

PipeDream-V Quick-start Guide

Thank you for your interest in PipeDream, a Windows application that connects Hyper-V virtual machines to serial hardware attached to a Hyper-V host. PipeDream transfers data between internal, external, and even remote serial (COM) hardware to Hyper-V clients using the native Hyper-V pipe interface. This guide provides installation instructions and a quick overview of the software. Please contact us at support@makingtechappen.com if you have any questions that this guide does not address.

System requirements

These are generally the basic requirements for running Hyper-V:

- Hyper-V host (such as Windows Server 2012R2, 2016, or 2019, Hyper-V Server, and Pro or Workstation editions of Windows 10).
- Available hardware serial port
- Administrative privileges for the Hyper-V host
- Network connectivity for license checks (offline version available)

If you are using a real-time or near-real-time system where latency control is important, enough system resources must be available to ensure PipeDream-V can quickly respond to communication traffic. Please contact us if you have questions about latency.

Installation instructions

Installing the software

Simply copy the PipeDream-V executable to a desired location and run. When you first run PipeDream-V, or if you want to change settings, you will need to run as administrator (right-click and select "Run as administrator"). Once your settings are properly configured, you can run PipeDream-V as a regular user.

PipeDream-V requires Microsoft's Visual C++ x64 redistributable to run. If PipeDream-V fails to start, please install `vc_redist.x64.exe` (included with your download, or you can [download and install from Microsoft](#)), then re-run PipeDream.

Configuring Hyper-V

To connect your virtual machine to the host's serial hardware, open the Hyper-V settings for the virtual machine and configure the virtual machine's serial port settings by providing a name for the serial pipe. Hyper-V usually makes serial ports COM1 and COM2 available to the virtual machine¹

¹ If you are using a Gen2 virtual machine the serial port settings may not show up in the Hyper-V GUI but can be accessed using Powershell commands. Please check Microsoft's related documentation or contact support for assistance.

and connects to the host's hardware using a named pipe. The default pipe name is "PipeDream," though you can change the name in PipeDream-V's settings.

For example, let's assume you want to make your serial hardware visible to the virtual machine at COM1. In the Hyper-V settings for the virtual machine, select COM1 and enable the named pipe. Under Pipe name type PipeDream, as shown below. If you are running multiple instances of PipeDream-V, you will need to specify a different name for each pipe.

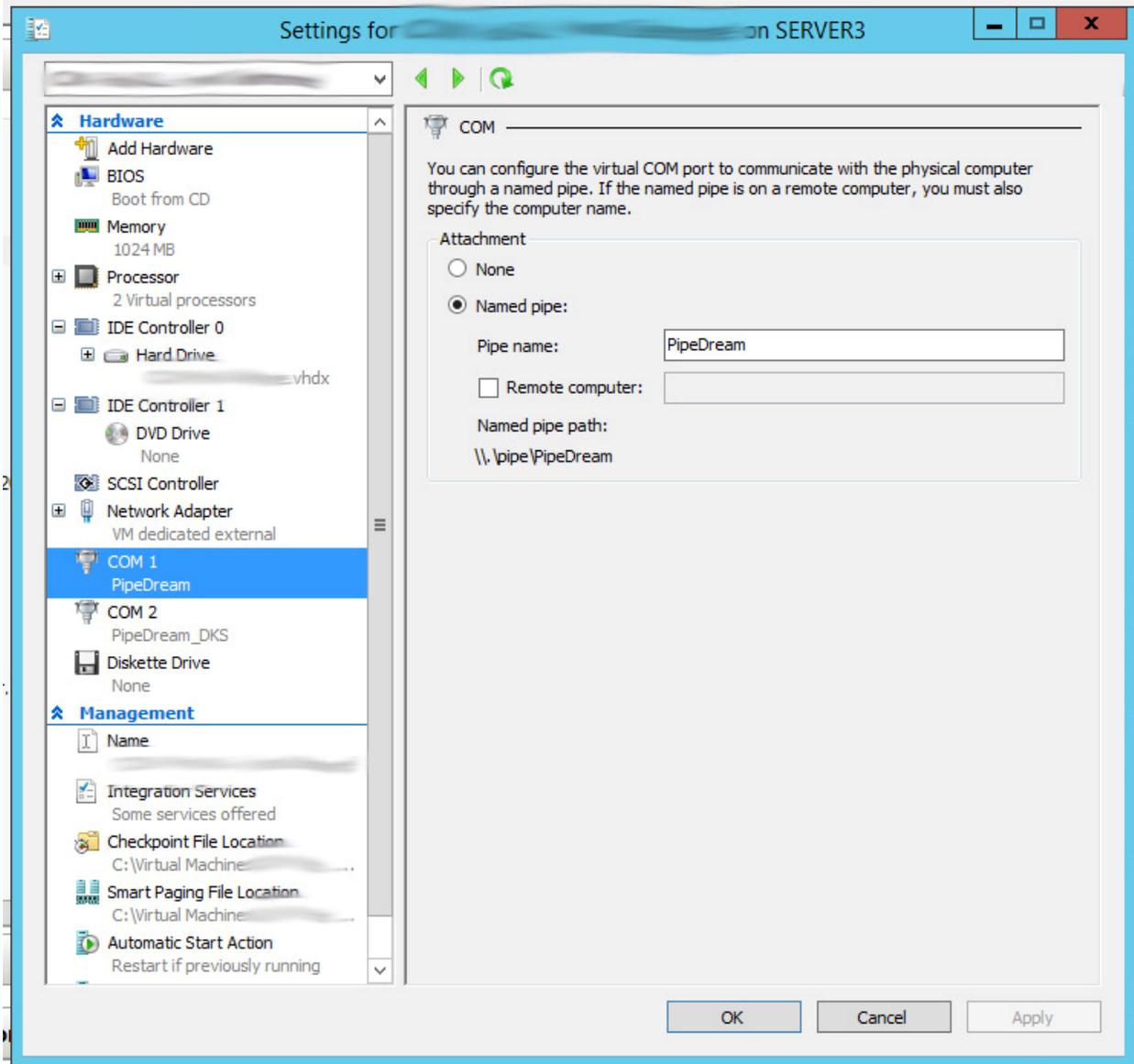


Figure 1. Example Hyper-V serial port settings for PipeDream-V (Gen1 VM shown)

Using PipeDream-V

The main PipeDream-V window is shown in Figure 2. The current status is shown at the bottom of the window.

