AWS re:Invent

DOP343-R

Introduction to the AWS CLI v2

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aws

Overview of AWS Command Line Interface (AWS CLI) v2

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aws

AWS Command Line Interface

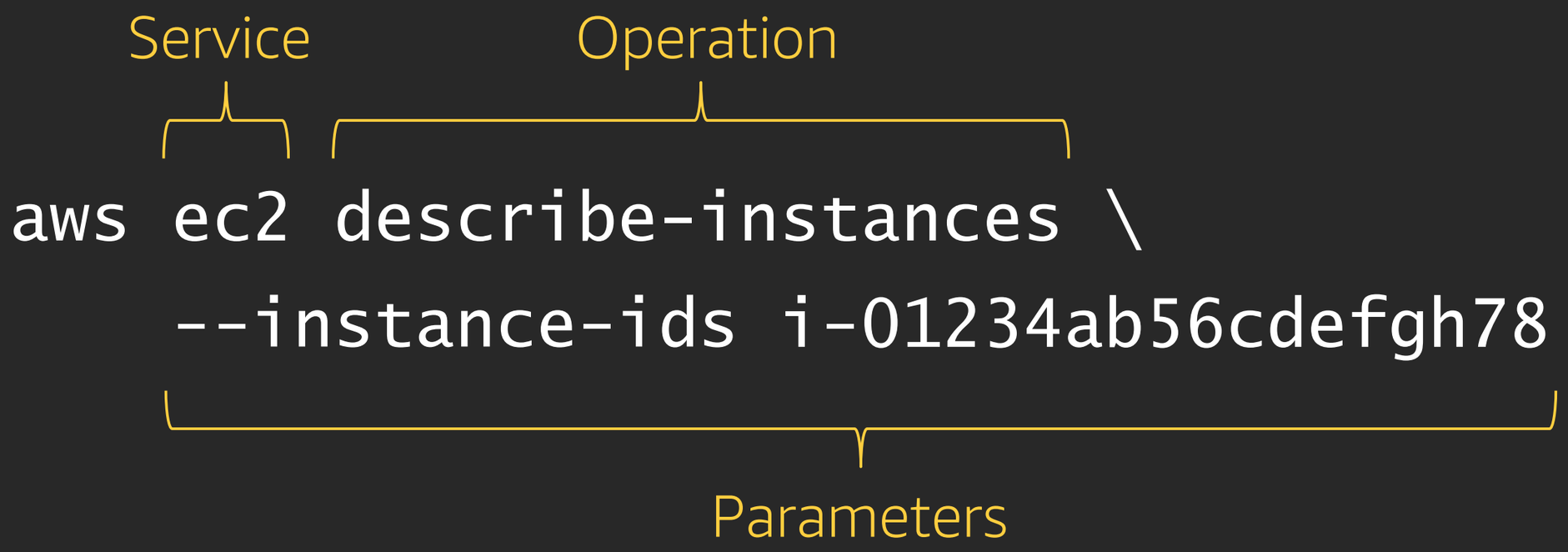


- A unified tool for managing AWS resources
- Supports Linux, MacOS, and Windows
- 200+ top-level commands

Sample AWS CLI command

```
aws ec2 describe-instances \
    --instance-ids i-01234ab56cdefgh78
```

Sample AWS CLI command



AWS Command Line Interface v2



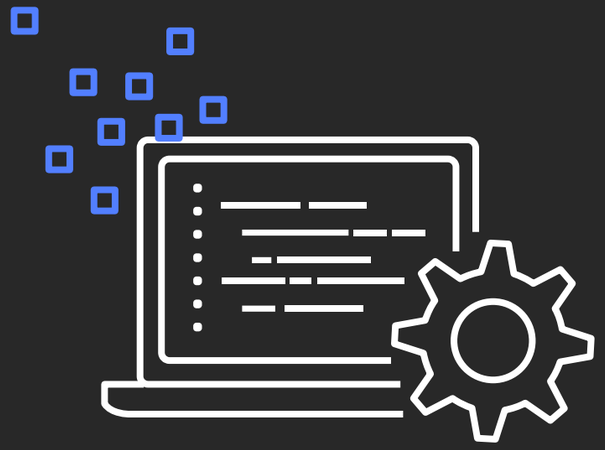
- Next major version of the AWS CLI
- In developer preview
- Mostly backwards compatible with AWS CLI v1
- New features

AWS Command Line Interface v2

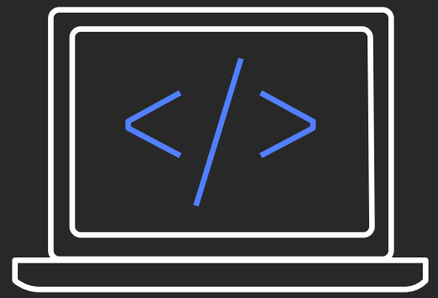


- Next major version of the AWS CLI
- In developer preview
- Mostly backwards compatible with AWS CLI v1
- New features *v2*

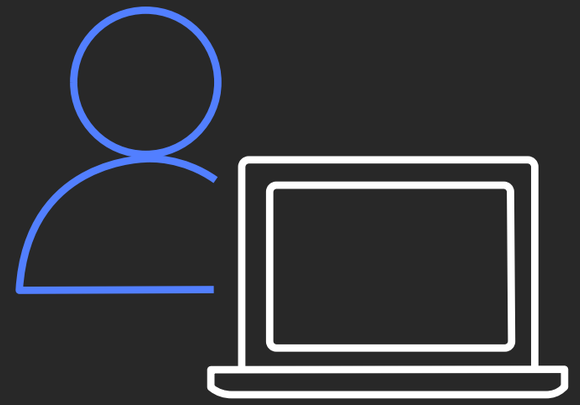
Highlights of AWS CLI v2



Installation and configuration

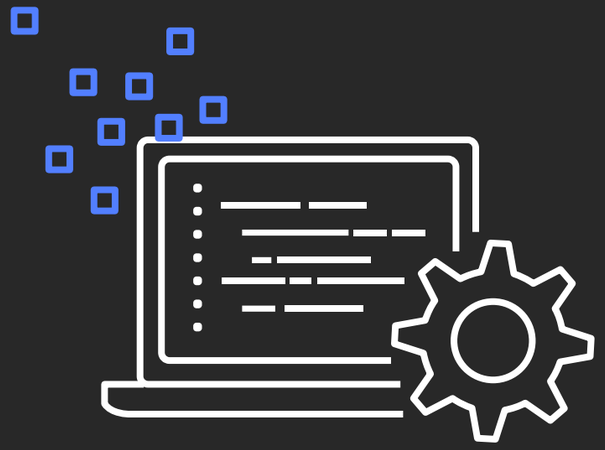


Command I/O

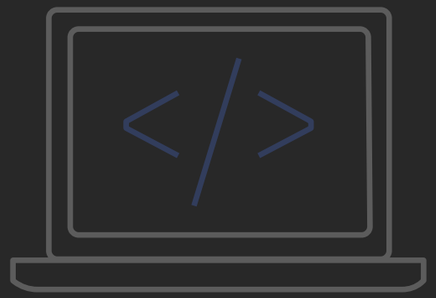


Interactive features

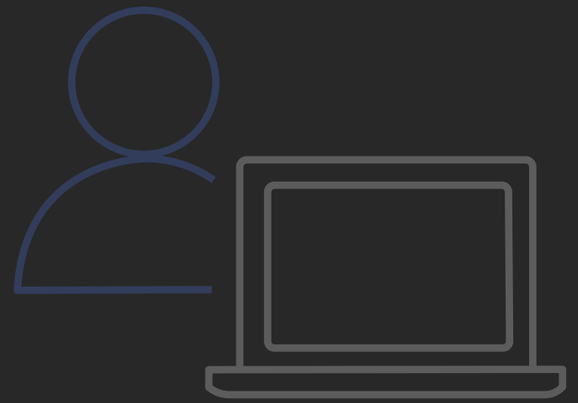
Highlights of AWS CLI v2



Installation and configuration



Command I/O

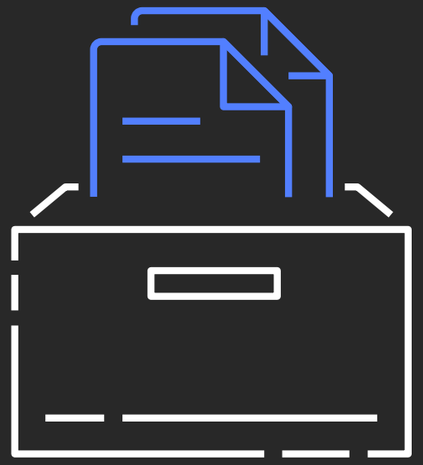


Interactive features

Installation and configuration

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AWS CLI v2 installers



Executable installer
(MacOS, Linux)



MSI installer
(Windows)

AWS CLI v2 installers

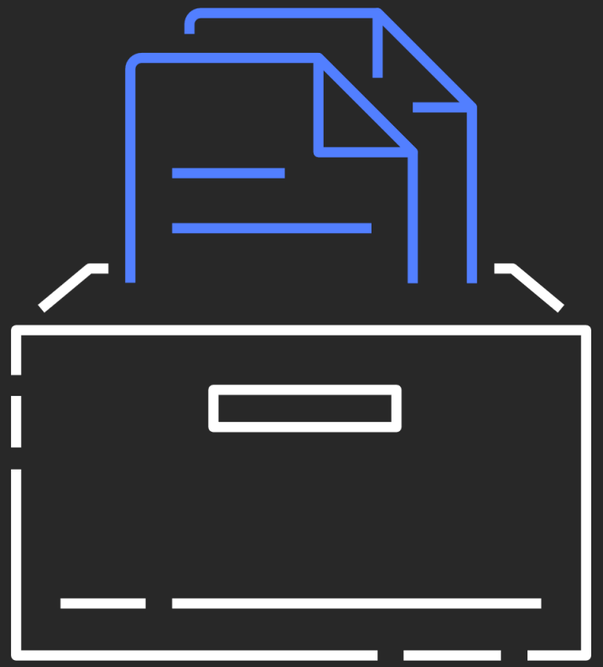


Executable installer
(MacOS, Linux)



MSI installer
(Windows)

Properties of installers



- Pre-built for operating system
- No system requirement on Python
- Self-contained

Note on executable name



- For developer preview, the executable name is: `aws2`
- Allows for side-by-side installation of v1 and v2

