

Limelight Networks, Inc.

Customer Support Guide

July 2019

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1. Operations

Limelight Networks' Operations consists of Customer Support, the Network Operations Center (NOC), Operations Engineering, and Advanced Services. These teams are dedicated to providing a consistent, positive support experience to all our customers.

1.1. Customer Support (CS) Center

- Customer-facing technicians for Tier 1 and Tier 2 support
- Staffed 24x7 to ensure customers have access to high quality service around the clock.
- CS Technicians analyze, investigate, resolve, and facilitate escalations of customer-reported issues or requests.
- CS Technicians make all reasonable efforts to ensure that our customers receive timely responses and updates.

1.2. Network Operations Center

- The Network Operation Center (NOC) is a 24x7 highly technical staffed team that actively monitors our Global Network production environment.
- NOC Engineers perform server and network troubleshooting, system repair, Incident Management and Problem Management.
- The NOC's quick response time to potential system issues provides our customers with high availability of Limelight services.

1.3. Operations Engineering

- Staffed 24x7
- Dedicated to providing exemplary Tier 3 customer support
- Operates globally with team members located at Limelight headquarters in Scottsdale, London, Tokyo, and Seoul.

1.4. Advanced Services

- Advanced Support is available to our Enterprise-level Customers who need a deeper engagement with Limelight than Standard Support provides.
- Enhanced response to Support issues and direct paths to Tier 3 support Engineers
- Limelight Advanced Services Engineers (ASEs), Advanced Service Delivery Managers (ASDMs), and Advanced Services Architects (ASAs) work with Advanced Support Customers, building an in-depth understanding of their businesses and technical operations. These individuals serve as Customer subject matter experts within Limelight for your needs.
 - Our ASEs, ASDMs and ASAs work with Customers during business hours to address business and technical operations initiatives.
 - ASEs assist in service consistency and execution.
 - ASDMs serve as points of contact for the overall service and support of Limelight products.
 - Limelight ASAs apply the deep technical knowledge acquired in the relationship to assist in building features and efficiencies into new generations of Limelight Networks products and services.

1.5. Operations Managerial and Executive Teams

Limelight Technical Support is backed by a broad team of industry veteran managerial and executive talent dedicated to our Customer's needs. Support cases can be escalated via the support email thread or through your Company's dedicated account representative; you may also leverage the matrix below to escalate support concerns.

Name	Title	Office Phone	Mobile	E-mail	Reports to
Jesse Sandon	Manager Network Operations	602.850.6418	602.481.5161	jsandon@ltnw.com	Mary Morgan
Mary Morgan	Dir. Operations Support	602.850.4870	505.417.3148	mary@ltnw.com	Julien Vaught
Julien Vaught	VP Network Engineering	602.850.4869	520.661.2583	julien@ltnw.com	Dan Carney
Dan Carney	SVP Network Operations	602.850.4881	339.293.9874	dcarney@ltnw.com	Bob Lento

2. Support Request Categories

Customers can engage Limelight for various types of support. Email support@llnw.com, and we will route your request to the right set of people in the most expeditious and repeatable manner. Limelight Networks classifies support requests into three major categories for support needs: Technical Support Issues, Service Changes, and Enquiries.

2.1. Technical Support Issues

Technical support issues are items related to the daily operation of web properties and the Limelight Networks Content Delivery Network (CDN). These can include service-quality issues detected by customers or Limelight Networks as well as scheduled downtime. The Limelight Networks Operations team owns these types of issues. Technical Support Issues can only be opened by people listed on the contact list.

2.2. Service Changes

Service Changes are items related to ordering, cancelling, or modifying existing Limelight services. These items are primarily handled by the Account team and are tracked by the Advanced Services team. Often these service changes have commercial implications, so they need to be reviewed before implementation. Limelight Operations is responsible for implementing many of the service changes, and Advanced Services or Account Management oversees the implementation process. Service Changes may only be requested by people listed as billing resources on the contact list.

2.3. Enquiries

Enquiries include all types of general questions that Limelight may be helpful in answering. These types of enquiries are not time critical, and any customer employee can make an enquiry; however, sensitive information is restricted to authorized personnel per existing agreements. Contact your Account Manager for enquiries about service level agreements (SLAs), billing, features, or roadmaps.

3. Technical Support Issue Types

Limelight Networks' Operations team follows strict guidelines to determine the prioritization of customer requests. These guidelines include, but are not limited to: impact to customer delivery, impact to the Limelight CDN and Worldwide Internet Infrastructure. The most important factor used to determine prioritization is the disposition of the client reporting the incident. Therefore, all customer requests for a higher priority are honored. If an issue does not fit a guideline, and a customer does not express a preference in priority, the priority assigned is automatically a default priority of 3.

In this section are the guidelines Limelight Networks' Operations uses to determine issue priority in the absence of a customer-expressed priority, as well as customer-specific conditions.

3.1. Priority 1 Issues

Description: Down service

Inclusions:

- Customer/LLNW service, system, or network outage
- Customer is unable to retrieve and/or download content.
- No workaround is available.

Examples:

- Content/streams/co-location services are unavailable from the LLNW delivery infrastructure
- LLNW infrastructure outage (hardware, software, network or data center)

Notification: Customer notifications/ contact occurs every 30 minutes or a bridge is established for constant communication.

Procedure: Limelight Networks Tier 2 Group is immediately engaged, and the Incident Manager is notified.

