

# IBM System Storage

## N series

### AutoSupport Overview

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AutoSupport is an integrated and efficient monitoring and reporting feature of the Data ONTAP operating system that runs on the IBM® System Storage® N series storage systems. It continuously monitors the health of your N series storage system, and it will automatically notify IBM Service and Support when certain problems are detected.

## What is AutoSupport?

AutoSupport is one of the most important troubleshooting tools for N series customers. AutoSupport allows the system to send messages directly to IBM Service and Support and provides these key features:

- Enables sophisticated monitoring for faster incident management
- Provides automated "call home" about critical events – even opening a support case automatically, such as hardware replacement requests
- Delivers non-intrusive alerting to notify you of a problem and provide information for IBM to take corrective action
- Enables AutoSupport analysis tools to monitor messages for known configuration issues
- Performs on-going health check analysis of 600 system parameters
- Sends system alerts to IBM Support and specified customer contacts
- Performs Return Merchandise Authorization (RMA) requests without customer action
- View timeline history of critical events and alerts

## How does AutoSupport work?

AutoSupport is a call home feature in the Data ONTAP operating software for all IBM N series systems, providing an integrated efficient monitoring and reporting capability that continuously checks the health of your system. AutoSupport provides you with detailed knowledge of your N series environment. Information is sent to IBM Support and other designated addresses for quick incident resolution and preventative support.

AutoSupport sends weekly diagnostic data back to IBM where it is automatically analyzed for any issues that may impact future system stability and performance.

## AutoSupport high level perspective

The following is a high level perspective of how AutoSupport functions (see Figure 1 on page 2).

1. An AutoSupport message is generated by the client filer
2. The AutoSupport message is sent to IBM via the Internet (HTTPS and SMTP)
3. An automated solution finder analyzes the AutoSupport message to locate existing solutions
4. IBM opens a problem management record (PMR)
5. The IBM Support Center will resolve the issue with the customer (by voice and/or email)

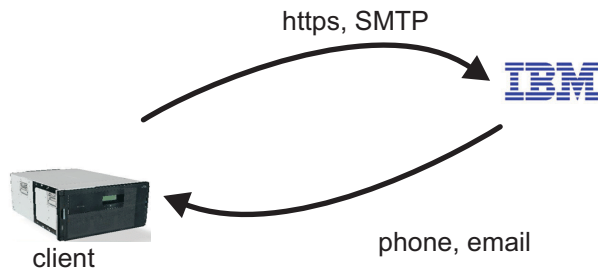


Figure 1. High level overview of AutoSupport event processing

## AutoSupport detailed perspective

The following sections provide more information on AutoSupport functionality and features

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### AutoSupport daemon

N series storage controllers use an AutoSupport daemon to control how messages are sent from the customer's system to IBM Support. The AutoSupport daemon is enabled by default on N series storage systems.

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### AutoSupport mechanism

The AutoSupport mechanism functions in the following ways:

- Data ONTAP triggers the AutoSupport mechanism automatically once a week to send information to IBM as well as the email addresses specified in **autosupport.to**. In addition, the **options** command can be used to invoke the AutoSupport mechanism to send this information on-demand.
- An AutoSupport message is sent in response to events that require corrective action from the system administrator or IBM Support.
- An AutoSupport message is sent when the system reboots.

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### Flexible transport options

AutoSupport can be configured with SMTP, HTTP or HTTPS as the transport option depending on network and security preferences. The transport option selected applies to the **autosupport.support.to** field (see AutoSupport Messages section). All other optional configured AutoSupport destinations are sent via SMTP and depends on a mailhost.

To improve email security, IBM supports Transport Layer Security (TLS) through VeriSign 256-bit digital certificates for encryption and authentication between mail server gateways through the following process:

- Ask your email administrator to enable TLS and install digital certificates on your mail servers. This will provide authentication against "man-in-the-middle" attacks.
- TLS encrypts the AutoSupport email content between your email server and the IBM email servers.

**Note:** HTTPS is the default transport protocol for AutoSupport, and it is the only transport protocol that IBM supports for Data ONTAP 8.x 7-Mode. To verify which specific transport protocols are supported on your Data ONTAP release, see the Data ONTAP publication matrices on the IBM N

series support site ([www.ibm.com/storage/support/nas](http://www.ibm.com/storage/support/nas)). Refer to the Important information for N series support page ([www.ibm.com/support/docview.wss?uid=ssg1S1003659](http://www.ibm.com/support/docview.wss?uid=ssg1S1003659)) for information on accessing and navigating the IBM Support Portal.

