An Introduction to SSH

SSH Keys & SSH Config

Adam Batten
Cookies ‘n’ Code

Secure SHell (SSH)

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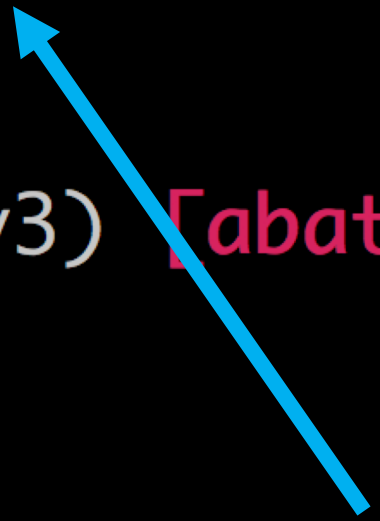
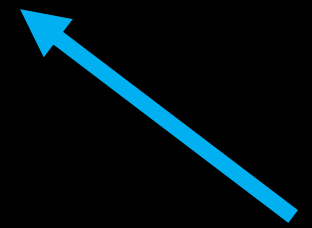


This prompt interacts with my local machine



This prompt interacts with Ozstar

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SSH Keys removes the need to enter passwords whilst still being secure

Setting this up once will actually save you lots of time in the future.

Setting up SSH Keys for Ozstar

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How do SSH Keys work?

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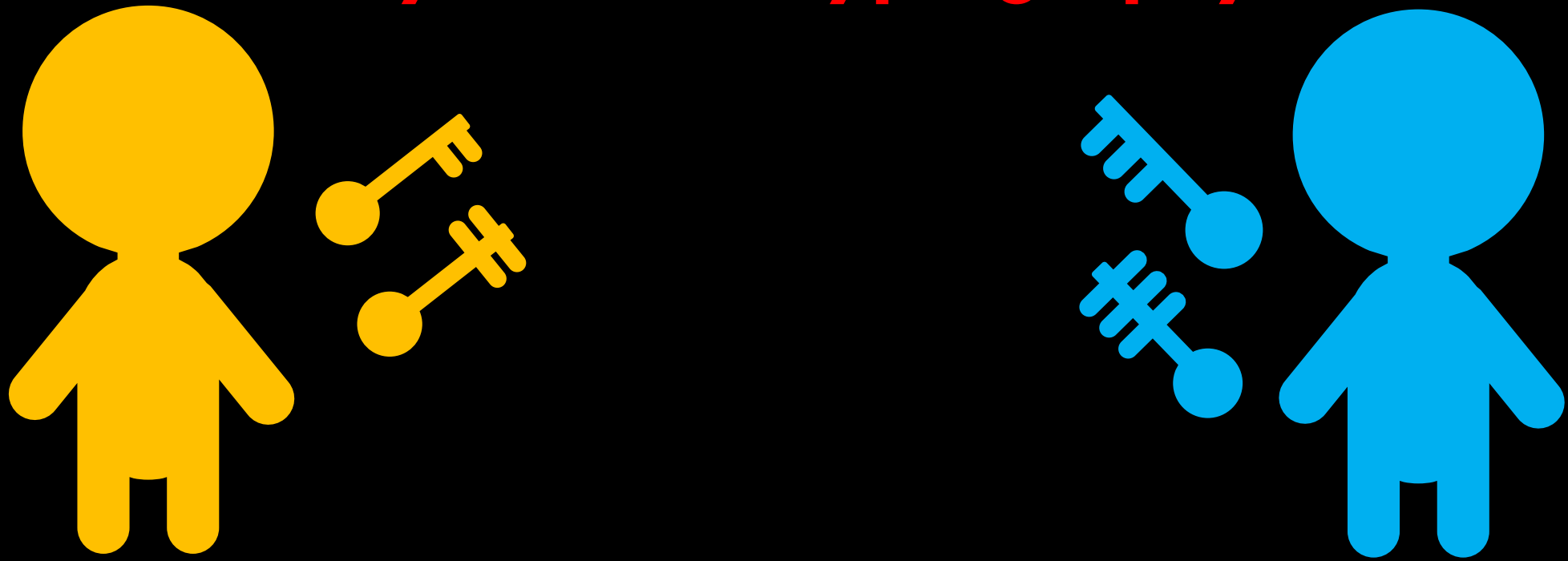
Asymmetric cryptography



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Example:

Square root a number 3 times remove the decimal point, 0’s and 8’s then use the first 5 numbers.

27164 **24534** **23796**

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3584	**1313**	**4207**

How do SSH Keys work?

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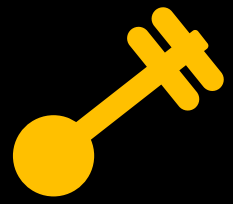

Private

How do SSH Keys work?

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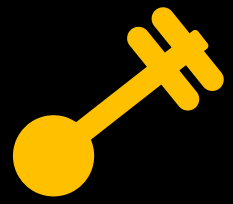

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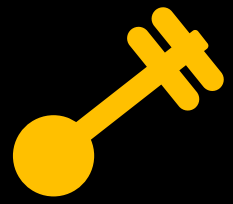


Private

Anything encrypted with one is decrypted with the other.

Example:

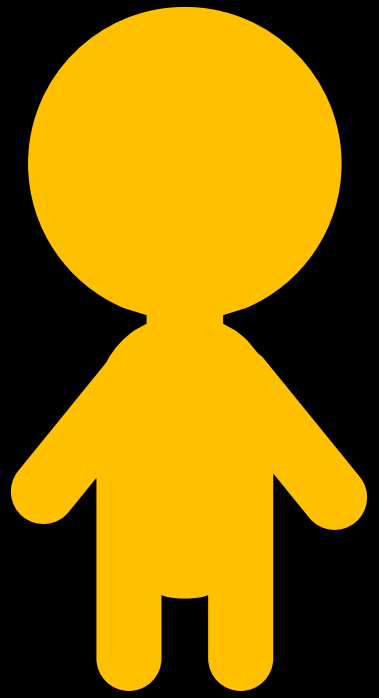
Say the ‘encryption’ process is to multiply by a number.

Then 3 and 1/3 could be key pairs.