AWS CLI configuration

```
aws2 configure
```

AWS CLI configuration

```
aws2 configure

aws2 configure wizard
```

AWS CLI configuration

```
aws2 configure
```

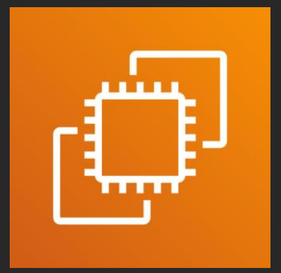
```
aws2 configure wizard
```

v2

Demo: Getting started

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AWS CLI credential sources

Environment variables	`export AWS_ACCESS_KEY_ID=...`	
Configuration files	 `~/.aws/credentials`	 `~/.aws/config`
Underlying AWS service	 Amazon EC2 Instance Metadata	 Amazon EC2 Container Service container credentials

AWS CLI credential sources

Environment variables

`export AWS_ACCESS_KEY_ID=...`

Configuration files



`~/.aws/credentials`



`~/.aws/config`

Typically used for dev environments,
but require static credentials

Underlying AWS service

Amazon EC2 Instance Metadata

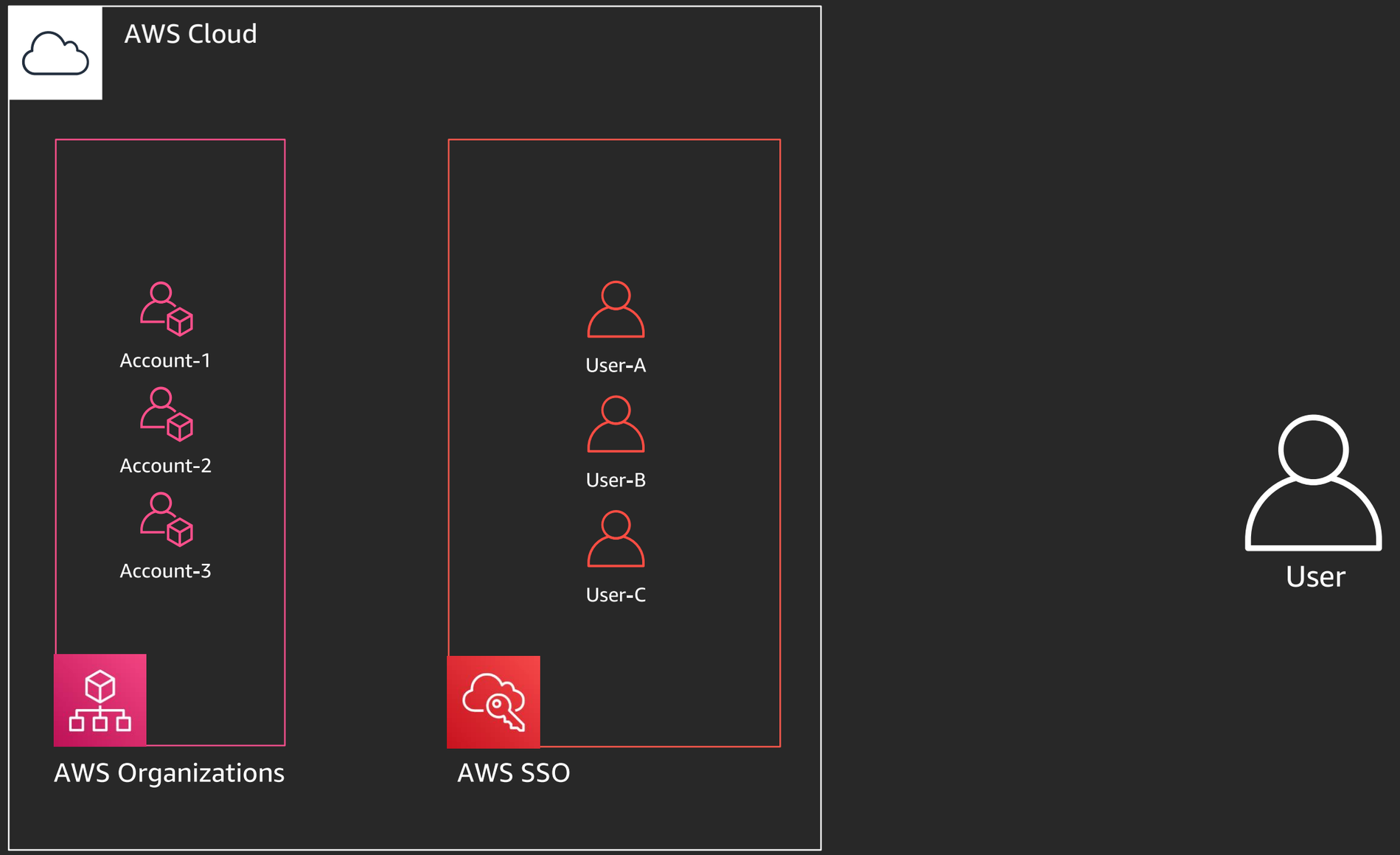
Amazon EC2 Container Service container credentials

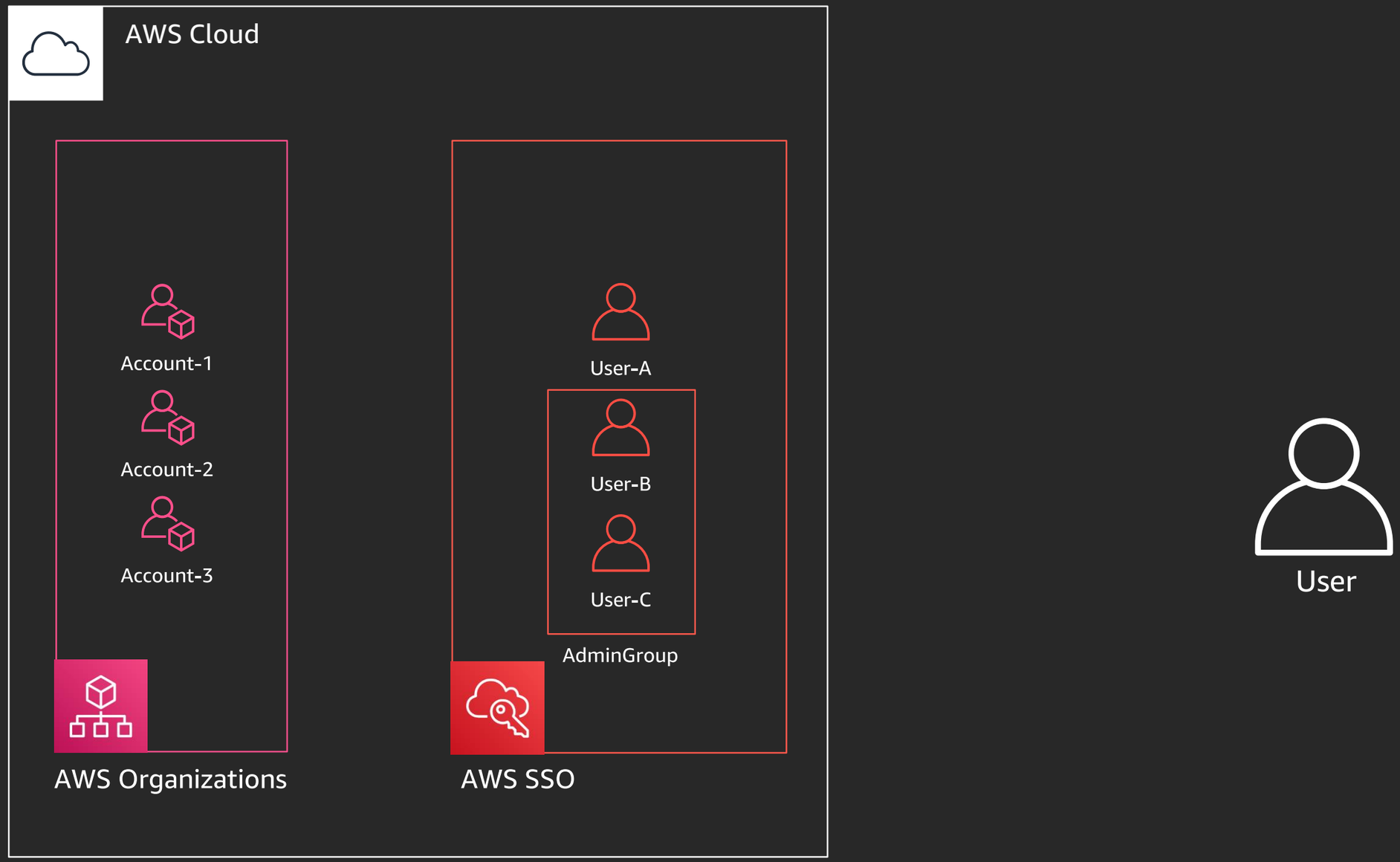
AWS Single Sign-On (AWS SSO)

