



Luniverse 실습

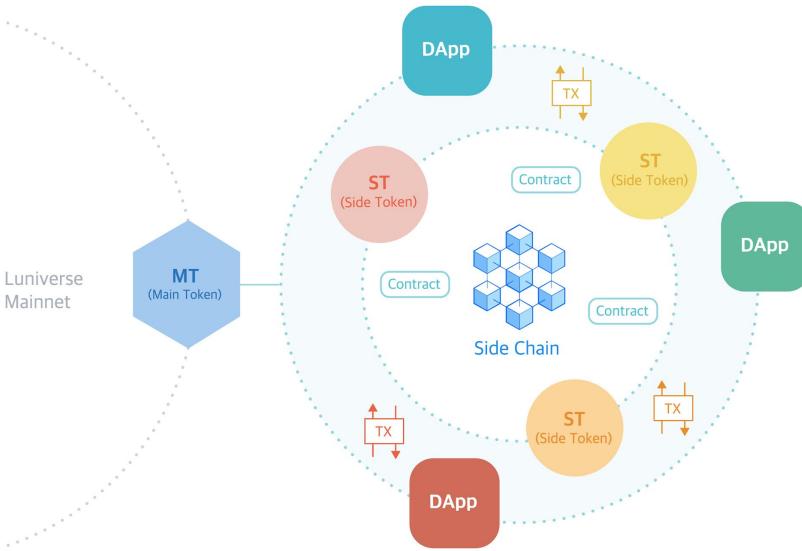
INDEX

Luniverse Key Term

루니버스 사용법

Luniverse Atom Plugin 사용법

Luniverse Key Term



토큰 유형

Main Token(MT)

└ 설명 : Main Admin이 발행할 수 있는 토큰으로 Main Chain 위에 존재

Side Token(ST)

└ 설명 : Side Admin이 발행할 수 있는 토큰으로 Main Chain과 연결된 Side Chain 위에 존재하고 Main Token과 전환비율 설정 가능

체인 유형

Main Chain

└ 설명 : 루니버스 서비스에서 중심이 되는 체인으로 여러 독립적인 Side Chain과 연결됨

Side Chain

└ 설명 : Main Chain과 연결된 체인으로 각각의 체인은 고객사들이 독립적으로 사용

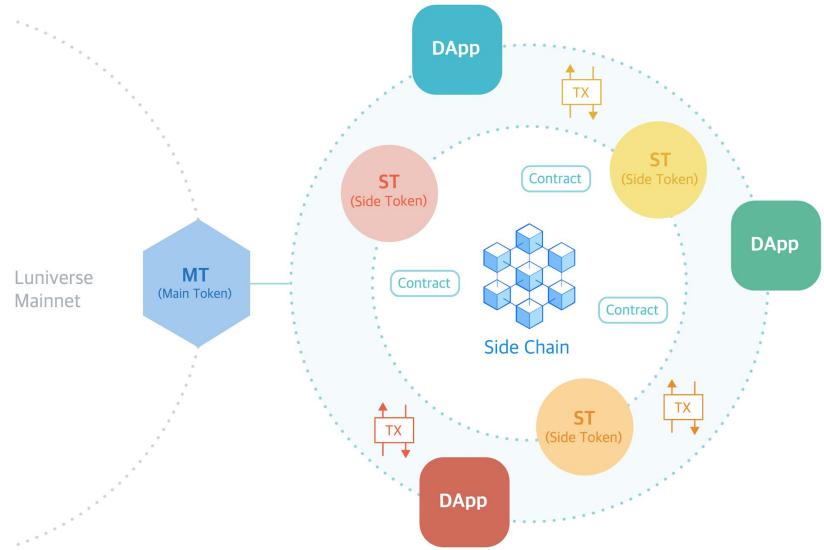
기타

Dapp

└ 설명 : token contract과 user contract을 기반으로 transaction을 정의하고 API key를 발급하여 구축하는 개발 환경

Luniverse Key Term

사용자 유형



Main Admin (MA)

설명 : Main Token 및 Side Chain을 생성하고 관리할 수 있는 사용자 유형으로 SA의 권한을 포함

Side Admin (SA)

설명 : Side Token을 발행하고 관리할 수 있는 사용자 유형으로 MA의 초대가 있어야 루니버스 사용 가능

Main Chain Validator

설명 : Main Chain에 있는 블록을 생성 및 검증하고 Main Chain 상의 의사결정에 참여하는 사용자 유형

Side Chain Validator

설명 : Side Chain에 있는 블록을 생성 및 검증하고 Side Chain 상의 의사결정에 참여하는 사용자 유형으로 MA의 초대가 있어야 루니버스 사용 가능

How to Use Luniverse

(※ 첫 사용자 기준)

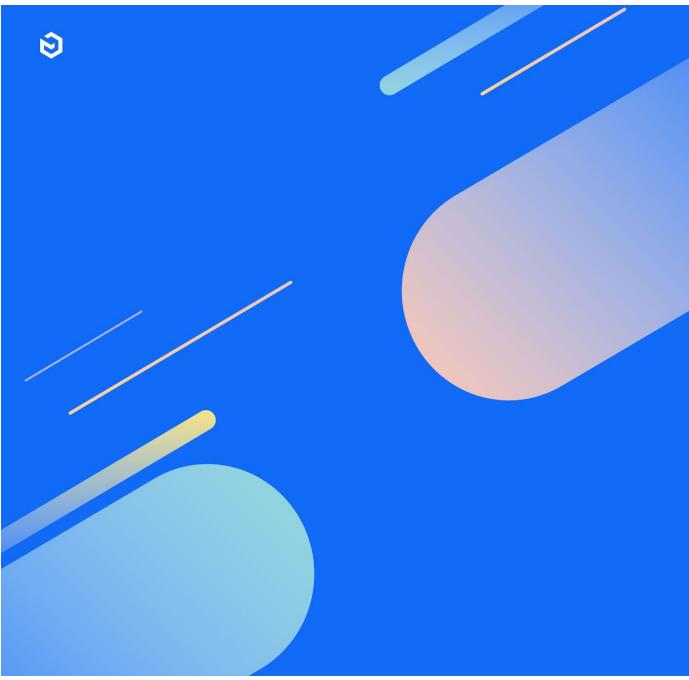
- 1) 회원가입
- 2) 로그인
- 3) Side Token 발행
- 4) DApp 생성
- 5) Side Token Transaction 설정
- 6) End User Private Key 생성
- 7) Side Token Transaction (Airdrop) 실행
- 8) DApp(유기견보호소) 1차 연동
- 9) Atom Plugin 사용
- 10) User Custom Contract Deploy
- 11) User Custom Contract-Transaction 설정
- 12) DApp(유기견보호소) 2차 연동

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1. 회원가입



Log In

Email Address

Password



- 1) Login 버튼 하단 'Create Account' 클릭

1. 회원가입



Let's Get Started

Email Address *

Username *

Password *

Confirm Password *

Phone Number *

+82 10000000

Company name

Company website

I agree to the Luniverse [Terms of Service](#) and [Services Privacy Policy](#)

Next

2) 회원 가입 정보 입력

1. 회원가입

Luniverse email verify.

no-reply@luniverse.io
to me ▾

4:32 PM (3 minutes ago) ☆ :



Sign Up

Please check the Verification code below to complete your email address verification.

Verification Code :

Copyright 2018@dunamu. All Right Reserved.

◀ Reply ▶ Forward

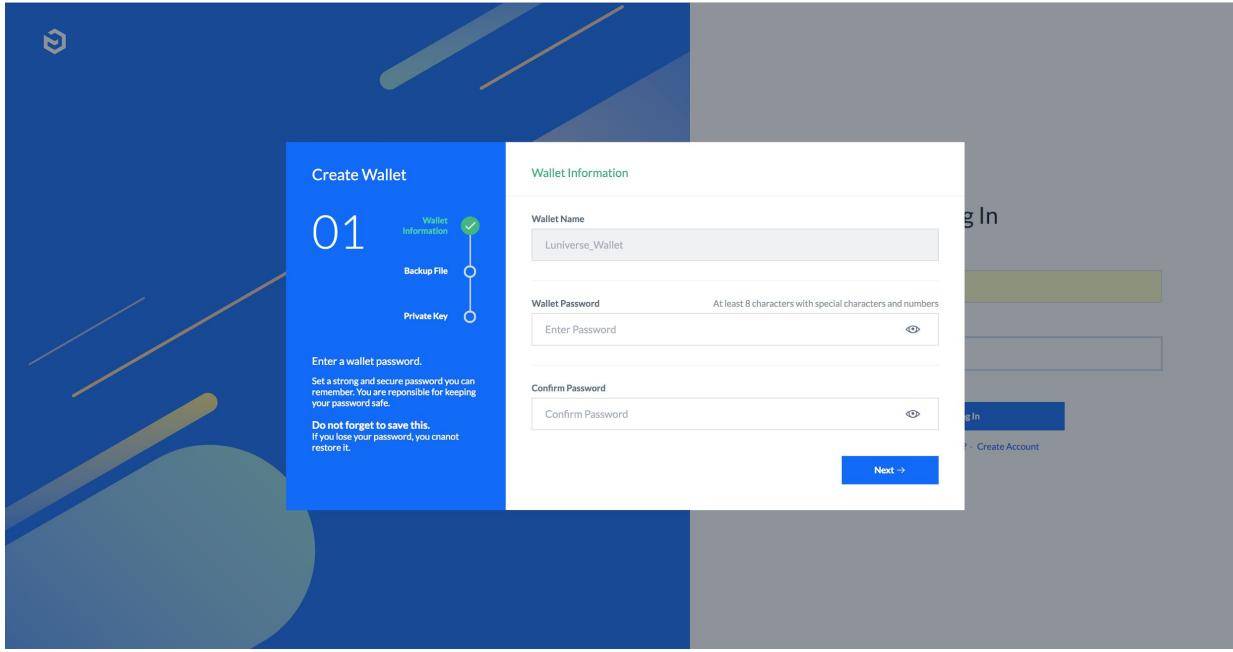
3) 입력한 메일주소로 보내진
인증 번호 확인 후 회원가입
완료

How to Use Luniverse

(※ 첫 사용자 기준)

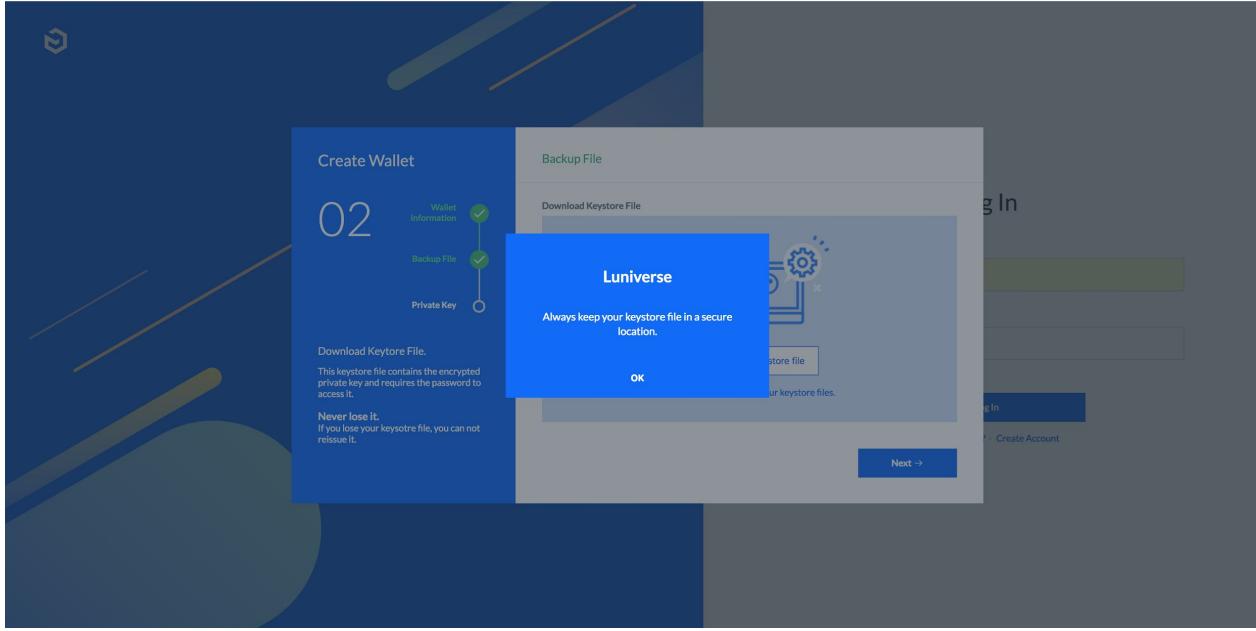
- 1) 회원가입
- 2) 로그인**
- 3) Side Token 발행
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2. 최초 로그인



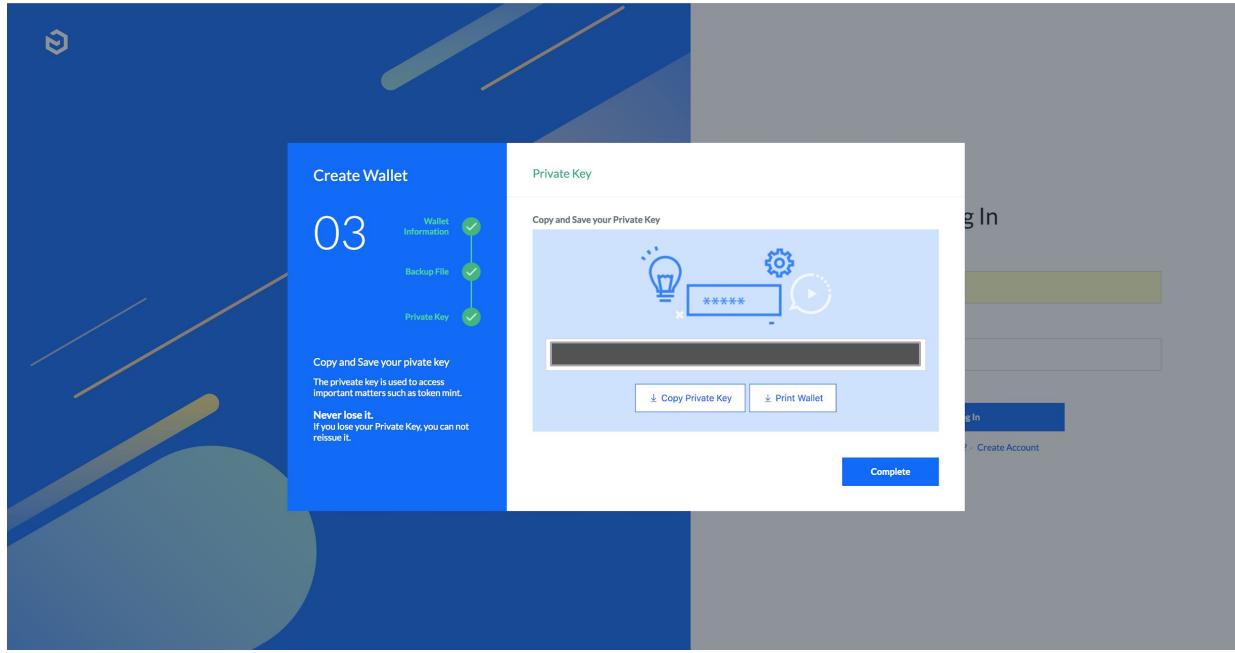
1) 최초 로그인(Free Trial 기준)의 경우 wallet 생성

2. 최초 로그인



2) wallet keystore file을
안전한 경로에 다운로드

2. 최초 로그인



3) wallet의 private key 확인

2. 최초 로그인

The screenshot shows the Luniverse platform's home page. At the top, there is a navigation bar with icons for Home, Security, Utility, Admin, and Luniverse. Below the navigation bar, a banner says "Welcome, Luniverse" and "You are now using the Free Trial." It also features a notice about the "The Next Generation Blockchain Service Platform" and a 3D geometric background graphic.