The sections of the main window are:

- [Link settings](#) shows the host serial port and pipe name being used.
- [Serial port settings](#) shows the baud rate, parity, and flow control settings for the connection.
- [Link activity](#) shows virtual LEDs that flash when activity is detected in the physical link.
- [Link statistics](#) counts the amount of data that is transmitted between the host and serial port, and the host and virtual machine. Press Reset to reset these statistics.
- [Status](#), the last line of the window, shows the program's status.

Press the *Change Settings* button to change the serial port, pipe name, or advanced program settings. You need to run PipeDream-V as administrator to make the changes.

In the example shown in Figure 2, COM3 on the Hyper-V host is connected to a virtual machine that uses a pipe named PipeDream.

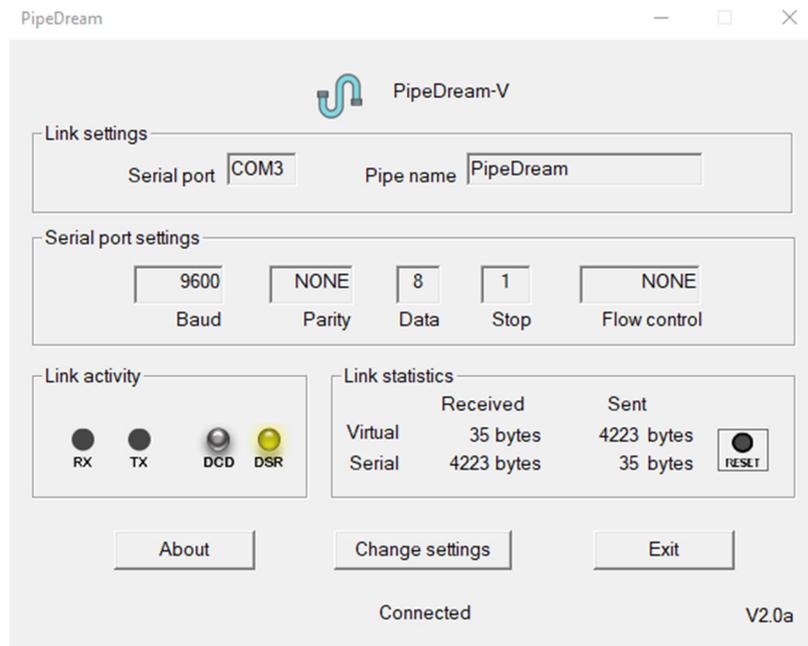


Figure 2. PipeDream-V main window

Troubleshooting

Trouble opening the serial port

If PipeDream can't open the serial port, make sure that the hardware port is available and is not in use. Make sure no other software is using the serial port on the host. Each host serial port can only be used by one instance of PipeDream.

Trouble connecting to the pipe

On launch, PipeDream-V searches for the named pipe. If it can't find an available pipe, PipeDream will prompt you to re-try. Please make sure the named pipe is configured and attached as described in the Installation section.

Rarely, you may need to toggle the named pipe in the Hyper-V settings. To do so, go to COM1 or COM2 settings in Hyper-V, set the attachment to None and press Apply. Then set the attachment back to Named Pipe and press Apply.

If you still experience issues, please contact our support team.

Pipe gets disconnected

With some guest operating systems and Hyper-V versions, restarting or rebooting a virtual machine may cause its connection to PipeDream-V to be lost. Please restart PipeDream-V if this occurs. Please contact support for potential work-arounds.

Support for DKS Remote Access Manager

For DKS Remote Access Manager version 6 or later, please set the RAM software settings to use the COM port instead of the named modem connection (for example, use *COM10* instead of *Conexant USB modem*). You can find the modem's COM port in the Phone and Modem settings under the Windows Control Panel. Please contact our support department if you need assistance.

Support for N-Star/Honeywell controllers

For Honeywell/N-Star, please set PipeDream-V to 9600/N/8/1. The flow control settings in System Manager are irrelevant, PipeDream-V will transfer data normally at any of the software settings.

Support for HubManager Pro

HubManager 8, when used with dial-up based connections, may not always hang-up the line upon completion. This occurs because the software fails to properly send a termination string to the modem. Please contact support for a DCD-Alert enabled-version of PipeDream-V.

Support for Arduino

PipeDream-V generally supports genuine Arduino boards and many after-market boards. However, these boards can vary considerably and some use special drivers to emulate a serial port, which may not be compatible with PipeDream-V. Please use the demo version to test with your particular application, and please contact our support team if you need assistance.

Known Issues or Limitations

- For *real-time applications/real-time systems*, special Windows tuning may be required, especially when very small keep-alives or long ping intervals are used. Please contact our support department for assistance.
- Depending on your host and guest operating systems, restarting or rebooting a virtual machine may cause its connection to PipeDream-V to be lost. Please restart PipeDream-V if this occurs. Our support team can provide a work around to this issue.