Working Effectively with Mellanox Support

To Ensure your production effectiveness
Mellanox Support Engineering Team

Thinking service - A “problem solving and solution delivery oriented” team

Depth & Breadth - Providing a wide range of interconnect services and product support since 2002.

Expertise - Experienced and highly qualified employees, with over 15 years in the high-tech service industry.

Quality - Average tenure of 10 years, client facing experts whom are repeatedly recognized for excellence

Results - Sound instructional principles and strategies with proven track record for business impact and ROI

Focus - Our staff provides state-of-the-art training, deployment service and support
Mellanox Support Offering

- Standard Warranty
- Bronze Advanced Hardware Exchange 1-2-3-4-5Y
- Silver / Gold Hardware Support 1-3-4-5Y
- Silver / Gold Support Standalone Software Support 1-3-4-5Y
- Partner Assist Program 1-3-4-5Y
- Supplemental System Support program
- Per incident Support
- Host services Support
- Training and Deployment
All Mellanox products feature a 1 year hardware warranty. If a failure occurs, return the product to Mellanox for repair or replacement.

<table>
<thead>
<tr>
<th>Software / Firmware Updates</th>
<th>Bronze</th>
<th>Silver</th>
<th>Gold</th>
</tr>
</thead>
<tbody>
<tr>
<td>Web Only</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Committed response</td>
<td>Commercial Best effort</td>
<td>4 Hours</td>
<td>2 Hours / 30 Minutes for P1</td>
</tr>
<tr>
<td>Access to On-Line technical Training Center</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Support web access - knowledge base, doc search, web case</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Email /Web/1800 toll free</td>
<td>Email only</td>
<td>8am – 5 pm M-F</td>
<td>24 x 7</td>
</tr>
<tr>
<td>Product Coverage</td>
<td>Hardware Repair Only</td>
<td>Hardware Firmware Server Software</td>
<td>Hardware Firmware Server Software</td>
</tr>
</tbody>
</table>
Support And services Products

Advanced Services
Technical Deployment
Mellanox Care NOC
Managed Services
Proactive Health check
HPC tuning

Education Services
Instructor Led Training
Partners Training
InfiniBand Certification
Online Academy
Open Enrollment Classes

Technical Support
24x7x365 Technical Support
GOLD/SILVER/BRONZE
4H / NBD Technician Dispatch
Advanced Troubleshooting
Return Authorization Material
Knowledge Management
Service provider and regional support locations

US, Sunnyvale, CA
US, Chelmsford, MA
Mexico
Israel
Brazil
CHINA, Beijing
GULF Region
INDIA
JAPAN
South Korea
Contacting Customer Service

- **Contact Customer service**
  - You can send an email: support@mellanox.com
  - You can open a case: http://support.mellanox.com/SupportWeb/service_center/SelfService
  - You can call:
    - Toll free hotline for China: 400-671-8505
    - TAC Support= +1 (408) 916.0055
    - Toll-free (USA only): 86-Mellanox / 8663552669
    - EMEA TAC = ##-800-Mellanox or ##-800-8658247
    - Where ## is the IDD (International Direct Dialing Prefix)

- **Hours Of Operation**
  - USA TAC – 9am-6pm (GMT -05:00) Eastern Time, Mon-Fri
  - APAC/EMEA TAC – 9am-6pm (GMT +02:00) Jerusalem Time, Sun-Thu
Customer Service is the organization responsible for providing customers technical support services, including:

- Product guideline and Q&A
- Hardware and software problem troubleshooting
- Fault isolation, upgrades, Fabric issues, Etc.
- RMA
Support Terminology – What is a Service Request (SR) Case?

- A service case ticket is your assistance request application to the Support Center

- Mellanox tracks every question or request for assistance to the Technical Support Center via a service case ticket

- Each opened service ticket receives a case number, which allows us to prioritize and track your problem effectively

- Be sure to reference the case number when contacting support so that we can accurately track your case progression.