The main content area is divided into several sections:

- Free Trial:** Shows a "Side Chain" icon with the status "Running".
- Chain Dev:** Shows a "Main Token" section with an "FTC" icon and a "Distribution Rate" bar at 100%.
- DApp:** Shows four "Trial DApp" icons.
- Side Token:** Shows a "Side Token" icon with a plus sign.

At the bottom right of the main content area, there are buttons for "Invite Side Admin" and "Request Main Token".

4) free trial 신청한 계정의 경우 Side Admin으로 로그인

(Side Admin 계정으로 로그인하면 Main Token과 Side Chain은 Main Admin에 의해 생성된 상황)

How to Use Luniverse

(※ 첫 사용자 기준)

- 1) 회원가입
- 2) 로그인
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- 4) DApp 생성
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3. Side Token 발행

The screenshot shows the Luniverse platform interface. At the top, there is a blue header bar with the following navigation items: Home, Security, Utility, a search bar containing "testdevdemo" with a red box highlighting it, and a user profile icon.

The main content area has a blue background with the text "Welcome, testdevdemo" and "You are now using the Free Trial." Below this, there are sections for "Chain Dev", "Side Chain", "Main Token", and "DApp".

- Chain Dev:** Shows a "FreeTrial" chain with a "Running" status and a "Create Chain" button.
- Side Chain:** Shows a "FreeTrial Side Chain" with a "Running" status and a "Create DApp" button.
- Main Token:** Shows the "FTT FreeTrialToken" with a distribution rate of "10%" and a "Request Main Token" button.
- DApp:** A placeholder for creating a DApp.

At the bottom left, there is a "Create ERC20 Side Token" button. On the right side, there are buttons for "Invite Side Admin" and "Request Main Token".

At the very bottom, there is a copyright notice: "Copyright(c) 2018. Lambda256. All rights reserved".

3. Side Token 발행

The screenshot shows the Luniverse platform interface. At the top, there is a navigation bar with links for Home, Security, Utility, and Sign Out. Below the navigation bar, a banner displays a notice about a free trial.

The main content area is divided into several sections:

- Chain Dev**: Shows a Side Chain named "FreeTrial Side Chain" which is "Running".
- Main Token**: Shows the token FT (FreeTrialToken) with a distribution rate of 10%.
- DApp**: A section for creating DApps, with a "Create DApp" button.
- Side Token**: A section for creating ERC20 Side Tokens, with a "Create ERC20 Side Token" button.
- Right Sidebar**: Contains links for Free Trial, Manage Billing Account, Contact Sales, Notifications, Wallet (which is highlighted with a red box), Team Members, Account Detail, Luniverse News, and other account-related options like Documents and Partners.

At the bottom left, there is a copyright notice: Copyright© 2018. Lambda256. All rights reserved.

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3. Side Token 발행

Home Security Utility ▾

Admin testdevdemo

Home > My Universe > My Wallet

MY UNIVERSE

Notifications

Billing

My Wallet

Team Members

Account Detail

Luniverse News

My Wallet

Address

0x391c6dcf42749ced6886527787e8ff66445fbe5 Copy

Token Type	Symbol	Name	Balance
MT	FTT	FreeTrialToken	1,000 FTT

3. Side Token 발행

The screenshot shows the Luniverse platform interface. At the top, there is a navigation bar with icons for Home, Security, Utility, Admin, and test/dev demo. Below the navigation bar, a banner reads "The Next Generation Blockchain Service Platform". The main content area is titled "FreeTrial" and "Chain Dev". It displays two sections: "Side Chain" and "Main Token". The "Side Chain" section shows a "FreeTrial Side Chain" icon and "Chain Status Running". The "Main Token" section shows an "FTT FreeTrialToken" icon and "Distribution Rate 10%". In the "DApp" section, there is a "Create DApp" button. Below it, there is a "Side Token" section with a "Create ERC20 Side Token" button, which is highlighted with a red arrow. There is also a "Create ERC20 Side Token" button with a plus sign. At the bottom right of the main content area, there are "Invite Side Admin" and "Request Main Token" buttons.

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Luniverse Key Term

How to Use Luniverse

How to Use Luniverse Atom Plugin

3. Side Token 발행

Home Security Utility Admin testdevdemo

Create ERC20 Side Token

Token Name: \$3426 (highlighted by red arrow)

Token Symbol: \$3426 (highlighted by red arrow)

Token Symbol Image: S3 (highlighted by red arrow)

Image Upload (PNG/JPG only, 640X640)

Set Conversion Rate:

Need to set conversion rate between side token and FTT(Main Token).
Your customers will always be able to redeem their side token for FTT at that conversion rate.
Once you create side token, the conversion rate is fixed and cannot be changed.

MT (FTT) —> PT
1 MT = 10.000000 PT

Mint Token:

Currently, 1,000 FTT can be staked for minting a PT.
Given conversion rate 1 FTT = 10 PT. You can mint a maximum of 10,000 PT
[Check Your MT Wallet](#)

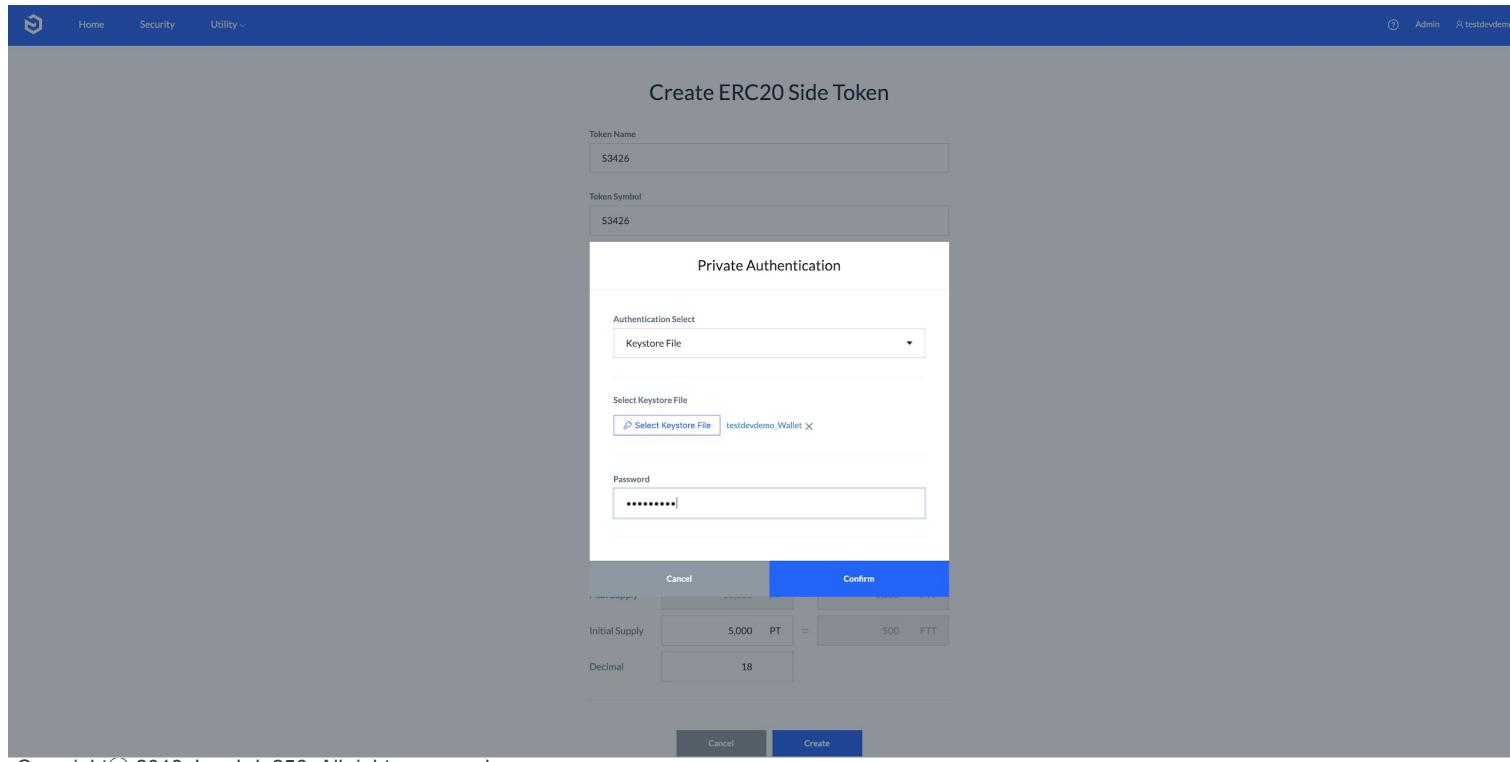
Max Supply: 10,000 PT (highlighted by red arrow)

Initial Supply: 5,000 PT (highlighted by red arrow)

Decimal: 18

Cancel Create (highlighted by red arrow)

3. Side Token 발행



3. Side Token 발행

The screenshot shows the Luniverse web interface with a blue header bar. The top navigation includes 'Home', 'Security', 'Utility', 'Admin' (with a user icon), and 'testdevdemo'. Below the header, the main content area has a title 'FreeTrial' and a 'Create Chain' button.

The main section is titled 'Chain Dev' and contains three main components:

- Side Chain:** Shows a 'FreeTrial Side Chain' icon and a 'Chain Status' of 'Running'.
- Main Token:** Shows an 'FTT FreeTrialToken' icon and a 'Distribution Rate' of '10%'.
- DApp:** A button labeled 'Create DApp'.

At the bottom, there's a 'Side Token' section with a card for 'S3' (ID: S3426). It shows a 'Distribution Rate' of '0%' and a status of 'Registering'. A red arrow points to the 'Registering' status. To the right of the card are buttons for 'Invite Side Admin' and 'Request Main Token'.

3. Side Token 발행

The screenshot shows the Luniverse web interface with a blue header bar. The header includes a logo, navigation links for 'Home', 'Security', 'Utility', and user information ('Admin' and 'testdevdemo'). Below the header, the main content area has a title 'FreeTrial' and a 'Create Chain' button.

The main section is titled 'Chain Dev'. It displays three components:

- Side Chain:** Shows a network icon, the name 'FreeTrial Side Chain', and a 'Chain Status' of 'Running'.
- Main Token:** Shows a hexagonal icon with 'FT' and the text 'FTT FreeTrialToken'. It also shows a 'Distribution Rate' of '10%'.
- DApp:** Shows a plus icon and a 'Create DApp' button.

At the bottom, there is a 'Side Token' section:

- A card for token 'S3' with the ID 'S3426' and a status of 'ENCODED'.
- A 'Distribution Rate' bar set at '0%'.
- A status indicator 'Registered' with a red arrow pointing to it.

Buttons for 'Invite Side Admin' and 'Request Main Token' are located at the top right of the 'Side Token' section.

3. Side Token 발행

Home Security Utility ▾

Admin testdevdemo

Home > My Luniverse > My Wallet

MY UNIVERSE Notifications Billing Team Members Account Detail Luniverse News

My Wallet

Address

0x391c6dcf42749ced68866527787e8ff66445fbe [Copy](#)

Token Type	Symbol	Name	Balance
FTT	FTT	FreeTrialToken	500 FTT
FETC20ST	S3	S3426	5,000.53426

3. Side Token 발행

Home Security Utility ▾

Admin testdevdemo

Create ERC20 Side Token

Token Name
A3426

Token Symbol
A3426

Token Symbol Image
 (Image Upload) (PNG/JPG only, 640X640)

Set Conversion Rate
Need to set conversion rate between side token and FTT(Main Token)
Your customers will always be able to redeem their side token for FTT at that conversion rate.
Once you create side token, the conversion rate is fixed and cannot be changed.

MT (FTT) → PT 1 MT = 10.000000 PT

Mint Token
Currently, 500 FTT can be staked for minting a PT.
Given conversion rate 1 FTT = 10 PT, You can mint a maximum of 5,000 PT
[Check Your MT Wallet](#)

Max Supply 5,000 PT = 500 FTT

Initial Supply 1,000 PT = 100 FTT

Decimal 18

3. Side Token 발행

Home Security Utility

Admin testdevdemo

Home > My Universe > My Wallet

MY LUNIVERSE Notifications Billing My Wallet Team Members Account Detail Luniverse News

My Wallet

Address

0x391c6dcf42749ced68866527787e8ff66445fbe5 [Copy](#)

Token Type	Symbol	Name	Balance
ERC20 ST	FTT	FreeTrialToken	400 FTT
ERC20 ST	A3	A3426	1,000 A3426
ERC20 ST	S3	S3426	4,900 S3426

How to Use Luniverse

(※ 첫 사용자 기준)

- 1) 회원가입
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4. DApp 생성

Welcome, testdevdemo
You are now using the Free Trial.

Home Security Utility Admin testdevdemo

FreeTrial Create Chain

Chain Dev

Side Chain Main Token Request Main Token

FreeTrial Side Chain Chain Status Running

FTT FreeTrialToken Distribution Rate 10%

DApp Create DApp

Side Token Invite Side Admin Request Main Token

S3 S3426 S3426

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4. DApp 생성

The screenshot shows the 'Create DApp' page of the Luniverse platform. At the top, there's a navigation bar with icons for Home, Security, Utility, and Admin. Below the navigation is a breadcrumb trail: Home > DApp > Create.

