

# **I2RS Working Group Introduction**

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# **Welcome to the I2RS WG Interim Meeting**

# Day 1 Agenda

Introduction, Discussion of agenda and goals	(Edward Crabbe, 40')	9:00
Discussion on Small Group Output	(Alia Atlas, 20')	9:40
Policy and Use Case Examples	(Sue Hares, 20')	10:00
Topology Modeling Discussion	(Edward Crabbe, 20')	10:20
Use Cases	(Alia Atlas, 10')	10:40
Topology Use Cases	(Jan Medved, 20')	10:50
Small Groups #1		11:10
Lunch		1230
Small Groups #1		2:00
snack break		3:45
Wrap Up Presentations & Feedback		4:00
Adjourn		5:45

# Day 2 Agenda

presentation of results	9:00am
small group meetings #2	10:00am
presentation of results	12:00am
lunch	1:00am
connecting architecture to use-cases	3::00pm
small group meetings #3	2:30pm
snack break	4:30pm
presentation & next-steps from each group	4:45pm
wrap-up	5:45pm

# Assorted Administrivia

wg chairs:                   Alia Atlas <akatlas@juniper.net>  
                                  Edward Crabbe <edc@google.com>

## Many thanks to:

jabber scribe volunteer:  
minutes:  
etherpad:



Thanks to Juniper for providing space, coffee  
and snacks!

# Optional Dinner Tonight

Xanh Restaurant

110 Castro St, Mountain View, CA 94041

45\$ / person

Please Pay Ed at either break or lunch

I accept CC via square

# **Charter Review**



# Use Cases in Charter

## First Order (Functional)

- Read/Write Interactions with RIB (**not** FIB)
  - no direct access to FIB
- Control and Analysis of BGP
- Extraction of Topology Data

## Second Order (Usage)

- control of egress based augmented (non-NE local) data
- reaction to network attacks
- service layer routing

# Milestones

Target Date	Months Remaining	Document Type	Document Content
7/2013	4	Informational	problem statement
7/2013	4	Informational	high-level architecture
8/2013	5	Informational	use cases
9/2013	6	Informational	protocol requirements
9/2013	6	Informational	encoding language requirements
2/2013	13	Standards Track	information models
2/2013	13	Informational	analysis of existing IETF / other protocols / encoding languages against requirements
2/2013	13	NA	Consider re-chartering

