

(B) Development of syslog based status logging and analysis system for Large Volume Plasma Device

Abstract

Large Volume Plasma device (LVPD) [1] is dedicated for fundamental plasma physics experiments. The machine control system [2-4] is used for protected and synchronized operation of various subsystems of the device for experimental investigations. The development is ongoing and status logging and analysis is a central component of this development. LabVIEW is adapted as application development environment for the development of machine control system and Syslog (RFC 3164), as logging standard. A systematic investigation of LabVIEW and syslog interface has been undertaken, syslog server has been benchmarked and infrastructure is developed. In continuation of preliminary work executed earlier [5], project will focus on following objectives:

- a. Integration of various LabVIEW applications into syslog logging architecture
- b. Investigation of RFC 5424 as logging standard and development of driver for it
- c. Investigation of syslog analyzer tools on RHEL platform
- d. Investigation and integration of data mining and machine learning techniques for high level data analysis

Finally, developed software will become an integral part of central machine control system.

Relevant references [Publications, web links etc.]:

1. MATTOO, S. K., ANITA, V. P., AWASTHI, L. M. et. al., Rev. Sci. Instrum. **72** , 3864 (2001)
2. SUGANDHI, R., SRIVASTAVA, P. K., SANYASI, A. K., et. al., *fusengdes.* 12, 804 (2016).
3. SUGANDHI, R., SRIVASTAVA, P. K., SANYASI, A. K., et. al., *fusengdes.* 15, 49 (2017).
4. SANYASI, A. K., SUGANDHI, R., SRIVASTAVA, P. K., et.al. Rev. Sci. Instrum. 89,055113 (2008).
5. KAUR, G., SUGANDHI, R., et. al., Investigation of LabVIEW and Syslog Interface using In-house Developed Generic Logging Software, Technical report at IPR (TR-508, Aug 2018)

Eligibility: Only students of M.E. / M.Tech. / M.Sc. (Engineering) / M.S. in Computer

Sc./Computer Engineering/Information Technology/ Information and communication technology

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