
Subject: **DOWNTIME SPECIFICATION FOR MSG CHANNEL**

Author(s): **James Casey**

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Distribution **WLCG**

1. OVERVIEW

This document is to specify the possible fields and values for those fields for a record descriptor to transmit downtimes from a source of this information (e.g. EGEE GOCDB, OSG Registration DB) to systems that need it like SAM, Gridview, dashboards,...

This is based on information currently published from the EGEE GOCDB. The definitive documentation for the GOCDB downtimes is published at : <https://tycho.gocdb.eu/help/downtime/>. This has been used for the basis of this document.

2. WHAT IS A DOWNTIME?

The following fields constitute a downtime record:

- A unique downtime ID
- The downtime classification (Scheduled or unscheduled)
- The severity of the downtime
- The user who entered the downtime
- The date at which the downtime was added
- The start and end of the downtime period
- A description of the downtime
- The entities affected by the downtime
- **JC – do we want/need this?** - The start and end date of CIC broadcast reminders

2.1. DOWNTIME ID

In the GOCDB, this is a small integer value. Obviously for multiple sources of downtime information, it's not clear how to manage this – an integer is not so good for being generated unique across several sources. Currently in SAM it expects an integer, so for now we can define a 'namespacing' of the integer space:

- EGEE downtimes: ID 1...99,999
- OSG Downtime: ID 100,000...199,999
- ... other ranges to be defined as needed

2.2. DOWNTIME CLASSIFICATION

The allowed classifications are 'SCHEDULED' and 'UNSCHEDULED'.

2.3. DOWNTIME SEVERITY

The allowed severities are

- At Risk (Resource will probably be working as normal, but may experience problems)
- **Moderate JC – What is difference between Moderate and Severe ???**
- Severe
- Outage (Resource will be completely unavailable)

2.4. NAMING OF AFFECTED ENTITIES

In the GOCDB (version 3) there is a hierarchical schema for naming entities e.g.

- /EGEE/CERN-PROD/dpm101.cern.ch/SE – the SE service on a given machine
- /EGEE/CERN-PROD – all services on all machines
- /EGEE/CERN-PROD/dpm101.cern.ch – All services on the machines dpm101.cern.ch

We assume all services are referenced by this 4 level hierarchical naming: e.g. for an OSG CE

- /OSG/FNAL-WC1/osgce1.fnal.gov/OSG-CE

3. ACTIONS ON DOWNTIMES

There are three possible actions that you can do with downtime messages:

3.1. CREATE A DOWNTIME

Here you are creating a new downtime – this will have a new DowntimeID, and the appropriate required fields

3.2. MODIFY A DOWNTIME

This uses an existing DowntimeID to link to the original message. It only needs to transmit the changed lines in the record. To remove a affected service, simply send the list of affected services which are left after the modification.

3.3. CANCELING A DOWNTIME

This provides an existing DowntimeID, and needs to only provide the DowntimeID

4. MAPPING OF DOWNTIME FIELDS TO MSG MESSAGE FORMAT

The message name for the downtime record is ‘**org.wlcm.management.downtime**’. We define the following fields in a org.wlcm.management.downtime message:

Field name	Type	Values/Description
Action	Enumeration	CREATE, MODIFY, CANCEL
MessageTime	ISO 8601 time	Time that this message was created
Username	DN	The user who initiated this action
DowntimeID	Integer	A globally unique identifier
DowntimeClassification	Enumeration	SCHEDULED, UNSCHEDULED
DowntimeSeverity	Enumeration	AT RISK, MODERATE, SEVERE, OUTAGE
DowntimeStart	ISO 8601 time	
DowntimeEnd	ISO 8601 time	
DowntimeDescription	String	Single line description
DowntimeAffectedService	String	Multiple entries allowed

4.1. REQUIRED FIELDS

For each action there are different required fields:

Field name	CREATE	MODIFY	CANCEL
Action	YES	YES	YES

MessageTime	YES	YES	YES
Username	YES	YES	YES
DowntimeID	YES	YES	YES
DowntimeClassification	YES	If modified	
DowntimeSeverity	YES	If modified	
DowntimeStart	YES	If modified	
DowntimeEnd	YES	If modified	
DowntimeDescription	YES	If modified	
DowntimeAffectedService	YES	If modified	

4.2. EXAMPLES

4.2.1. Creation

```

Action: CREATE
MessageTime: 2008-02-01T14:02:01
Username:/DC=ch/DC=cern/OU=OrganicUnits/OU=Users/CN=jamesc/CN=380618/CN=James
Casey
DowntimeID: 100123
DowntimeClassification: SCHEDULED
DowntimeSeverity: OUTAGE
DowntimeStart: 2008-03-01T00:00:00
DowntimeEnd: 2008-03-01T12:00:00
DowntimeDescription: Upgrade of database backend
DowntimeAffectedService: /EGEE/CERN-PROD/dpm101.cern.ch/SE
DowntimeAffectedService: /EGEE/CERN-PROD/lfc101.cern.ch

```

4.2.2. Modification

```

Action: MODIFY
MessageTime: 2008-02-01T14:04:01
Username:/DC=ch/DC=cern/OU=OrganicUnits/OU=Users/CN=jamesc/CN=380618/CN=James
Casey
DowntimeID: 100123
DowntimeEnd: 2008-03-01T16:00:00

```

4.2.3. Cancellation

```

Action: CANCEL
MessageTime: 2008-02-01T14:06:05
Username:/DC=ch/DC=cern/OU=OrganicUnits/OU=Users/CN=jamesc/CN=380618/CN=James
Casey
DowntimeID: 100123

```

4.3. MESSAGE CHANNELS

Since this is a broadcast, we use topics in the messaging system. We define the following channel infrastructure:

- grid.management.downtime.<INFRASTRUCTURE>

where <INFRASTRUCTURE> is one of 'EGEE', 'OSG', TBD. This will allow for components to easily subscribe just to changes in their infrastructure, without having to use selectors on the topic.

JC- This ties a message to a single infrastructure – perhaps we don't want this ?

5. SAMPLE MSG-PUBLISH-SIMPLE CONFIGURATION

Here is the snippet of configuration file for using this message format with the msg-publish-simple tool.

```
[publisher]
# The standard endpoint
endpoints=http://gridmsg001.cern.ch/message stomp://gridmsg001.cern.ch:6163
messageClass=org.wlcg.management.downtime

org.wlcg.management.downtime_reqattrs=Action,MessageTime,User,DowntimeID
org.wlcg.management.downtime_headerattrs=Action,DowntimeID,DowntimeAffectedService
org.wlcg.management.downtime_destination=/topic/grid.management.downtime.<INFRASTRUCTURE>
```

where <INFRASTRUCTURE> is replaced with your INFRASTRUCTURE name.

6. CHANGES

Version 1.1 : 08-05-08

- Changed field due to conflict with SQL reserved words:
 - o 'user' becomes 'username'
 - o 'timestamp' becomes 'messageTime'