Technical white paper

HP ThinPro

RDP Connection Drop Detection

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Overview

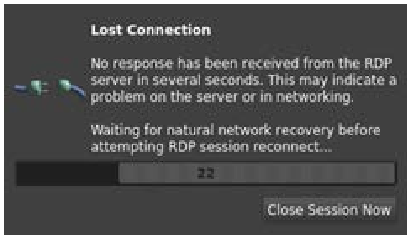
The RDP client in HP ThinPro includes an advanced end-to-end connection check feature that continually monitors the status of the connection between the client and the RDP server. Unlike conventional RDP sessions that will freeze when connectivity is lost, ThinPro will display a dialog when the connection is lost and, after a timeout, automatically attempt a quick, seamless reconnection. Default timeout values might need to be tuned or disabled to match the thin client application or to match expected customer networking parameters.

Operation details

The RDP client in ThinPro contains an agent that periodically checks the interval between the current time and the last time that network traffic was received from the RDP server. Since RDP servers do not send traffic when nothing is happening on the screen, if no traffic has been received within a period, the client will send a small message to the server to which it must respond. This ensures that, under normal circumstances, network travel is received from the server in every check interval.

This interval is known as the warning timeout. By default, the warning timeout is set to six seconds. If no traffic is received from the server for an interval longer than the warning timeout, the screen image is turned grayscale and a warning dialog is displayed. Frequently, this is the result of a temporary network outage between the RDP client and server or a high workload on the server restricting its ability to respond. This warning does not usually indicate a problem on the thin client itself. It simply indicates that the server is not responding.

The server or network will often recover naturally, and the RDP session can pick up right where it left off. The RDP client will wait for another interval, the recovery timeout, for this natural recovery to occur. The recovery timeout is measured starting from the last network traffic received from the server, not from the appearance of the warning dialog. The default recovery timeout is 30 seconds. The image below shows the Lost Connection warning with 22 seconds remaining for natural recovery.

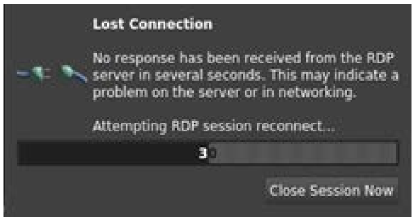


Lost Connection

No response has been received from the RDP server in several seconds. This may indicate a problem on the server or in networking.

Waiting for natural network recovery before attempting RDP session reconnect...

At the end of the recovery timeout, ThinPro closes the existing RDP session and attempts to contact the RDP server at its normal address and port. As soon as the RDP client receives a response from the server, the client attempts to reestablish the RDP connection using a special reconnection token that was negotiated during the original RDP connection. This token allows a session to be reestablished to the original session's state very quickly.

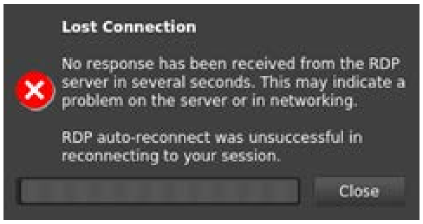


Lost Connection

No response has been received from the RDP server in several seconds. This may indicate a problem on the server or in networking.

Attempting RDP session reconnect...

ThinPro will wait for a limited amount of time for the server to respond before attempting this quick reconnect. This third interval is the error timeout, and it defaults to 60 seconds. Again, this interval is measured starting from last server traffic rather than the end of the recovery period. If no session can be reestablished by the end of the error timeout, the RDP session is considered fully lost.



Lost Connection

No response has been received from the RDP server in several seconds. This may indicate a problem on the server or in networking.

RDP auto-reconnect was unsuccessful in reconnecting to your session.

Advantages of connection drop detection

With conventional RDP connections before RDP 8.1, there is no end-to-end connectivity check. This means that the data on the screen might not be current. This might be unimportant for a kiosk displaying advertising, but it might be critical in an application such as financial trading or medical diagnosis. Most commonly, lack of connection-drop notification leads to the frustrating situation of a system that appears unresponsive to user input.

