

**Subject:** OFFICIAL COMMENT: Waterfall  
**From:** "Scott Fluhrer" <sfluhrer@cisco.com>  
**Date:** Fri, 19 Dec 2008 17:58:14 -0500  
**To:** <hash-function@nist.gov>  
**CC:** <hash-forum@nist.gov>

I have submitted initial cryptographical results at <http://eprint.iacr.org/2008/531.pdf> . If these results are correct, this shows a weakness in collision resistance.

**Subject:** OFFICIAL COMMENT: Waterfall is broken

**From:** "Bob Hattersley" <bob.hattersley@optaconsulting.co.uk>

**Date:** Sat, 20 Dec 2008 06:55:42 -0500

**To:** Multiple recipients of list <hash-forum@nist.gov>

Scott Fluhrer of Cisco has found a  $2^{70}$  collision attack on Waterfall. His paper is available on ePrint. I hereby withdraw from the competition.

I realise that I failed to think clearly about collision attacks at all. I believe the first and second preimage resistance is unaffected, but the collision weakness is fundamental - I can't see any way of patching it up. So you will be spared any embarrassing attempts to tune numbers of rounds etc.. I don't think there is much useful to be dragged from the wreckage except perhaps the message "don't try this".

Bob Hattersley

**Subject:** Re: OFFICIAL COMMENT: Waterfall is broken  
**From:** Richard Outerbridge <outer@sympatico.ca>  
**Date:** Sat, 20 Dec 2008 20:40:43 -0500  
**To:** Multiple recipients of list <hash-forum@nist.gov>

On Dec 20, 2008, at 06:55, Bob Hattersley wrote:

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Bob Hattersley

Hey, thanks for trying.

Richard