

## **ABSTRACT**

### **DESIGN OF MONITORING SYSTEM FOR BANDWIDTH, ELECTRICAL AND TEMPERATUR USING RASPBERRY PI™ IN LAMPUNG UNIVERSITY DATACENTER**

By

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Information technology infrastructure is an important thing in collage. In collage environment, there are a few important information technology infrastructures such as datacenter and internet connection. To build a data center, there's a requirement for temperature and electricity to support performance of Lampung University IT services. To accomodate the requirement, we design systems which able to monitor the bandwidth, electricity and the temperature in datacenter using Raspberry Pi. The system can also display information online, email seport and send sms notification to UPT-Puskom administrator. The systems build using software engineering principles, especially modified waterfall model. Modified waterfall consist of 5 stages : systems analysis, design, implementation, testing, and pmaintenance. The tests result conducted use of maximum bandwidth in Lampung University occurring at working hours starting from 8 am to 4 pm. The data obtained from sensors temperature on each rack server uneven result. During April, May, to June there were at least 20 days blackout and 12 day blackout occurred when at night. Based on testing result, estimated data for one years, is 3.3 GB and while the systems running, the use of cpu resource is less than 20% when no process error occured. Monitoring system for bandwidth, electrical, and temperature using Raspberry Pi in Lampung University datacenter able to achieve it's goal to collect bandwidth, electrical, and temperature data.

**Keyword** : Raspberry Pi, bandwidth monitoring, electrical monitoring, temperatur monitoring, datacenter.