The main form has the following fields:

- DApp Name ***: demoHomelessDog
- DApp Description**: Dapp for demoHomelessDog
- DApp Symbol Image**: A placeholder image featuring the letters 'DE' on a blue button and five colored circles (red, orange, yellow, green, blue) in a row.
- DApp Enduser Wallet**: A section with a note about selecting a wallet provider. It includes two radio buttons:
 - 직접제공 (Direct Provision)
 - Luniverse (Luniverse)A red arrow points to the 'Luniverse' option. Below the radio buttons is a note: "Luniverse에서 Private Key를 관리하고 Transaction 서명을 대신합니다. (개별적으로만 사용해 주세요.)".
- Create** button: A large blue button at the bottom right.

8. DApp(유기견보호소) 1차 연동

다음으로 페이지 열기	▶
사용자 에이전트	▶
Jaehoon의 MacBook Pro (2)	▶
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실험적 기능	▶
응답형 디자인 모드 시작	⌘R
스니펫 편집기 보기	
확장 프로그램 빌더 보기	
웹 속성 연결	⌥ ⌘ I
JavaScript 콘솔 표시	⌥ ⌘ C
페이지 소스 보기	⌥ ⌘ U
페이지 리소스 보기	⌥ ⌘ A
타임라인 기록 시작	⌥ ⌘ T
요소 선택 시작	⇧ ⌘ C
캐시 비우기	⌥ ⌘ E
이미지 비활성화	
스타일 비활성화	
JavaScript 비활성화	
확장 프로그램 비활성화	
특정 사이트 헥(Hack) 비활성화	
로컬 파일 제한사항 비활성화	
출처 간 제한 비활성화	
WebRTC	▶
스마트 검색 필드에서 JavaScript 허용	
Apple 이벤트에서 JavaScript 허용	
원격 자동화 허용	
서명되지 않은 확장 프로그램 허용	
Safari Technology Preview 받기	

- (Mac Safari) 개발자용 메뉴에서 “로컬 파일 제한사항 비활성화”를 체크한다.
- (Windows Chrome) cmd창에서
**"C:\Program Files
(x86)\Google\Chrome\Application\chrom
e.exe" --allow-file-access-from-files**
으로 크롬 실행

<https://chrome.google.com/webstore/detail/allow-control-allow-origi/nlfbmbojpeacfghkpbjhddihlkkiljbi?hl=ko> 다운로드 후 실행

다음으로 페이지 열기	▶
사용자 에이전트	▶
Jaehoon의 MacBook Pro (2)	▶
서비스 제공자	▶
실험적 기능	▶
응답형 디자인 모드 시작	⌘R
스니펫 편집기 보기	
확장 프로그램 빌더 보기	
웹 속성 연결	⌥ ⌘ I
JavaScript 콘솔 표시	⌥ ⌘ C
페이지 소스 보기	⌥ ⌘ U
페이지 리소스 보기	⌥ ⌘ A
타임라인 기록 시작	⌥ ⌘ T
요소 선택 시작	⇧ ⌘ C
캐시 비우기	⌥ ⌘ E
이미지 비활성화	
스타일 비활성화	
JavaScript 비활성화	
확장 프로그램 비활성화	
특정 사이트 헥(Hack) 비활성화	
✓ 로컬 파일 제한사항 비활성화	
출처 간 제한 비활성화	
WebRTC	▶
스마트 검색 필드에서 JavaScript 허용	
Apple 이벤트에서 JavaScript 허용	
원격 자동화 허용	
서명되지 않은 확장 프로그램 허용	
Safari Technology Preview 받기	

4. DApp 생성

The screenshot shows the Luniverse web application interface. At the top, there is a blue header bar with the Luniverse logo, navigation links for Home, Security, Utility, and a user account section for Admin and teststgdemodino. Below the header, the URL indicates the user is viewing the Overview of a DApp named 'demoHomelessDog2'. On the left, a sidebar menu for 'DAPP' includes 'Overview' (which is currently selected), 'Transaction List', and 'API Key'. The main content area displays the 'DApp Overview' for 'demoHomelessDog2', which is described as a 'Dapp for demoHomelessDog'. It shows details such as the Wallet Type (highlighted with a red box), Created by (teststgdemodino), and Created at (2018.12.18).

Wallet Type	Luniverse 지갑
Created by	teststgdemodino (teststgdemodino@dunamu.com)
Created at	2018.12.18

4. DApp 생성

The screenshot shows the Luniverse web interface with a blue header bar. The header includes a logo, navigation links for 'Home', 'Security', and 'Utility', and a user account section for 'Admin' and 'testdevdemo'. Below the header, a breadcrumb navigation path indicates the current location: 'Home > Chain > DApp > Open API Key'. The main content area has a teal sidebar on the left with a circular icon containing 'DE' and the text 'demoHomeless...'. The main content area displays the 'Open API Key' generation page, which includes a sub-header 'Open API Key', a sub-sub-header 'Generate an Open API Key', and a note 'You can generate 1 Open API Key for 1 DApp.' A large blue 'Generate' button is centered on the page. On the far left, a vertical sidebar lists 'DAPP' categories: 'Overview', 'Transaction List', and 'API Key', with 'API Key' being the active tab.

4. DApp 생성

The screenshot shows the Luniverse web interface with a blue header bar. The header includes a logo, navigation links for 'Home', 'Security', 'Utility', and a user account section for 'Admin'. Below the header, a breadcrumb trail indicates the current location: 'Home > Chain > DApp > Open API Key'. The main content area has a white background. On the left, there's a sidebar with a teal circular icon containing 'DE' and a list of DApp-related options: 'Overview', 'Transaction List', and 'API Key'. The main content area displays the 'Open API Key' generation process. It starts with a heading 'Open API Key' and a sub-section 'Your Open API Key'. Below this, a note states 'You can generate 1 Open API Key for 1 DApp.' A 'Confirm Your Key' section follows, showing an 'Access Key' field with the value 'xCh9RwpZof652DLUf97Mwccg2GzgCPWpDA9FLCKVkvwgCqGEyvp432hioZKEuMP4Te'. At the bottom of this section is a blue 'OK' button.

How to Use Luniverse

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- 4) DApp 생성
- 5) Side Token Transaction 설정**
- 6) End User Private Key 생성
- 7) Side Token Transaction (Airdrop) 실행
- 8) DApp(유기견보호소) 1차 연동
- 9) Atom Plugin 사용
- 10) User Custom Contract Deploy
- 11) User Custom Contract-Transaction 설정
- 12) DApp(유기견보호소) 2차 연동

5. Side Token Transaction 설정

The screenshot shows the Luniverse DApp interface. At the top, there is a blue header bar with the Luniverse logo, navigation links for Home, Security, Utility, and a user account section for Admin and testdevdemo. Below the header, a breadcrumb navigation shows the path: Home > Chain > DApp > Transaction > Create. On the left side, there is a sidebar with a profile icon labeled 'DE' and 'demoHomeless...', and a menu with options: DAPP, Overview, Transaction List, and API Key. The main content area is titled 'Smart Transaction Wizard' and has a sub-section titled 'Contract or Side Token'. A dropdown menu titled 'Choose your side token or contract' contains the option 'S3426 (S3426)'. The overall interface is clean and modern, with a white background and blue accents.

5. Side Token Transaction 설정

The screenshot shows the Lambda256 Luniverse DApp interface. At the top, there is a blue header bar with the Lambda256 logo, navigation links (Home, Security, Utility), and user information (Admin, testdevdemo). Below the header, a breadcrumb navigation shows the path: Home > Chain > DApp > Transaction > Create. On the left, a sidebar menu includes sections for DAPP (Overview, Transaction List, API Key) and a profile section for 'DE demoHomeless...'. The main content area is titled 'Smart Transaction Wizard' and is for 'Contract or Side Token'. It contains fields for 'Contract or Side Token' (set to 'S3426 (\$3426)'), 'Transaction type' (set to 'Simple Transfer'), and 'Transaction Name' (set to 'Airdrop'). Below these, under the 'Transfer' section, the 'Business to Customer' option is selected. There is a 'Transaction Value' field with 'Flexible' selected, and a note stating 'Any value can be assigned at any time of transaction request.' A 'Create' button is at the bottom.

5. Side Token Transaction 설정

The screenshot shows the Luniverse DApp interface. On the left, there's a sidebar with a user icon (DE), the name 'demoHomeless...', and navigation links: DAPP, Overview, Transaction List (which is selected and highlighted in blue), and API Key.

The main content area has a header 'Transaction List' with a 'New Transaction' button. Below it is a message: 'Side Token을 생성하거나 User Contract을 생성하여 Transaction으로 등록할 수 있습니다. 등록한 Transaction은 TxAPI를 통해서 Restful API로 제공하여 손쉽게 호출할 수 있습니다.' A table lists a single transaction:

From	Function	Name	Type	Value	Fees	Actions
SideToken S3426 (S3426)	transfer	Airdrop	Business to Customer	Flexible	-	API

Below the table is a code editor containing a curl script for executing the transaction:

```
curl -X POST 'https://dev-api.luniverse.io/tx-api/api/v1.0/transactions/action'\n  -header 'api-key: XCb9RwpZof652DLUf97Mwccg2GzgCPWpDA9FLCKVkwgCqGEywp432hpZKEuMP4Te'\n  -header 'Content-Type: application/json'\n  -data ' {\n    "receiverAddress": "",\n    "valueAmount": "Enter value amount",\n    "actionName": "Airdrop"\n}'
```

5. Side Token Transaction 설정

The screenshot shows the 'Smart Transaction Wizard' interface for configuring a Side Token Transaction. The top navigation bar includes 'Home', 'Security', 'Utility', and user information ('Admin' and 'testdevdemo'). The left sidebar has sections for 'DAPP', 'Overview', 'Transaction List' (which is currently selected), and 'API Key'. The main form is titled 'Smart Transaction Wizard' and contains the following fields:

- Contract or Side Token:** S3426 (S3426)
- Transaction type:** Simple Transfer
- Transaction Name:** Support
- Transfer:** Customer to Customer (radio button selected)
- Transaction Value:** Fixed (radio button selected)
- Any value can be assigned at any time of transaction request.**
e.g. Use this same transaction to assign a value for each item.
- Transaction Fee (% of Transaction Value):** Flexible (radio button selected)
- Any value can be assigned at any time of transaction request.**
Transaction fees are the fees received from the members and can only be charged to 'User' transactions.

5. Side Token Transaction 설정

The screenshot shows the 'Smart Transaction Wizard' interface for creating a transaction. A red arrow points to the 'Contract or Side Token' dropdown menu, which is currently set to 'A3426 (A3426)'. The interface includes fields for 'Transaction type' (set to 'Simple Transfer'), 'Transaction Name' (set to 'Adopt'), and sections for 'Transfer' (Customer to Customer selected), 'Transaction Value' (Flexible), and 'Transaction Fee (% of Transaction Value)' (Flexible). A 'Create' button is at the bottom.

DE

demo-homeless...

Home Security Utility

Admin testdevdemo

Home > Chain > DApp > Transaction > Create

< Smart Transaction Wizard

Contract or Side Token

A3426 (A3426)

Transaction type

Simple Transfer

Transaction Name

Adopt

Transfer

Customer to Customer

Business to Customer

Customer to Business

Transaction Value

Fixed Flexible

Any value can be assigned at any time of transaction request.
e.g. Use this same transaction to assign a value for each item.

Transaction Fee (% of Transaction Value)

Fixed Flexible

Any value can be assigned at any time of transaction request.
Transaction fees are the fees received from the members and can only be charged to 'User to User' transactions.

Create

5. Side Token Transaction 설정

The screenshot shows the 'Smart Transaction Wizard' interface for creating a Side Token Transaction. The top navigation bar includes 'Home', 'Security', 'Utility', and user information ('Admin' and 'testdevdemo'). The left sidebar has sections for 'DAPP' (Overview, Transaction List, API Key) and a profile section for 'DE demoHomeless...'. The main form is titled 'Smart Transaction Wizard' and includes the following fields:

- Contract or Side Token:** A dropdown menu showing 'A3426 (A3426)'.
- Transaction type:** A dropdown menu showing 'Simple Transfer'.
- Transaction Name:** An input field containing 'Reward'.
- Transfer:** A section with three radio button options:
 - Customer to Customer
 - Business to Customer
 - Customer to Business
- Transaction Value:** A section with a note: 'Any value can be assigned at any time of transaction request.' and 'e.g. Use this same transaction to assign a value for each item.' It includes 'Fixed' and 'Flexible' buttons.
- Transaction Fee (% of Transaction Value):** A section with a note: 'Any value can be assigned at any time of transaction request.' and 'e.g. Transaction fees are the fees received from the members and can only be charged to "User to User" transactions.' It includes 'Fixed' and 'Flexible' buttons.

A large blue 'Create' button is located at the bottom of the form.

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6. End User Private Key 생성

```
dino@Dinoui-MacBook-Pro ~ ➔ curl -X POST 'https://stg-api.luniverse.io/tx-api/api/v1.0/wallet/users' \
--header 'Content-Type: application/json' \
--data '{
  "email": "testdummy2@dunamu.com"
}' | jq
% Total    % Received % Xferd  Average Speed   Time     Time      Time  Current
          Dload  Upload Total   Spent   Left  Speed
100  158  100  110  100    48    248   108 --:--:-- --:--:-- --:--:--  248
{
  "result": true,
  "data": {
    "userId": "6150749929095562757",
    "address": "0xc2033ab561f80e296512675c2330c452b2f3d740"
  }
}
```

```
curl -X POST 'https://stg-api.luniverse.io/tx-api/api/v1.0/wallet/users' \
--header 'Content-Type: application/json' \
--data '{
  "email": "${회원가입시 사용하지 않은 Email}"
}'
```

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- 12) DApp(유기견보호소) 2차 연동

7. Side Token Transaction (Airdrop)

실행

The screenshot shows the Luniverse DApp Transaction List interface. On the left, there's a sidebar with a user icon (DE), the name "demoHomeless...", and navigation links: DAPP, Overview, Transaction List (which is selected and highlighted in blue), and API Key.