- Service request is associated with the customer’s contract by his email address
Case Types

- Different Case types
  - Technical service request
  - Feature Request – request for including a feature not initially planned in the product
  - Bug – code malfunction causing the product not behaving according to the documentation
  - RMA
Service Request (SR) - Case Severities – Level 1

- **Severity Level 1 – Fatal** – Wide failure of enterprise and/or critical business impact

  - You experience a complete loss of service; work cannot be reasonably continued, the operation is critical to the business and the situation is an emergency

  - Enterprise Network/SAN/NAS System is down and inoperable (hardware or software)
  - Critical business impact
  - Problem is causing hangs and/or data corruption, and/or is security related without a workaround
  - A critical application is unusable, the workload is totally disrupted and no work is possible; no workaround or immediate solution is available
Severity Level 2 – **High** – Significant business impact

- You experience a severe loss of service. No acceptable workaround is available; however, operation can continue in a restricted fashion.

- Partial, critical loss of functionality of the network/SAN/NAS (Single product is down).
- The problem prevents end user from using machine as originally intended
- Useful production is difficult because system or software is failing to perform properly and/or reliably
- Regular failures are occurring, and system is not completely unusable
- Problem is causing hangs and/or data corruption, and/or is security related, with a workaround
Service Request (SR) - Case Severities – Level 3

- **Severity Level 3 – Medium – Minor business impact**

  - You experience a minor loss of service. The impact is an inconvenience, which may require a workaround to restore functionality

  - Non-critical loss of functionality or performance degradation of the network/SAN /NAS (limited use)
  - Inconvenience or performance problems (overall the system is functional and able to be used for its intended purpose)
  - System or software is not operating in a normal manner
  - There is a workaround and/or the problem is very intermittent
Severity Level 4 – **Low** – Minimal business impact – System is usable

- You experience no loss of service. The result does not impede the operation of a system.

- Minor issues such as errors in the documentation, general usage, questions, and recommendations for product enhancements and/or modifications.
- Causing error messages or other nuisance type problems
- The problem is causing only a minor inconvenience, or the case is a request for information or a new feature
How To Determine Your Case Severity

Answering the following questions ensures your case is logged at the Severity you require:

1. Can you easily recover from, bypass or work around the problem? (Yes/No)

2. Does your system or application continue normally after the problem occurs? (Yes/No)

3. Are the standard features of the system or application still available; is the loss of service minor? (Yes/No)

Severity 1 setting for a case is based on the Yes/No answer provided on the question:

- Are you experiencing a business-critical loss of service that requires immediate and continuous effort in order to resolve the issue?
How Do We Work?

- **For ‘Severity Level 1’ Cases**
  
  - **24/7 Commitment:** Mellanox Support works 24x7 until the issue is resolved or as long as useful progress can be made

  - You must provide a contact during this 24x7 period, either on site or by pager, to assist with data gathering, testing, and applying fixes
  - You are requested to propose the case classification with great care, so that valid ‘Severity 1’ situations obtain the necessary resources allocation from Mellanox
What Can you do?

- Make sure your Case’s severity correctly reflects the seriousness of the problem. Let us know if it changes over time.
- Please provide complete and objective information. Use our diagnostic tools for collecting system information.
- Let us know your expectations and your opinion.
- Avoid reporting different problems in one case.
- Review our knowledgebase.
- Be prepared for remote connection with our Engineers.
What Can You Do? (continues)

- Provide a clear problem statement:
  - Is the problem reproducible?
  - Test or Production?
  - Review recent changes that were implemented
  - Review the How-to “Determine the Nature of the Problem” slide and gather all information required
Determine the Nature of the Problem

- Try to determine the cause of the problem by answering the following questions:
  - What behavior are you experiencing?
  - What behavior do you expect?
  - When was the last time the software worked properly?
  - When was the problem first observed?
  - What has changed in your environment in the interim? (installing software, changing configuration, etc.)
  - When did the problem occur?
  - When does the problem not occur?
  - What is the difference between the later two situations?
  - How extensive or localized is the problem?
  - What is the difference between the elements that exhibit the problem and those that don’t?
  - How critical is this problem to your development or deployment?
  - Can you work around it until a fix is found?
  - Is there a better way to implement the software that would make the problem disappear?