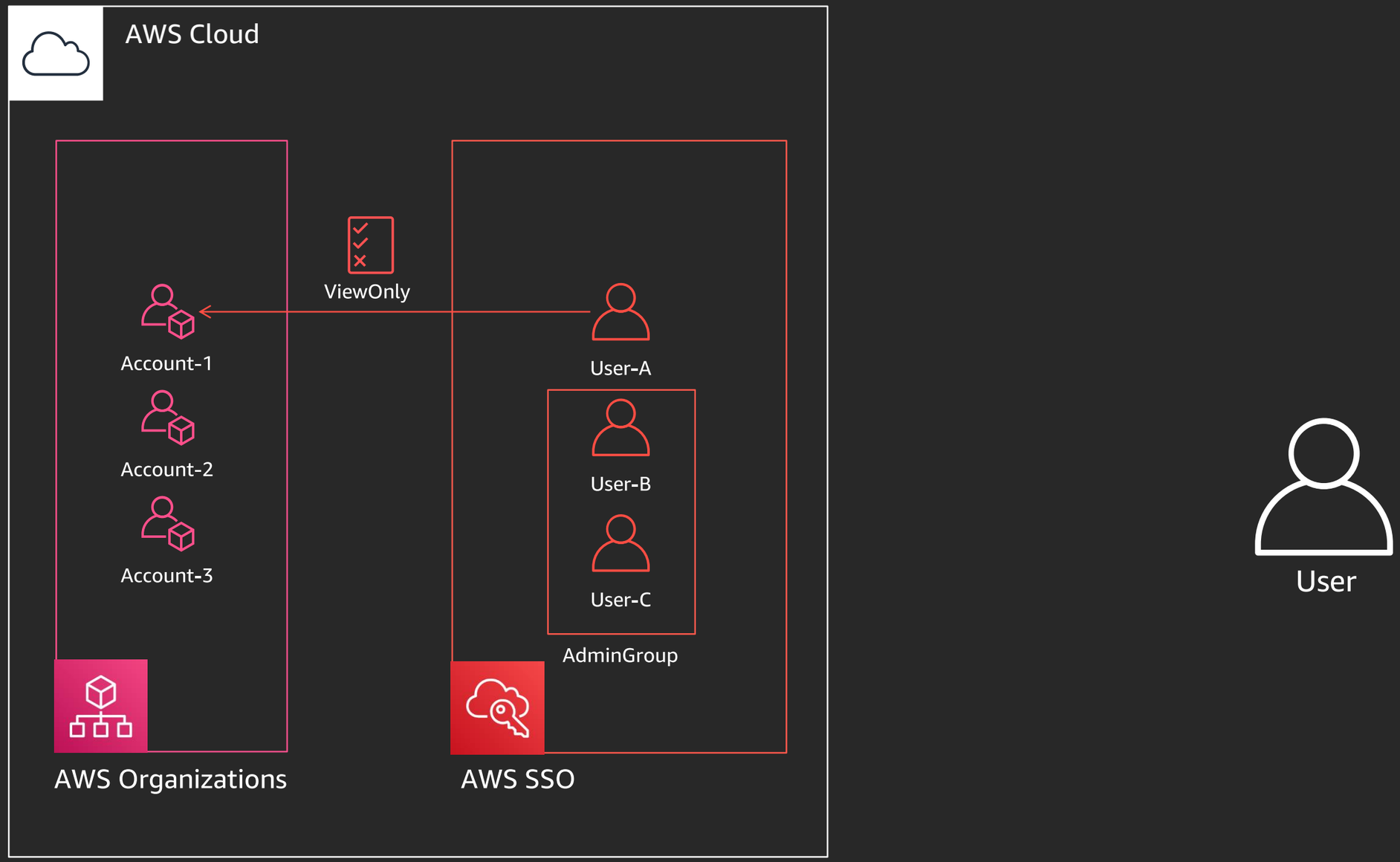


- Centrally manage access to all of your AWS accounts
- Integration with AWS Organizations
- Users can sign in to portal to access AWS accounts and cloud applications

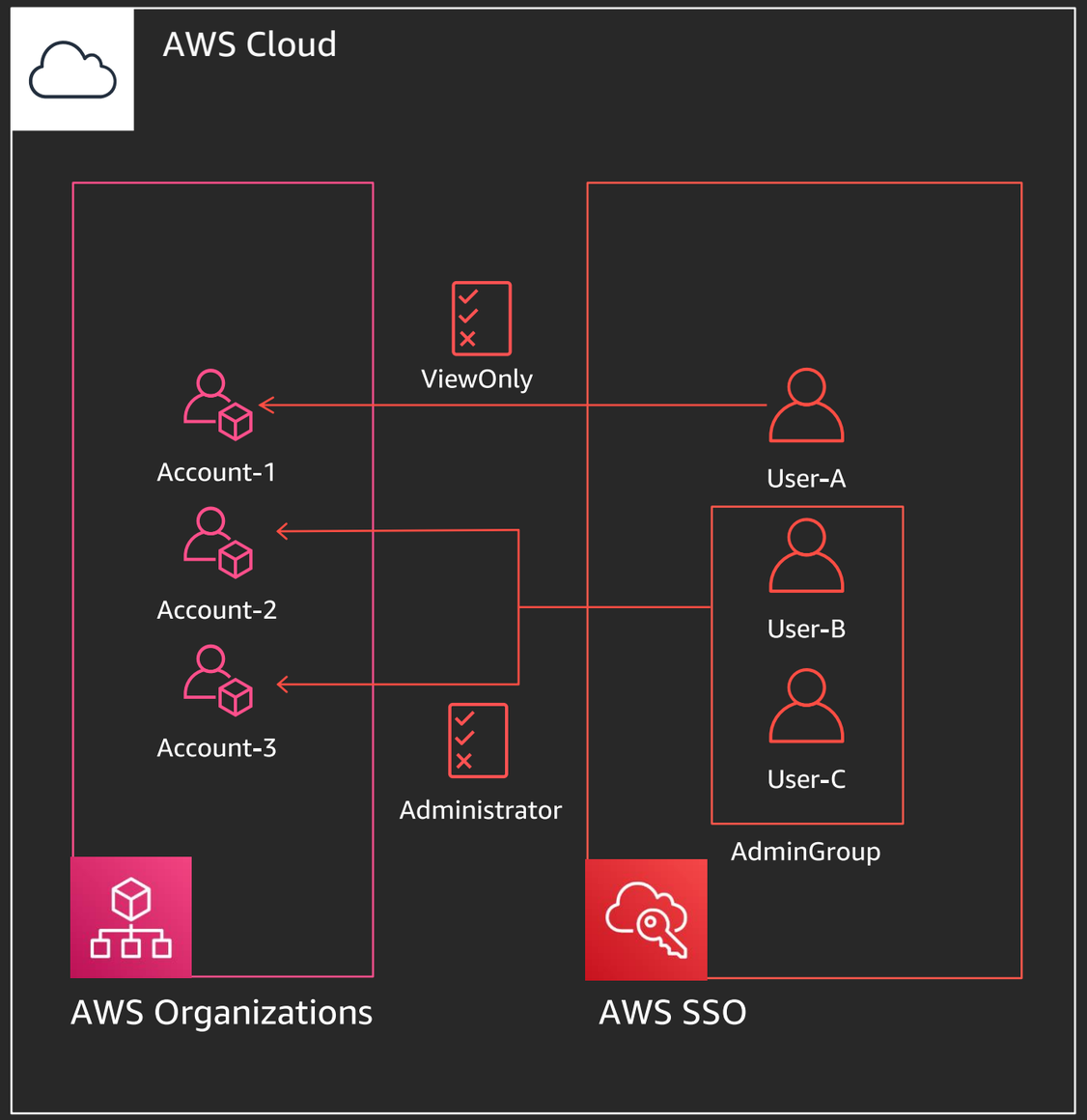

AWS Cloud
Account-1
Account-2
Account-3
AWS Organizations
User


AWS Cloud
Account-1
Account-2
Account-3
AWS Organizations
User-A
User-B
User-C
AWS SSO
User

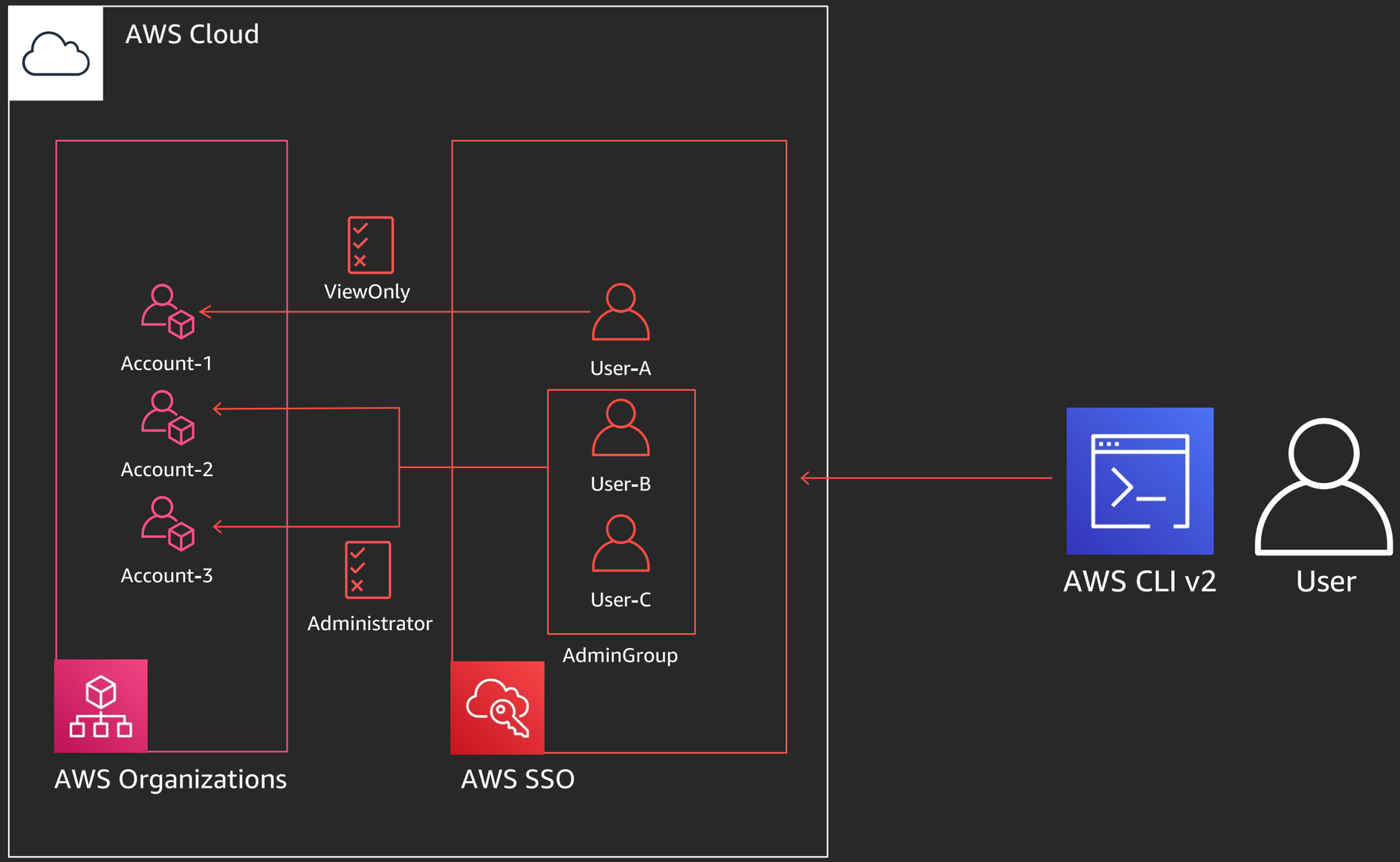

AWS Cloud
Account-1
Account-2
Account-3
AWS Organizations
User-A
User-B
User-C
AdminGroup
AWS SSO
User