The main content area has a header "Transaction List" with a "New Transaction" button. Below it is a message box stating: "Side Token을 생성하거나 User Contract을 생성하여 Transaction으로 등록할 수 있습니다. 등록한 Transaction은 TxAPI를 통해서 Restful API로 제공하여 손쉽게 호출할 수 있습니다." A table lists a single transaction:

From	Function	Name	Type	Value	Fees	Actions
SideToken S3426 (S3426)	transfer	Airdrop	Business to Customer	Flexible	-	API

Below the table is a section titled "Use below curl script for executing transaction. (Fill in the blank area for executing.)" containing the following curl command:

```
curl -X POST 'https://dev-api.luniverse.io/tx-api/api/v1.0/transactions/action'\n--header 'api-key: XCb9RwpZof652DLUf97Mwccg2GzgCPWpDA9FLCKVkwgCqGEywp432hpZKEuMP4Te'\n--header 'Content-Type: application/json'\n--data '{\n  \"receiverAddress\": \"\",\n  \"valueAmount\": \"Enter value amount\", \n  \"actionName\": \"Airdrop\"\n}'
```

7. Side Token Transaction (Airdrop)

실행

```
dino@Dinoui-MacBook-Pro ~ ➔ curl -X POST 'https://stg-api.luniverse.io/tx-api/api/v1.0/transactions/action' \
--header 'api-key: MhmKWC1dFBTXpyvjo8PtTQcNfZS4j6RVhtzFybubs9BgXhRWvoK67sbrcrXaPHWj' \
--header 'Content-Type: application/json' \
--data '{
    "receiverAddress": "0xd692fe86c20a4ef634ccae f44e955d244cd4c2d5",
    "valueAmount": "10000000000000000000000000",
    "actionName": "Airdrop"
}' | jq
% Total    % Received % Xferd  Average Speed   Time   Time   Time  Current
          Dload Upload Total Spent   Left Speed
100  290  100  133  100  157    461   544 --:--:-- --:--:-- --:--:--  545
{
  "result": true,
  "data": {
    "txId": 48,
    "txHash": "0x94b30862c0515ad86dfd4786b2e75cdc24873da9431ae2f2be5c4154f057513a",
    "pdTs": 1545109239195
  }
}
```

```
curl -X POST 'https://stg-api.luniverse.io/tx-api/api/v1.0/transactions/action' \
--header 'api-key: MhmKWC1dFBTXpyvjo8PtTQcNfZS4j6RVhtzFybubs9BgXhRWvoK67sbrcrXaPHWj' \
--header 'Content-Type: application/json' \
--data '{
    "receiverAddress": "${앞에서 private key 생성하면서 출력된 wallet address 입력}",
    "valueAmount": "10000000000000000000000000",
    "actionName": "Airdrop"
}'
```

How to Use Luniverse

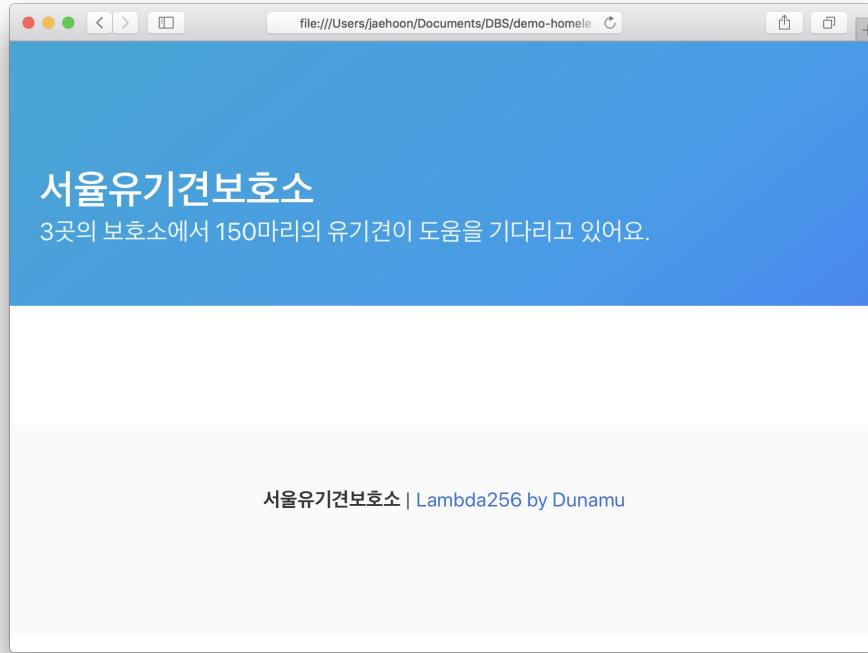
(※ 첫 사용자 기준)

- 1) 회원가입
- 2) 로그인
- 3) Side Token 발행
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- 6) End User Private Key 생성
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- 8) DApp(유기견보호소) 1차 연동**
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- 10) User Custom Contract Deploy
- 11) User Custom Contract-Transaction 설정
- 12) DApp(유기견보호소) 2차 연동

8. DApp(유기견보호소) 1차 연동

- 1) demo-homeless-dogs.zip 소스 압축을 푸다.
- 2) demo-homeless-dogs/index.html 을 사파리(safari) 브라우저로 띄운다.
- 3) (Mac Safari) 브라우저 “개발자용” 메뉴에서 “로컬 파일 제한 비활성화”를 체크하고 페이지를 리로드한다.
- 4) (Windows Chrome) cmd창에서
"C:\Program Files (x86)\Google\Chrome\Application\chrome.exe"
--allow-file-access-from-files
으로 크롬 실행한다.

8. DApp(유기견보호소) 1차 연동



- demo-homeless-dogs/index.html 을 사파리에서 띄우면 왼쪽 화면이 뜬다.

8.DApp(유기견보호소) 1차 연동

```
var Config = {
  // STEP 1 chainId, contractAddress 입력
  chainId: '1545038449653695272',
  st: {
    support: {
      contractAddress: '0xa0d91e9c1211dc1a6026637652fDf368da49D811'
    },
    adopt: {
      contractAddress: '0x419eC01d6589B9e7FB557FD088020DD31A3ce7DB'
    },
  },
  walletAddress: {
    // STEP 1 pd, user.walletAddress 입력
    pd: '0xd81ed145e5e9ff9ad476698aca90863a76fddb21',
    user: '0x09c5aa25689fafb0c5b981ccb392e9f16c4d46ca'
  },
  dapp: {
    // STEP 1 token ,apiKey 입력
    apiKey: 'CxNeagk3iKm2AmGuWeZLXr8cdiSd6yLXVYuV6tKwS8jbbsjCyxWWZKibKbUJ35a9',
  },
}
```

src/js/config.js 파일 수정

8.DApp(유기견보호소) 1차 연동

The screenshot shows the Luniverse platform's main dashboard. At the top, there are navigation links: Home, Security, Utility, Admin, and testdevdemo. Below the header, a banner reads "Welcome, testdevdemo You are now using the Free Trial." and "The Next Generation Blockchain Service Platform".

The main content area is divided into several sections:

- FreeTrial**: Shows a "Side Chain" named "FreeTrial" with a status of "Running".
- Main Token**: Shows an "FTT" token with a "Distribution Rate" of 10%.
- DApp**: Shows a "demoHomelessDog" app for "Homeless...".
- Side Token**: Shows tokens A3 and S3.

At the bottom left, a URL is displayed: <https://dev.luniverse.io/chains/1545038873053531346>.

8.DApp(유기견보호소) 1차 연동

Home Security Utility ▾

Admin testdevdemo

Home > Chain > Overview

FreeTrial
FreeTrialChain

CHAIN

Overview User Contract List Abusing List Block Explorer Anchoring List

Nodes 6 / 6 Block Period 1 second Chain Type Ethereum Region Seoul Created at 2018.12.17 Status Running

Node name	Owner	RPC Endpoint	Status	Action
t1	test1@dunamu.com	-	● Invitation Sent	Change
t2	test2@dunamu.com	-	● Invitation Sent	Change
t3	test3@dunamu.com	-	● Invitation Sent	Change
t4	test4@dunamu.com	-	● Invitation Sent	Change
devadmin	devadmin (admin@dunamu.com)	ws://dev-rpc.luniverse.io:8546/?ChainId=154503887305351346	● Active	Not Available
Validator	Luniverse	-	● Active	Not Available



8.DApp(유기견보호소) 1차 연동

The screenshot shows the Luniverse DApp interface for managing a Side Chain and its associated Main Token.

Side Chain: FreeTrial Side Chain, Chain Status: Running.

Main Token: FTT, FreeTrialToken, Distribution Rate: 10%.

DApp: demoHomelessDog, demo App for Homeless...

Side Token: A3 (A3426, A3426, ERC20ST), S3 (S3426, S3426, ERC20ST). A red arrow points from the URL bar at the bottom to the A3 token card.

Actions: Invite Side Admin, Request Main Token.

<https://dev.luniverse.io/8/side-tokens/8>

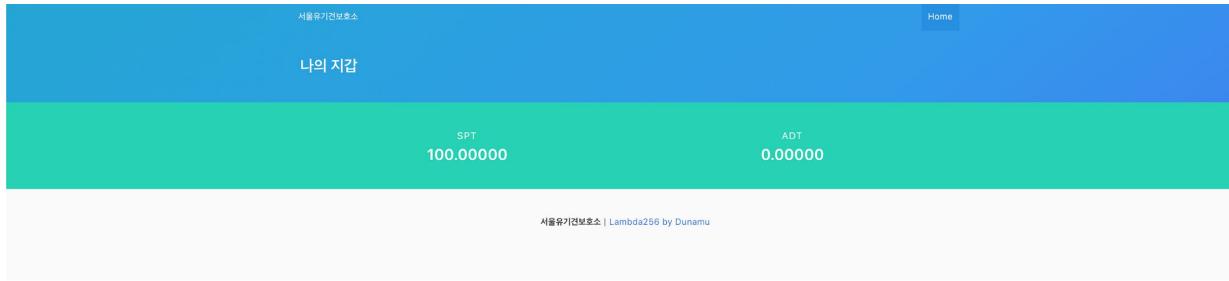
8.DApp(유기견보호소) 1차 연동

The screenshot shows the 'Token Overview' page of the Luniverse DApp. At the top, there's a navigation bar with icons for Home, Security, Utility, and a user account. Below the navigation is a breadcrumb trail: Home > Side Token > Overview. On the left, a sidebar shows a list of tokens: FTT : A3426, SIDE TOKEN, Overview, and Supply. The main content area has a header 'Token Overview' with two circular icons labeled 'A3'. Below the header, it says 'A3426' and 'A3426'. It includes fields for 'Token Type' (ERC20 ST), 'Description' (Please enter your token description.), and a conversion rate '1 FTT = 10 A3426'. A table provides detailed information about the token:

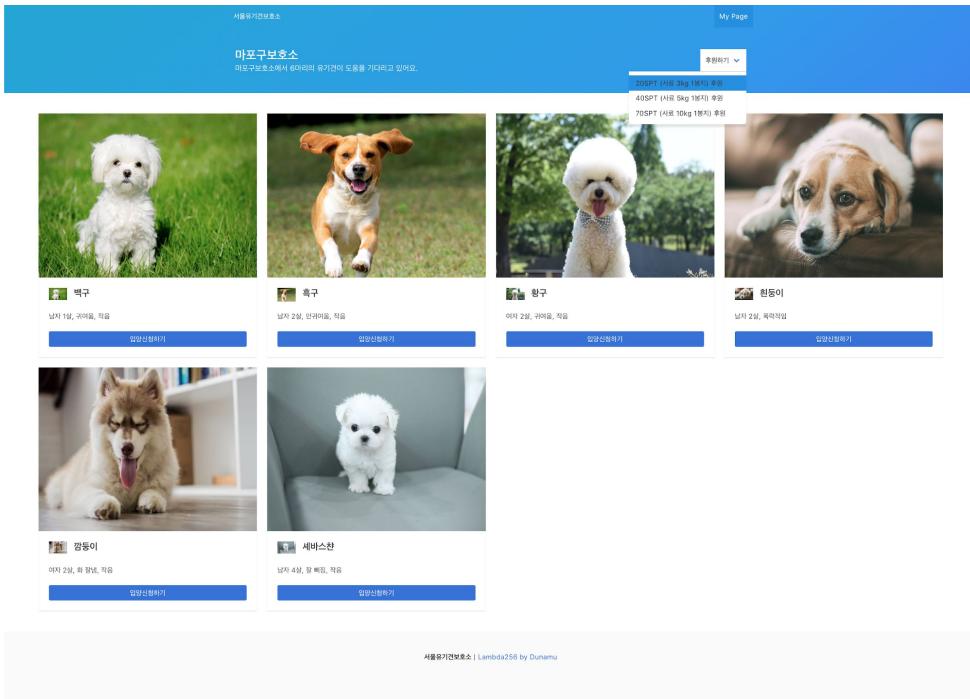
Created by	testdevdemo (testdevdemo@dunamu.com)
Created at	2018.12.18
Contract Address	0x093D67D7a07174739f5562D9E280c20E71e9Ca51
Decimals	18
Circulating Supply	1,000 A3426
Conversion Rate	1:10 (FTT:A3426)

A red arrow points to the 'Contract Address' field in the table.

