GENERAL SERVICES ADMINISTRATION
Federal Supply Service
Authorized Federal Supply Schedule Price List

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SCHEDULE TITLE: Multiple Award Schedule   **FSC: MAS**

SPECIAL ITEM NUMER 518210C - CLOUD AND CLOUD-RELATED IT PROFESSIONAL SERVICES
FSC/PSC Class D305   IT Cloud Computing Services

SPECIAL ITEM NUMBER 54151S - INFORMATION TECHNOLOGY (IT) PROFESSIONAL SERVICES

FPDS Code D301	IT Facility Operation and Maintenance
FPDS Code D302	IT Systems Development Services
FPDS Code D306	IT Systems Analysis Services
FPDS Code D307	Automated Information Systems Design and Integration Services
FPDS Code D308	Programming Services
FPDS Code D310	IT Backup and Security Services
FPDS Code D311	IT Data Conversion Services
FPDS Code D313	Computer Aided Design/Computer Aided Manufacturing (CAD/CAM) Services
FPDS Code D316	IT Network Management Services
FPDS Code D317	Creation/Retrieval of IT Related Automated News Services, Data Services, or Other Information Services (All other information services belong under Schedule 76)
FPDS Code D399	Other Information Technology Services, Not Elsewhere Classified

SPECIAL ITEM NUMBER 54151HEAL – HEALTH INFORMATION TECHNOLOGY (IT) SERVICES
FSC/PSC Class D399   IT AND TELECOM Other Data Transmission Services, Not elsewhere classified

SPECIAL ITEM NUMBER OLM – ORDER-LEVEL MATERIALS (OLMs)

Contract Number : 47QTCA20D008E
Contract Period   : 04/02/2020 to 04/01/2025

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

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CTIS, Inc.
One Research Court, Suite 200
Rockville, MD 20850
Tel: 301-948-3033 Fax: 301-948-2242
www.ctisinc.com
Business size: Small Business

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| **INFORMATION FOR ORDERING OFFICES APPLICABLE TO ALL** |
| **SPECIAL ITEM NUMBERS** |

CUSTOMER INFORMATION

1a.   Awarded Special Item Numbers (SIN):

SIN	Description
54151S	Information Technology Professional Services
54151HEAL	Health Information Technology Services
518210C	Cloud and Cloud-Related IT Professional Services
OLM	Order-Level Materials (OLMs)

1b.   Lowest Priced Model Number and Price: Approved GSA Pricing

1c.   Contractor hourly rates, a description of all corresponding commercial job titles, experience, functional responsibility and education for those types of employees or subcontractors:
Refer to page 19 for IT Professional Services Labor Category Descriptions and page 55 for hourly rates
Refer to page 34 for Health IT Services Labor Category Descriptions and page 57 for hourly rates
Refer to page 48 for Cloud IT Professional Services Labor Category Descriptions and page 59 for hourly rates

2.   Maximum Order: $500,000.00

3.   Minimum Order: $100.00

4.   Geographic Coverage (delivery Area): Domestic, within 50 United States and U.S territories

5.   Point(s) of production (city, county, and state or foreign country): Maryland

6.   Discount from list prices or statement of net price: Prices shown are NET Prices; Basic Discounts have been deducted. CTIS reserves the right to offer additional discounts in cases where the value of an order exceeds the Maximum Order Limit or when business conditions warrant

7.   Quantity discounts: None

8.   Prompt payment terms: Net 30 days

9a.   Notification that Government purchase cards are accepted up to the micro-purchase threshold: Yes

9b.   Notification whether Government purchase cards are accepted or not accepted above the micro-purchase threshold: Yes

10.   Foreign items (list items by country of origin): Not applicable

11a.   Time of Delivery (Contractor insert number of days): As negotiated on the task order level.

11b.   Expedited Delivery: As negotiated on the task order level.

11c.   Overnight and 2-day delivery: As negotiated on the task order level.

11d.   Urgent Requirements: As negotiated on the task order level.

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12. F.O.B Points(s): Destination

13a. Ordering Address(es):

FOR MAILED ORDERS:
GSA Sales Administrator
CTIS, Inc.
One Research Court, Suite 200
Rockville, MD 20850

FOR FAXED ORDERS:
GSA Sales Administrator
CTIS, Inc.
(301) 948-2242

13b. Ordering procedures: For supplies and services, the ordering procedures, information on Blanket Purchase Agreements (BPA's), and a sample BPA can be found at the GSA/FSS Schedule homepage (fss.gsa.gov/schedules).