- After determining the nature problem, be as specific as possible.
- Determine the exact steps required to consistently reproduce the problem
Questions to Help Us Understand Your Environment

- Provide the environment details
- Can we do a remote connection session?
- Do you have multiple/single test environments?
- Do your test environments mirror production?
- Does your implementation schedule allow adequate time for testing?
- Do you have the knowledge and relevant personal to handle the products involved?
- Do you maintain a system logbook to track changes?
- Do you have a process that manages patches and patch testing?
<table>
<thead>
<tr>
<th>Case Life Cycle State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open - New in unassigned queue – Pending support</td>
</tr>
<tr>
<td>agent assignment</td>
</tr>
<tr>
<td>Assigned - Case is assigned to a support agent</td>
</tr>
<tr>
<td>Waiting for Customer Info - Case is pending</td>
</tr>
<tr>
<td>customer to provide debug and troubleshooting</td>
</tr>
<tr>
<td>information</td>
</tr>
<tr>
<td>Waiting for Customer to apply Patch – Case is</td>
</tr>
<tr>
<td>pending customer to apply patch</td>
</tr>
<tr>
<td>Waiting for Customer Approval – Case is pending</td>
</tr>
<tr>
<td>customer approval for closure – will automatically</td>
</tr>
<tr>
<td>closed after 14 business days</td>
</tr>
<tr>
<td>Closed – Case Closed problem resolved</td>
</tr>
<tr>
<td>Open AE – Case is assigned to sustaining</td>
</tr>
<tr>
<td>engineering queue</td>
</tr>
<tr>
<td>Assigned AE – Case is assigned to sustaining</td>
</tr>
<tr>
<td>engineer</td>
</tr>
<tr>
<td>Wait for Release – Problem is pending bug fix to</td>
</tr>
<tr>
<td>be released in future release</td>
</tr>
<tr>
<td>On Hold – Case is on hold – no activates</td>
</tr>
<tr>
<td>Feature-Request/Doc-Change</td>
</tr>
<tr>
<td>RMA Assigned - RMA Case opened and assigned</td>
</tr>
<tr>
<td>RMA Approved - RMA approved to ship/ repair</td>
</tr>
<tr>
<td>RMA Canceled – RMA request canceled</td>
</tr>
</tbody>
</table>
Case Close Survey

- **Case Survey mail notification is sent to you when the SR gets closed so you can:**
  
  1. Tell us about your opinion on the service received on that particular SR
  2. Help Support Management to evaluate and take actions accordingly
Case Escalation
Why to Escalate?

- In some cases, the case resolution process may not match your business needs. In such cases, you can escalate your Service Request
  - For example:
    - Project milestone is on a critical path
    - Erroneous functionality is causing major extra work/costs for the business and more progress in the resolution is required
    - Acceptance testing delays

- Raising Severity vs. Escalations
  - If the **Severity level** of the SR is mismatched over time, it may be raised by mutual agreement between the Technical Support representative and the customer
  - **Escalating** an issue brings more attention to it, and when needed, more resources. This doesn’t mean that the ‘Severity Level’ of the SR will be automatically changed
Quality and timeliness of information is key; Mellanox Support Team relies on the customer to communicate the relative importance of critical issues.

What is your escalation criteria?

- Project deadlines?
- Lost revenue?
- Government reporting?
- Users at your door (CIO/CFO)?

How do you request escalation:

- Updating the case with requesting escalation and/or
- Calling Support to request escalation

Nevertheless, the customer is expected to provide justification for the escalation request.
What can you expect?

- Manager escalation mutual expectation
  - Agree on proposed action plan, including identifying owners for each action
  - Ensure escalation milestones
  - Implementation dates are clearly understood
  - Agree over the date and time for periodic update
  - Agree over the de-escalation criteria

- Is the progress still unsatisfying?
  - You can consider escalating to the next Management level (Sr. Manager, MNG director, VP)
SupportWeb
Solve the Problem Faster and Save your time
Introduction to SupportWeb – www.mellanox.com/support

- Knowledge Browser
- Advanced Search
- Quick Links
- Patches, Code GA releases
- User Profile
- Online Chat
- News, Notes, Product Alerts
- Products Documentation
- Returns (RMA)
Why using SupportWeb?