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**BERLIN!**

# Draft Inventory and Content

Problem Statement

Use Cases

High level Arch

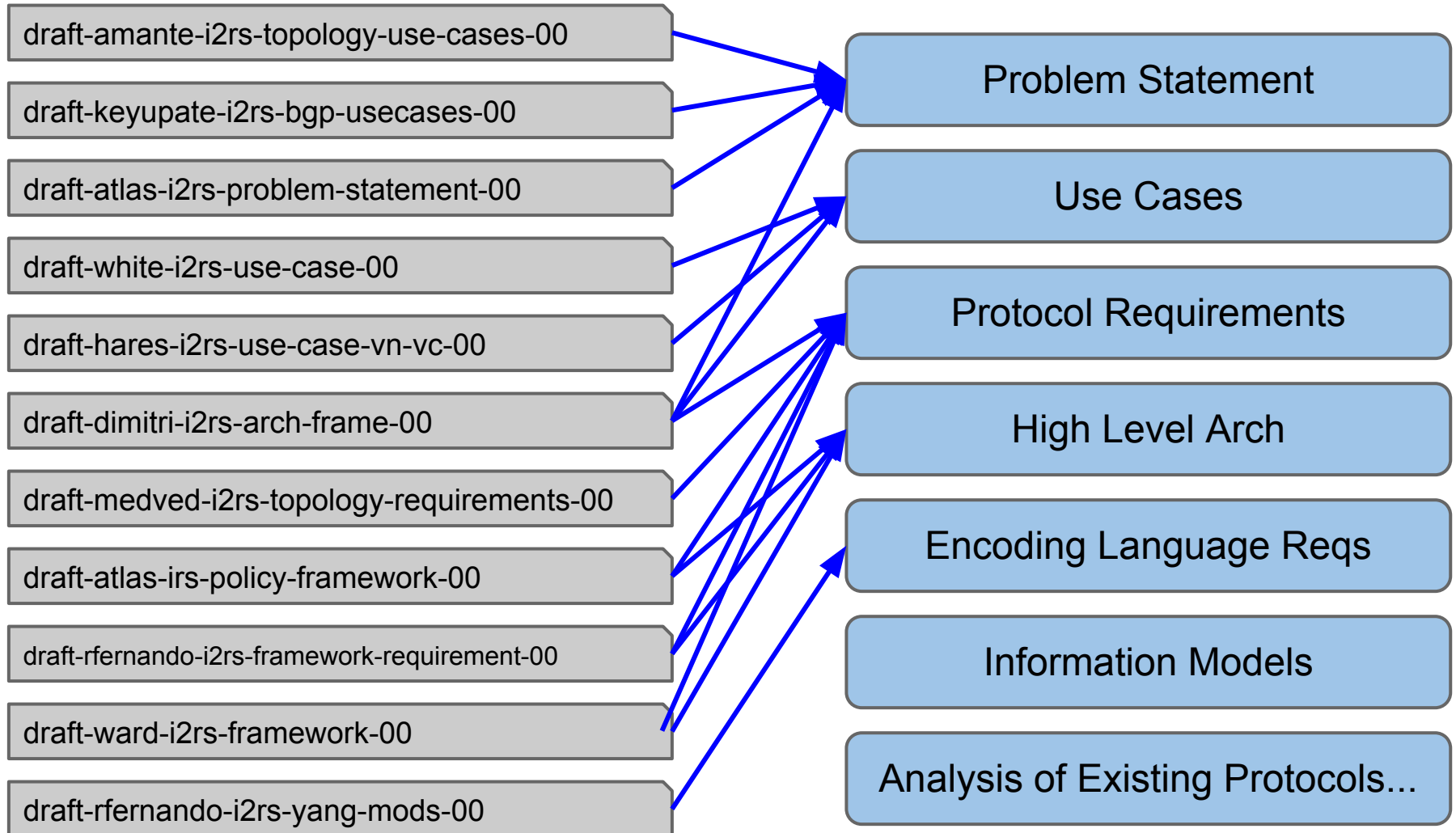
Protocol Requirements

Encoding Language Reqs

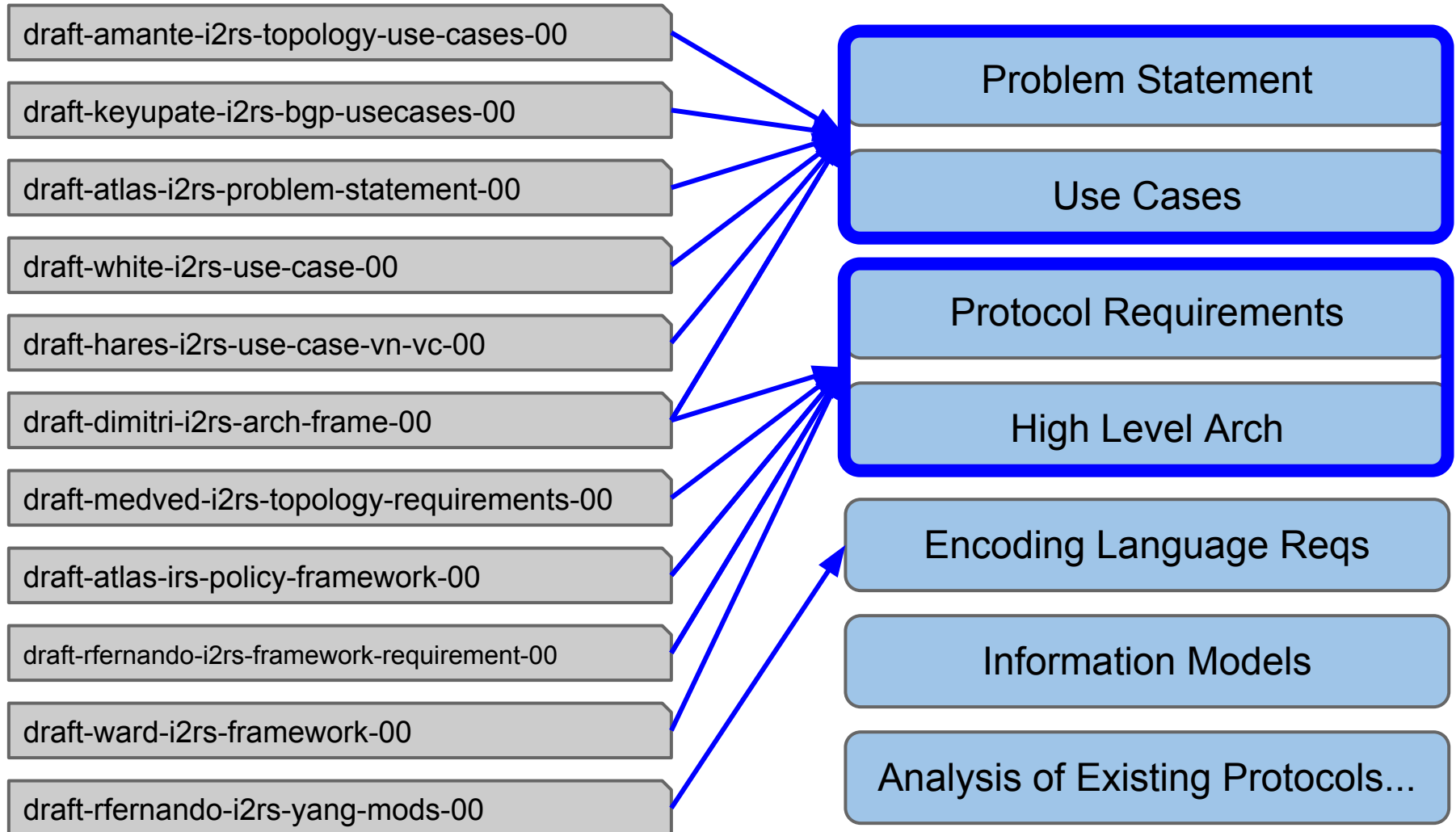
Information Models

Analysis of Existing Protocols...

