What's New in NetMotion Diagnostics 4.60

Diagnostics v4.60 significantly increases server scalability and includes many improvements and fixes.

Diagnostics Server

- Maximum server capacity has increased to 30,000 clients. See Hardware Details by Deployment Size for details.

- Changed our licensing infrastructure to remove port 8081 conflicts with other products and services.

- Moved the data export/publishing function from *System > Data Export* tab to the *System > Publisher* tab.

- Diagnostic server status messages now indicate what percentage of disk space remains available (17174).

- Added *Last communication time* to *System > Client Settings t*ab (17175).

- Deprecated support for importing Mobility Analytics data using the *Diagnostics Connect for Mobility* tool. It is replaced by direct data publishing from Mobility Analytics to Mobile IQ (17545, 17617).

- Improved the *Support Data* tool to include richer device, licensing, drive, database, upgrade, client authentication, and profile information (17869).

- Updated matching APNs to carrier names (17601).

- Improved handling and reporting of clients that are unlicensed, then relicensed (17288).

- Renamed *Data Export Health* option to *Publisher Health* in the dropdown list for Alert configuration (17599).

- Increased the security and complexity of credentials required for NetMotion Cloud hosted instances (18091).

- Administrative access to the server console enforces the use of TLS v1.2 (17730).

- Improved display and clarity of GPS Metrics reports:
  Users and phone numbers for a device are grouped in a single row (17640).
  The distinction between unlocated data and no data is clear (18065).

  Note: Due to incompatibilities, collecting GPS metrics and dropped connections data from Diagnostics clients earlier than v4.0 is no longer supported.

- When multiple warnings are present, the Diagnostics console now shows all of them (12079).

- When Mobility is not connected, client reports include the associated reason (17587).

Diagnostics Client for Android

- Added support for devices running Android 9 "P" (18095).

- Deprecated support for devices running Android 4.x (17639).

- Client report HTTP tests show correct summary string (14080).

- Results of the most recent manual bandwidth test are shown on the client (17547, 17928).

- Added support for multiple connected interfaces (for example, Wi-Fi and Mobile Network) on Android 8 and later (16585).

- Fixed data usage overreporting on mobile networks (18128).

- Diagnostics client updates complete without requiring the user to open the client application (18032).

- Improved stability when revoking client permissions (17637).

- Diagnostics reports the status of generic third-party VPNs, in addition to Mobility, on NIC diagnostic tests (17551).

- Added radio type and channel in Wi-Fi events and client reports (17573).

- If Mobility is not connected, client reports include the associated reason (17529).

- Clients now report Mobile Network channel and band, when available (17573, 17575).

- Added support for the Mobile Data Off-loading (IWLAN) technology type (17614).

- Added documentation describing how to deploy the Diagnostics client using SOTI (17946).

Diagnostics Client for Windows

- Results of the most recent manual bandwidth test are shown on the client (17532, 17928).

- Improved handling when an invalid ICCID or IMEI value is reported (17812, 18136).

- Added support for reporting metered connections (16068).

- Diagnostics reports the status of generic third-party VPNs, in addition to Mobility, on NIC diagnostic tests (17551).

- Added radio type and channel in Wi-Fi events and client reports (17125).

- Clients now report WWAN channel and band, when available (17566).

- Added automatic fallback to WMB to get interface details for unsupported adapters (17666).

- If Mobility is not connected, client reports include the associated reason (17549).

- Fixed hot key conflicts on foreign language clients (18153, 18155).

Diagnostics Client for Apple iOS

- The client alerts the user when location is not enabled, prompting to enable location so the client can run in the background (17841).

- Fixed misreported speed of bandwidth tests for Wi-Fi bytes sent by Apple devices running iOS 11. (18029).

- Fixed an unlicensed client's failure to automatically reauthenticate while running in the background (18008).

- Results of the most recent manual bandwidth test are shown on the client (17456, 17928).

- If Mobility is not connected, client reports include the associated reason (17548).

- Corrected latency measurements in bandwidth tests (18023).

- Improved the Network Interface tests in client reports by distinguishing IPv4, IPv6, and IPv4/6-dual-stack interfaces, added the *Active Interface* to the interface summary, and added the interface name to route table entries (17552).

