0x42c Documentation

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CHAPTER 1

FAQ

- How do I use the 0x42c Kernel?

First include the kernel jump table in your source code by using the assembler directive `.include "kern_jumptable.dasm16"`. For this to work you need to ensure the kernel jumptable file is in the same directory as your source file.

Then, when you want to use a kernel routine, set the appropriate registers to the parameters using the overview below and run the __JSR__ instruction (jump to sub-routine), passing the address of the desired routine from the jump table. For example:

```
hello dat "Hello, World!", 0`
set a, hello`
jsr [kern_printnl]
```

- It won't assemble!

  Make sure you're using noname22's assembler

CHAPTER 2

Kernel functions

[0x002] kern_return

Warning: Deprecated.

[0x003] kern_strcmp

Compares two strings, sets A to 0 if they are equivalent

Input:

Input	Description
A	The first string
B	The second string

Output:

Output	Condition
0	A === B
<> 0	A != B

[0x005] kern_startswith

Checks whether the first string starts with the second string, sets Y to 0 if it does.

Input:

Input	Description
A	The first string
B	The second string

Output:

Output	Condition
0	A starts with B
<> 0	A does not start with B

[0x007] kern_strlen

Sets A to the length of the given string

Input:

Input	Description
A	The first string

Output:

Output	Condition
n	The length of zero-terminated string A

[0x009] kern_strcat

Concatenates two strings

Input:

Input	Description
A	The first string
B	The second string

Output:

Output	Condition
pointer	–

Note: strcat currently only appends one character.

[0x00B] kern_print

Prints a string

Input:

Input	Description
A	The string

[0x00D] kern_printnl

Prints a string followed by a new line

Input	Description
A	The string

[0x00F] kern_printchar

Prints a character

Input	Description
A	The character

[0x011] kern_newline

Prints a new line

[0x013] kern_scroll

Scrolls the screen one line up.

[0x015] kern_clear

Clears the screen.

[0x017] kern_vidmem

Warning: Deprecated.

[0x018] kern_backspace

Warning: Deprecated.

[0x01A] kern_memcpy

Copies n words from dst to src.

Input:

Input	Description
A	The destination address
B	The source address
C	The number of words to copy

Note: It does not do error checking. Yet.

[0x01C] kern_reserve

Warning: Deprecated.

[0x01E] kern_malloc

Returns a pointer with n words of free space ahead of it.

Input:

Input	Description
A	The number of words requested.
B	The owner of the memory to be allocated.

Output:

Output	Condition
pointer	–

[0x020] kern_memset

Sets n words of dst to a constant word.

Input:

Input	Description
A	The destination address
B	The word that will fill the destination address.
C	The number of words to fill

[0x022] kern_free

Sets free a memory block, and attempts free-block merges.

Input:

Input	Description
A	Pointer to the memory to be freed

[0x024] kern_readline

Reads a line (sequence of characters ended by a newline, not included).

Input:

Input	Description
A	The buffer in which the line should be copied.

Note: You will need to allocate the buffer yourself. Example:

```
set a, 32
set b, 0x42c
jsr [kern_malloc] ; buffer gets passed to readline as an argument
jsr [kern_readline]
```

[0x026] kern_itoa

Converts a number to ASCII.

Input:

Input	Description
A	Number.
B	The buffer in which the character sequence will be stored.
C	Radix

Note: You will need to allocate the buffer yourself. Example:

```
set a, 10
set b, 0xDEAD
jsr [kern_malloc]
```