

AWS Marketplace

Installing and Configuring Proven

This document will guide you through the steps to deploy and configure Indicio Proven in AWS using Proven from the AWS Marketplace. The first part of this document is intended to be a “quick start” to get you up and running quickly, then you can look at the indicated appendices for more details if needed.

Get the most of your Indicio Proven

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1. Creating the VM instance (Defaults will work for all items not included in these instructions)
 - a. Login to the AWS console.
 - b. Select the region that you want the Proven instance to reside in.
 - c. In the Services Menu (top left), go to **EC2** then select **Instances**
 - d. Click **LAUNCH INSTANCES**
 - e. Under **Name and tags** enter a name for your Proven instance
 - f. Under **Application and OS Images (Amazon Machine Image)**
 - i. Type **Indicio Proven** in the search box and press enter
 - ii. Select the **AWS Marketplace AMIs** tab
 - iii. Click **Select** for Indicio Proven.
 - iv. Click one of the **Subscribe** buttons.
 - v. **Continue**
 - g. Under **Instance type** the default will work fine. (t3a.medium)
 - h. Under **Key pair (login)**
 - i. Use an existing key pair or create a new one, your choice.
 - i. Under **Network settings**
 - i. Select the boxes to Allow HTTPS and HTTP traffic from the internet

- ii. Click **Edit**
 - iii. Disable the automatic assignment of a public IP if desired
 - iv. Scroll down to the bottom and click **Add security group rule** to add a port for SSH access to the server
 - v. Use default values except enter **Port Range** : 22 and **SourceType** : MyIP OR **Source** : 0.0.0.0/0 (less secure).
 - vi. You can set a static IP address later if desired. It is not available for change at this phase.
 - j. Under **Configure Storage** it is recommended to select a disk at least 50GB in size. (default)
 - i. AWS defaults to encrypted drives so the default is encrypted data at rest.
 - k. Under Advanced details you can configure settings however you like including the **Termination protection** setting.
 - l. When all settings are complete, click **Launch instance** in the right hand pane.
 - m. After deployment is complete:
 - i. **Click on the instance id** in the green box then select the instance to bring up Details about the Proven instance you just deployed.
 - ii. Record the **Public IPv4 address** of your Proven instance.
2. Configure DNS (see appendix A for an example DNS setup option)
- a. This step is optional, but recommended.
 - b. Add a DNS entry for your new Proven Issuer to a domain of your choice.
3. Configure the VM
- a. SSH into the VM
 - i. For example, from a MAC terminal you might do the following if your pem file was saved to your Downloads folder:
 - ii. `mv ~/Downloads/yourpemfile.pem ~/pems`
 - iii. `chmod 600 ~/pems/yourpemfile.pem`
 - iv. `ssh -i ~/pems/yourpemfile.pem ubuntu@<ip address of your new VM>`
 - b. Enter these commands at the command prompt in your instance to make it so that the “proven.service” starts up automatically after every server reboot.


```
cd /opt/indicio/proven-release-docker
```

```
sudo systemctl enable proven
```
 - c. Run the following to configure Proven.


```
sudo cp demonet.env .env
```

 - i. In a later step you will need to enter some passwords, keys, and secrets that are unique to your instance of Proven. To create some random 32 character strings for the keys and secrets (you can use it for the

passwords too, if desired), you can run the following from the command prompt:

1. **sudo apt update**
2. **sudo apt install pwgen**
3. **pwgen 32 8**
4. Save the output for use in a later step
5. This command creates random strings that you can use as KEY's and SECRET's in the .env file.

- ii. Edit the .env file to fit your environment. -> **sudo vim .env**
Shown below are the minimal fields needing configured, their default values, and short descriptions. **This includes several passwords and keys that you will need to create.** This is sensitive information and should not be shared and will ensure that your version of Proven is unique to you. The remaining fields are described in Appendix B.