- You have full access to all the available knowledge base (user manual, installation guides, etc.)
- To confirm, review and refer to different types of information (technical, service, etc.)
- To review an issue before attempting to reproduce the problem (review known issues and resolution provided)
- To review multiple solutions, workarounds and frequently asked question (FAQs, Q&A, etc.)
- Easy and simple navigation between sources; save time and effort
- To contact Mellanox Support directly by opening a case
Search/Advanced Search

- Use the Search function to locate information and solutions faster in the SupportWeb database.

- Use the Advanced Search to focus your search.
Choose the **KNOWLEDGE** tab and gain access to thousand of knowledge articles.

Sort your search according to product, access type and article type.

Some documents also available in Chinese language!
Your Cases

- You can manage all your cases and RMA online:
1. Navigate to the products page and choose the family product.
2. Choose the desired product
3. Go to the page of the requested info
To download the latest Firmware or Software version available for your product, click on “Download” tab.
Downloading Resources

- Under “Software -> Support Tool Kits” you will find many tools that help you manage the fabric.
- Among those tools, you can find the “System Snapshot” tools which gather useful information about your system.
  - The support team will ask you to download and run the relevant System Snapshot tool for your system.
  - The output of those tools will contain information about the server and the fabric, and it will enable the support team to better understand the issue you are encountering.
Online Chat

- Use our Online Chat to talk with our support team online.
RMA
Returns (RMA)

- To return a product for repair or replacement, please complete and submit the RMA Request Form at: http://www.mellanox.com/page/rma_form
Checking Assets’ Warranty Status

- You can check the warranty status of your assets online at the following page:
  http://mellanox.force.com/VF_RMA_Serial_Check

- Fill in the Serial Number, and click on “SUBMIT”.

![Screenshot of Mellanox Check Service and Support Coverage page]
RMA – Prior to Submitting the RMA Request

Guidance and How-To Video on: http://www.mellanox.com/page/rma_form

- Before submitting the RMA request:
  1. Check that the product’s warranty is still valid.
     - Please note that we cannot approve RMA requests for out of warranty assets.
  2. Review the recommended troubleshooting checklist.
     http://www.mellanox.com/page/rma_checklist
Based upon our prior experience, a short troubleshooting session may reveal the root cause of a failure and prevent redundant shipment of parts.

Please review the recommended troubleshooting checklist at the following page prior to submitting an RMA request:

RMA - Troubleshooting Checklist

- Checklists are provided for the following Mellanox product types (assets):
  - Network Adapter Card
  - Switch Power Supply and Fan FRU (Field Replacement Unit)
  - Remotely-managed (Unmanaged) Switch
  - Managed Switch
  - Switch Leaf/Spine Module
  - Cable
RMA – Filling the Form

1. Please fill in your details; contact info, Bill-to and Ship-to addressed.

2. For each faulty asset, please enter the S/N, P/N, a detailed problem description (including the troubleshooting steps you performed) and check the DOA flag (Yes/No).
   - Products count as DOA if they're faulty within 90 days of the shipping date.

3. By default, you can enter up to 5 serial numbers in the RMA form. If you need to submit an RMA request for more than 5 assets, please click on “Add Serial” as needed.

4. Finally, click on “Submit RMA Request”.
Diagnostic Tools

Solve the Problem Faster and Save Your Time
Diagnostic Tools – Mellanox Support Tool Kit

- **Performance tools**

  - **mlnxperftuner**
    - Mellanox performance tool, run with `--view`, to show performance tuning suggestions, and with `--allow_changes` to tweak the OS

  - **cpu_performance.sh**
    - Set CPU frequency to maximum

  - **set_irq_affinity.sh**
    - Distribute evenly across cores

  - **show_irq_affinity.sh**
    - Show current affinity

  - **set_irq_affinity_bynode.sh**
    - Assign to a NUMA node
Diagnostic Tools – Mellanox Support Tool Kit

- **Windows tools**
  - Windows System Snapshot
    - Collect information on host, output is saved by default under Desktop.
  - mlxWinStat
    - A small tool to query the eth and IPoIB statistics on windows (similar to “ethtool –S” on linux). compiled on Windows Server 2008 R2 (x64)
  - devicetool
    - Display Devices Mode in windows (works for 64-bit only)
Diagnostic Tools – System Snapshot tools

- The “System Snapshot” tools gathers useful information about your system.
  - The support team will ask you to download and run the relevant System Snapshot tool for your system.
  - The output of those tools will contain information about the server and the fabric, and it will enable the support team to better understand the issue you are encountering.