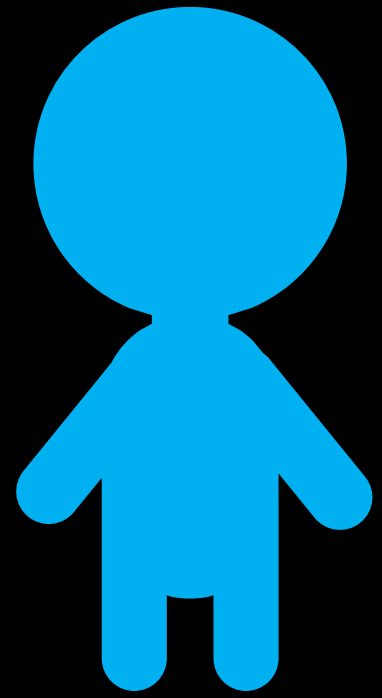
$$(3 \times y) \times \frac{1}{3} = \left(\frac{1}{3} \times y\right) \times 3 = y$$

How do SSH Keys work?

YOU



OZSTAR



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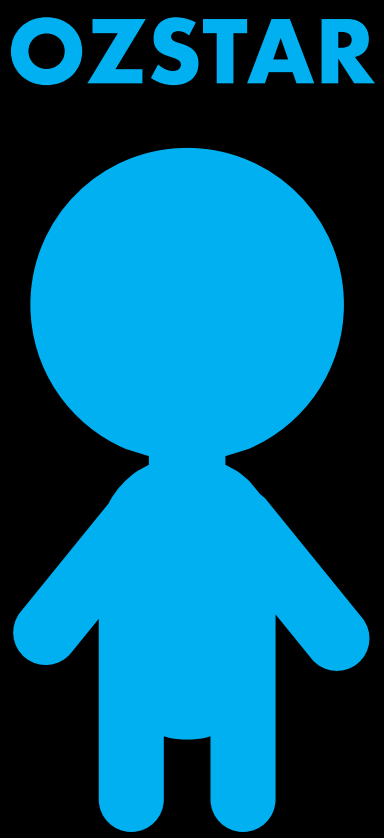

Setting up SSH Keys for Ozstar

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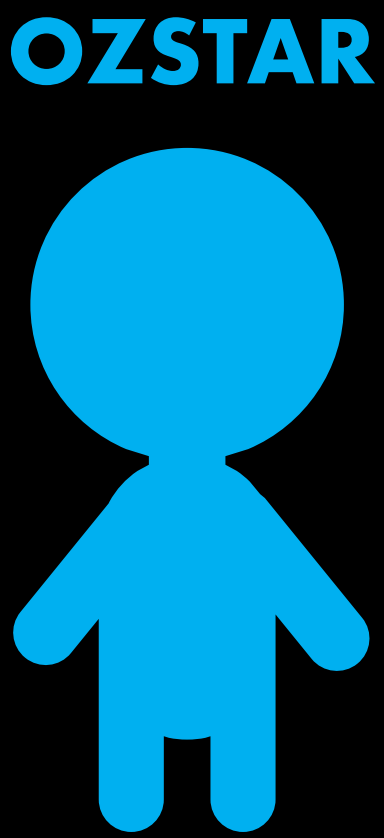

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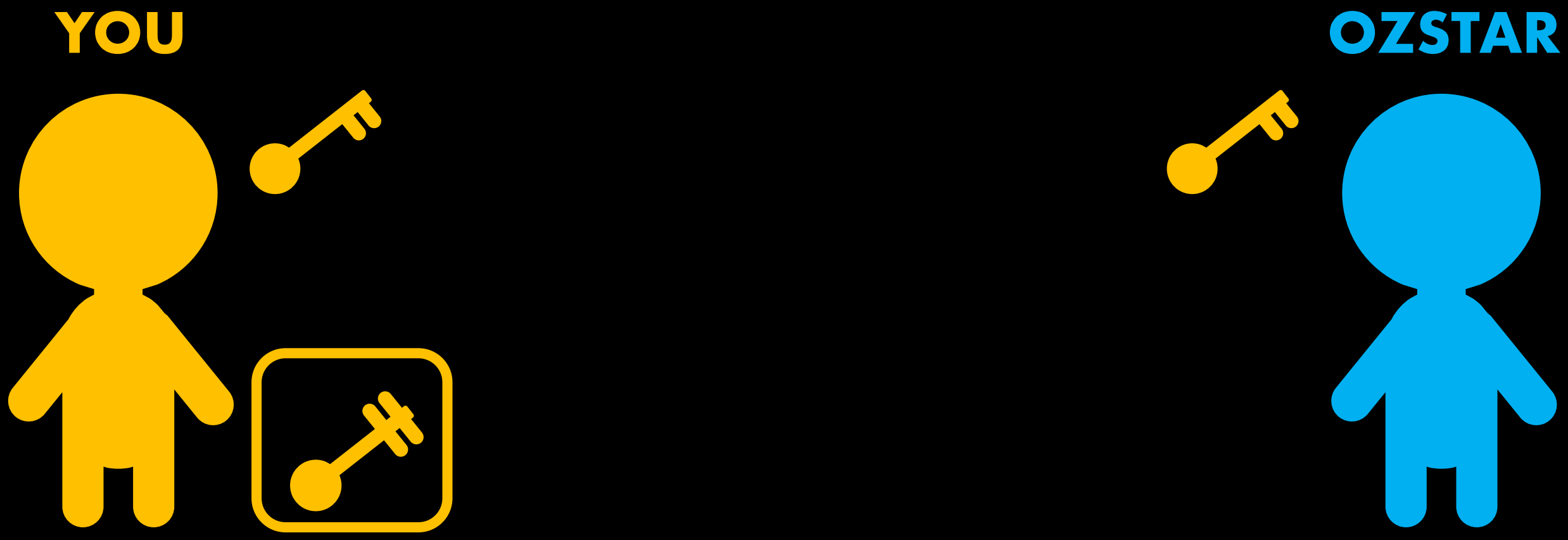

