RSAConference2018
San Francisco | April 16 – 20 | Moscone Center

SESSION ID: **GRC-F03**

SCALING AN APPLICATION SECURITY PROGRAM AT THE IMF: A CASE STUDY

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How did we get here?

What does your application security (AppSec) program look like?

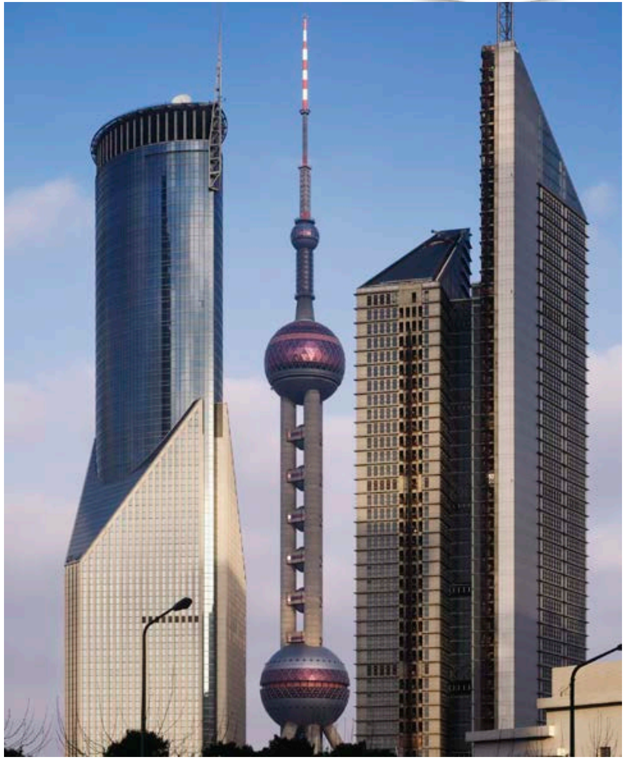
Just Starting

Still Young

Mature

Wait, what??
Where am I?!?

Application security is hard



Application security is hard

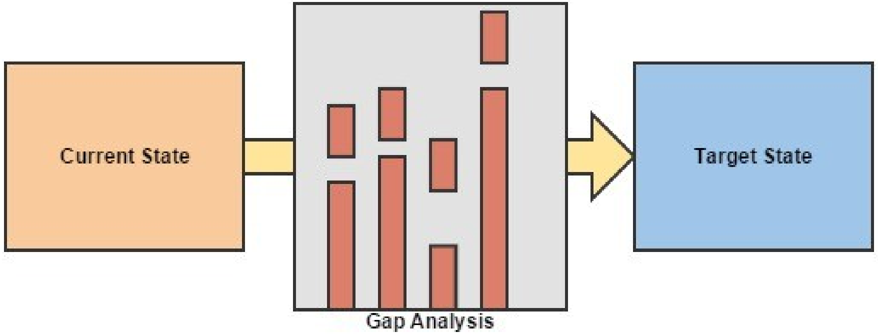
- New field
- Rapidly changing environment
- Competing priorities
- Industry still behind

Why are you doing this?

Prerequisites for success

- Management
- Accurate and up-to-date asset inventory
- Baseline and a plan
- Deep technical knowledge of software development

Approach



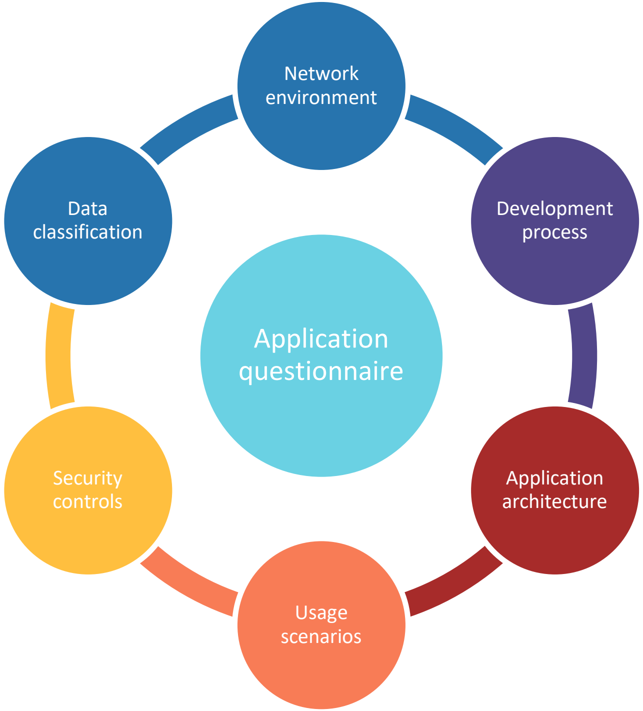
- Develop current state or “as-is” security capabilities and maturity assessment
- Develop strategy or “to-be” security capabilities
- Perform gap analysis
- Develop transition plan from current state to target state