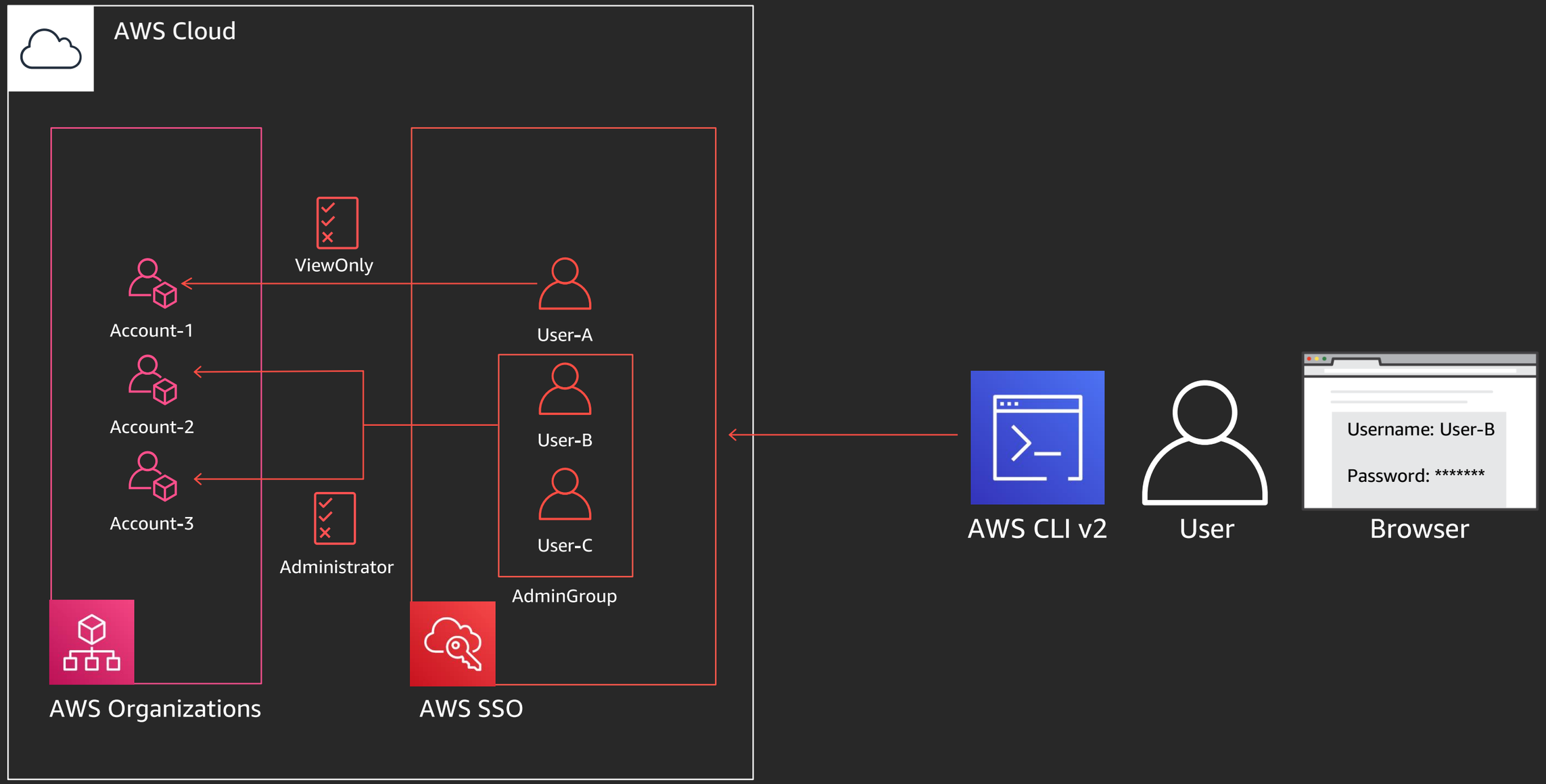

AWS Cloud
ViewOnly
Account-1
Account-2
Account-3
User-A
User-B
User-C
AdminGroup
AWS Organizations
AWS SSO

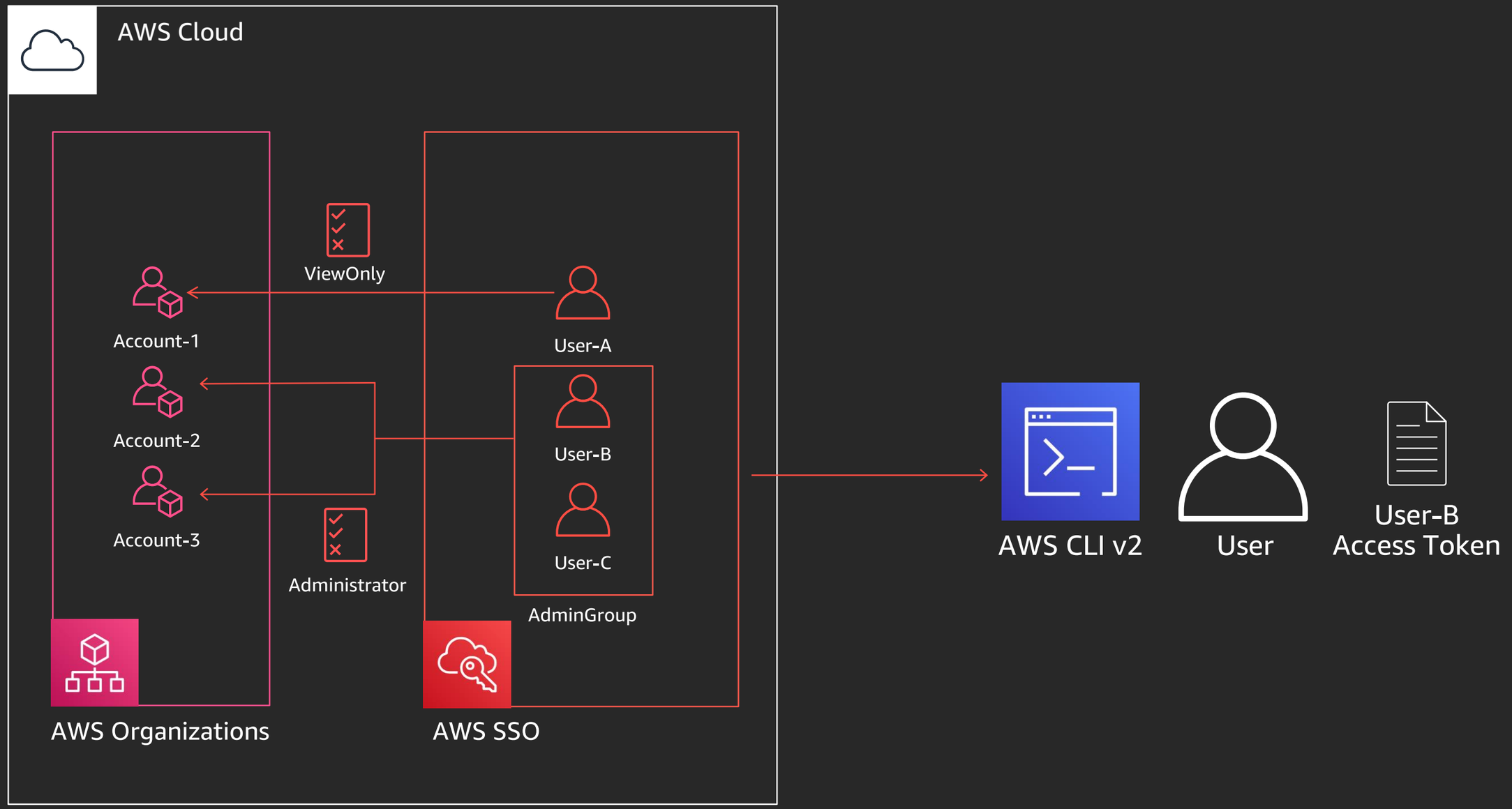
User

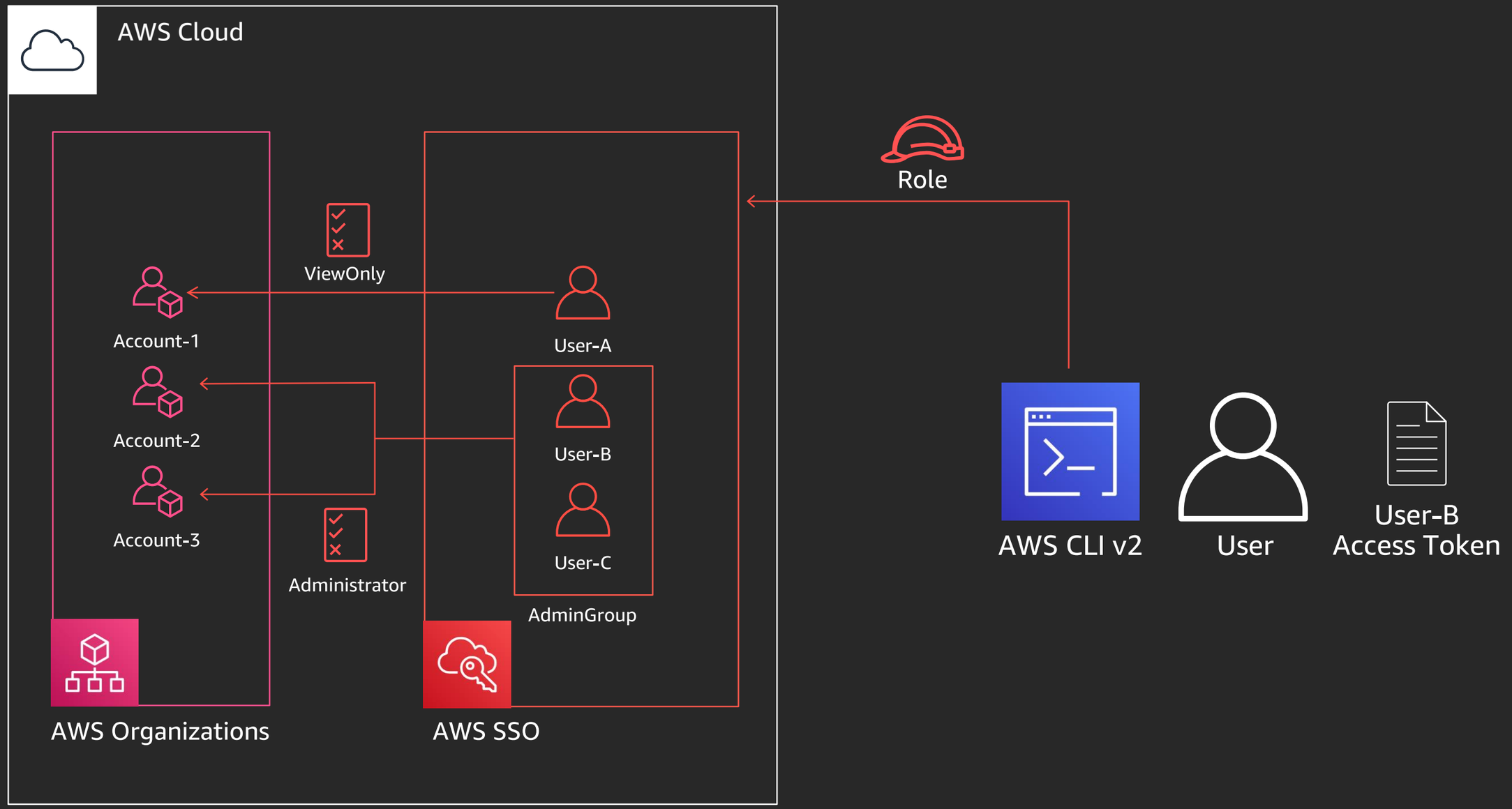

AWS Cloud
ViewOnly
Account-1
Account-2
Account-3
Administrator
User-A
User-B
User-C
AdminGroup
AWS Organizations
AWS SSO

