SSAC Skills Survey Preview

The purpose of the SSAC Skills Survey is to understand the expertise areas of current and prospective Security and Stability Advisory Committee (SSAC) members. Individual responses will be confidential, accessible only to the SSAC Membership Committee and, for SSAC members, the SSAC Administrative Committee. Personal information will not be published or shared outside these Committees without explicit consent.

The skills inventory portion of the survey consists of 43 skills across 9 categories, with some categories encompassing multiple areas. Each area includes examples of relevant topics. The examples are meant to be illustrative but not exhaustive; you may have skills in some, but not all, listed areas. The survey also includes 7 demographic questions to help assess the diversity of SSAC.

Estimated time to complete: 20-25 minutes.

<u>**Skills by Category**</u>
Below is a list of the skills organized by category and examples for each skill. The examples are not exhaustive. You may possess skills in some but not necessarily all of these areas:

Category 1: Domain Name System (DNS)

- **1.1 DNS Protocol:** Protocol & standards [IETF, other]
- **1.2 DNS Development:** Authoritative server development, Resolver development, Application Development using the DNS Protocol
- **1.3 DNS Name Service Operations:** Operating authoritative servers, Operating full service resolvers, Operating zones, contact with registrants
- **1.4 Large Scale DNS Operations:** Large ISP, Major infrastructure operator
- **1.5 DNS Monitoring Or Traffic Analysis:** Data gathering, Statistics evaluation, Development or deployment of monitoring systems, DNS Protocol Research, Analysis and Forensics

Category 2: Security

- **2.1 DNSSEC:** DNSSEC protocol [IETF, other], DNSSEC-aware DNS server software development, Deployment and operational experience, DNSSEC-aware applications development
- **2.2 Security Standards And Protocols:** Security policy and auditing NIST, ISO and other international security standards

- **2.3 Security Systems:** Application security gateways, security proxies, virtual private networks (VPNs), Public Key Infrastructure, TLS, certificate authorities, X.509" certificate authorities
- **2.4 Security Attacks & Countermeasures [Defender]:** DDOS mitigation/abatement, Network vulnerability assessment, Application vulnerability assessment, Malware detection and mitigation, Threat source investigation and intelligence, CERT experience and operation
- **2.5 Security Assessment, Attack Methods & Countermeasures [Attacker]:** DDOS techniques, Network intrusion, Application reverse engineering, Attack tools, Reconnaissance
- **2.6 Business Continuity And Disaster Recovery:** Critical systems identification, Planning, Plan Implementation, Running exercises
- **2.7 Cryptography:** Cryptographical Standards, Deployment and operation, Key management

Category 3: Abuse

- **3.1 Cybercrime:** Research and analysis, Policy creation/evolution, Enforcement, Investigation, Prosecution, Intelligence
- **3.2 Denial Of Service:** Research and analysis of attack vectors and infrastructure, Deployment and operation of mitigation technology, Attack traffic analysis
- **3.3 Malware:** Botnets, Ransomware, Drive-by-download, Data exfiltration, Remote Access Tools
- **3.4 Other Abuse:** Click fraud, Potentially unwanted applications, Intellectual property theft, Spam, Scams

Category 4: Root Server System

- **4.1 Root Zone Provisioning:** Root zone administration, working knowledge of IANA functions automation, Working knowledge of IANA functions operations
- **4.2 Root Server Operations:** Support of one of the 13 Internet Root Servers

Category 5: IP Addressing/Routing

- **5.1 ISP, Access Provider:** Global Service Provider [transit] routing, operation, peering, Global Service Provider [transit] business model experience, Customer connectivity, Network Operations Center, Operation of a content delivery network, Cloud services
- **5.2 Network Operations:** IETF routing protocol standards [BGP, ISIS, OSPF, etc], IPv4 allocation, ASNs, RIR operations, IPv6 allocation, ASNs, RIR operations, BGP and global routing operations

- **5.3 Large Scale Network Architecture And Design:** Large ISP, Major Infrastructure Provider, Large multi-campus enterprise
- **5.4 IANA:** Internet number resource management, IANA functions automation, IANA functions operations

Category 6: Registration Services

- **6.1 Domain Registry Operations:** Business experience, Operational experience, EPP experience, ccTLD experience, gTLD experience, ICANN Policy [e.g., PDP process, Registry Agreement]
- **6.2 Domain Registrar Operations:** Business experience, ccTLD experience, gTLD experience, ICANN policy [e.g., PDP process, Registrar Accreditation Agreement], Mitigation of registration abuse, malicious registrations
- **6.3 Registration Data Services:** Internationalized registration data issues, ccTLD practices, Directory services standards and deployment [WHOIS, RDAP, others], Registration data directory service operational experience
- **6.4 Large Scale Registrar Operations**

Category 7: Internationalized Domain Names (IDNs)

- **7.1 Internationalized Domain Names:** IDN protocol, standards, guidelines [IETF, ICANN, other], Software development, Operational experience
- **7.2 Character Set Expertise:** Non-Latin Character Sets

Category 8: Information Technology

- **8.1 Software Engineering:** Programming, Code specification and architecture, Software Development Life Cycle [SDLC]
- **8.2 Software Test Engineering:** Testing in development environment, Testing of fielded software systems
- **8.3 PC/Laptop Operating Environment Support:** Desktop systems
- **8.4 Mobile Operating Environment Support:** Smart phones, Mobility, location and presence applications
- **8.5 Resource Constrained Operating Environment Support:** The Internet of Things [IoT], Supervisory Control and Data Acquisition [SCADA], Industrial Control Systems [ICS], Operational Technology [OT]
- **8.6 Cloud Operating Environment Support:** Content and service distribution networks, Software as a Service [SaaS], Infrastructure as a Service [IaaS], Platform as a Service [PaaS]
- **8.7 Hosting Services:** Hosting of web sites, mail or other services for customers

Category 9: Non-Technical

- **9.1 ICANN:** ICANN Strategic plan, ICANN Operating plan and budget, ICANN security, stability and resiliency plan, ICANN Compliance, Policy Development Process experience
- **9.2 Legal Expertise:** Regulatory, Registry or Registrar, General contract law, Civil subpoena service, Criminal subpoena service/process, Data privacy regulations
- **9.3 Leadership:** Leading moderate to large groups or organizations, Leading technical activities or functions, Decision-making, Planning, Financial control, Delegation
- **9.4 Risk Management:** Risk identification, assessment, evaluation, mitigation planning and implementation
- **9.5 Technology Writing:** Academic research papers, technical advice documents, Technical process or procedure documents
- **9.6 Public Policy:** Governmental or public institution policy development, implementation, or audit
- **9.7 Business Skills:** Business planning, Financial planning, Project management, Negotiation
- **9.8 Communications:** Product management, Marketing, External Communications, Public Relations, Customer support