

Himawari Data Transfer to Asian Countries

*Praphan Pavarangkoon¹, Ken T. Murata¹, Kazunori Yamamoto¹, Atsushi Higuchi², Takamichi Mizuhara³, Yuya Kagebayashi³, Ayahiro Takaki³, Kazuya Muranaga⁴, Chalermopol Charnsripinyo⁵, Bayani Benjamin R. Lara⁶, Joel Joseph S. Marciano, Jr.⁶, Eric Yen⁷, Simon C. Lin⁷, Keiichiro Fukazawa⁸

1. National Institute of Information and Communications Technology, Japan, 2. Center for Environmental Remote Sensing, Chiba University, Japan, 3. CLEALINK TECHNOLOGY Co., Ltd., Japan, 4. Systems Engineering Consultants Co., Ltd., Japan, 5. National Electronic and Computer Technology Center, Thailand, 6. Advanced Science and Technology Institute, Department of Science and Technology, Philippines, 7. Academia Sinica Grid Computing Centre, Taiwan, 8. Academic Center for Computing and Media Studies, Kyoto University, Japan

Quick dissemination of weather information to Asian countries in the risk region is of great significance from the viewpoint of weather disaster mitigation. Geostationary meteorological satellites play an important role to provide continuous atmospheric observations both for weather forecasting and for monitoring a wide range of environmental phenomena. The third-generation geostationary meteorological satellites equipped with highly improved imagers, e.g., Himawari-8/9 provide a huge amount of Earth observation data. In this research, we propose a high-speed data transmission system using a file transfer tool, called high-performance copy (HCP). The HCP is high-performance and flexible protocol 2 (HpFP2)-based and is a server-client command line tool, which works on several operating systems (OSs) such as Linux and Windows. It can push files to another server or pull files from another server. With the advantages of the HpFP2, the HCP is able to transfer files effectively under networks with high latency and packet loss, e.g., international networks. In addition, the HCP is a great way to synchronize files that a user can maintain on more than one system. In the proposed high-speed data transmission system, a set of tiled pyramid image files is generated every 10 minutes on the Himawari-8 real-time web in Japan, and then transferred to the mirror websites in Thailand, Philippines, and Taiwan. Moreover, we have a plan to provide the archive data to Asian countries in the near future. The results show that our system is effective and appropriate for real use. This suggests that the proposed high-speed data transmission system has a potential for deployment in other Asian countries.

Keywords: Himawari, Earth Observation, Data Transfer, HpFP