

**SIPeerior**  
**Technologies**  
A superior way to connect

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# Convergence and Compatibility

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# Outline

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- Background
- Why care about SIP?
- Why does SIP make convergence easy?
- So which parts are really standard?
- Why don't some things work together?
- What is being done to improve this, and where?

# Background

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- About SIPeerior Technologies...
  - Founded in January 2006
  - Leading provider of P2PSIP technology development tools
- About me...
  - Founder, CEO of SIPeerior
  - IETF P2PSIP co-chair
  - Active in SIP community (Open Source, IETF, etc.)

# Why SIP for convergence?

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- Biggest reason...SIP is an *Internet* protocol
- Other protocols (H.323) run over IP, but aren't really *Internet* in the same sense
  - SIP Uses messages/responses very similar to HTTP
  - SIP URIs are much like email addresses
    - sip:dbryan@SIPeerior.com
    - mailto:dbryan@SIPeerior.com
  - Full support for IM/Presence as well as voice
  - SIP has strong support for other types of media sessions

# A bit about SIP and the IETF...

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- SIP is a protocol defined by the IETF
- Standard for establishing media sessions
  - Not just VoIP sessions
    - Used for video, gaming, IM, presence
- IETF defines standards for *protocols*
  - Doesn't always show all the ways to use it
  - Highly extensible
  - Think of the web today vs. 1995
  - Leads to flexibility, but sometimes problems
- Many telephone-like features aren't specified

# The IETF approach



- IETF gives you a box of Lego<sup>®</sup> blocks, but doesn't tell you how to build a house
- Very flexible approach that doesn't limit implementers as specifying how to do each feature would, but...
  - If your door is 5 blocks high and my person is 6...



# IETF approach and convergence

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- Convergence works well because it is a modular, Internet based toolkit
  - I can email voice mail to a computer
  - I can send an update using presence to a phone when a package arrives
  - I can display web pages on my phone
  - I can hand a call from my VoIP phone to a video client on my PC
- This is the true power of SIP, as people are now realizing
- But people put the blocks together differently...

# Which VoIP features are standard?

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- SIP defines how to initiate the session (place a call)
  - This almost always works between two phones
- In general, many features aren't specified by the IETF
- Some features are well specified
  - Transfer
  - Hold

# Implementing features

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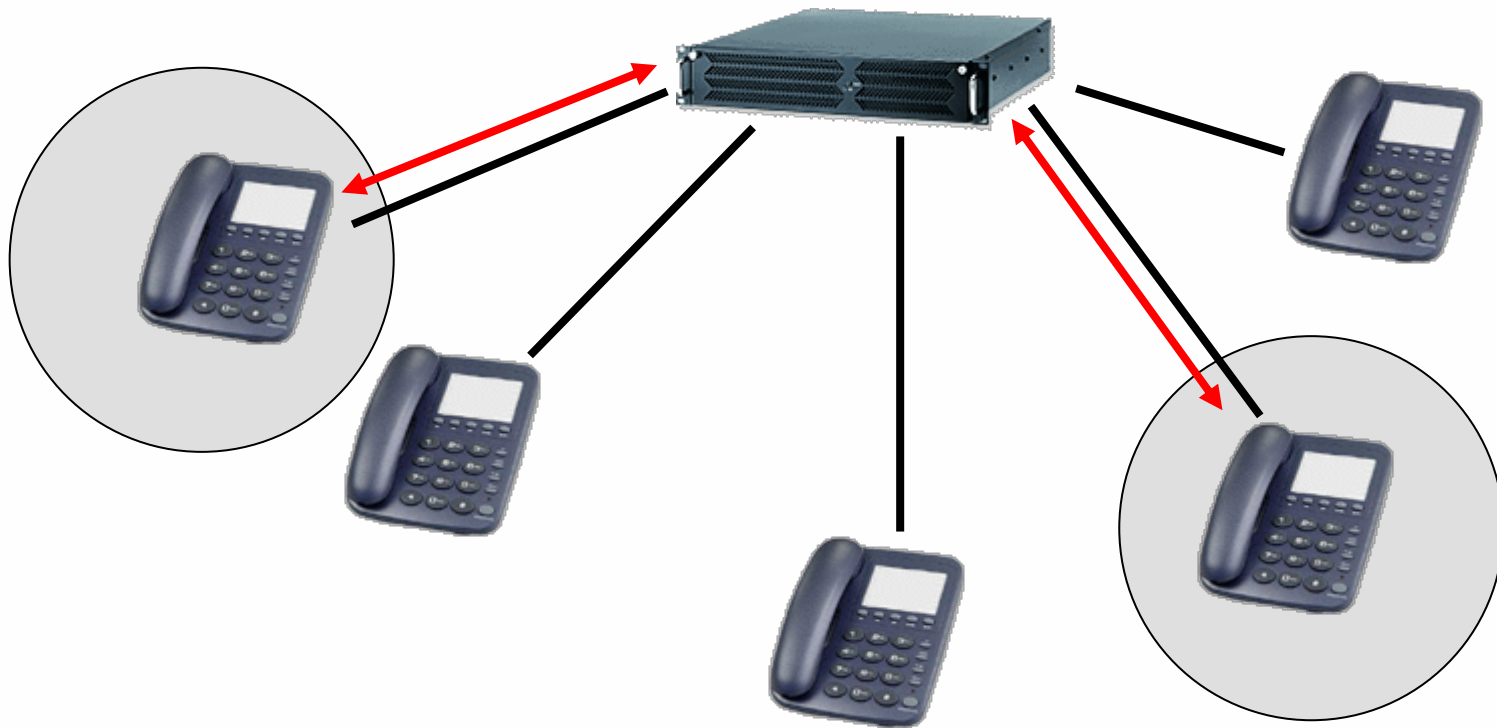
- Features can be implemented different places in the network
  - In the phones
  - In servers
  - Partially in both
- Features can be implemented in many different ways (often proprietary)
  - New SIP messages
  - New SIP headers
  - Sending information in the media (touch tones, IVR) rather than in SIP messages



