Technolution
Prime

PrimeDocks

Platform for
**cross domain
solutions**

Redefining
solutions

PrimeDocks provides **optimal control** over domain separations and data

Data diodes offer excellent security thanks to their combination of very strong domain separation and one-way data traffic. But implementing one-way data traffic requires a lot of thought and preparation. PrimeDocks allows you to integrate data diodes into your digital infrastructure. Use this open platform to create and configure all the software proxies you need, so that your users, applications and systems can function optimally in a secure environment.

FTP-server

Unclassified

FTP-protocol

Inbound proxy

The importance of software proxies
A data diode can impede the proper functioning of applications that use bidirectional transport protocols such as TCP. This can be the case, for example, for FTP or email. But using specific software proxies (protocol handlers) can facilitate the proper functioning of these applications and protocols. This can ensure that tasks such as sending emails, file transfer and updates will continue to function via a unidirectional connection.

Software proxies can help your applications to remain functional. You may also need additional functionality from time to time. Like a virus scanner to scan files that are being transferred to the higher-level domain. Or conversion of data to a specific file format for simplified processing in the higher-level domain. Software proxies can similarly be used for these data processing tasks.

PrimeDocks gives you full control over the software proxies for the data diodes in your network infrastructure.
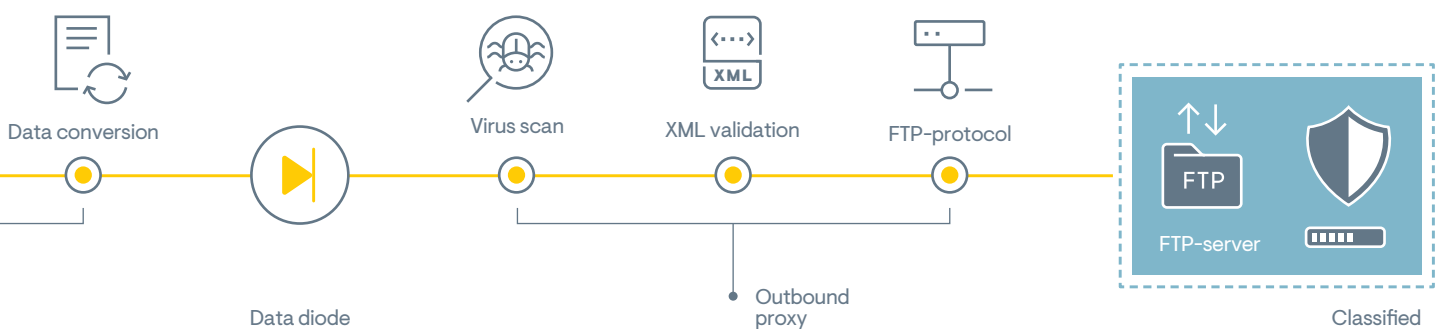
Beads on a chain: a multi-functional data chain
PrimeDocks is an open platform for the development and configuration of software proxies for data diodes. Use PrimeDocks to create a chain of protocol handlers
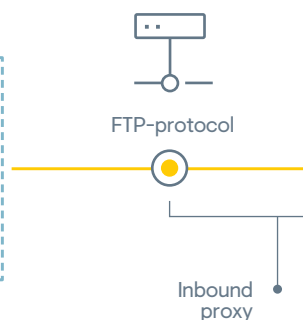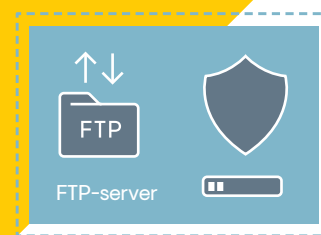
and data handlers, like beads on a chain. It is entirely up to you to determine what this multi-functional data chain will look like. Several standard handlers are available directly from our growing library, such as email, FTP and a virus scanner. But you can also develop your own handlers and add them to your personal library. This gives you optimal control over the data that passes the diode.

Smart tactics and logging
If you are using a data diode, you need good statistics and logging. The sender has no way of determining what data has been received on the outbound side of the data diode. PrimeDocks offers various statistics to monitor your system of software proxies. It also allows you to combine the statistics of the inbound and outbound software proxies into a single flow of logging information on the outbound side for optimal overview.

Data conversion | Data diode | Virus scan | XML validation | FTP-protocol | Outbound proxy | FTP-server | Classified

Flexible configurations

PrimeDocks offers great flexibility with regard to the configurations of your proxy solutions. For example, you can implement multiple chains of handlers (such as email, file share and time synchronization) on the same hardware. Or you can connect multiple software proxies, data diodes and/or hardware-based data filters in a chain, both in series or parallel.

Ready for the future

PrimeDocks is the connecting factor between our current and future cross-domain solutions. Have your data processing requirements changed? Simply add new software- or hardware-based components to the chain. For example, the PrimeCross, an especially versatile, hardware-based automated data filter.