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OZSTAR

Attempt to login to Ozstar

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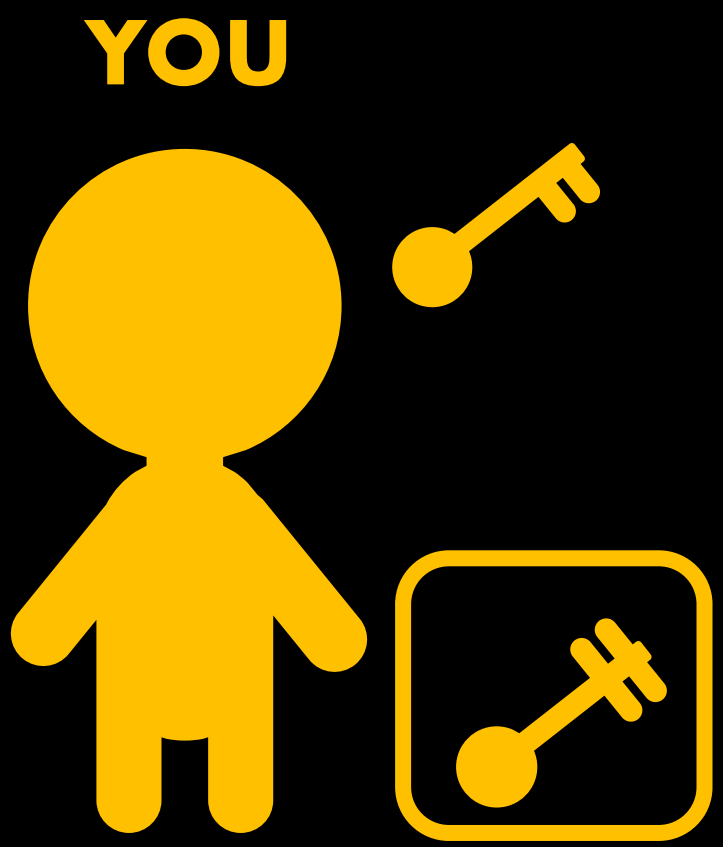

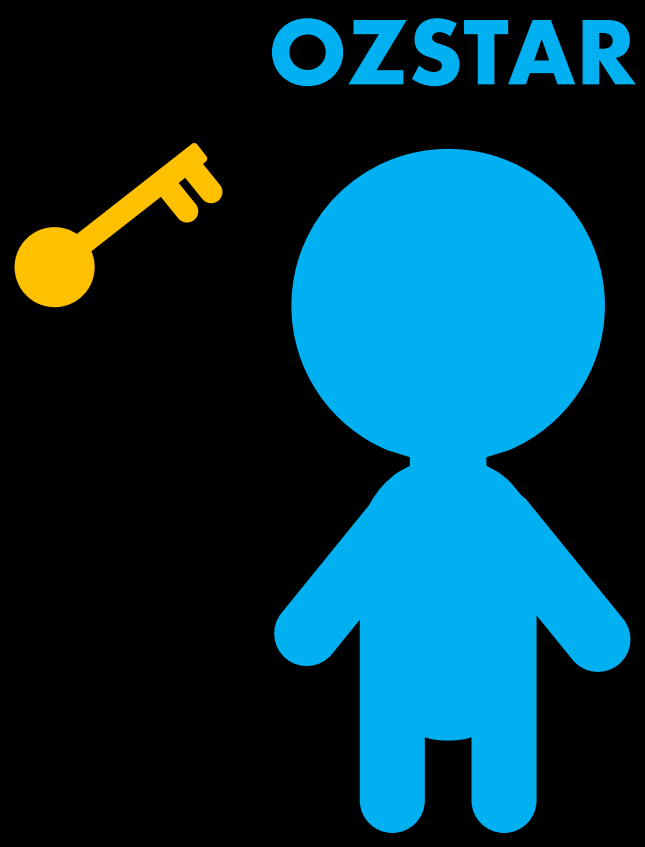

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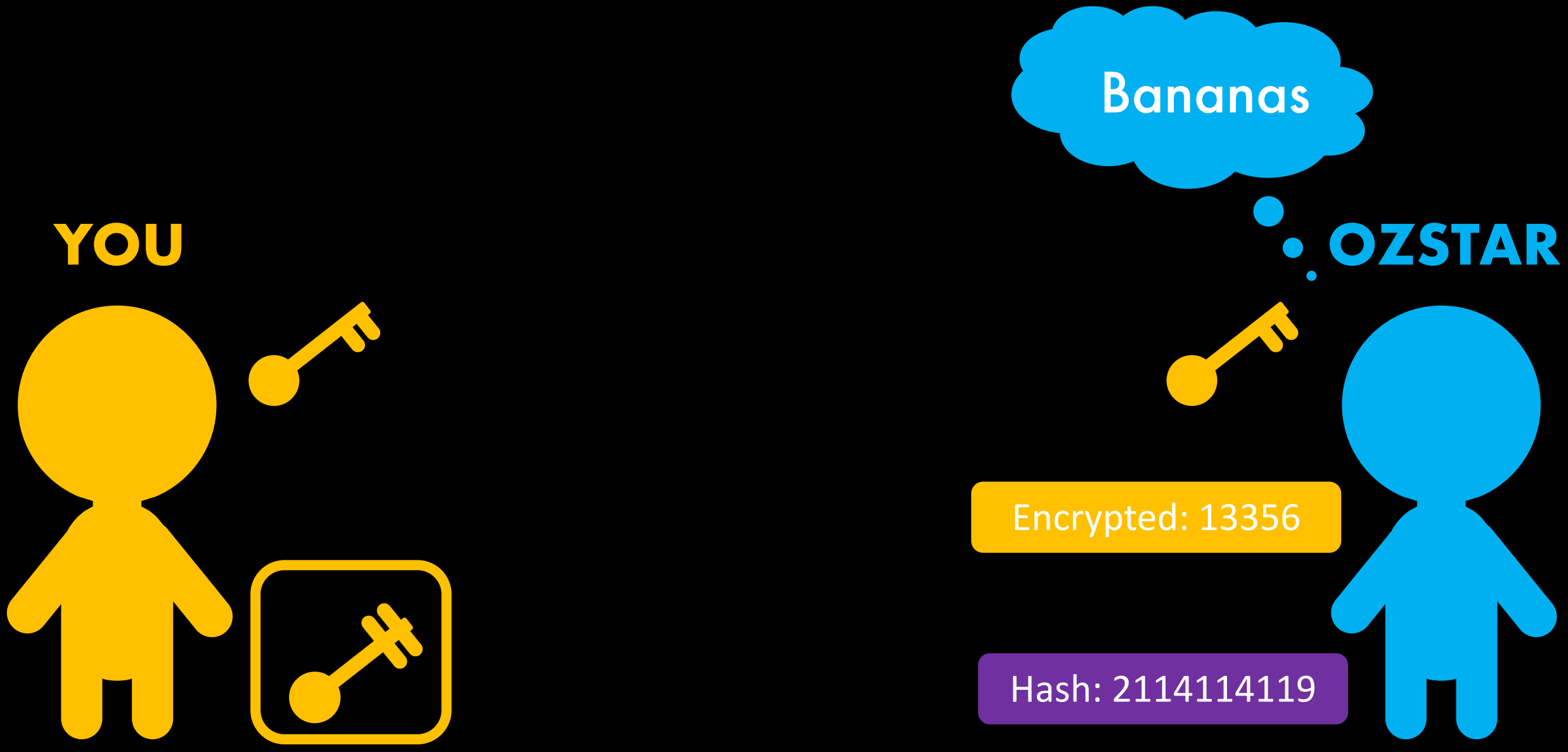

