Making the PDS Planetary Plasma Interactions (PPI) Node Data Accessible via the EPN-TAP Protocol, HAPI Server, and PDS API

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Introduction

PDS Planetary Plasma Interaction (PPI) Node is improving data access between data systems. In particular, we have developed support for the EuroPlaNet Table Access Protocol (EPN-TAP) and the Heliophysics Applications Programmer's Interface (HAPI). Data access between data systems within and across space science disciplines has long been a goal of NASA and many other national and international organizations.

EPN-TAP

The data from PPI is available to anyone. PPI follows the FAIR principles of data access services. There are several tools for data display and analysis which are developed under Europlanet or IVOA auspices. These tools (TOPCAT, Aladin, 3D-view, and etc) can access by TAP server.
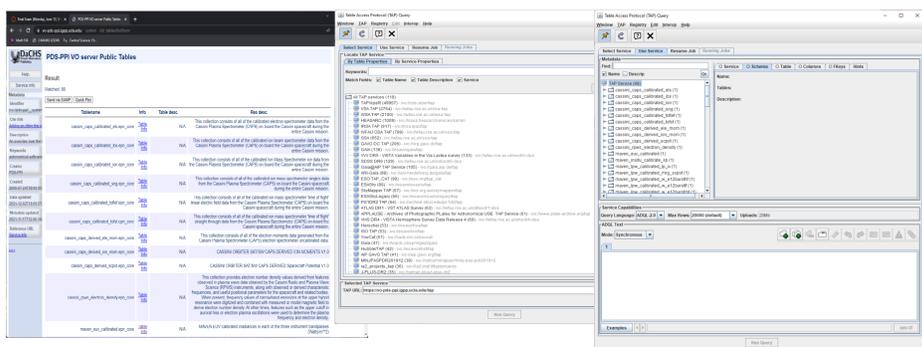

PPI currently has 82 data collection tables. The TAP services can be access through TOPCAT.
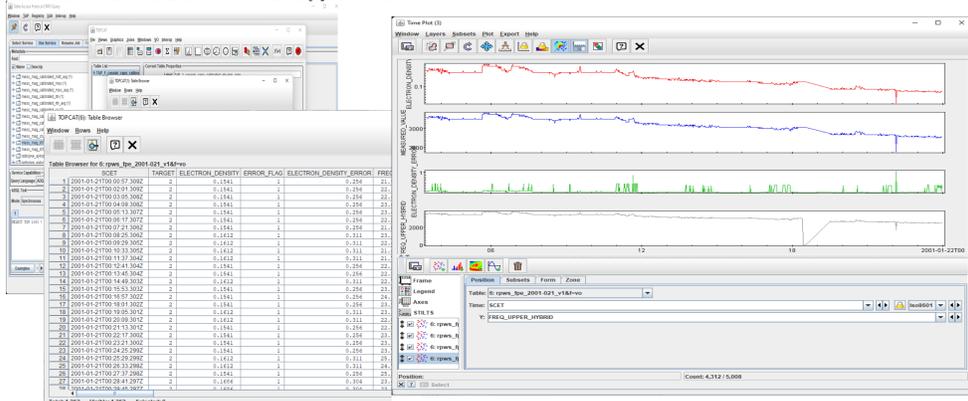
TOPCAT provides capabilities to view and plot the data. The PPI goal for TAP server is make available all PDS4 Data.