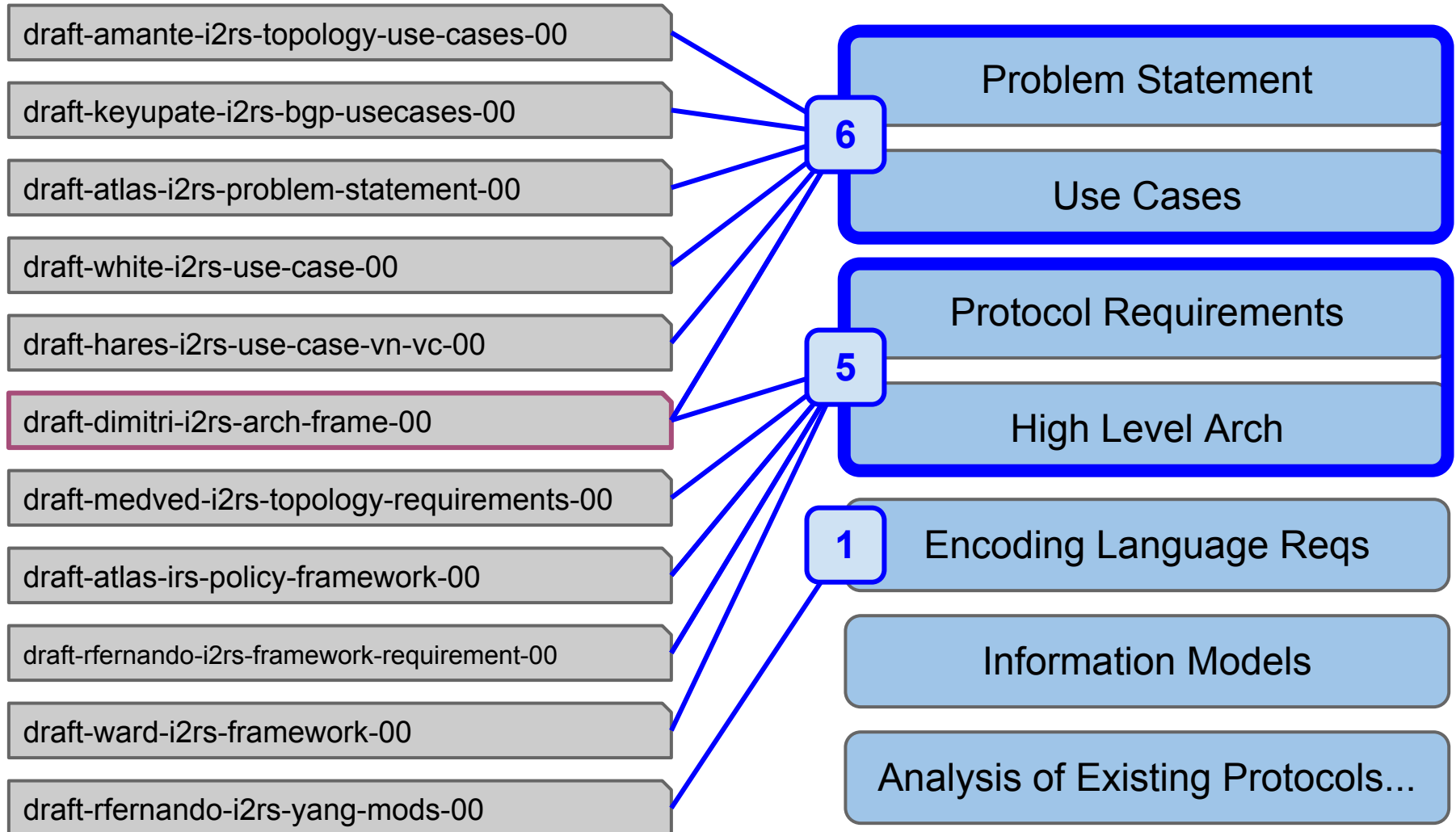
# Draft Inventory and Content



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# Draft Inventory and Content



# **Interim Meeting Agenda**



# Meeting Focused Around Small Groups

Since you're all here, let's get some work done.

Small groups focus on a specific use case or subject area.

Time spent discussing use cases and producing results and actionable plans for work and drafts

# Small Group Structure

- **Managable size for making progress**
  - you be the judge, but preferably 3-8 people
  - small enough to make progress
- **Allow for Remote Participation**
  - Give folks on VC a chance to express views
  - All remote groups ok too
- **Resources**
  - Groups are assigned a topic, a google hangout and a participation spreadsheet - this is given at the end of this presentation and on paper at the group table.
  - Please enter your names into the small group participation spreadsheets
  - Let me know if you have issues with the hangouts

# Small Group Procedure

Each Table has a printout on it with a group number and 2 short links on it:

- A hangout
- A spreadsheet

Please:

1. Join the Hangout for any remote participants
2. Enter your names and focus area in the Spreadsheet

# Small Group Goals & Output

Focus on:

- Problem Statements
- Use Cases
- High Level Architecture
- Modelling

At a High Level Produce:

- Actional plans for drafts
- Agreements for collaboration on drafts
- Draft text
- Architectural Requirements
- A brief presentation to sync up with the rest of the group

# Looking at Use Cases

- What are the specifics of the use case
- What are the high level protocol requirements for the use case
- What new functionality, if any, is required for the use case?
- What existing protocols overlap with the use case? Are any of these protocols readily usable to produce the same effect?

# Example of Small Group Work

## DDoS Protection

### Description:

Based off an attack profile, drop or selectively route traffic across a subset of devices on the network edge.

# Example of Small Group Work

## DDoS Protection

What is required here:

- A method to describe filters
- A method of collecting statistics on filter match
- A method to mirror traffic based on some match
- A method to route traffic based on some match
- A method of reliably pushing state updates to devices

# Example of Small Group Work

## DDoS Protection

What existing protocols currently perform these type of operations, if any? How is this done today?

