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(54) Title: SYSTEM AND METHOD FOR OBTAINING CROSS COMPATIBILITY WITH A PLURALITY OF THIN-CLIENT PLATFORMS

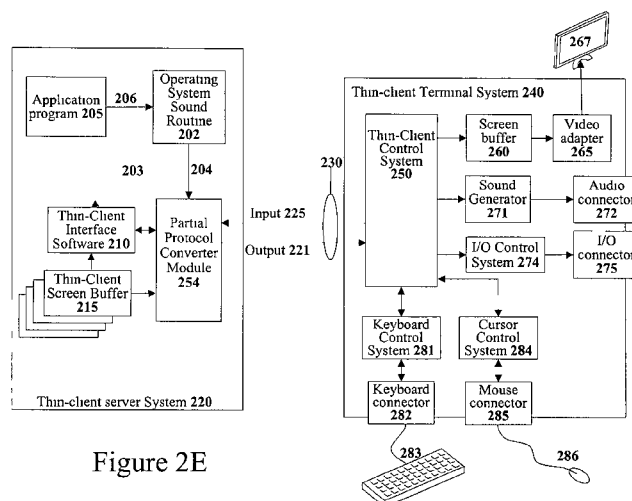


Figure 2E

(57) Abstract: Techniques for use within computer systems that communicate with multiple different terminal systems using multiple different terminal protocols are disclosed. In one embodiment, a partial protocol converter module is installed in a computer server system to enable the computer server system to communicate with terminal systems that use terminal protocol other than the terminal protocol used natively by the computer server system. The partial protocol converter module directly accesses a screen buffer in the computer server system that is associated with the terminal systems that use terminal protocol other than the terminal protocol used natively by the computer server system. The partial protocol converter module detects updates to the screen buffer and encodes these display screen updates into a message using the native protocol used by the terminal system and then transmits that encoded message to the terminal system.

## AMENDED CLAIMS

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## CLAIMS

1. A method of communicating with a terminal system, said method comprising:
  - locating a terminal screen buffer within a server system, said terminal screen buffer created by first terminal interface software in said server system for said terminal system that uses a first terminal protocol not used natively by said terminal system;
  - detecting updates to said terminal screen buffer;
  - encoding said updates to said terminal screen buffer into a display update message in a second terminal protocol using second terminal interface software, said second terminal protocol used natively by said terminal system; and
  - transmitting said display update message to said terminal system.
2. The method of communicating with said terminal system as set forth in claim 1, said method further comprising:
  - receiving messages created by said first terminal interface software for said terminal system in said first terminal protocol used natively by said first terminal interface software in said server system;
  - translating said messages for said terminal system from said first terminal protocol used natively by said server system to said second terminal protocol used natively by said terminal system; and
  - transmitting said messages in said second terminal protocol to said terminal system.
3. The method of communicating with said terminal system as set forth in claim 1, said method further comprising:
  - receiving messages from said terminal system, said messages encoded in said second terminal protocol used natively by said terminal system;
  - translating said messages from said terminal system from said second terminal protocol used natively by said terminal system to said first terminal protocol used natively by said first terminal interface software in said server system; and

passing said messages in said first terminal protocol to said first terminal interface software in said server system.

4. The method of communicating with said terminal system as set forth in claim 1, said method further comprising:

intercepting requests to an operating system for generating output from application programs associated with said terminal system;  
generating corresponding output request messages encoded in said second terminal protocol used natively by said terminal system; and  
transmitting said corresponding output messages to said terminal system.

5. The method of communicating with said terminal system as set forth in claim 1, said method further comprising:

receiving messages from said terminal system, said messages encoded in said second terminal protocol used natively by said terminal system;  
decoding said messages from said terminal system to determine input data; and  
passing said input data to an operating system input module in said server system.

6. The method of communicating with said terminal system as set forth in claim 1, said method further comprising:

receiving display update messages encoded in said first terminal protocol used natively by said server system addressed for said terminal system; and  
discarding said display update messages encoded in said first terminal protocol used natively by said first terminal interface software in said server system.

7. The method of communicating with said terminal system as set forth in claim 4 wherein said output comprises a sound.

8. The method of communicating with said terminal system as set forth in claim 5 wherein said input data comprises keystrokes.