HAPI

PPI supports the Heliophysics Applications Programmer's Interface (HAPI) server. The specification defines downloading time-series data and streaming data parameter details. HAPI is used to download data. User can access HAPI server at PPI https://pds-ppi.igpp.ucla.edu/hapi and can find available data collections from the server.   PPI is currently contains 195 data collections. User can get data using **cget** or **wget**. User can download csv formatted data. PPI will support PPI HAPI service by using **Autoplot(http://autoplot.org)**.
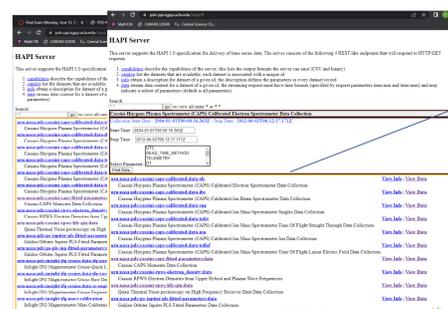

This is viewing from PPI website for HAPI Viewing parameters and downloading data are available now.
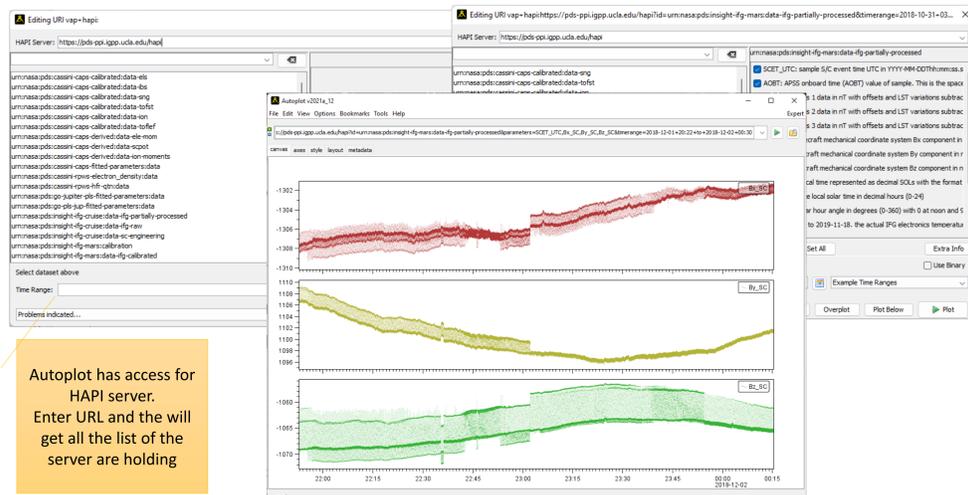
Autoplot has access for HAPI server. Enter URL and the will get all the list of the server are holding

 User can view parameters and the parameters' details from **Autoplot** and also possible to plot the data. PPI's goal is making all the time-series data available using HAPI service.

PDS API
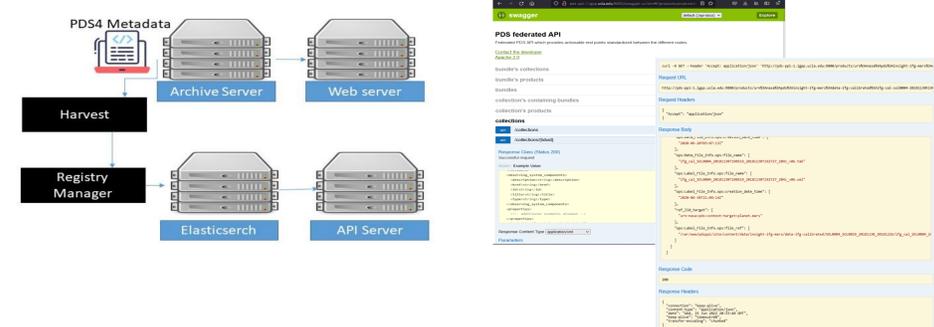
Harvest and Registry Manager are developed by NASA Jet Propulsion Laboratory. The **Harvest** is a command-line tool to crawl and extract metadata from PDS4 labels. **Registry Manager** is a command-line tool to create/delete Registry indices in Elasticsearch and to load, delete and export registry data. User can query with identifier of bundle, collection or product. Also directly request through URL or get query using curl command.

References

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https://ivoa.net/documents/EPNTAP/
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[3] Jordan Padams, The PDS Application Programming Interface (API), https://github.com/NASA-PDS/pds-api/blob/main/docs/spec/pds-api-specification.md