Digi Realport Windows Driver and Setup Release Notes
Digi Realport
Version 4.10.490 Update (October 20, 2021)

INTRODUCTION

This is a production release of the Digi Realport Windows Driver. This document contains general information as well as last minute changes for the Digi RealPort driver and Setup Wizard.

SUPPORTED Operating Systems

- Windows 7
- Windows 8
- Windows 8.1
- Windows 10
- Server 2008-R
- Server 2012
- Server 2012-R2
- Server 2016
- Server 2019

SUPPORTED PRODUCTS

- Digi Connect Family
- Digi ConnectPort Family
- Digi EtherLite Family
- Digi One Family
- Digi PortServer Family
- Digi PortServer TS Family
- Digi TransPort Family
- Digi Connect EZ Family

Software Packages P/N's

40002549

KNOWN ISSUES

None

GETTING STARTED

The quickest way to get started is to run the Digi RealPort Setup Wizard, setup.com. See the help file, DgRpHelp.chm, for more details.

Note: It is recommended that one run Setup64.exe or Setup32.exe based on whether the system is 64-bit or 32-bit.

HELP AND DOCUMENTATION

Help and Documentation for installing, updating, removing and configuring Digi RealPort for Windows can be found in the help file, DgRpHelp.chm.

DgRpHelp.chm is part of the software. To view the help file, browse to the directory containing the software package and double-click on the file, DgRpHelp.chm.

If a Digi RealPort device is installed, the help file can also be accessed from the Device Manager, via the device's Multi-port serial adapters property page.

TECHNICAL SUPPORT

Get the help you need via our Technical Support team and online resources. Digi offers multiple support levels and professional services to meet your needs. All Digi customers have access to product documentation, firmware, drivers, knowledge base and peer-to-peer support forums. Visit us at https://www.digi.com/support to find out more.

CHANGE LOG

VERSION 4.10.490 (10/20/21, Rev J)

NEW FEATURES
- None

ENHANCEMENTS
- TLS 1.3 Support. Can now make TLS 1.3 secure connections with RealPort servers. Backward compatible with RealPort servers which only support TLS 1.0/1.1/1.2. Can be configured to use a minimum of TLS 1.2 with "tls12" console switch or via a checkbox in the Device Manager property page. See user's manual for details.
- Certificates for TLS connections are now pinned when the first encrypted connection is established. The device must then present the same certificate on each subsequent connection or the connection will be rejected and a message will be sent to the event log. The pinned certificate can be viewed or removed from the Device Manager Property page. Removing the certificate will allow the device to pin a new certificate on the next connection.

SECURITY FIXES
- SHA256 hash support for secret key authentication. The hash function used for authentication can be configured from the Device Manger Property page. The hashing algorithm must match the algorithm used by the target device.
- Security patches to address CVE-2020-24357.

BUG FIXES

- Fixed an issue in which a high starting port number would not install ports in consecutive order.
- Fixed an issue where the RealPort connection service would crash after accessing the Device Manager property page of a device configured to use UDP.
- Fixed an issue where the "Wait for COM open request" option would prevent RealPort from working when using encryption.
- Fixed potential invalid memory access when parsing a device query response.

VERSION 4.8.488 (10/29/18, Rev H)

NEW FEATURES

None

ENHANCEMENTS

TLS v1.2 support. Can now make TLS 1.2 secure connections with Realport servers. Backward compatible with Realport servers which only support TLS 1.0/1.1. Can be configured to only establish TLS 1.2 connections with "tls12" console switch or via a checkbox in the Device Manager property page. See user's manual for details.

SECURITY FIXES

TLS v1.2 support. See Enhancements above.

BUG FIXES

None

VERSION 4.7.410 (UPDATE)

NEW FEATURES

This release (G) has now been tested for all of the above Microsoft operating systems INCLUDING WINDOWS 10.