Escalation:

Time Elapsed	Management Escalation	Technical Escalation
Immediate	Incident Manager	Level 2
15 Minutes	CS Manager	Level 3 / Ops Eng
30 Minutes	Ops Manager	
1 Hour	VP of Network Engineering	Tier 4 / Governance Group
2 Hours	SVP of Operations	SysEng, DevEng, NetEng

3.2. Priority 2 Issues

Description: Significant service degradation

Inclusions:

Customer/LLNW service, system or network degradation that significantly impacts the customers' ability to retrieve and/or download content

Examples:

- Content/ streams are buffering intermittently
- Content/ streams work in one region, but not in another region

Notification: Customer contact initiated by Limelight Networks once every 4 hours.

Procedure: Limelight Networks Tier 2 Group is immediately engaged.

Escalation:

Time Elapsed	Management Escalation	Technical Escalation
Immediate	Incident Manager	Level 2
30 Minutes	CS Manager	Level 3 / Ops Eng
1 Hour	Ops Manager	
2 Hours	VP of Network Engineering	Level 4 / Governance Group
4 Hours	SVP of Operations	SysEng, DevEng, NetEng

3.3. Priority 3 Issues

Description: Routine Issue

Inclusions:

Customer/LLNW service is not impacted due to redundancy/ backup service and/or link and there is no degradation of service

Examples:

- Limelight origin failure; backup takes over
- Routine purges in bulk

Notification: Customer contact initiated by Limelight Networks once every 8 hours.

Procedure: Limelight Networks CS team is immediately engaged.

Escalation:

Time Elapsed	Management Escalation	Technical Escalation
15 Minutes		Level 1
30 Minutes		Level 2
2 Hours	CS Manager	
4 Hours	Ops Manager	Level 3 / OpsEng
8 Hours	VP of Network Engineering	Level 4 / Governance Group

3.4. Priority 4 Issues

Description: Non-impacting event/ issue/ enquiry

Inclusions:

Customer/ LLNW request for information (status), administrative task ("how to", invoicing), or non-billable service requests

Examples:

- Monitoring request
- Testing/ Hardware replacement
- Reporting issues/ other
- New live stream creation/ requests
- Change of contact request

Notification: Customer contact initiated by Limelight Networks once every 24 hours.

Procedure: Limelight Networks CS team is immediately engaged.

Escalation:

Time Elapsed	Technical Escalation
15 Minutes	Level 1

3.5. Major Incidents

Description: Service-impacting events affecting two or more customers

Notification: Customer notifications and updates for Major Incidents are delivered en masse to all impacted customers that have elected to receive Major Incident notifications.

Procedure: These incidents are managed with an accelerated escalation timeline in order to mitigate and resolve the incident as quickly as possible.

4. Technical Support Issue Procedures

4.1. Report a Technical Issue

Contact the Operations Customer Support team to report a technical issue to Limelight Networks. You can report your issue via phone, email, or Limelight's Control portal.

- **Phone:** 1.866.544.4830 or 602.850.5200
- **Email:** support@llnw.com or support@llnw.com
- **Control Portal:** Go to the *Support* section on the left side of the Control portal, and select *Support Tickets*.

Any method generates a support ticket number you can use to track your specific issue. Although Limelight can attempt to troubleshoot problems with limited information, the time-to-resolution is impacted directly by the quality and quantity of information Limelight receives.

Required Information for Ticket Submission:

- The web property experiencing the issue (e.g. xxx.com, affiliate property, etc.)
- Business impact
- Specific portion of the property having the issue
- Nature of the issue. Some examples are:
 - Jitter in video playback (e.g. HTTP, Video, Content)
 - Rebuffering of stream (e.g. HTTP, Content)
 - Issues uploading new content
 - Video transcoding delay or failure, delay to publish
 - Complete site unreachability (HTTP)
- The geography of the problem (e.g. Paris users)
- Stream or object
- Log files examples of the problem, if applicable
- Screen shots of the problem, if possible
- Traceroute to the server(s) being used for playback
- Number of users impacted (single or multiple users)

4.2. Postmortems

Incident Management reviews all Major Incidents to determine root cause. Any possibility of the re-occurrence of the related root cause requires the creation of a Problem record. Problem Management identifies required actions and monitors the deployment of a permanent resolution for the root cause.

4.3. Customer Root Cause Analysis Report (RCA)

After a Major Incident or customer incident, a customer may request a Root Cause Analysis (RCA) report. RCAs are requested through a customer incident ticket. The Service Level Agreement (SLA) for RCA delivery is 5 business days from the resolution of the Major Incident or customer incident.

5. Customer Live Events

The goal of this process is to increase the visibility and effectiveness of monitoring live events for all our customers. This helps us ensure that our operational support staff are aware of upcoming customer events and are vigilant of issues that may affect the event. This also helps Limelight identify potential issues that can affect Content Delivery Network operations as a whole. Limelight adds the event to our event calendar and confirms customer server allocation in the specified regions.

5.1. Report a Live Event

Simply send the requested information to support@llnw.com at least 72 hours prior to the start time. There is no charge for this service.

Required Information: Customer/ Primary contact name, event date, event start/ end times, event description, published URL, LLNW services used for the event, estimated traffic, and geographic breakdown.

5.2. Live Event Services

For larger, high profile events that require our Live Event Services and live support during the event a Statement of Work (SoW) is required. Contact your Account Manager to begin the SoW process.