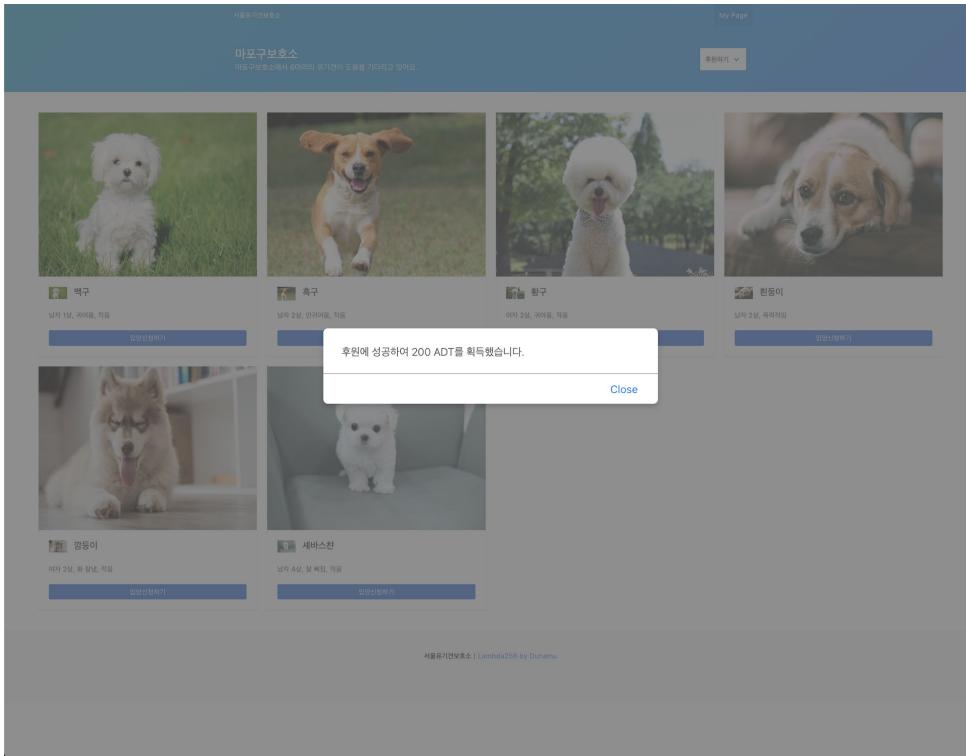
8.DApp(유기견보호소) 1차 연동



8.DApp(유기견보호소) 1차 연동

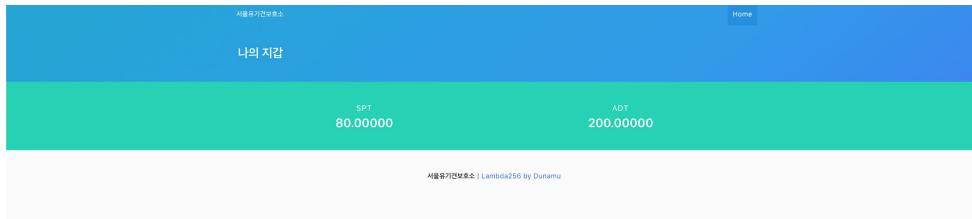


8.DApp(유기견보호소) 1차 연동



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8.DApp(유기견보호소) 1차 연동



How to Use Luniverse

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- 6) End User Private Key 생성
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- 9) Atom Plugin 사용**
- 10) User Custom Contract Deploy
- 11) User Custom Contract-Transaction 설정
- 12) DApp(유기견보호소) 2차 연동

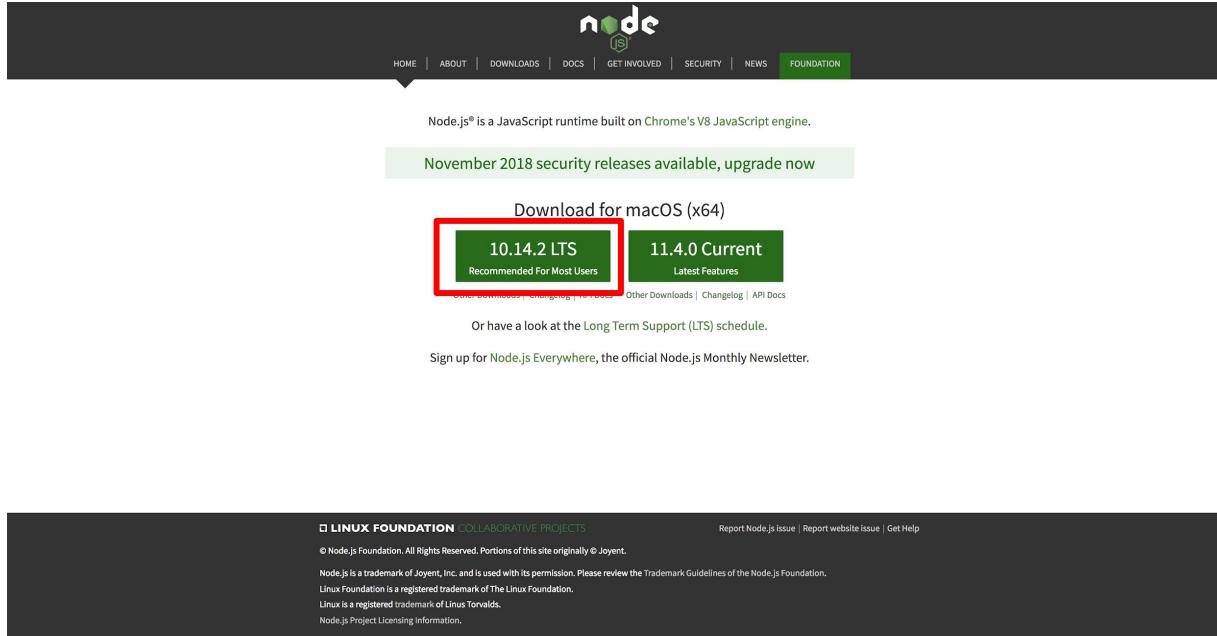
How to Use Luniverse Atom Plugin

9-1) Luniverse Atom Plugin 사전 준비

- a) Node.js 설치
- b) Truffle 설치
- c) Atom 설치
- d) Atom 환경설정

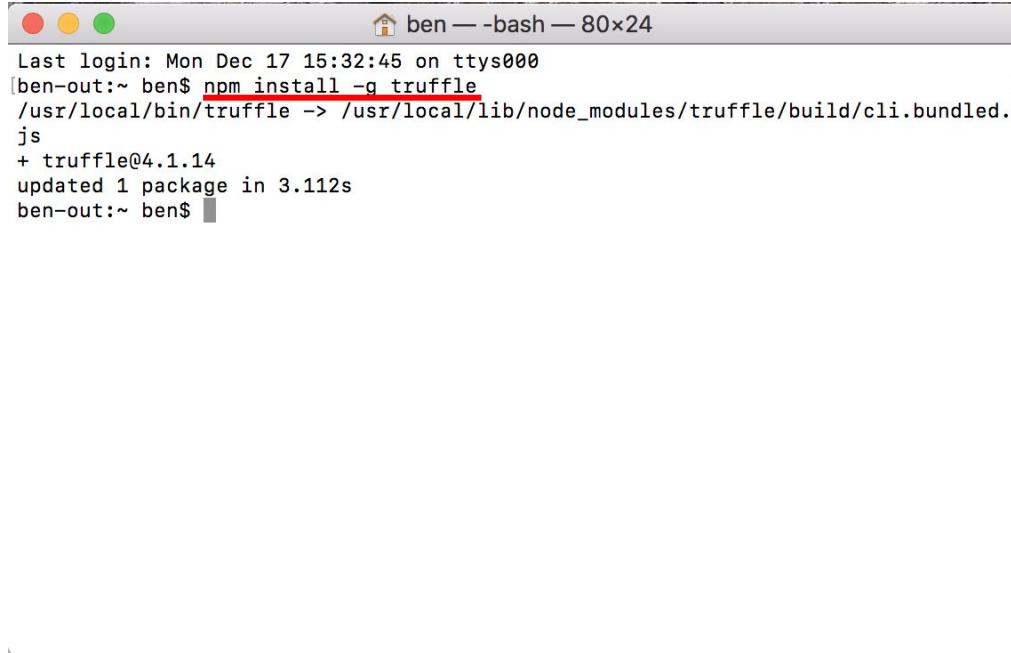
9-2) Atom Plugin 실행하기

9-1. Atom Plugin 사전준비 - node.js 설치



1) <https://nodejs.org/en/>
에서 Node.js 설치

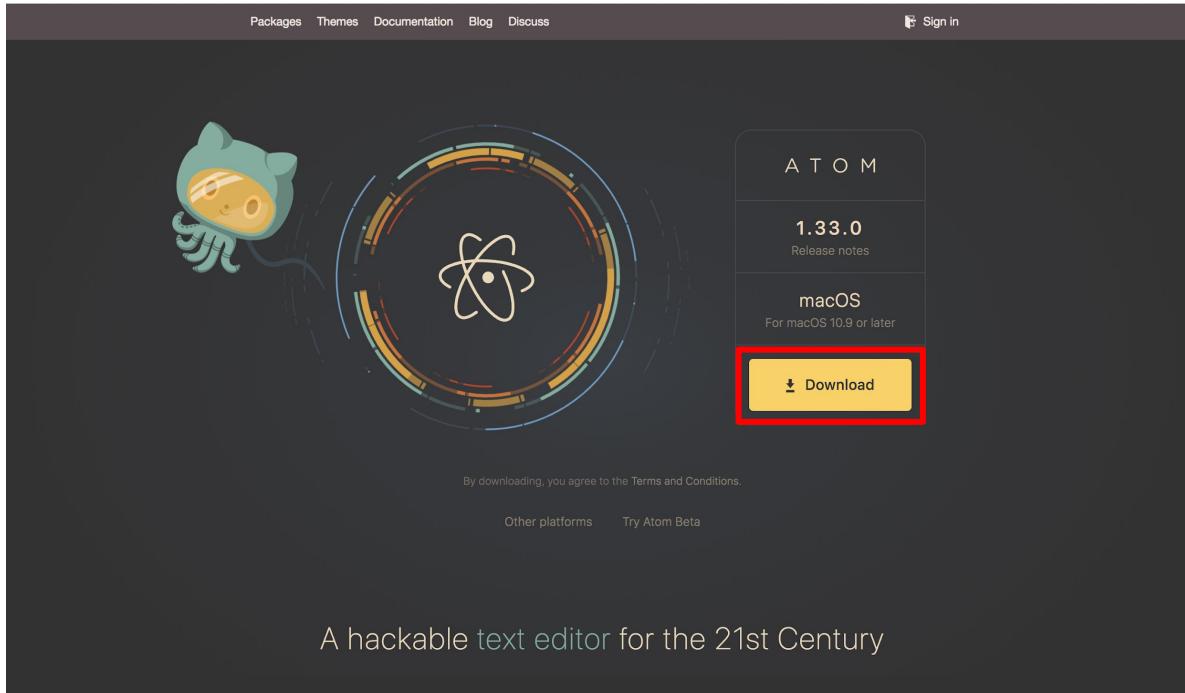
9-1. Atom Plugin 사전준비 - truffle 설치



```
Last login: Mon Dec 17 15:32:45 on ttys000
[ben-out:~ ben$ npm install -g truffle
/usr/local/bin/truffle -> /usr/local/lib/node_modules/truffle/build/cli.bundled.
js
+ truffle@4.1.14
updated 1 package in 3.112s
ben-out:~ ben$ ]
```

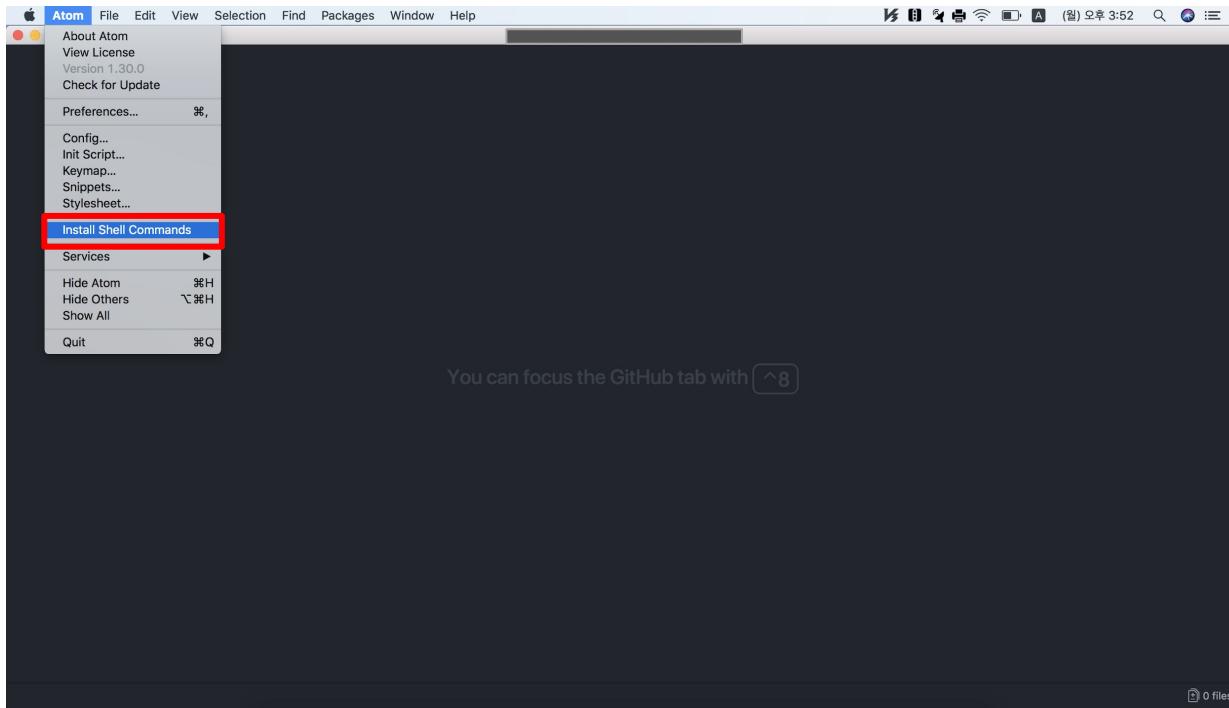
2) Terminal 창에서 'npm install -g truffle' 입력하여 truffle 설치

9-1. Atom Plugin 사전준비 - atom 설치



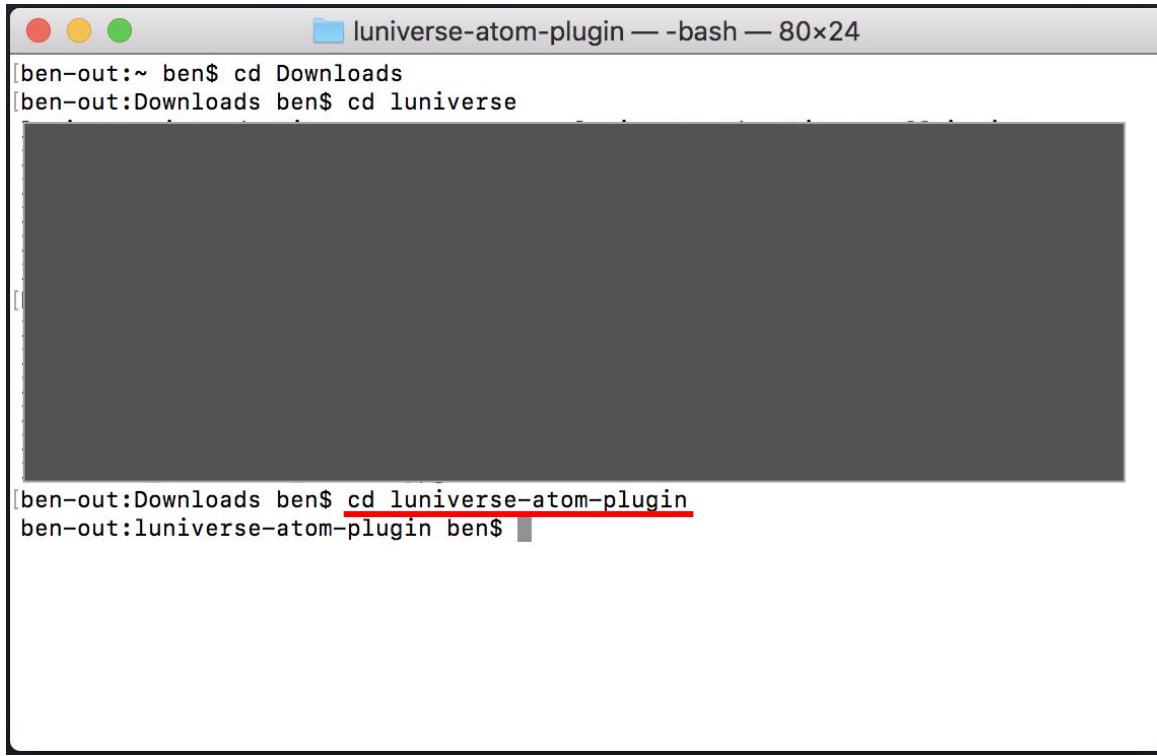
3) <https://atom.io/> 에서 atom Download

9-1. Atom Plugin 사전준비 - atom 환경설정



4) atom -> Install Shell Commands 선택 후 승인

9-1. Atom Plugin 사전준비 - atom 환경설정



```
[ben-out:~ ben$ cd Downloads  
[ben-out:Downloads ben$ cd luniverse  
[ben-out:Downloads ben$ cd luniverse-atom-plugin  
ben-out:luniverse-atom-plugin ben$ ]]
```