9. A computer system for communicating with a terminal system that does not use a first terminal protocol native to first terminal interface software in said computer system, said computer system further comprising:

- a terminal screen buffer associated with said terminal system;
- a terminal communication module associated with second terminal interface software, said terminal communication module detecting updates to said terminal screen buffer from said first terminal interface software and encoding said updates into a display update message in a second terminal protocol used natively by said terminal system, said terminal communication module transmitting said display update message to said terminal system.

10. The computer system for communicating with said terminal system as set forth in claim 9 wherein said terminal communication module further receives messages for said terminal system from said first terminal interface software encoded in said first terminal protocol used natively by said server system, translates said messages for said terminal system from said first terminal protocol to said second terminal protocol used natively by said terminal system, and transmitting said messages to said terminal system.

11. The computer system for communicating with said terminal system as set forth in claim 9 wherein said terminal communication module further receives receiving messages from said terminal system encoded in said second terminal protocol used natively by said terminal system, translates said messages from said second terminal protocol to said first terminal protocol used natively by said first terminal interface software in said server system, and passes said messages in said first terminal protocol to said terminal interface software in said server system.

12. The computer system for communicating with said terminal system as set forth in claim 9 wherein said terminal communication module further intercepts requests for generating output from application programs associated with said terminal system, generates corresponding output request messages encoded in said second terminal protocol used natively by said terminal system, and transmits said corresponding output messages to said terminal system.

13. The computer system for communicating with said terminal system as set forth in claim 9 wherein said terminal communication module further receives messages encoded in said second terminal protocol used natively by said terminal system from said terminal system, decodes said messages from said terminal system to determine input data, and passes said input data to an operating system input module in said server system.

14. The computer system for communicating with said terminal system as set forth in claim 9 wherein said terminal communication module further receives display update messages encoded in said first terminal protocol used natively by said server system addressed for said terminal system and discards said display update messages encoded in said first terminal protocol used natively by said first terminal interface software in said server system.

15. A machine-readable medium, said machine-readable medium comprising a set of instructions that, when executed, implement a method of communicating with a terminal system, said method comprising:

- locating a terminal screen buffer within a server system, said terminal screen buffer created by first terminal interface software in said server system for said terminal system that uses a first terminal protocol not used natively by said terminal system;
- detecting updates to said terminal screen buffer;
- encoding said updates to said terminal screen buffer into a display update message in a second terminal protocol using second terminal interface software, said second terminal protocol used natively by said terminal system; and

transmitting said display update message to said terminal system.

16. The machine-readable medium as set forth in claim 15 wherein said method implemented by said instructions further comprises:  
receiving messages created by said first terminal interface software for said terminal system in said first terminal protocol used natively by said first terminal interface software in said server system;  
translating said messages for said terminal system from said first terminal protocol used natively by said server system to said second terminal protocol used natively by said terminal system; and  
transmitting said messages in said second terminal protocol to said terminal system.

17. The machine-readable medium as set forth in claim 15 wherein said method implemented by said instructions further comprises:  
receiving messages from said terminal system, said messages encoded in said second terminal protocol used natively by said terminal system;  
translating said messages from said terminal system from said second terminal protocol used natively by said terminal system to said first terminal protocol used natively by said first terminal interface software in said server system; and  
passing said messages in said first terminal protocol to said first terminal interface software in said server system.

18. The machine-readable medium as set forth in claim 15 wherein said method implemented by said instructions further comprises:  
intercepting requests to an operating system for generating output from application programs associated with said terminal system;  
generating corresponding output request messages encoded in said second terminal protocol used natively by said terminal system; and  
transmitting said corresponding output messages to said terminal system.

19. The machine-readable medium as set forth in claim 15 wherein said method implemented by said instructions further comprises:  
receiving messages from said terminal system, said messages encoded in said second terminal protocol used natively by said terminal system;  
decoding said messages from said terminal system to determine input data; and  
passing said input data to an operating system input module in said server system.

20. The machine-readable medium as set forth in claim 15 wherein said method implemented by said instructions further comprises:  
receiving display update messages encoded in said first terminal protocol used natively by said server system addressed for said terminal system; and  
discarding said display update messages encoded in said first terminal protocol used natively by said first terminal interface software in said server system.