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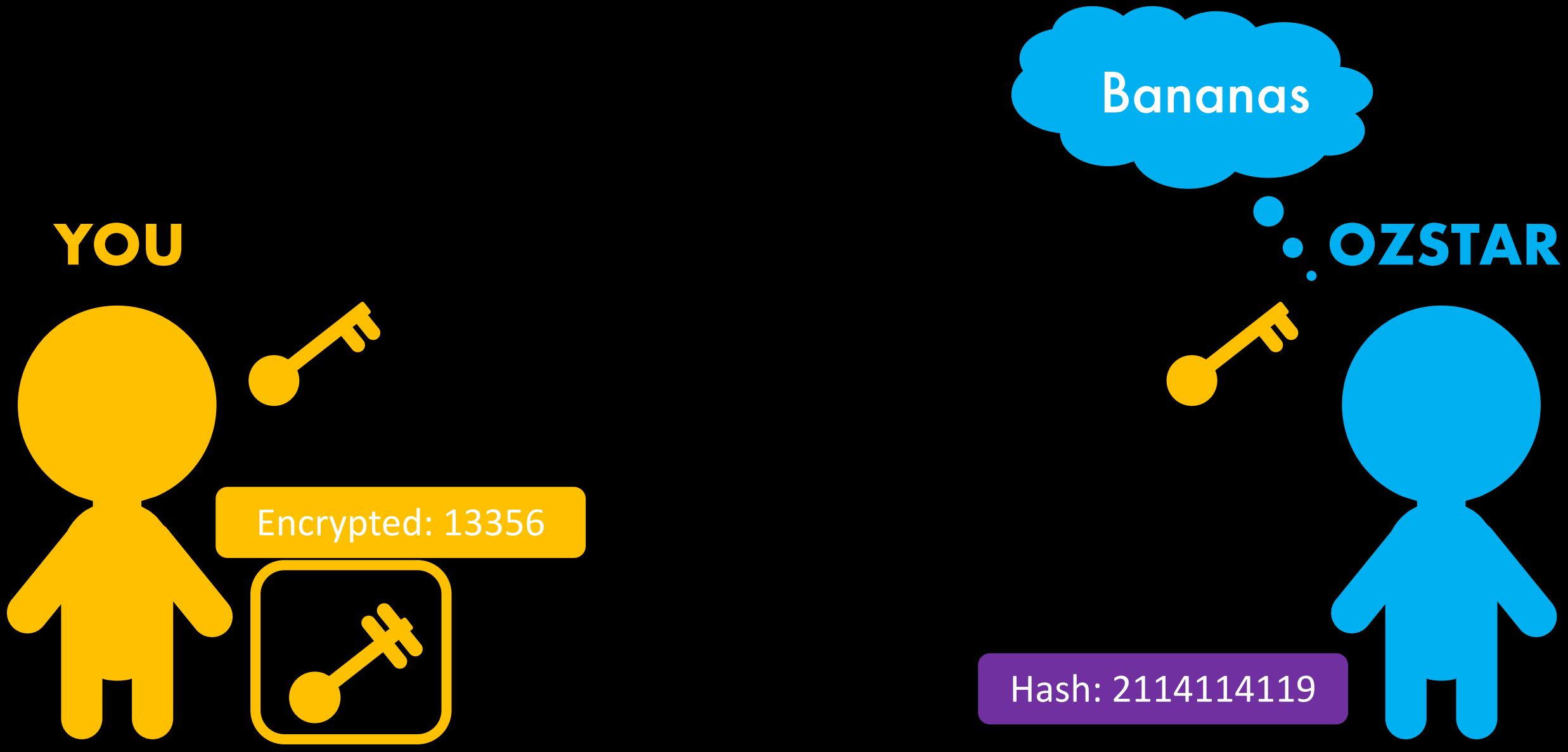