Connection drop events are logged in the ThinPro connection logs. Logged information can sometimes be helpful in problem diagnosis. For example, if an RDP server becomes unresponsive each night at 2 a.m. while a backup of the server is being performed, a connection loss might be noted in the connection logs.

Tuning or disabling the timeout values

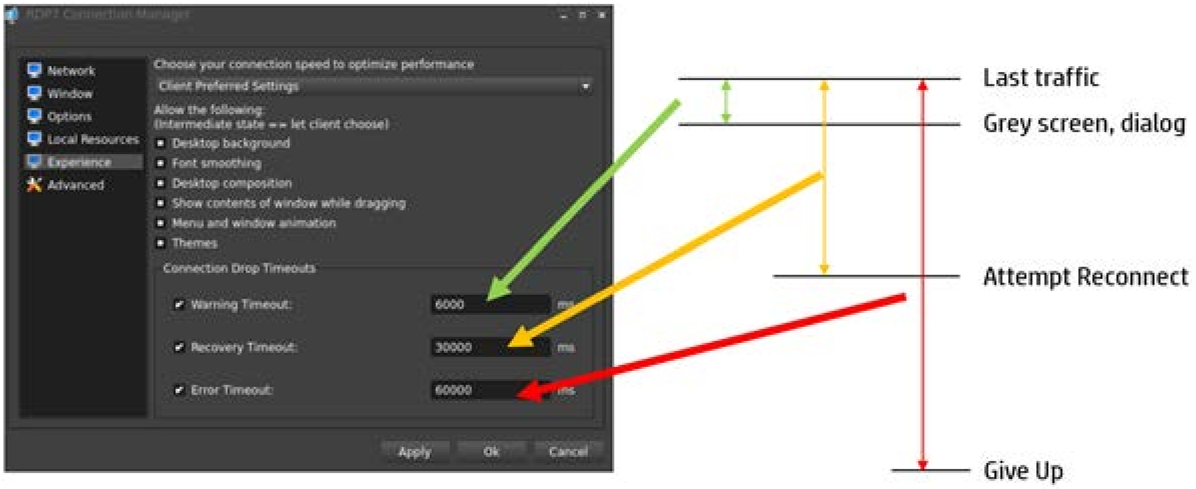
While the default timeouts were chosen to be reasonable for most RDP environments with a solid LAN connection to a moderately loaded server, no set of timeouts will be optimal for all situations. For instance, in a kiosk it might be more desirable to live with a momentarily-frozen connection than to display the warning dialog. In those cases, the warning can be fully disabled in the RDP connection settings dialog. On a WAN or a noisy network, packet drop and retransmittal may mean that the six-second warning timeout is too short and a 10-second or 15-second timeout might be more appropriate. On the other hand, in an environment where it is absolutely essential that the data be known to be current, a four-second warning timeout might be desirable.

Similarly, it might be desirable to adjust the recovery timeout to give more time for natural network recovery (without forcing a quick reconnect).

The error timeout can be lengthened to accommodate known periodic network or server outages. For instance, if it is known that the server is going to become unresponsive each night for three minutes while network switches are reconfigured, an error timeout of six minutes would allow time for that outage with the potential for full recovery.

Finally, to enter a state where no connection drop checks are performed at all, all three timeouts could be disabled.

Note
All timeout values are in milliseconds, so you have to divide by 1000 for their equivalent in seconds.



Choose your connection speed to optimize performance

Client Preferred Settings

Allow the following:
(Intermediate state == let client choose)

■ Desktop background
■ Font smoothing
■ Desktop composition
■ Show contents of window while dragging
■ Menu and window animation
■ Themes

Connection Drop Timeouts

☑ Warning Timeout: 6000 ms
☑ Recovery Timeout: 30000 ms
☑ Error Timeout: 60000 ms

For more information

For more information about HP ThinPro, go to the following websites:

- **HP ThinPro home page:** http://www.hp.com/go/thinpro
- **HP Support Center**: http://www.hp.com/go/hpsc (search for your thin client model and see the Manuals page for documentation)

Sign up for updates

hp.com/go/getupdated

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