AppSec programs have to be tailored

Plan

- Application risk profiling
- Secure Software Development Lifecycle (SDLC) integration services
- Tailored application security training and guidance
- Application security automation
- Vulnerability management

Application Security Risk Level (ASRL)



Application Security Risk Level (ASRL)

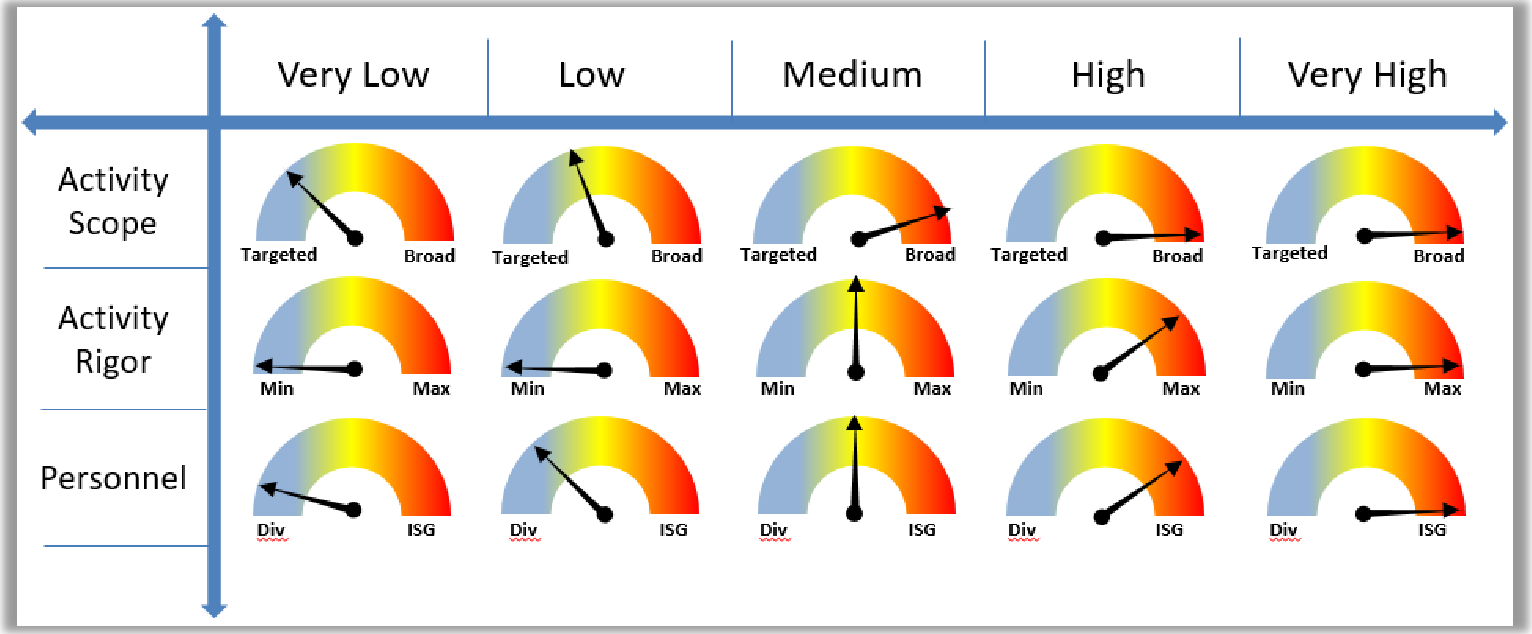
Model calibration

- Representative sampling of applications
- Scoring calculation
- Sanity check

Application Security Risk Levels