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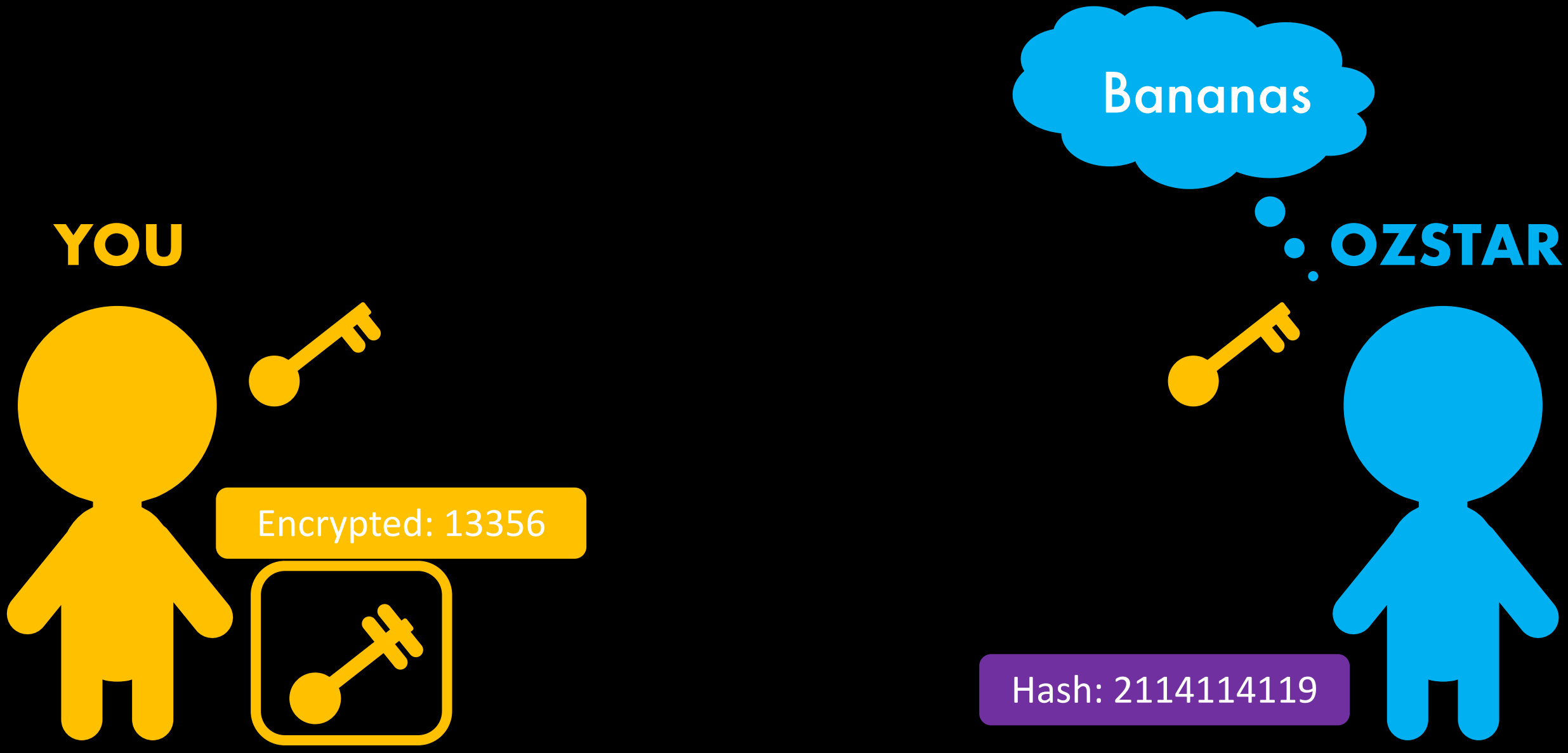

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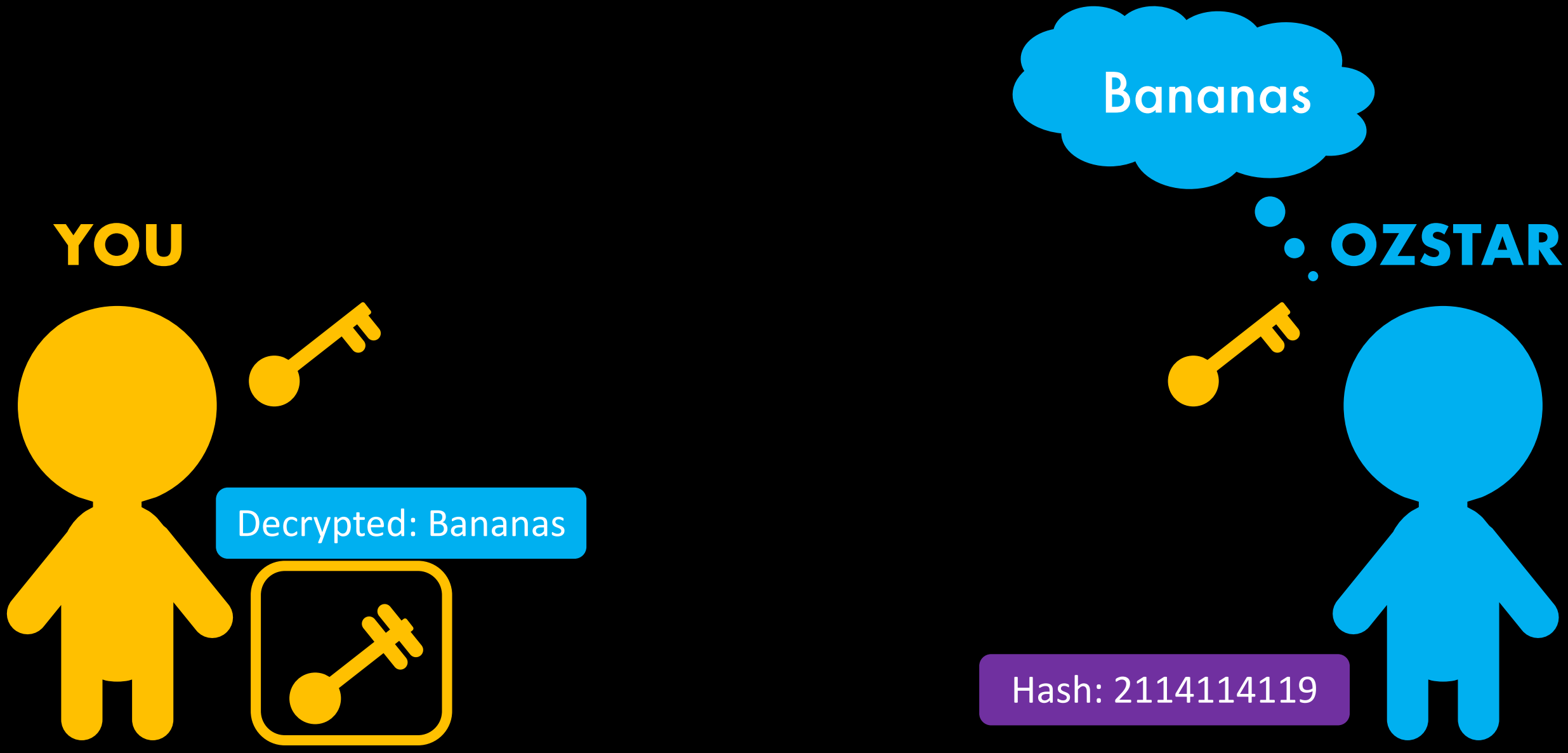

