



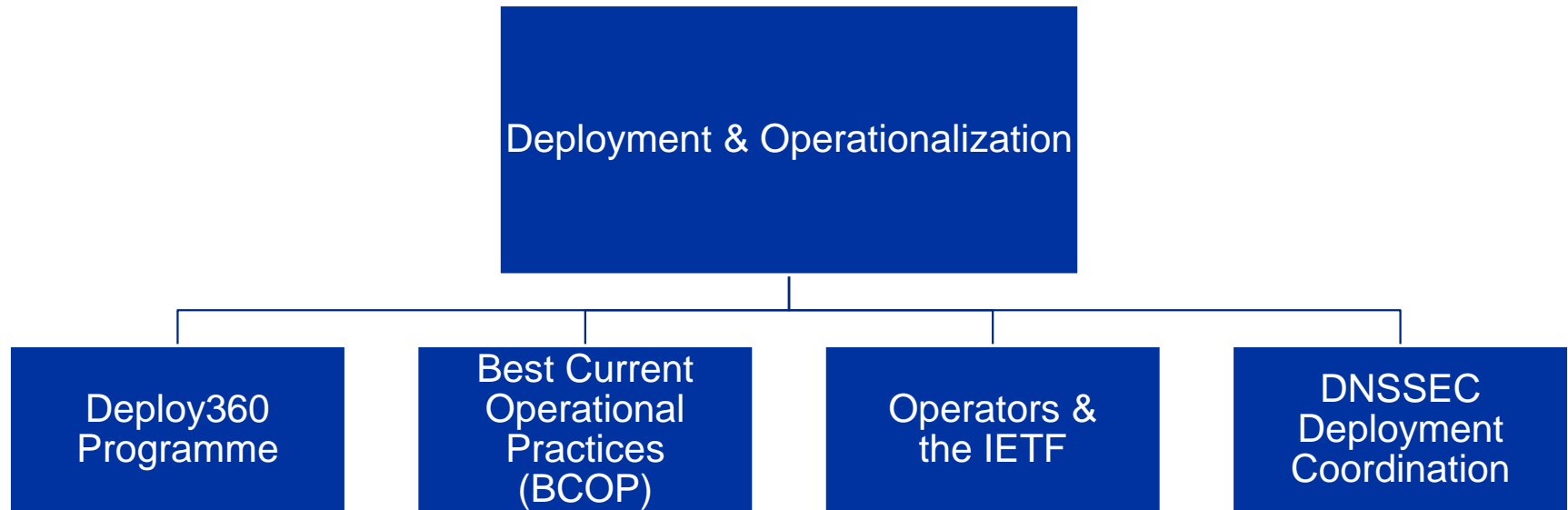
**Deployment & Operationalization:  
Deploy360, Best Current Operational Practices,  
Operators & the IETF**

# The Deployment & Operationalization Team

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# Deployment & Operationalization Projects



# The Deploy360 Programme

# About Deploy360

## The Challenge:

- The IETF creates protocols based on open standards, but some are not widely known or deployed
- People seeking to implement these protocols are confused by a lack of clear, concise deployment information

## The Deploy360 Solution:

- Provide hands-on information on IPv6, DNSSEC, TLS for applications, Securing BGP, and Anti-spoofing to advance real-world deployment
- Work with first adopters to collect and create technical resources and distribute these resources to fast following networks

# Deploy360 Components

## Web Portal

*(Online Knowledge Repository)*

- Technical documents
- Audience-specific information
- Blogs & social media

## Social Media

*(Constant Audience Engagement)*

- Twitter
- Facebook
- Google+
- YouTube
- RSS Feeds

## Speaking Engagements

*(Come Meet Us or Invite Us to Speak)*

- IPv6 Summits
- Interop Events
- Network Operators' Groups

## ION Conferences

*(Hands-on Educational Events)*

- Chile
- Djibouti
- Canada
- Singapore
- Sri Lanka



# Web Portal – [www.internetsociety.org/deploy360](http://www.internetsociety.org/deploy360)

**IPv6, DNSSEC, Securing BGP, TLS for Applications, Anti-spoofing knowledge base including tutorials, case studies, training resources, etc.**