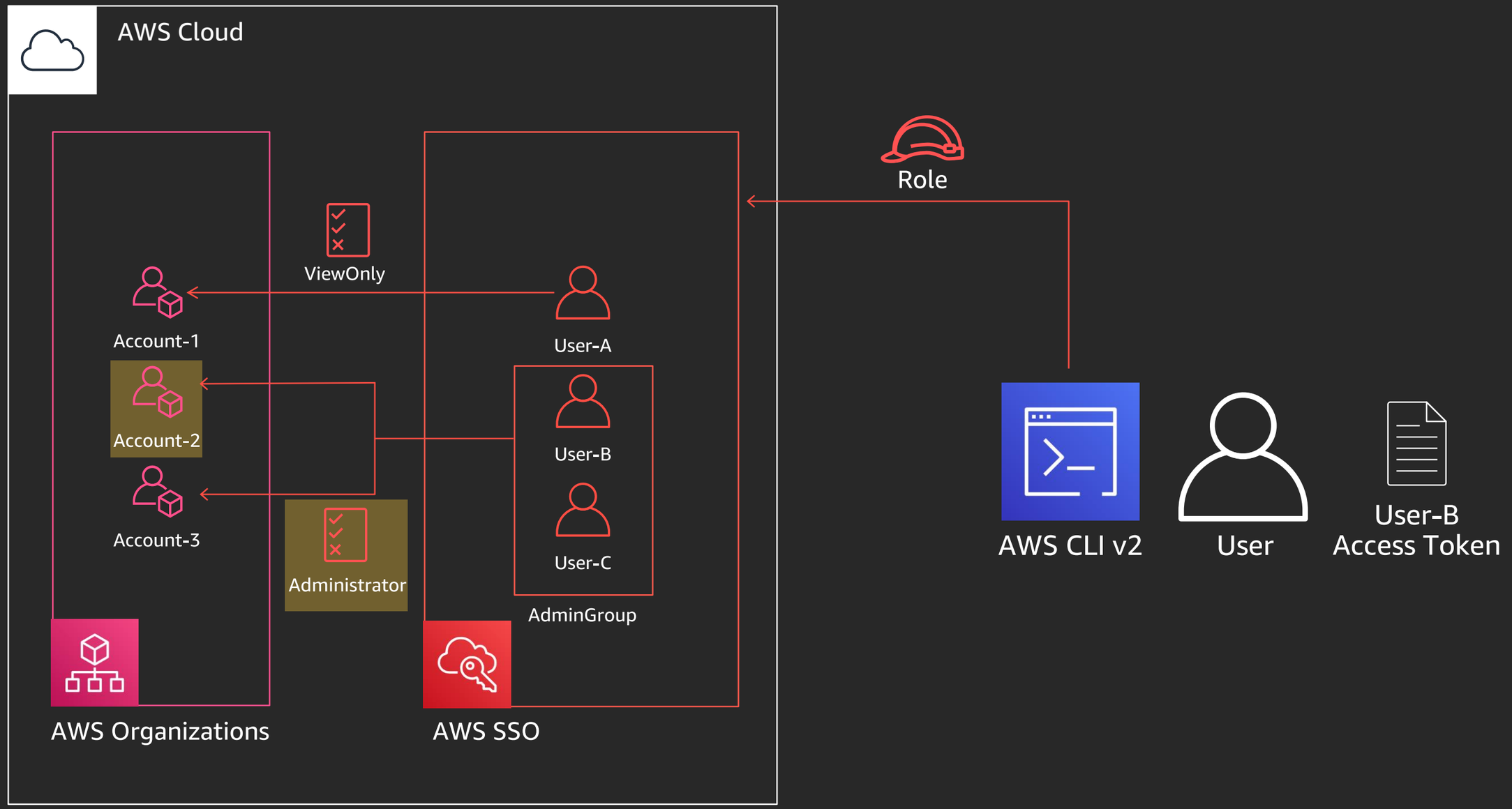

User

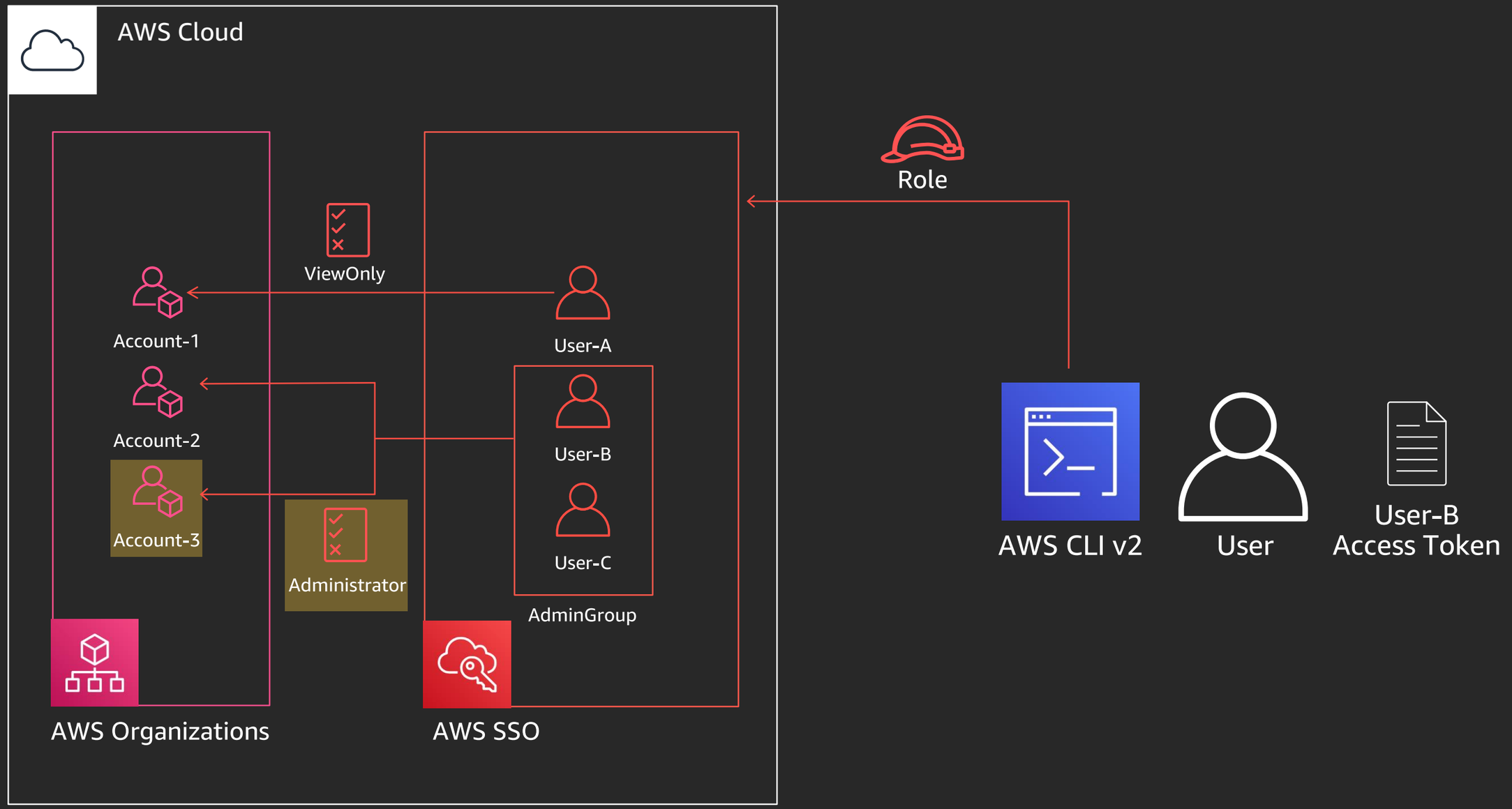

AWS Cloud
ViewOnly
Account-1
Account-2
Account-3
Administrator
User-A
User-B
User-C
AdminGroup
AWS Organizations
AWS SSO
AWS CLI v2
User


AWS Cloud
ViewOnly
Account-1
Account-2
Account-3
Administrator
User-A
User-B
User-C
AdminGroup
AWS Organizations
AWS SSO
AWS CLI v2
User
Username: User-B
Password: *******
Browser


AWS Cloud
ViewOnly
Account-1
Account-2
Account-3
Administrator
User-A
User-B
User-C
AdminGroup
AWS Organizations
AWS SSO
AWS CLI v2
User
User-B
Access Token


AWS Cloud
Role
ViewOnly
Account-1
Account-2
Account-3
Administrator
User-A
User-B
User-C
AdminGroup
AWS Organizations
AWS SSO
AWS CLI v2
User
User-B
Access Token


AWS Cloud
Role
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AWS SSO
AWS CLI v2
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AWS Cloud
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Account-2
Account-3
Administrator
User-A
User-B
User-C
AdminGroup
AWS Organizations
AWS SSO
AWS CLI v2
User
User-B
Access Token

AWS CLI v2 integration with AWS SSO

```
aws2 configure sso
```

AWS CLI v2 integration with AWS SSO

```
aws2 configure sso
```

```
aws2 sso login
```

AWS CLI v2 integration with AWS SSO

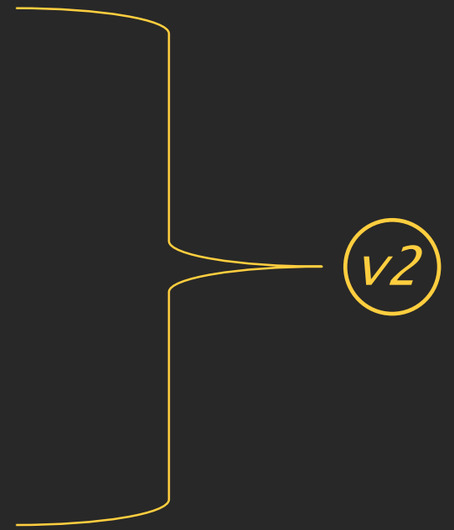
```
aws2 configure sso

aws2 sso login

aws2 sso logout
```

