



# Digi WAN Bonding

Resilient connectivity and maximum performance across multiple connections

**Digi WAN Bonding** combines multiple connections into a seamless and resilient connectivity solution that ensures optimal performance and maximum uptime anywhere around the world.

Digi devices provide a range of connectivity options including cellular failover with features such as **Digi Surelink®**, policy-based routing and interface bonding. These features are excellent at preventing any external network failures from causing downtime.

When one or many cellular connections are used across a network, they are vulnerable to the disruptions inherent to wireless communication. Digi WAN Bonding provides a valuable addition beyond failover by aggregating multiple connections to maximize speed and throughput, reduce latency and seamlessly optimize performance. This service provides continuous, intelligent optimization even in moving vehicles.

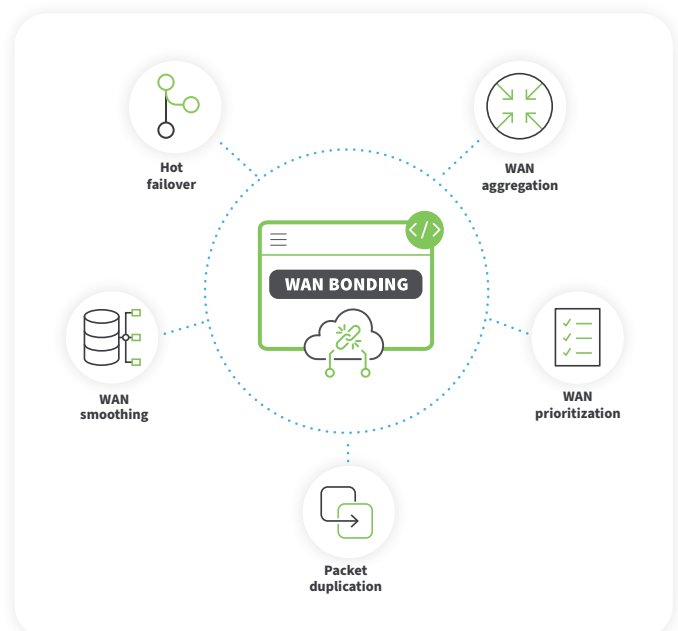
Digi WAN Bonding combines multiple cellular and wired connections to deliver the lowest latency of the bonded interfaces, along with resilient and seamless handover, and a throughput representative of the combined interfaces.

## REMOTE MANAGEMENT AND SECURITY

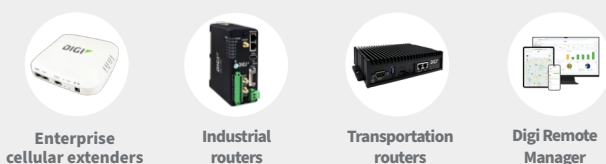
As a valuable add-on service to **Digi Remote Manager®** (Digi RM), Digi WAN Bonding can be easily integrated from a central portal to enhance connectivity across the network. Using Digi RM to manage devices and network connectivity leverages our proven cloud-based platform through a single point of command. Digi RM's monitoring and management features make it easy to view and control your devices from any location.

## Digi WAN Bonding features and benefits

- **Hot failover:** Digi's bonded tunnel interface stays up across all WAN links with no packet loss or failover wait time
- **WAN aggregation:** Combines multiple WAN links for increased speed and bandwidth for one or multiple devices, up to a maximum bandwidth of 1 Gbps
- **WAN smoothing:** Reduces latency and jitter by sending data through multiple channels simultaneously to eliminate packet loss and maintain connection resiliency
- **WAN prioritization:** Automatically senses or manually sets the best active WAN link and balances traffic accordingly
- **Packet duplication:** Ensures delivery of mission-critical data by replicating packets on multiple WAN links
- **Simple integration:** Digi WAN Bonding is easy to deploy on a range of Digi enterprise (EX), industrial (IX) and transportation (TX) routers in a variety of public and private environments at fixed or mobile locations via Digi Remote Manager
- **Increased throughput:** Digi WAN Bonding offers 100 Mbps, 200 Mbps and 1 Gbps max throughput subscription options



## Digi WAN Bonding with Digi Remote Manager



To support the full range of IoT applications and environments today, Digi offers dozens of hardware solutions that can leverage Digi WAN Bonding.