PROVEN_ISSUER_SERVER_NAME=proven.dev.indiciotech.io
Use your DNS entry or the IP address for the issuer. Do not include "http://" or a trailing slash

PROVEN_ISSUER_SEED=
Optional. If used, it must have "--seed " at the start. If you do not already have an Issuer seed, you may leave this blank if this is a testing environment and if blank make sure to perform the optional items in step 6. For a production environment, see Appendix C.

TAILS_URL=http://proven.dev.indiciotech.io
Replace the URL on this line with your URL.

DB_SERVER_PASSWORD=development
Local database server password. For security purposes, this MUST be changed.

NODE_ENV=production

PROVEN_ADMIN_PASSWORD=
This is the password for the administrator ui console. This is required to be set and must be a secure password of your choosing. This MUST be added, an empty string does not work for this variable. This also MUST be 15 characters in length.

PROVEN_ISSUER_API_DB_PASSWORD=provenapi
Local database password. For security purposes, this MUST be changed.

PROVEN_ISSUER_AGENT_DB_PASSWORD=provenagent
Local database password. For security purposes, this MUST be changed.

PROVEN_ISSUER_AGENT_LABEL=Proven
This is what you want the issuer name to show up as on other agents' connection list. Change this so that agents can tell the difference between Proven issuers.

PROVEN_ISSUER_APIKEY=1ae2e84429d3447aa9aa8e38ea84fa6b
For Security purposes, this value MUST be changed. Must be 32 alphanumeric characters.

PROVEN_ISSUER_PROXY_DB_PASSWORD=provenproxy
Local database password. For security purposes, this MUST be changed.

PROVEN_ISSUER_WEB_ROOT=https://proven.dev.indiciotech.io
If you have a DNS name, change localhost to the issuer DNS name with https://. Otherwise, change it to your VM's external IP. Do not have a trailing slash.

PROVEN_ISSUER_JWT_SECRET=Zu0gPaBdGSP8dfgoK6C1vIBLaXOh6gGq
For Security purposes, this value MUST be changed. Must be 32 alphanumeric characters.

PROVEN_ISSUER_SESSION_SECRET=Xn2r5u8xjAgD7G39jjdSgVkYp3s6v9y5
For Security purposes, this value MUST be changed. Must be 32 alphanumeric characters.

PROVEN_ISSUER_ENC_KEY=54234625127cb22694ff0e27cc14b685
For Security purposes, this value MUST be changed. Must be 32 alphanumeric characters.

- iii. Enter <esc> **:wq** to exit the vim session
- d. For an example of a configured .env file, please see Appendix B.
- e. Run the following command:

- i.

```
sudo systemctl start proven.service
```

- ii. When the above command has finished starting Proven, the terminal will return and display a command prompt.

- iii. OPTIONAL: SSH in through a different terminal if you want to monitor the progress of the starting of Proven.
 - 1. `sudo systemctl status proven`
 - 2. On error, return to the original ssh window, wait for the process to stop, then try again.
- f. INFORMATIONAL NOTES: **Do not** run the following commands unless you need to stop or start your Proven service. The “proven.service” is a service file that makes it easy to start and stop your proven instance. It usually takes 2-3 minutes for Proven to be ready for use. The following are some tips and FUTURE commands that you can run if you need to manage the proven service,
 - i. IMPORTANT: Do NOT stop the service in the middle of its initial starting time. You have a chance of interrupting the install process and it will corrupt files that will need to be removed before restarting.
 - ii. **For later use**, to stop the proven service:

```
1. sudo systemctl stop proven
```
 - iii. **For later use**, to restart the proven service:

```
1. sudo systemctl restart proven
```

4. Accessing Proven

- a. You should now be able to navigate to your Proven issuer in a web browser, using its DNS Name or ip address.
 - b. HINT: If you see a “loading please wait” image for more than 10 seconds, please try refreshing the browser. If it persists, verify that you have added your 15 character `PROVEN_ADMIN_PASSWORD`, to the `.env` file and try again.
5. Your Proven instance is now ready to go!
6. To try out Proven with a User credential do the following:
- a. Install the latest Holdr+ app on your mobile device. Holdr+ is available through your devices app store.
 - b. In a browser, access your Proven IP address or DNS URL.
 - c. Using your mobile Holdr+ app, scan the QR code displayed.
 - i. This creates a connection between your mobile device and the Proven Issuer
 - ii. Troubleshooting Tip: If you see "Loading Please wait" for a long time on the browser, try refreshing the browser page. If that doesn't fix the problem then you might have an issue with your DNS setup that is causing the problem.
 - d. To issue a credential based on the connection you just made, return to your browser and change the IP address by adding “/admin” to the end of the Proven IP address or URL.
 - e. Login using the following default credentials:
 - i. Username: admin

