



▶ ***OpenSIPS, what you can do.***

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Cloud Services for Business





Cloud Services for Business

- **eFax®**
- **eVoice®**
- **FuseMail®**
- **Campaigner®**
- **KeepItSafe®**
- **Onebox®**
- www.j2.com





Outline:

- **What's SIP?**
- **Proxy Servers**
- **OpenSIPS**
- **Question?**





What's SIP?





What's SIP? Session Initiation Protocol

- SIP is a Voice over IP Protocol





VoIP (major) Protocols

- **H.323 (D-Ch/ISDN over IP)**
 - ITU-T (Telecommunication Standardization Sector)
- **SIP (Text based similar to HTTP)**
 - IETF (Internet Engineering Task Force):
- **SIP wins:**
 - simpler (Text based)
 - more flexible (presence, IM, app sharing, special features)
 - NAT/Network traversal capability
- **Media: RTP/RTCP (over UDP)**





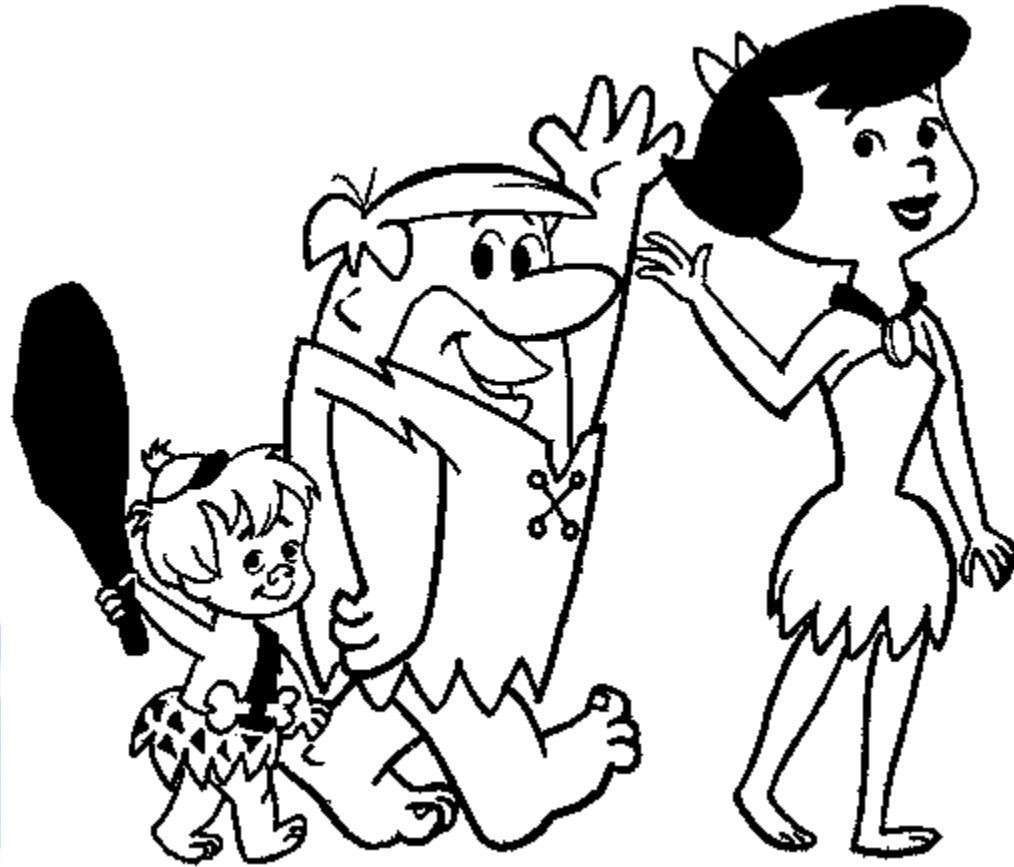
What's VoIP?

