

Documentation

Introduction

Developer Guides

Research

Application

Application-Layer Topics

Tagline goes here

End-to-End Transport API and Protocols

The end-to-end protocols used by clients for reliable and unreliable communication.

Client-to-Router Interface API and Protocols

The lowest-level API used for clients (applications) to send and receive traffic to a router.

Cryptography

End-to-End Encryption

Tagline goes here

Network

Transport Layer

The protocols for direct (point-to-point) router to router communication.

Tunnels

Selecting peers, requesting tunnels through those peers, and encrypting and routing messages through these tunnels.

Network Database

Distributed storage and retrieval of information about routers and clients.

Router

Router Message Protocol

I2P is a message-oriented router. The messages sent between routers are defined by the I2NP protocol.

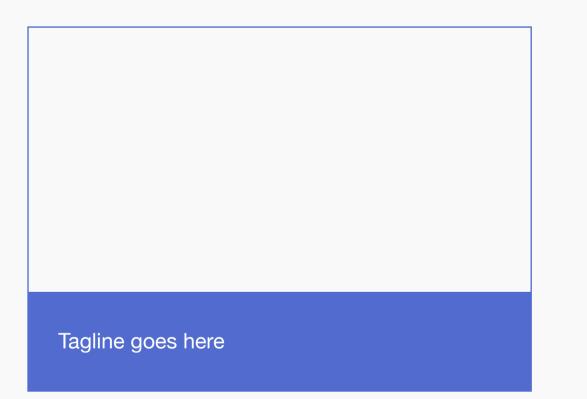
Other Router Topics

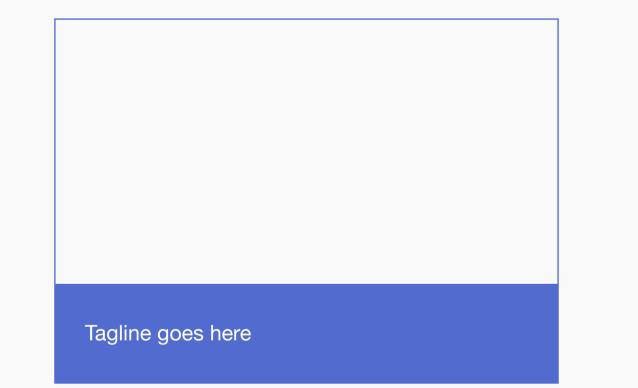
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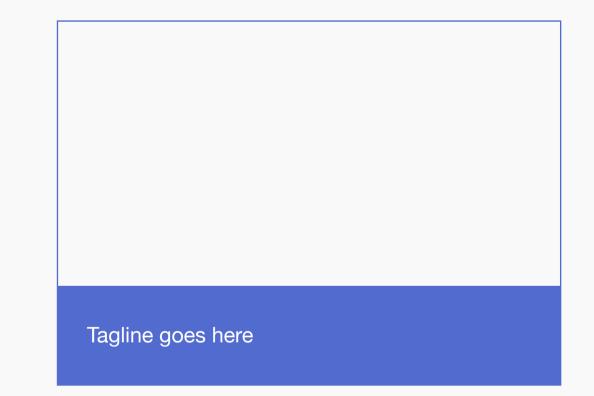
APIs

| EXAMPLE SESSION DIALOGUE simple telnet 127.0.0.1 | | | | |
|--|----|--------------------------|-------------------|--|
| A = Application | | | | |
| C = BOB's Command response. | | | | |
| | | | | |
| FROM | то | DIALOGUE | | |
| с | А | BOB 00.00.10 | | |
| с | А | ок | | |
| А | с | setnick mouth | | |
| с | А | OK Nickname set to mouth | | |
| | | | | |
| BOB Protocol | | | Tagline goes here | |
| | | | | |

