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The Japan Research Institute, Limited

Press Release

## **“Development of Linux Security Enhancement Modules”**

The Japan Research Institute, Limited (Head Office: Chiyoda-ku, Tokyo, President: Shunichi Okuyama, - Referred to as Japan Research Institute) is developing software (Linux Basic Security Modules, referred to as LBSM henceforth) for enhancing the security of Linux and is planning to release the product in April. The LBSM that is currently being developed is a kernel module for Linux and is designed to enhance the security without replacing the Linux kernel currently installed. Japan Research Institute is also planning to provide a secure system construction service by incorporating LBSM. This will be the first service made available in the domestic Sier by incorporating the locally developed security enhancement technology.

### **1. Progress of the Development**

With the recent increase in attempts of illegal access, the demand for an operating system with enhanced security is rapidly increasing in corporations, government agencies, and local public bodies. There is also a trend towards active introduction of open source software whose source code is publicly available such as Linux into the e-government systems.

Based on these trends, Japan Research Institute predicted an increase of demand for a safe operating system developed by the domestic technology and has been developing our proprietary software for enhancing the Linux security.

Japan Research Institute is also developing services for corporations, government agencies, and local public organizations that require advanced security measures, by starting a system construction service using Linux with enhanced security as the platform.

### **2. Functions**

Japan Resource Institute is currently developing the LBSM for realizing two functions among those functions that are essential for level B1 (\*1) that is defined in TCSEC (alias ‘Orange Book’). By combining the functions that use open source software, the security of the entire Linux will be enhanced.

The following functions will be realized.

- (1) Auditing function
- (2) Essential access control function
- (3) Buffer overflow countermeasure function

\* The technologies of Japan Research Institute are used for the functions (1) and (2) and open source software is used for the function (3).

### **3. Schedule**

The LBSM will be released in April.

We are planning to develop various Linux applications with the enhanced security using this software such as WEB server, mail server, and DNS server.

In the future, we will integrate these functions as a “Trusted OS” combining with other security functions under various corporate participations, with the intention of ISO 15408 license acquisitions.

(\*1) Level B1 specified in TCSEC (alias ‘Orange Book’)

TCSEC is the procurement standard of the U.S. government and defines the security requirements of each level by classifying operating systems into the following levels based on the reliability.

- A Verified design
- B3 Security domain
- B2 Structured protection
- B1 Label type protection (forced access control)
- C2 Protection by access control
- C1 Optional protection
- D Minimum security

\* Linux is a registered trademark or a trademark of Linus Torvalds of the USA and other countries.

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