



An Efficient Design of Intelligent Network Data Plane

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This artifact appendix is included in the Artifact Appendices to the Proceedings of the 32nd USENIX Security Symposium and appends to the paper of the same name that appears in the Proceedings of the 32nd USENIX Security Symposium.

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A Artifact Appendix

A.1 Abstract

This artifact performs model inference on a programmable switch to complete traffic classification. It specifically includes the transformation of the decision tree model to the flow table and the logic of the control plane and data plane on the programmable switch. The evaluation requires a Intel Tofino 1 programmable switch with SDE version 9.1.0, and two servers to send and receive traffic respectively. In addition, a python execution environment is needed that can perform model transformation and interaction between the control plane and data plane. The verification is done by calculating the accuracy of the received packet class, and the expected result is that the accuracy is basically the same as the result in the paper.

A.2 Artifact check-list (meta-information)

- **Algorithm:** New algorithm
- **Publicly available (explicitly provide evolving version reference)?:** <https://github.com/IDP-code/NetBeacon>
- **Code licenses (if publicly available)?:** MIT License
- **Archived (explicitly provide DOI or stable reference)?:** Yes

A.3 Description

A.3.1 How to access

<https://github.com/IDP-code/NetBeacon>

A.3.2 Hardware dependencies

N/A

A.3.3 Software dependencies

N/A

A.3.4 Data sets

N/A

A.3.5 Models

N/A

A.3.6 Security, privacy, and ethical concerns

No

A.4 Installation

Download from the <https://github.com/IDP-code/NetBeacon>

A.5 Experiment workflow

N/A

A.6 Evaluation and expected results

N/A

A.7 Version

Based on the LaTeX template for Artifact Evaluation V20220119.