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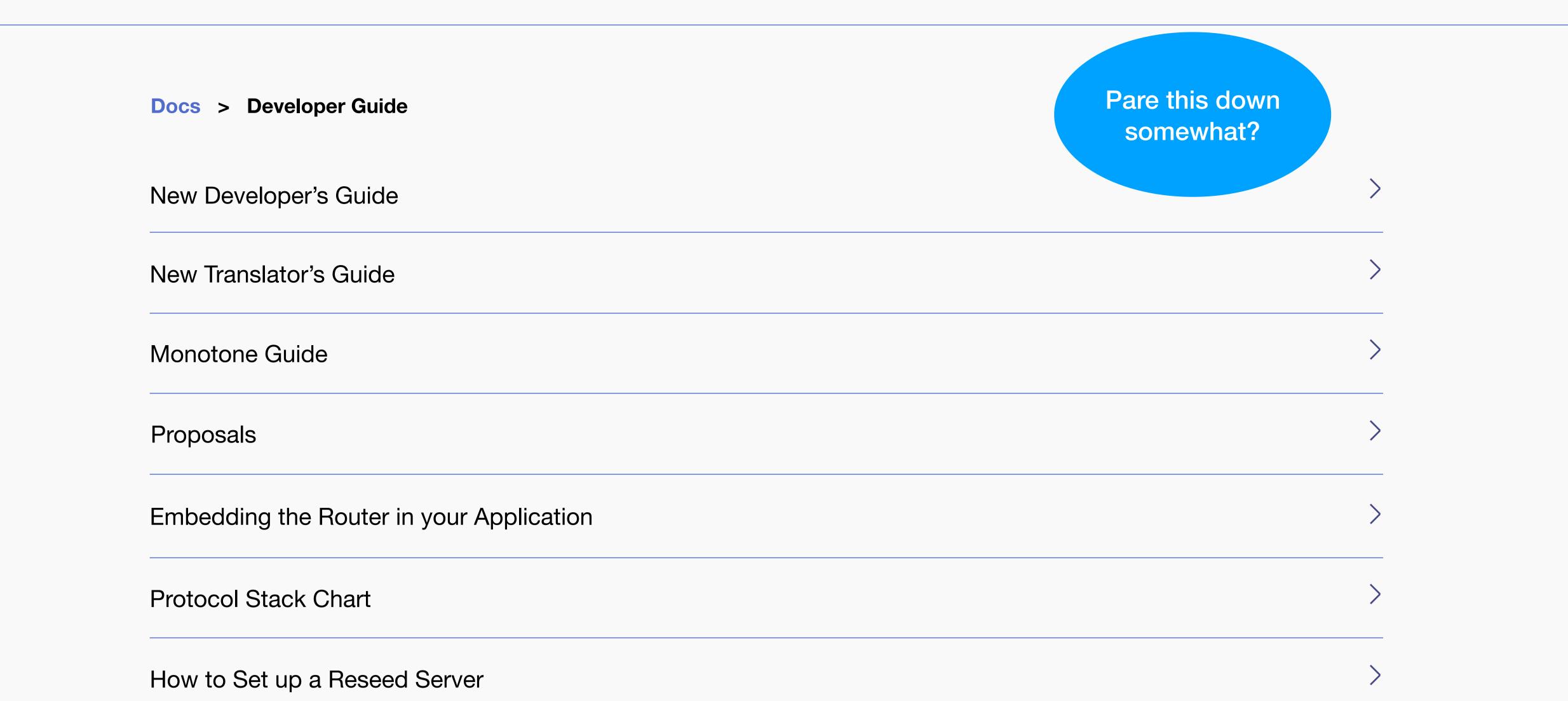
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| Docs > Introduction | |
|--|---|
| Technical Introduction | |
| A Less Technical Introduction | > |
| Threat Model and Analysis | > |
| Comparisons with Tor, Freenet, and other networks | > |
| Specifications | > |
| Protocol Stack Chart | > |
| Presentations, articles, tutorials, videos, and interviews | > |





| Ports Used by I2P | > |
|--|---|
| Automatic Updates to Development Builds Inside I2P | > |
| Updating the Wrapper Manually | > |
| User Forum | > |
| Developer Forum Inside I2P | > |
| Bug Tracker | > |
| I2P Source Exported to GitHub | > |
| I2P Source Git Repo Inside I2P | > |
| Source Translation at Transifex | |
| Roadmap | > |