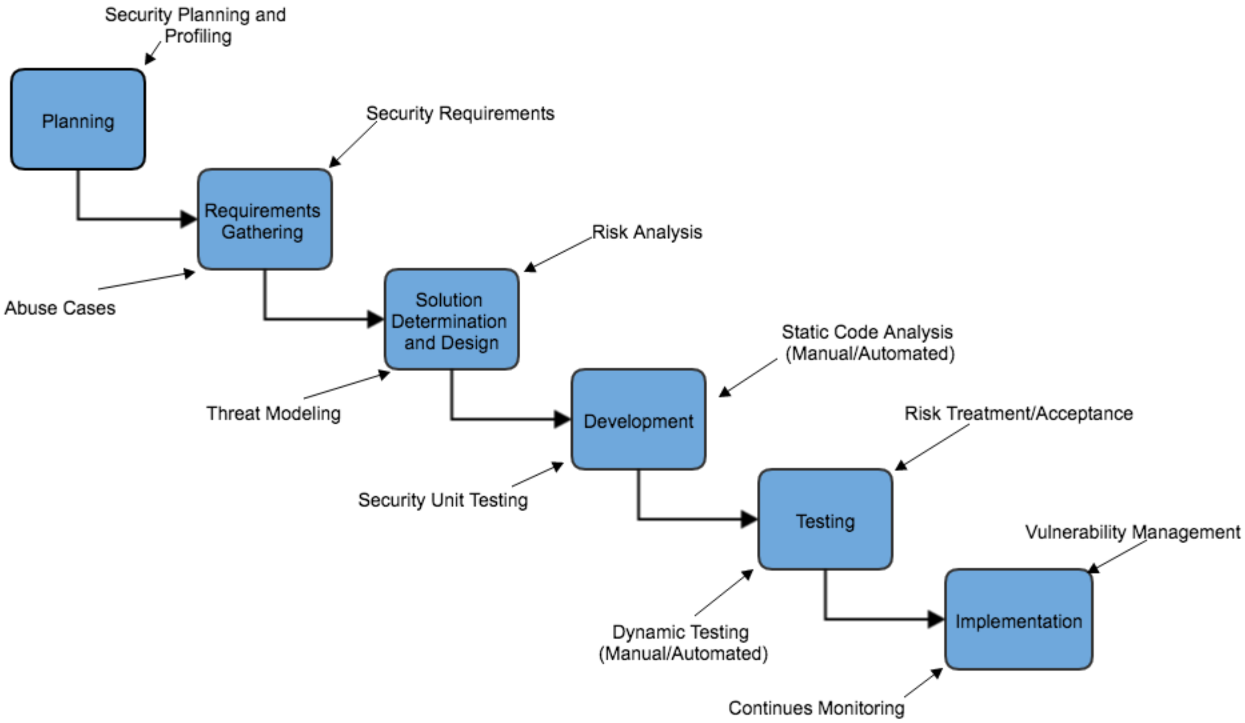
Very High
High
Medium
Low
Very Low

Benefits of ASRL

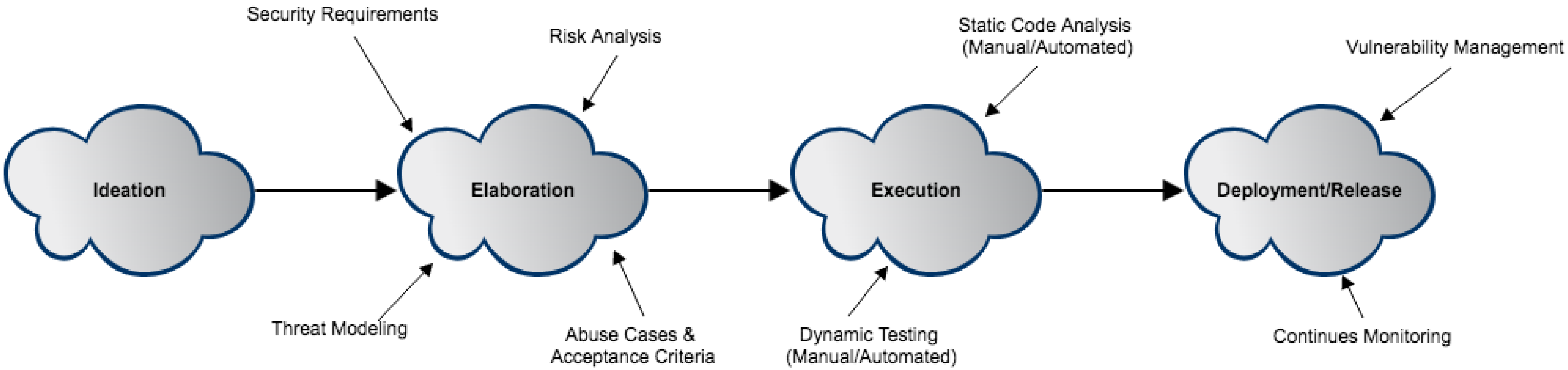


	Very Low	Low	Medium	High	Very High
Activity Scope	Targeted Broad	Targeted Broad	Targeted Broad	Targeted Broad	Targeted Broad
Activity Rigor	Min Max	Min Max	Min Max	Min Max	Min Max
Personnel	Div ISG	Div ISG	Div ISG	Div ISG	Div ISG

SDLC integration



SDLC integration



CASE STUDY

Actual results and lessons learned

Case study: ASRL process