AWS CLI v2 integration with AWS SSO

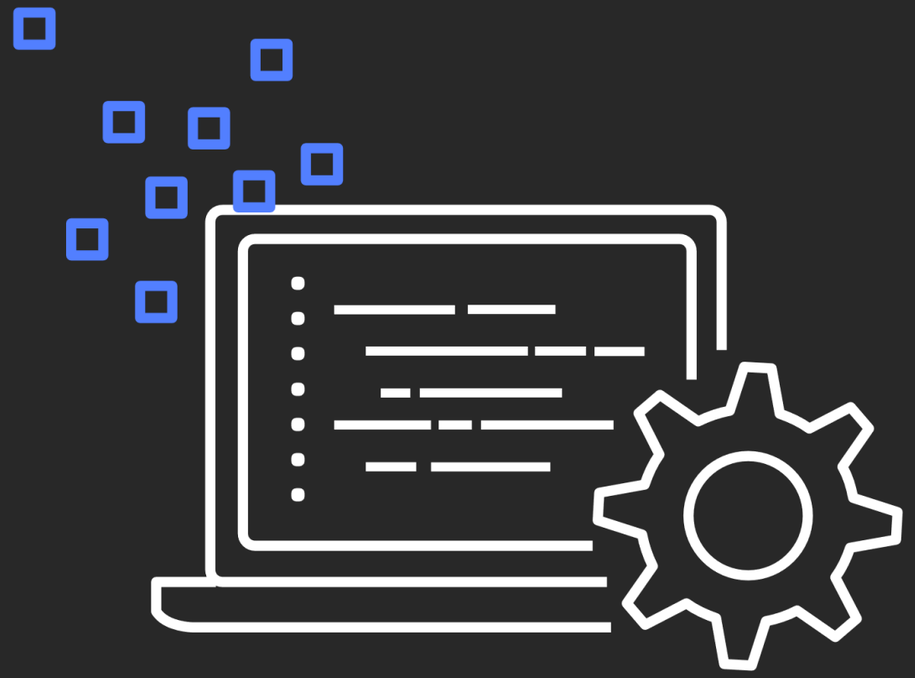
```
aws2 configure sso
aws2 sso login
aws2 sso logout
```



Demo: AWS SSO

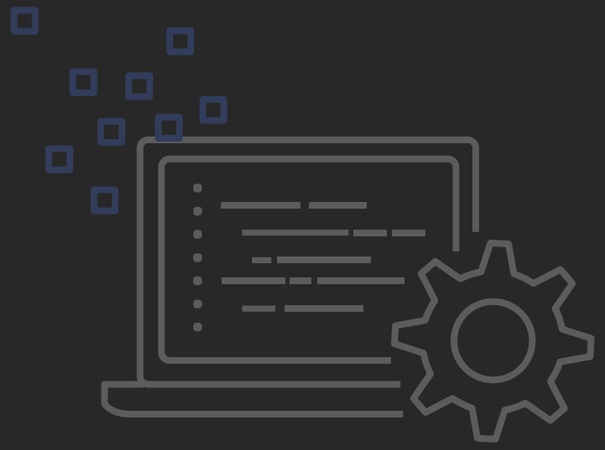
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Recap: Installation and configuration

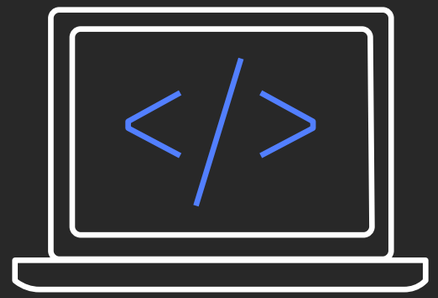


- MacOS, Linux, and Windows installers
- `aws2 configure wizard`
- `aws2 configure sso`
- `aws2 sso login`

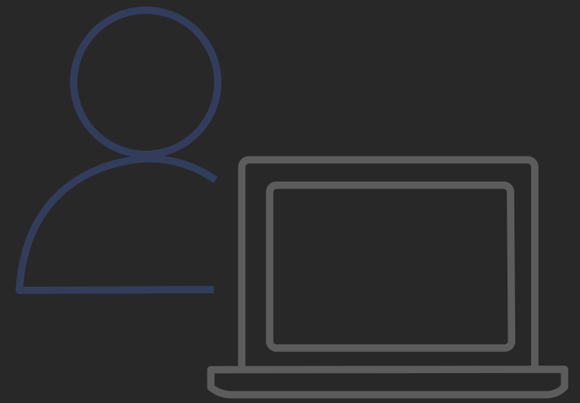
Highlights of AWS CLI v2



Installation and configuration



Command I/O

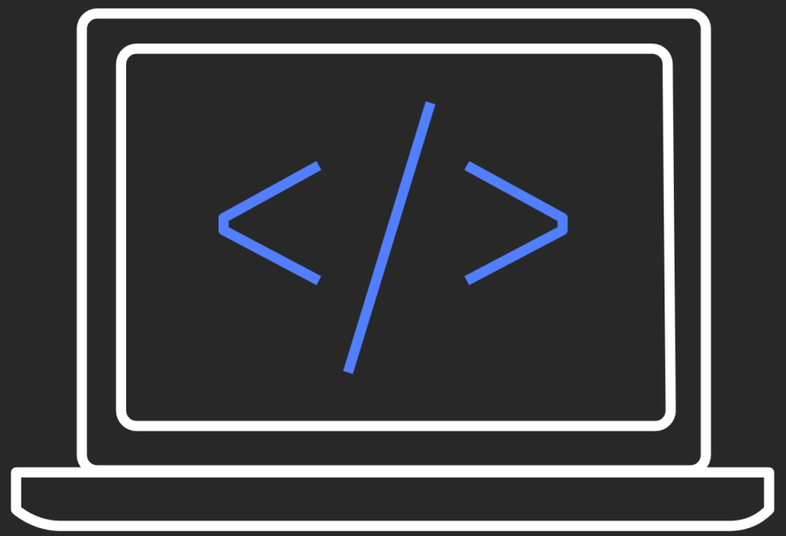


Interactive features

Command I/O

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Command I/O highlights



- AWS resource completion
- YAML support
- Paging improvements

AWS resource completion

```
$ complete -C aws2_completer aws2
```

AWS resource completion

```
$ complete -C aws2_completer aws2
$ aws2 dy<TAB>
```

AWS resource completion

```
$ complete -C aws2_completer aws2
$ aws2 dy<TAB>
dynamodb dynamodbstreams
```

AWS resource completion

```
$ complete -C aws2_completer aws2
$ aws2 dy<TAB>
dynamodb dynamodbstreams
$ aws2 dynamodb delete-<TAB>
```

AWS resource completion

```
$ complete -C aws2_completer aws2
$ aws2 dy<TAB>
dynamodb dynamodbstreams
$ aws2 dynamodb delete-<TAB>
delete-backup delete-item  delete-table
```

AWS resource completion

```
$ complete -C aws2_completer aws2
$ aws2 dy<TAB>
dynamodb dynamodbstreams
$ aws2 dynamodb delete-<TAB>
delete-backup  delete-item   delete-table
$ aws2 dynamodb delete-table --ta<TAB>
```

AWS resource completion

```
$ complete -C aws2_completer aws2
$ aws2 dy<TAB>
dynamodb dynamodbstreams
$ aws2 dynamodb delete-<TAB>
delete-backup  delete-item   delete-table
$ aws2 dynamodb delete-table --ta<TAB>
--table-name
```

AWS resource completion

v2

```
$ aws2 dynamodb delete-table --table-name <TAB>
Table1 Table2 Table3
```

AWS resource completion

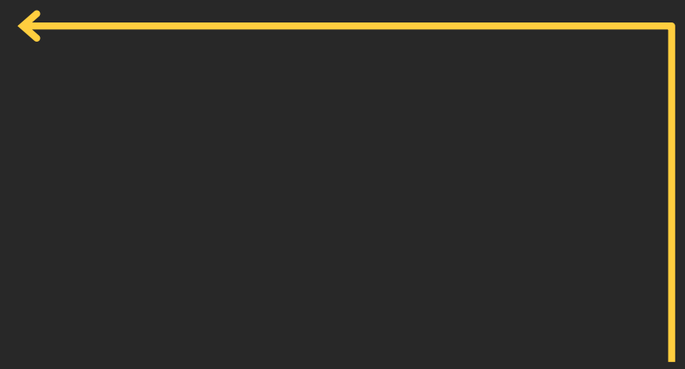
v2

```
$ aws2 dynamodb delete-table --table-name <TAB>
Table1 Table2 Table3
```

AWS resource completion

v2

```
$ aws2 dynamodb delete-table --table-name <TAB>
Table1 Table2 Table3
```

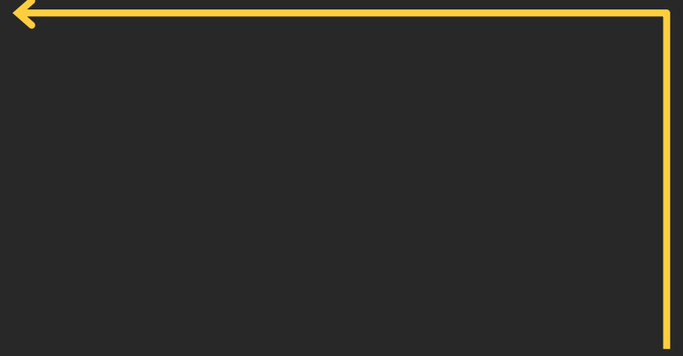


aws2 dynamodb list-tables

AWS resource completion

v2

```
$ aws2 dynamodb delete-table --table-name <TAB>
Table1 Table2 Table3
```



- Cached index of autocompletions
- Auto-generate resource completion models
- Over 5000+ completions for resources

```
aws2 dynamodb list-tables
```

YAML format

```
$ aws2 dynamodb list-tables
```

YAML format

```
$ aws2 dynamodb list-tables
{
    "TableNames": [
        "Table1",
        "Table2"
    ]
}
```

YAML format

```
$ aws2 dynamodb list-tables --output json
{
    "TableNames": [
        "Table1",
        "Table2"
    ]
}
```