14. Payment address(es):

Accounts Receivable
CTIS, Inc.
One Research Court, Suite 200
Rockville, MD 20850

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

16. Export Packing Charges (if applicable): N/A

17. Terms and conditions of Government purchase card acceptance (any thresholds above the micro-purchase level): Contact Contractor

18. Terms and conditions of rental, maintenance, and repair (if applicable): N/A

19. Terms and conditions of installation (if applicable): N/A

20. Terms and conditions of repair parts indicating date of parts price lists and any discounts from list prices (if applicable): N/A

20a. Terms and conditions for any other services (if applicable): N/A

21. List of service and distribution points (if applicable): N/A

22. List of participating dealers (if applicable): N/A

23. Preventive maintenance (if applicable): N/A

24a. Environmental attributes, e.g., recycled content, energy efficiency, and/or reduced pollutants: N/A

24b. If applicable, indicate that Section 508 compliance information is available on Electronic and Information Technology (EIT) supplies and services and show where full details can be found (e.g. contactor's website or other location.) The EIT standards can be found at: www.Section508.gov/.

25. Data Universal Numbering System (DUNS) number: 606270015

26. Notification regarding registration in the System for Award Management (SAM) Database: Registered

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

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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

The Inspection of Services–Fixed Price (AUG 1996) (Deviation – May 2003) clause at FAR 52.246-4 applies to firm-fixed price orders placed under this contract. The Inspection–Time-and-Materials and Labor-Hour (MAY 2001) (Deviation – May 2003) clause at FAR 52.246-6 applies to time-and-materials and labor-hour orders placed under this contract.

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.

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"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.

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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

See page 19 for SIN 132-51 Labor Category Descriptions and page 55 for Labor Category Rates

17. EDUCATION SUBSTITUTION LANGUAGE

Degree may be substituted as follows:

ASSOCIATE DEGREE = 2 YEARS EXPERIENCE

BACHELORS DEGREE = 4 YEARS EXPERIENCE

MASTERS DEGREE = 6 YEARS EXPERIENCE

PHD = 8 YEARS EXPERIENCE

Education may be substituted as follows:

2 YEARS EXPERIENCE = ASSOCIATE DEGREE

4 YEARS EXPERIENCE = BACHELORS DEGREE

6 YEARS EXPERIENCE = MASTERS DEGREE

8 YEARS EXPERIENCE = PHD

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1. **SCOPE**

   a. The labor categories, prices, terms and conditions stated under Special Item Number 132- 56 Health Information Technology Services apply exclusively to Health IT Services within the scope of this Information Technology Schedule.

   b. This SIN is limited to Health IT Services only. Software and hardware products are out of scope. Hardware and software can be acquired through different Special Item Numbers on IT Schedule 70 (e.g. 132-32, 132-33, 132-8).

   c. This SIN provides ordering activities with access to Health IT services.

   d. Health IT Services provided under this SIN shall comply with all Healthcare certifications and industry standards as applicable at the task order level.

   e. 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. **ORDER**

   a. Agencies may use written orders, Electronic Data Interchange (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.

3. **PERFORMANCE OF SERVICES**

   a. The Contractor shall commence performance of services on the date agreed to by the Contractor and the ordering activity. All Contracts will be fully funded.

   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 Health 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. All travel will be agreed upon with the client prior to the Contractor's travel.

4. **INSPECTION OF SERVICES**

In accordance 552.212-4 CONTRACT TERMS AND CONDITIONS–COMMERCIAL ITEMS (JAN 2017) (DEVIATION – FEB 2007)(DEVIATION - FEB 2018) for Firm-Fixed Price orders; or GSAR 552.212-4 CONTRACT TERMS AND CONDITIONS- COMMERCIAL ITEMS (JAN 2017) (DEVIATION - FEB 2018) (ALTERNATE I - JAN 2017) (DEVIATION -FEB 2007) for Time-and-Materials and Labor-Hour Contracts orders placed under this contract.

RESPONSIBILITIES OF THE CONTRACTOR

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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.

5. RESPONSIBILITIES OF THE ORDERING ACTIVITY

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

6. INDEPENDENT CONTRACTOR

All Health IT 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.

7. 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.

