235"
                                        }
                                    }
                                ] ⎘ ⎘

Get the SmartContractPacket contract at the deployed packet deployed in the previous step (seen in the yellow box above).

CONTRACT

SmartContractPacket - contracts/SmartContractPacket.sol ⬍

`evm version: shanghai`

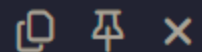**Deploy**   string _name, address[] _parties, address _owner   ⌄

☐ Publish to IPFS

At Address   0xbd5b354220B250DF257ed5e988Fe8FE81CdB6235

⌄ SMARTCONTRACTPACKET AT 0XBD5...B6235 (MEMORY)   📋 📌 ✕

Balance: 0 ETH

addContract   address _contract   ⌄

sign   string _signature   ⌄

updateFields   address _contract, tuple[] _fields   ⌄

getContracts

0: address[]: 0x6305CdCd11C0dE34Fe5092EB83C8507F40581eD1

getOwner

0: address: 0xAb8483F64d9C6d1EcF9b849Ae677dD3315835cb2

getParties

0: tuple(address,string,bool)[]: 0x4B20993Bc481177ec7E8f571ceCaE8A9e22C02db,,fals
e,0x78731D3Ca6b7E34aC0F824c42a7cC18A495cabaB,,false

packetName ◄ packetName - call

0: string: Joslin, Owen & Joslin, William - Packet

Get the address of the contract added to the packet by default.

CONTRACT

SmartContract - contracts/SmartContract.sol

evm version: shanghai

Deploy   string _name, address _owner, address _contractFactoryAddress, address _packetF

☐ Publish to IPFS

At Address   0x6305CdCd11C0dE34Fe5092EB83C8507F40581eD1

This contract will be the Blockchain TOS preadded to every contract packet:

∨ SMARTCONTRACT AT 0X630...81ED1 (MEMORY)

Balance: 0 ETH

setDeploy   uint256 _time

setSign   uint256 _time

setStatus   uint8 _status

updateFields   tuple[] _fields

updateTerms   string _terms

currentState

deploymentTi...

getFields

0: tuple(uint256,uint8,string,string,bool)[]: 1,2,CONTRACT.DATE,,false,2,0,PARTY1.SIGNATURE,,false,3,4,PARTY1.NAME,,false,4,0,PARTY1.SIGNDATE,,false,5,0,PARTY2.SIGNATURE,,false,6,4,PARTY2.NAME,,false,7,0,PARTY2.SIGNDATE,,false

getName

0: string: BLOCKCHAIN LEGAL AGREEMENT TERMS OF SERVICE (TOS)