Or are you looking for a more compact solution for your proxy servers? Migrate your software proxies from standard 19" servers to PrimeProxy mini servers. The PrimeFlex rack (2U) can accommodate twelve PrimeProxy mini servers – saving more than 80% in space! PrimeCross supports any required configuration.
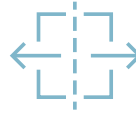
PrimeProxy

PrimeDocks are installed on a PrimeProxy. The following types of PrimeProxy's are available: PrimeProxy 19", PrimeProxy VM, PrimeProxy Flex, PrimeProxy Integrated.

The advantages of PrimeDocks in a row

Flexible
Users can build their own chain of beads

Strong separation
Handlers are separate docker containers

Open platform
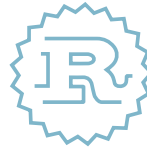Users can develop and add their own handlers

Minimal attack vector
One compromised handler does not expose the whole chain

Language-agnostic
Handlers can be written in any language that can be compiled to Linus

RUST
Written in RUST: a language for security applications

PrimeDocks protocol handlers and data handlers

For PrimeDocks, several configurable handlers for common applications were developed, such as e-mail, FTP and virus checking.

Below is an overview. In addition to these handlers, you can easily develop your own handlers with the PrimeDocks Software Development Kit.

External applications	Protocol Handlers Ingress	Protocol Handlers Egress	External applications	Data handler		Framework handler		Transport Handlers Ingress	Domain crossing	Transport Handlers Egress
Samba Server	Samba Client	Samba Client	Samba Server	Data Generator	Generates random data to test data throughput	Monitor	Stores all statistics and logging in local database	TH Prime Diode	PrimeDiode	TH Prime Diode
FTP Server	FTP Client	FTP Client	FTP Server	dupli-cate	Duplicates data stream from 1 to N handlers	Syslog	Pushes all stats to a syslogserver	TH Prime Cross	PrimeCross	TH Prime Cross
FTP Client	FTP Server	FTP Server	FTP Client	merge	Merge data stream from N to 1 handler					
SFTP Client	SFTP Server	SFTP Server	SFTP Client	ClamAV scanner	Checks files for virus					
SFTP Server	SFTP Client	SFTP Client	SFTP Server	Yara scanner	Checks files for virus					
FTPS Client	FTPS Server	FTPS Server	FTPS Client	XML valida-tor	Checks files for valid XML or valid XSD					
NTP Servers	NTP Client	NTP Server	NTP Clients	sort	Sorts base on: Regex on Filename / Extention / Content					
SMTP Client	SMTP Server	SMTP Client	SMTP Server							
RTMP Server Video source H264	RTMP Client	RTMP Client	RTMP Client Viewer H264							
	Roadmap: Under development:			Roadmap: Under development:						
HTTP Push Client	HTTP Server	HTTP Server	HTTP Get Client	JSON Valida-tor	Check files for valid JSON or YAML					
HTTP Server	HTTP Get Client	HTTP Push Client	HTTP Server							

Technical specifications

PrimeDocks

Performance	
File size	Up to 40 GB
Throughput	Up to 900 mbit/s*
Latency	From 1.3ms*

Management	
Chain Configuration	Drag-and-drop ConfigTool
Configuration deployment	Via CD or USB-stick
Logging output to	syslog-server influxDB
Time synchronization	NTP

Handler SDK	
Supported languages	C++ interface Java interface
Platform interface	Via proxy library (libcdproxy)
Development environment	VS Code configuration with development container
Debug features	Single-stepping

Technology	
OS Platform	Minimal Linux Platform (buildroot)
Handler separation	Docker-based
Platform implementation	Rust
Standard handler implementation	Rust

PrimeProxy 19"

Hardware	
Processor	Intel® Xeon® processor D-2123IT 4 cores, 8 threads
Memory	16 GB
SSD	256 GB
Cooling	4x 40x28mm PWM fans

Interfaces	
Network - 10G	2x 10G SFP+ 2x 10GBase-T
Network - 1G	9x 1GbE
Regularly compliance	RoHS, CE
Power input	100-240 V AC, 50-60 Hz

Operating environment	
Mounting rails	included
Weight	11,34 Kg
Dimensions	19" rack 1U: W 438 x D 381 x H 43 mm
Operating environment	0°C - 45°C Ambient Temperature 8% - 90% Relative Humidity (non-condensing)
Non-operation environment	-40°C - 70°C Ambient Temperature 5% - 95% Relative Humidity (non-condensing)

*in optimal configuration

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About Technolution Prime

About Technolution Prime Technolution Prime is the leader in Netherlands in preventive high assurance solutions for classified data. We develop our products and solutions entirely in-house. We stand for high quality cyber security where it is needed most.

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