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## Interaction with mail hosts

Storage systems do not function as mail hosts, instead they rely on another mailhost at the customer site that listens on the SMTP port 25 to send mail. To receive AutoSupport messages, the storage system requires access to an SMTP server or a mail forwarder, such as the sendmail program or Microsoft Exchange server. The administration host defined during setup is used as the default mail host unless otherwise specified. Customers can specify additional mail hosts, if desired.

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## AutoSupport messages

AutoSupport email options support up to five email addresses, which can include distribution email aliases for each AutoSupport option. These options are defined during the initial configuration and setup of the system and there are no requirements for AutoSupport email notifications to be customer or partner specific. Private email addresses can be defined. Refer to the *Data ONTAP System Administration Guide* for the version of Data ONTAP you have installed for detailed information on AutoSupport message capability, configuration and troubleshooting. See the AutoSupport tool section for more information.

Up to five email addresses can be set for each AutoSupport mail option:

- The **autosupport.noteto** option provides for a "short note" email message containing the reason for the notification in the subject line and the time of failure. These messages are triggered only by specific urgent events and are easily viewed on a cell phone or other text device. This option is useful for system administrators who read email messages on alphanumeric pagers.
  - The **autosupport.partner.to** option defines the list of email addresses that will receive all AutoSupport email notifications regardless of the severity level. This option is typically used by IBM support partners.
  - The **autosupport.to** option defines the list of email addresses that will receive only critical AutoSupport email notifications; however, all AutoSupport notifications, regardless of their level of severity, continue to be sent to technical support as displayed by the read-only options: **autosupport.support.to** or **autosupport.support.url**.
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## Subject line of AutoSupport messages

The subject line of messages sent by the AutoSupport mechanism contains a text string that identifies the reason for the notification. The format of the subject line is as follows:

*System Notification from <System\_Name>(message)<Severity>*

The subject line of messages sent by storage systems configured for high availability (HA) start with "Cluster Notification" (Data ONTAP 7.x) or "HA Group Notification" (Data ONTAP 8.x).

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## IBM Support response

IBM Support will address cases triggered by AutoSupport. Please note that not all AutoSupport messages will result in a case. Some messages are for your information only.

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## Supported systems

AutoSupport is supported on any IBM N series systems running Data ONTAP 7.1 and later. IBM currently supports the 7.1, 7.2, 7.3, and 8.0 (7-Mode) release families.

Refer to the *Data ONTAP System Administration Guide* for the version of Data ONTAP you have installed for more information on the AutoSupport proactive health check capability. See the Data ONTAP publication matrices on the on the IBM N series support site ([www.ibm.com/storage/support/nas](http://www.ibm.com/storage/support/nas)). Refer to the Important information for N series support page ([www.ibm.com/support/docview.wss?uid=ssg1S1003659](http://www.ibm.com/support/docview.wss?uid=ssg1S1003659)) for information on accessing and navigating the IBM Support Portal.

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## AutoSupport content

AutoSupport collects configuration, status, and performance information about the storage system for IBM Support without the need for your involvement. Always refer to the *Data ONTAP System Administration Guide* for the most current AutoSupport information.

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## AutoSupport troubleshooting

If AutoSupport is not working, refer to the *Data ONTAP System Administration Guide* for the version you have installed. See the AutoSupport tool section: AutoSupport troubleshooting tasks.

## AutoSupport FAQs

Use the links below to navigate to the following frequently asked questions and their answers.

