



Log files reference

StorageGRID 11.5

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Log files reference

The following sections list the logs used to capture events, diagnostic messages, and error conditions. You might be asked to collect log files and forward them to technical support to assist with troubleshooting.

- [StorageGRID software logs](#)
- [Deployment and maintenance logs](#)
- [Logs for third-party software](#)
- [About the bycast.log](#)



The tables in this section are for reference only. The logs are intended for advanced troubleshooting by technical support. Advanced techniques that involve reconstructing the problem history using the audit logs and the application log files are beyond the scope of this guide.

To access these logs, you can collect log files and system data (**Support > Tools > Logs**). Or, if the primary Admin Node is unavailable or unable to reach a specific node, you can access the logs for each grid node, as follows:

1. Enter the following command: `ssh admin@grid_node_IP`
2. Enter the password listed in the `Passwords.txt` file.
3. Enter the following command to switch to root: `su -`
4. Enter the password listed in the `Passwords.txt` file.

Related information

[Collecting log files and system data](#)

StorageGRID software logs

You can use StorageGRID logs to troubleshoot issues.

General StorageGRID logs

| File name | Notes | Found on |
|--|---|-----------|
| <code>/var/local/log/bycast.log</code> | The file <code>bycast.log</code> is the primary StorageGRID troubleshooting file. The file <code>bycast-err.log</code> contains a subset of <code>bycast.log</code> (messages with severity ERROR and CRITICAL). CRITICAL messages are also displayed in the system. Select Support > Tools > Grid Topology . Then select Site > Node > SSM > Events . | All nodes |

| File name | Notes | Found on |
|-------------------------------|---|-----------|
| /var/local/log/bycast-err.log | The file <code>bycast.log</code> is the primary StorageGRID troubleshooting file. The file <code>bycast-err.log</code> contains a subset of <code>bycast.log</code> (messages with severity ERROR and CRITICAL). CRITICAL messages are also displayed in the system. Select Support > Tools > Grid Topology . Then select Site > Node > SSM > Events . | All nodes |
| /var/local/core/ | Contains any core dump files created if the program terminates abnormally. Possible causes include assertion failures, violations, or thread timeouts. Note: The file <code>/var/local/core/kexec_cmd</code> usually exists on appliance nodes and does not indicate an error. | All nodes |

Server Manager logs

| File name | Notes | Found on |
|---------------------------------------|--|-----------|
| /var/local/log/servermanager.log | Log file for the Server Manager application running on the server. | All nodes |
| /var/local/log/GridstatBackend.errlog | Log file for the Server Manager GUI backend application. | All nodes |
| /var/local/log/gridstat.errlog | Log file for the Server Manager GUI. | All nodes |

Logs for StorageGRID services

| File name | Notes | Found on |
|----------------------------|-------|---------------------------------------|
| /var/local/log/acct.errlog | | Storage Nodes running the ADC service |

| File name | Notes | Found on |
|--|---|---------------------------------------|
| /var/local/log/adc.errlog | Contains the Standard Error (stderr) stream of the corresponding services. There is one log file per service. These files are generally empty unless there are problems with the service. | Storage Nodes running the ADC service |
| /var/local/log/ams.errlog | | Admin Nodes |
| /var/local/log/arc.errlog | | Archive Nodes |
| /var/local/log/cassandra/system.log | Information for the metadata store (Cassandra database) that can be used if problems occur when adding new Storage Nodes, or if the nodetool repair task stalls. | Storage Nodes |
| /var/local/log/cassandra-reaper.log | Information for the Cassandra Reaper service, which performs repairs of the data in the Cassandra database. | Storage Nodes |
| /var/local/log/cassandra-reaper.errlog | Error information for the Cassandra Reaper service. | Storage Nodes |
| /var/local/log/chunk.errlog | | Storage Nodes |
| /var/local/log/clb.errlog | Error information for the CLB service. Note: The CLB service is deprecated. | Gateway Nodes |
| /var/local/log/cmn.errlog | | Admin Nodes |
| /var/local/log/cms.errlog | This log file might be present on systems that have been upgraded from an older version of StorageGRID. It contains legacy information. | Storage Nodes |
| /var/local/log/cts.errlog | This log file is only created if the Target Type is Cloud Tiering - Simple Storage Service (S3) . | Archive Nodes |