- A method to describe filters
  - FlowSpec, NetConf ...
- A method of collecting statistics on filter match
  - SNMP, bulkstats ...
- A method to mirror traffic based on some match
  - FlowSpec, NetConf ...
- A method to route traffic based on some match
  - FlowSpec, NetConf/YANG ...
- A method of reliably pushing state updates to devices
  - NetConf



# Example of Small Group Work

## DDoS Protection

Why are these not sufficient?

What additional functionality is required?

How can we do better?

# Small Groups Day 1

Group	Focus	Participant List Spreadsheet	Hangout Link
Group 1	Service-Chaining	<a href="http://goo.gl/4g2Ws">http://goo.gl/4g2Ws</a>	<a href="http://goo.gl/P7In6">http://goo.gl/P7In6</a>
Group 2	Optimized Exit Scenario	<a href="http://goo.gl/bWB0Y">http://goo.gl/bWB0Y</a>	<a href="http://goo.gl/j470B">http://goo.gl/j470B</a>
Group 3	Distributed Reaction to Network-Based Attack	<a href="http://goo.gl/oxLb2">http://goo.gl/oxLb2</a>	<a href="http://goo.gl/NWuvR">http://goo.gl/NWuvR</a>
Group 4	Improving Hub-and-Spoke Overlay Routing	<a href="http://goo.gl/kjD4b">http://goo.gl/kjD4b</a>	<a href="http://goo.gl/dKgT6">http://goo.gl/dKgT6</a>
Group 5	Other RIB-layer use-cases	<a href="http://goo.gl/Vs0Py">http://goo.gl/Vs0Py</a>	<a href="http://goo.gl/t3M3g">http://goo.gl/t3M3g</a>
Group 6	Topology - Services Provisioning	<a href="http://goo.gl/Ftn6f">http://goo.gl/Ftn6f</a>	<a href="http://goo.gl/HZJTN">http://goo.gl/HZJTN</a>
Group 7	Standardized Topology Model, Path Computation, and interactions with Alto	<a href="http://goo.gl/LQD1M">http://goo.gl/LQD1M</a>	<a href="http://goo.gl/QfwaZ">http://goo.gl/QfwaZ</a>
Group 8	Topology & Customer Interfaces & Peering Interfaces	<a href="http://goo.gl/3Zsht">http://goo.gl/3Zsht</a>	<a href="http://goo.gl/BGEb4">http://goo.gl/BGEb4</a>
Group 9	Overlay Topology Troubleshooting & Monitoring; Topology Component History	<a href="http://goo.gl/P305M">http://goo.gl/P305M</a>	<a href="http://goo.gl/qQuhU">http://goo.gl/qQuhU</a>
Group 10	Other Topology use-cases	<a href="http://goo.gl/Kj6Od">http://goo.gl/Kj6Od</a>	<a href="http://goo.gl/g83yZ">http://goo.gl/g83yZ</a>

# Small Groups Day 1

Group	Focus	Participant List Spreadsheet	Hangout Link
Group 11	BGP Error-Handling; BGP Troubleshooting	<a href="http://goo.gl/MxKJU">http://goo.gl/MxKJU</a>	<a href="http://goo.gl/yAlnQ">http://goo.gl/yAlnQ</a>
Group 12	Centralized VPN Provisioning	<a href="http://goo.gl/IQ2wv">http://goo.gl/IQ2wv</a>	<a href="http://goo.gl/DR8XX">http://goo.gl/DR8XX</a>
Group 13	Centralized BGP Policy Updating	<a href="http://goo.gl/OMvBJ">http://goo.gl/OMvBJ</a>	<a href="http://goo.gl/lzFle">http://goo.gl/lzFle</a>
Group 14	BGP Route Manipulation	<a href="http://goo.gl/zOJ6K">http://goo.gl/zOJ6K</a>	<a href="http://goo.gl/g78be">http://goo.gl/g78be</a>
Group 15	Other BGP Use-Cases	<a href="http://goo.gl/K4Aqz">http://goo.gl/K4Aqz</a>	<a href="http://goo.gl/YTeXI">http://goo.gl/YTeXI</a>
Group 16	Taxonomy of Network Applications	<a href="http://goo.gl/9erFw">http://goo.gl/9erFw</a>	<a href="http://goo.gl/Uxk3b">http://goo.gl/Uxk3b</a>

# Discussion