GSA Schedule 70
Federal Supply Service
Authorized Federal Supply Schedule Price List

General Purpose Commercial Information Technology Equipment, Software, and Services

Development Consultants Incorporated

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EDWOSB
SBA 8(a) Certified

SIN 132-40 CLOUD COMPUTING SERVICES
FSC/PSC Class D305 IT AND TELECOM- TELEPROCESSING, TIMESHARE, AND CLOUD COMPUTING

Includes public cloud provider services that meet all NIST essential characteristics for cloud computing. Offered services include all three NIST service models Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS), as well as emerging cloud services. Offered services support public, community (GovCloud), and hybrid deployment models.

SIN 132-51 INFORMATION TECHNOLOGY (IT) PROFESSIONAL SERVICES
FSC/PSC Class D301 IT AND TELECOM- FACILITY OPERATION AND MAINTENANCE
FSC/PSC Class D302 IT AND TELECOM- SYSTEMS DEVELOPMENT
FSC/PSC Class D306 IT AND TELECOM- SYSTEMS ANALYSIS
FSC/PSC Class D307 IT AND TELECOM- IT STRATEGY AND ARCHITECTURE
FSC/PSC Class D308 IT AND TELECOM- PROGRAMMING
FSC/PSC Class D310 IT AND TELECOM- CYBER SECURITY AND DATA BACKUP
FSC/PSC Class D311 IT AND TELECOM- DATA CONVERSION
FSC/PSC Class D313 IT AND TELECOM- COMPUTER AIDEDED DESIGN/COMPUTER AIDED MANUFACTURING (CAD/CAM)
FSC/PSC Class D316 IT AND TELECOM- TELECOMMUNICATIONS NETWORK MANAGEMENT
FSC/PSC Class D317 IT AND TELECOM- WEB-BASED SUBSCRIPTION
FSC/PSC Class D399 IT AND TELECOM- OTHER IT AND TELECOMMUNICATIONS

Contract Number: GS35F354GA
Contract Period: 04/06/2017 - 04/05/2022
Prices Effective: 04/06/2017 - 04/05/2022
Effective: 06/26/2018

On-line access to contract ordering information, terms and conditions, up-to-date pricing, and the option to create an electronic delivery order are available through GSA Advantage!®, a menu-driven database system. The INTERNET address GSA Advantage!® is: GSAAdvantage.gov.

For more information on ordering from Federal Supply Schedules click on the FSS Schedules button at fss.gsa.gov.
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SCA MATRIX

TERMS AND CONDITIONS APPLICABLE TO PURCHASE OF CLOUD COMPUTING SERVICES (SPECIAL ITEM NUMBER 132-40)

SIN 132-40 CLOUD COMPUTING SERVICES PRICE LIST
CUSTOMER INFORMATION:

1a. **Awarded Special Item Number(s):**

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</tr>
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1b. **Lowest priced model number and lowest unit price for that model for each SIN:** Not Applicable

1c. **Description of all corresponding commercial job titles, experience, functional responsibility, and education** are provided beginning on page 12.

2. **Maximum order:**
   - i. The maximum order value for SIN 132-40 is $500,000
   - ii. The maximum order value for SIN 132-51 is $500,000

3. **Minimum order:** $100

4. **Geographic coverage (delivery area):** The Geographic Scope of Contract will be domestic delivery only.

5. **Point(s) of production (city, county, and State or foreign country):** Not Applicable

6. **Discount from list prices or statement of net price:** Prices shown herein are NET Prices; basic discounts have been deducted.

7. **Quantity discounts:** None

8. **Prompt payment terms:** Net 30 from receipt of invoice or date of acceptance, whichever is later.

9a. **Government purchase cards are accepted at or below the micro-purchase threshold.**

9b. **Government purchase cards are not accepted above the micro-purchase threshold.**

10. **Foreign items:** None

11a. **Time of delivery:** The Contractor shall deliver to destination within the number of calendar days after receipt of order (ARO), as set forth below:
   - i. SIN 132-40 - Cloud Computing Services: As negotiated
   - ii. SIN 132-51 - Information Technology (IT) Professional Services: As negotiated

11b. **Expedited delivery:** Not Applicable

11c. **Overnight and 2-day delivery:** Not Applicable
11d. **Urgent requirements:** When the Federal Supply Schedule contract delivery period does not meet the bona fide urgent delivery requirements of an ordering agency, agencies are encouraged, if time permits, to contact the Contractor for the purpose of obtaining accelerated delivery. The Contractor shall reply to the inquiry within 3 workdays after receipt. (Telephonic replies shall be confirmed by the Contractor in writing.) If the Contractor offers an accelerated delivery time acceptable to the ordering agency, any order(s) placed pursuant to the agreed upon accelerated delivery time frame shall be delivered within this shorter delivery time and in accordance with all other terms and conditions of the contract.

12. **FOB point:** Destination

13a. **Ordering address:**

   Development Consultants, Incorporated  
   24940 Patrick brush Run Road,  
   Marysville, OH 43040  
   Phone: (855) 746-5324 Ext.70  
   Email: orders@devconinc.com

13b. **Ordering procedures:** For supplies and services, the ordering procedures, information on Blanket Purchase Agreements (BPA’s) are found in Federal Acquisition Regulation (FAR) 8.405-3.

14. **Payment address:**

   Development Consultants Incorporated  
   24940 Patrick brush Run Road,  
   Marysville, OH 43040  
   Phone: (855) 746-5324  
   Email: accounting@devconinc.com

15. **Warranty provision:** Contractor's standard warranty

16. **Export packing charges:** Not Applicable

17. **Terms and conditions of Government purchase card acceptance:** Contact Development Consultants Incorporated for terms and conditions of Government Purchase Card acceptance.

18. **Terms and conditions of rental, maintenance, and repair:** Not Applicable

19. **Terms and conditions of installation:** Not Applicable

20. **Terms and conditions of repair parts indicating date of parts price lists and any discounts from list prices:** Not Applicable

20a. **Terms and conditions for any other services:** Not Applicable

21. **List of service and distribution points:** Not Applicable

22. **List of participating dealers:** Not Applicable

23. **Preventive maintenance:** Not Applicable
24a. Special attributes such as environmental attributes (e.g., recycled content, energy efficiency, and/or reduced pollutants): Not Applicable

24b. Section 508 compliance for Electronic and Information Technology (EIT):
Development Consultants Incorporated is aware of the Section 508 requirements, and will comply with all applicable Section 508 requirements as specified for each Task Order placed against this contract vehicle. The EIT standard can be found at: www.Section508.gov

25. Data Universal Number System (DUNS) number: 042292750

26. Notification regarding registration in System for Award Management (SAM) database:
Development Consultants Incorporated has an active registration in the System for Award Management (SAM) database.
TERMS AND CONDITIONS APPLICABLE TO INFORMATION TECHNOLOGY (IT) PROFESSIONAL SERVICES (SPECIAL ITEM NUMBER 132-51)

****NOTE: All non-professional labor categories must be incidental to, and used solely to support professional services, and cannot be purchased separately.

1. SCOPE
   a. The prices, terms and conditions stated under Special Item Number 132-51 Information Technology Professional Services apply exclusively to IT Professional Services within the scope of this Information Technology Schedule.
   b. The Contractor shall provide services at the Contractor’s facility and/or at the ordering activity location, as agreed to by the Contractor and the ordering activity.

2. PERFORMANCE INCENTIVES  I-FSS-60 Performance Incentives (April 2000)
   a. Performance incentives may be agreed upon between the Contractor and the ordering activity on individual fixed price orders or Blanket Purchase Agreements under this contract.
   b. The ordering activity must establish a maximum performance incentive price for these services and/or total solutions on individual orders or Blanket Purchase Agreements.
   c. Incentives should be designed to relate results achieved by the contractor to specified targets. To the maximum extent practicable, ordering activities shall consider establishing incentives where performance is critical to the ordering activity’s mission and incentives are likely to motivate the contractor. Incentives shall be based on objectively measurable tasks.

3. ORDER
   a. Agencies may use written orders, EDI orders, blanket purchase agreements, individual purchase orders, or task orders for ordering services under this contract. Blanket Purchase Agreements shall not extend beyond the end of the contract period; all services and delivery shall be made and the contract terms and conditions shall continue in effect until the completion of the order. Orders for tasks which extend beyond the fiscal year for which funds are available shall include FAR 52.232-19 (Deviation – May 2003) Availability of Funds for the Next Fiscal Year. The purchase order shall specify the availability of funds and the period for which funds are available.
   b. All task orders are subject to the terms and conditions of the contract. In the event of conflict between a task order and the contract, the contract will take precedence.
4. PERFORMANCE OF SERVICES

a. The Contractor shall commence performance of services on the date agreed to by the Contractor and the ordering activity.

b. The Contractor agrees to render services only during normal working hours, unless otherwise agreed to by the Contractor and the ordering activity.

c. The ordering activity should include the criteria for satisfactory completion for each task in the Statement of Work or Delivery Order. Services shall be completed in a good and workmanlike manner.

d. Any Contractor travel required in the performance of IT Services must comply with the Federal Travel Regulation or Joint Travel Regulations, as applicable, in effect on the date(s) the travel is performed. Established Federal Government per diem rates will apply to all Contractor travel. Contractors cannot use GSA city pair contracts.