# Implementing features

*End points implement the feature, the server only routes the call (most "SIP" way to do it)*

*Can be in the SIP messages or media (tones, IVR)*



# Implementing features



*Can be in a server in the middle that manipulates the call in some way*

*Again, in the SIP messages or media (tones, IVR)*

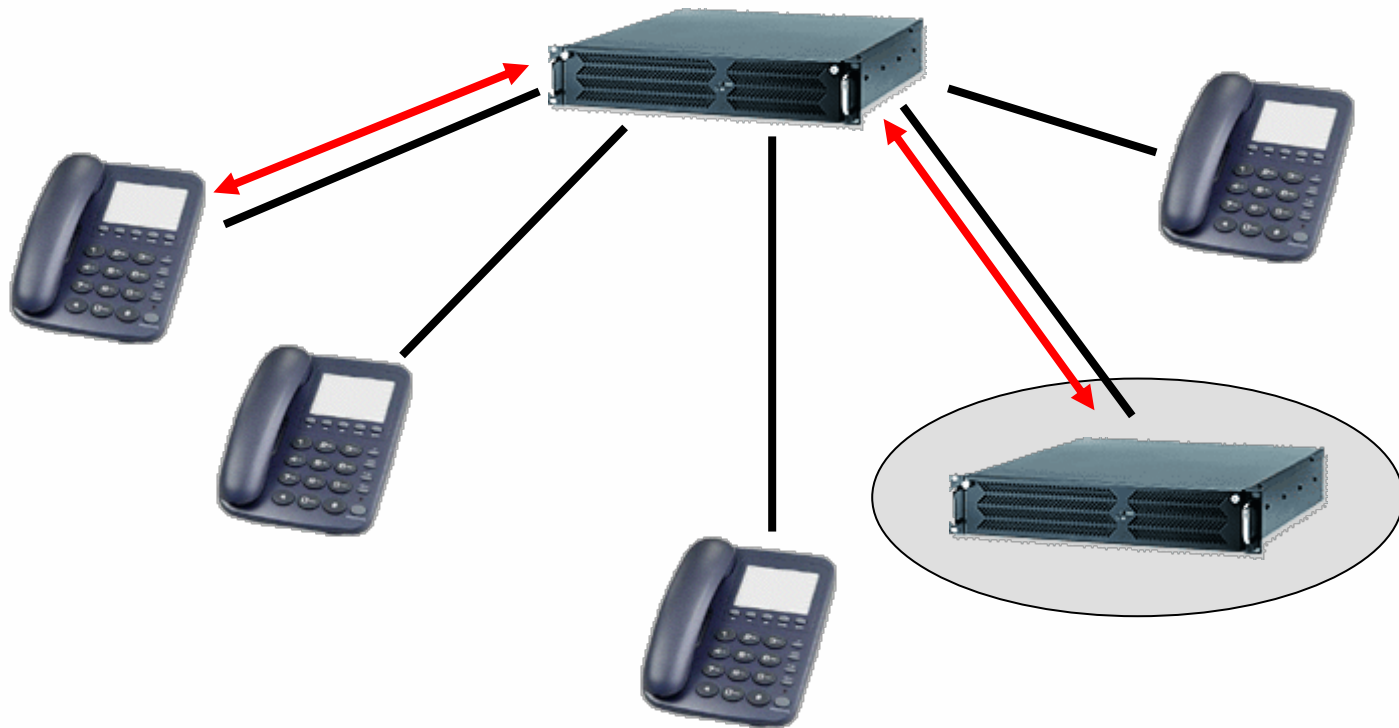




# Implementing features

*Can be in a server that looks like a phone (answers the call and does something)*

*Again, in the SIP messages or media (tones, IVR)*



# Feature compatibility

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- Because SIP is flexible but doesn't always fully specify features, can have incompatible versions of features
- Usually basic call and common features work between vendors
- Advanced services may not...

# Solving these issues

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- Many venues/groups are working to help fix these problems
- IETF
  - Continue to firm up SIP specifications
  - New group being proposed -- BLISS
    - Basic Level Interoperability for SIP Services
    - [www.bliss-ietf.org](http://www.bliss-ietf.org)
    - Basic idea: Look at and document how people are doing this, so others can be understand and work with them
    - Won't stifle creativity by giving "one true way"

# Solving these issues

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- SIP Forum
  - Provides white papers, implementation guides, etc. that are beyond the scope of IETF, and provide...
- SIPit Interoperability testing
  - Vendors come together, bring their products
  - Test those things that are defined
  - Basically, they call each other and try things
    - If they don't work, look at the specs, fix, try again
  - Also a great venue to see how other things are implemented by various vendors (even if not specified)
  - Might be a great place to help BLISS see “what is in the wild”



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# Thanks!