ENHANCEMENTS

None

SECURITY FIXES

None

BUG FIXES

None

VERSION 4.7.410 (09/01/2017, Rev G)

NEW FEATURES

None

ENHANCEMENTS

None

SECURITY FIXES

None

BUG FIXES

1. Start Write Timeouts Early and Quick Write Timeouts were not properly initialized. Fixed. This fixes JIRA RP-51 (AMEC).

VERSION 4.5.372.2, (04/29/2013, Rev F)

NEW FEATURES
None

ENHANCEMENTS
Add support for Windows 8.1 and Server 2012 R2.

SECURITY FIXES
None

BUG FIXES
1. Fix bug in handling of SERIAL_EV_RX80FULL that was causing an infinite recursive loop which resulted in BSOD because of a stack overflow. Vantive 37199.
2. In RpCancelWrite, make sure WriteIrp is on timedOutWriteQueue before removing it. Vantive 37804.
3. Fix CancelIrp bug which is caused by the way we handle spinlocks. Eliminate all calls to KeAcquireSpinLockAtDpcLevel. Vantives 37804 and 43940.

VERSION 4.4.365.1, (10/18/2010, Rev E1)

NEW FEATURES
None

ENHANCEMENTS
None

SECURITY FIXES
None

BUG FIXES
The setup CLI ignored the "skipenumeration" setting (/padv +e). Fixed.

VERSION 4.4.365.0, (10/18/2010, Rev. E)

NEW FEATURES
None

ENHANCEMENTS
Add support for Server 2008 R2 and Windows 7.

SECURITY FIXES
None

BUG FIXES
1. Free excess "Tx" resources when no longer required.
2. Fix intermittent system hang on recovery from network error.
3. Fixed a memory leak in the encryption service.
4. Add the configuration option "Wait for COM open request" to the setup install wizard UI.
5. Outbound buffers were not reported as purged after a "PurgeComm" request while the ethernet cable was disconnected.

VERSION **4.2.360.1 (01/30/2009, Rev. D1)**

NEW FEATRUES
None

ENHANCEMENTS
None

SECURITY FIXES
None

BUG FIXES
Fixes to the setup CLI: several parameters were being ignored. This update modifies only the setup32/setup64.exe files. The other binaries are unchanged from the 4.2.360.0 release.

VERSION **4.2.360.0 (07/10/2008, Rev D)**

NEW FEATURES
None

ENHANCEMENTS
Add support for Windows Server 2008.

SECURITY FIXES
None

BUG FIXES
1. Fixed bluescreen during write timeout processing for applications using overlapped writes.
2. Fixed problem closing flow controlled port while also handling network error causes port to be un-openable until reboot.
3. Fixed stack corruption problem in network service caused by fault in standard string library, typically exhibited on fast, quadruple-processor machines.
4. Fixed problem not restarting transmit after running low on network resources, generally caused by applications using TCP: Typical Settings and reading hundreds of bytes one byte at a time.
5. Changed TCP: Typical Settings to disable Nagle by default, as it induces 200 msec. delays for some applications when remote devices are configured for delayed ACKs, as they are by default.
6. Changed non-typical TCP Port Profiles to use 554 msec. Device Transmit Notification update timeout (see "Or this many msec pass since last update" on Data Notification Settings dialog, accessible from port TCP tab), since a 0 value with Complete Write Requests Immediately also enabled may cause write requests to go uncompleted.
7. Fixed: Unable to enable/disable "Disable TCP Nagle Algorithm" option on Device Manager Property page.
8. Fixed: x64 Device Manager Property page GUI layout.

VERSION **4.1.353.0 (09/21/2007, Rev C)**

NEW FEATURES
1. UDP support (serial data only).
2. Device-Initiated RealPort support.