getOwner

0: address: 0x5B38Da6a701c568545dCfcB03FcB875f56beddC4

getStatus

0:        uint8: 0

getTerms

0: string: This Terms of Service or ('Agreement') has been entered into on the date of [CONTRACT.DATE] This Terms of Service document; agreement ('Agreement') is comprised in part through this document ('Document'), following contractual agreement document ('Document'), and through a smart contract ('Smart Contract') which will be deployed on the Ethereum network ('Blockchain') to an address known to the Agreement's parties. Both the Documents and the Smart Contract are integral to the Agreement. 1. Parties: The parties ('Parties') involved with this agreement: PARTY1, PARTY2, PARTY3, ... The Parties will be identified by their respective public addresses on the Ethereum network. Each involved Parties' address will be stored in their respective Field of the Smart Contract. 2. Proof of Identity: All involved parties certify that the information provided to this contract are true and correct and that the hash ('Hash') created from said information qualifies as said party's reproducible, verifiable identity ('Identity') usable for all signing and verification processes. Each involved Parties' hash will be stored in their respective Field of the Smart Contract. 3. Agreement: Parties involved with this and the following contractual agreement agree that their respective Identities and signatures are true and correct and are binding in the court of law. 4. Transparency: Parties involved acknowledge and understand that the documents being agreed to are forever stored on a public ledger and that even though only the parties involved may access the readable contents, this agreement will forever exist in some state as determined by the 'status' Field. 5. Additional Terms: 5A. In the event there is a conflict between this Document and the Smart Contract, the terms of the Smart Contract will control. 5B. Each of the Parties is responsible for their own costs (e.g., 'gas' on the Ethereum network) for executing transactions against the Smart Contract. 5C. If any provision of this Agreement is held to be unenforceable, the Parties wish that the remaining provisions of the Agreement continue to be enforced. 5D. The terms of this Agreement shall be interpreted by the local laws of the deploying Parties' jurisdiction. Any disputes shall be resolved in a tribunal local to the deploying Parties'. Venue shall be at a location determined by deploying Parties' within the jurisdiction. 6. Performance: The Agreement will be performed when the following functions have been called and/or Fields populated by the Parties in the Smart Contract. To the extent permitted by law, the sequence of events of the Smart Contract is not important to the Agreement. - [PARTY] structures have been populated; - 'Status' has been set to 'Active'; - BLOCKCHAIN LEGAL AGREEMENT TERMS OF SERVICE (TOS) has been signed. - [CONTRACT] has been signed; - a copy of [this] Document has been stored in the 'contract' array[0]; - a copy of the [CONTRACT] Document/s has been stored in the 'contract' array; - contractArray has been hashed and encrypted; - a copy of the contractPacket has been stored on an immutable file system; - parties have recieved their respective 'keys' and the 'location' of the contractPacket within the immutable file system; PARTY1 Signature: [PARTY1.SIGNATURE] Typed or Printed Name: [PARTY1.NAME] Date: [PARTY1.SIGNDATE] PARTY2 Signature: [PARTY2.SIGNATURE] Typed or Printed Name: [PARTY2.NAME] Date: [PARTY2.SIGNDATE] ...
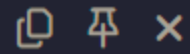
getVersion

0:        uint256: 1

signTime

0:        uint256: 0

To make a contract template, go back to FrontEnd1, and call RentalAgreementTemplate.

FRONTEND1 AT 0X406...2CFBC (MEMORY)

Balance: 0 ETH

createTOS

DeployPacket

NDATemplate

RentalAgree...

RentalAgreementTemplate - transact
(not payable)

[vm] **from:** 0x5B3...eddC4 **to:** FrontEnd1.RentalAgreementTemplate() 0x406...2Cfbc **value:** 0 wei **data:** 0x00e...9326f **logs:** 2 **hash:** 0x858...92b9b

status   0x1 Transaction mined and execution succeed

transaction hash   0x858fb5be5466c639627f79aa7a15c4ca7389e7b19fe5c794e8c437c409c92b9b

block hash   0x80b206152bc61ca0864a3bb909e257c9d36cd30cefb76cdda6854ff1c8f12508

block number   210

from   0x5B38Da6a701c568545dCfcB03FcB875f56beddC4

to   FrontEnd1.RentalAgreementTemplate() 0x406AB5033423Dcb6391Ac9eEEad73294FA82Cfbc

gas   5180239 gas

transaction cost   4504555 gas

execution cost   4483503 gas

input   0x00e...9326f

decoded input   {}

decoded output   {
                                    "0": "address: 0xF63a410DDFa1f5346739450254D2eC434dd2D1E7"
                                }

logs   [
                                    {
                                        "from": "0xF63a410DDFa1f5346739450254D2eC434dd2D1E7",
                                        "topic": "0x749db2f60504ce8efa882e6faa3d82a04eaf97c42c09c1516ed1881098813bd9",
                                        "event": "Contract",
                                        "args": {
                                            "0": "Contract Created",
                                            "1": "Scottsville Mini Storage RENTAL AGREEMENT",
                                            "2": "0xF63a410DDFa1f5346739450254D2eC434dd2D1E7",
                                            "kind": "Contract Created",
                                            "name": "Scottsville Mini Storage RENTAL AGREEMENT",
                                            "Contract": "0xF63a410DDFa1f5346739450254D2eC434dd2D1E7"
                                        }
                                    },
                                    {
                                        "from": "0xF63a410DDFa1f5346739450254D2eC434dd2D1E7",
                                        "topic": "0x749db2f60504ce8efa882e6faa3d82a04eaf97c42c09c1516ed1881098813bd9",
                                        "event": "Contract",
                                        "args": {
                                            "0": "Contract Terms Updated",
                                            "1": "Scottsville Mini Storage RENTAL AGREEMENT",
                                            "2": "0xF63a410DDFa1f5346739450254D2eC434dd2D1E7",
                                            "kind": "Contract Terms Updated",
                                            "name": "Scottsville Mini Storage RENTAL AGREEMENT",
                                            "Contract": "0xF63a410DDFa1f5346739450254D2eC434dd2D1E7"
                                        }
                                    }
                                ]

Add the newly created template to the SmartContractPacket.

