Practical demonstration of Bananb Target Collisions for Skein with NIST KAT files

Presented by

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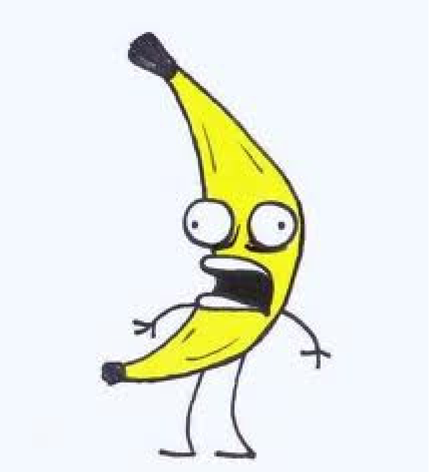
Last year at CRYPTO 2010, Rump Session

Banana Attack

On Blue Midnight Wish by Gaëtan Leurent



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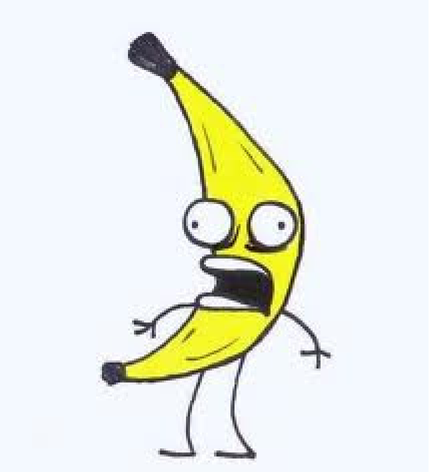


This year on Rump Session

Bananb Attack

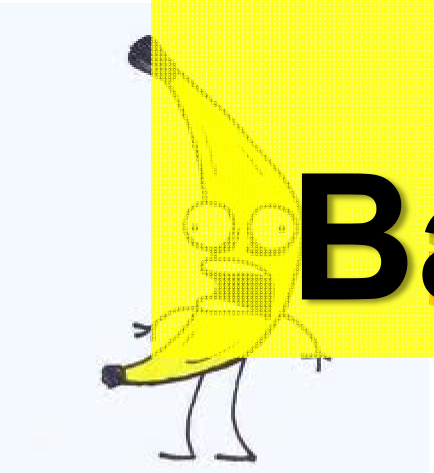
On Skein (and others)

Bananb Attack is a philosophical sibling to Banana Attack

CRYPTO 2010, Rump Session

Banana Attack

Bananb Attack



Demonstration of Bananb Target Collisions for Skein with NIST KAT files

Message 1: ”Banana Attacks are crap”

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Message 1: ”Banana Attacks are crap”

Message 2: ”Banana Attacks are craq”

Demonstration of Bananb Target Collisions for Skein with NIST KAT files

Message 1: ”h(s&@h3w%!Banana Attacks are crap”

Message 2: ”h(s&@h3w%!Banana Attacks are craq”

Prepend a garbage

(computed by an undisclosed algorithm)

Demonstration of Bananb Target Collisions for Skein with NIST KAT files

Transform to hexadecimal

Message 1: ”h(s&@h3w%!Banana Attacks are crap”

6828732640683377252142616E616E612041747461 636B7320617265206372617０

Message 2: ”h(s&@h3w%!Banana Attacks are craq”

6828732640683377252142616E616E612041747461 636B73206172652063726171

Demonstration of Bananb Target Collisions for Skein with NIST KAT file

Produce a NIST KAT file ShortMsgKAT.txt

```
# ShortMsgKAT.txt
# Algorithm Name: Practical demonstration of Bananb Target Collisions for Skein with NIST KAT files
# Principal Submitter: Danilo Gligoroski for the Rump Session CRYPTO 2011

Len = 260
Msg = 682873264068337725214261 6E616E6120417474616 36B73206172652063726170
MD = ??

Len = 260
Msg = 682873264068337725214261 6E616E6120417474616 36B73206172652063726171
MD = ??
```

Demonstration of Bananb Target Collisions for Skein with NIST KAT files

Compile and run genKAT256.exe provided in Skein submission package over ShortMsgKAT.txt and see the produced file ShortMsgKAT_256.txt

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Demonstration of Bananb Target Collisions for Skein with NIST KAT files

```
# ShortMsgKAT_256.txt
# Algorithm Name: Practical demonstration of Bananb Target Collisions for
# Principal Submitter: Danilo Gligoroski for the Rump Session CRYPTO 201

Len = 260
Msg = 6828732640683377252142616E616E612041747461636B73206172652063726170
MD = EBFEF527B76D55D886A5B91E64765274BFCAB9E78253F3411B4A0840CA5055D2

Len = 260
Msg = 6828732640683377252142616E616E612041747461636B73206172652063726171
MD = EBFEF527B76D55D886A5B91E64765274BFCAB9E78253F3411B4A0840CA5055D2
```

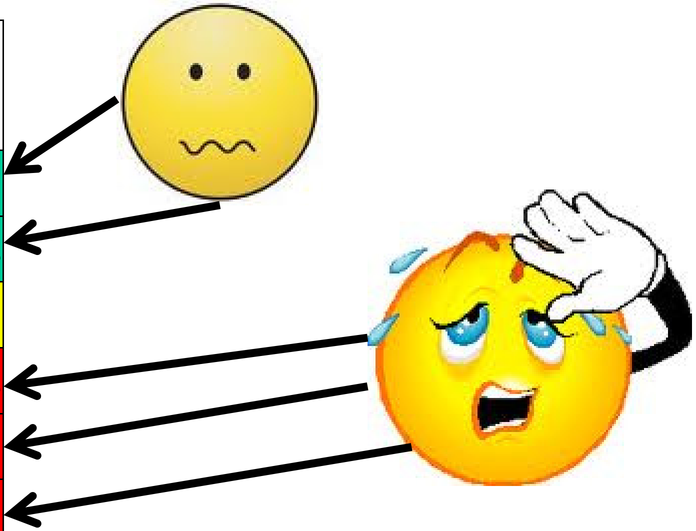
Why Skein, why not the other SHA-3 finalists?

Why Skein, why not the other SHA-3 finalists?

- Well, personally I could do BLAKE too, but I am not interested for the others

amd64; Sandy Bridge (206a7); 2011 Intel Core i7-2600K; 4 x 3400MHz; threads; sandy0, supercop-20110708

	64-bit mode, 512 bit hash	Speed cycles/byte
1.	skein512	7.83
2.	blake512	7.94
3.	sha512	11.67
4.	keccakc512	12.84
5.	jh512	13.70
6.	groestl512	15.59



Thank you for your attention!

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