ENHANCEMENTS
None

SECURITY FIXES
None

BUG FIXES
1. Fixed bluescreen or hang when recovering from low network resource condition.
2. Fixed installation problem when phantom ports present.
3. Doubled maximum allowed baud rate, from 921600 to 1843200.
4. The Setup Wizard and Device Manager Property pages warn if a device being configured cannot be found online.
5. Setup Wizard will no longer run CLI commands unless user is running from console window with administrative privileges (Vista and later OSes).
6. Fixed service in Vista to not load disabled devices.
7. Fixed memory corruption when processing multiple simultaneous write timeouts during a network outage for applications using overlapped writes.
8. New option, Force HUPCL.
9. Fixed first port open after a device is rebooted to not fail immediately but to recover the lost network session and try again.

VERSION 4.0.332.0 (04/06/2007, Rev B)

NEW FEATURES
None

ENHANCEMENTS
1. Add support for Windows Vista and Windows Vista x64.
2. New TCP-Listen network option for devices "hidden" by a NAT.

SECURITY FIXES
None

BUG FIXES
1. New TCP-Listen network option for devices "hidden" by a NAT.
2. Fixed bluescreen on packet flood from rogue RealPort endpoint.
3. Corrected timing of network reconnection timer.
4. Added new device connection option, Fail COM open if Retry Frequency not elapsed, to choose whether the retry and offline frequencies should be enforced for CreateFile requests or just when reconnecting a lost network connection.
5. Added controls to reduce network usage by ignoring certain signals and settings for each port, including hardware lines, software flow control, serial errors, and serial settings.
6. Added a way to control whether the Complete Write Requests Immediately feature is lossy or not when the device buffer is full; the feature is called, "Discard Writes if Device Buffer Full (else block WriteFile)".
7. Added option to Setup Wizard to install modem INF file -- this causes a Windows security prompt so this is optional.
8. Modified "Wait for COM open before connecting" to wait two seconds after last COM close before shutting down network.
9. Fixed problems enabling and disabling ports from a device's Device Manager Property page.
10. "Hidden" CLI feature /purgereg added.
11. Pressing "Refresh" button on discovery dialog causes <Device Not Listed> item to appear immediately.
12. Added options to install Setup Wizard to Program Files, to Control Panel > Add or Remove

Programs, and to PATH environment variable.

13. Added hidden Registry option for each port, 'ForceHUPCL'.
14. Fixed modem detection to occur upon device installation.

VERSION 3.6.325.0 (11/17/2006, Rev. A)

NEW FEATURES
None

ENHANCEMENTS
1. Add support for Windows XP x64 and Server 2003 x64.
2. Significantly improved device installation time.
3. Added CLI sliders to indicate Setup / Wizard progress. (use /silent to suppress output)
4. Added more useful information when Setup Wizard fails on exception, including the file name and line number where the exception was raised; this applies to both the CLI and GUI.
5. Added timeout to wait for COM port data to drain on close.
6. Reworded the two Port Network Profiles:
    a. The default setting, "Latency-Optimized TCP" is renamed "TCP: Typical Settings".
    b. The cellular environment-targeted setting, "Throughput- Optimized TCP", is renamed "TCP: Less Overhead".
7. Added two additional Port Network Profiles:
    a. "TCP: Modified Read/Write" acts like "Typical Settings" but may cause some applications to write data more efficiently and may cause the device to transport serial data using fewer network packets and less overhead;
    b. "TCP: Low Overhead/No Deltas" works like "Less Overhead" but further reduces network traffic by suppressing line change notifications and disabling RealPort Keep Alive packets (flow control still works if your application sets it and   forgets it, but do not use this setting if your application needs to know the current state of line signals and when they change).
8. Removed the "Optimize for Throughput" checkbox from the RealPort Setup Wizard Discovery page and replaced it with a drop-down list of Network Profiles on the Describe Device page.
9. Updated Event Viewer-logging of application name to be universally supported on all operating systems (rather than logging "Unknown")
10. Updated help with discussion of writing applications for networked- serial devices, troubleshooting help, and details about the new Network Profiles.
11. Created new package (this package, PN 40002549) to support x64, and migrated support for Windows XP and Windows Server 2003 from PN 40002164, the Digi RealPort Driver & Setup Wizard for Windows 2000.

