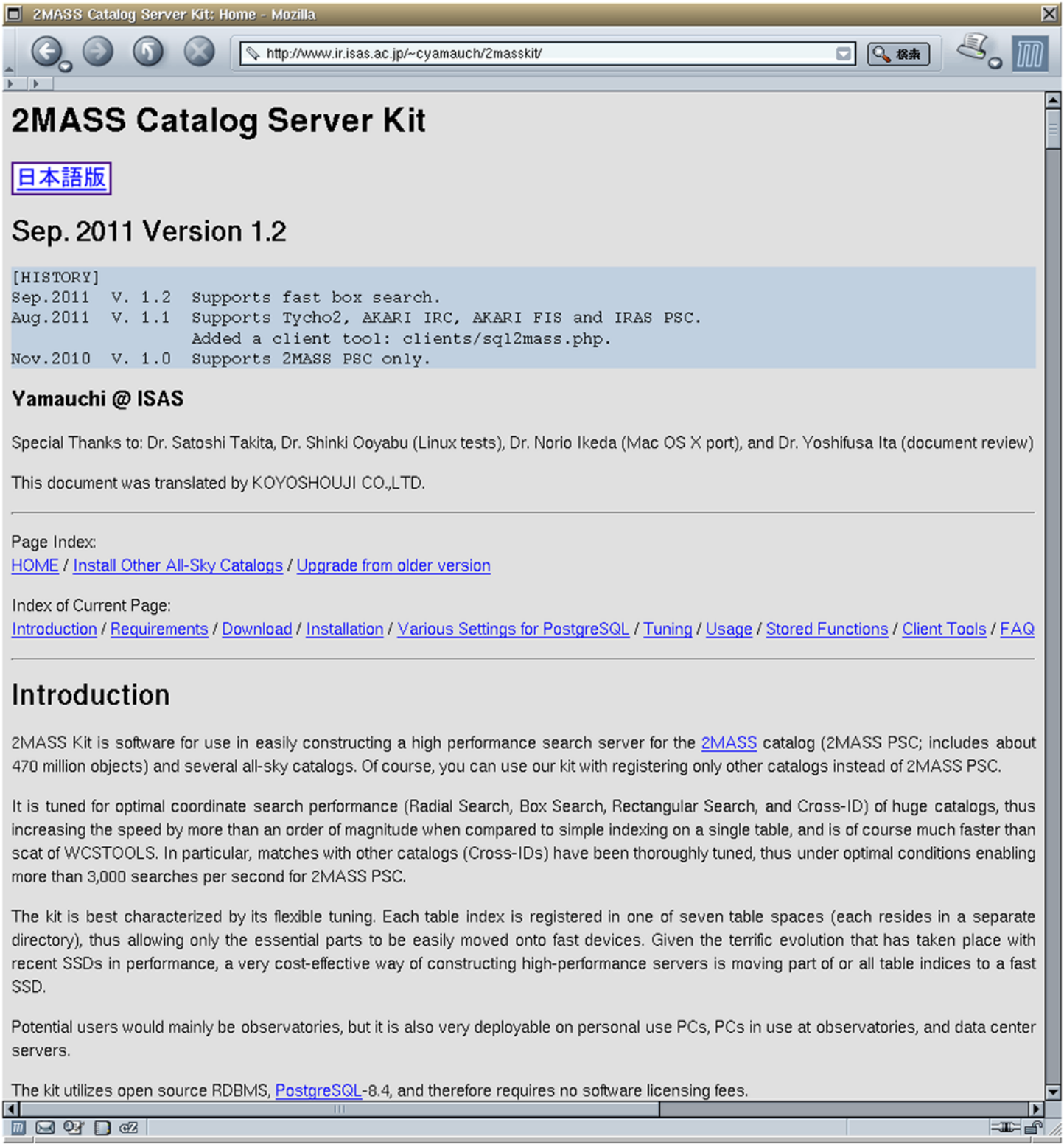

2MASS Catalog Server Kit

日本語版

Sep. 2011 Version 1.2

```
[HISTORY]
Sep.2011  V. 1.2  Supports fast box search.
Aug.2011  V. 1.1  Supports Tycho2, AKARI IRC, AKARI FIS and IRAS PSC.
                  Added a client tool: clients/sql2mass.php.
Nov.2010  V. 1.0  Supports 2MASS PSC only.
```

Yamauchi @ ISAS

Special Thanks to: Dr. Satoshi Takita, Dr. Shinki Ooyabu (Linux tests), Dr. Norio Ikeda (Mac OS X port), and Dr. Yoshifusa Ita (document review)

This document was translated by KOYOSHOUJI CO.,LTD.

Introduction

2MASS Kit is software for use in easily constructing a high performance search server for the 2MASS catalog (2MASS PSC; includes about 470 million objects) and several all-sky catalogs. Of course, you can use our kit with registering only other catalogs instead of 2MASS PSC.

It is tuned for optimal coordinate search performance (Radial Search, Box Search, Rectangular Search, and Cross-ID) of huge catalogs, thus increasing the speed by more than an order of magnitude when compared to simple indexing on a single table, and is of course much faster than scat of WCSTOOLS. In particular, matches with other catalogs (Cross-IDs) have been thoroughly tuned, thus under optimal conditions enabling more than 3,000 searches per second for 2MASS PSC.

The kit is best characterized by its flexible tuning. Each table index is registered in one of seven table spaces (each resides in a separate directory), thus allowing only the essential parts to be easily moved onto fast devices. Given the terrific evolution that has taken place with recent SSDs in performance, a very cost-effective way of constructing high-performance servers is moving part of or all table indices to a fast SSD.

Potential users would mainly be observatories, but it is also very deployable on personal use PCs, PCs in use at observatories, and data center servers.

The kit utilizes open source RDBMS, PostgreSQL-8.4, and therefore requires no software licensing fees.