ARM statt init?

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The GNUnet Framework

Transport
- TCP, UDP, HTTP, ...

Routing
- DV
- GAP
- DHT

Encryption

Authoring

Datastore
- MySQL
- Postgres
- SQLite

ARM

Testing

fsnsg
GNUnet’s Automatic Restart Manager

- User requires services
- Changes configuration
- Monitors configuration changes
- ARM starts impacted processes
- ARM restarts impacted services
- ARM analyzes crash, adds instrumentation, restarts service
- ARM reports crash
- Developer investigates bugs
- Bug Tracking System
- Process uses dependency
- Dependency Learning and Management
- Bug

Configuration

Process

Process
GNUnet System Overview: Getting started

configure --prefix=$HOME
make
make install
export GNUNET_PREFIX=$HOME
export PATH=$HOME/bin
make check
mkdir .gnunet/
touch .gnunet/gnunet.conf
gnunet--arm --s
Configuration

- Defaults (share/gnunet/defaults.conf) are overridden by
- ./gnunet/gnunet.conf which can be changed using
- \( -c \) FILENAME command-line option
INI format

- One section for each controlled process
- One special section for gnunet-arm
- One special section for paths
Example

[foo]
BINARY = foo-binary
PORT = 2092
HOSTNAME = localhost
CONFIG = $DEFAULTCONFIG
Options

- **PREFIX** – prepended to command
- **OPTIONS** – appended to command

Fun uses for developers:

PREFIX = xterm -e valgrind
PREFIX = xterm -e gdb --args
gnunet-arm options

PORT which port gnunet-service-arm listens on

DEFAULTSERVICES applications to start initially

GLOBAL_PREFIX prefix to apply to all applications that do not specify PREFIX
The Future

• Starting services on-demand
• Support for UNIX Domain Sockets
• Improved configuration change detection
• Automatic debugging (crash diagnostic)
Questions
Secure Routing (1/3)

Base Restricted Route Topology

A - B - C - D - E
A - H - G - F - E
Secure Routing (2/3)

Distance Vector Added Links

A
B
C
D
E
F
G
H

fsnsg
Secure Routing (3/3)

Resulting DHT Topology

000
110
010
100
111
011
101
001

fsnsg