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Session Channel Break Extension
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Abstract

The Break Extension provides a way to send a break signal during a SSH terminal session.

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1. Introduction

The SSH session channel provides a mechanism for the client-user to interactively enter commands and receive output from a remote host while taking advantage of the SSH transport's privacy and integrity features.

A common application of the telnet protocol is the "Console Server" whereby a telnet NVT can be connected to a physical RS-232/V.24 asynchronous port, allowing the telnet NVT to appear as a locally attached terminal to that port, and allowing that port to appear as a network addressable device. A number of major computer equipment vendors provide high level administrative functions through an asynchronous serial port and generally expect the attached terminal to be capable of send a BREAK signal, which is defined as the TxD signal being held in a SPACE state for a time greater than a whole character time, typically interpreted as 250 to 500 ms.

The telnet protocolprovides a means to send a "BREAK" signal, which is defined as a "a signal outside the USASCII set which is currently given local meaning within many systems." [1] Console Server vendors interpret the TELNET break signal as a physical break signal, which can then allow access to the full range of administartive functions available on an asynchronous serial console port.

The lack of a similar facility in the SSH session channel has forced users to continue the use of telnet for the "Console Server" function.

2. The Break Request

The following following channel specific request can be sent to request that the remote host perform a break operation.

byte	SSH_MSG_CHANNEL_REQUEST
uint32	recipient channel
string	"break"
boolean	want_reply
uint32	break-length in milliseconds

If the break length cannot be controlled by the application receiving this request, the break length parameter SHOULD be ignored and the default break signal length of the chipset or underlying chipset driver SHOULD be sent.

If the application can control the break-length, the following suggestions are made reagarding break duration. If a break duration request of greater than 3000ms is received, it SHOULD be processed as a 3000ms break, in order to an unreasonably long break request causing the port to become unavailable for as long as 47 days while executing the break. Applications that require a longer break may choose to ignore this requirement. If break duration request of less than 500ms, is requested a break of 500ms SHOULD be sent since most devices will recognize a break of that length. In the event that an application needs a shorter break, this can be ignored. If the break-length parameter is 0, the break SHOULD be sent as 500ms or the default break signal length of the chipset or underlying chipset driver .

If the want_reply boolean is set, the server MUST reply using SSH_MSG_CHANNEL_SUCCESS or SSH_MSG_CHANNEL_FAILURE [4] messages. If a break of any kind was preformed, SSH_MSG_CHANNEL_SUCCESS MUST be sent. If no break was preformed, SSH_MSG_CHANNEL_FAILURE MUST be sent.

This operation SHOULD be support by most general purpose SSH clients.

References

[1] Postel, J. and J. Reynolds, "Telnet Protocol Specification", STD 8, RFC 854, May 1983.

[2] Rinne, T., Ylonen, T., Kivinen, T. and S. Lehtinen, "SSH Protocol Architecture", draft-ietf-secsh-architecture-13 (work in progress), September 2002.

[3] Rinne, T., Ylonen, T., Kivinen, T., Saarinen, M. and S. Lehtinen, "SSH Transport Layer Protocol", draft-ietf-secsh-transport-15 (work in progress), September 2002.

[4] Rinne, T., Ylonen, T., Kivinen, T. and S. Lehtinen, "SSH Connection Protocol", draft-ietf-secsh-connect-16 (work in progress), September 2002.

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