YAML format

```
$ aws2 dynamodb list-tables --output yaml
```

YAML format

```
$ aws2 dynamodb list-tables --output yaml
```

v2

YAML format

v2

```
$ aws2 dynamodb list-tables --output yaml
TableNames:
- Table1
- Table2
```

YAML format

```
$ aws2 dynamodb list-tables --output yaml
TableNames:
- Table1
- Table2
```



Also supported:

- `table`
- `text`

Paging improvements



- Streaming responses
- Outputting to pager

```
$ aws ec2 describe-snapshots
```

API responses

```
{
  "Snapshots”: [
    {
      "SnapshotId": "snap-0",
    },
    ... (More snapshots)
  ]
}
```

```
$ aws ec2 describe-snapshots
```

API responses

```
{
  "Snapshots”: [
    {
      "SnapshotId": "snap-0",
    },
    ... (More snapshots)
  ]
}
```

```
{
  "Snapshots”: [
    {
      "SnapshotId": "snap-1000",
    },
    ... (More snapshots)
  ]
}
```

```
$ aws ec2 describe-snapshots
```

API responses

```
{
  "Snapshots”: [
    {
      "SnapshotId": "snap-0",
    },
    ... (More snapshots)
  ]
}
```

```
{
  "Snapshots”: [
    {
      "SnapshotId": "snap-1000",
    },
    ... (More snapshots)
  ]
}
```

```
{
  "Snapshots”: [
    {
      "SnapshotId": "snap-2000",
    },
    ... (More snapshots)
  ]
}
```

```
$ aws ec2 describe-snapshots
```

API responses

```
{
  "Snapshots”: [
    {
      "SnapshotId": "snap-0",
    },
    ... (More snapshots)
  ]
}
```

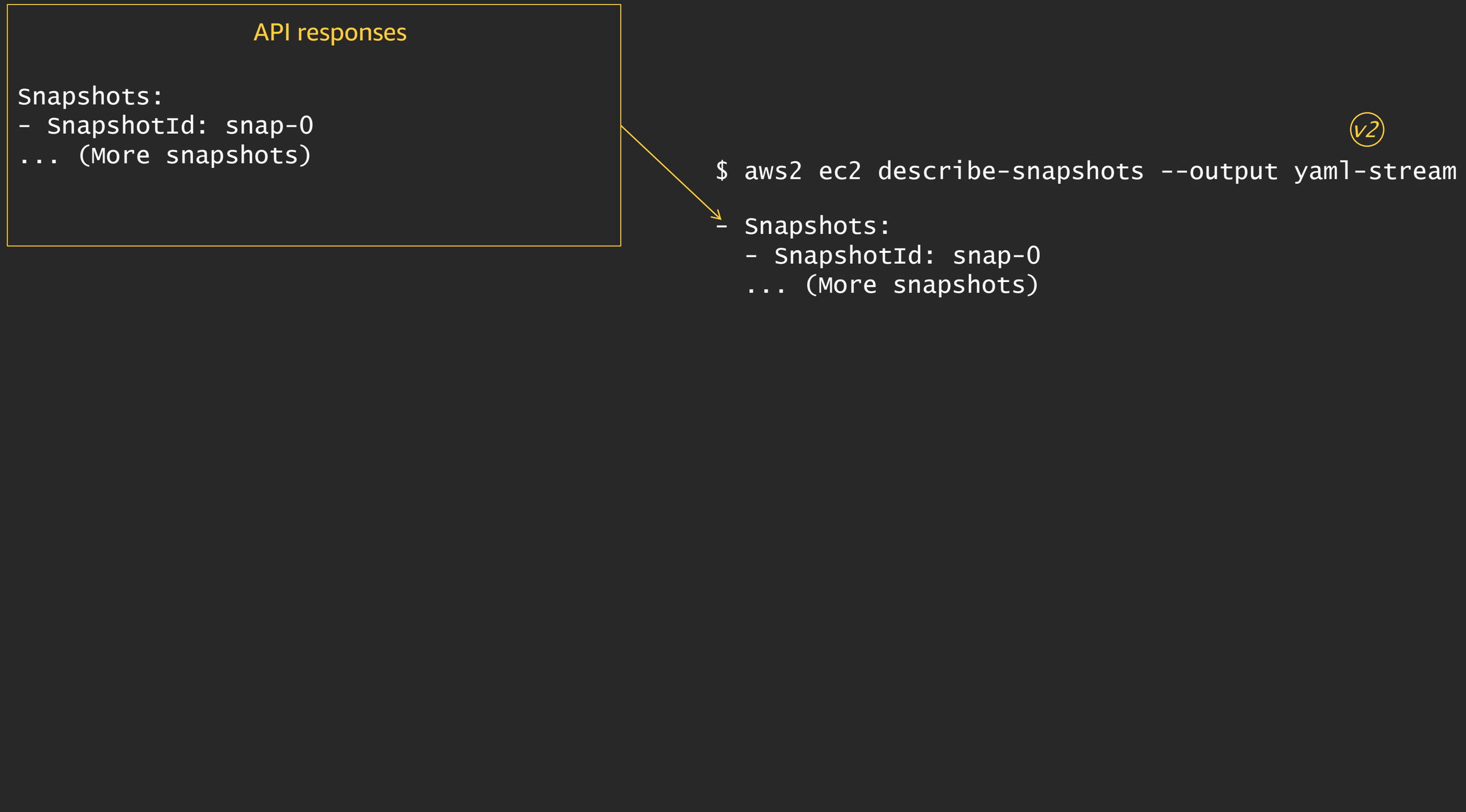
```
{
  "Snapshots”: [
    {
      "SnapshotId": "snap-1000",
    },
    ... (More snapshots)
  ]
}
```

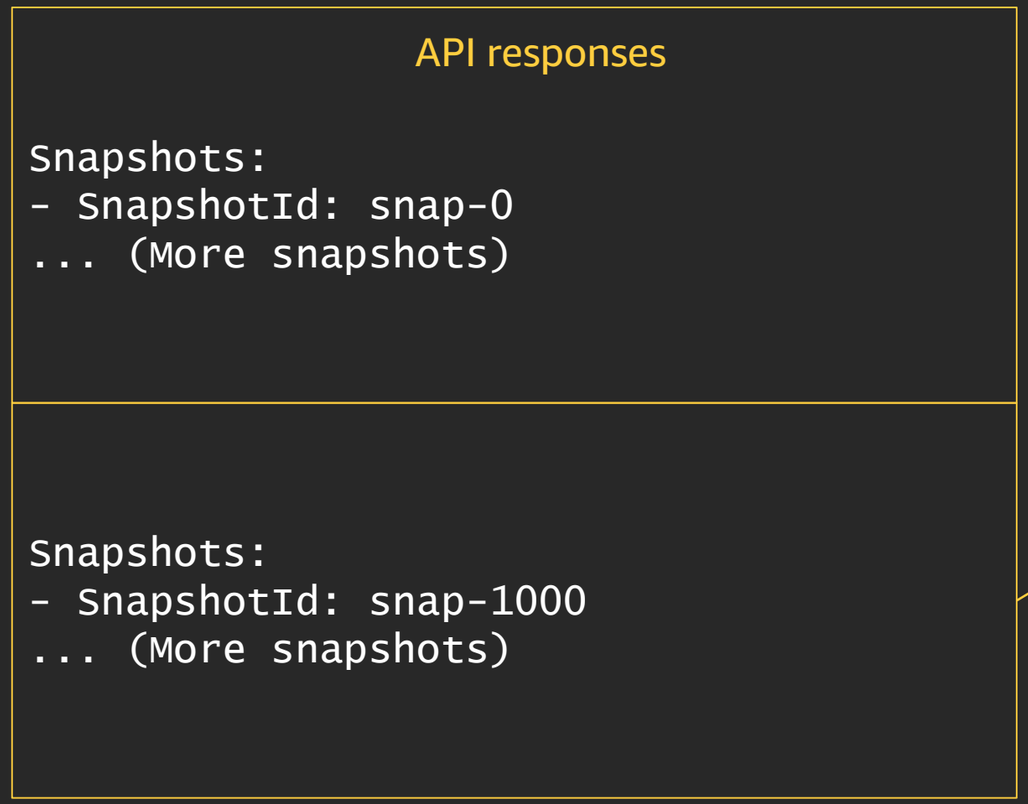
```
{
  "Snapshots”: [
    {
      "SnapshotId": "snap-2000",
    },
    ... (More snapshots)
  ]
}
```

```
$ aws ec2 describe-snapshots
{
  "Snapshots”: [
    {
      "SnapshotId": "snap-0",
    },
    ... (More snapshots)
    {
      "SnapshotId": "snap-1000",
    },
    ... (More snapshots)
    {
      "SnapshotId": "snap-2000",
    },
    ... (More snapshots)
  ]
}
```