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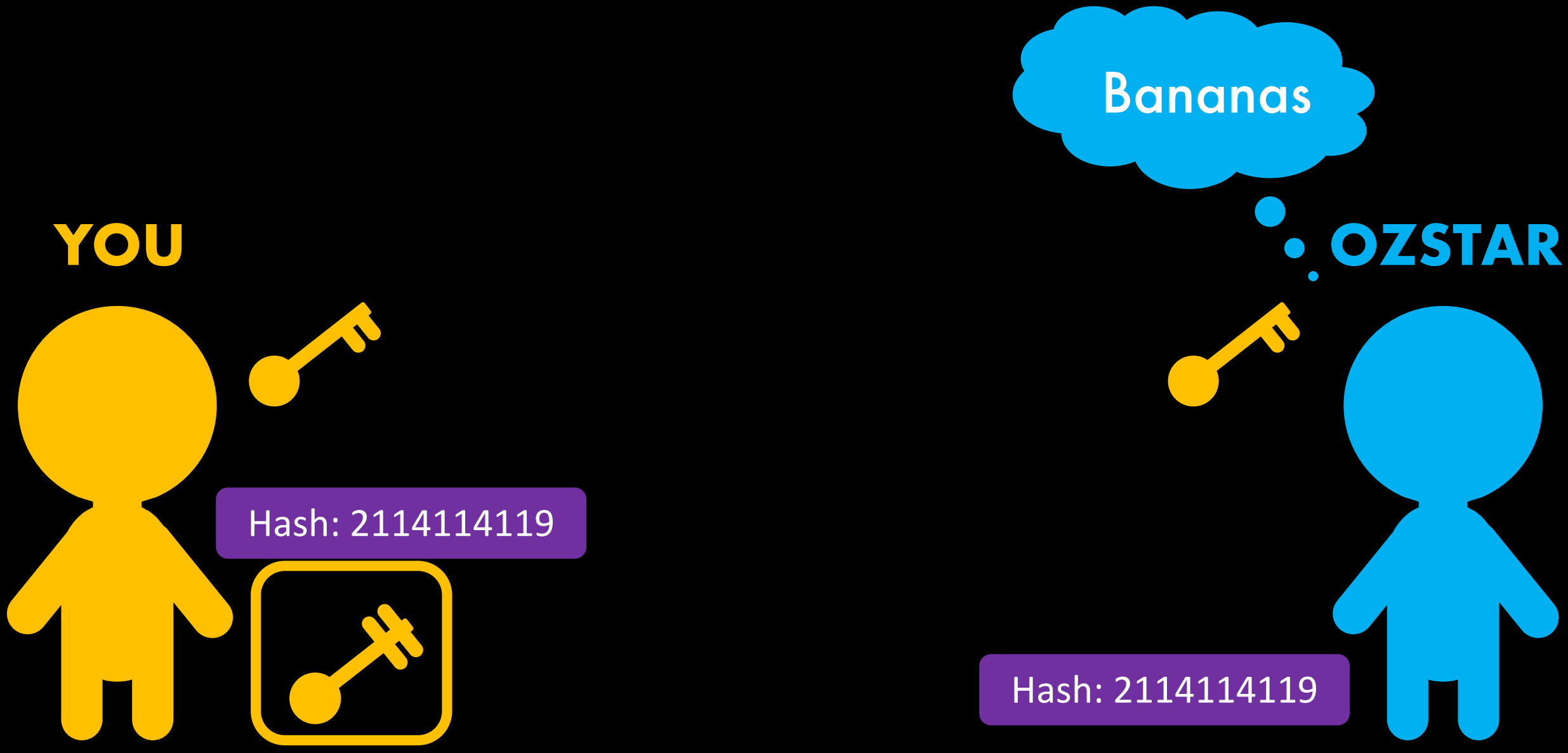