5) terminal 창에서 다운받은 luniverse-atom-plugin으로 directory 설정
(‘cd luniverse-atom-plugin’ 입력)

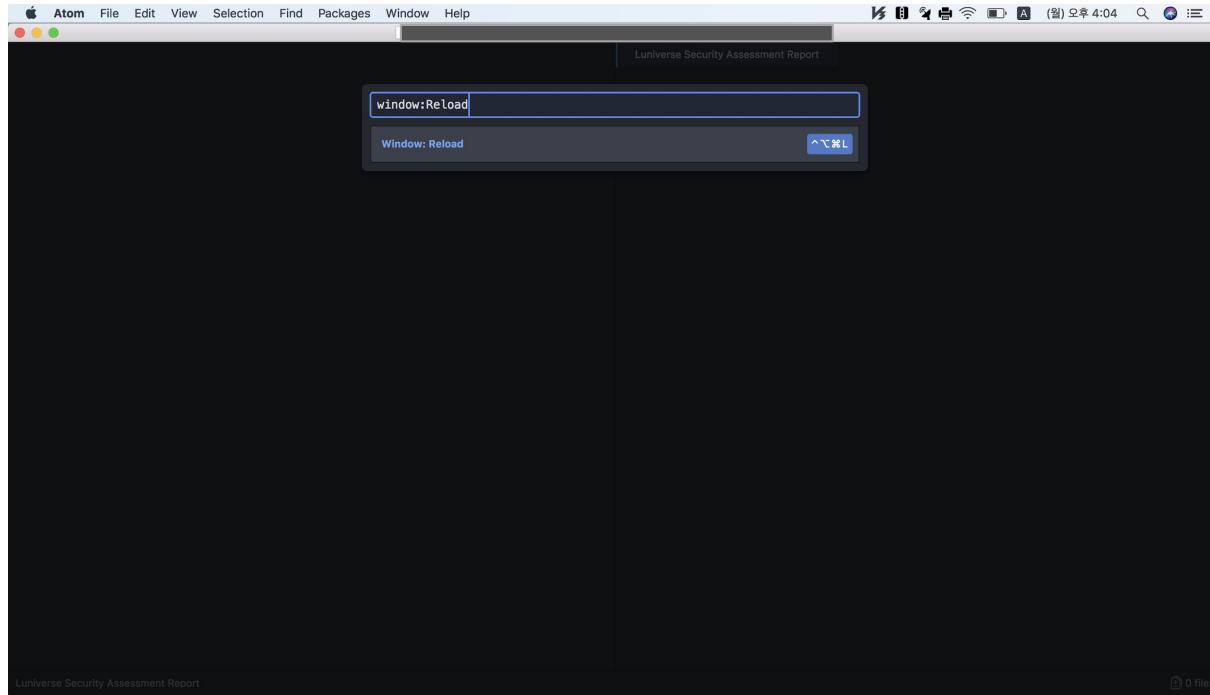
9-1. Atom Plugin 사전준비 - atom 환경설정

```
[ben-out:~ ben$ cd Downloads
[ben-out:Downloads ben$ cd luniverse
[ben-out:Downloads ben$ cd luniverse-atom-plugin
[ben-out:Downloads ben$ apm link
[ben-out:luniverse-atom-plugin ben$ apm link
[ben-out:luniverse-atom-plugin ben$ /Users/ben/.atom/packages/luniverse-atom-plugin -> /Users/ben/Downloads/luniverse-atom-plugin
[ben-out:luniverse-atom-plugin ben$ ]
```

5) npm install (추가)

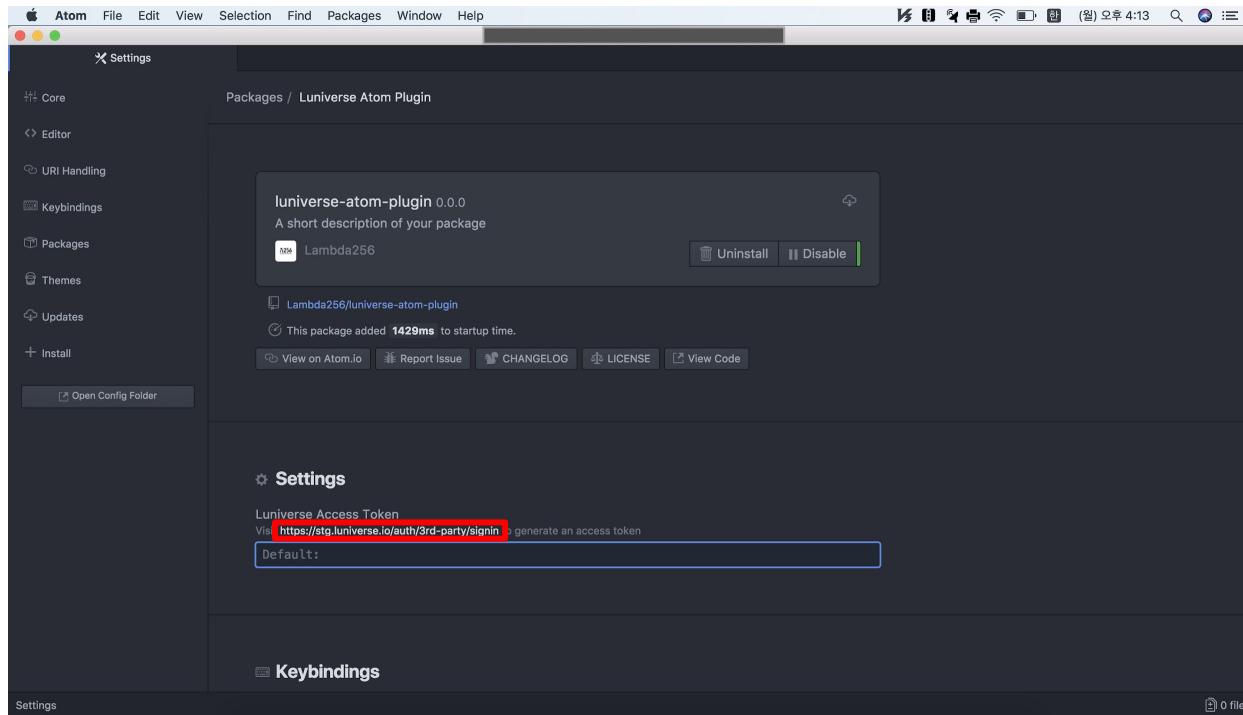
6) terminal 창에 ‘apm link’ 입력

9-1. Atom Plugin 사전준비 - atom 환경설정



7) Atom에서 `cmd+shift+p`를
입력한 후 `Window: Reload`를
실행

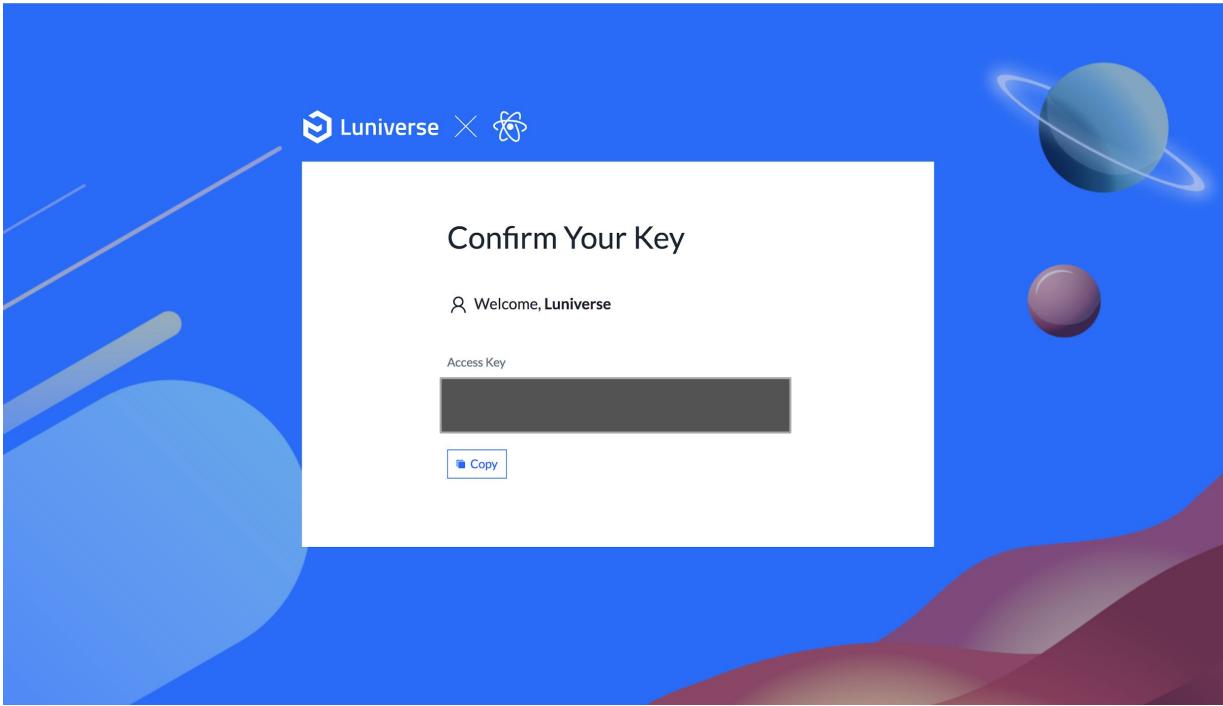
9-2. Atom Plugin 실행하기



8) Atom에서 `ctrl+option+1`를 입력한 후 Settings 탭에 있는 주소 링크로 진입

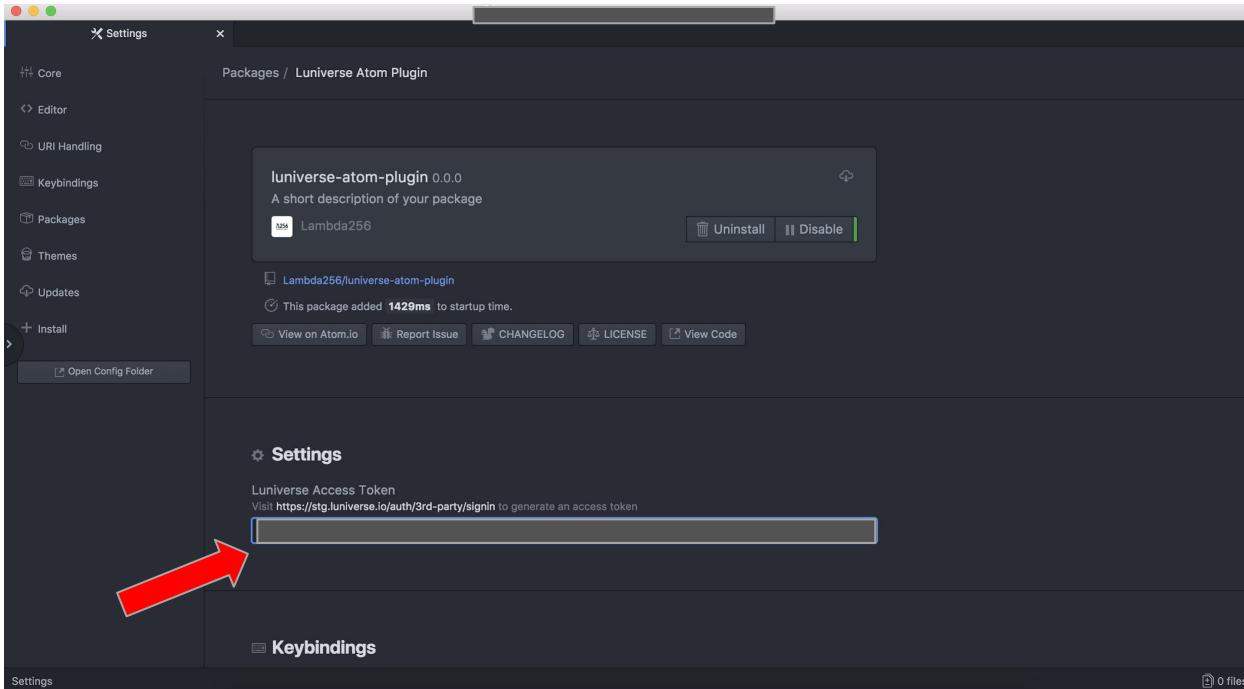
(<https://stg.luniverse.io/auth/3rd-party/signin>)

9-2. Atom Plugin 실행하기



9) 가입한 계정으로 로그인 후
Access Key 확인 후 복사

9-2. Atom Plugin 실행하기



10) Settings 탭에 빈칸에
복사했던 'Access Key'
붙여넣기

9-2. Atom Plugin 실행하기 - Audit

```
Homelessdogs.sol
1 pragma solidity ^0.4.18;
2 contract homelessDogs {
3     string [8] owner;
4     function setOwner(uint _index, string _name) public {
5         owner[_index] = _name;
6     }
7
8     function getOwner(uint _index) public view returns (string) {
9         return owner[_index];
10    }
11 }
```