- **“AutoSupport benefits” on page 6**
  - What are the benefits of enabling AutoSupport on my IBM N series systems?
- **“AutoSupport email” on page 6**
  - How many email addresses can be defined for AutoSupport message notifications and must they belong to the same company?
  - Does IBM control whether AutoSupport notifications are associated to a customer and / or partner name? Can private email addresses receive AutoSupport messages?
  - Can AutoSupport messages be customized?
  - What if the AutoSupport messages are too large to go through the email gateway?
  - How do I test AutoSupport?
  - How do I verify my AutoSupport messages are being received by IBM Global Support's AutoSupport case automation system?
  - When should I manually generate an AutoSupport message?
  - Can I schedule when to run an AutoSupport message?
  - What if I am not or IBM is not receiving AutoSupport messages?
- **“AutoSupport configuration” on page 8**
  - How do I check for DNS server mapping and name resolution issues?
  - What do I do if the AutoSupport options have been configured but AutoSupport messages are not being sent?
  - Where can I find step-by-step instructions for setting up and testing AutoSupport for a new installation?
  - What protocols can be used to send AutoSupport messages?
  - Is AutoSupport configured by default when the system is installed?
  - What about firewalls?
  - How do I configure firewalls to allow AutoSupport messages to be transported?
  - Does IBM publish an IP address that can be put into the firewall rules (instead of FQDN hostname) when configuring AutoSupport message delivery?
- **“AutoSupport messaging” on page 12**
  - What is the content of an AutoSupport message?

- **“AutoSupport minimal setting” on page 12**
  - Is there a way to “sanitize” the AutoSupport data to erase all customer and/or site specific data?
  - How do I set security levels on AutoSupport messages?
  - If AutoSupport minimal mode is configured, what impact does it have on services and tools that rely on AutoSupport content?
  - What message details are removed when AutoSupport content is set to minimal?
- **“Performance AutoSupport” on page 13**
  - Should I enable Performance AutoSupport messages?
  - What is a Performance Data or Performance Snapshot AutoSupport message and how is it collected?
  - What level of detail does the Performance AutoSupport message provide?
- **“General AutoSupport questions” on page 14**
  - What are IBM Health Trigger (NHT) AutoSupport messages? options?
  - What is the performance or network overhead of sending AutoSupport via a IBM controller?
  - What are the **autosupport.nht\_data.enable** and **autosupport.local.nht\_data.enable** options?
  - Can I send an AutoSupport message from Data ONTAP via my storage system's service processor (SP, BMC or RLM card)?

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## AutoSupport benefits

### What are the benefits of enabling AutoSupport on my IBM N series systems?

AutoSupport is an integrated and efficient monitoring and reporting feature that constantly checks the health of IBM N series systems. It is one of the most important troubleshooting tools for our customers from IBM Support. When enabled on a system, AutoSupport:

- Provides detailed configuration and health knowledge of your N series environment
- Utilized by IBM N series Support personnel for preventive support
- Provides useful information to Support to identify and troubleshoot problems
- Sends weekly logs to IBM, where they are analyzed for system stability and performance issues

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## AutoSupport email

### How many email addresses can be defined for AutoSupport message notifications and must they belong to the same company?

Up to five email addresses can be set for each AutoSupport option that specifies email addresses. Addresses do not need to belong to the same company.

- The **autosupport.noteto** option provides for a “short note” email message containing the reason for the notification in the subject line and the time of failure. These messages are triggered only by specific urgent events and can be easily viewed on a cell phone or other text device. Useful for system administrators who read email messages on alphanumeric pagers.
- The **autosupport.partner.to** option defines the list of email addresses that will receive all AutoSupport email notifications regardless of the severity level. This option is typically used by IBM support partners.
- The **autosupport.to** option defines the list of email addresses that will receive only critical AutoSupport email notifications. However, all AutoSupport notifications, regardless of their level of severity, will continue to be sent to IBM Support as displayed by the **autosupport.support.to** or **autosupport.support.url** read-only options.

## Does IBM control whether AutoSupport notifications are associated to a customer and / or partner name? Can private email addresses receive AutoSupport messages?

AutoSupport email options support up to five email addresses, which can include distribution email aliases for each AutoSupport option. These options are defined during the initial configuration and setup of the system. There are no requirements for AutoSupport email notifications to be customer or partner specific. Private email addresses can be defined.