5. STOP-WORK ORDER (FAR 52.242-15) (AUG 1989)

(a) The Contracting Officer may, at any time, by written order to the Contractor, require the Contractor to stop all, or any part, of the work called for by this contract for a period of 90 days after the order is delivered to the Contractor, and for any further period to which the parties may agree. The order shall be specifically identified as a stop-work order issued under this clause. Upon receipt of the order, the Contractor shall immediately comply with its terms and take all reasonable steps to minimize the incurrence of costs allocable to the work covered by the order during the period of work stoppage. Within a period of 90 days after a stop-work is delivered to the Contractor, or within any extension of that period to which the parties shall have agreed, the Contracting Officer shall either-

(1) Cancel the stop-work order; or

(2) Terminate the work covered by the order as provided in the Default, or the Termination for Convenience of the Government, clause of this contract.

(b) If a stop-work order issued under this clause is canceled or the period of the order or any extension thereof expires, the Contractor shall resume work. The Contracting Officer shall make an equitable adjustment in the delivery schedule or contract price, or both, and the contract shall be modified, in writing, accordingly, if-

(1) The stop-work order results in an increase in the time required for, or in the Contractor's cost properly allocable to, the performance of any part of this contract; and

(2) The Contractor asserts its right to the adjustment within 30 days after the end of the period of work stoppage; provided, that, if the Contracting Officer decides the facts justify the action, the Contracting Officer may receive and act upon the claim submitted at any time before final payment under this contract.

(c) If a stop-work order is not canceled and the work covered by the order is terminated for the convenience of the Government, the Contracting Officer shall allow reasonable costs resulting from the stop-work order in arriving at the termination settlement.

(d) If a stop-work order is not canceled and the work covered by the order is terminated for default, the Contracting Officer shall allow, by equitable adjustment or otherwise, reasonable costs resulting from the stop-work order.

6. INSPECTION OF SERVICES

In accordance with FAR 52.212-4 CONTRACT TERMS AND CONDITIONS--COMMERCIAL ITEMS (MAR 2009) (DEVIATION I - FEB 2007) for Firm-Fixed Price orders and FAR 52.212-4 CONTRACT TERMS AND
7. RESPONSIBILITIES OF THE CONTRACTOR

The Contractor shall comply with all laws, ordinances, and regulations (Federal, State, City, or otherwise) covering work of this character. If the end product of a task order is software, then FAR 52.227-14 (Dec 2007) Rights in Data – General, may apply.

8. RESPONSIBILITIES OF THE ORDERING ACTIVITY

Subject to security regulations, the ordering activity shall permit Contractor access to all facilities necessary to perform the requisite IT Professional Services.

9. INDEPENDENT CONTRACTOR

All IT Professional Services performed by the Contractor under the terms of this contract shall be as an independent Contractor, and not as an agent or employee of the ordering activity.

10. ORGANIZATIONAL CONFLICTS OF INTEREST

a. Definitions.

“Contractor” means the person, firm, unincorporated association, joint venture, partnership, or corporation that is a party to this contract.

“Contractor and its affiliates” and “Contractor or its affiliates” refers to the Contractor, its chief executives, directors, officers, subsidiaries, affiliates, subcontractors at any tier, and consultants and any joint venture involving the Contractor, any entity into or with which the Contractor subsequently merges or affiliates, or any other successor or assignee of the Contractor.

An “Organizational conflict of interest” exists when the nature of the work to be performed under a proposed ordering activity contract, without some restriction on ordering activities by the Contractor and its affiliates, may either (i) result in an unfair competitive advantage to the Contractor or its affiliates or (ii) impair the Contractor’s or its affiliates’ objectivity in performing contract work.

b. To avoid an organizational or financial conflict of interest and to avoid prejudicing the best interests of the ordering activity, ordering activities may place restrictions on the Contractors, its affiliates, chief executives, directors, subsidiaries and subcontractors at any tier when placing orders against schedule contracts. Such restrictions shall be consistent with FAR 9.505 and shall be designed to avoid, neutralize, or mitigate organizational conflicts of interest that might otherwise exist in situations related to individual orders placed against the schedule contract. Examples of situations, which may require restrictions, are provided at FAR 9.508.

11. INVOICES

The Contractor, upon completion of the work ordered, shall submit invoices for IT Professional services. Progress payments may be authorized by the ordering activity on individual orders if appropriate. Progress payments shall be based upon completion of defined milestones or interim products. Invoices shall be submitted monthly for recurring services performed during the preceding month.

12. PAYMENTS

For firm-fixed price orders the ordering activity shall pay the Contractor, upon submission of proper invoices or vouchers, the prices stipulated in this contract for service rendered and accepted. Progress payments shall be made only when authorized by the order. For time-and-materials orders, the Payments under Time-and-Materials and Labor-Hour Contracts at FAR 52.212-4 (MAR 2009) (ALTERNATE I – OCT 2008) (DEVIATION I – FEB 2007)
applies to time-and-materials orders placed under this contract. For labor-hour orders, the Payment under Time-and-Materials and Labor-Hour Contracts at FAR 52.212-4 (MAR 2009) (ALTERNATE I – OCT 2008) (DEVIATION I – FEB 2007) applies to labor-hour orders placed under this contract. 52.216-31(Feb 2007) Time-and-Materials/Labor-Hour Proposal Requirements—Commercial Item Acquisition. As prescribed in 16.601(e)(3), insert the following provision:

(a) The Government contemplates award of a Time-and-Materials or Labor-Hour type of contract resulting from this solicitation.
(b) The offeror must specify fixed hourly rates in its offer that include wages, overhead, general and administrative expenses, and profit. The offeror must specify whether the fixed hourly rate for each labor category applies to labor performed by—
   (1) The offeror;
   (2) Subcontractors; and/or
   (3) Divisions, subsidiaries, or affiliates of the offeror under a common control.

13. RESUMES

Resumes shall be provided to the GSA Contracting Officer or the user ordering activity upon request.

14. INCIDENTAL SUPPORT COSTS

Incidental support costs are available outside the scope of this contract. The costs will be negotiated separately with the ordering activity in accordance with the guidelines set forth in the FAR.

15. APPROVAL OF SUBCONTRACTS

The ordering activity may require that the Contractor receive, from the ordering activity's Contracting Officer, written consent before placing any subcontract for furnishing any of the work called for in a task order.

16. DESCRIPTION OF IT PROFESSIONAL SERVICES AND PRICING

a. The Contractor shall provide a description of each type of IT Service offered under Special Item Numbers 132-51 IT Professional Services should be presented in the same manner as the Contractor sells to its commercial and other ordering activity customers. If the Contractor is proposing hourly rates, a description of all corresponding commercial job titles (labor categories) for those individuals who will perform the service should be provided.

b. Pricing for all IT Professional Services shall be in accordance with the Contractor’s customary commercial practices; e.g., hourly rates, monthly rates, term rates, and/or fixed prices, minimum general experience and minimum education.

**SIN 132-51 PROFESSIONAL SERVICES DESCRIPTION**

Development Consultants, Incorporated is a Minority Woman-Owned, SBA 8(a) certified Small Business providing scientific excellence to Information Technology since 2001. Since our inception we’ve provided our commercial and federal customers with the highest level of expertise.

Our engineering services include cloud-based topology design, capacity planning, contingency planning, automated resource provisioning, security hardening, performance engineering, and grid monitoring of high-performance, highly-available software, middleware, and infrastructure resources. We specialize in high security cloud design, implementation, migration, operation, and governance of FISMA-High and FedRAMP cloud environments. We offer mature, disciplined, highly capable Extreme Agile software development, operations, and software process improvement services. Measurement, monitoring, and quality assurance are integral to the scientific method and our success, and we are experts in performance and security monitoring, analysis, engineering, and governance.
Development Consultants, Incorporated offers Information Technology expertise, including, but not limited to the following specializations:

**Cloud Engineering**
Design and implement large scale enterprise cloud data centers that comply with the latest NIST, FIIPS and OMB security standards. We also provide physical to virtual migration services, as well as hybrid cloud solutions to securely connect the cloud to your corporate data center. We design traditional solutions that scale to meet dynamic capacity requirements or create completely server less cloud solutions that only incur cost when accessed.

**Software Engineering Services**
We provide test driven software development to satisfy the most demanding technical requirements with agility and eloquence. Our software processes utilize highly automated continuous integration and delivery that minimize overhead and maximize productivity. We offer a full range of software life cycle services that encompass everything from inception to production including ongoing maintenance, re-factoring/re-engineering and comprehensive data migration services.

**Performance Engineering**
We offer comprehensive performance engineering solutions, including nearly infinitely scaleable load testing of application, database and infrastructure resources. Application optimization includes code reviews and analysis, code profiling, and distributed in-memory grid caching of software objects. Our database optimization services include improving the efficiency of queries, indices, execution plans, transaction containment boundaries, transaction isolation levels, and cache hits. Infrastructure tuning includes everything from topology analysis and design to middleware server tuning.