Mobile Routers and Devices
Added support for the following mobile routers and devices:

- ATT Nighthawk LTE Mobile Hotspot Router / Netgear MR1100 (17567, 18018)

- Cradlepoint IBR-1700 (17654, 18017)

- Dell Wireless DW5821e LTE module (18124)

- HP LT4120 LTE integrated broadband adapter (17982, 17983)

- Microsoft Surface 4 and Surface Pro 2018

- Sierra Wireless EM7455 (17902)

- Sierra Wireless EM7565 (18124)

- Sierra Wireless GX450 (17748)

- Sierra Wireless MG90, including reporting for Band 14 (17665, 18148, 18143)

- Sierra Wireless OMG 2000 Mobile Gateway (17664, 17651)

Deprecated support for the following mobile devices on Windows 10 (17777):

- Gobi 1000

- Gobi 2000

- Pantech UML290

- Various Option cards for AT&T—GTM-380, GTM-382, Velocity, and Quicksilver

Diagnostics v4.x Release History
Rel. v4.5

The v4.5 release of NetMotion Diagnostics® delivers enhanced functionality as a stand-alone tool and as a key component of the NetMotion Mobile Performance Management solution for securing and supporting enterprise mobile deployments.

Diagnostics 4.50 has the following new features and improvements to configurability, management, and support.

Bandwidth Testing & Scheduling

To measure the actual speed and latency of the current network connection, Diagnostics clients can be configured to run bandwidth tests. This provides real-world, location-based tracking and analysis of actual throughput available to each device.

Users can manually initiate bandwidth tests on their devices, or you can configure and distribute a client settings profile that sets the maximum amount of data for the tests and schedules the bandwidth tests to run periodically on selected days and at certain times.

Bandwidth test data is not visible in the Diagnostics console but can be included in the data you send to a log management server, such as NetMotion Mobile IQ® 2.0 or syslog.

Client Report Scheduling

Using new client settings profile options, you can schedule client reports to be triggered automatically at regular intervals during selected days and shift times. Running client reports manually or using Mobility policy continues to be supported.

Multiple Data Exporters

Diagnostics 4.5 now allows configuring custom data export streams to as many as 10 servers so that you can freely share the Diagnostics system data with other operational, security, reporting and business intelligence systems. This is especially valuable where multiple departments—like operations, security, and accounting—are interested in seeing specific metrics to inform their view of the mobile deployment.

Export Data Filtering

Each data export configuration supports customizing the data being sent to external systems down to the field level, allowing you to selectively send only the information needed by each external system.

Data Export Monitoring

You can configure an alert to monitor the health of the data pipeline between Diagnostics and its export targets—Mobile IQ, syslog or Splunk servers.

Client Export Annotations

Using the Diagnostics client API on Windows or Android, or using the command line on Windows, the client can be configured to supply an annotation to enhance the data, providing additional context.

Configurable Android Device Naming Scheme

The new client setting "Device naming scheme" provides the option to use either the Android device name or the configured Bluetooth name to identify the device and its data. Whenever possible, the Diagnostics client will query and use the name configured by the Mobility client if it is also installed on the device. This supports customers who choose to use a different scheme on Android to identify and name their devices and ensures consistency and correlation between the data provided by NetMotion client software installed on the device.

Diagnostics User Name Integrated with Mobility

If the Diagnostics 4.50 client is installed on a device that is also running NetMotion Mobility v11.31 or later, Diagnostics automatically uses the Mobility user name to ensure consistent, unified correlation of data reported by the client software.

MDM Provisioning Configuration Support

The Diagnostics 4.50 client can be provisioned and configured by EMM/MDM systems that support the AppConfig Consortium standards, allowing you to automate provisioning the Diagnostics client software on Android and Apple devices.

Prevent Client Changes to Server Configuration

You have the option to lock down the server address configured on the client, ensuring that once a client connects, the user cannot disconnect without uninstalling the Diagnostics client. Together with other options for remote configuration, this allows you to seamlessly configure Diagnostics clients with no opportunity for user error. First, distribute clients using MSI or an EMM/MDM system, pre-configured with a server address and authentication code. After the client automatically connects to the server, the user cannot manually disconnect; at this point you can specify other configuration options from the server and pass them down to clients individually or in groups

IPv6 Network Information Added to Client Reports

The Diagnostics client reports include event-based data on both IPv6-only and dual-stack networks. The built-in suite of diagnostic tests now includes an IPv6 route table, and all client platforms support running tests to query IPv6-only resources.