SMARTCONTRACTPACKET AT 0XBD5...B6235 (MEMORY)

Balance: 0 ETH

| addContract | 0xF63a410DDFa1f5346739450254D2eC434dd2D1E7 | ⌄ |

| sign | string _signature | ⌄ |

| updateFields | address _contract, tuple[] _fields | ⌄ |

getContracts

0: address[]: 0x6305CdCd11C0dE34Fe5092EB83C8507F40581eD1

getOwner

0: address: 0xAb8483F64d9C6d1EcF9b849Ae677dD3315835cb2

getParties

0: tuple(address,string,bool)[]: 0x4B20993Bc481177ec7E8f571ceCaE8A9e22
C02db,,false,0x78731D3Ca6b7E34aC0F824c42a7cC18A495cabaB,,false

packetName

0: string: Joslin, Owen & Joslin, William - Packet

We now see that the SmartContractrPacket has two contracts.

SMARTCONTRACTPACKET AT 0XBD5...B6235 (MEMORY)

Balance: 0 ETH

| addContract | 0xF63a410DDFa1f5346739450254D2eC434dd2D1E7 | ⌄ |

| sign | string _signature | ⌄ |

| updateFields | address _contract, tuple[] _fields | ⌄ |

getContracts

0: address[]: 0x6305CdCd11C0dE34Fe5092EB83C8507F40581eD1,0xF63a41
0DDFa1f5346739450254D2eC434dd2D1E7

getOwner

0: address: 0xAb8483F64d9C6d1EcF9b849Ae677dD3315835cb2

getParties

0: tuple(address,string,bool)[]: 0x4B20993Bc481177ec7E8f571ceCaE8A9e22
C02db,,false,0x78731D3Ca6b7E34aC0F824c42a7cC18A495cabaB,,false

packetName

0: string: Joslin, Owen & Joslin, William - Packet

If we look at the second contract, we see that it is a copy of the Scottsville Mini Storage RENTAL AGREEMENT Template we made in FrontEnd1.

SMARTCONTRACT AT 0XF63...2D1E7 (MEMORY)

Balance: 0 ETH

setDeploy	uint256 _time
setSign	uint256 _time
setStatus	uint8 _status
updateFields	tuple[] _fields
updateTerms	string _terms

currentState

deploymentTi...

getFields

0: tuple(uint256,uint8,string,string,bool)[]: 1,2,CONTRACT.DATE,,true,2,4,LANDLORD.NAME,,true,3,6,LANDLORD.ADDRESS,,true,4,4,TENANT.NAME,,true,5,6,TENANT.ADDRESS,,true,6,6,PROPERTY.ADDRESS,,true,7,2,START.DATE,,true,8,2,END.DATE,,true,9,9,RENT_AMOUNT,,true,10,2,DUE_DATE,,true,11,9,SECURITY_DEPOSIT_AMOUNT,,true,12,9,UTILITY_DETAILS,,true,13,9,NOTICE_PERIOD,,true,14,6,STATE/COUNTRY,,true,15,0,LANDLORD.SIGNATURE,,true,16,4,LANDLORD.NAME,,true,17,2,LANDLORD.SIGNDATE,,true,18,0,TENANT.SIGNATURE,,true,19,4,TENANT.NAME,,true,20,2,TENANT.SIGNDATE,,true