## Can AutoSupport messages be customized?

Yes. AutoSupport notification can be customized so that you only receive AutoSupport emails relevant to you. Customization options include:

- Smaller message body
- Customize AutoSupport email notifications
- Individual devices or whole site
- Maintains notification change history log
- Specify notification by message type or severity levels

## What if the AutoSupport messages are too large to go through the email gateway?

You should control the size of AutoSupport messages. Doing so can prevent problems, especially if using the SMTP transport protocol. AutoSupport messages contain information about the system and the contents of various /etc directory files. Your email server may have size limits that can cause messages to be dropped when SMTP is used as the protocol. To control the size of AutoSupport messages, take one or more of the following actions:

- Make sure the /etc/messages file is being rotated on a weekly basis as expected. If necessary, rotate the file manually.
- Make sure you have your /etc/syslog.conf file capture only system messages of **Warning** level or above in the /etc/messages file.
- Consider using HTTP or HTTPS for your AutoSupport transport protocol. If these steps do not resolve the problem, you can set the **autosupport.content** option to **minimal**. However, this is not recommended as you may need to manually generate AutoSupport messages when working with IBM N series Support to resolve a case.

## How do I test AutoSupport?

Testing AutoSupport helps you ensure that AutoSupport is properly configured. Enter the following command: **options autosupport.doit message** where message is the subject line for the test AutoSupport email. Enter the keyword TEST in the message so you will receive a return email indicating that the AutoSupport process is working correctly. Use the options **autosupport.doit** command in 7.x and 8.x 7-Mode. You will need to contact IBM N series support to verify that the autosupport was received. If the AutoSupport was not received, perform the troubleshooting task relative to the transport protocol (HTTP, HTTPS, and SMTP) you are using to resolve the problem. Refer to the *AutoSupport troubleshooting tasks* section of the *Data ONTAP System Administration Guide* for the Data ONTAP version you have installed.

## How do I verify my AutoSupport messages are being received by IBM Global Support's AutoSupport case automation system?

Send a user-triggered AutoSupport with the message text "TEST", using the options **autosupport.doit** command in 7.x and 8.x 7-Mode. An email will be sent back to the system owner of record to verify that the email was received.

## When should I manually generate an AutoSupport message?

You can manually generate an AutoSupport message to confirm that AutoSupport is enabled and is working correctly by using the "Call Home Check" function. Perform the **autosupport.doit** command with a subject line containing any variation of the word TEST or TESTING.



```
>options autosupport.doit "TEST ASUP"
```

An email will be sent back to the system owner of record to verify that the email was received.

When such a message is sent to IBM, the mail handler sends an automated response to the configured recipient addresses, indicating that the test AutoSupport message was received successfully.

Alternatively, if working with a IBM support person, you may be asked to manually generate an AutoSupport to assist with troubleshooting an issue.

### Can I schedule when to run an AutoSupport message?

No, but you can manually generate an AutoSupport message using the **autosupport.doit** option as needed. AutoSupport messages are generated once a week, between 12:00 midnight and 1 a.m. Sunday or when events occur on the system requiring corrective action from the system administrator or technical support, or when the system reboots. Use the **autosupport.doit** command in 7.x and 8.x 7-Mode.

### What if I am not or IBM is not receiving AutoSupport messages?

Check your system configuration to ensure that you have enabled AutoSupport, the SMTP gateway or HTTP/S configuration is correct and that your network connection can send messages to IBM. The storage system will try 15 times (by default) to send the AutoSupport notification before giving up. If the AutoSupport test message is not being sent, perform the troubleshooting task relative to the transport protocol (HTTP, HTTPS, SMTP) you are using to try and resolve the problem. Refer to the *AutoSupport troubleshooting tasks* section of the *Data ONTAP System Administration Guide* for the version you have installed.

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## AutoSupport configuration

### How do I check for DNS server mapping and name resolution issues?

The DNS system does not have a correct entry for the mail host ID which the storage system is configured to use, or there is a missing or incorrect value in the "/etc/hosts" file on the storage system. Check the DNS server mapping and "/etc/hosts" file. These must be fixed by the customer. Ensure that DNS is enabled and configured correctly on your system.

#### Check the DNS server

1. Ensure that DNS is enabled and configured correctly on your system by entering the following command(s) on the storage system:

To check configuration and errors

```
>dns info
```

To test name resolution

```
>getXXbyYY gethostbyname_r <host_name>
```

or

```
>ping <host_name>
```

2. Ensure that the system is routing messages out to the Internet successfully by entering the following command:

```
traceroute -p port support.ibm.com
```



Generally, port is 80 if you are using HTTP or 443 if you are using HTTPS. Also see Best Practices for Network Configuration with IBM Storage Systems.

### What do I do if the AutoSupport options have been configured but AutoSupport messages are not being sent?

This can be caused by one or more reasons: Storage system configuration, name resolution (DNS server), mail relay/mail host problems, blocked network ports - review the information below to find the most likely cause of the issue.