**DevOps**
We provide DevOps automation that improves governance, oversight and accountability while improving efficiency in the software development and release process. Our continuous integration and continuous delivery pipeline includes a comprehensive battery of tests that range from static code compliance testing to dynamic testing. Static tests (white-box) include unit testing with code coverage, cyclomatic complexity analysis, and adherence to code style and standards. Automated dynamic testing (black-box) includes performance monitoring, security profiling and penetration testing to identify potential run time attack vectors, vulnerabilities and defects.

**Enterprise Architecture**
Our experience architects integrate architectural patterns that promote consistency, improve functionality, and reduce entropy throughout the enterprise. We offer long term strategic planning to improve and simplify all Information technology domains including development, infrastructure, governance, and security.

**Data Science**
Our data scientists will help you reveal patterns, trends and associations in extremely large data sets through distributed computation and storage technologies. We specialize in analysis, capture, curation, search and visualization of data sets whose complexity transcends traditional data processing mechanisms. We provide the cloud infrastructure and analytical skills necessary to improve your capability to manage the volume, variety and velocity of your information assets.

**Project Management**
We manage projects using the Agile Scrum or Kanban processes. By incorporating continual feedback, we ensure that we consistently conforming to user expectations, schedules and deliverables. We apply Agile not only to service operations, but also to service strategies, service design and service transition.
SIN 132-51 PROFESSIONAL SERVICES LABOR CATEGORY DESCRIPTIONS

Application Architect I
Functional Responsibility: Responsible for the design and development of new software products. Provides guidance and leadership to the development team on designing complex software systems. Acts as a high level technical expert and addresses issues relating to systems integration and compatibility. Works with project managers, developers, and end users to ensure application designs meet business requirements.

Education Requirements: Bachelor’s degree in Computer Science or equivalent field
Minimum/General Experience: Five years of experience

Application Architect II
Functional Responsibility: Responsible for the design and development of new software products. Provides guidance and leadership to the development team on designing complex software systems. Acts as a high level technical expert and addresses issues relating to systems integration and compatibility. Works with project managers, developers, and end users to ensure application designs meet business requirements. Estimates size and schedule for software enhancements. Reviews existing programs and assists in making refinements, reducing operating time and improving current techniques. Responsible for program design, coding, testing, debugging and documentation. Instructs, directs, and checks the work of other task personnel. Responsible for quality assurance review and the evaluation of existing and new software products.

Education Requirements: Bachelor’s degree in Computer Science or equivalent field
Minimum/General Experience: Eight years of experience

Cloud Architect
Functional Responsibility: Designs cloud infrastructure, virtual private cloud, virtual private network, relational database services, auto scaling, and compute resources to meet customers’ requirements. Provides expertise in high availability, contingency planning, and automated provisioning. Responsible for cloud management and monitoring. Designs solutions for various deployment models (Private, Public, Community and Hybrid) and service models including Infrastructure as a Service (IaaS), Platform as a service (PaaS), Software as a Service (SaaS) and emerging cloud services to optimize the essential characteristics of cloud computing. Advises on storage and security solutions to securely store data in multi-tenancy environments. Collaborates with enterprise architecture team and other stakeholders to determine enterprise tools, technologies and processes. Establishes corporate cloud computing architecture policies and standards in compliance with appropriate security levels and governance in accordance with best practices prescribed by the National Institute of Standards and Technology (NIST), Federal Information Security Management Act (FISMA), Federal Information Processing Standard (FIPS), Office of Management and Budget (OMB) and Federal Risk and Authorization Management Program (FedRAMP). Responsible for delivering an end-to-end cloud architecture solution across all domains.

Education Requirements: Bachelor’s degree in Computer Science or equivalent field
Minimum/General Experience: Seven years of experience
Cloud Engineer

Functional Responsibility: Provides direction on designing cloud infrastructure capable of supporting a number of applications in the cloud with an emphasis on scalability, automation, performance and availability. Oversees the installation, provisioning, configuration, operation and maintenance of required hardware and software related to cloud computing infrastructure components. Provides guidance and sets standards on migrating internal and external organizational projects to a cloud computing environment including migration of existing data centers to a cloud computing environment. Provides expertise on cloud implementations and researches emerging trends and technologies related to cloud engineering. Implements prescribed solutions for various deployment models (Private, Public, Community and Hybrid) and delivery models including Infrastructure as a Service (IaaS), Platform as a service (PaaS), and Software as a Service (SaaS). Collaborates with security analysts, architects and engineers to define and implement the best solutions for the technical infrastructure layer in a cloud environment.

Education Requirements: Bachelor’s degree in Computer Science or equivalent field

Minimum/General Experience: Seven years of experience

Cloud Operations

Functional Responsibility: Responsible for configuring cloud environments that are scalable and reliable. Performs tasks including installation, configuration, and maintenance under the direction of the cloud engineering team. Collaborates with engineering, development and quality assurance teams to develop guidelines on automated monitoring and alerting protocols. Works with other infrastructure and engineering teams to identify emerging trends and technologies related to cloud engineering. Prepares and updates documentation relating to organizational standards and procedures pertaining to the cloud. Monitors and troubleshoots any cloud operational issues. Maintains logs and records related to the cloud environment.

Education Requirements: Bachelor’s degree in Computer Science or equivalent field

Minimum/General Experience: Three years of experience

Continuous Integration Engineer I

Functional Responsibility: Develops and documents configuration management processes and procedures to meet the scope and complexity of systems. Maintains the CM environment and performs change control and configuration audits consistent with industry standards. Controls the change process so that only approved and validated changes are incorporated and promoted from Dev to QA to Prod. Implements version control process for hardware and software systems. Provides guidance on the selection and use of configuration management tools to store, track, and manage configuration artifacts. Creates build scripts and promotes those scripts within the software build process. Ensures that the development, test and production environments are identical in configuration to avoid inconsistencies with in environments.

Education Requirements: BA/BS in Computer Science, or equivalent experience

Minimum/General Experience: Seven years of experience

Configuration Management Analyst II

Functional Responsibility: Develops and documents configuration management processes and procedures to meet the scope and complexity of systems. Maintains the CM environment and performs change control and configuration audits consistent with industry standards. Controls the change process so that only approved and validated changes are incorporated and promoted from Dev to QA to Prod. Implements version control process for
hardware and software systems. Provides guidance on the selection and use of configuration management tools to store, track, and manage configuration artifacts. Creates build scripts and promotes those scripts within the software build process. Ensures that the development, test and production environments are identical in configuration to avoid inconsistencies with in environments. Directs and provides guidance to junior staff on configuration management related tasks.

**Education Requirements:** BA/BS in Computer Science, or equivalent experience

**Minimum/General Experience:** Ten years of experience

**Database Administrator Senior**

**Functional Responsibility:** Responsible for the configuration, installation, upgrade, migration, and maintenance of databases. Responsible for quality control and audits of databases to confirm the accuracy and functionality of data. Monitors database systems and resources to ensure that the database is available and performing at the optimum level. Performs backups, maintains logs; installs database software upgrades; restores and/or recovers data as needed. Consults on a variety of database integration issues including migration between disparate databases, maintenance/conversion and capacity planning. Works with management to develop database strategies based on customers’ requirements. Recommends testing and tuning of databases to increase functionality and efficiency.

**Education Requirements:** BS in Computer Science, or equivalent experience.

**Minimum/General Experience:** Five to seven years of experience

**Enterprise Architect**

**Functional Responsibility:** Responsible for the long-term strategic planning of IT systems to improve functionality and efficiency. Provides guidance on integration and synchronization of disparate technologies to improve cost and increase productivity. Develops policies, standards and guidelines that direct the selection/development, implementation and use of technologies. Collaborates with other IT stakeholders to provide an architecture solution that is reliable, adaptable and scalable. Addresses risks associated with IT assets through the development, use and recommendation of appropriate standards and security policies. Analyzes technology trends relating to security, infrastructure, and development, and provides technical vision. Collaborates with senior level technical staff to integrate project requirements while complying with industry’s standard practices and SOA methodologies. Documents and presents SOA methodologies, other architectural principles and technical solutions to senior staff and IT stakeholders.

**Education Requirements:** Bachelor's Degree in Information Technology or equivalent field of study

**Minimum/General Experience:** Ten years of IT related experience or equivalent knowledge, training, and experience

**Help Desk Support I**

**Functional Responsibility:** Provides technical support via phone and/or email to local and off-site users. Analyzes and responds to incidents and determines the level of support required. Collaborates with users to diagnose problems, investigate causes, and recommend solutions. Resolves issues within the scope specified in specific SLA’s or escalates the calls to the appropriate service level queue for resolution. Records incidents and maintains a database of all occurrences requesting technical assistance. Coordinates with internal support staff and/or with
vendors to resolve problems. Participates in meeting with support and operations staff and provides feedback on support related issues.

