Binary, Hexadecimal, and Base64

5m intro

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what are we gonna learn today?

what are we gonna learn today?

how to recognize common encodings that come up a lot in programming/CTFs

binary hexadecimal base64

1s and 0s



012...789

base 10

we have 10 fingers

9 -> 10

base 10

1s and 0s

what if we just had two fingers?

0 -> 1

1 -> 10

1 -> 2

1 -> 10 -> 11

1 -> 2 -> 3

how would you write 4 in binary?

11?

how would you write 4 in binary?

11?

100,

how would you write 4 in binary?

11?

100,

^ one 4, zero 2's, zero one's

1011

^ one 8, ^ zero 4's

^ one 2, one 1

There are only 10 types of people in the world: Those who understand binary, and those who don't.

Binary	Decimal
0000	0
0001	1
0010	2
0011	3
0100	4
0101	5
0110	6
0111	7
1000	8
1001	9
1010	10
1011	11
1100	12
1101	13
1110	14
1111	15

В	inary	Decimal	
	0000	0	
C	0001	1	
C	010	2	
C	0011	3	
C	0100	4	pretend you have 16 fingers
C	0101	5	
C	0110	6	
C	0111	7	
1	1000	8	
1	1001	9	
1	1010	10	
1	1011	11	
1	1100	12	
1	1101	13	
1	1110	14	
1	1111	15	

Binary	Decimal	Hex
0000	0	0
0001	1	1
0010	2	2
0011	3	3
0100	4	4
0101	5	5
0110	6	6
0111	7	7
1000	8	8
1001	9	9
1010	10	Α
1011	11	В
1100	12	С
1101	13	D
 1110	14	E
1111	15	F

789ABCDEF

789101112131415

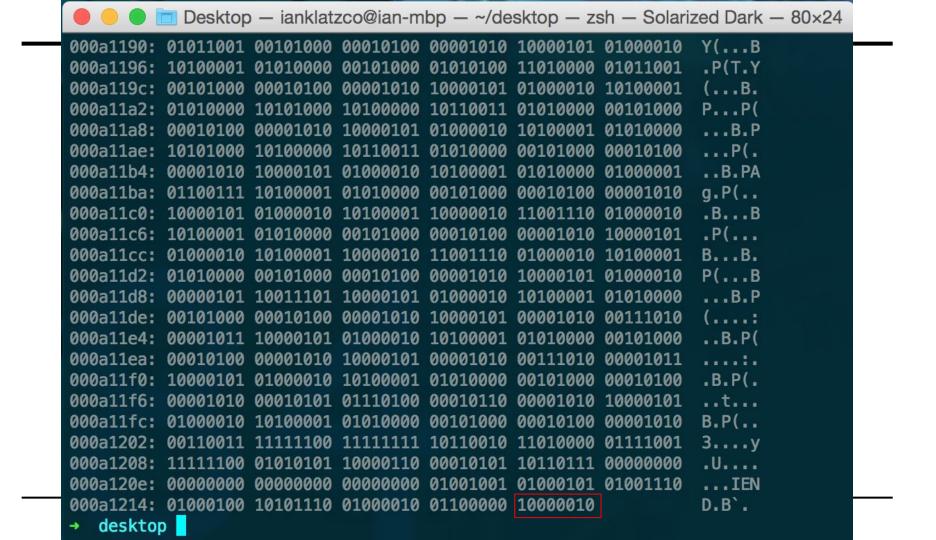
F -> 10

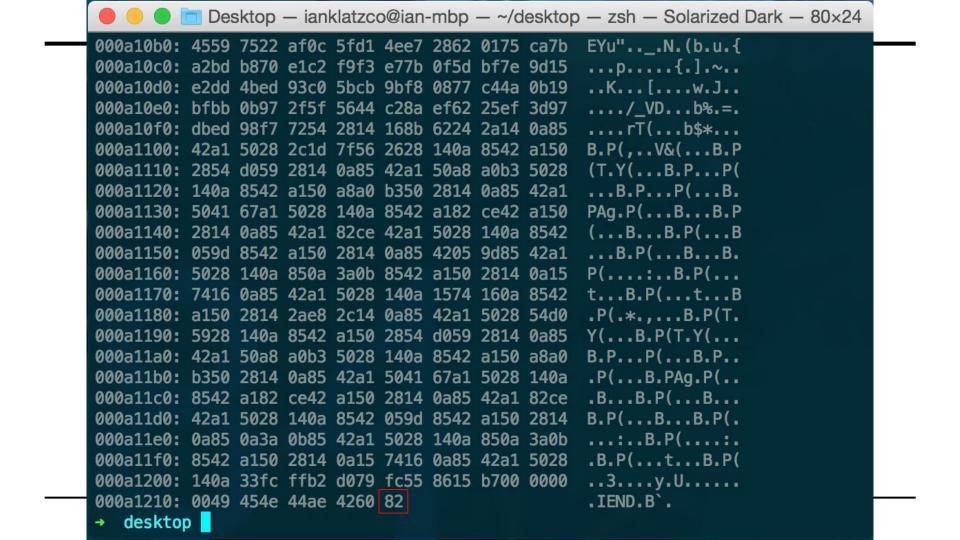
15 -> 16

10 -> 11 -> 12

16 -> 17 -> 18 in base 10

Binary	Decimal	Hex
0000	0	0
0001	1	1
0010	2	2
0011	3	3
0100	4	4
0101	5	5
0110	6	6
0111	7	7
1000	8	8
1001	9	9
1010	10	Α
1011	11	В
1100	12	С
1101	13	D
 1110	14	E
1111	15	F





```
E42Q+sQGtkRNUXIy8tAAidw/3Trhlu5zIrmOytOzaDViLnbKOArC9Mt9S2ItigRE8s80wGNntXxOyeVG
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TucoYgF1ynuivbhw4cL58+d7D12/fp0V4t1L7ZPAW8ub+Ah3xEoLGb+7C5cvX1ZEworvYiXvPZfb7Zj3
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```

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Challongo

Challenge

39 Solves

what is base (2^6) 50

answer: a very common encoding format in ctf

Q1RGe2Jhc2VkX29mX3RoZV82NHRofQ==

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Simply use the form below

VkdobElHWnNZV2NnYVhNZ0luZG9iMjl3YVc1bklHTnZkV2RvSWc9PQ==

VGhlIGZsYWcgaXMgIndob29waW5nIGNvdWdoIg==