Challenges we faced

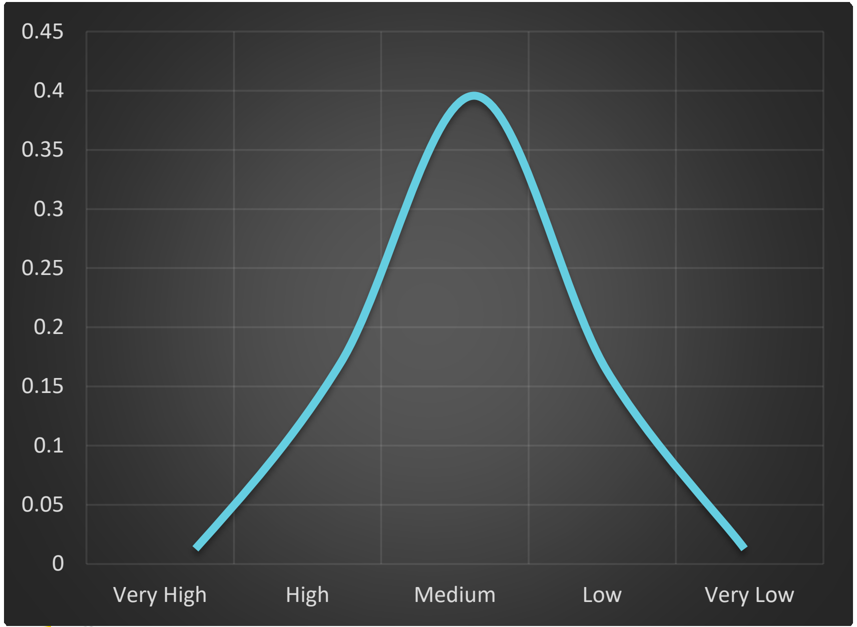
- Lack of continuity hurt efficiency
- Teams found questions confusing
- Same owner for many applications
- Legacy apps with new owners
- Discrepancy between collected fields and asset inventory fields

Lessons learned

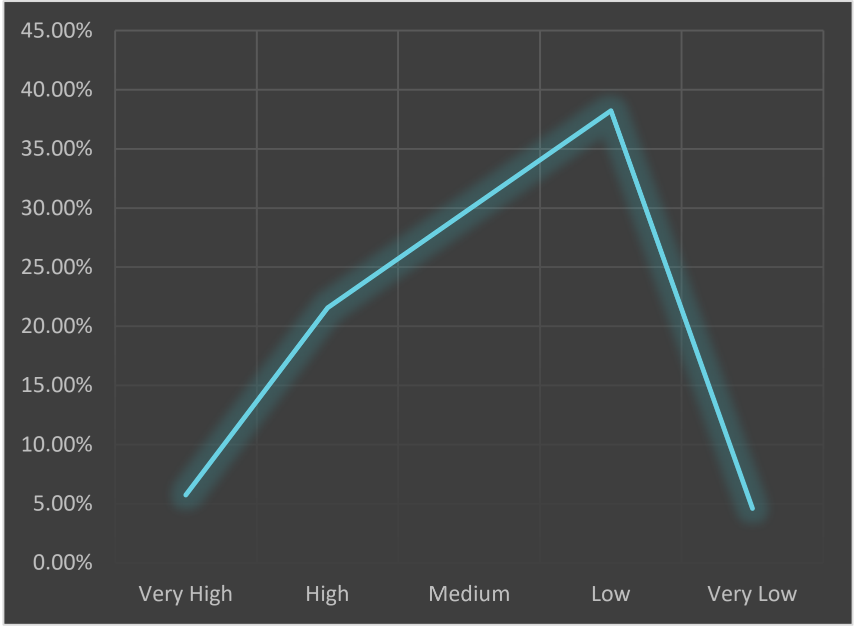
- Use a dedicated resource
- Update based on experiences
- Short meetings across multiple weeks
- Provide questions in advance
- Work with asset inventory team to update