getName

0: string: Scottsville Mini Storage RENTAL AGREEMENT

getOwner

0: address: 0xAb8483F64d9C6d1EcF9b849Ae677dD3315835cb2

getStatus

0: uint8: 0

getTerms

0: string: Scottsville Mini Storage RENTAL AGREEMENT This Rental Agreement ('Agreement') is made and entered into on [CONTRACT.DATE] between: Landlord: [LANDLORD.NAME], residing at [LANDLORD.ADDRESS] ('Landlord') Tenant: [TENANT.NAME], residing at [TENANT.ADDRESS] ('Tenant') 1. Property Description: The Landlord agrees to rent to the Tenant the property located at [PROPERTY.ADDRESS] ('Property'). 2. Term: The term of this Agreement shall commence on [START.DATE] and continue until [END.DATE]. 3. Rent: Tenant agrees to pay rent in the amount of [RENT_AMOUNT] per month. Rent shall be due on the [DUE_DATE] of each month. 4. Security Deposit: Tenant agrees to pay a security deposit in the amount of [SECURITY_DEPOSIT_AMOUNT] upon signing this Agreement. This deposit will be held by the Landlord as security for any damages to the Property. 5. Use of Property: Tenant agrees to use the Property solely for residential purposes and shall not sublet or assign the Property without the Landlord's written consent. 6. Maintenance and Repairs: Tenant shall maintain the Property in good condition and promptly notify the Landlord of any repairs needed. 7. Utilities: [UTILITY_DETAILS] 8. Termination: Either party may terminate this Agreement by providing [NOTICE_PERIOD] days' written notice to the other party. 9. Governing Law: This Agreement shall be governed by the laws of [STATE/COUNTRY]. IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first above written. LANDLORD Signature: [LANDLORD.SIGNATURE] Printed Name: [LANDLORD.NAME] Date: [LANDLORD.SIGNDATE] TENANT Signature: [TENANT.SIGNATURE] Printed Name: [TENANT.NAME] Date: [TENANT.SIGNDATE]

getVersion

0: uint256: 1

signTime

To fill in the fields of this contract, deploy FrontEnd2 with the address of the SmartContractPacket.

CONTRACT

FrontEnd2 - contracts/FrontEnd2.sol

evm version: shanghai

Deploy 0xbd5b354220B250DF257ed5e988Fe8FE81CdB6235

From FrontEnd2, call UpdateRentalAgreementTemplate with the address of the Rental Agreement contract in the SmartContractPacket.
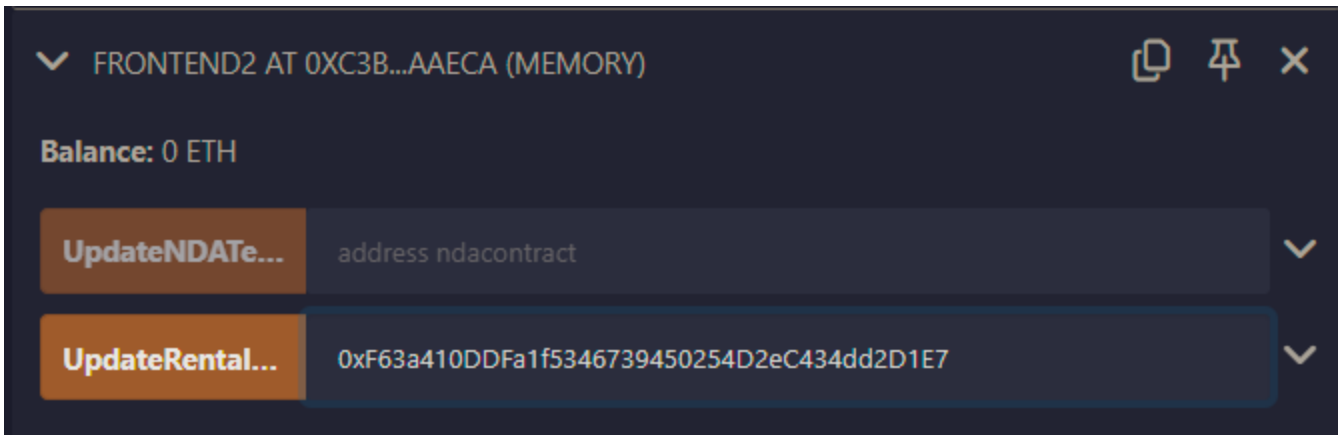
Now, if we go back to the Rental Agreement Contract, we can see that the terms have updated correctly.

To sign a contract, call the sign function from a party account with the appropriate signature, in this case just an empty string.

However, there are still issues with signing the contract due to gas limitations.