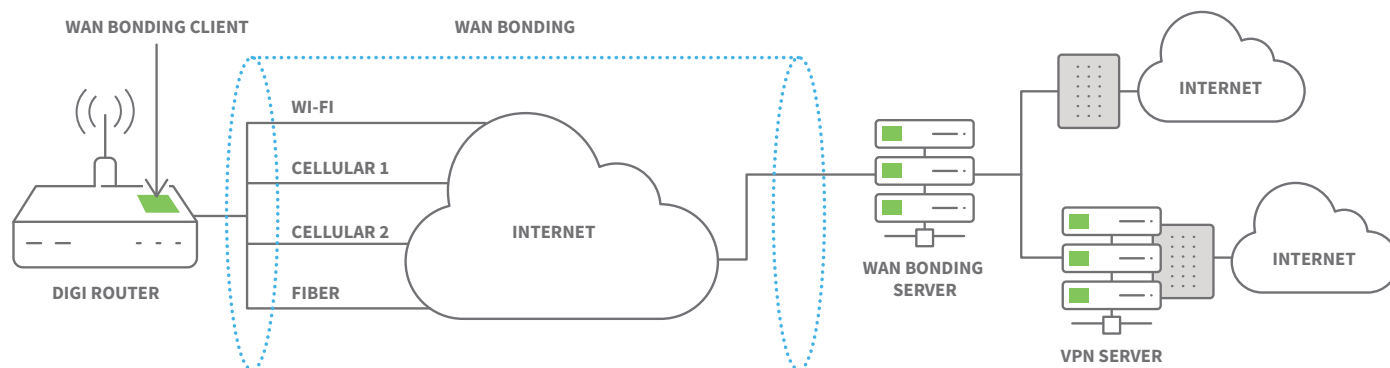


## DIGI WAN BONDING Capabilities

### Digi WAN Bonding with Digi Remote Manager

Developed with a technology partner, Bondix Intelligence, Digi WAN Bonding integrates Bondix S.A.NE software to optimize and extend the capabilities of your Digi connectivity solution.

#### Intelligent Connection Management Process



#### Cellular resiliency for vehicles

Uptime in vehicles, such as buses and trains, is a major priority for many use cases. Setting up multiple cellular connections with failover through Digi Surelink helps ensure uptime if one connection goes down; however, as the vehicle moves, connections can gradually degrade in quality.

With Digi WAN Bonding, multiple connections are intelligently balanced based on quality metrics such as packet loss and latency. Then as one connection degrades it is only used when the most effective connection has been saturated.

#### Faster Internet bandwidth

Digi WAN Bonding combines symmetric wired connectivity on a WAN with asymmetric cellular connectivity via a wireless WAN (WWAN) to enable greater total throughput in excess of either single connection while maintaining low latency characteristics even under load.

This helps reduce the load on either connection and significantly reduces the impact of intensive transfers on other users of the network.

#### Built-in capabilities with DAL OS

With DAL OS embedded in Digi devices, an extensive set of software features and capabilities are built into firmware that is signed, vetted, and distributed as part of our **Digi TrustFence®**-approved standards.

When a client enables the WAN Bonding feature in Digi Remote Manager and configures their Digi devices to combine their WAN and WWAN interfaces, the default route for any traffic is through the WAN Bonding application.

This application then negotiates a tunnel with a virtual private server (VPS). This can be managed by the customer, by **Digi Professional Services** or by a Digi partner, and begins sending data to the VPS to be recombined and sent onwards.

Any replies are sent via the VPS, fragmented appropriately, and sent to whichever interface the device identifies as the most performant and is not saturated.

If a device sends a packet via the WWAN connection and proceeds to lose signal before a reply is possible, the VPS will send the reply through the connected WAN interface.