| File name | Notes | Found on |
|------------------------------------|--|---------------------------------------|
| /var/local/log/dds.errlog | | Storage Nodes |
| /var/local/log/dmv.errlog | | Storage Nodes |
| /var/local/log/dynip* | Contains logs related to the dynip service, which monitors the grid for dynamic IP changes and updates local configuration. | All nodes |
| /var/local/log/grafana.log | The log associated with the Grafana service, which is used for metrics visualization in the Grid Manager. | Admin Nodes |
| /var/local/log/hagroups.log | The log associated with high availability groups. | Admin Nodes and Gateway Nodes |
| /var/local/log/hagroups_events.log | Tracks state changes, such as transition from BACKUP to MASTER or FAULT. | Admin Nodes and Gateway Nodes |
| /var/local/log/idnt.errlog | | Storage Nodes running the ADC service |
| /var/local/log/jaeger.log | The log associated with the jaeger service, which is used for trace collection. | All nodes |
| /var/local/log/kstn.errlog | | Storage Nodes running the ADC service |
| /var/local/log/ldr.errlog | | Storage Nodes |
| /var/local/log/miscd/*.log | Contains logs for the MISCd service (Information Service Control Daemon), which provides an interface for querying and managing services on other nodes and for managing environmental configurations on the node such as querying the state of services running on other nodes. | All nodes |

| File name | Notes | Found on |
|--|---|--------------------------------|
| /var/local/log/nginx/*.log | Contains logs for the nginx service, which acts as an authentication and secure communication mechanism for various grid services (such as Prometheus and Dynip) to be able to talk to services on other nodes over HTTPS APIs. | All nodes |
| /var/local/log/nginx-gw/*.log | Contains logs for the restricted admin ports on Admin Nodes and for the Load Balancer service, which provides load balancing of S3 and Swift traffic from clients to Storage Nodes. | Admin Nodes and Gateway Nodes |
| /var/local/log/persistence* | Contains logs for the Persistence service, which manages files on the root disk that need to persist across a reboot. | All nodes |
| /var/local/log/prometheus.log | For all nodes, contains the node exporter service log and the ade-exporter metrics service log. For Admin Nodes, also contains logs for the Prometheus and Alert Manager services. | All nodes |
| /var/local/log/raft.log | Contains the output of the library used by the RSM service for the Raft protocol. | Storage Nodes with RSM service |
| /var/local/log/rms.errlog | Contains logs for the Replicated State Machine Service (RSM) service, which is used for S3 platform services. | Storage Nodes with RSM service |
| /var/local/log/ssm.errlog | | All nodes |
| /var/local/log/update-s3vs-domains.log | Contains logs related to processing updates for the S3 virtual hosted domain names configuration. See the instructions for implementing S3 client applications. | Admin and Gateway Nodes |
| /var/local/log/update-snmpp-firewall.* | Contain logs related to the firewall ports being managed for SNMP. | All nodes |

| File name | Notes | Found on |
|---|--|-------------------------|
| /var/local/log/update-sysl.log | Contains logs related to changes made to the system syslog configuration. | All nodes |
| /var/local/log/update-traffic-classes.log | Contains logs related to changes to the traffic classifiers configuration. | Admin and Gateway Nodes |
| /var/local/log/update-utcn.log | Contains logs related to Untrusted Client Network mode on this node. | All nodes |

NMS logs

| File name | Notes | Found on |
|---------------------------|---|-------------|
| /var/local/log/nms.log | <ul style="list-style-type: none"> • Captures notifications from the Grid Manager and the Tenant Manager. • Captures events related to the operation of the NMS service, for example, alarm processing, email notifications, and configuration changes. • Contains XML bundle updates resulting from configuration changes made in the system. • Contains error messages related to the attribute downsampling done once a day. • Contains Java web server error messages, for example, page generation errors and HTTP Status 500 errors. | Admin Nodes |
| /var/local/log/nms.errlog | <p>Contains error messages related to MySQL database upgrades.</p> <p>Contains the Standard Error (stderr) stream of the corresponding services. There is one log file per service. These files are generally empty unless there are problems with the service.</p> | Admin Nodes |

| File name | Notes | Found on |
|--------------------------------|---|-------------|
| /var/local/log/nms.request.log | Contains information about outgoing connections from the Management API to internal StorageGRID services. | Admin Nodes |

Related information

[About the bycast.log](#)

[Use S3](#)