8. INVOICES

The Contractor, upon completion of the work ordered, shall submit invoices for Health 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.

9. RESUMES

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

10. INCIDENTAL SUPPORT COSTS

Incidental support costs are not considered part of 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.

11. 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.

12. DESCRIPTION OF HEALTH IT SERVICES AND PRICING

See page 34 for SIN 132-56 Labor Category Descriptions and page 57 for Labor Category Rates

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13. EDUCATION SUBSTITUTION LANGUAGE

Degree may be substituted as follows:

ASSOCIATE DEGREE = 2 YEARS EXPERIENCE

BACHELORS DEGREE = 4 YEARS EXPERIENCE

MASTERS DEGREE = 6 YEARS EXPERIENCE

PHD = 8 YEARS EXPERIENCE

Education may be substituted as follows:

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4 YEARS EXPERIENCE = BACHELORS DEGREE

6 YEARS EXPERIENCE = MASTERS DEGREE

8 YEARS EXPERIENCE = PHD

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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).

2. DESCRIPTION OF CLOUD COMPUTING SERVICES

CTIS managed Cloud IaaS & PaaS Solution is a custom solution that is built on industry Cloud service providers including AWS Gov, AWS, Azure etc. CTIS has the technical expertise and experience to provision managed IaaS/PaaS solutions/environments for government customers. In addition, CTIS also promotes a hybrid solution that takes advantages of the best combination of security and cost for provisioning, managing, and funding IaaS/PaaS solutions. Our solutions, designs and governance models focus on a high availability, high reliability, multi-tiered and modular solutions. CTIS implements and follows comprehensive support of Disaster Recovery and COOP services to its clients through implementation of Server, System and Application Virtualization services. CTIS implements a continuous monitoring program to monitor the established security controls and detect deviations. Preventive maintenance processes are key to avoiding unplanned outages. CTIS provides system image backup solutions that provide point-in-time backup and recovery options possible while providing a consistent and predictable Disaster Recovery. The monitoring capability was designed across dashboards that ranged from Telecom, Network, IT Security, Systems (windows/non-windows), storage, etc. Highly available virtual infrastructure allows for automatic failover to alternate resources when failures are detected, thereby providing the ability for rapid and unassisted site-level disaster recoveries to meet the business requirements at a lower total cost of ownership. Systematic updates, cycling and servicing of hardware and applications is key to successful infrastructure. CTIS provide application hosting services in virtualized environment with redundant power and cooling infrastructure to ensure 99.99% uptime. CTIS' services provides excellent value in Hybrid environments - on-premise and cloud together with cost optimization, license compliance, and FISMA compliance. See page **60** for Price List of CTIS Cloud Services.

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

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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. Per Federal Information Processing Standards Publication 199 & 200 (FIPS 199, "Standards for Security Categorization of Federal Information and Information Systems") (FIPS 200, "Minimum Security Requirements for Federal Information and Information Systems")

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.

  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 800-1224 and OMB memos M-06-165 and M-3 MEMORANDUM FOR CHIEF INFORMATION OFFICERS: Security Authorization of Information Systems in Cloud Computing Environments. December 8, 2011. 4 NIST SP 800-122, "Guide to Protecting the Confidentiality of Personally Identifiable Information (PII)" 5 OMB memo M-06-16: Protection of Sensitive Agency Information http://www.whitehouse.gov/sites/default/files/omb/memoranda/fy2006/m06-16.pdf

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 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 that 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.

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. 6 OMB Memo M-07-16: Safeguarding Against and Responding to the Breach of Personally Identifiable Information http://www.whitehouse.gov/sites/default/files/omb/memoranda/fy2007/m07- 16.pdf
- 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

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 (i.e. IaaS, etc.) 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.

6. INFORMATION PERTAINING TO CLOUD RELATED IT PROFESSIONAL SERVICES

CTIS is offering both Cloud Services (i.e. IaaS, etc.) and Cloud Related IT Professional Services under this SIN.

a. SCOPE OF 132-40 Cloud Related IT Professional Services

(1) The labor categories, prices, terms and conditions stated under Special Item Numbers 132-40 Cloud Services and Related IT Professional Services apply exclusively to this SIN within the scope of this Information Technology Schedule. It is anticipated that the relevant IT Professional Services for this SIN (132-40) are related to the following: assessing cloud solutions, preparing for cloud solutions, refactoring legacy solutions for cloud migration, migrating legacy or other systems to cloud solutions, DevOps, developing new cloud based applications and providing management/governance for cloud solutions. Contractors may propose other types of relevant professional services as long as they are specifically designed to work within and/or support the types of cloud product services described in SIN 132-40.