## DIGI WAN BONDING Management

### Digi Accelerated Linux (DAL OS) and Digi Remote Manager (Digi RM)

#### DAL OS

**DAL OS** is Digi's standard operating system integrated into **Enterprise (EX)**, **Industrial (IX)** and **Transportation (TX)** routers, **console servers** and **USB-connected devices**.

Developed for speed and simplicity, DAL OS enables advanced capabilities that support today's demanding applications.

Learn more at [www.digi.com/DAL](http://www.digi.com/DAL).

#### Digi Remote Manager

**Digi Remote Manager** (Digi RM) is a proven technology platform that brings networks to the next level, empowering networks — and the people who manage them — to work smarter. Digi RM transforms a multitude of dispersed IoT devices into a dynamic, intelligent network. It's easy to deploy, monitor and diagnose thousands of mission-critical devices from a single point of command on a desktop, tablet or phone. All the while, software-defined security diligently safeguards the entire Digi ecosystem.

Learn more at [www.digi.com/digi-remote-manager](http://www.digi.com/digi-remote-manager).

#### Digi RM Infrastructure

- Hosted in a commercial-grade cloud server environment that meets SOC 1°, SOC 2° and SOC 3° standards
- Superior availability, operating at 99.9% or greater uptime
- Open APIs are available to support application development

#### Digi RM Security

- Built-in Digi TrustFence device security framework
- Member of the Center for Internet Security® (CIS®)
- Enables compliance with security frameworks like ISO27002, HIPAA, NIST and more
- Earned Skyhigh's CloudTrust™ Program highest rating of Enterprise-Ready



#### DAL OS and Digi RM Capabilities

- **DAL OS with Digi Remote Manager:** Remote console access, profile Configuration Manager, HTTP proxy, device event logs, configurable maintenance window
- **I/O ports:** Pulse counter, custom Digi device Python library
- **Serial:** Modbus, serial-over-TCP/UDP
- **Customization:** Python 3, Python pip, PyCharm integration, shell scripting, containers, MQTT client
- **Troubleshooting tools:** iPerf and nuttcp bandwidth testing, Find Me tool
- **GNSS:** NMEA/TAIP location forwarding to multiple servers, geo-fencing
- Activate, monitor and diagnose your mission-critical devices from a single point of command and control
- Schedule key operations — including firmware updates and file management — on a single device or on a group of devices, keeping your network functionality up-to-date and maintaining compliance standards
- Manage edge devices out-of-band via console terminal access
- Keep tabs on device health and connectivity across device deployments of any size
- Create detailed reports and enable real-time alerts for specified conditions
- Integrate device data through open APIs to gain deeper insights and control with third-party applications
- Report and alert on performance statistics, including connection history, signal quality, latency, data usage and packet loss



## DIGI WAN BONDING Security

### Digi TrustFence



#### BUILT-IN SECURITY. DELIVERED.

Designed for mission-critical applications, **Digi TrustFence** enables users to easily integrate device security, device identity, and data privacy capabilities into product design. Digi TrustFence security for IoT devices is designed to grow and adapt with new and evolving threats.

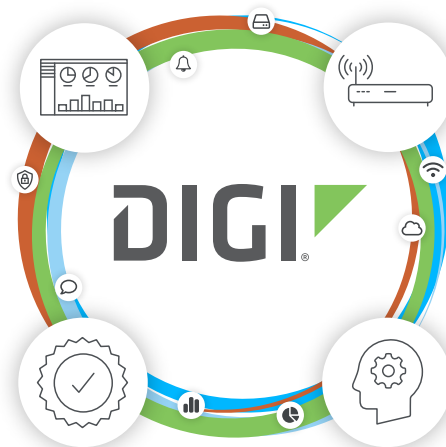
Learn more at [www.digi.com/trustfence](http://www.digi.com/trustfence).