v2

```
$ aws2 ec2 describe-snapshots --output yaml-stream
```

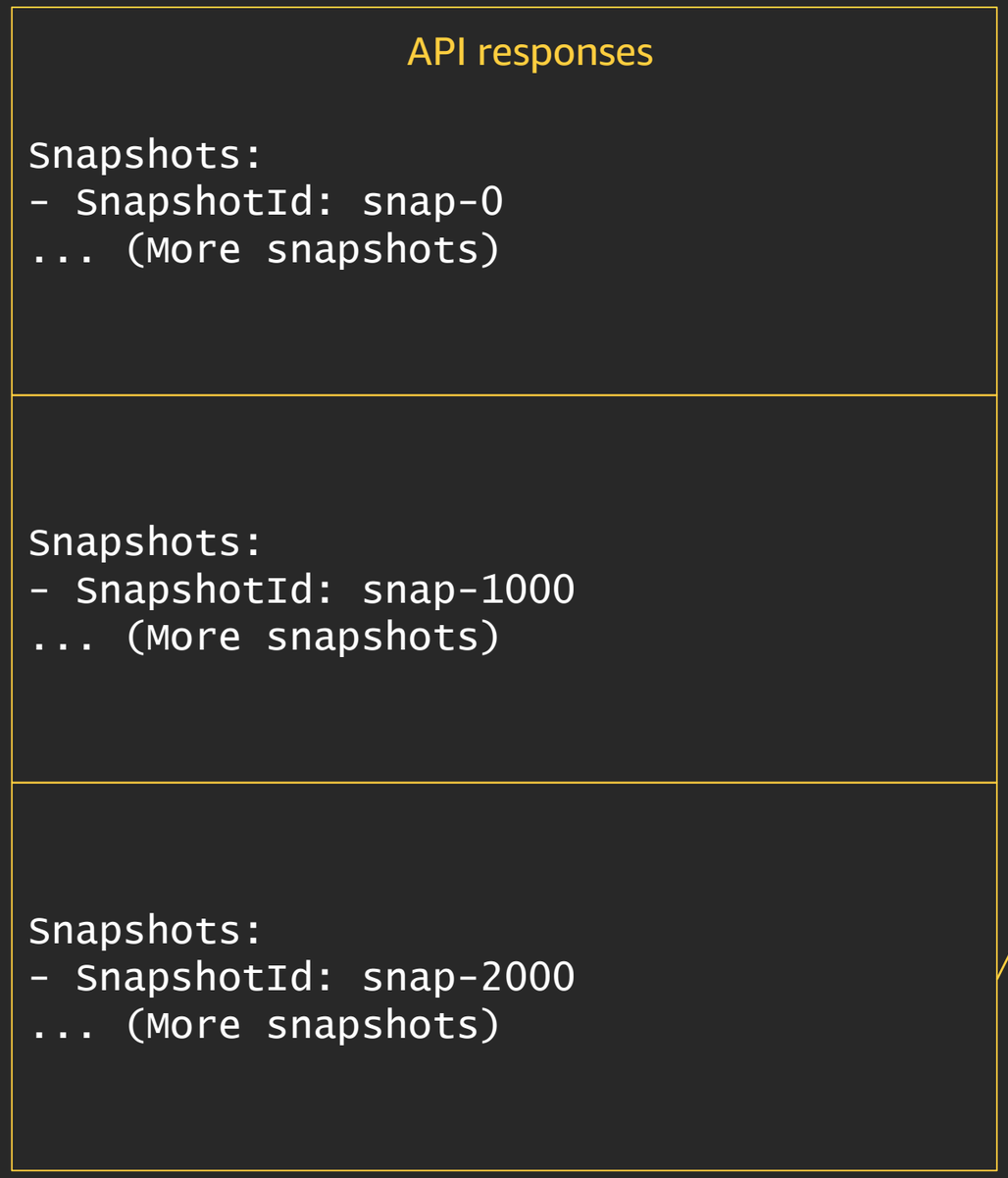

API responses
Snapshots:
- SnapshotId: snap-0
... (More snapshots)
v2
$ aws2 ec2 describe-snapshots --output yaml-stream
- Snapshots:
- SnapshotId: snap-0
... (More snapshots)



v2

```
$ aws2 ec2 describe-snapshots --output yaml-stream

- Snapshots:
  - SnapshotId: snap-0
  ... (More snapshots)
- Snapshots:
  - SnapshotId: snap-1000
  ... (More snapshots)
```



v2

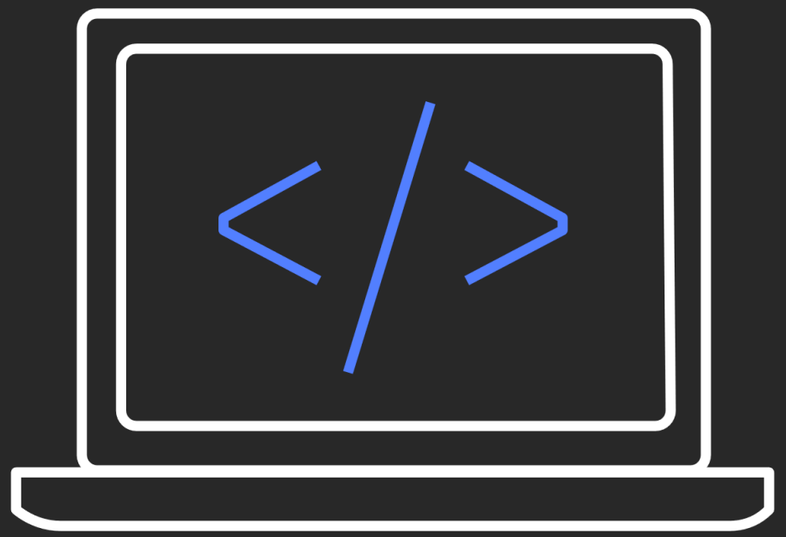
```
$ aws2 ec2 describe-snapshots --output yaml-stream

- Snapshots:
  - SnapshotId: snap-0
  ... (More snapshots)
- Snapshots:
  - SnapshotId: snap-1000
  ... (More snapshots)
- Snapshots:
  - SnapshotId: snap-2000
  ... (More snapshots)
```

Demo: Command I/O

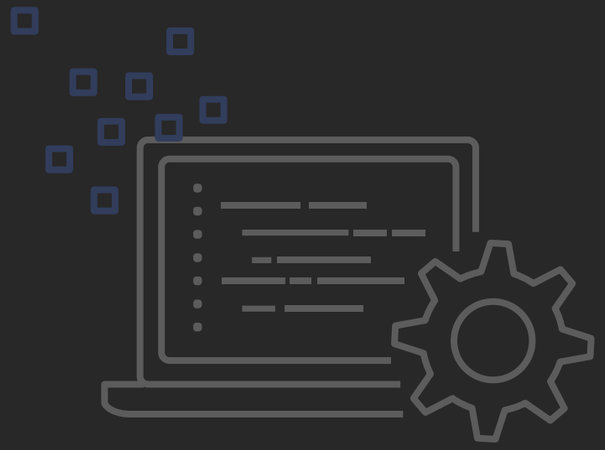
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Recap: Command I/O

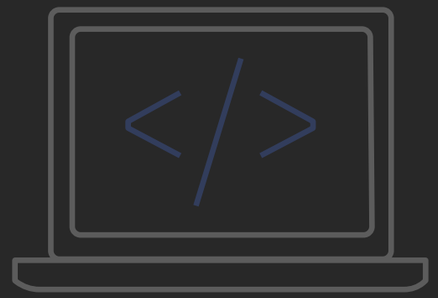


- AWS resource completion
- `--output yaml`
- Streaming output
- Outputting to pager

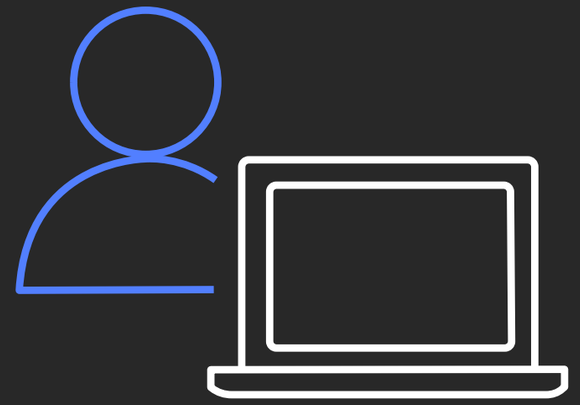
Highlights of AWS CLI v2



Installation and configuration



Command I/O

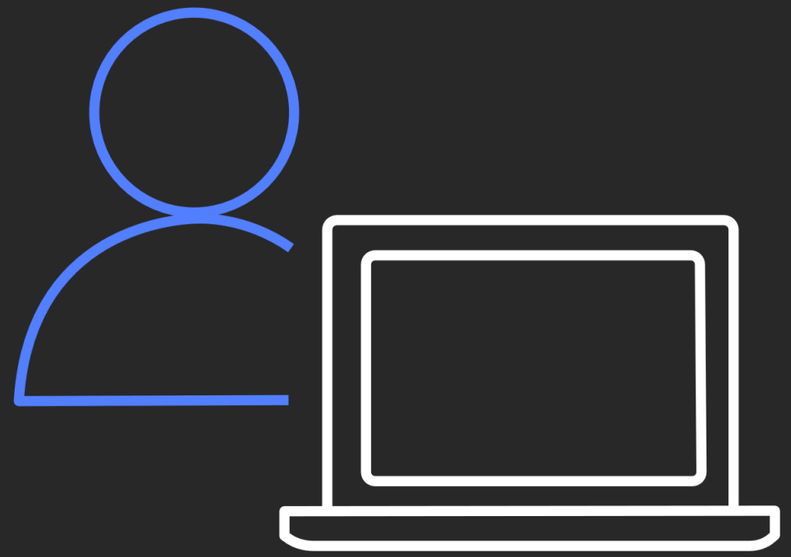


Interactive features

Interactive features

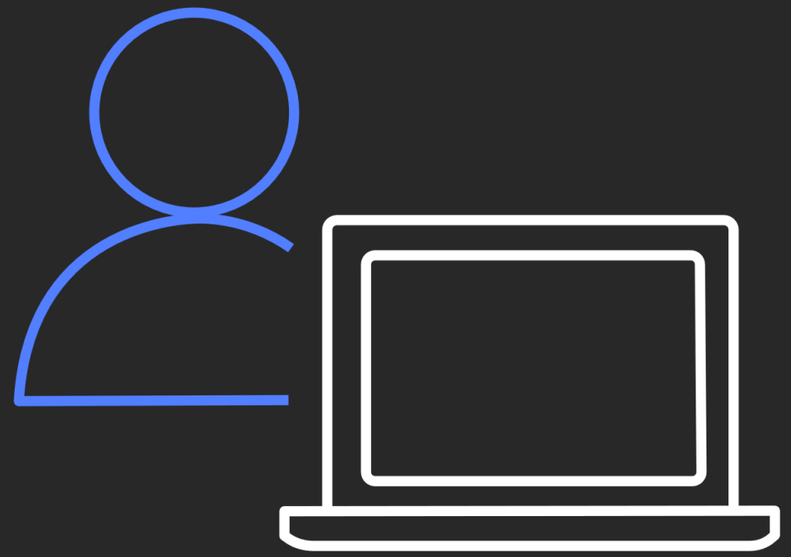
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Interactive features



- 200+ top-level CLI commands
- 6000+ total CLI commands
- 37,000+ total CLI parameters

Interactive features



- 200+ top-level CLI commands
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How can we help users?

Demo: Interactive features

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Wrapping up

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Recap

- AWS CLI v2 is in developer preview
- Download the installers and try it out. Feedback wanted!
- Configuration enhancements including AWS SSO support
- Command I/O improvements
- Wizards and interactive prompts

Next steps

AWS CLI v2 user guide
https://docs.aws.amazon.com/cli/latest/userguide/install-cliv2.html

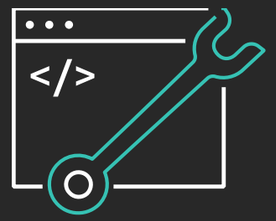
AWS CLI v2 feature requests

https://github.com/aws/aws-cli/labels/v2

AWS CLI v2 blog posts
https://aws.amazon.com/blogs/developer/category/programing-language/aws-cli/

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Thank you!

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