#### Storage system configuration issue:

The AutoSupport options on the storage system are not configured properly to send messages. Check the AutoSupport options. These settings must be corrected on the storage system.

```
>options autosupport.option [arguments]
```

#### Example:

```
>options autosupport.enable on
>options autosupport.mailhost mailhost.example.com
>options autosupport.to internal-support@example.com
>options autosupport.partner.to support@partner.com
```

#### Test the configuration:

```
>options autosupport.doit "TEST ASUP"
```

An email will be sent back to the system owner of record to verify that the email was received. Refer to the Data ONTAP System Administration Guide for the version you have installed for a complete listing of AutoSupport options and information about troubleshooting AutoSupport.

#### Name resolution problems

The DNS system does not have a correct entry for the mail host ID which the storage system is configured to use, or there is a missing or incorrect value in the "/etc/hosts" file on the storage system. Check the DNS server mapping and "/etc/hosts" file. These must be fixed by the customer. Ensure that DNS is enabled and configured correctly on your system.

#### Check the DNS server

Ensure that DNS is enabled and configured correctly on your system by entering the following command(s) on the storage system:

##### To check configuration and errors

```
>dns info
```

##### To test name resolution

```
>getXXbyYY gethostbyname_r <host_name>
```

or

```
>ping <host_name>
```

Ensure that the system is routing messages out to the Internet successfully by entering the following command:

```
tracert -p port support.ibm.com
```

Generally, port is 80 if you are using HTTP or 443 if you are using HTTPS. Also see Best Practices for Network Configuration with IBM Storage Systems.

#### **Mail Relay / Mail Host problems:**

The customer's mail relay is not configured to allow the storage system to relay email.

Related to this is a condition where AutoSupport messages are blocked because the email server views these messages as "spam" or unsolicited bulk email messages. This can also be a problem for the customer's storage team, who may not be receiving AutoSupport messages internally because they are being identified as spam even though messages are being successfully sent to IBM.

This must be fixed by the customer's email administrator. The details differ depending on what type of mail relay is being used. In general, each storage system that relays mail from a specific mail relay has to be configured on that relay to allow the storage system to send mail through it, usually by adding the storage system's IP Address or host name to a white list or by ensuring that the storage systems are part of the DNS database to enable reverse DNS lookups. Specific details will vary depending on the anti-virus solution in use by the customer.

#### **Blocked Network Ports – Using SMTP, HTTP or HTTPS**

If the AutoSupport test message is not being sent and you are using SMTP, check that the mail host specified is a host that the storage system can "talk to" and that the host can serve SMTP requests.

Set debug level in the syslog.conf file by creating the following line in the /etc/syslog.conf file:  
\*.debug /etc/messages

Test the AutoSupport message.

```
>options autosupport.doit "Test ASUP"
```

An AutoSupport error message is displayed.

Check that the mail host specified in the options is a host that the storage system can talk to by entering the following command on the storage system: ping mailhost\_name mailhost\_name is the name of the mail host specified in the AutoSupport options.

Log on to the host designated as the mail host and make sure that it can serve SMTP requests by entering the following command (25 is the listener SMTP port number):

```
netstat -aAn|grep 25
```

A message will appear, similar to the following text:

```
ff64878c tcp 0 0 *.25 *.* LISTEN.
```

Telnet to the SMTP port from some other host by entering the following command:

```
telnet mailhost 25
```

A message will appear, similar to the following text:

```
Trying 192.9.200.16 ...
Connected to mailhost.
Escape character is '^]'.
220 mailhost.example.com Sendmail 4.1/SMI-4.1 ready at Thu, 30 Nov 2010 10:49:04 PST
```

If you are still experiencing problems, use a local area network (LAN) trace.

If the AutoSupport test message is not being sent and you are using HTTP or HTTPS, check that DNS is enabled and configured correctly and that the system is routing messages out to the Internet successfully.

### **Where can I find step-by-step instructions for setting up and testing AutoSupport for a new installation?**

For the initial installation of a new system, see the *DOT Software Setup Guide* for your version of Data ONTAP. For detailed information on the AutoSupport configuration options, consult the *Data ONTAP System Administration Guide* for your version of Data ONTAP.