SECURITY FIXES
None

BUG FIXES
1. Fixed Keep-alive mechanism, which was slewing its time calculation.

VERSION 3.5.316.0 (07/12/2006, Rev V)

NEW FEATURES
None

ENHANCEMENTS

1. Added option to never block serial communication calls because of network response lag.
2. Added setup CLI options /pnet and /ptcp to supercede /pnetw.
3. Added setup CLI options /pser and /padv to replace /port.
4. Added network and port re-connection controls to throttle network activity for byte-conscious environments (for IP-addressed devices).
5. Added additional controls to allow user to influence network usage, including: Port data drain-on-close timeout; Port is being shared; and, Wait on COM open before starting network.
6. On update, now fixing ports' driver versions to reflect new version.
7. Added absolute TCP timeout to unblock driver when critical device responses are dropped and the system network stack does not properly detect the situation.
8. Improved driver load time on boot.
9. Improved driver update time when SkipEnumerations is enabled.

SECURITY FIXES

None

BUG FIXES

1. Fixed race condition on close while losing network connectivity causes CloseHandle to hang
2. Fixed race condition on purge while also calling ReadFile from another thread causes new read to be canceled.
3. Fixed race condition on write timeout while another WriteFile request is pending and a network interruption occurs causes second write to hang.
4. Corrected blue screen when using "Always Grant Port Opens", driver is loading, network stack is not done loading, and port is accessed by user application.
5. Fixed problem pending first WriteFile when using Always Grant and network stack is not done loading.

VERSION 3.4.306.0, (06/16/2006, Rev U)

NEW FEATURES

None

ENHANCEMENTS

1. Improved device installation time.

SECURITY FIXES

None

BUG FIXES

1. Fixed problem with the first port of additional device installations being installed before Serenum runs, causing the port to not be installed correctly.

VERSION 3.2.281.0 (11/17/2005, Rev S)

NEW FEATURES

1. Added feature to optimize network usage for different networks -- i.e., wired, wireless, and cellular.
2. Added 'examine' command to RealPort Setup Wizard CLI to simplify driver backup, restoration and deployment.
3. Added option to use device MAC or DNS name rather than IP address.
4. Added digirlpt.chm context and HTML help.

5. Updated 'change' command in RealPort Setup Wizard CLI to support /id, /likeid, /com, and /likecom switches.
6. Added feature to coalesce data for legacy applications.
7. Exposed option to force RTS Toggle flow for legacy applications.
8. Added option to set SkipEnumerations Serenum key.

ENHANCEMENTS
None

SECURITY FIXES
None

BUG FIXES
1. Fixed RTS toggle to not require CTS to be asserted to send.
2. Fixed problem loading driver when Registry misconfigured.
3. Resolved transmission issue with offline device when port is configured for Always Grant Port Open Requests.
4. Corrected processing of SERIAL_NULL_STRIPPING.
5. Corrected support of XonLimit and XoffLimit.
6. Corrected blue screen on ARP from closed cellular device.
7. Corrected polling application receive resource exhaustion issue.
8. Fixed issue sending command after device rejects open request.

VERSION 3.1.243.0 (11/15/2004, Rev R)

NEW FEATURES
None

ENHANCEMENTS
None

SECURITY FIXES
None

BUG FIXES
1. Resolved issue with updating three or more adapters in Windows Server 2003 unnecessarily prompting for reboot.
2. Resolved issue with Setup Wizard failing if it encountered corrupt or un-parsable INFs in the Windows INF directory.
3. Fixed condition during driver update that could cause a bugcheck.
4. Fixed a condition where closing the ports during a network outage and subsequently disabling the adapter freezes the system.
5. Resolved problem with opened ports being unresponsive after returning from hibernation or sleep.
6. Fixed problem with COM ports being mislabeled in Device Manager after device installation.
7. Modified behavior of "Always grant port open requests" to try to establish connection before succeeding open request.
8. Fixed a condition where write timeout processing under certain conditions may cause a bugcheck.
9. Fixed condition where read timeout processing while also handling incoming read data under certain conditions may cause a bugcheck.
10. Added encryption support for DOIAP.
11. Corrected Setup Wizard to always enable encryption for a device when the user specifies as such

