Amazon AWS Screen Reader Test

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Tested using NVDA and JAWS on Windows as well as VoiceOver on Mac

Summary
When performing the tasks in these exercises, it was possible to complete all tasks. Since all of this work is performed on the command line, a screen reader user should have no problems performing the tasks as long as they are comfortable navigating the text history with their reader of choice.

Installing the Client
- I had no trouble navigating to the Amazon page to download the client. The installer used standard Windows controls so was completely accessible for screen readers.
- The Mac installer uses pip which is command line based and therefore works fine with VoiceOver which is the screen reader on the Mac platform.

Configuring the AWS Command Line Utility
I had no problems with this task. I opened the CSV file in a spreadsheet program (LibreOffice Calc) and pasted the results that were required in the configuration section of the program.

Creating a User
- I had no problems with this exercise. I liked how the client produced a detailed verification message of what was occurring.

Attaching Admin Policy
- No issues with this task.

Creating a Bucket
- No problems with this task. I like that while using these commands, the client returns a zero value for successful completion and another integer when there is errors. This would make scripting with this tool very handy.

Deleting a Bucket
  - No issues were encountered when performing this task with screen readers.

Creating a Key Pair
- No issue performing this task. The white space made this friendly for screen reader navigation.
Applying Firewall Rules

- I had no problem applying the firewall rules.

Filtering for AMIs

- No issues with these tasks. The white space in the tables made the output very friendly for screen reader users. Output was similar for Windows and Linux virtual machines because these tasks involve performing different searches with the same command so I put these tasks together under this heading.

Starting Virtual Machines Windows and Linux

- I had no issues with this besides the VPC issue which we worked out. The info that this prints to the terminal is easy to read with screen readers. It is printed in a nice tabular format which allows efficient navigation through all the info provided.

Status Command

- There are no problems when reading the output generated by the status commands.

Web Pages after Launching Servers

- I had no problem accessing these pages with screen readers in web browsers to read the message that the server was successfully running.

Instructions for reading Command Line Output from Screen Readers

- JAWS and NVDA both work fine with the stock cmd.exe utility included with Windows.

NVDA

- NVDA’s review mode actually looks at the underlying code for the output control so it is possible to read text even if it is scrolled off the screen.

- When navigating text on the command line, you use NVDA’s review mode keys. They are all listed in the NVDA quick reference guide but the most important ones are below.

- Go to the previous line of output:
  - Desktop: numpad7
  - Laptop: NVDA+up arrow

- Go to the next line of output:
  - Desktop: numpad9
  - Laptop: NVDA+down arrow
Go to the previous word on the command line:
  ◦ Desktop: numpad4
  ◦ Laptop: NVDA+Control+left arrow

Go to the next word on the command line:
  ◦ Desktop: numpad6
  ◦ Laptop: NVDA+Control+right arrow

Go to the previous character on the command line:
  ◦ Desktop: numpad1
  ◦ Laptop: NVDA+left arrow

Go to the next character on the command line:
  ◦ Desktop: numpad3
  ◦ Laptop: NVDA+right arrow

**JAWS**

- It is possible to view the command line with JAWS, however, the JAWS Cursor must be used. Unlike NVDA, the JAWS Cursor actually reads the text that is displayed in the Window so it is beneficial to maximize the Window so that more text can be read at one time.

**Keystrokes for Reviewing Command Line Output with JAWS**

- Like NVDA, JAWS will automatically read text that is printed to the terminal.

- To actually review the text, it is necessary to use the JAWS Cursor, which provides a way to explore the screen similar in scope to mouse access.

- After switching to the JAWS Cursor, it is first necessary to route the JAWS cursor to the PC cursor. Since the PC Cursor follows system focus, this ensures that when the user starts reading with the JAWS cursor, they will be in the correct place in the correct Window to read the history from the commands previously typed.

- Activate JAWS Cursor:
  ◦ Desktop: numpad-
  ◦ Laptop: Caps lock+p

- Route JAWS Cursor to PC Cursor:
- Desktop: Insert+numpad-
• Laptop: Caps lock+[

• At this point, it is possible to use the arrow keys as you would normally read a document on both desktop and laptop.
  ◦ Up and down arrows move by line.
  ◦ Left and right arrows move by character.
  ◦ Control+left and right arrows move by word.

• Once done reviewing, switch back to PC Cursor to restore normal operation of keyboard commands.
  ◦ Desktop: numpad+
  ◦ Laptop: Caps lock+;

**VoiceOver Mac Access**

• I used the stock terminal application which can be launched from Utilities under Applications in Finder.

• VoiceOver automatically reads text that is printed to the terminal and commands are available to review the screen.

• Once open, use Control+Option+right arrow to move the focus to where VoiceOver says shell. It is the last item in the window.

• Interact with this object using Control+Option+Shift+down arrow.

• Use Control+Option+up arrow to read the previous line.

• Use Control+Option+down arrow to read the next line.

• Use Control+Option+left arrow to read the previous word.

• Use Control+Option+right arrow to read the next word.

• Use Control+Option+Shift+left arrow to read the previous character.

• Use Control+Option+Shift+right arrow to read the next character.