- History





History of VoIP





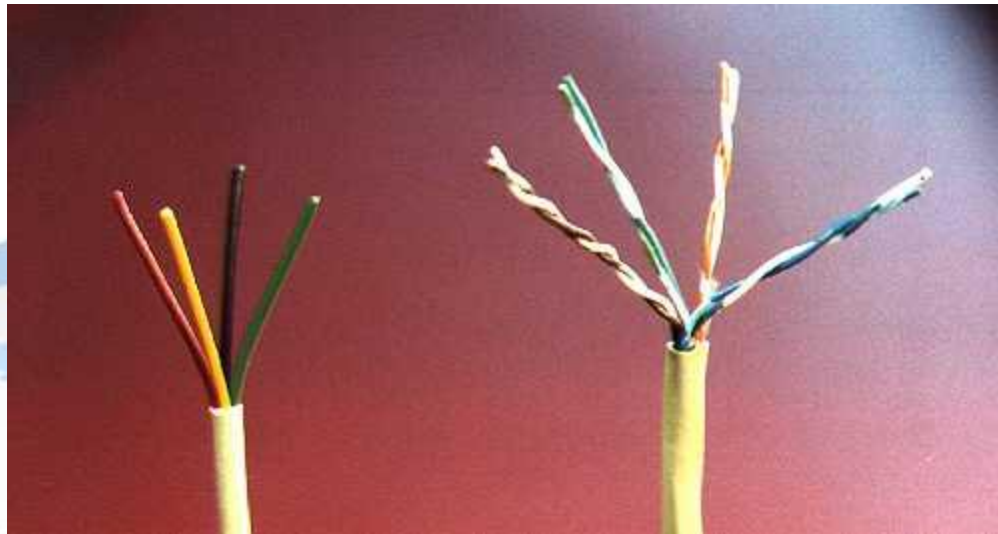
Started in 1892 - First phone call





Cables

- **Telephones needed cables (still do)**
- **Lots of Cables**
- **The art of cabling**
- **Connecting Terminals, Patch Panels, etc.**



