

## Cisco Certified Architect (CCAr)

### **a. Gather, clarify, and analyze business requirements**

- i. Recognize critical requirements (stated and implied)
- ii. Recognize noncritical requirements (stated and implied)
- iii. Identify and gather missing information
- iv. Identify and clarify ambiguous information
- v. Identify and resolve conflicting information and requirements
- vi. Demonstrate knowledge of the business
- vii. Decompose requirements and problems into component parts
- viii. Recognize and/or clarify CAPEX parameters (e.g., equipment costs, capital software costs, capital facility expenditures)
- ix. Recognize and/or clarify OPEX parameters (e.g., software tooling changes, leases, retraining, staffing, support contracts, utilities, licensing and hosting)
- x. Recognize, challenge, and resolve unrealistic requirements (e.g., common-case vs. worst-case scenario)

### **b. Gather, clarify, and analyze technical requirements**

- i. Recognize critical requirements (stated and implied)
- ii. Recognize noncritical requirements (stated and implied)
- iii. Identify and gather missing information
- iv. Identify and clarify ambiguous information
- v. Identify and resolve conflicting information and requirements
- vi. Leverage existing network documentation to gain understanding of the current network and how it supports the business
- vii. Decompose requirements and problems into component parts
- viii. Recognize, challenge, and resolve unrealistic requirements (e.g., common-case vs. worst-case scenario)

**c. Align business and technical goals and direction**

- i. Map technical solution to business impact
- ii. Map business needs and requirements to technology
- iii. Recognize the relationship between technical and business requirements
- iv. Map business continuity requirements to the network architecture
- v. Establish a vision and strategy for the network with clarity and completeness
- vi. Analyze and estimate various impacts on the network from a change in business structure or process
- vii. Analyze and estimate the SLAs required by the business and evaluate the impact of outages
- viii. Recognize, challenge, and resolve unrealistic requirements (e.g., common-case vs. worst-case scenario)

**d. Perform cursory rough estimations for new or changing requirements and/or informal what-ifs and requests**

- i. Recognize the impact on the existing network and how it currently supports the business
- ii. Estimate the general implementation cost and time frame
- iii. Estimate project feasibility and practicality (including assumptions of parameters and constraints that impact the two)
- iv. Provide an opinion of how the request does or does not align with network and business goals (both current and future)
- v. Recognize and/or clarify CAPEX parameters (e.g., equipment costs, capital software costs, capital facility expenditures)
- vi. Recognize and/or clarify OPEX parameters (e.g., software tooling changes, leases, retraining, staffing, support contracts, utilities, licensing and hosting)

**• 2. Develop a functional specification for the network**

**a. Devise a solution**

- i. The complexity of the network is appropriate for the business requirements
- ii. The survivability of the network is appropriate for the business requirements
- iii. The scalability of the network is appropriate for the business requirements
- iv. The manageability of the network is appropriate for the business requirements

- v. The security of the network is appropriate for the business requirements
- vi. The performance of the network is appropriate for the business requirements
- vii. The cost of the network is appropriate for the business requirements

**b. Perform risk analysis**

- i. Technologies
- ii. Security
- iii. Legal
- iv. Dependencies (e.g., outsourcing to third parties, training, tools, provisioning)

• **3. Create a road map**

**a. Create a migration and transition strategy**

- i. Account for long-term requirements
- ii. Perform and account for risk analysis
- iii. Minimize the negative impact on existing services
- iv. Identify parties responsible for design, implementation, and operation tasks
- v. Strive for ease of implementation

• **4. Convey decisions and rationale (written and verbal)**

**a. Communicate to a business audience**

- i. Articulate business problems, requirements, and constraints
- ii. Articulate technical problems, requirements, interdependencies, and constraints
- iii. Communicate the business strategy and direction
- iv. Communicate the risks and benefits
- v. Communicate with specificity rather than generality (e.g., “does not scale because...” rather than simply “does not scale”)
- vi. Communicate the rationale for decisions clearly and confidently
- vii. Accept, think about, and respond to changing requirements, criticisms, questions, and challenges in a timely and positive (not arrogant or defensive) manner

viii. Influence others

**b. Communicate to a technical audience**

i. Articulate business problems, requirements, and constraints

ii. Articulate technical problems, requirements, interdependencies, and constraints

iii. Communicate business strategy and direction

iv. Communicate risks and benefits

v. Communicate with specificity rather than generality (e.g., “does not scale because...” rather than simply “does not scale”)

vi. Communicate the rationale for decisions clearly and confidently

vii. Accept, think about, and respond to changing requirements, criticisms, questions, and challenges in a timely and positive (not defensive) manner

viii. Influence others

• **5. Demonstrate technical expertise**

**a. Technical expertise**

i. Demonstrate conceptual knowledge of a wide array of network technologies (e.g., Layer 3 routing, tunneling, security, network management)

ii. Demonstrate conceptual knowledge of places in the network (e.g., data center, WAN, campus)

iii. Demonstrate conceptual knowledge of a wide array of applications on the network (e.g., voice, video)

iv. Demonstrate conceptual knowledge of interactions between components and technologies

v. Demonstrate knowledge of current and future directions of technologies, places in the network, and applications

vi. Demonstrate detailed knowledge of a range of network technologies applicable to infrastructure design (e.g., Layer 3 routing, tunneling, security, network management)