**Education Requirements:** BA/BS

**Minimum/General Experience:** Two years

### Help/Service Desk Support II

**Functional Responsibility:** Supervises support staff schedules and assigns support activities based on staff capability. Provides technical support via phone and/or email to local and off-site users. Analyzes and responds to incidents and determines the level of support required. Collaborates with users to diagnose problems, investigate causes, and recommend solutions. Resolves issues within the scope specified in specific SLA’s or escalates the calls to the appropriate service level queue for resolution. Reviews incidents and incident database to ensure that problems are resolved efficiently. Coordinates with internal support staff and/or with vendors to resolve problems. Follows up with end users and customers to make sure that incidents are resolved in a timely manner. Participates in meeting with support and operations staff and provides feedback on support related issues.

**Education Requirements:** BA/BS

**Minimum/General Experience:** Five years

### Infrastructure Engineer I

**Functional Responsibility:** Responsible for the design, implementation and maintenance of physical systems including servers, storage arrays, network devices and data centers. Installs, configures and maintains virtual hosts, operating systems, applications and databases. Documents IT infrastructure standards, processes and procedures. Schedules and coordinates infrastructure maintenance outages with all key stakeholders to ensure high availability of operations. Provides periodic status updates on scheduled maintenance and upgrade of all infrastructure systems. Troubleshoots hardware, network, software and application issues to identify bottleneck in operations and provides recommendations to ensure optimum performance and continuity of critical systems. Provides tier 3 support as needed.

**Education Requirements:** Bachelor’s degree or higher in Computer Science or equivalent field

**Minimum/General Experience:** Six years of engineering experience

### Infrastructure Engineer II

**Functional Responsibility:** Responsible for the design, implementation and maintenance of physical systems including servers, storage arrays, network devices and data centers. Installs, configures and maintains virtual hosts, operating systems, applications and databases. Develops and presents IT infrastructure standard operating procedures to senior management. Provides periodic status updates on scheduled maintenance and upgrade of all infrastructure systems. Schedules and coordinates infrastructure maintenance outages with all key stakeholders to ensure high availability of operations. Troubleshoots hardware, network, software and application issues to identify bottleneck in operations and provides recommendations to ensure optimum performance and continuity of critical systems.

**Education Requirements:** Bachelor’s degree or higher in Computer Science or equivalent field

**Minimum/General Experience:** Ten years of engineering experience
Infrastructure Engineer III

Functional Responsibility: Serves as technology expert and provides guidance to junior team members. Oversees the design, implementation and maintenance of physical systems including servers, storage arrays, network devices and data centers. Provides guidance on installation, configuration and maintenance of virtual hosts, operating systems, applications and databases. Maintains ownership of high availability, high security IT operations. Develops and presents IT infrastructure standard operating procedures to senior management. Reviews and approves periodic status updates on scheduled maintenance and upgrade of all infrastructure systems. Troubleshoots hardware, network, software and application issues to identify bottleneck in operations and provides recommendations to ensure optimum performance and continuity of critical systems.

Education Requirements: Bachelor’s degree or higher in Computer Science or equivalent field

Minimum/General Experience: Fifteen years of engineering experience in a leadership role

Project Lead/Manager I

Functional Responsibility: Responsible for all aspects of project development and implementation from original inception to final completion. Serves as a single point of contact. Interfaces with all parties involved in the project including developers, administrators, engineers and customers. Gathers customers’ requirements and establish project scope and objectives. Prepares detailed schedules, project estimates, and status reports. Allocates resources to facilitate the successful completion of projects. Responsible for project tracking and analysis. Prepares deliverables and ensures adherence to quality standards. Manages the integration of vendor tasks, and evaluates vendor deliverables. Provides recommendations and takes action to resolve any management related issues.

Education Requirements: Bachelor’s degree or equivalent

Minimum/General Experience: Six years of project management or task lead experience

Project Lead/Manager II

Functional Responsibility: Responsible for all aspects of project development and implementation from original inception to final completion. Serves as a single point of contact. Interfaces with all parties involved in the project including developers, administrators, engineers and customers. Gathers customers’ requirements and establish project scope and objectives. Prepares detailed schedules, project estimates, and status reports. Allocates resources to facilitate the successful completion of projects. Coordinates and conducts meetings and is responsible for project tracking and analysis. Reviews deliverables and ensures adherence to quality standards. Manages the integration of vendor tasks, and evaluates vendor deliverables. Provides recommendations and takes action to resolve any management related issues.

Education Requirements: Bachelor’s degree or equivalent

Minimum/General Experience: Ten years of project management or task lead experience

Senior Applications Developer

Functional Responsibility: Develops, tests and debugs code. Works with technical staff to identify, troubleshoot and solve problems related to software. Responds to software code defects and performance bottlenecks and suggests improvements. Schedules and applies code fixes and patches to improve performance and functionality. Interfaces with end users and resolves any customer complaints. Collaborates with other development staff to
prepare software user manuals. Monitors and reports any software related issues to senior staff and makes suggestions for enhancements.

**Education Requirements**: Bachelor’s degree in Computer Science or equivalent field

**Minimum/General Experience**: Five years of experience

**Senior Systems Engineer I or Sr. Systems Engineer**

**Functional Responsibility**: Responsible for the design and implementation of new systems. Performs a variety of tasks related to systems design, integration and implementation. Provides quality assurance review and the evaluation of new and existing software and hardware. Coordinates with senior management and technical personnel to ensure problem resolution and customer satisfaction.

**Education Requirements**: Bachelor’s degree in Computer Science, Engineering or equivalent field of study

**Minimum/General Experience**: Five years of experience

**Senior Systems Engineer II**

**Functional Responsibility**: Responsible for the design and implementation of new systems. Performs a variety of tasks related to systems design, integration and implementation. Provides quality assurance review and the evaluation of new and existing software and hardware. Coordinates with senior management and subordinate technical personnel to ensure problem resolution and customer satisfaction. Makes recommendations, if needed, for approval of major systems integration. Prepares milestone status reports and delivers presentations on the system concept to colleagues, subordinates, and end user representatives.

**Education Requirements**: Bachelor’s degree in Computer Science, Engineering or equivalent field of study

**Minimum/General Experience**: Seven years of experience

**Senior Systems Engineer III**

**Functional Responsibility**: Responsible for the design and implementation of new systems. Performs a variety of tasks related to systems design, integration and implementation. Provides quality assurance review and the evaluation of new and existing software and hardware. Supervises and coordinates with subordinate technical personnel to ensure problem resolution and customer satisfaction. Makes recommendations, if needed, for approval of major systems integration. Prepares milestone status reports and deliveries/presentations on the system concept to senior staff, and end user representatives.

**Education Requirements**: Bachelor’s degree in Computer Science, Engineering or equivalent field of study

**Minimum/General Experience**: Ten years of experience

**Social Media Analyst**

**Functional Responsibility**: Develops, posts and maintains social media content that confirms to customer’s standards and monitors customer reputation. Plans and implements social media marketing campaigns that increase customers’ social media presence. Conducts surveys and provides analytics across a variety of social media channels. Identifies performance, trends, and opportunities within various social media environments. Compiles
metrics related to social media issues and presents qualitative and quantitative reports/findings to stakeholders. Collaborates with internal staff and customers to create content that is appropriate and engaging.

Education Requirements: Bachelor’s degree

Minimum/General Experience: Two to three years of experience.

Subject Matter Expert I

Functional Responsibility: Responsible for planning, researching, developing, and evaluating complex Information Technology tasks. Responsible for providing technical guidance and analysis of highly specialized applications and environments. Provides high-level systems analysis, design, integration, and implementation expertise. Responsible for providing expert advice and insight on complex problems that require in-depth knowledge of the subject matter for successful implementation.

Education Requirements: Master’s degree in Computer Science or Engineering or Bachelor’s degree in Computer Science or Engineering with five years of experience

Minimum/General Experience: Ten years of experience

Subject Matter Expert II

Functional Responsibility: Provides significant technical knowledge and analysis of highly specialized applications and environments. Provides high-level systems analysis, design, integration, and implementation expertise. Advises on complex problems that require in-depth knowledge of the subject matter for successful implementation. Participates as needed in all phases of the software development life-cycle including planning, design, development, testing, integration, support and documentation.

Education Requirements: Master’s degree in Computer Science or Engineering or Bachelor’s degree in Computer Science or Engineering with seven years of experience

Minimum/General Experience: Twelve years of experience

Subject Matter Expert III

Functional Responsibility: Provides high-level subject matter proficiency for work defined in specific tasks. Provides technical expertise on highly specialized information technology applications, operational environments and systems. Advises on complex problems that require in-depth knowledge of the subject matter for successful design, integration, and implementation. Participates as needed in all phases of the software development life-cycle including planning, design, development, testing, integration, support and documentation.