Deployment and maintenance logs

You can use the deployment and maintenance logs to troubleshoot issues.

| File name | Notes | Found on |
|---------------------------------------|---|--------------------|
| /var/local/log/install.log | Created during software installation. Contains a record of the installation events. | All nodes |
| /var/local/log/expansion-progress.log | Created during expansion operations. Contains a record of the expansion events. | Storage Nodes |
| /var/local/log/gdu-server.log | Created by the GDU service. Contains events related to provisioning and maintenance procedures managed by the primary Admin Node. | Primary Admin Node |
| /var/local/log/send_admin_hw.log | Created during installation. Contains debugging information related to a node's communications with the primary Admin Node. | All nodes |
| /var/local/log/upgrade.log | Created during software upgrade. Contains a record of the software update events. | All nodes |

Logs for third-party software

You can use the third-party software logs to troubleshoot issues.

| Category | File name | Notes | Found on |
|------------------|---|---|---------------|
| apache2 logs | /var/local/log/apache2/access.log /var/local/log/apache2/error.log /var/local/log/apache2/other_vhosts_access.log | Log files for apache2. | Admin Nodes |
| Archiving | /var/local/log/dserrors.log | Error information for TSM Client APIs. | Archive Nodes |
| MySQL | /var/local/log/mysql.err /var/local/log/mysql.err /var/local/log/mysql-slow.log | Log files generated by MySQL. The file mysql.err captures database errors and events such as startups and shutdowns. The file mysql-slow.log (the slow query log) captures the SQL statements that took more than 10 seconds to execute. | Admin Nodes |
| Operating system | /var/local/log/messages | This directory contains log files for the operating system. The errors contained in these logs are also displayed in the Grid Manager. Select Support > Tools > Grid Topology . Then select Topology > Site > Node > SSM > Events . | All nodes |

| Category | File name | Notes | Found on |
|----------|--|---|---|
| NTP | /var/local/log/ntp.log /var/lib/ntp/var/log/ntpstats/ | The /var/local/log/ntp.log contains the log file for NTP error messages. The /var/lib/ntp/var/log/ntpstats/ directory contains NTP timing statistics. loopstats records loop filter statistics information. peerstats records peer statistics information. | All nodes |
| Samba | /var/local/log/samba/ | The Samba log directory includes a log file for each Samba process (smb, nmb, and winbind) and every client hostname/IP. | Admin Node configured to export the audit share over CIFS |

About the bycast.log

The file `/var/local/log/bycast.log` is the primary troubleshooting file for the StorageGRID software. There is a `bycast.log` file for every grid node. The file contains messages specific to that grid node.

The file `/var/local/log/bycast-err.log` is a subset of `bycast.log`. It contains messages of severity ERROR and CRITICAL.

File rotation for bycast.log

When the `bycast.log` file reaches 1 GB, the existing file is saved, and a new log file is started.

The saved file is renamed `bycast.log.1`, and the new file is named `bycast.log`. When the new `bycast.log` reaches 1 GB, `bycast.log.1` is renamed and compressed to become `bycast.log.2.gz`, and `bycast.log` is renamed `bycast.log.1`.

The rotation limit for `bycast.log` is 21 files. When the 22nd version of the `bycast.log` file is created, the oldest file is deleted.

The rotation limit for `bycast-err.log` is seven files.



If a log file has been compressed, you must not uncompress it to the same location in which it was written. Uncompressing the file to the same location can interfere with the log rotation scripts.

Related information

[Collecting log files and system data](#)

Messages in bycast.log

Messages in `bycast.log` are written by the ADE (Asynchronous Distributed Environment). ADE is the runtime environment used by each grid node's services.

This is an example of an ADE message:

```
May 15 14:07:11 um-sec-rg1-agn3 ADE: |12455685      0357819531
SVMR EVHR 2019-05-05T27T17:10:29.784677| ERROR 0906 SVMR: Health
check on volume 3 has failed with reason 'TOUT'
```

ADE messages contain the following information:

| Message segment | Value in example |
|--------------------------|--|
| Node ID | 12455685 |
| ADE process ID | 0357819531 |
| Module name | SVMR |
| Message identifier | EVHR |
| UTC system time | 2019-05-05T27T17:10:29.784677 (YYYY-MM-DDTHH:MM:SS.uuuuuu) |
| Severity level | ERROR |
| Internal tracking number | 0906 |
| Message | SVMR: Health check on volume 3 has failed with reason 'TOUT' |

Message severities in bycast.log

The messages in `bycast.log` are assigned severity levels.