Expanded VPN detection added to client diagnostic reports

The Diagnostics client reports are now aware when any VPN client, including the NetMotion Mobility® mobile VPN, is running on a Diagnostics client device, which enhances the product's ability to determine the causes of network connectivity problems.

Support Added For Modems, Network Interface Cards And MiFi Devices

The following have been added to the list of supported devices in Diagnostics v4.50:

- Dell 5811e (United States/China/Indonesia/India)

- Dell 5816e (International)

- Franklin Wireless MHS900L (Verizon)

- Sierra Wireless EM7430

- Sierra Wireless MP70

- Sonim XP7700 Android device (FirstNet)

- Novatel MiFi 7730L (Verizon)

- Novatel USB730L (Verizon)

- ZTE MF861 (AT&T)

- ZTE MF975S Pocket MiFi (Sprint)

The complete list is here: **Supported Network Adapters and GPS Receivers**.

Improved Accuracy in GPS Metrics Reports

We improved data accuracy in the GPS Feed and GPS Drops reports, including occasional problems with missed transitions and inaccurate "% Detected" data.

DEPRECATED: iOS Inventory module

The iOS Inventory module for Diagnostics has been deprecated and is no longer supported. It was originally developed (before a full-fledged Diagnostics client was available on iOS) to provide Inventory information to the system by registering Diagnostics as an MDM provider. Now that a full Diagnostics client for iOS is available; the iOS Inventory module has been discontinued and is no longer supported.

DEPRECATED: Diagnostics 3.x Client Data Removed in Two Reports

Due to inaccuracies in the way Diagnostics 3.x and earlier clients collect and report data, these clients are no longer represented in the GPS Metrics and Dropped Connections reports in the Diagnostics 4.50 console.

DEPRECATED: Diagnostics Connect for Mobility Module and Two Diagnostics Dashboards

Effective with the release of NetMotion Diagnostics v4.50, NetMotion Software will stop developing and testing the Diagnostics Connect for Mobility module and its related reports.

The functionality of the Diagnostics Connect for Mobility module has been replaced with native support in the Mobility Analytics module available with NetMotion Mobility v11.3x and later. The Mobility v11.3x Analytics module now supports a direct connection to NetMotion Mobile IQ, and to other business intelligence and analysis tools. Native data messaging in the Mobility v11.3x Analytics module provides substantially more detailed, accurate, and timely data, and is available at no additional cost.

Customers running Mobility v11.3x Analytics module or later already have access to these richer data-messaging capabilities.

The Diagnostics Connect for Mobility module provided data for two Diagnostics reports, Compression – Mobility and Applications – Mobility. These reports will be discontinued after NetMotion Diagnostics v4.50. NetMotion Mobile IQ v2.0 provides all the utility available in these reports and more.

Customers with a current maintenance agreement will continue to receive full support for NetMotion products until the product version they are running has reached end-of-life.

END OF LIFE: Diagnostics 3.x Clients

With the release of Diagnostics v4.5x, we are announcing end-of-life for Diagnostics 3.x. The Diagnostics 4.5x server is the final server version that will support connections from mobile devices running Diagnostics 3.x client software. Customers should plan to upgrade their mobile devices to Diagnostics 4.5x are later as soon as possible.

Rel. v4.1

With release v4.1, administrators could configure their Diagnostics server to export data to a target server offered by NetMotion. The preferred target server is a new product, called NetMotion Mobile IQ™ and is designed to complement and supplement a Diagnostics deployment for real-time data analysis. Diagnostics clients report a combination of events and survey data that help you monitor the health of your wireless network and investigate the source of networking issues in real time. Mobile IQ is designed to help you get the most out of this flow of data.

Additionally, Diagnostics is supported on Windows Server 2016. Other improvements included correcting a problem where the system may not correctly display coverage maps, device maps, and client report mini-maps. It also delivered localized version of the Diagnostics Server for Japan.

Rel. v4.0

This release dramatically expanded network support and increased data collection quality, speed and accuracy. It also added a full-fledged client for iOS that collects ongoing data. V4.0 also added the ability to centrally configure client settings.

Added Support for Wi-Fi and Ethernet Networks

In addition to LTE/WWAN networks, Diagnostics 4.0 now supports Wi-Fi and Ethernet networks, allowing you to see and manage the user experience across the entire mobile network fabric. You get a broad understanding of how, where and how well employees connect on internal and external, private and public networks.