Education Requirements: Master’s degree in Computer Science or Engineering or Bachelor’s degree in Computer Science or Engineering with ten years of experience

Minimum/General Experience: Fifteen years of experience

System Administrator I

Functional Responsibility: Responsible for the functionality, efficiency, and maintenance of one or more operating systems. Responsible for installing, configuring, monitoring, identifying and addressing operating system issues. Performs necessary software installations, updates and maintains systems in accordance with established policies.
and procedures. Monitors and configures operating systems to achieve optimum level of performance. Ensures system efficiency by evaluating, implementing, and managing appropriate software and hardware solutions. Responsible for scheduling system backups and database archiving. Performs necessary hardware and software audits to ensure compliance with policies, and configuration guidelines. Develops and maintains a standard operating procedure manual. Maintains comprehensive operating manual and support documentation for hardware and software systems.

**Education Requirements:** Bachelor’s degree in Computer Science or related field

**Minimum/General Experience:** Four years of experience

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**System Administrator II**

**Functional Responsibility:** Responsible for the functionality, efficiency and maintenance of one or more operating systems. Responsible for installations, configuration and maintenance of systems to ensure operational efficiency. Supervises and delegates software installations, updates and maintenance of systems to conform with established policies and procedures. Coordinates and assigns various system administration tasks to personnel and evaluates their performance. Collaborates with architecture and development teams and makes recommendations for operating system enhancements to improve the reliability, scalability and performance of the system.

**Education Requirements:** Bachelor’s degree in Computer Science or related field

**Minimum/General Experience:** Bachelor’s degree in Computer Science or related field

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**Test Engineer I**

**Functional Responsibility:** Responsible for the creation and automation of test plans and scripts for various testing environment including but not limited to load, performance, system, regression. Consults with developers, engineers and recommends the appropriate test requirements. Identifies potential software and hardware shortfalls and risks, and recommends mitigation strategies. Collaborates with application developers, engineers and administrators to isolate and fix any bottlenecks in application/system performance and functionality. Prepares reports and documentation to convey the results and test findings.

**Education Requirements:** BA/BS in Computer Science or related field

**Minimum/General Experience:** Two years of testing experience

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**Test Engineer II**

**Functional Responsibility:** Oversees the creation of test plans and scripts for various testing environment. Coordinates the effort of subordinates test staff, developers, and engineers, and authorizes the appropriate test requirement. Identifies potential software and hardware shortfalls and risks, and prepares mitigation strategies. Researches and evaluates new testing technologies. Collaborates with subordinate test engineers to isolate and fix any bottlenecks in application/system performance and functionality. Prepares reports to convey the results and test findings to senior technologists and other stakeholders. Makes recommendations to optimize software and hardware configurations based on test results and findings.

**Education Requirements:** BA/BS in Computer Science or related field

**Minimum/General Experience:** Six Years of testing experience
### SIN 132-51 PROFESSIONAL SERVICES PRICE LIST

#### GOVERNMENT SITE RATES w/IFF

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## CONTRACTOR SITE RATES w/IFF

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### SCA MATRIX

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The Service Contract Act (SCA) is applicable to this contract and it includes SCA applicable labor categories. The prices for the indicated (**) SCA labor categories are based on the U.S. Department of Labor Wage Determination Number(s) identified in the SCA matrix. The prices awarded are in line with the geographic scope of the contract (i.e. nationwide).

The mapping to SCA labor categories in the matrix is representative only and does not limit the use of the Development Consultants Incorporated’s labor category to those SCA titles identified in the matrix nor does it limit the use of the Development Consultants Incorporated’s labor category only to services covered by the SCA. The services provided under each labor category will be determined at the task order level.
TERMS AND CONDITIONS APPLICABLE TO PURCHASE OF CLOUD COMPUTING SERVICES (SPECIAL ITEM NUMBER 132-40)

****NOTE: If offering related IT Professional Services over and above initial onboarding and training, reference SIN 132-51, per Guidance to Ordering Activities on Professional services below.

****NOTE: This new SIN presents a clear way for Contractors to provide cloud computing services according to NIST definitions and principles within the scope of today’s technology and standards with a secondary goal of accommodating ongoing technical advances in cloud computing.

1. SCOPE

The prices, terms and conditions stated under Special Item Number (SIN) 132-40 Cloud Computing Services apply exclusively to Cloud Computing Services within the scope of this Information Technology Schedule.

This SIN provides ordering activities with access to technical services that run in cloud environments and meet the NIST Definition of Cloud Computing Essential Characteristics. Services relating to or impinging on cloud that do not meet all NIST essential characteristics should be listed in other SINs.

The scope of this SIN is limited to cloud capabilities provided entirely as a service. Hardware, software and other artifacts supporting the physical construction of a private or other cloud are out of scope for this SIN. Currently, an Ordering Activity can procure the hardware and software needed to build on premise cloud functionality, through combining different services on other IT Schedule 70 SINs (e.g. 132-51).

Sub-categories in scope for this SIN are the three NIST Service Models: Software as a Service (SaaS), Platform as a Service (PaaS), and Infrastructure as a Service (IaaS). Offerors may optionally select a single sub-category that best fits a proposed cloud service offering. Only one sub-category may be selected per each proposed cloud service offering. Offerors may elect to submit multiple cloud service offerings, each with its own single sub-category. The selection of one of three sub-categories does not prevent Offerors from competing for orders under the other two sub-categories.

See service model guidance for advice on sub-category selection.

Sub-category selection within this SIN is optional for any individual cloud service offering, and new cloud computing technologies that do not align with the aforementioned three sub-categories may be included without a sub-category selection so long as they comply with the essential characteristics of cloud computing as outlined by NIST.

See Table 1 for a representation of the scope and sub-categories.
Table 1: Cloud Computing Services SIN

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<tr>
<th>SIN Description</th>
<th>Sub-Categories¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Commercially available cloud computing services</td>
<td>1. <strong>Software as a Service (SaaS)</strong>: Consumer uses provider’s applications on cloud infrastructure. Does not manage/control platform or infrastructure. Limited application level configuration may be available.</td>
</tr>
<tr>
<td>● Meets the National Institute for Standards and Technology (NIST) definition of Cloud Computing essential characteristics</td>
<td>2. <strong>Platform as a Service (PaaS)</strong>: Consumer deploys applications onto cloud platform service using provider-supplied tools. Has control over deployed applications and some limited platform configuration but does not manage the platform or infrastructure.</td>
</tr>
<tr>
<td>● Open to all deployment models (private, public, community or hybrid), vendors specify deployment models</td>
<td>3. <strong>Infrastructure as a Service (IaaS)</strong>: Consumer provisions computing resources. Has control over OS, storage, platform, deployed applications and some limited infrastructure configuration, but does not manage the infrastructure.</td>
</tr>
</tbody>
</table>

2. DESCRIPTION OF CLOUD COMPUTING SERVICES AND PRICING

a. Service Description Requirements for Listing Contractors

The description requirements below are in addition to the overall Schedule 70 evaluation criteria described in SCP-FSS-001-N Instructions Applicable to New Offerors (Alternate I – MAR 2016) or SCP-FSS-001-S Instructions Applicable to Successful FSS Program Contractors, as applicable, SCP-FSS-004 and other relevant publications.

Refer to overall Schedule 70 requirements for timelines related to description and other schedule updates, including but not limited to clauses 552.238-81 – section E and clause I-FSS-600.

Table 2 summarizes the additional Contractor-provided description requirements for services proposed under the Cloud Computing Services SIN. All mandatory description requirements must be complete, and adequate according to evaluation criteria.

In addition there is one “Optional” reporting descriptions which exists to provide convenient service selection by relevant criteria. Where provided, optional description requirements must be complete and adequate according to evaluation criteria:

- The NIST Service Model provides sub-categories for the Cloud SIN and is strongly encouraged, but not required. The Service Model based sub-categories provide this SIN with a structure to assist ordering activities in locating and comparing services of interest. Contractors may optionally select the single service model most closely corresponding to the specific service offering.
- If a sub-category is selected it will be evaluated with respect to the NIST Service Model definitions and guidelines in “Guidance for Contractors”.

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Table 2: Cloud Service Description Requirements

<table>
<thead>
<tr>
<th>#</th>
<th>Description Requirement</th>
<th>Reporting Type</th>
<th>Instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Provide a brief written description of how the proposed cloud computing services satisfies each individual essential NIST Characteristic</td>
<td>Mandatory</td>
<td>The cloud service must be capable of satisfying each of the five NIST essential Characteristics as outlined in NIST Special Publication 800-145. See ‘GUIDANCE FOR CONTRACTORS: NIST Essential Characteristics’ below in this document for detailed overall direction, as well as guidance on inheriting essential characteristics.</td>
</tr>
<tr>
<td>2</td>
<td>Select NIST deployment models for the cloud computing service proposed.</td>
<td>Mandatory</td>
<td>Contractors must select at least one NIST deployment model as outlined in NIST Special Publication 800-145 describing how the proposed cloud computing service is deployed. Select multiple deployment models if the service is offered in more than one deployment model. See ‘GUIDANCE FOR CONTRACTORS: NIST Deployment Model’ below in this document for detailed direction on how to best categorize a service for the NIST deployment models.</td>
</tr>
<tr>
<td>3</td>
<td>Optionally select the most appropriate NIST service model that will be the designated sub-category, or may select no sub-category.</td>
<td>Optional</td>
<td>Contractor may select a single NIST Service model to sub-categorize the service as outlined in NIST Special Publication 800-145. Sub-category selection is optional but recommended. See ‘GUIDANCE FOR CONTRACTORS: NIST Service Model’ below in this document for detailed direction on how to best categorize a service for the NIST IaaS, PaaS, and SaaS service models.</td>
</tr>
</tbody>
</table>

b. Pricing of Cloud Computing Services

All current pricing requirements for Schedule 70, including provision SCP-FSS-001-N (Section III Price Proposal), SCP-FSS-001-S, SCP-FSS-004 (Section III Price Proposal), and clause I-FSS-600 Contract Price Lists, apply. At the current time there is no provision for reducing or eliminating standard price list posting requirements to accommodate rapid cloud price fluctuations.