- ii. Password: <Use the PROVEN_ADMIN_PASSWORD that you added to the .env file in an earlier step>
 - f. You should now see the Issuer admin interface.
 - g. If you did not enter a PROVEN_ISSUER_SEED in the .env config file do the following:
 - i. Click on SCHEMAS in the left menu
 - ii. Click **Get Public DID** in the Issuer Information section.
 - iii. Click **Yes**
 - iv. When the Endorser Workflow window appears, click on one of the links to add the displayed DID and Verkey to the ledger of your choice.
 1. For example: If you are following the defaults, at the <https://selfserve.indiciotech.io/> site change the "Network" to Indicio DemoNet then copy the DID and Verkey to the form and click **Submit**.
 - v. After you have clicked Submit, go back to the Proven Admin interface and click **Yes**.
 - h. You should now see your issuer DID listed on the page.
 - i. Click on SCHEMAS in the left menu
 - j. Under **Issuance Schemas** click **Add**
 - k. Paste Gj39gdivhMneKBaamMsX7P:2:User:1.0 as the **Schema ID** then click **Submit**
 - l. OPTIONAL: Add more schema's at this point to support more types of credentials.
 - m. Click on CONTACTS in the left menu
 - n. Click on the most recent contact (the one added via Holdr+ in an earlier step).
 - o. Under Credential Issuance, from the dropdown box select **User** and then click **Issue**
 - i. Hint: if the **User** option is not in the list, refresh the page and try again
 - p. Fill in the fields
 - q. Click **Send**
 - r. You should now see a notification of a new credential on your mobile device (go to the home screen to see notifications on Holdr+)
 - s. Click **View** to view the credential offer.
 - t. Scroll to the bottom of the Credential offer and click **Accept**
 - u. The credential is now added to your mobile wallet. Click the wallet button on the bottom navigation bar in Holdr+ to see your credential in your wallet. Click the Credentials tab in your Proven Admin interface to see the credential there.
 - v. You now have Proven Issuer working!
7. To assess and monitor the health and proper function of the application from the AWS console:
 - a. Navigate to your Amazon EC2 console and verify that you're in the correct region.
 - b. Choose **Instance** and select your launched instance.

- c. Select the server to display your metadata page and choose the **Status checks** tab at the bottom of the page to review if your status checks passed or failed.

Appendix A - DNS Setup Example

To setup DNS for Proven on AWS Route 53, do the following:

1. From the Services menu, select **Route 53**
2. On the Dashboard click on the link to **Hosted zones**
 - a. If you do not have a dashboard or any hosted zones in Route 53, then you will need to use another method for adding a DNS entry for your instance. Your IT department will be likely able to assist further with this if needed.
3. Click on the **Hosted zone name** that you would like to add your DNS entry to.
 - a. Click **Create record**
 - b. Type in your desired DNS name (i.e. proven)
 - c. **Record Type** -> A Record
 - d. **Value** -> your new IP address goes here
 - e. Defaults are fine for the rest (TTL 300 and simple routing will work, etc)
 - f. Click **Create records**

Appendix B - Some .env file variable descriptions plus an example file.

PROVEN_ISSUER_SSL_DOMAIN_PATH=

Path to Issuer SSL certificate. If not defined, creates a self-signed cert. If using certbot, leave blank before running certbot.

PROVEN_ISSUER_SERVER_NAME=proven.dev.indiciotech.io

Use your DNS entry for the issuer in place of "localhost." Do not include "http://" or a trailing slash

PROVEN_ISSUER_HTTPS_PORT=443

The port that the issuer uses for https connections.