(2) Cloud Related IT Professional Services provided under this SIN shall comply with all certifications and industry standards as applicable pertaining to the type of services as specified by ordering agency.

(3) The Contractor shall provide Cloud Related IT Professional Services at the Contractor's facility and/or at the ordering activity location, as agreed to by the Contractor and the ordering activity.

b. ORDER

(1) Agencies may use written orders, Electronic Data Interchange (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 order shall specify the availability of funds and the period for which funds are available.

(2) 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.

c. PERFORMANCE OF SERVICES

(1) The Contractor shall commence performance of Cloud Related IT Professional Services on the date agreed to by the Contractor and the ordering activity.

(2) The Contractor agrees to render Cloud Related IT Professional Services during normal working hours, unless otherwise agreed to by the Contractor and the ordering activity.

(3) The ordering activity should include the criteria for satisfactory completion for each task in the Statement of Work or Delivery Order. Cloud Related IT Professional Services shall be completed in a good and workmanlike manner.

(4) Any Contractor travel required in the performance of Cloud Related IT Professional 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. All travel will be agreed upon with the client prior to the Contractor's travel.

d. INSPECTION OF SERVICES

Inspection of services is in accordance with 552.212-4 CONTRACT TERMS AND CONDITIONS–COMMERCIAL ITEMS (JAN 2017) (DEVIATION – FEB 2007) (DEVIATION - FEB 2018) for Firm-Fixed Price orders; or GSAR 552.212-4 CONTRACT TERMS AND CONDITIONS-COMMERCIAL ITEMS (JAN 2017) (DEVIATION - FEB 2018) (ALTERNATE I - JAN 2017) (DEVIATION - FEB 2007) for Time-and-Materials and Labor- Hour Contracts orders placed under this contract.

e. 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 (MAY 2014) Rights in Data – General, may apply.

The Contractor shall comply with contract clause (52.204-21) to the Federal Acquisition Regulation (FAR) for the basic safeguarding of contractor information systems that process, store, or transmit Federal data received by the contract in performance of the contract. This includes contract documents and all information generated in the performance of the contract.

f. RESPONSIBILITIES OF THE ORDERING ACTIVITY

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

g. INDEPENDENT CONTRACTOR

All Cloud Computing 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.

h. ORGANIZATIONAL CONFLICTS OF INTEREST

    (1) 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.

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.

i. INVOICES

The Contractor, upon completion of the work ordered, shall submit invoices for Cloud Computing 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 IT professional services performed during the preceding month.

j. PAYMENTS

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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. Payments shall be made in accordance with:

For orders that are NOT time-and-materials/labor hours (fixed price applicable).

- GSAR 552.212-4 CONTRACT TERMS AND CONDITIONS–COMMERCIAL ITEMS (JAN 2017) (DEVIATION – FEB 2007) (DEVIATION - FEB 2018)

For orders that are time-and-materials/labor hours.

- GSAR 552.212-4 CONTRACT TERMS AND CONDITIONS-COMMERCIAL ITEMS (JAN 2017) (DEVIATION - FEB 2018) (ALTERNATE I - JAN 2017) (DEVIATION - FEB 2007)

FAR 52.216-31 (Feb 2007) Time-and-Materials/Labor-Hour Proposal Requirements— Commercial Item Acquisition. As prescribed in 16.601(f)(3), insert the following provision:

(1) The Government contemplates award of a Time-and-Materials or Labor-Hour type of contract resulting from this solicitation.

(2) 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-

    i   The offeror;

    ii   Subcontractors; and/or

    iii   Divisions, subsidiaries, or affiliates of the offeror under a common control.]

k. RESUMES

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

l. 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.

m. DESCRIPTION OF CLOUD COMPUTING LABOR HOURS AND PRICING

See page 48 for SIN 132-51 Labor Category Descriptions and page 59 for Labor Category Rates

n. EDUCATION SUBSTITUTION LANGUAGE

Degree may be substituted as follows:

ASSOCIATE DEGREE = 2 YEARS EXPERIENCE

BACHELORS DEGREE = 4 YEARS EXPERIENCE

MASTERS DEGREE = 6 YEARS EXPERIENCE

PHD = 8 YEARS EXPERIENCE

Education may be substituted as follows:

