

GCIS Hash-to-Password Recovery & Cryptographic Side-Channel Report

CHARGE ANALYSIS - OVERVIEW

INDIVIDUAL VALUES (20 characters):

```
'0' -> -1 '1' -> -1 '2' -> -1 '3' -> -1
'4' -> -1 '5' -> -1 '6' -> -1 '8' -> -1
'A' -> -1 'L' -> -1 'P' -> -1 'R' -> -1
'T' -> -1 'W' -> -1 'b' -> -1 'c' -> -1
'e' -> -1 'h' -> -1 'k' -> -1 's' -> -1
```

TOTAL: $20x - 1$, $0x + 1$

SIGNIFICANT (100.0% uniform charge) - Dominant charge: -1

PATTERN CONSISTENCY ANALYSIS

20/20 bytes show 100% pattern consistency
RESULT: All password bytes have UNIQUE, CONSISTENT sign patterns

STATISTICAL SUMMARY

Pearson Correlation: 1.0000
Bit-Sign Agreement: 100.00%

INPUT DATA

```
 Password: PeRTh5s80L12Ab34ck6W  
 Password Bitstring:  
 01010000 01100101 01010010 01010100 01101000 00110101 01110011 00111000 00110000 01001100  
 00110001 00110010 00100001 00110000 01100010 00110011 00110100 01100011 01101011 00110110 01010111
```

Layer 1 (es17): 2048 bits

Layer 2 (es18): 4096 bits

Bitstring:
01100011001110

Sign sequence (complete):

PAGE 2: LAYER DATA + CHARGE DETAILS

LAYER: es17 (2048 bits)

Bitstring:

Character positions and charges:

```
'0' @ 160-->-1, 177-->-1, 324-->-1, 674-->-1 -> Charge: -1
'1' @ 216-->-1, 298-->-1, 353-->-1, 456-->-1 -> Charge: -1
'2' @ 0-->-1, 153-->-1, 367-->-1, 701-->-1 -> Charge: -1
'3' @ 117-->-1, 121-->-1, 212-->-1, 461-->-1 -> Charge: -1
'4' @ 145-->-1, 286-->-1, 303-->-1, 798-->-1 -> Charge: -1
'5' @ 1590-->-1, 1744-->-1, 1852-->-1 -> Charge: -1
'6' @ 85-->-1, 125-->-1, 221-->-1, 680-->-1 -> Charge: -1
'8' @ 231-->-1, 575-->-1, 587-->-1, 869-->-1 -> Charge: -1
'A' @ 281-->-1, 307-->-1, 338-->-1, 372-->-1 -> Charge: -1
'L' @ 158-->-1, 454-->-1, 1061-->-1 -> Charge: -1
'P' @ 106-->-1, 167-->-1, 260-->-1, 279-->-1 -> Charge: -1
'R' @ 77-->-1, 446-->-1, 735-->-1, 825-->-1 -> Charge: -1
'T' @ 75-->-1, 267-->-1, 444-->-1, 637-->-1 -> Charge: -1
'W' @ 359-->-1, 505-->-1, 608-->-1, 621-->-1 -> Charge: -1
'b' @ 354-->-1, 388-->-1, 914-->-1, 1017-->-1 -> Charge: -1
'c' @ 21-->-1, 217-->-1, 299-->-1, 457-->-1 -> Charge: -1
'e' @ 490-->-1, 684-->-1, 821-->-1, 1155-->-1 -> Charge: -1
'h' @ 146-->-1, 304-->-1, 848-->-1, 856-->-1 -> Charge: -1
'k' @ 485-->-1, 782-->-1, 1409-->-1, 1591-->-1 -> Charge: -1
's' @ 10-->-1, 363-->-1, 1264-->-1, 1362-->-1 -> Charge: -1
```

LAYER: es18 (4096 bits)

Bitstring:

10001011001100010011110100110010010011010000011101001010100001110111100000100001010011011010101
11010110110101011000111100001101100001010100010101000111111110001010100110000100000011011111011
10010110111
Sign sequence: -1, +1, +1, -1, -1, +1, +1, -1, -1, +1, +1, +1, -1, -1, +1, -1, +1, +1, -1, -1, +1, +1, +1, -1, -1, -1,
+1, -1, +1, +1, -1, -1, -1, +1, -1, +1, -1, +1, +1, ...

