Mellanox NPS-400 EZdk Installation Guide

Rev 2.1 Open

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Release Update History

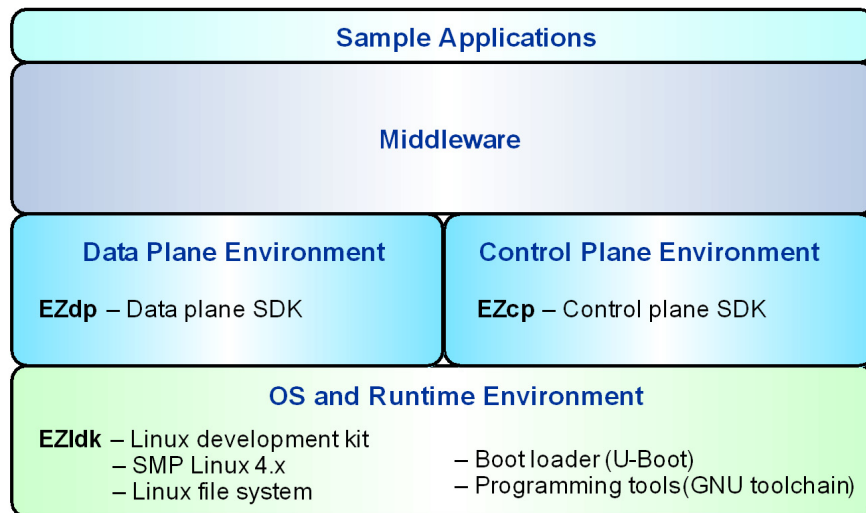| Release	Date	Description
Rev 2.1 Open	July 7, 2016	Relates to EZdk version 2.1a Open.

1 Introduction

The EZdk software development kit is a comprehensive set of design and runtime tools developing both data-plane and control-plane applications for NPS devices.

Figure 1: EZdk Software Development Kit

EZdk – Software Development Kit for NPS

2 Folder Structure and Contents

Table 1 - Folder Structure and Contents

Folder	Contents
/EZdk	
/cpe	Control-plane environment libraries
/agt	Control-plane agent library
/cp	Control-plane application services library
/dev	Control-plane device access layer library
/env	Control-plane environment library
/jsonrpc-c	Jason-RPC server (used by agt library)
/libev	Event loop library (used by jsonrpc-c library)
/spy	Control-plane application spy library
/uio	User space IO Kernel driver for NPS device
/doc	Documentation
/dpe	Data-plane environment libraries
/dp	Data-plane application services library
/frame	Data-plane frame services library
/ldk	Linux Development Kit
/images	Pre-build Linux kernel image and root file-system for each target
/sources	Source packages used by Buildroot
/sysroot	Pre-built root file system, used by GDB for libraries when debugging.
/toolchain	Pre-built GNU toolchain (assembler, compiler, standard libraries, etc.)
/samples	Sample applications
/tools	Development tools
/EZcpPyLib	Python library for executing remote commands to control plane environment libraries.
/EZware	Basic control plane application

3   Documentation

The following documentation can be found in the doc folder of the EZdk installation:

General

- *EZdk Release Notes* – provides additional information related to the release not contained in the product's manuals.

- *EZdk Installation Guide* (this document) – provides information on EZdk installation procedure and contents.

Control Plane and Data Plane Environments

- *NPS-400 Developer's Guide* – Describes each of the control plane libraries and each of the data plane libraries and their respective APIs. Describes the various EZdk Control Plane Library (EZcp) components and how they can be ported to various platforms and used to develop control-plane applications for NPS-based products. It includes:

  - EZcp – describes the Control Plane Service library (EZcp) and its related APIs. The EZcp library provides an application programming interface (API) for control-plane applications for the NPS network processor, abstracting the complexities of the underlying hardware.

  - EZdev – describes the Device Access Layer library (EZdev) and its related APIs. The EZdev library defines and implements the services required for accessing NPS devices, such as detecting the devices on the PCI Express bus, mapping the devices to the CPU address space, performing memory accesses to the devices, and handling interrupt event notifications from the devices.

  - EZenv – describes the Environment library (EZenv) and its related APIs. The EZenv library provides a shared runtime infrastructure for all Control Plane Environment (CPE) libraries.

  - EZspy – describes the Spy tool and its related APIs.

  - EZdp – describes the Data Plane Services library (EZdp) and its related APIs. The EZdp library provides an application programming interface (API) for data-plane applications running on NPS network processors, abstracting the complexities of the underlying CTOP core instruction set and various hardware accelerators.

  - EZframe – provides detailed descriptions of the EZframe data plane library's APIs.

  - EZldk – provides information on configuring and building the OS runtime software for NPS targets using the Linux development kit.

Sample Applications

- *NPS-400 Demo Application* – sample data plane and control plane application designed to enable developers to quickly begin writing an application for an NPS-400 system.