**Digi TrustFence is a device security framework that simplifies the process of securing multiple connected devices.**

- **Secure boot:** Programs and code running on the device are validated to be from an approved source or manufacturer.
- **Protected hardware ports:** Internal and external I/O ports are hardened and access-controlled to prevent unwanted intrusion.
- **Authentication:** TrustFence provides data authentication and device identity management options and ensures that products are not shipped with default user and password settings.
- **Secure connections:** These connections utilize the latest encryption protocols for data in motion and over-the-air (OTA) transmissions to ensure the integrity of network data.
- **Ongoing monitoring and support:** Digi provides ongoing threat measurement and monitoring services and performs external security audits.

### Proven global connectivity and reliability

With over 35 years of industry leadership and experience enabling millions of globally connected products, Digi is a trusted IoT solutions provider, simplifying the way customers design, build, deploy and manage connected devices and applications. Digi also offers cellular integration support, certification assistance, and custom design and build services to get products to market smarter and faster.





## DIGI WAN BONDING

# Value-Added Service

### DIGI WAN BONDING WITH DIGI REMOTE MANAGER

#### IMPLEMENTATION AND MANAGEMENT OF DIGI WAN BONDING

	HOT FAILOVER	WAN AGGREGATION	WAN SMOOTHING	WAN PRIORITIZATION	PACKET DUPLICATION
DIGI WAN BONDING	<ul style="list-style-type: none"><li>Bonded tunnel interface stays up across all WAN links</li><li>No packet loss or failover wait time</li></ul>	<ul style="list-style-type: none"><li>Combines multiple WAN links</li><li>Increases speed and bandwidth for one or multiple devices</li></ul>	<ul style="list-style-type: none"><li>Reduces latency and jitter</li><li>Eliminates packet loss and maintains connection resiliency</li></ul>	<ul style="list-style-type: none"><li>Automatically senses or manually sets the best active WAN link</li><li>Balances traffic accordingly</li></ul>	<ul style="list-style-type: none"><li>Replicates packets on multiple WAN links</li><li>Ensures delivery of mission-critical data</li></ul>

#### MARKET FIT

	CUSTOM APPLICATIONS	BENEFITS
USE CASES FOR DIGI WAN BONDING	<ul style="list-style-type: none"><li>Resilient and critical connectivity</li><li>Public and private WAN prioritization</li><li>Offices, retail, industrial, energy, buses and trains</li></ul>	<ul style="list-style-type: none"><li>Optimized speed and throughput with reduced latency</li><li>Hot failover and packet duplication</li><li>WAN smoothing, aggregation and prioritization</li></ul>

### PART NUMBERS

### DIGI WAN BONDING

#### VALUE-ADDED SUBSCRIPTIONS WITH DIGI REMOTE MANAGER PREMIER

DIGI-SRV-WB-TIER1-1YR	Digi WAN Bonding subscription with 100 Mbps max throughput
DIGI-SRV-WB-TIER2-1YR	Digi WAN Bonding subscription with 200 Mbps max throughput
DIGI-SRV-WB-TIER3-1YR	Digi WAN Bonding subscription with 1 Gbps max throughput

#### VALUE-ADDED TRIAL SUBSCRIPTIONS WITH DIGI REMOTE MANAGER PREMIER

DIGI-SRV-WB-TIER1-TRIAL-30D	Digi WAN Bonding trial subscription with 100 Mbps max throughput
DIGI-SRV-WB-TIER2-TRIAL-30D	Digi WAN Bonding trial subscription with 200 Mbps max throughput
DIGI-SRV-WB-TIER3-TRIAL-30D	Digi WAN Bonding trial subscription with 1 Gbps max throughput

Digi WAN Bonding is available as a subscription added to Digi Remote Manager Premier. Additional value-added services are also available.

### PART NUMBERS

### DIGI REMOTE MANAGER

#### DIGI REMOTE MANAGER SUBSCRIPTIONS

DIGI-RM-PRM-1YR	Digi Remote Manager Premier — 1-year subscription
DIGI-RM-PRM-3YR	Digi Remote Manager Premier — 3-year subscription
DIGI-RM-PRM-5YR	Digi Remote Manager Premier — 5-year subscription

For more information, visit [digi.com](https://digi.com).



For more information about Digi WAN Bonding, visit [www.digi.com/wanbonding](https://www.digi.com/wanbonding).

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