Character positions and charges:

'0' @ 197-->1, 700-->1, 746-->1, 1682-->1 -> Charge: -1
'1' @ 186-->1, 325-->1, 405-->1, 529-->1 -> Charge: -1
'2' @ 497-->1, 1409-->1, 1502-->1, 1631-->1 -> Charge: -1
'3' @ 4-->1, 340-->1, 344-->1, 355-->1 -> Charge: -1
'4' @ 659-->1, 1254-->1, 1278-->1, 1517-->1 -> Charge: -1
'5' @ 83-->1, 225-->1, 299-->1, 442-->1 -> Charge: -1
'6' @ 348-->1, 483-->1, 582-->1, 1750-->1 -> Charge: -1
'8' @ 77-->1, 243-->1, 1029-->1, 1204-->1 -> Charge: -1
'A' @ 72-->1, 192-->1, 695-->1, 848-->1 -> Charge: -1
'L' @ 184-->1, 495-->1, 744-->1, 1359-->1 -> Charge: -1
'P' @ 693-->1, 846-->1, 943-->1, 1320-->1 -> Charge: -1
'R' @ 396-->1, 502-->1, 927-->1, 1264-->1 -> Charge: -1
'T' @ 158-->1, 653-->1, 691-->1, 728-->1 -> Charge: -1
'W' @ 288-->1, 310-->1, 383-->1, 458-->1 -> Charge: -1
'b' @ 187-->1, 326-->1, 406-->1, 586-->1 -> Charge: -1
'c' @ 0-->1, 438-->1, 530-->1, 1234-->1 -> Charge: -1
'e' @ 152-->1, 498-->1, 1111-->1, 1386-->1 -> Charge: -1
'h' @ 660-->1, 1225-->1, 1255-->1, 1279-->1 -> Charge: -1
'k' @ 47-->1, 84-->1, 300-->1, 443-->1 -> Charge: -1
's' @ 321-->1, 336-->1, 632-->1, 1513-->1 -> Charge: -1

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PASSWORD BYTE SIGN PATTERNS

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BYTE 0 | ASCII: 'P' | Bit Pattern: 01010000
Found at 23 location(s)
SIGN PATTERN: -1 +1 -1 +1 -1 -1 -1 -1
CONSISTENCY: 100.0%
BIT-SIGN MATCH: 100.0%

BYTE 1 | ASCII: 'e' | Bit Pattern: 01100101
Found at 19 location(s)
SIGN PATTERN: -1 +1 +1 -1 -1 +1 -1 +1
CONSISTENCY: 100.0%
BIT-SIGN MATCH: 100.0%

BYTE 2 | ASCII: 'R' | Bit Pattern: 01010010
Found at 25 location(s)
SIGN PATTERN: -1 +1 -1 +1 -1 -1 +1 -1
CONSISTENCY: 100.0%
BIT-SIGN MATCH: 100.0%

BYTE 3 | ASCII: 'T' | Bit Pattern: 01010100
Found at 31 location(s)
SIGN PATTERN: -1 +1 -1 +1 -1 +1 -1 -1
CONSISTENCY: 100.0%
BIT-SIGN MATCH: 100.0%

BYTE 4 | ASCII: 'h' | Bit Pattern: 01101000
Found at 33 location(s)
SIGN PATTERN: -1 +1 +1 -1 +1 -1 -1 -1
CONSISTENCY: 100.0%
BIT-SIGN MATCH: 100.0%

BYTE 5 | ASCII: '5' | Bit Pattern: 00110101
Found at 20 location(s)
SIGN PATTERN: -1 -1 +1 +1 -1 +1 -1 +1
CONSISTENCY: 100.0%
BIT-SIGN MATCH: 100.0%