PROVEN_ISSUER_HTTP_PORT=80

The port that the issuer uses for http connections.

GENESIS_URL=https://raw.githubusercontent.com/Indicio-tech/indicio-network/main

/genesis_files/pool_transactions_testnet_genesis

The URL to the Genesis pool file. Must be a URL. Do not include a trailing slash. The default connects to the testnet, make sure to adjust this for the network you are connecting to.

PROVEN_ISSUER_SEED=

Must be 32 alphanumeric characters. Has to have "--seed " at the start.
Typically only used in Live environments.

TEST_SEED=

Must be 32 alphanumeric characters. Has to have "--seed " at the start.
Not necessary.

TAILS_URL=http://172.31.86.163:6543

Replace the IP address with your local IP address on this line.

DISABLE_SSL_CHECK=true

NODE_ENV=development

Possible values: production, development

GOVERNANCE_PATH=<http://localhost:3100/api/governance-framework>

Where governance details are downloaded from. Can use DNS name, but typically left as localhost.

PROVEN_ISSUER_API_DB_HOST=db

Local database

PROVEN_ISSUER_API_DB=provenapi

Local database

PROVEN_ISSUER_API_DB_USERNAME=provenapi

Local database

PROVEN_ISSUER_API_DB_PASSWORD=provenapi

Local database

PROVEN_ISSUER_AGENT_DB=provenagent

Local database

PROVEN_ISSUER_AGENT_DB_HOST=db

Local database

PROVEN_ISSUER_AGENT_DB_USERNAME=provenagent

Local database

PROVEN_ISSUER_AGENT_DB_PASSWORD=provenagent

Local database

PROVEN_ISSUER_AGENT_ADMIN_DB_USERNAME=development

Local database

PROVEN_ISSUER_AGENT_ADMIN_DB_PASSWORD=development
Local database

PROVEN_ISSUER_AGENT_LABEL=Proven

This is what you want the issuer name to show up as on other agents' connection list.

PROVEN_ISSUER_APIKEY=1ae2e84429d3447aa9aa8e38ea84fa6b
Must be 32 alphanumeric characters.

PROVEN_ISSUER_PROXY_DB=postgres://provenproxy:provenproxy@db:5432/provenproxy

PROVEN_ISSUER_WEB_ROOT=https://issuer.dev.indiciotech.io
If you have a DNS name, change localhost to the issuer DNS name with https://. Otherwise, change it to your VM's external IP. Do not have a trailing slash.

PROVEN_ISSUER_JWT_SECRET=Zu0gPaBdGSP8dfgoK6C1vIBLaXOh6gGq
Must be 32 alphanumeric characters.

PROVEN_ISSUER_SESSION_SECRET=Xn2r5u8xjAgD7G39jjdSgVkYp3s6v9y5
Must be 32 alphanumeric characters.

PROVEN_ISSUER_ENC_KEY=54234625127cb22694ff0e27cc14b685
Must be 32 alphanumeric characters.

ISSUER_RECAPTCHA_SITEKEY=
This is a future feature, it should be left blank for now.

ISSUER_RECAPTCHA_SECRETKEY=
This is a future feature, it should be left blank for now.