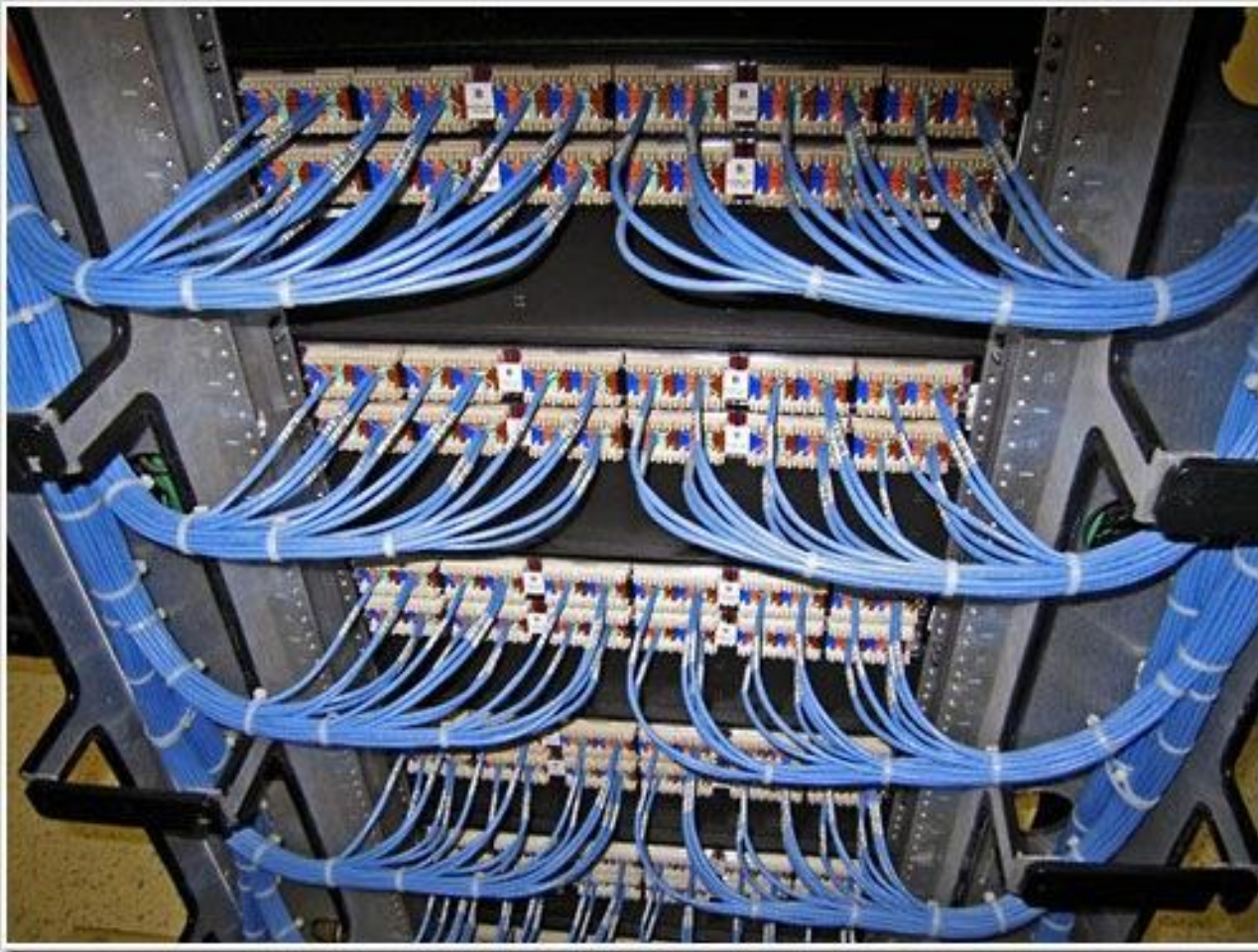


OpenSIPS Version 1.0 – Bogdan in another life





Distribution Panels, Connecting Terminals, Patch Panels, Connection Blocks, etc.





The middle man

- **IP: Firewalls, Routers, NATs**
- **ISDN Gateways: Digital and Analog**
- **Electricity: Distribution Panels**
- **Water Supply Distribution System**
- **Airport transits**





- **When it comes to VoIP, you need OpenSIPS**



Chapter 2: Proxy Servers

- Proxy Server
- SBC
- Back to back user agent
- SIP Router





Advantages of using a proxy server

- **Improved performance**
- **Security and Authentication**
- **Flexibility and Customization**
- **NAT**
- **Redundancy and High Availability (failure detection and re-routing)**
- **Distribution**
- **Routing, Rules and Priorities**





Advantages of using a proxy server (Cont'd)

- Load balancing
- SIP Signaling, Codec and Digit Manipulation
- Scripting
- Resource Allocation
- Rate Limiting
- Media Proxy (or Direct Media Path)





Open Source

- **No Cost, no licensing fees**
- **Flexibility, Customization and Integration**
- **More independence (not depending on a single company)**
- **Community**
 - Wider support
 - Continued enhancements
 - Tools
- **In line with future of telecom**





OpenSIPS Overview

- **Call Routing (Rules, Priorities, LCR & Reporting)**
- **NAT Traversal**
- **Security**
- **Registrar Server**
- **SIP Signaling, Codec and Digit Manipulation**
- **Load Balancing**
- **Failure detection and re-routing**
- **Scripting**
- **Database**
- **Management Interface**





OpenSIPS Overview

- **Performance – Over 1000 calls per second**
- **Distributed architecture**
- **Over 120 Modules**
- **www.opensips.org**
- **Learning Curve**
- **Mailing Lists, Forums, OpenSIPS Summits, etc.**





Modules (over 120 modules)

