

# Prediction

## Project: Prediction

A failure prediction system could be deployed to help the NFV system avoid the unexpected failure in advance. The whole failure prediction system is made up of a data collector, a failure predictor and a failure management module.

This project aims to development a predictor framework, a data collector model and a dashboard. User could define which failure should be detected and which data should be used for prediction via dashboard.

The predictor framework is based on machine learning library, e.g. Weka, Spark ML lib. User can define what failure should be detected and which data is used for prediction. The predictor will collect data automatically and perform corresponding prediction.

The data collector consists of Ceilometer and Monasca which can be extended to plugin some other open source data collectors, e.g. Zabbix, Nagios, Cacti. Based on real-time analytics techniques and machine learning techniques, the failure predictor analyses the data gathered by the data collector to automatically determine whether a failure will happen. If a failure is judged, then the failure predictor sends failure notifications to the failure management module, which could handle these notifications.

In Brahma Putra release, we have defined requirement documents. In release Colorado, we will deliver code, including dashboard, data collector and predictor framework.

- Deliverable:
  - Brahma Putra
    - Use cases and gap analysis [PDF](#)
- Workspace
  - Project Proposal: [data collection for failure prediction](#)
  - Prediction Workspace: <https://etherpad.opnfv.org/p/prediction>
  - Release Planning (current) [Colorado Planning](#)

Prediction's data collection model can collect data through Ceilometer, Zabbix and Monasca. User could select metrics in scope of Ceilometer, Zabbix and Monasca for prediction. All metrics are defined below.

- Related documents:
  - Data collected by Ceilometer: [telemetry\\_measurements\\_related\\_failure\\_analysis.xlsx](#)
  - Data collected by Zabbix 3.0: [zabbix3.0\\_measurements\\_related\\_failure\\_analysis.xlsx](#)
  - Data collected by Monasca: [monasca\\_measurements\\_related\\_failure\\_analysis.xlsx](#)

### Quick links:

- **IRC** : freenode #opnfv-prediction
- **Mailing List**: use [opnfv-tech-discuss](#) and tag your emails with [prediction] in the subject for easier filtering
- **Meetings**: <https://wiki.opnfv.org/meetings/prediction>
- **Review**: <https://gerrit.opnfv.org/gerrit/>
- **Repository**: <https://git.opnfv.org/cgit/prediction/>
- **JIRA**: <https://jira.opnfv.org/browse/PREDICTION>

## Key Project Facts

**INFO** (source from prediction)

Project Name: Prediction  
Repo name: prediction  
Category: Requirement  
Lifecycle State: Proposal approved  
Primary Contact: hai.liu@huawei.com  
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Link to TSC approval of the project: <http://meetbot.opnfv.org/meetings/opnfv-meeting/>  
Link(s) to approval of additional submitters:

## Committers and Contributors

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