BYTE 6 | ASCII: 's' | Bit Pattern: 01110011
Found at 22 location(s)
SIGN PATTERN: -1 +1 +1 +1 -1 -1 +1 +1
CONSISTENCY: 100.0%
BIT-SIGN MATCH: 100.0%

BYTE 7 | ASCII: '8' | Bit Pattern: 00111000
Found at 27 location(s)
SIGN PATTERN: -1 -1 +1 +1 +1 -1 -1 -1
CONSISTENCY: 100.0%
BIT-SIGN MATCH: 100.0%

BYTE 8 | ASCII: '0' | Bit Pattern: 00110000
Found at 15 location(s)
SIGN PATTERN: -1 -1 +1 +1 -1 -1 -1 -1
CONSISTENCY: 100.0%
BIT-SIGN MATCH: 100.0%

BYTE 9 | ASCII: 'L' | Bit Pattern: 01001100
Found at 19 location(s)
SIGN PATTERN: -1 +1 -1 -1 +1 +1 -1 -1
CONSISTENCY: 100.0%
BIT-SIGN MATCH: 100.0%

BYTE 10 | ASCII: '1' | Bit Pattern: 00110001
Found at 27 location(s)
SIGN PATTERN: -1 -1 +1 +1 -1 -1 -1 +1
CONSISTENCY: 100.0%
BIT-SIGN MATCH: 100.0%

BYTE 11 | ASCII: '2' | Bit Pattern: 00110010
Found at 24 location(s)
SIGN PATTERN: -1 -1 +1 +1 -1 -1 +1 -1
CONSISTENCY: 100.0%
BIT-SIGN MATCH: 100.0%

BYTE 12 | ASCII: 'A' | Bit Pattern: 01000001
Found at 37 location(s)
SIGN PATTERN: -1 +1 -1 -1 -1 -1 -1 +1
CONSISTENCY: 100.0%
BIT-SIGN MATCH: 100.0%

BYTE 13 | ASCII: 'b' | Bit Pattern: 01100010
Found at 22 location(s)
SIGN PATTERN: -1 +1 +1 -1 -1 -1 +1 -1
CONSISTENCY: 100.0%
BIT-SIGN MATCH: 100.0%

BYTE 14 | ASCII: '3' | Bit Pattern: 00110011
Found at 27 location(s)
SIGN PATTERN: -1 -1 +1 +1 -1 -1 +1 +1
CONSISTENCY: 100.0%
BIT-SIGN MATCH: 100.0%

BYTE 15 | ASCII: '4' | Bit Pattern: 00110100
Found at 32 location(s)
SIGN PATTERN: -1 -1 +1 +1 -1 +1 -1 -1
CONSISTENCY: 100.0%
BIT-SIGN MATCH: 100.0%

BYTE 16 | ASCII: 'c' | Bit Pattern: 01100011
Found at 29 location(s)
SIGN PATTERN: -1 +1 +1 -1 -1 -1 +1 +1
CONSISTENCY: 100.0%
BIT-SIGN MATCH: 100.0%

BYTE 17 | ASCII: 'k' | Bit Pattern: 01101011

Found at 24 location(s)

SIGN PATTERN: -1 +1 +1 -1 +1 -1 +1 +1

CONSISTENCY: 100.0%

BIT-SIGN MATCH: 100.0%

BYTE 18 | ASCII: '6' | Bit Pattern: 00110110

Found at 20 location(s)

SIGN PATTERN: -1 -1 +1 +1 -1 +1 +1 -1

CONSISTENCY: 100.0%

BIT-SIGN MATCH: 100.0%

BYTE 19 | ASCII: 'W' | Bit Pattern: 01010111

Found at 28 location(s)

SIGN PATTERN: -1 +1 -1 +1 -1 +1 +1 +1

CONSISTENCY: 100.0%

BIT-SIGN MATCH: 100.0%

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