- The System Snapshot tools are located under:
  - Software -> Support Tool Kits -> Host Tools
Diagnostic Tools – System Snapshot tools

- **Using Linux System Snapshot:**
  1. Download the file to the server using the following link: myMellanox -> Software -> Support Tool Kits -> Host Tools
  2. Untar the file: `tar -zxvf sysinfo-snapshot.tar.gz`
  3. Enter the directory: `cd sysinfo-snapshot-XX-XX`
  4. Run the script: `./sysinfo-snapshot.sh`
  5. Send the two system info files generated under “/tmp” to the Support team.

```bash
[root@l supp-09 tmp111]# wget http://support.mellanox.com/ftp/versions/current/Tools/System-snapshot/sysinfo-snapshot.tar.gz
Resolving support.mellanox.com... 212.179.114.98
Connecting to support.mellanox.com[212.179.114.98]:80... connected.
HTTP request sent, awaiting response... 200 OK
Length: 8494 (8.3K) [application/x-tar]
Saving to: 'sysinfo-snapshot.tar.gz.1'
100%[==================================================================================================] 8,494    8.3K/s in 0.1s
2013-01-29 15:07:10 (84.5 KB/s) - `sysinfo-snapshot.tar.gz.1' saved [8494/8494]
[root@l supp-09 tmp111]# tar -zxvf sysinfo-snapshot.tar.gz
sysinfo-snapshot-1.59/
sysinfo-snapshot-1.59/README
sysinfo-snapshot-1.59/sysinfo-snapshot.sh
[root@l supp-09 tmp111]# ./sysinfo-snapshot-1.59/sysinfo-snapshot.sh
/tmp/sysinfo-snapshot-1.58-l-supp-09-26130129-1507.html.gz
/tmp/sysinfo-snapshot-1.58-l-supp-09-26130129-1507.html.md5sum
[root@l supp-09 tmp111]# ]
```
Diagnostic Tools – System Snapshot tools

- **Using Windows System Snapshot:**
  1. Download the file to the server using the following link:
     - `myMellanox → Software → Support Tool Kits → Windows Tools`
  2. Decompress the file, and run the tool on the server.
  3. Choose the path for the output file by clicking on “Set target file”.
     - The output is saved by default under Desktop.
  4. Click on “Generate HTML”.
  5. Send the generated HTML file to the Support team.
Remote Session Support
WebEX Remote Session

- **Using WebEX**
  - You can decide on allowing Support Members to have mouse/keyboard control
  - You can share your desktop, application or individual windows – Sharing only required information

- **When will it be used?**
  - To see the issue before attempting to replicate the problem
  - To verify that a solution works
  - Whenever it is the most effective troubleshooting method
  - To improve customer satisfaction
  - When proactive support is needed

- **Why Use remote session support**
  - Resolution time is reduced - resolve issues faster
  - Less SRs are re-opened and less likely to be escalated
  - Eliminates time lost waiting on serial communications
  - proactive support, Improve customer satisfaction, develop more personal relationships
WebEX Remote Session

- **Using WebEx:**
  - The customer can decide on allowing Support Member to have mouse/keyboard control
  - The customer can share their desktop, applications or individual windows while exposing only the required relevant information

- **When and why will it be used?**
  - To observe the issue before attempting a replicate the problem
  - To verify that the solution provided works
  - Whenever it is the most effective troubleshooting method; to save time and correspondences
  - To ameliorate customer’s experience of the support service
  - Whenever proactive support is needed
  - Resolution time is reduced - resolve issues faster
  - Less SRs are re-opened and the issue is less likely to be escalated
  - To develop more trusty-interpersonal relationship with the customer
Thank You