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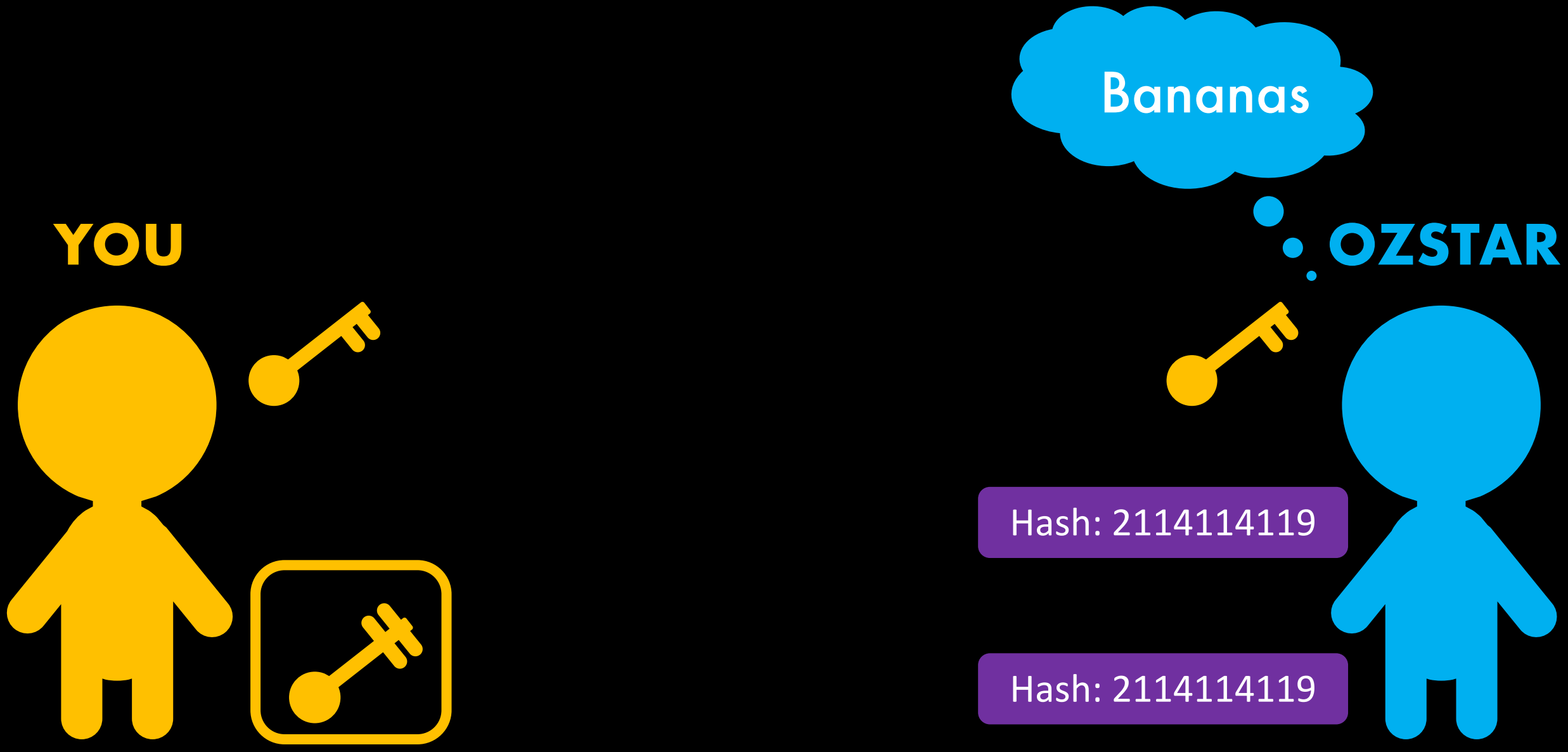
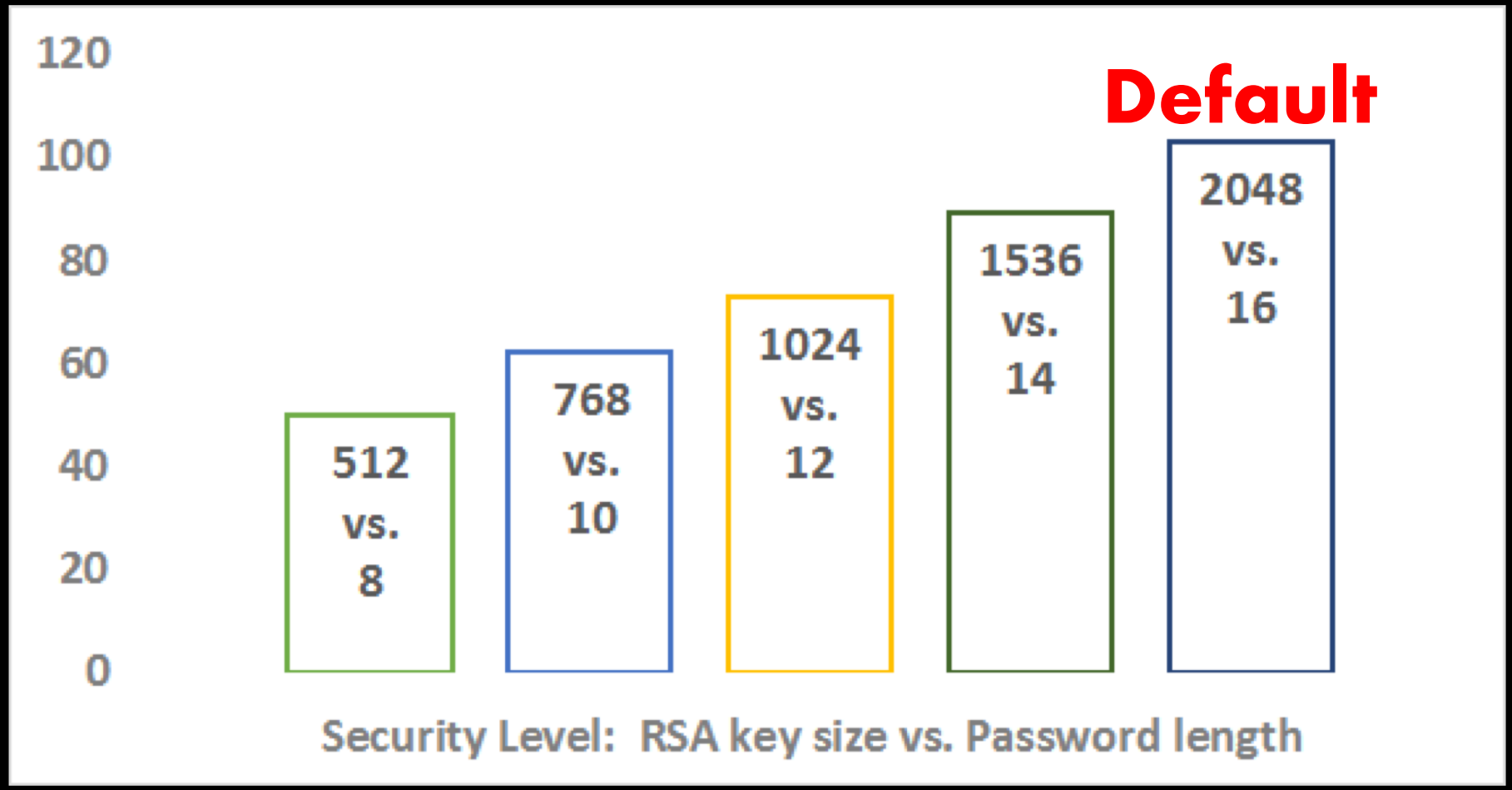


How strong are SSH keys?



The default ssh key is as strong as a 16 character password.