In addition to standard pricing requirements, all pricing models must have the core capability to meet the NIST Essential Cloud Characteristics, particularly with respect to on-demand self-service, while allowing alternate variations at the task order level at agency discretion, pursuant to the guidance on NIST Essential Characteristics.
3. RESPONSIBILITIES OF THE CONTRACTOR

The Contractor shall comply with all laws, ordinances, and regulations (Federal, State, City, or otherwise) covering work of this character.

a. Acceptance Testing

Any required Acceptance Test Plans and Procedures shall be negotiated by the Ordering Activity at task order level. The Contractor shall perform acceptance testing of the systems for Ordering Activity approval in accordance with the approved test procedures.

b. Training

If training is provided commercially the Contractor shall provide normal commercial installation, operation, maintenance, and engineering interface training on the system. Contractor is responsible for indicating if there are separate training charges.

c. Information Assurance/Security Requirements

The contractor shall meet information assurance/security requirements in accordance with the Ordering Activity requirements at the Task Order level.

d. Related Professional Services

The Contractor is responsible for working with the Ordering Activity to identify related professional services and any other services available on other SINs that may be associated with deploying a complete cloud solution. Any additional substantial and ongoing professional services related to the offering such as integration, migration, and other cloud professional services are out of scope for this SIN.

e. Performance of Cloud Computing Services

The Contractor shall respond to Ordering Activity requirements at the Task Order level with proposed capabilities to Ordering Activity performance specifications or indicate that only standard specifications are offered. In all cases the Contractor shall clearly indicate standard service levels, performance and scale capabilities.

The Contractor shall provide appropriate cloud computing services on the date and to the extent and scope agreed to by the Contractor and the Ordering Activity.

f. Reporting

The Contractor shall respond to Ordering Activity requirements and specify general reporting capabilities available for the Ordering Activity to verify performance, cost and availability.

In accordance with commercial practices, the Contractor may furnish the Ordering Activity/user with a monthly summary Ordering Activity report.

4. RESPONSIBILITIES OF THE ORDERING ACTIVITY
The Ordering Activity is responsible for indicating the cloud computing services requirements unique to the Ordering Activity. Additional requirements should not contradict existing SIN or IT Schedule 70 Terms and Conditions. Ordering Activities should include (as applicable) Terms & Conditions to address Pricing, Security, Data Ownership, Geographic Restrictions, Privacy, SLAs, etc.

Cloud services typically operate under a shared responsibility model, with some responsibilities assigned to the Cloud Service Provider (CSP), some assigned to the Ordering Activity, and others shared between the two. The distribution of responsibilities will vary between providers and across service models. Ordering activities should engage with CSPs to fully understand and evaluate the shared responsibility model proposed. Federal Risk and Authorization Management Program (FedRAMP) documentation will be helpful regarding the security aspects of shared responsibilities, but operational aspects may require additional discussion with the provider.

a. Ordering Activity Information Assurance/Security Requirements Guidance

i. The Ordering Activity is responsible for ensuring to the maximum extent practicable that each requirement issued is in compliance with the Federal Information Security Management Act (FISMA) as applicable.

ii. The Ordering Activity shall assign a required impact level for confidentiality, integrity and availability (CIA) prior to issuing the initial statement of work.\(^2\) The Contractor must be capable of meeting at least the minimum security requirements assigned against a low-impact information system in each CIA assessment area (per FIPS 200) and must detail the FISMA capabilities of the system in each of CIA assessment area.

iii. Agency level FISMA certification, accreditation, and evaluation activities are the responsibility of the Ordering Activity. The Ordering Activity reserves the right to independently evaluate, audit, and verify the FISMA compliance for any proposed or awarded Cloud Computing Services.

iv. The Ordering Activity has final responsibility for assessing the FedRAMP status of the service, complying with and making a risk-based decision to grant an Authorization to Operate (ATO) for the cloud computing service, and continuous monitoring. A memorandum issued by the Office of Management and Budget (OMB) on Dec 8, 2011 outlines the responsibilities of Executive departments and agencies in the context of FedRAMP compliance.\(^3\)

v. Ordering activities are responsible for determining any additional information assurance and security related requirements based on the nature of the application and relevant mandates.

b. Deployment Model

If a particular deployment model (Private, Public, Community, or Hybrid) is desired, Ordering Activities are responsible for identifying the desired model(s). Alternately, Ordering Activities could identify requirements and assess Contractor responses to determine the most appropriate deployment model(s).

c. Delivery Schedule

The Ordering Activity shall specify the delivery schedule as part of the initial requirement. The Delivery Schedule options are found in Information for Ordering Activities Applicable to All Special Item Numbers.

d. Interoperability

Ordering Activities are responsible for identifying interoperability requirements. Ordering Activities should clearly delineate requirements for API implementation and standards conformance.

e. Performance of Cloud Computing Services
The Ordering Activity should clearly indicate any custom minimum service levels, performance and scale requirements as part of the initial requirement.


f. **Reporting**

The Ordering Activity should clearly indicate any cost, performance or availability reporting as part of the initial requirement.

g. **Privacy**

The Ordering Activity should specify the privacy characteristics of their service and engage with the Contractor to determine if the cloud service is capable of meeting Ordering Activity requirements. For example, a requirement could be requiring assurance that the service is capable of safeguarding Personally Identifiable Information (PII), in accordance with NIST SP 800-122\(^2\) and OMB memos M-06-16\(^5\) and M-07-16\(^6\). An Ordering Activity will determine what data elements constitute PII according to OMB Policy, NIST Guidance and Ordering Activity policy.

h. **Accessibility**

The Ordering Activity should specify the accessibility characteristics of their service and engage with the Contractor to determine if the cloud service is capable of meeting Ordering Activity requirements. For example, a requirement could require assurance that the service is capable of providing accessibility based on Section 508 of the Rehabilitation Act of 1973 (29 U.S.C. 794d).

i. **Geographic Requirements**

Ordering activities are responsible for specifying any geographic requirements and engaging with the Contractor to determine if the cloud services offered have the capabilities to meet geographic requirements for all anticipated task orders. Common geographic concerns could include whether service data, processes and related artifacts can be confined on request to the United States and its territories, or the continental United States (CONUS).

j. **Data Ownership and Retrieval and Intellectual Property**

Intellectual property rights are not typically transferred in a cloud model. In general, CSPs retain ownership of the Intellectual Property (IP) underlying their services and the customer retains ownership of its intellectual property. The CSP gives the customer a license to use the cloud services for the duration of the contract without transferring rights. The government retains ownership of the IP and data they bring to the customized use of the service as spelled out in the FAR and related materials.

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\(^3\) *NIST SP 800-122, “Guide to Protecting the Confidentiality of Personally Identifiable Information (PII)”*
General considerations of data ownership and retrieval are covered under the terms of Schedule 70 and the FAR and other laws, ordinances, and regulations (Federal, State, City, or otherwise). Because of considerations arising from cloud shared responsibility models, ordering activities should engage with the Contractor to develop more cloud-specific understandings of the boundaries between data owned by the government and that owned by the cloud service provider, and the specific terms of data retrieval.

In all cases, the Ordering Activity should enter into an agreement with a clear and enforceable understanding of the boundaries between government and cloud service provider data, and the form, format and mode of delivery for each kind of data belonging to the government.

The Ordering Activity should expect that the Contractor shall transfer data to the government at the government's request at any time, and in all cases when the service or order is terminated for any reason, by means, in formats and within a scope clearly understood at the initiation of the service. Example cases that might require clarification include status and mode of delivery for:

- Configuration information created by the government and affecting the government’s use of the cloud provider’s service.
- Virtual machine configurations created by the government but operating on the cloud provider’s service.
- Profile, configuration and other metadata used to configure SaaS application services or PaaS platform services.

The key is to determine in advance the ownership of classes of data and the means by which Government owned data can be returned to the Government.

k. Service Location Distribution

The Ordering Activity should determine requirements for continuity of operations and performance and engage with the Contractor to ensure that cloud services have adequate service location distribution to meet anticipated requirements. Typical concerns include ensuring that:

- Physical locations underlying the cloud are numerous enough to provide continuity of operations and geographically separate enough to avoid an anticipated single point of failure within the scope of anticipated emergency events.
- Service endpoints for the cloud are able to meet anticipated performance requirements in terms of geographic proximity to service requestors.