## Content specific to:

- Network Operators
- Developers
- Content Providers
- Consumer Electronics Manufacturers
- Enterprise Customers

**Blog posts**

**Social media integration**



# Social Media Channels



<https://twitter.com/deploy360>



<https://www.facebook.com/Deploy360>



<http://gplus.to/deploy360>



<http://www.youtube.com/user/Deploy360>



<http://www.internetsociety.org/deploy360/feed/>



<http://soundcloud.com/deploy360/>



# Speaking Engagements (External Events)

**Network Operator Groups**

**Consumer Electronics Show**

**North American IPv6 Task Force**

**Large Installation Systems Administration  
(LISA) Conference**

**Interop**

**Broadband World Forum**

**IPv6 Webinars**

# ION Conferences



**3-4 events per year, co-located  
with a diverse set of events in varying locations**

**Next Event: San Francisco Bay Area, September 2015**

## **Recent Events:**

- ION Trinidad and Tobago, 5 February 2015
- ION Sri Lanka, 18 January 2015
- ION Tokyo, 17 November 2014

**Past events in Chile, Ireland, Djibouti, Brazil, Canada,  
India, Singapore, and more ...**

**Future events information announced at  
<http://www.internetsociety.org/deploy360/ion/>**



# Next Steps

## **Adding more content**

- Clearly defined content growth using published roadmaps for IPv6, DNSSEC, Securing BGP, and TLS for applications
- Actively engaged with industry professionals to curate or create deployment content

**Adding features based on audience feedback (including yours!)**

**Adding information in multiple languages**

**Increasing blogging and social media efforts**

# Your Participation

**Visit and explore**

<http://www.internetsociety.org/deploy360>

## **Create Content**

- Help us develop materials based on your experiences
- We will credit your work

## **Define New Features**

- Tell us what you need to get started on your own deployment
- We have the flexibility to make changes/additions

**Contact us:** [deploy360@isoc.org](mailto:deploy360@isoc.org)

# Best Current Operational Practices (BCOP)

# What's a BCOP?

## Best Current Operational Practices

A living document describing the best operational practices currently agreed on by subject matter experts

Vetted and periodically reviewed by the global network engineering community (GNEC)

# The Problem

Operational knowledge tends to be “tribal”

- Presentations, hallway conversations, internal documents, in someone’s head...
- Technology, tools, and practices change over time...

There are hundreds of operational forums globally

- Archives stored in different formats, some searchable, rarely have speech text or video, no vetting, and state unknown.

**How do I find up-to-date, relevant information when I need it?**



# The BCOP Solution

## Open, Transparent, Bottom-up, and Community led

- Community driven, community written, community vetted Best Current Operational Practices from an open forum, list, and publicly searchable site.
- Community written and approved development process for BCOPs
- Everyone is welcome to participate

80/20 model

# BCOP efforts around the world

<http://www.internetsociety.org/deploy360/about/bcop/>

- Africa: BCOP group started under AfNOG, lead by Douglas Onyango
- Asia: **BoF this Wednesday! Room 411, 17:30-19:00**
- Europe: RIPE BCOP Task Force created, co-chaired by Benno Overeider and Jan Žorž
- Latin America: BCOP Task Force started under LACNOG, lead by Luis Balbinot and Pedro R Torres Jr.
- North America: NANOG BCOP Committee established, lead by Aaron Hughes and Chris Grundemann

# BCOP documents currently in progress

IPv6 troubleshooting for residential helpdesks (RIPE)

DNSSEC for authoritative name servers (RIPE)

(e)BGP configuration (RIPE & NANOG)

IPv6 Peering (NANOG)

Public Peering Exchange Participant (NANOG)

Ethernet OAM (NANOG)

Anti-DDoS (NANOG)

BCP 38 (NANOG)

Africa-specific IPv6 FAQ (AfNOG)

# Potential Topics for Additional BCOPs

<http://www.internetsociety.org/deploy360/about/bcop/topics/>

How to test your network performance

How to check your visibility from global Internet

De-Aggregation: strict filtering /48s out of /32

How are operators using IRR?