### **What protocols can be used to send AutoSupport messages?**

AutoSupport supports the following transport protocols:

- HTTPS (This is the default transport protocol used by AutoSupport, which should be used whenever possible.)
- HTTP
- SMTP (not supported on DOT 8.x 7-mode)

Because SMTP can introduce limitations on message length and line length, IBM recommends that you use HTTP or, preferably, HTTPS for your AutoSupport transport protocol. If the network connection does not allow HTTPS or HTTP, you need to configure AutoSupport for SMTP. Refer to the *AutoSupport troubleshooting tasks* section of the *Data ONTAP System Administration Guide* for the version you have installed.

### **Is AutoSupport configured by default when the system is installed?**

No. AutoSupport is enabled by default on the storage system and must be configured to ensure AutoSupport messages are set to the correct options and addresses and that a valid mail host for messages sent to your internal support group is defined.

### **What about firewalls?**

HTTPS provides the highest level of security as a transport protocol; however firewalls may block transport whereas messages sent by HTTP can typically bypass firewalls. If messages are blocked, configure the firewall to allow connections to IBM Support.

SMTP email requires a mail server. If a firewall blocks the mail server, use HTTP Post. Data ONTAP System Administration Guide for the version you have installed.

### **How do I configure firewalls to allow AutoSupport messages to be transported?**

HTTPS provides the highest level of security as a transport protocol; however firewalls may block transport whereas messages sent by HTTP can typically bypass firewalls. If messages are blocked, configure the firewall to allow connections to only `eccgw01.boulder.ibm.com`. SMTP email requires a mail server. If a firewall blocks the mail server, use HTTP Post. See the *AutoSupport* section of the *Data ONTAP System Administration Guide* for the version you have installed.

### **Does IBM publish an IP address that can be put into the firewall rules (instead of FQDN hostname) when configuring AutoSupport message delivery?**

No. IBM recommends resolving the destination IP address using DNS at all times.

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## AutoSupport messaging

### What is the content of an AutoSupport message?

Each AutoSupport message contains the following types of information. Items in the following list marked with an asterisk (\*) are suppressed when **autosupport.content** is set to **minimal** format. Items marked with two asterisks (\*\*) are partially displayed in the **autosupport.content minimal** format.

- Date and timestamp of the message
- Data ONTAP software version
- IBM N series machine type - model
- Serial number of the storage system
- Encrypted software licenses\*
- Host name of the storage system\*
- SNMP contact name and location (if specified)\*
- Console encoding type
- Output of commands that provide system information
- Checksum status
- Error-Correcting Code (ECC) memory scrubber statistics
- The following information, if High Availability (HA) configuration is licensed\*\*
  - System ID of the partner in an HA pair
  - Host name of the partner in an HA pair
  - HA node status, including the HA monitor and HA interconnect statistics
- Contents of selected /etc directory files
- Expiry date of all SnapLock volumes on the system\*
- Registry information
- Usage information\*
- Service statistics
- Boot time statistics\*
- NVLOG statistics\*
- WAFL check log
- Modified configurations
- X-header information

Information about the boot device (such as the CompactFlash card) In addition, the contents of the /etc/messages and /etc/log/ems files are sent with each AutoSupport message as .gz attachments. You can specify the value of the **autosupport.content** option as **complete** or **minimal** to control the detail level of event messages and weekly reports.

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## AutoSupport minimal setting

### Is there a way to “sanitize” the AutoSupport data to erase all customer and/or site specific data?

Yes. The **autosupport.content** option can be set to **minimal** (default is **complete**) to remove sensitive data. Some of the benefits include:

- Changing from **complete** to **minimal** deletes all previous and pending AutoSupport messages under the assumption that complete messages should not be transmitted.
- System ID is used instead of host name in the AutoSupport email subject line
- Message logs have all host names, IP addresses, and user names removed leaving no unique system information

- The **minimal** AutoSupport setting provides similar technical support case generating features as **complete** AutoSupport

#### How do I set security levels on AutoSupport messages?

You can set the level of content visible in an AutoSupport by changing the **autosupport.content** setting from **complete** (default) to **minimal**. It is recommended that the content be set to **complete** to take full advantage of tools and services that are dependent on the AutoSupport content for robust reporting and system monitoring capabilities. When the AutoSupport content is set to **minimal**, host names, IP addresses and user account information is removed from the message content. In addition, message logs are scrubbed of all system sensitive data. Key counters and indicators are still maintained allowing important data for technical support analysis and case resolution.