SCHEMA_USER=Gj39gdivhMneKBaamMsX7P:2:User:1.0

d. Here is an example of a configured .env:

```
AGENT_TUNNEL_HOST=https://tun2.indiciotech.io
PROVEN_ISSUER_SSL_DOMAIN_PATH=
PROVEN_ISSUER_SERVER_NAME=provenaws.indiciotech.io
```

```
PROVEN_ISSUER_HTTPS_PORT=443
PROVEN_ISSUER_HTTP_PORT=80
PROVEN_SESSION_MAXAGE=86400000

WDS_SOCKET_PORT=0
WDS_SOCKET_HOST=0.0.0.0
WDS_SOCKET_PATH=sockjs-node

MEDIATOR_INVITE=https://proven.mediator.indiciotech.io?c_
i=eyJAdHlwZSI6ICJkaWQ6c292OkJ6Q2JzTlloTXJqSGlxWkRUVUFTSGc
7c3BlYy9jb25uZWN0aW9ucy8xLjAvaW52aXRhdGlvbiIsICJAaWQiOiAi
Y2ZlNjA5ZGItdDA0Zi00NzUxLWEyNDctZTJiNGZkNGM0YTI1IiwgImxhY
mVsIjogIkluZGljaW8gUHVjdmVuIE1lZGlhdG9yIiwgInJlY2lwaWVudE
tleXMiOiBbIkJHb0w4ZHFzUXZ6Wm5XclFoZnZ3ODZjTm9BeWFKb2pqR0J
5MlZNUmB3THl6Il0sICJzZXJ2aWNlRW5kcG9pbnQiOiAiaHR0cHM6Ly9w
cm92ZW4ubWVkaWF0b3IuaW5kaWNpb3RlY2guaW8ifQ==
GENESIS_URL=https://raw.githubusercontent.com/Indicio-tec
h/indicio-network/main/genesis_files/pool_transactions_de
monet_genesis
PROVEN_ISSUER_SEED=
TEST_SEED=

TAILS_URL=http://172.31.23.61:6543

DB_SERVER=db
DB_SERVER_USERNAME=development
DB_SERVER_PASSWORD=development

REVOCATION_ALLOWED=false

DISABLE_SSL_CHECK=true
NODE_ENV=production
PROVEN_ISSUER_API_DB_HOST=${DB_SERVER}
PROVEN_ISSUER_API_DB=provenapi
PROVEN_ISSUER_API_DB_USERNAME=provenapi
PROVEN_ISSUER_API_DB_PASSWORD=provenapi
PROVEN_ISSUER_AGENT_DB=provenagent
PROVEN_ISSUER_AGENT_DB_HOST=${DB_SERVER}
PROVEN_ISSUER_AGENT_DB_USERNAME=provenagent
PROVEN_ISSUER_AGENT_DB_PASSWORD=provenagent
```

```
PROVEN_ISSUER_AGENT_ADMIN_DB_USERNAME=${DB_SERVER_USERNAME}
E}
PROVEN_ISSUER_AGENT_ADMIN_DB_PASSWORD=${DB_SERVER_PASSWORD}
D}
PROVEN_ISSUER_AGENT_LABEL=Proven
PROVEN_ISSUER_APIKEY=9^2m@qw2w885dKXxaup6TQ&CQT4@=RNW
PROVEN_ISSUER_PROXY_DB=provenissuerproxy
PROVEN_ISSUER_PROXY_DB_USERNAME=provenproxy
PROVEN_ISSUER_PROXY_DB_PASSWORD=provenproxy
PROVEN_ISSUER_PROXY_DB_COMBINED=postgres://${PROVEN_ISSUER_PROXY_DB_USERNAME}:${PROVEN_ISSUER_PROXY_DB_PASSWORD}@${DB_SERVER}:5432/${PROVEN_ISSUER_PROXY_DB}
PROVEN_ISSUER_WEB_ROOT=https://provenaws.indiciotech.io
PROVEN_ISSUER_JWT_SECRET=Zu0gPaBdGSP8dfgoK6C1v1BLaXOh6gGq
PROVEN_ISSUER_SESSION_SECRET=Xn2r5u8xjAgD7G39jjdSgVkyP3s6v9y5
PROVEN_ISSUER_ENC_KEY=54234625127cb22694ff0e27cc14b685
ISSUER_RECAPTCHA_SITEKEY=
ISSUER_RECAPTCHA_SECRETKEY=

SCHEMA_USER=Gj39gdivhMneKBaamMsX7P:2:User:1.0

ALLOW_REPORTING=true
REPORTING_CUSTOMER_CODE=IND
REPORTING_TEST_EVENTS=true
REPORTING_AUTHORIZATION=b310fe6e5c18

ALLOW_PHI_ATTRIBUTES=false
```

Appendix C - Issuer DID and Verkey setup

support@indicio.tech