Note that cloud providers may address concerns in the form of minimum distance between service locations, general regions where service locations are available, etc.

l. Related Professional Services

Ordering activities should engage with Contractors to discuss the availability of limited assistance with initial setup, training and access to the services that may be available through this SIN.

Any additional substantial and ongoing professional services related to the offering such as integration, migration, and other cloud professional services are out of scope for this SIN. Ordering activities should consult the appropriate GSA professional services schedule.
5. GUIDANCE FOR CONTRACTORS

This section offers guidance for interpreting the Contractor Description Requirements in Table 2, including the NIST essential cloud characteristics, service models and deployment models. This section is not a list of requirements.

Contractor-specific definitions of cloud computing characteristics and models or significant variances from the NIST essential characteristics or models are discouraged and will not be considered in the scope of this SIN or accepted in response to Factors for Evaluation. The only applicable cloud characteristics, service model/subcategories and deployment models for this SIN will be drawn from the NIST 800-145 special publication. Services qualifying for listing as cloud computing services under this SIN must substantially satisfy the essential characteristics of cloud computing as documented in the NIST Definition of Cloud Computing SP 800-145⁷.

Contractors must select deployment models corresponding to each way the service can be deployed. Multiple deployment model designations for a single cloud service are permitted but at least one deployment model must be selected.

In addition, contractors submitting services for listing under this SIN are encouraged to select a sub-category for each service proposed under this SIN with respect to a single principal NIST cloud service model that most aptly characterizes the service. Service model categorization is optional.

Both service and deployment model designations must accord with NIST definitions. Guidance is offered in this document on making the most appropriate selection.

a. NIST Essential Characteristics

General Guidance

NIST’s essential cloud characteristics provide a consistent metric for whether a service is eligible for inclusion in this SIN. It is understood that due to legislative, funding and other constraints that government entities cannot always leverage a cloud service to the extent that all NIST essential characteristics are commercially available. For the purposes of the Cloud SIN, meeting the NIST essential characteristics is determined by whether each essential capability of the commercial service is available for the service, whether or not the Ordering Activity actually requests or implements the capability. The guidance in Table 3 offers examples of how services might or might not be included based on the essential characteristics, and how the Contractor should interpret the characteristics in light of current government contracting processes.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Capability</th>
<th>Guidance</th>
</tr>
</thead>
</table>
| On-demand self-service | • Ordering activities can directly provision services without requiring Contractor intervention.  
• This characteristic is typically implemented via a service console or programming interface for provisioning | Government procurement guidance varies on how to implement on-demand provisioning at this time. Ordering activities may approach on-demand in a variety of ways, including “not-to-exceed” limits, or imposing monthly or annual payments on what are essentially on demand services.  
Services under this SIN must be capable of true on-demand self-service, and ordering activities and Contractors must negotiate how they implement on demand capabilities in practice at the task order level:  
• Ordering activities must specify their procurement approach and requirements for on-demand service  
• Contractors must propose how they intend to meet the approach  
• Contractors must certify that on-demand self-service is technically available for their service should procurement guidance become available. |
| Broad Network Access | • Ordering activities are able to access services over standard agency networks  
• Service can be accessed and consumed using standard devices such as browsers, tablets and mobile phones | Broad network access must be available without significant qualification and in relation to the deployment model and security domain of the service  
• Contractors must specify any ancillary activities, services or equipment required to access cloud services or integrate cloud with other cloud or non-cloud networks and services. For example a private cloud might require an Ordering Activity to purchase or provide a dedicated router, etc. which is acceptable but should be indicated by the Contractor. |
| Resource Pooling    | • Pooling distinguishes cloud services from offsite hosting.  
• Ordering activities draw resources from a common pool maintained by the Contractor | • The cloud service must draw from a pool of resources and provide an automated means for the Ordering Activity to dynamically allocate them. |
| **Development Consultants Incorporated**  
| **Contract Number: GS35F354GA** |

<table>
<thead>
<tr>
<th><strong>Rapid Elasticity</strong></th>
<th><strong>Measured Service</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Resources may have general characteristics such as regional location</td>
<td>• Manual allocation, e.g. manual operations at a physical server farm where Contractor staff configure servers in response to Ordering Activity requests, does not meet this requirement</td>
</tr>
<tr>
<td>• Similar concerns apply to software and platform models; automated provisioning from a pool is required</td>
<td>• Ordering activities may request dedicated physical hardware, software or platform resources to access a private cloud deployment service. However the provisioned cloud resources must be drawn from a common pool and automatically allocated on request.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Rapid Elasticity</strong></th>
<th><strong>Measured Service</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Rapid Elasticity is a specific demand-driven case of self-service</td>
<td>• Procurement guidance for on-demand self-service applies to rapid elasticity as well, i.e. rapid elasticity must be technically available but ordering activities and Contractors may mutually negotiate other contractual arrangements for procurement and payment.</td>
</tr>
<tr>
<td>• ‘Rapid’ should be understood as measured in minutes and hours, not days or weeks.</td>
<td>• ‘Rapid’ should be understood as measured in minutes and hours, not days or weeks.</td>
</tr>
<tr>
<td>• Elastic capabilities by manual request, e.g. via a console operation or programming interface call, are required.</td>
<td>• Elastic capabilities by manual request, e.g. via a console operation or programming interface call, are required.</td>
</tr>
<tr>
<td>• Automated elasticity which is driven dynamically by system load, etc. is optional. Contractors must specify whether automated demand-driven elasticity is available and the general mechanisms that drive the capability.</td>
<td>• Automated elasticity which is driven dynamically by system load, etc. is optional. Contractors must specify whether automated demand-driven elasticity is available and the general mechanisms that drive the capability.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Measured Service</strong></th>
<th><strong>Procurement guidance for on-demand self-service applies to measured service as well, i.e. rapid elasticity must be technically available but ordering activities and Contractors may mutually designate other contractual arrangements.</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Measured service should be understood as a reporting requirement that enables an Ordering Activity to control their use in cooperation with self service</td>
<td>• Regardless of specific contractual arrangements, reporting must indicate actual usage, be continuously available to the Ordering Activity, and provide meaningful metrics appropriate to the service measured</td>
</tr>
</tbody>
</table>
Inheriting Essential Characteristics

Cloud services may depend on other cloud services, and cloud service models such as PaaS and SaaS are able to inherit essential characteristics from other cloud services that support them. For example, a PaaS platform service can inherit the broad network access made available by the IaaS service it runs on, and in such a situation would be fully compliant with the broad network access essential characteristic. Services inheriting essential characteristics must make the inherited characteristic fully available at their level of delivery to claim the relevant characteristic by inheritance.

Inheriting characteristics does not require the inheriting provider to directly bundle or integrate the inherited service, but it does require a reasonable measure of support and identification. For example, the Ordering Activity may acquire an IaaS service from “Provider A” and a PaaS service from “Provider B”. The PaaS service may inherit broad network access from “Provider A” but must identify and support the inherited service as an acceptable IaaS provider.

Assessing Broad Network Access

Typically broad network access for public deployment models implies high bandwidth access from the public internet for authorized users. In a private cloud deployment internet access might be considered broad access, as might be access through a dedicated shared high bandwidth network connection from the Ordering Activity, in accord with the private nature of the deployment model.

Resource Pooling and Private Cloud

All cloud resource pools are finite, and only give the appearance of infinite resources when sufficiently large, as is sometimes the case with a public cloud. The resource pool supporting a private cloud is typically smaller with more visible limits. A finite pool of resources purchased as a private cloud service qualifies as resource pooling so long as the resources within the pool can be dynamically allocated to the ultimate users of the resource, even though the pool itself appears finite to the Ordering Activity that procures access to the pool as a source of dynamic service allocation.

b. NIST Service Model

The Contractor may optionally document the service model of cloud computing (e.g. IaaS, PaaS, SaaS, or a combination thereof) that most closely describes their offering, using the definitions in The NIST Definition of Cloud Computing SP 800-145. The following guidance is offered for the proper selection of service models.

NIST’s service models provide this SIN with a set of consistent sub-categories to assist ordering activities in locating and comparing services of interest. Service model is primarily concerned with the nature of the service offered and the staff and activities most likely to interact with the service. Contractors should select a single service model most closely corresponding to their proposed service based on the guidance below. It is understood that cloud services can technically incorporate multiple service models and the intent is to provide the single best categorization of the service.
Contractors should take care to select the NIST service model most closely corresponding to each service offered. Contractors should not invent, proliferate or select multiple cloud service model sub-categories to distinguish their offerings, because ad-hoc categorization prevents consumers from comparing similar offerings. Instead vendors should make full use of the existing NIST categories to the fullest extent possible.

