Procedure for Handling Network Incidents

Executive Summary

This document describes how network incidents between WLCG sites should be handled, identifying the key actors and their roles. It is applicable to all types of problem, from degradation to total outage (e.g. fibre cuts) and is independent of the network type (general purpose network or LHCOPN).

It does not guarantee that problems will be resolved within a specific timeframe and the standard escalation mechanisms should be used in case problems are not resolved sufficiently rapidly.

Introduction

Network incidents can be broadly categorized as follows:

1. A "clean" cut of the link(s) between site A & B.

In such cases the traffic is typically rerouted automatically and the interruption is transparent. Occasionally, failover / back is manual but these cases typically do not result in prolonged service disruption and are well understood.

2. Degradation – typified by lower than expected transfer rates and/or high failure rates.

Such cases can be hard to debug, often involve multiple parties and can take up to weeks to resolve.

Although the procedure described below is applicable to all cases it is of most relevance to case 2.

A network problem of this type is typically found when one or more VO observes high failure rates and / or low performance in transfers between two sites: **A & B**. After some basic debugging, for example to rule out problem related to the source or target storage element or the transfer software itself (middleware or experiment-specific), the issue is declared to be a **network issue** and raised at the WLCG operations meeting.

The key actors involved from the WLCG Operations point of view are:

- The VO representatives – typically the operations contact for the concerned VO attending the daily operations call (with handover for problems of prolonged duration);

- The representatives of sites **A** and **B**.

All interactions at the WLCG Operations level concern only these players.

To track the problem a GGUS **TEAM** ticket should be used.

All updates regarding the problem are tracked by the corresponding ticket and reported at the daily WLCG Operations call.

Responsibilities

The site representatives are responsible for interacting with their local network experts, who in turn are responsible for testing the connection between the two sites and ensuring any problem is resolved. This includes all interactions with the network service providers concerned. The site representatives should update the corresponding ticket on all changes of state, as well as at regular intervals (daily for urgent problems).

Ticket Assignment

The corresponding ticket needs to be assigned to one of the two sites. The following model is proposed:

- In the case of Tier0-Tier1 the **Tier0** is by default assigned the ticket;
- In the case of Tier0/1-Tier2 sites, the **Tier0/1** site is assigned the ticket;
- In the case of Tier1-Tier1 transfers, the **receiving** site is by default assigned the ticket;
- In all other cases the **receiving** site is again assigned the ticket by default.

In certain cases this assignment may not be appropriate in which case the assignment shall be negotiated between the VO and sites involved and documented both in the ticket as well as at the daily WLCG Operations call.

Should no agreement be reached between the three parties the WLCG Service Coordinator on duty shall determine which site shall be assigned the ticket.

Escalation

The standard escalation channels of the daily operations meeting, the fortnightly WLCG Service Coordination meeting and if necessary the WLCG Management Board shall be used.

Conclusions

A simple model for defining the actors and responsibilities for handling network problems has been described.

It has been agreed by the LHC OPN community but is equally applicable to non-OPN problems.