ASRL results

Expected results



Actual results



Case study: targeted training

Challenges we faced

- Roles need different training
- Outsourced development results in staff that comes and goes
- Developers geographically dispersed
- Off-the-shelf trainings insufficiently tailored

Lessons learned

- Ensure role-based curriculum
- Include security training requirements in contract agreements
- Favor e-learning/recorded modules
- Mix commodity training with custom developed modules

Training results

- Three main series
  - Security awareness
  - Secure processes/activities
  - Technical application security
- Nine roles identified
- 28 e-learning modules

Case study: application security guidance

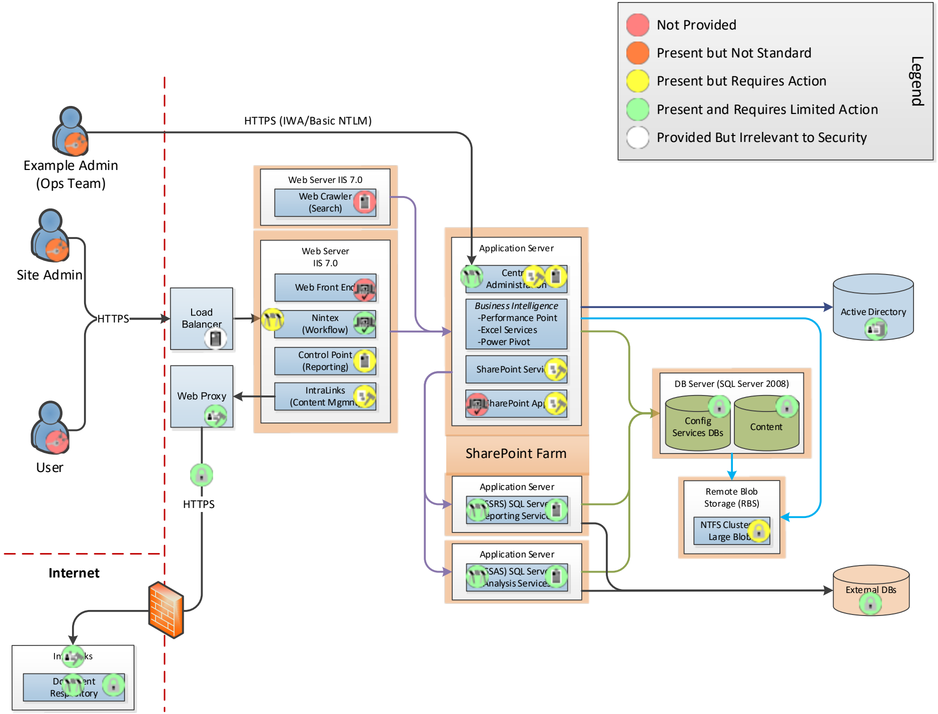
Challenges we faced

- Teams don’t have time to read docs
- Teams need relevant guidance
- Organization moving toward cloud

Lessons learned

- Streamline as two-page reference
- Tailor to most common architectures
- Highlight standard control equivalents

Case study: Application Security Knowledge Domains (ASKDs)



Legend

- 🔴 Not Provided
- 🟠 Present but Not Standard
- 🟡 Present but Requires Action
- 🟢 Present and Requires Limited Action
- ⚪ Provided But Irrelevant to Security

Case study: road map status

- Part of a multiyear program build-out
  - Still progress to be made
- What does the future look like?
  - New testing methods
  - New development paradigms
  - Emerging trend toward security champions

How can you start applying?

Next week you should:

- Get buy-in from management

In the first three months following this presentation you should:

- Identify your set of profiling questions
- Model an initial sample set of applications to calibrate
- Align appropriate security activities based on risk level

Within six months you should:

- Complete the profiling of your application portfolio
- Identify program activities based on portfolio trends
- Begin assessing your highest risk applications

Takeaways

- Find your crown jewels
- Buy-in from management
- Don’t do the same thing for every application
- A stitch in time saves nine …

QUESTIONS?

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