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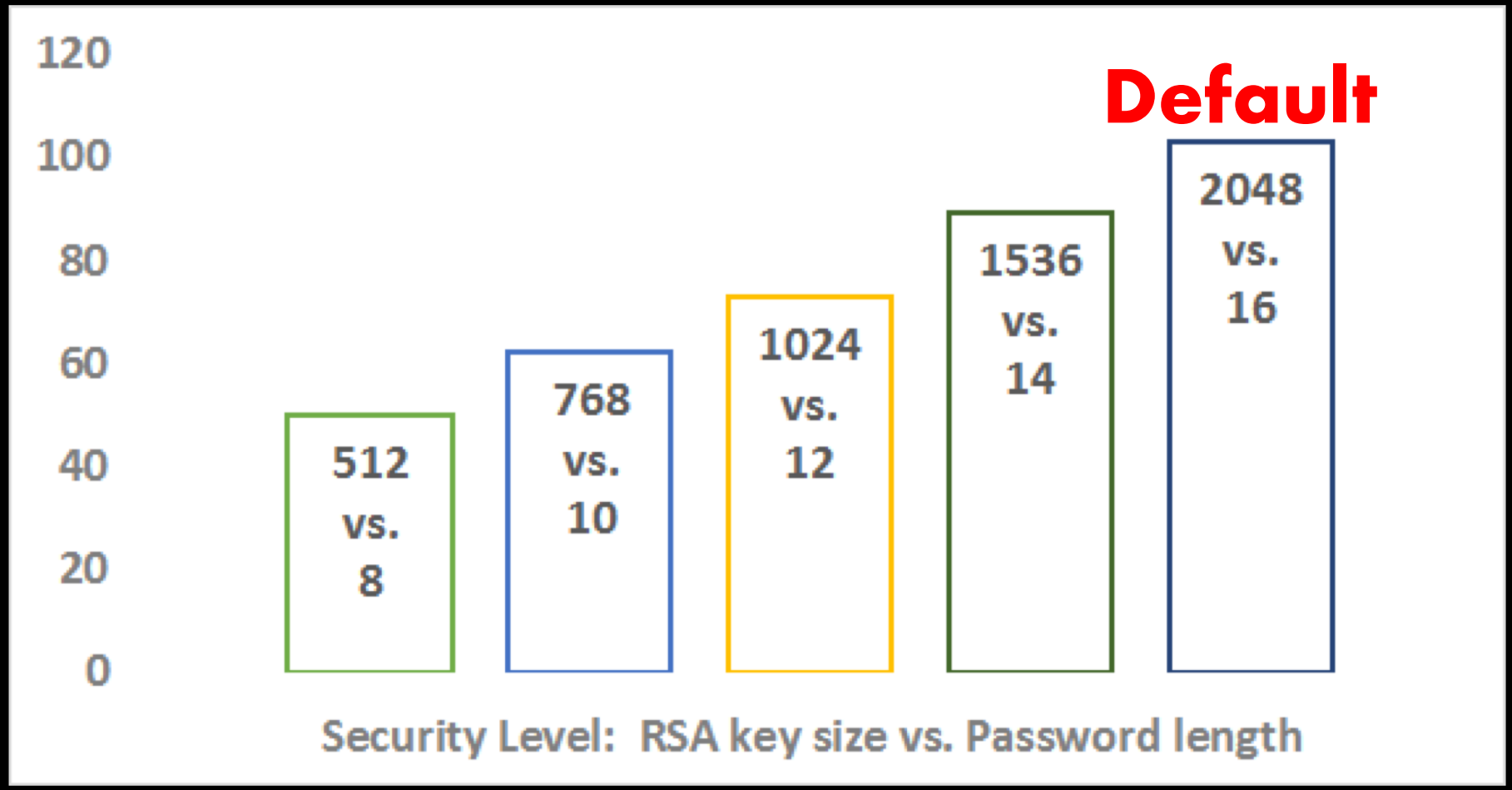

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i.e."safe" until around 2030

SSH Config

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[~/.ssh] ls
config  id_rsa  id_rsa.pub  known_hosts
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Inside your .ssh folder you should see 4 files:

1. `config` — This is your ssh config file
2. `id_rsa` — This is your private key (DO NOT SHARE THIS!)
3. `id_rsa.pub` — This is your public key
4. `known_hosts` — This is a list of known places you ssh

SSH Config

Your SSH config contains the settings for everything when you SSH into a remote server.

```
Host firsthost
    SSH_OPTION_1 custom_value
    SSH_OPTION_2 custom_value
    SSH_OPTION_3 custom_value

Host secondhost
    SSH_OPTION_1 custom_value
    SSH_OPTION_2 custom_value
    SSH_OPTION_3 custom_value
```

SSH Config

```
1  Host oz
2    Hostname ozstar.swin.edu.au
3    User abatten
4    ForwardX11 yes
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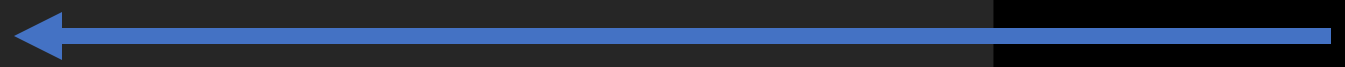

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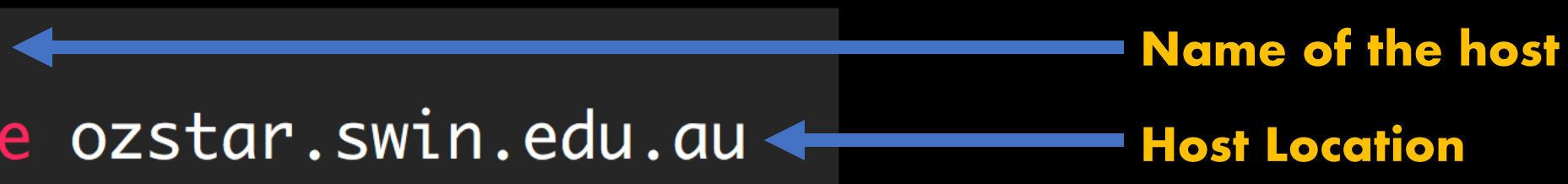

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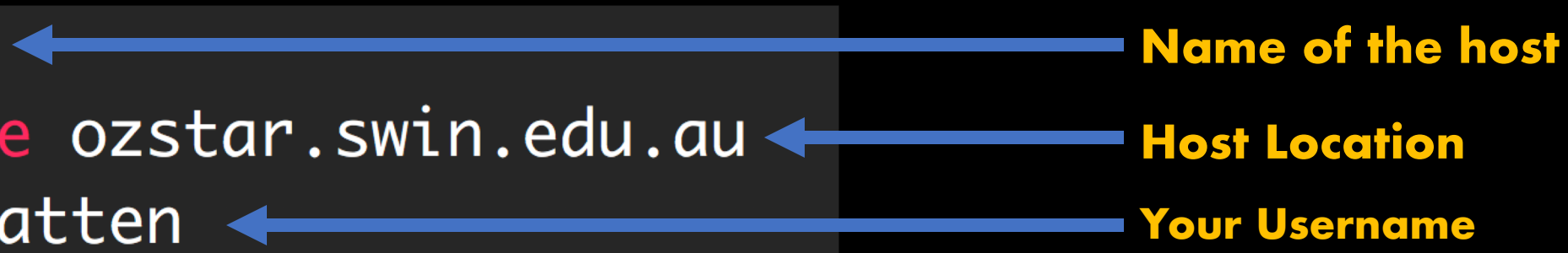

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Using SSH Config

```
[~] ssh oz
```