For example:

- **NOTICE** — An event that should be recorded has occurred. Most log messages are at this level.
- **WARNING** — An unexpected condition has occurred.
- **ERROR** — A major error has occurred that will impact operations.
- **CRITICAL** — An abnormal condition has occurred that has stopped normal operations. You should address the underlying condition immediately. Critical messages are also displayed in the Grid Manager. Select **Support > Tools > Grid Topology**. Then select **Site > Node > SSM > Events**.

Error codes in `broadcast.log`

Most of the error messages in `broadcast.log` contain error codes.

The following table lists common non-numerical codes in `broadcast.log`. The exact meaning of a non-numerical code depends on the context in which it is reported.

| Error code | Meaning |
|------------|---------------------|
| SUCS | No error |
| GERR | Unknown |
| CANC | Canceled |
| ABRT | Aborted |
| TOUT | Timeout |
| INVL | Invalid |
| NFND | Not found |
| VERS | Version |
| CONF | Configuration |
| FAIL | Failed |
| ICPL | Incomplete |
| DONE | Done |
| SUNV | Service unavailable |

The following table lists the numerical error codes in `broadcast.log`.

| Error number | Error code | Meaning |
|--------------|------------|---------------------------|
| 001 | EPERM | Operation not permitted |
| 002 | ENOENT | No such file or directory |
| 003 | ESRCH | No such process |
| 004 | EINTR | Interrupted system call |
| 005 | EIO | I/O error |
| 006 | ENXIO | No such device or address |
| 007 | E2BIG | Argument list too long |
| 008 | ENOEXEC | Exec format error |
| 009 | EBADF | Bad file number |
| 010 | ECHILD | No child processes |
| 011 | EAGAIN | Try again |
| 012 | ENOMEM | Out of memory |
| 013 | EACCES | Permission denied |
| 014 | EFAULT | Bad address |
| 015 | ENOTBLK | Block device required |
| 016 | EBUSY | Device or resource busy |
| 017 | EEXIST | File exists |
| 018 | EXDEV | Cross-device link |
| 019 | ENODEV | No such device |
| 020 | ENOTDIR | Not a directory |
| 021 | EISDIR | Is a directory |
| 022 | EINVAL | Invalid argument |

| Error number | Error code | Meaning |
|--------------|--------------|-------------------------------------|
| 023 | ENFILE | File table overflow |
| 024 | EMFILE | Too many open files |
| 025 | ENOTTY | Not a typewriter |
| 026 | ETXTBSY | Text file busy |
| 027 | EFBIG | File too large |
| 028 | ENOSPC | No space left on device |
| 029 | ESPIPE | Illegal seek |
| 030 | EROFS | Read-only file system |
| 031 | EMLINK | Too many links |
| 032 | EPIPE | Broken pipe |
| 033 | EDOM | Math argument out of domain of func |
| 034 | ERANGE | Math result not representable |
| 035 | EDEADLK | Resource deadlock would occur |
| 036 | ENAMETOOLONG | File name too long |
| 037 | ENOLCK | No record locks available |
| 038 | ENOSYS | Function not implemented |
| 039 | ENOTEMPTY | Directory not empty |
| 040 | ELOOP | Too many symbolic links encountered |
| 041 | | |
| 042 | ENOMSG | No message of desired type |
| 043 | EIDRM | Identifier removed |

| Error number | Error code | Meaning |
|--------------|------------|-------------------------------|
| 044 | ECHRNG | Channel number out of range |
| 045 | EL2NSYNC | Level 2 not synchronized |
| 046 | EL3HLT | Level 3 halted |
| 047 | EL3RST | Level 3 reset |
| 048 | ELNRNG | Link number out of range |
| 049 | EUNATCH | Protocol driver not attached |
| 050 | ENOCSI | No CSI structure available |
| 051 | EL2HLT | Level 2 halted |
| 052 | EBADE | Invalid exchange |
| 053 | EBADR | Invalid request descriptor |
| 054 | EXFULL | Exchange full |
| 055 | ENOANO | No anode |
| 056 | EBADRQC | Invalid request code |
| 057 | EBADSLT | Invalid slot |
| 058 | | |
| 059 | EBFONT | Bad font file format |
| 060 | ENOSTR | Device not a stream |
| 061 | ENODATA | No data available |
| 062 | ETIME | Timer expired |
| 063 | ENOSR | Out of streams resources |
| 064 | ENONET | Machine is not on the network |
| 065 | ENOPKG | Package not installed |