For Wi-Fi networks, Diagnostics 4.0 collects data on the networks (SSID), access points (BSSID), bytes received and transmitted, connection failures, authentication methods and security ciphers, help you understand geographical network and access point usage, identify insecure networks, and detect rogue access points.

Added Support for Wi-Fi Location

We added the option to use Wi-Fi assisted location for offices, campuses, hospitals, and airports—places that are normally shielded from GPS satellite reception.

Added Support for Concurrent Adapters (Windows only)

The Diagnostics 4.0 client for Windows now recognizes and accurately tracks network and coverage information accurately from more than one active network adapter (WWAN, Wi-Fi, and Ethernet). This is particularly useful for enterprises with a multi-network fabric of connections (for example, public WWAN, Wi-Fi, and FirstNet) that need help identifying roaming, and collecting coverage and usage data. The client interface on Windows is more informative and shows all installed adapters, indicating which are connected and disconnected.

Client for iOS: Background Data Collection and Policy Integration

In addition to the Diagnose functionality provided previously, the Diagnostics 4.0 client for iOS adds the expanded background data collection we have in our Android and Windows clients. Clients running on iPhones and iPads automatically collect location, network connectivity and user experience information on both WWAN and Wi-Fi networks. (Due to restrictions from Apple, WWAN signal details and personally identifiable information—for example, IMEI and phone number—are not available.)

The client for iOS is also integrated with Mobility 11.0 policies, allowing customers to automatically troubleshoot end-to-end when network connections degrade.

Smarter, Event-based Data Collection

We made massive improvements to Diagnostics 4.0 client data collection and accelerated the frequency at which clients can send the data to the Diagnostics server. Data is more accurate, more detailed and timelier, allowing administrators to troubleshoot, diagnose and get a near real-time view of their mobile deployment.

Events and survey data are structured for analysis and to minimize the quantity of data. All events and survey data include a timestamp and information about the device—the user, manufacturer, adapter, location, and more. In addition, events include other pertinent information, such as the network the adapter connected to, the generation of cellular technology, and signal quality.

Configurable Client Data Collection Rate

The rate at which Diagnostics 4.0 clients send data to the Diagnostics server is configurable from the Diagnostics server, allowing administrators to balance data volume and timeliness.

Centrally Administered, Client Setting Profiles

From the Diagnostics console, administrators can now create and assign a settings profile to one or more client devices. Using settings profiles eliminates the need to configure clients and modems by hand for different devices. For example, if some of your Windows users have a Sierra Wireless AirLink remote broadband adapter, you can assign a settings profile that specifies the IP address and password necessary for connecting to the AirLink trunk modem. This makes client configuration consistent and less subject to user error. Configuration settings are automatically pushed down from the server to the assigned clients and can be updated at any time.

High-performance Splunk Integration Using HTTP Event Collector

Diagnostics 4.0 supports the Splunk HTTP Event Collector (HEC), so that Splunk dashboards and reports are always up to date, allowing you to troubleshoot, investigate and monitor the health of your mobile deployment.

New *NetMotion Mobile Deployment* Application for Splunk

We have posted a new application at Splunkbase.com called NetMotion Mobile Deployment that complements and supplements your v4.0 Diagnostics deployment. Diagnostics clients report a combination of events and survey data that help you monitor the health of your wireless deployment and investigate the source of networking issues in real time.

Added a Manual Option to Back Up the Diagnostics Database

You can manually start a Diagnostics database backup, instead of waiting for the daily maintenance window. This is useful, for example, if you are moving your Diagnostics server to a different computer and need to accelerate the backup.

International Localizations

Diagnostics 4.0 clients are localized for English, French, Italian, German, Japanese and Spanish.

Diagnostics 4.0 servers are available in English. A Japanese-localized server will be available with the release of Diagnostics 4.1 in Q2 2017.

Added or Improved Support for Network Adapters

- Cradlepoint IBR900

- Dell (Australian carriers only): Sierra Wireless EM7305 (DW5809E)

- Franklin U772 USB

- HP Sierra Wireless EM7355 (HP LT4111)

- Inseego/Feeney Wireless Skyus-X IoT gateway

- Jetpack 4G LTE / Novatel MiFi 4510L

- Jetpack 4G LTE Ellipsis MHS700L and MHS815L

- Motorola VML700

- Netgear AirCard 341U USB in IP passthrough mode

- Sierra Wireless EM7345

- Sierra Wireless EM7455 (DW5811E)

- Sierra Wireless MC7455

- Unite Pro NetGear AirCard 781S