To-Do List

 Ancient Invisiblenet I2P documents (2003)
 >

 The Ancient I2P Mailing List 2004-07 to 2006-10
 >



| Docs > Research | |
|--|--|
| Academic Research | |
| Presentations, Tutorials, Articles, and Interviews | |
| Papers on I2P | |
| Academic Papers and Peer Reviews | |
| Talks | |
| Open Research Topics | |

| Vulnerability Response Process | |
|--------------------------------|--|
| Impressum | |



Docs > Application Layer Topics

| Application Development Overview and Guide | > |
|--|---|
| Naming and Address Book | > |
| Address Book Subscription Feed Commands | > |
| Plug-ins Overview | > |
| Plug-in Specification | > |
| Managed Clients | > |
| | |

| BitTorrent over I2P | > |
|---------------------------|---|
| I2PControl Plugin API | > |
| hostsdb.blockfile Format | > |
| Configuration File Format | > |



| Streaming Library | > |
|----------------------------------|---|
| Streaming Protocol Specification | |
| Streaming Javadoc | |
| Datagrams | |
| Datagram Javadoc | > |



Docs > Client-to-Router Interface API and Protocols

| I2CP - I2P Control Protocol / API Overview | > |
|--|--------------|
| I2CP Specification | \succ |
| I2CP API Javadoc | $\mathbf{>}$ |
| Common Data Structures Specification | \succ |
| Data Structures Javadoc | > |



Docs > End-to-End Encryption

| ECIES-X25519-AEAD-Ratchet Encryption for Destinations | > |
|---|---|
| ECIES-X25519 Encryption for Routers | > |
| ElGamal/AES+SessionTag Encryption | > |
| ElGamal and AES Cryptography Details | > |



 Docs > Transport Layer

 Transport layer Overview

 NTCP TCP-based Transport Overview and Specification

 NTCP2 Specification

 SSU UDP-based Transport Overview

 SSU Specification

 NTCP Transport Encryption

| Transport Javadoc | > |
|-------------------|---|
| NTCP Javadoc | > |
| SSU Javadoc | > |



| Docs > Tunnels | |
|--|--------------|
| Peer Profiling and Selection | |
| Tunnel Routing Overview | > |
| Garlic Routing and "Garlic" Terminology | > |
| Tunnel Building and Encryption | > |
| ElGamal/AES for Build Request Encryption | $\mathbf{>}$ |
| ElGamal and AES Cryptography Details | > |
| | |

| Tunnel Building Specification (ECIES-X25519) | > |
|--|---|
| Low-Level Tunnel Message Specification | > |
| Unidirectional Tunnels | > |
| Peer Profiling and Selection in the I2P Anonymous Network | > |
| 2009 paper (pdf), not current but still generally accurate | > |



Docs > Network Database

| Network Database Overview, Details, and Threat Analysis | > |
|---|---|
| Cryptographic Hashes | > |
| Cryptographic Signatures | > |
| Red25519 Signatures | |
| Router Reseed Specification | > |
| Base32 Addresses for Encrypted Leasesets | > |



 Docs > Router Message Protocol

 I2NP - I2P Network Protocol Overview

 I2NP Specification

 I2NP Javadoc

 Common Data Structures Specification

 Encrypted Leaseset Specification

 Data Structures Javadoc



| Docs > Other Router Topics | |
|-----------------------------|---|
| Router Software Updates | > |
| Router Reseed Specification | > |
| Native BigInteger Library | > |
| ime Synchronization and NTP | |
| Performance | |
| Configuration File Format | > |