#### If AutoSupport minimal mode is configured, what impact does it have on services and tools that rely on AutoSupport content?

AutoSupport **minimal** has limited information content. Tools that are dependent on the AutoSupport content to deliver the full range of information reporting and system monitoring and management capabilities may have less robust output.

#### What message details are removed when AutoSupport content is set to minimal?

The following information is removed when the **autosupport.content** option is set to **minimal**:

- Encrypted software licenses
- Host name of the storage system
- SNMP contact name and location (if specified)
- The following information, if High Availability (HA) configuration is licensed: (partially displayed)
  - System ID of the partner in an HA pair
  - HA node status, including the HA monitor and HA interconnect statistics
- Expiry date of all SnapLock volumes on the system
- Usage information
- Boot time statistics
- NVLOG statistics

In addition, file attachments that are normally sent are not attached to a minimal AutoSupport message. Minimal AutoSupport messages also omit sections and values that might be considered sensitive information and significantly reduces the amount of information sent.

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## Performance AutoSupport

#### Should I enable Performance AutoSupport messages?

Yes. Performance AutoSupport messages are generated weekly and provide technical support with comprehensive performance information about your storage system for the preceding week. The **autosupport.performance\_data.enable** option is, by default, on. The performance messages can be quite large, so by default are sent only to technical support.

#### What is a Performance Data or Performance Snapshot AutoSupport message and how is it collected?

The Performance Data AutoSupport message is sent weekly. The Performance Snapshot AutoSupport message is sent shortly after a reboot of the storage system. This AutoSupport type is specifically used to send a basic set of performance statistics that have been collected with an hourly granularity from the system's Counter Manager. When it is time to generate a Performance-related AutoSupport, Counter Manager converts the hourly statistics into an XML file, which is attached to the AutoSupport message.

#### What level of detail does the Performance AutoSupport message provide?

A basic set of performance statistics are collected using an hourly granularity, which is a suitable granularity for trending.

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## General AutoSupport questions

### What are IBM Health Trigger (NHT) AutoSupport messages? options?

IBM Health Trigger (NHT) AutoSupport messages detect and report anomalies in the hard disk drive which may affect IBM system performance, functionality, quality or reliability.

- `autosupport.nht_data.enable` option enables creation and transmission of NHT AutoSupport messages, the default is off. Note that this only applies if `autosupport.support.enable` is on
- `autosupport.local.nht_data.enable` option enables transmission of NHT AutoSupport messages to destinations listed in the `autosupport.to` option, the default is off. Note that this only applies if `autosupport.nht_data.enable` is on

### What are the `autosupport.nht_data.enable` and `autosupport.local.nht_data.enable` options?

N series Health Trigger (NHT) is intended to detect and report anomalies in the hard disk drive which may affect N series system performance, functionality, quality, or reliability. The `autosupport.nht_data.enable` option enables creation and transmission of NHT AutoSupport messages. The default is **off**. Note that this only applies if `autosupport.support.enable` is **on**. The `autosupport.local.nht_data.enable` option enables transmission of NHT AutoSupport messages to destinations listed in the `autosupport.to` option. The default is **off**. Note that this only applies if `autosupport.nht_data.enable` is **on**.

### What is the performance or network overhead of sending AutoSupport via a N series controller?

The collection performance impact for AutoSupport messages is minimal. Critical storage operations have priority over AutoSupport processing. Network overhead is variable because AutoSupport messages can greatly vary in size, depending on message type and storage system model.

### Can I send an AutoSupport message from Data ONTAP via my storage system's service processor (SP, BMC or RLM card)?

No. The service processor cannot act as a proxy for AutoSupport messages generated by its host storage system. However, the service processor itself is an AutoSupport message generator - the service processor can send an AutoSupport message in the event of an abnormal disruption sustained by its host storage system. IBM Call Home support currently does not process AutoSupport messages that originate at the storage system's service processor (SP), BMC, or RLM due to incomplete system information required for processing. These messages are sent via SMTP (email) only and can be configured to send to specified email addresses. See the *Data ONTAP Administration Guide* AutoSupport section for instructions on how to enable and specify email addresses.

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GC26-7854-05