IPv6 enterprise network renumbering scenarios, considerations, and methods

DNS Policies

Email Policies

ICMP Filtering

... (we need more suggestions)

## Next Steps

### Where are we going from here?

Continue to bootstrap new efforts as needed

Develop new BCOP documents

Lots of low-hanging fruit

Review and update existing BCOP documents

Start thinking & talking about global coordination

## Get Involved Today!

**Join this grass-roots effort at the ground floor!**

Contribute to an existing draft

Offer ideas for new drafts

Kick off a new document

Start a local or regional BCOP effort

Email [deploy360@isoc.org](mailto:deploy360@isoc.org) for more information



# Operators & the IETF



# Project Rationale

## In a perfect world:

- Operators participate in the IETF standards process
- New standards work perfectly once deployed
- Deployment and operationalization concerns are addressed
- Operators know when to participate, and do so in a timely manner

## In reality:

- Network operators are not engaged enough in the IETF process
- Many operators do not join IETF mailing lists or attend meetings
- Operators do not know standards are even under development
- Standards deemed ready by recent IETF attendees sometimes turn out to be problematic in operational networks

# ISOC's Role

**The discussion about operator input (or lack thereof) into the IETF process is not new, but there was very little hard data to back up anecdotal evidence**

**DO created and marketed an online survey in 2014 to understand the operators' issues so that we can address the concerns and ultimately help make better standards**

**We are working to facilitate communications between operators and the IETF to help ensure operational realities inform standards development**

# A Three-Phase Plan

## Phase 1 – Survey the operator community

The survey closed on 1 July 2014 with over 350 responses

## Phase 2 – Synthesize, discuss, and document survey results

- An Internet-Draft at the IETF: <https://tools.ietf.org/html/draft-opsawg-operators-ietf>

## Phase 3 – Action!

- Facilitate increased operator input into the IETF
- An Internet Society Whitepaper (forthcoming)

# Initial Survey Results (Part 1)

**Most survey participants were Operators/Engineers/Architects; more than 90% hold primarily technical roles**

**Many have heard of the IETF and know what it does, but do not know how to participate**

**A strong majority claim they are interested in IETF mailing lists, find the content relevant, believe it's important to their jobs, but don't have enough time to participate in mailing lists**

## Initial Results (Part 2)

**~50% do not participate in the IETF in any form; ~30% participate only on mailing lists**

**+50% believe operator input is welcome; 64% say they do NOT rely on vendors to represent them**

**50% of respondents claim to have a managerial role**

**82% say that they do not have a travel budget for IETF meetings**

# Survey Analysis

**Collected data into an IETF Internet-Draft, including a report on the challenges to greater operator engagement and a summary of potential solutions, including:**

- Things operators and operator groups can do to help provide more input
- Things the IETF can do to help operators participate
- Things ISOC can do to help facilitate greater operator engagement

**Internet-Draft online at <https://tools.ietf.org/html/draft-opsawg-operators-ietf>**

# Phase 3 - Next Steps to Prompt Action

## Host discussions, gather feedback

At IETFs, NOGs, and events all around the world with all types of operators

Wednesday, Room 502 + 503, 17:30 - 19:00

## Update the Internet-Draft

Synthesize additional input into future versions

<https://datatracker.ietf.org/doc/draft-opsawg-operators-ietf/>

## Lobby for specific solutions?

Take necessary actions

Based on what we hear from you and others



# Thank You!

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