For example, in this SIN an offering commercially marketed by a Contractor as “Storage as a Service” would be properly characterized as Infrastructure as a Service (IaaS), storage being a subset of infrastructure. Services commercially marketed as “LAMP” as a Service” or “Database as a Service” would be properly characterized under this SIN as Platform as a Service (PaaS), as they deliver two kinds of platform services. Services commercially marketed as “Travel Facilitation as a Service” or “Email as a Service” would be properly characterized as species of Software as a Service (SaaS) for this SIN. However, Contractors can and should include appropriate descriptions (include commercial marketing terms) of the service in the full descriptions of the service’s capabilities.

When choosing between equally plausible service model sub-categories, Contractors should consider several factors:

1) **Visibility to the Ordering Activity.** Service model sub-categories in this SIN exist to help Ordering Activities match their requirements with service characteristics. Contractors should select the most intuitive and appropriate service model from the point of view of an Ordering Activity.

2) **Primary Focus of the Service.** Services may offer a mix of capabilities that span service models in the strict technical sense. For example, a service may offer both IaaS capabilities for processing and storage, along with some PaaS capabilities for application deployment, or SaaS capabilities for specific applications. In a service mix situation the Contractor should select the service model that is their primary focus. Alternatively contractors may choose to submit multiple service offerings for the SIN, each optionally and separately subcategorized.

3) **Ordering Activity Role.** Contractors should consider the operational role of the Ordering Activity’s primary actual consumer or operator of the service. For example services most often consumed by system managers are likely to fit best as IaaS; services most often consumed by application deployers or developers as PaaS, and services most often consumed by business users as SaaS.

4) **Lowest Level of Configurability.** Contractors can consider IaaS, PaaS and SaaS as an ascending hierarchy of complexity, and select the model with the lowest level of available Ordering Activity interaction. As an example, virtual machines are an IaaS service often bundled with a range of operating systems, which are PaaS services. The Ordering Activity usually has access to configure the lower level IaaS service, and the overall service should be considered IaaS. In cases where the Ordering Activity cannot configure the speed, memory, network configuration, or any other aspect of the IaaS component, consider categorizing as a PaaS service.

Cloud management and cloud broker services should be categorized based on their own characteristics and not those of the other cloud services that are their targets. Management and broker services typically fit the SaaS service model, regardless of whether the services they manage are SaaS, PaaS or IaaS. Use Table 3 to determine which service model is appropriate for the cloud management or cloud broker services, or, alternately choose not to select a service model for the service.

The guidance in Table 3 offers examples of how services might be properly mapped to NIST service models and how a Contractor should interpret the service model sub-categories.
Table 3: Guidance on Mapping to NIST Service Models

<table>
<thead>
<tr>
<th>Service Model</th>
<th>Guidance</th>
</tr>
</thead>
</table>
| Infrastructure as a Service (IaaS) | Select an IaaS model for service based equivalents of hardware appliances such as virtual machines, storage devices, routers and other physical devices.  
- IaaS services are typically consumed by system or device managers who would configure physical hardware in a non-cloud setting  
- The principal customer interaction with an IaaS service is provisioning then configuration, equivalent to procuring and then configuring a physical device.  
Examples of IaaS services include virtual machines, object storage, disk block storage, network routers and firewalls, software defined networks.  
Gray areas include services that emulate or act as dedicated appliances and are directly used by applications, such as search appliances, security appliances, etc. To the extent that these services or their emulated devices provide direct capability to an application they might be better classified as Platform services (PaaS). To the extent that they resemble raw hardware and are consumed by other platform services they are better classified as IaaS. |
| Platform as a Service (PaaS)  | Select a PaaS model for service based equivalents of complete or partial software platforms. For the purposes of this classification, consider a platform as a set of software services capable of deploying all or part of an application.  
- A complete platform can deploy an entire application. Complete platforms can be proprietary or open source  
- Partial platforms can deploy a component of an application which combined with other components make up the entire deployment.  
- PaaS services are typically consumed by application deployment staff whose responsibility is to take a completed agency application and cause it to run on the designated complete or partial platform service.  
- The principal customer interaction with a PaaS service is deployment, equivalent to deploying an application or portion of an application on a software platform service.  
- A limited range of configuration options for the platform service may be available.  
Examples of complete PaaS services include:  
- A Linux/Apache/MySQL/PHP (LAMP) platform ready to deploy a customer PHP application,  
- A Windows .Net platform ready to deploy a .Net application,  
- A custom complete platform ready to develop and deploy an customer application in a proprietary language  
- A multiple capability platform ready to deploy an arbitrary customer application on a range of underlying software services.  
The essential characteristic of a complete PaaS is defined by the customer’s ability to deploy a complete custom application directly on the platform. |
PaaS includes partial services as well as complete platform services. Illustrative examples of individual platform enablers or components include:

- A database service ready to deploy a customer’s tables, views and procedures,
- A queuing service ready to deploy a customer’s message definitions
- A security service ready to deploy a customer’s constraints and target applications for continuous monitoring

The essential characteristic of an individual PaaS component is the customer’s ability to deploy their unique structures and/or data onto the component for a partial platform function.

Note that both the partial and complete PaaS examples all have two things in common:

- They are software services, which offer significant core functionality out of the box
- They must be configured with customer data and structures to deliver results

As noted in IaaS, operating systems represent a grey area in that OS is definitely a platform service, but is typically bundled with IaaS infrastructure. If your service provides an OS but allows for interaction with infrastructure, please sub-categorize it as IaaS. If your service “hides” underlying infrastructure, consider it as PaaS.

<table>
<thead>
<tr>
<th>Software as a Service (SaaS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select a SaaS model for service based equivalents of software applications.</td>
</tr>
<tr>
<td>- SaaS services are typically consumed by business or subject-matter staff who would interact directly with the application in a non-cloud setting</td>
</tr>
<tr>
<td>- The principal customer interaction with a SaaS service is actual operation and consumption of the application services the SaaS service provides.</td>
</tr>
</tbody>
</table>

Some minor configuration may be available, but the scope of the configuration is limited to the scope and then the permissions of the configuring user. For example an agency manager might be able to configure some aspects of the application for their agency but not all agencies. An agency user might be able to configure some aspects for themselves but not everyone in their agency. Typically only the Contractor would be permitted to configure aspects of the software for all users.

Examples of SaaS services include email systems, business systems of all sorts such as travel systems, inventory systems, etc., wiki’s, websites or content management systems, management applications that allow a customer to manage other cloud or non-cloud services, and in general any system where customers interact directly for a business purpose.

Gray areas include services that customers use to configure other cloud services, such as cloud management software, cloud brokers, etc. In general
c. Deployment Model

Deployment models (e.g. private, public, community, or hybrid) are not restricted at the SIN level and any specifications for a deployment model are the responsibility of the Ordering Activity.

Multiple deployment model selection is permitted, but at least one model must be selected. The guidance in Table 4 offers examples of how services might be properly mapped to NIST deployment models and how the Contractor should interpret the deployment model characteristics. Contractors should take care to select the range of NIST deployment models most closely corresponding to each service offered.

Note that the scope of this SIN does not include hardware or software components used to construct a cloud, only cloud capabilities delivered as a service, as noted in the Scope section.

Table 4: Guidance for Selecting a Deployment Model

<table>
<thead>
<tr>
<th>Deployment Model</th>
<th>Guidance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Private Cloud</strong></td>
<td>The service is provided exclusively for the benefit of a definable organization and its components; access from outside the organization is prohibited. The actual services may be provided by third parties, and may be physically located as required, but access is strictly defined by membership in the owning organization.</td>
</tr>
<tr>
<td><strong>Public Cloud</strong></td>
<td>The service is provided for general public use and can be accessed by any entity or organization willing to contract for it.</td>
</tr>
<tr>
<td><strong>Community Cloud</strong></td>
<td>The service is provided for the exclusive use of a community with a definable shared boundary such as a mission or interest. As with private cloud, the service may be in any suitable location and administered by a community member or a third party.</td>
</tr>
<tr>
<td><strong>Hybrid Cloud</strong></td>
<td>The service is composed of one or more of the other models. Typically hybrid models include some aspect of transition between the models that make them up, for example a private and public cloud might be designed as a hybrid cloud where events like increased load permit certain specified services in the private cloud to run in a public cloud for extra capacity, e.g. bursting.</td>
</tr>
</tbody>
</table>
SIN 132-40 CLOUD COMPUTING SERVICES PRICE LIST

The Development Consultants Incorporated AWS Customer Agreement is available at https://www.devconinc.com/agreement.

This cloud service product pricing is for the GSA Schedule IT-70 Multiple Award Schedule (MAS). All prices are in U.S. Dollars and include the 0.75% Industrial Funding Fee (IFF).

No professional services are provided under this SIN. Development Consultants Incorporated provides cloud-related professional services under GSA Schedule IT-70 SIN 132-51.

Prices may be subject to the additional terms included in the pricing pages on http://aws.amazon.com.

AWS updates services, regions, availability zones, and pricing frequently. The latest regional service information can be found here: https://aws.amazon.com/about-aws/global-infrastructure/regional-product-services/

The most complete and up to date version of Development Consultants Incorporated GSA Schedule IT-70 SIN 132-40 pricing information is available at https://www.devconinc.com/pricing/GSA-IT-Schedule-70/cloud/