~/Desktop/OLD/Homelessdogs.sol 7:1 LF UTF-8 Plain Text 0 files

11) Atom에서 Smart Contract
작성 후 마우스 오른쪽 버튼
눌러 ‘Create Audit’ 실행

9-2. Atom Plugin 실행하기 - Audit

The screenshot shows a split-screen interface. On the left is a code editor window titled 'Homelessdogs.sol' containing Solidity code for a 'homelessDogs' contract. On the right is the 'Luniverse Security Assessment Report' window. The report header includes the file name 'Homelessdogs.sol' and the date '2018. 12. 17. 오후 8:18:26'. Below this is a summary card with a large green 'A' grade, labeled 'Security Level'. To the right of the grade are five columns: Critical, High, Medium, Low, and Note, each with a value of 0. A blue 'Detail Report' button is located at the bottom right of the summary card. A red arrow points to this button.

```
1 pragma solidity ^0.4.18;
2 contract homelessDogs {
3     string [8] owner;
4     function setOwner(uint _index, string _name) public {
5         owner[_index] = _name;
6     }
7     function getOwner(uint _index) public view returns (string) {
8         return owner[_index];
9     }
10 }
11 }
```

~/Desktop/OLD/Homelessdogs.sol 7:1 LF UTF-8 Plain Text 0 files

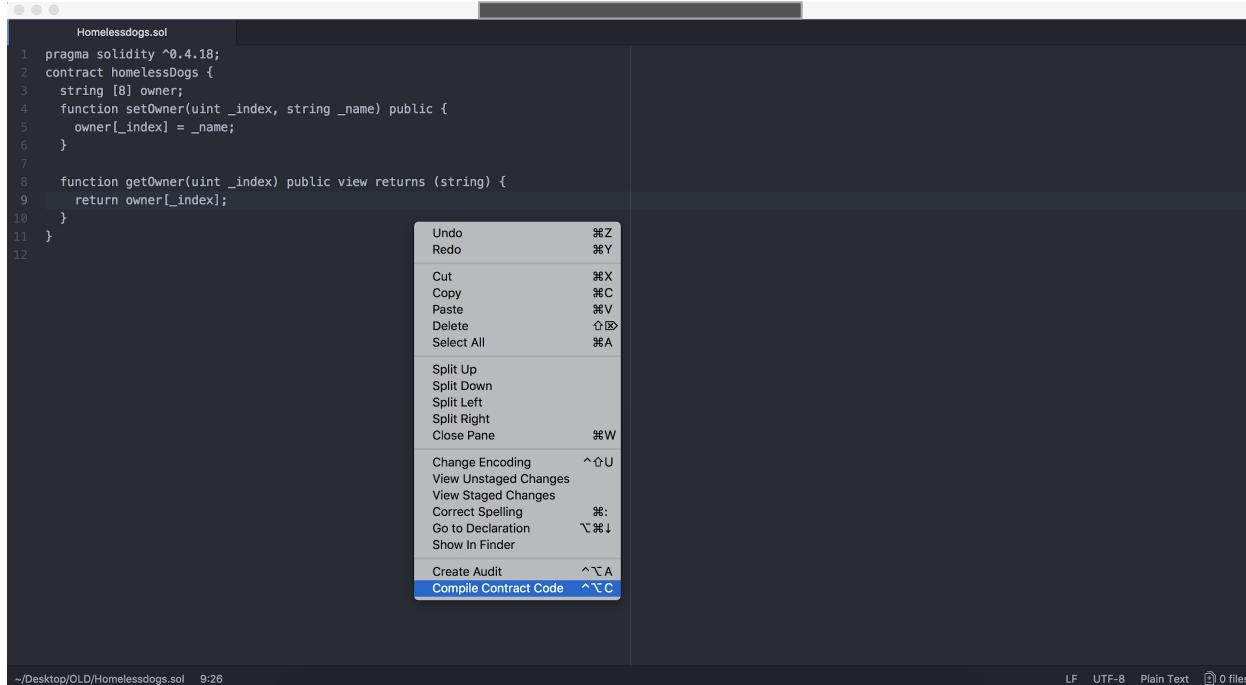
12) Audit에 대한 report에 대한 상세 내용을 확인하려면 'Detail Report' 클릭

9-2. Atom Plugin 실행하기 - Audit

The screenshot shows the Luniverse web interface. At the top, there's a navigation bar with 'Home', 'Security', and 'Utility' tabs. Below that is a breadcrumb trail: Home > Security > Assessment > Report > Project > Detail. The main content area is titled 'SpankCoin.sol'. It shows a 'Top 3 Vulnerability' section with one item: 'sooho-solidity-spockchain-31 Reentrancy Attack'. To the right, there's a summary card with a red 'F' rating for 'Security Level' and 'Reentrancy Attack' under 'Details'. Below the main content are sections for 'Cases' and 'Recommendations'. At the bottom left, the URL 'https://stg.luniverse.io' is visible.

13) Luniverse에서 audit한 report에 대한 자세한 내용(보안 레벨, 취약한 부분, 보완 방법 추천) 확인 가능

9-2. Atom Plugin 실행하기 - Compile



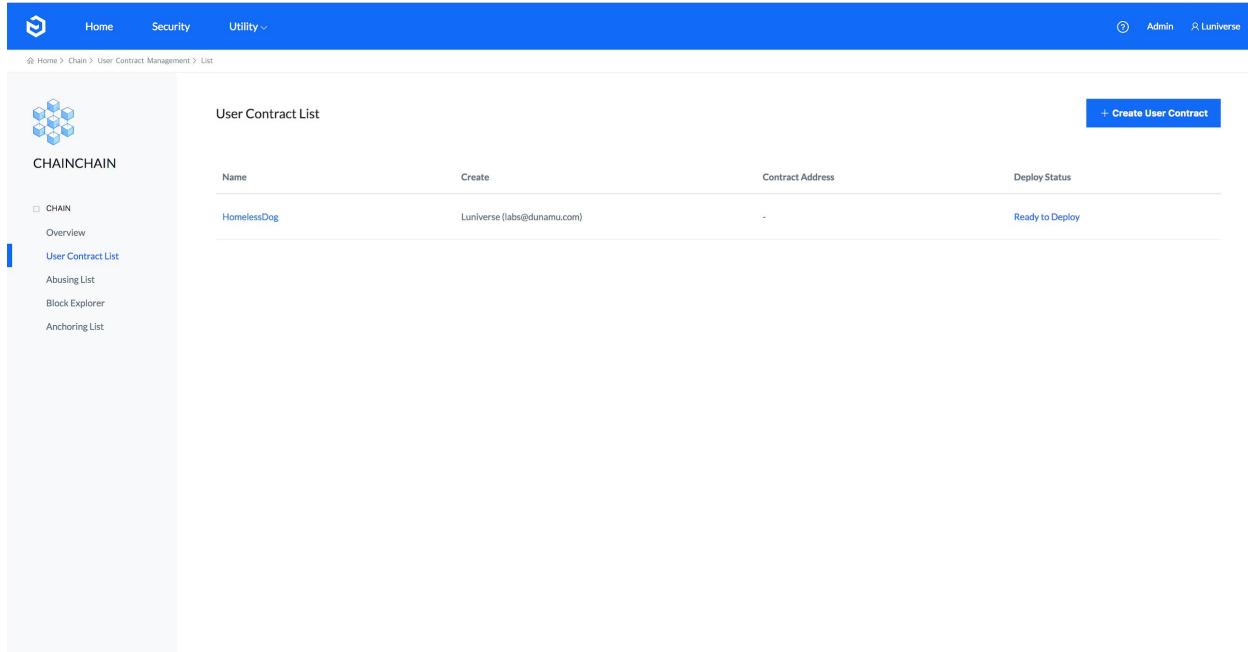
```
Homelessdogs.sol
1 pragma solidity ^0.4.18;
2 contract homelessDogs {
3     string [8] owner;
4     function setOwner(uint _index, string _name) public {
5         owner[_index] = _name;
6     }
7
8     function getOwner(uint _index) public view returns (string) {
9         return owner[_index];
10    }
11 }
12 }
```

Undo ⌘Z
Redo ⌘Y
Cut ⌘X
Copy ⌘C
Paste ⌘V
Delete ⌘⌫
Select All ⌘A
Split Up
Split Down
Split Left
Split Right
Close Pane ⌘W
Change Encoding ⌘↑U
View Unstaged Changes
View Staged Changes
Correct Spelling ⌘;.
Go to Declaration ⌘⌘↓
Show In Finder
Create Audit ⌘⌥A
Compile Contract Code ⌘⌥C

~/Desktop/OLD/Homelessdogs.sol 9:26 LF UTF-8 Plain Text 0 files

14) Atom에서 Smart Contract 작성 후 마우스 오른쪽 버튼 눌러 ‘Compile Contract Code’ 실행

9-2. Atom Plugin 실행하기 - Compile



The screenshot shows the Luniverse User Contract Management interface. At the top, there's a blue header bar with the CHAINCHAIN logo, navigation links for Home, Security, Utility, Admin, and Luniverse, and a breadcrumb trail indicating the current location: Home > Chain > User Contract Management > List.

The main area is titled "User Contract List". It displays a single row of data:

Name	Create	Contract Address	Deploy Status
HomelessDog	Luniverse (labs@dunamu.com)	-	Ready to Deploy

A blue button labeled "+ Create User Contract" is located at the top right of the list table. On the left side, there's a sidebar with a tree view under the CHAIN heading, showing categories like Overview, User Contract List (which is selected and highlighted in blue), Abusing List, Block Explorer, and Anchoring List.

15) Luniverse에서 compile한 smart contract 확인 가능

How to Use Luniverse

(※ 첫 사용자 기준)

- 1) 회원가입
- 2) 로그인
- 3) Side Token 발행
- 4) DApp 생성
- 5) Side Token Transaction 설정
- 6) End User Private Key 생성
- 7) Side Token Transaction (Airdrop) 실행
- 8) DApp(유기견보호소) 1차 연동
- 9) Atom Plugin 사용

10) User Custom Contract Deploy

- 11) User Custom Contract-Transaction 설정
- 12) DApp(유기견보호소) 2차 연동

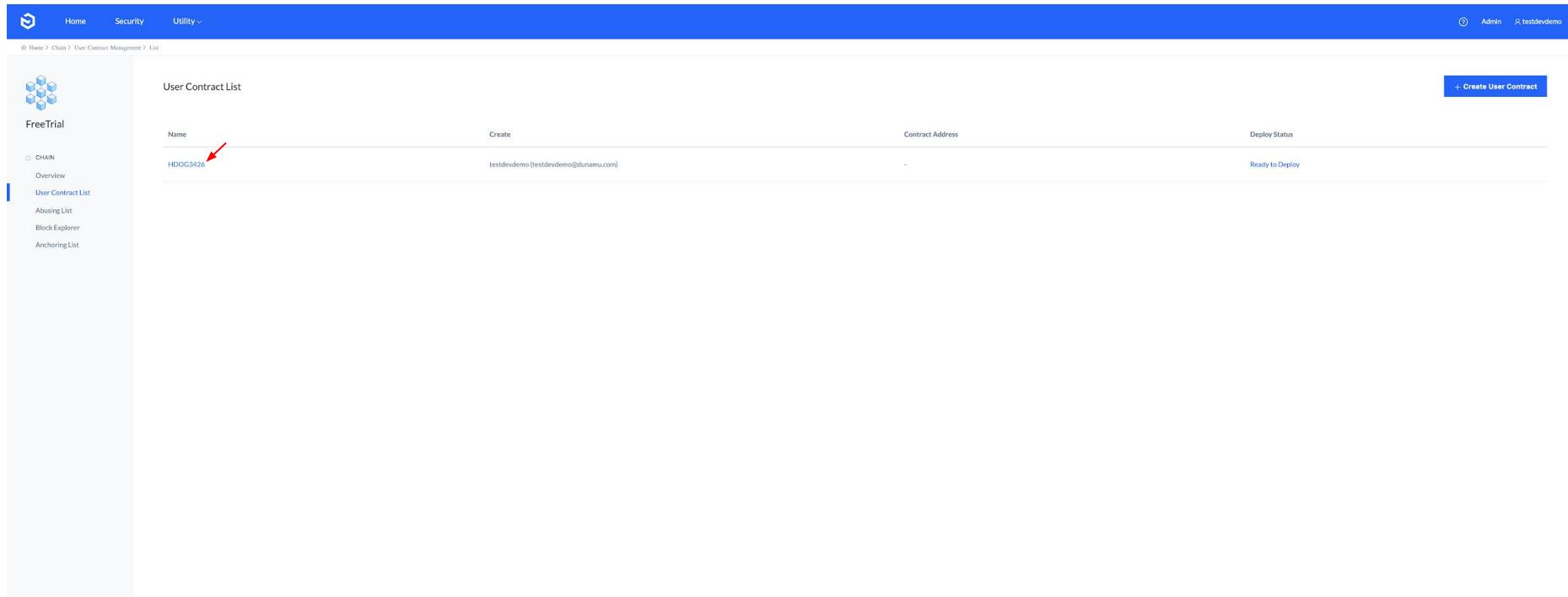
10. User Custom Contract Deploy

The screenshot shows the Luniverse web application interface. At the top, there is a blue header bar with the Luniverse logo, navigation links for Home, Security, Utility, and a user account section for Admin and testdevdemo. Below the header, a breadcrumb navigation path indicates the current location: Home > Chain > User Contract Management > Create. On the left side, there is a sidebar with a 'FreeTrial' icon and a 'CHAIN' section containing links for Overview, User Contract List, Abusing List, Block Explorer, and Anchoring List. The main content area is titled 'Create User Contract'. It contains the following fields:

- Name:** A text input field containing "HDOG3426".
- Description (Optional):** An empty text input field.
- Contract File:** A file upload input field with a preview showing "dog.sol" and a delete button.
- Contract Select:** A dropdown menu currently set to "homelessDogs".
- Constructor Parameters:** A text input field stating "There is no constructor parameter."

At the bottom of the form are two buttons: "Back" and "Apply".

10. User Custom Contract Deploy



User Contract List

Name	Create	Contract Address	Deploy Status
HDOG3426	testdevdemo (testdevdemo@duanmu.com)	-	Ready to Deploy

+ Create User Contract

FreeTrial

CHAIN

Overview

User Contract List

Abusing List

Block Explorer

Anchoring List

10. User Custom Contract Deploy

The screenshot shows the Luniverse web application interface for managing user contracts. The top navigation bar includes links for Home, Security, Utility, Admin, and testdevdemo. The left sidebar has sections for CHAIN (Overview, User Contract List, Abusing List, Block Explorer, Anchoring List) and a FreeTrial section. The main content area is titled "User Contract Detail" and contains fields for Name (HDOG3426), Description (Optional), Contract File (dog.sol), Contract Select (homelessDogs), and Constructor Parameters (There is no constructor parameter). A blue "Deploy" button at the bottom is highlighted with a red arrow.

