Hello, Cloud Gurus

and welcome to this lecture.

This lecture is all about AWS CLI Pagination.

So, what does that mean?

Well, with CLI Pagination, you can actually

control the number of items

included in the output when you run

an AWS CLI command.

By default, it's going to return 1,000 items

per API call.

They call that the page size.

So by default, the AWS CLI uses a page size of 1,000.

But, what if you want to run a command

which is going to return more than 1,000 objects?

So, for example, if you ran

AWS S3 API list objects on a bucket,

which contains over 2,000 objects.

So, for example, if it contained 2,500 objects,

then the CLI is actually going to make three

separate API calls to S3.

But then, it's going to display the entire output in one go.

So, it's actually making those three

API calls in the background.

However, for some situations,

you might find that this default page size of 1,000

is actually too high.

For example, if you see errors when you're running

list commands on a large number of resources.

For example, if you had an S3 bucket

with well over 1,000 objects,

and you were trying to list the individual objects

within that S3 bucket,

you might see something like a time out

or timed out error

because the API calls have exceeded the maxiumum

allowed time to fetch the required results.

It's just taking too long to return

the number of results that you have.

So, how do you fix this?

Well, you can actually adjust the default page size

when you run your command.

You basically just add this minus minus page size option

to tell the CLI to request a smaller number of items

from each API call.

So, the CLI will still retrieve the full list of objects,

but it's just going to perform a larger number

of API calls in the background.

So, it makes multiple API calls to get your results,

and then retrieves a smaller number of items with each call,

and then it will just return to you the full list of items.

So, I've got a couple of commands to show you.

The first one is this AWS S3 API list objects,

and then you specify the bucket name,

and then you can actually specify the page size at the end.

In this example, we're setting the page size

to 100 instead of 1,000.

If you had an S3 bucket which contained over 1,000 items,

and you wanted to limit the page size to 100,

it would just end up making over 10 API calls

to get the results and then it will just return

all of the results to you in one go.

There's this other option that you can use

with the list objects command,

and it's called max items.

This allows you to return fewer items in the CLI output.

In the example command, we've got AWS S3 API list objects,

and then we're setting the bucket to my bucket,

and then we're setting the max items to 100.

In this case, instead of returning

all of the items in the bucket,

it's just going to return the first 100.

Now, I'm just going to show you how to use those commands

in the terminal.

Don't worry, you don't actually need to know how to

use these commands for the exam.

I'm just showing you 'cause it's fun,

and to give you that background.

Here I am in the terminal window.

I don't have a bucket which has thousands of objects in it,

but I do have one that's got about 20 objects.

That should be enough to show you the commands

and show you how they work.

First of all, I'm going to use this

S3 API list objects command.

This is just going to list all of the objects in my bucket.

There we are, that's all my objects.

I've got around 20 or just over 20 objects in this bucket.

So, that's my output.

I'm now going to run that same command again

and I'm going to use a page size of five.

I'm going to use a really low page size

because we've only got 20 items in the bucket.

I'm just going to hit that command again.

There we are.

You'll see that even though we have a page size of five,

it's actually still retrieving

all 20 objects from my bucket.

It's running multiple API calls

to retrieve the contents of my bucket,

but it just returns it all in one go,

as though it was just running it in one single command.

The other command I wanted to show you,

is using the max items option.

Here is the command, so we're still running

exactly the same AWS S3 API list objects.

We're specifying the bucket name,

and then we just add the minus minus max items

on the end of that command,

and I'm just going to set the max items to one.

Hit enter.

There we are, it just returns the first item it comes to.

That is just another way, or another option,

for dealing with this time out error.

Don't worry, you don't need to know

how to use these commands for the exam.

I'm just showing you because it makes it a little bit

more interesting and a little bit easier to understand.

What are our exam tips for AWS CLI Pagination?

You just need to remember that if you do see errors

like timed out, or errors relating to too many results

being returned to a CLI command,

all you need to do is adjust the Pagination

of the CLI results,

and that will help avoid any errors getting generated

by too many results.

In order to do that you just add the minus minus

page size, and adjust your page size so that it's

below the default of 1,000.

When you do this, the CLI is still going to retrieve

the full list.

It just performs a larger number of API calls

in the background,

but it will still return the full set of results.

So, that is everything that you should need to know

for the exam about CLI Pagination,

and dealing with time out errors on the CLI.

If you have any questions, please let me know.

If not, feel free to move on to the next lecture.

Thank you.