- **SIP Clients related modules:**
 - Registrar Server
 - Authentication
 - Presence Server
 - Instant messaging, Jabber, Jsn, SMS
 - NAT Traversal
 - Back to Back User Agent (topology hiding)
 - Database (mysql, oracle, odbc, postgres)





Modules

- **Trunks and Routing**
 - **Dynamic Routing (Prefix base rules, priority, time, distribution, drain mode, failure detection and re-routing)**
 - **Load Balancer (Dispatcher)**
 - **Dial Plan**
 - **SIP MSG OPS**
 - **NAT Traversal**
 - **TLS**
 - **XMPP (SIP to XMPP Gateway)**





Modules

- **Utilities**

- Rate Limit
- Statistics
- SNMP interface
- SIP Trace
- SIP Capture
- Pike – Flood detector
- Perl
- Accounting
- Call Control (PrePaid application module)



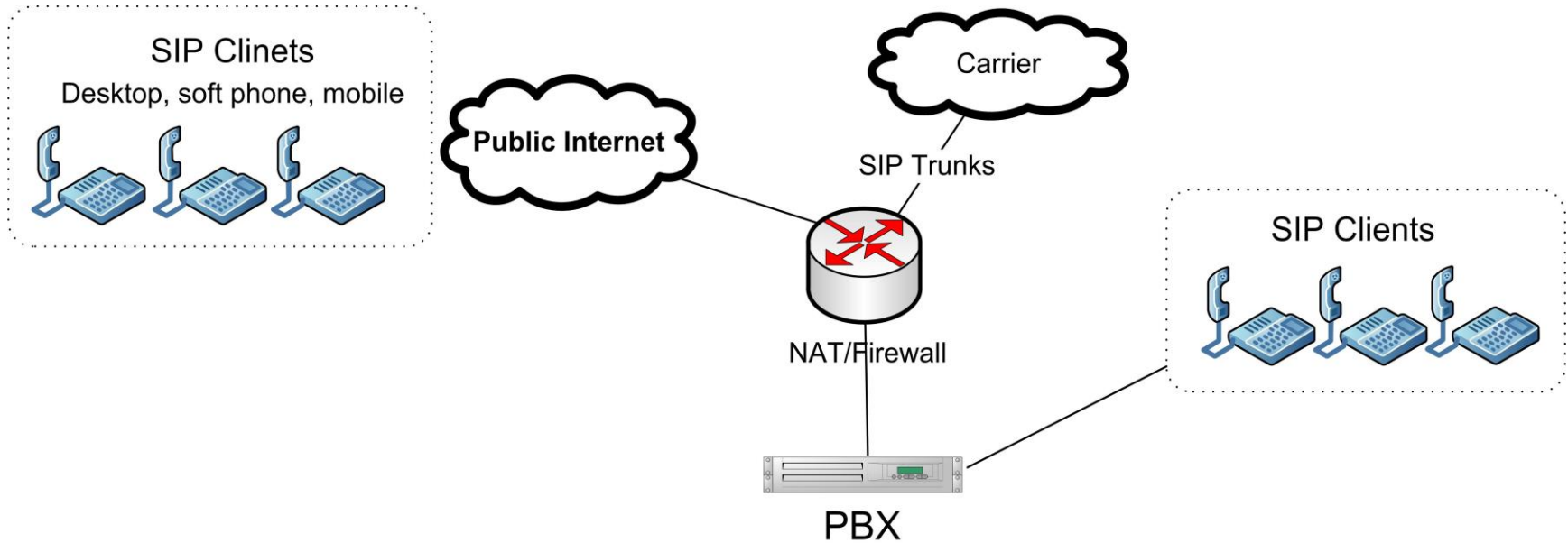


Network Diagrams



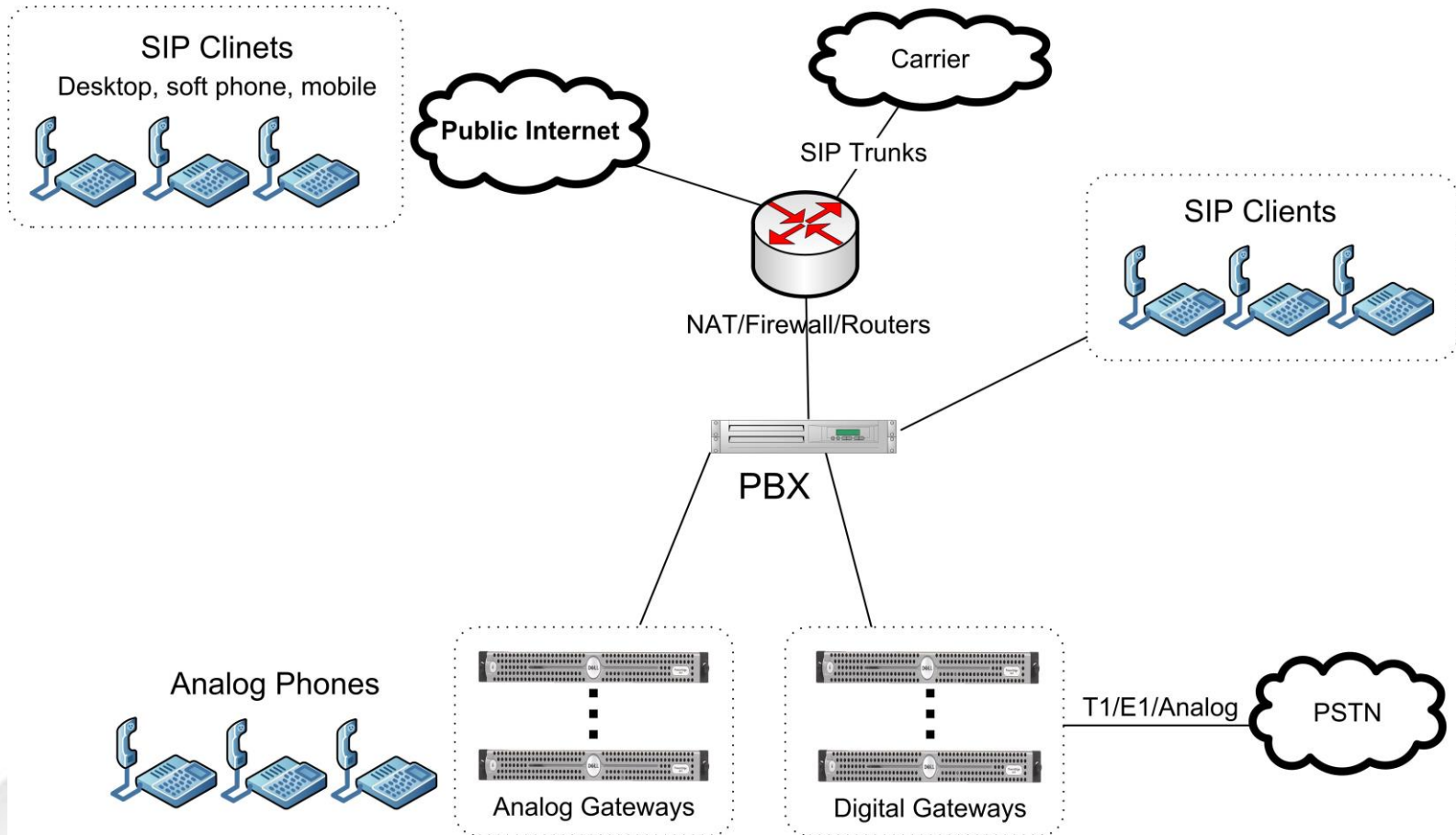


Simple PBX Environment



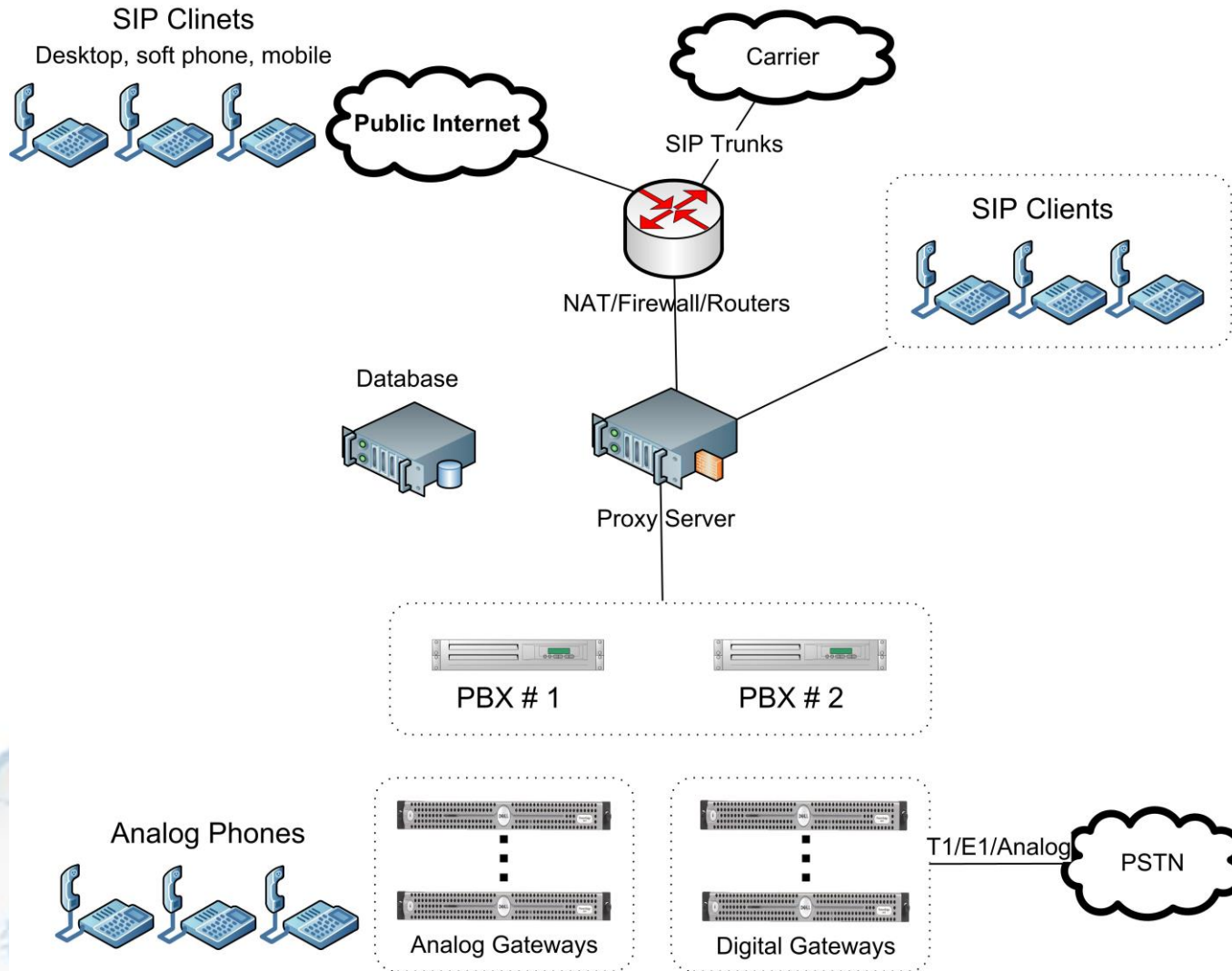