during installation.
12. Modified SetQueueSize to accept any queue size.
13. Fixed problem with encryption service unloading unexpectedly after disabling encryption for a device.
14. Fixed issue reopening port when "Always Grant Port Open Requests" is enabled under certain conditions.
15. Corrected support for IOCTL_SERIAL_LSRMST_INSERT.

VERSION 3.0.226.0 (03/18/2004, Rev P)

NEW FEATURES
None

ENHANCEMENTS
1. Added Digi RealPort Setup Wizard for installing, updating and removing RealPort device driver and devices
2. Updated Device Manager User interface.
3. Added registry option to force baud rate.
4. Added registry option to disable DOSMODE.
5. Improved Event Log messages in case of network disconnect.
6. Improved handling of network outage.
7. Added support for IOCTL_SERIAL_XOFF_COUNTER.
8. Added registry option to force xedata (ignore serial errors).

SECURITY FIXES
None

BUG FIXES
1. Resolved issues with Complete write requests immediately.
2. Fixed support for IOCTL_SERIAL_IMMEDIATE_CHAR.
3. Fixed a condition where a network disconnect under certain conditions may cause a bugcheck.

VERSION 2.8.94.0 (06/10/2003, Rev N)

NEW FEATURES
None

ENHANCEMENTS
1. Added support for Digi Connect ME.

BUG FIXES
1. Fixed a problem processing write requests after the input buffer is cleared with PurgeComm during network disconnect.
2. Corrected break event signaling.
3. Fixed detection of modem line transitions for EtherLite 2.

SECURITY FIXES
None

VERSION 2.7.90.0 (04/22/2003, Rev M)

NEW FEATURES

None

ENHANCEMENTS
1. Added support for Microsoft Windows Server 2003
2. Improved management of outgoing network resources.
3. Modified the Complete Writes Immediately feature to allow queued data to drain when the port is closed.
4. Modified driver to default uninitialized ports to "1200,7,e,1" like the standard serial driver, and to maintain baud rate, line settings and flow control across opens.
5. Added code to force RTS low when device is closed; sometimes, if a port was using RTS/CTS flow control and was closed, RTS would remain high.
6. Added support for Digi One TS H, Digi PortServer TS 2 H, and Digi PortServer TS 4 H.
7. Added support for Digi One TS W, Digi PortServer TS 2 W, and Digi PortServer TS 4 W.

SECURITY FIXES
None

BUG FIXES
1. Fixed a condition where a network disconnect under certain conditions may cause a bugcheck.
2. Fixed RTS Toggle functionality. A RTS pre- and post-delay can be configured through the command line interface or the web interface of your Digi One or Digi PortServer.
3. Fixed framing error detection to not insert bogus data into the read data stream.

VERSION 2.6.82.0 (01/31/2003, Rev L)

NEW FEATURES
None

ENHANCEMENTS
1. Added support for Digi One EM, Digi One IA and Digi One SP.
2. Modified Complete Write Requests Immediately feature to work regardless of flow control.
3. Added user interface option "Send keep alive packets" to control keep alive packets sent to the remote device. The default setting is disabled.
4. Exposed GUI option to allow serial ports to be opened even if the driver cannot communicate with the remote device.
5. Improved driver load time when network is disconnected.
6. Changed event reporting to begin accumulating events once SetCommMask is called, instead of waiting for WaitCommMask.

SECURITY FIXES
None

BUG FIXES
1. Fixed race condition when switching parity states.
2. Fixed condition where default Xon and Xoff characters were not initialized correctly.
3. Fixed detection of parity and framing errors.
4. Fixed Xon/Xoff limit bounds checking.