| Error number | Error code | Meaning |
|--------------|------------|---|
| 066 | EREMOTE | Object is remote |
| 067 | ENOLINK | Link has been severed |
| 068 | EADV | Advertise error |
| 069 | ESRMNT | Srmount error |
| 070 | ECOMM | Communication error on send |
| 071 | EPROTO | Protocol error |
| 072 | EMULTIHOP | Multihop attempted |
| 073 | EDOTDOT | RFS specific error |
| 074 | EBADMSG | Not a data message |
| 075 | EOVERFLOW | Value too large for defined data type |
| 076 | ENOTUNIQ | Name not unique on network |
| 077 | EBADFD | File descriptor in bad state |
| 078 | EREMCHG | Remote address changed |
| 079 | ELIBACC | Cannot access a needed shared library |
| 080 | ELIBBAD | Accessing a corrupted shared library |
| 081 | ELIBSCN | |
| 082 | ELIBMAX | Attempting to link in too many shared libraries |
| 083 | ELIBEXEC | Cannot exec a shared library directly |
| 084 | EILSEQ | Illegal byte sequence |

| Error number | Error code | Meaning |
|--------------|-----------------|---|
| 085 | ERESTART | Interrupted system call should be restarted |
| 086 | ESTRPIPE | Streams pipe error |
| 087 | EUSERS | Too many users |
| 088 | ENOTSOCK | Socket operation on non-socket |
| 089 | EDESTADDRREQ | Destination address required |
| 090 | EMSGSIZE | Message too long |
| 091 | EPROTOTYPE | Protocol wrong type for socket |
| 092 | ENOPROTOOPT | Protocol not available |
| 093 | EPROTONOSUPPORT | Protocol not supported |
| 094 | ESOCKTNOSUPPORT | Socket type not supported |
| 095 | EOPNOTSUPP | Operation not supported on transport endpoint |
| 096 | EPFNOSUPPORT | Protocol family not supported |
| 097 | EAFNOSUPPORT | Address family not supported by protocol |
| 098 | EADDRINUSE | Address already in use |
| 099 | EADDRNOTAVAIL | Cannot assign requested address |
| 100 | ENETDOWN | Network is down |
| 101 | ENETUNREACH | Network is unreachable |
| 102 | ENETRESET | Network dropped connection because of reset |
| 103 | ECONNABORTED | Software caused connection abort |
| 104 | ECONNRESET | Connection reset by peer |

| Error number | Error code | Meaning |
|--------------|--------------|---|
| 105 | ENOBUFS | No buffer space available |
| 106 | EISCONN | Transport endpoint is already connected |
| 107 | ENOTCONN | Transport endpoint is not connected |
| 108 | ESHUTDOWN | Cannot send after transport endpoint shutdown |
| 109 | ETOOMANYREFS | Too many references: cannot splice |
| 110 | ETIMEDOUT | Connection timed out |
| 111 | ECONNREFUSED | Connection refused |
| 112 | EHOSTDOWN | Host is down |
| 113 | EHOSTUNREACH | No route to host |
| 114 | EALREADY | Operation already in progress |
| 115 | EINPROGRESS | Operation now in progress |
| 116 | | |
| 117 | EUCLEAN | Structure needs cleaning |
| 118 | ENOTNAM | Not a XENIX named type file |
| 119 | ENAVAIL | No XENIX semaphores available |
| 120 | EISNAM | Is a named type file |
| 121 | EREMOTEIO | Remote I/O error |
| 122 | EDQUOT | Quota exceeded |
| 123 | ENOMEDIUM | No medium found |
| 124 | EMEDIUMTYPE | Wrong medium type |

| Error number | Error code | Meaning |
|--------------|-----------------|---|
| 125 | ECANCELED | Operation Canceled |
| 126 | ENOKEY | Required key not available |
| 127 | EKEYEXPIRED | Key has expired |
| 128 | EKEYREVOKED | Key has been revoked |
| 129 | EKEYREJECTED | Key was rejected by service |
| 130 | EOWNERDEAD | For robust mutexes: Owner died |
| 131 | ENOTRECOVERABLE | For robust mutexes: State not recoverable |

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