Home Security Utility

Admin testdevdemo

FreeTrial

CHAIN

Overview

User Contract List

Abusing List

Block Explorer

Anchoring List

< User Contract Detail

Name: HDOG3426

Description (Optional):

Contract File: dog.sol

Contract Select: homelessDogs

Constructor Parameters: There is no constructor parameter.

Deploy

10. User Custom Contract Deploy

The screenshot shows the Luniverse web interface with a blue header bar. The header includes a logo, navigation links for Home, Security, Utility, and Admin, and a user account section for testdevdemo.

The main content area is titled "User Contract List". It displays a table with the following columns:

Name	Create	Contract Address	Deploy Status
HDOG3426	testdevdemo (testdevdemo@dunamu.com)	0xd58920c60A687b282aB23ce78Bd52fe679508B66	● Deployed

A red arrow points to the "Deployed" status indicator for the contract HDOG3426.

The left sidebar has a "FreeTrial" icon and a navigation menu with the following items:

- CHAIN
- Overview
- User Contract List (selected)
- Abusing List
- Block Explorer
- Anchoring List

How to Use Luniverse

(※ 첫 사용자 기준)

- 1) 회원가입
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- 8) DApp(유기견보호소) 1차 연동
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- 10) User Custom Contract Deploy
- 11) User Custom Contract-Transaction 설정**
- 12) DApp(유기견보호소) 2차 연동

11. User Custom Contract - Transaction 설정

The screenshot shows the Luniverse DApp interface. The top navigation bar includes links for Home, Security, Utility, Admin, and testdevdemo. The main content area is titled "Smart Transaction Wizard" and displays a "Contract or Side Token" selection dropdown. The dropdown menu lists three options: "S3426 (S3426)", "A3426 (A3426)", and "HDOG3426 (homelessDogs)". On the left side, there is a sidebar with a profile icon for "DE" and sections for "DApp", "Overview", "Transaction List", and "API Key". The URL in the browser's address bar indicates the user is at the "Create" step of the transaction wizard.

11. User Custom Contract - Transaction 설정

The screenshot shows the "Smart Transaction Wizard" interface for creating a transaction. On the left, a sidebar lists "DE demoHomeless...", "DAPP Overview", "Transaction List", and "API Key". The main area has the following fields:

- Contract or Side Token:** HDOG3426 (homelessDogs)
- Contract or Side Token Function protoType:** setOwner
- Input Parameter:** _index (uint256), _name (string)
- Output:** There is no output parameter.
- Transaction Name:** setOwner!
- Create:** A blue button at the bottom.

11. User Custom Contract - Transaction 설정

The screenshot shows the "Smart Transaction Wizard" interface for creating a transaction. The top navigation bar includes links for Home, Security, Utility, Admin, and testdevdemo. The main form is titled "Smart Transaction Wizard" and contains the following fields:

- Contract or Side Token:** HDOG3426 (homelessDogs)
- Contract or Side Token Function protoType:** getOwner
- Input Parameter:** _index, uint256
- Output:** string
- Transaction Name:** getOwner!

A blue "Create" button is located at the bottom of the form.

11. User Custom Contract - Transaction 설정

The screenshot shows the Luniverse DApp interface with a blue header bar. The header includes navigation links for Home, Security, Utility, and a user account section for Admin (testdevdemo). Below the header is a breadcrumb trail: Home > Chain > DApp > Transaction > List. On the left, there's a sidebar for 'testDapp2' with sections for DAPP Overview, Transaction List (which is currently selected), and API Key. The main content area is titled 'Transaction List' and contains a table of transactions. A note at the top of the table says: 'SideToken을 생성하거나 User Contract를 생성하여 Transaction으로 등록할 수 있습니다. 등록한 Transaction은 TxAPI를 통해서 Restful API로 제공하여 손쉽게 호출할 수 있습니다.' The table has columns: From, Function, Name, Type, Value, and Fees. Each row represents a transaction entry.

From	Function	Name	Type	Value	Fees	API	
SideToken	A3426 (A3426)	transferWithFee	Reward	Customer to Customer	Flexible	Flexible	API ▾
SideToken	A3426 (A3426)	transferWithFee	Adopt	Customer to Customer	Flexible	Flexible	API ▾
SideToken	S3426 (S3426)	transferWithFee	Support	Customer to Customer	Flexible	Flexible	API ▾
SideToken	S3426 (S3426)	transfer	Airdrop	Business to Customer	Flexible	-	API ▾
Contract	HDOG3426 (homelessDogs)	getOwner	getOwner	-	-	-	API ▾
Contract	HDOG3426 (homelessDogs)	setOwner	setOwner	-	-	-	API ▾

How to Use Luniverse

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- 9) Atom Plugin 사용
- 10) User Custom Contract Deploy
- 11) User Custom Contract-Transaction 설정
- 12) DApp(유기견보호소) 2차 연동**

12. DApp(유기견보호소) 2차 연동

```
JS config.js src/js

1 var Config = {
2   // STEP 1 chainId, contractAddress 입력
3   chainId: '1545038873053531346',
4   st: {
5     support: {
6       contractAddress: '0xa0d91e9c1211dc1a6026637652fDf368da49D811'
7     },
8     adopt: {
9       contractAddress: '0x093D67D7a07174739F5562D9E280c20E71e9Ca51'
10    },
11  },
12  walletAddress: {
13    // STEP 1 pd, user.walletAddress 입력
14    pd: '0x391c6dcf42749ced68866527787e8ff66445fbe5',
15    user: '0xd725cf3a85f99c0d1a28e32308c67727126a976a'
16  },
17  dapp: {
18    // STEP 1 token, apiKey 입력
19    apiKey: 'eHePwZEtykNhDb1Sa6EdMY2j62MyUsJMSZ5irupvzXP6nxakLcgHxEjf nz36ost',
20  },
21  txActionName: {
22    // STEP 2 setOwner, getOwner.transactionName 입력
23    setOwner: 'setOwner',
24    getOwner: 'getOwner',
25  },
26  // STEP 2 userName 입력
27  userName: 'demoOwner',
28};
29
30
```

12. DApp(유기견보호소) 2차 연동

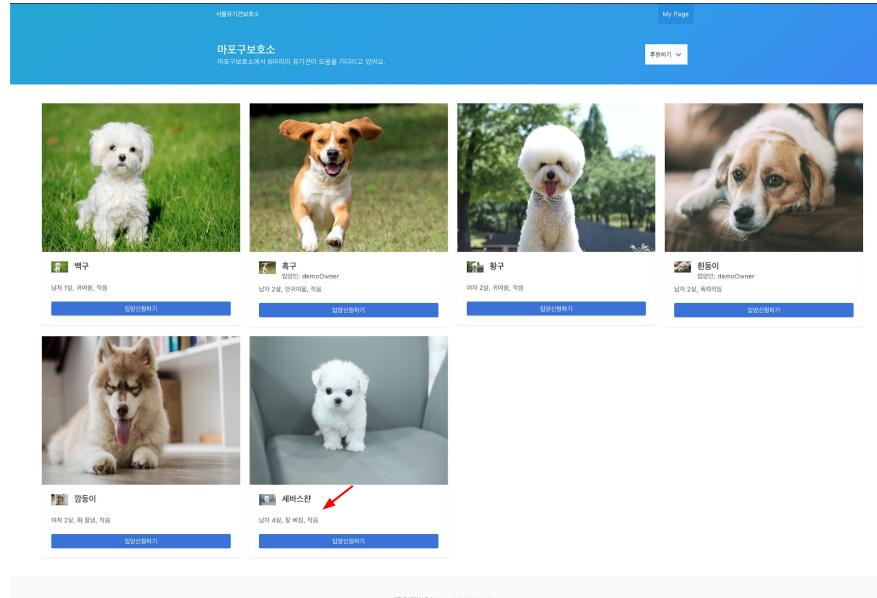
JS shelter.js src/js

```
49
50     // STEP 2 Remove this annotation
51
52     for(let i = 0; i < animals.length; i++) {
53         $.ajax({
54             url: Const.luniverse.endpoint.contractAction(Config.txActionName.getOwner),
55             type: 'post',
56             crossDomain: true,
57             dataType: 'json',
58             headers: {
59                 'Authorization': Config.dapp.token,
60             },
61             data: {
62                 'inputs': {
63                     '_index': animals[i].animalId
64                 }
65             },
66             success: function (data) {
67                 if (data.data.res[0] !== '') {
68                     $('#dog-${animals[i].animalId}').text(`입양인: ${data.data.res[0]}`)
69                 }
70             },
71             error: function (data) {
72             }
73         });
74     });
75 });
76 });
77 };
```

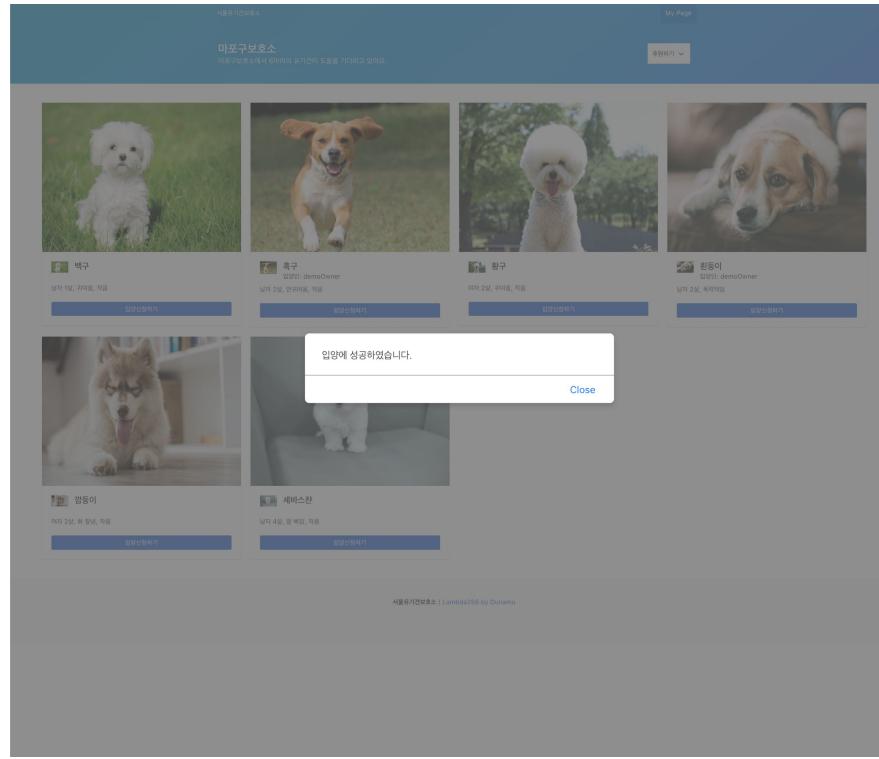
JS shelter.js src/js

```
163
164     success: function (data) {
165         // STEP 2 Remove this annotation
166
167         $.ajax({
168             url: Const.luniverse.endpoint.contractAction(Config.txActionName.setOwner),
169             type: 'post',
170             crossDomain: true,
171             dataType: 'json',
172             headers: {
173                 'Authorization': Config.dapp.token,
174             },
175             data: {
176                 'from': Config.walletAddress.pd,
177                 'inputs': {
178                     '_index': animalId,
179                     '_name': Config.userName
180                 }
181             },
182             success: function (data) {
183                 alert('입양에 성공하였습니다.')
184                 $('.overlay').hide()
185             },
186             error: function (data) {
187                 alert('입양에 실패하였습니다.')
188                 $('.overlay').hide()
189             }
190
191             // STEP 2 remove below 2 line
192             // alert('입양에 성공하였습니다.')
193             // $('.overlay').hide()
194         },
195         error: function (data) {
196             alert('입양에 실패하였습니다.')
197             $('.overlay').hide()
198         }
199     });
200 };
```

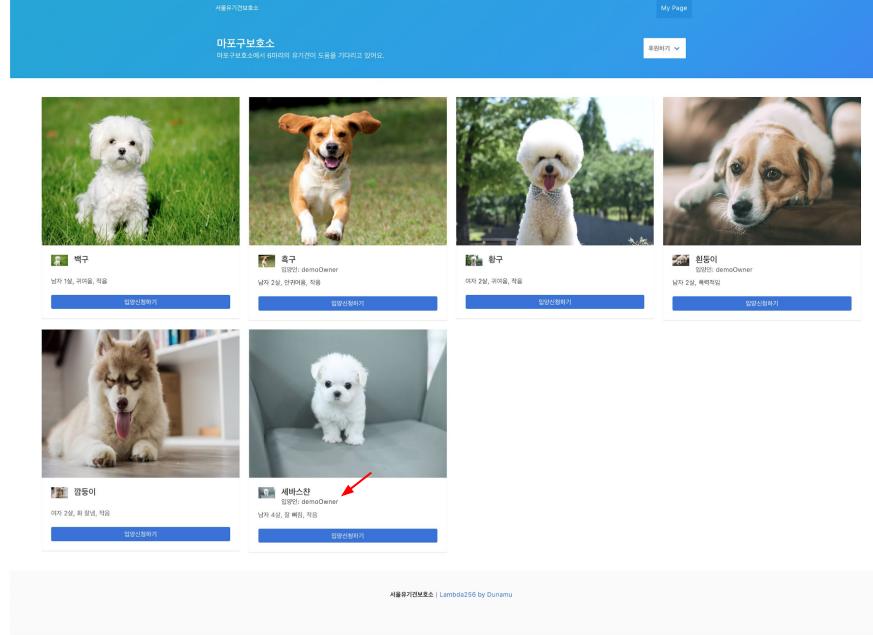
12. DApp(유기견보호소) 2차 연동



12. DApp(유기견보호소) 2차 연동



12. DApp(유기견보호소) 2차 연동



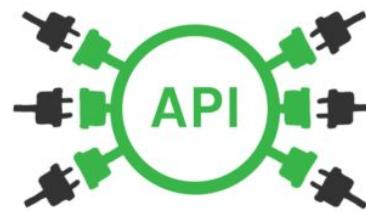
정리

Developer friendly environment



Luniverse Atom Plugin

APIfy smart contracts



Restful API
(Token / Transaction Creation)

Enhanced smart contract security



Smart Contract
Assessment Service