PBX Deployment with Analog/Digital Gateways



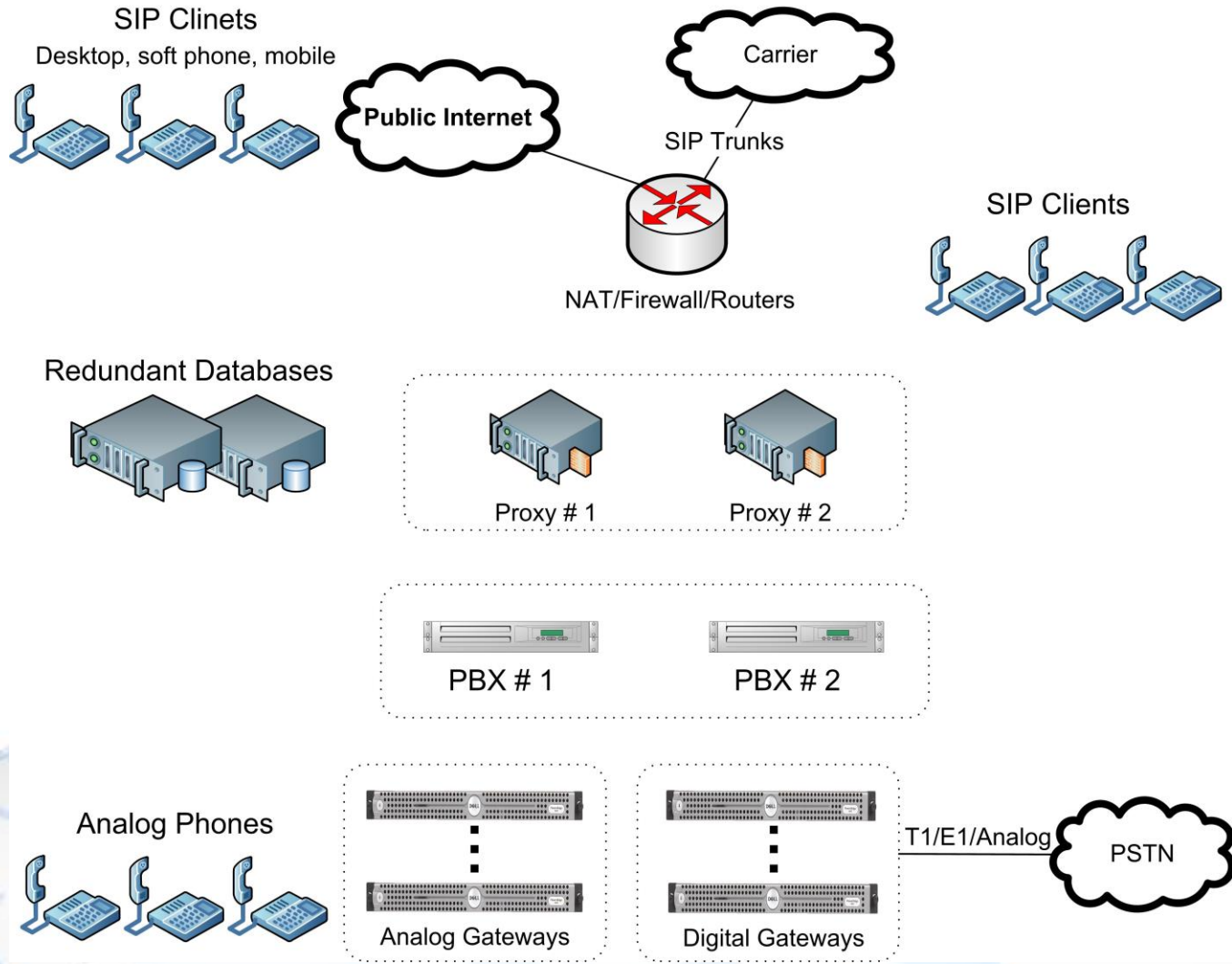


Adding a proxy server



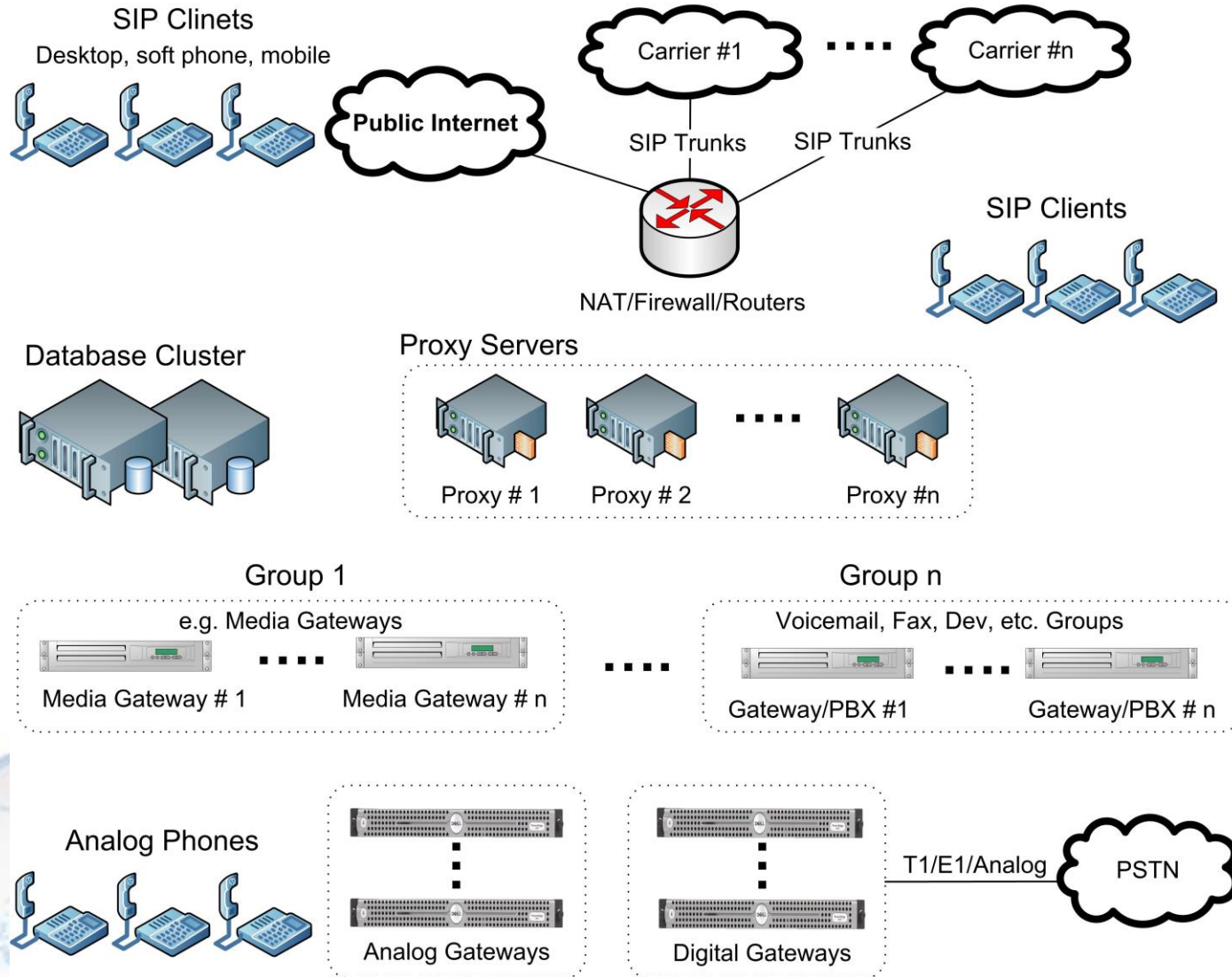


Full Redundancy





A complete Network





Questions?