2 YEARS EXPERIENCE = ASSOCIATE DEGREE

4 YEARS EXPERIENCE = BACHELORS DEGREE

6 YEARS EXPERIENCE = MASTERS DEGREE

8 YEARS EXPERIENCE = PHD

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SIN	Labor Category	Description	Minimum Experience	Minimum Education
54151S	Principal	Proficient in project estimation and resource planning efforts and in resolving global project issues, such as technical compatibility, client expectations, and timing; identifies themes capable of being developed into new IT strategy methodology, helps to ensure overall soundness of analytical approach, and is able to suggest alternatives; manages local and international resources; champions firm initiatives, and leads developments in new business enterprises through technical innovations.	15 Years	Master's Degree in Business/Management/IT or related field. Advanced degree/relevant professional certification (e.g. PMP) preferred.
54151S	Program Manager	Responsible for overall program management of complex, multi-task IT projects. Oversees all technical operations, prepares financial and contractual requirements. Responsible for cost control. Works with client representatives to ensure smooth program operation. Manages technical and administrative personnel when necessary.	10 years	Bachelor's Degree in Business/Management/IT or related field. Advanced degree/relevant professional certification (e.g. PMP) preferred.
54151S	Project Manager III	Responsible for all aspects of development and implementation of assigned projects and provides a single point of contact for those projects. Takes projects from original concept through final implementation. Interfaces will all areas affected by project including end users, computer services and client services. Defines project scope and objectives. Develops detailed work plans, schedules, project estimates, resource plans and status reports. Conducts project meetings and is responsible for project tracking and analysis. Ensures adherence to quality standards and reviews project deliverables. Manages the integration of vendor tasks and reviews vendor deliverables. Provides technical and analytical guidance to project team. Recommends and takes action to direct the analysis and solutions of problems. In cloud and Hybrid environment Project Manager has the overall responsibility of designing and executing a cloud/Hybrid solution in	8 years	Bachelor's Degree in Business/Management/IT or related field. Advanced degree/relevant professional certification (e.g. PMP) preferred.

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SIN	Labor Category	Description	Minimum Experience	Minimum Education
		collaboration with client, cross-service teams, and third-party partners. Works closely with IT consultants, cloud solution architects and cloud engineers in translating IT strategic goals, roadmaps, and business requirements into future state architectures designed to leverage the cutting-edge functionality delivered through commercial and private cloud service providers.		
54151S	Project Manager II	Responsible for all aspects of development and implementation of assigned projects and provides a single point of contact for those projects. Takes projects from original concept through final implementation. Interfaces will all areas affected by project including end users, computer services and client services. Defines project scope and objectives. Develops detailed work plans, schedules, project estimates, resource plans and status reports. Conducts project meetings and is responsible for project tracking and analysis. Ensures adherence to quality standards and reviews project deliverables. Manages the integration of vendor tasks and reviews vendor deliverables. Provides technical and analytical guidance to project team. Recommends and takes action to direct the analysis and solutions of problems. In cloud and Hybrid environment Project Manager has the overall responsibility of designing and executing a cloud/Hybrid solution in collaboration with client, cross-service teams, and third-party partners. Works closely with IT consultants, cloud solution architects and cloud engineers in translating IT strategic goals, roadmaps, and business requirements into future state architectures designed to leverage the cutting-edge functionality delivered through commercial and private cloud service providers.	5 years	Bachelor's Degree in Business/Management/IT or related field.
54151S	Project Manager I	Responsible for all aspects of development and implementation of assigned projects and provides a single point of contact for those projects. Takes projects from original concept through final implementation. Interfaces will all areas affected by project including end users, computer services and client services. Defines project scope and objectives. Develops detailed work plans,	3 years	Bachelor's Degree in Business/Management/IT or related field.

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SIN	Labor Category	Description	Minimum Experience	Minimum Education
		schedules, project estimates, resource plans and status reports. Conducts project meetings and is responsible for project tracking and analysis. Ensures adherence to quality standards and reviews project deliverables. Manages the integration of vendor tasks and reviews vendor deliverables. Provides technical and analytical guidance to project team. Recommends and takes action to direct the analysis and solutions of problems. In cloud and Hybrid environment Project Manager has the overall responsibility of designing and executing a cloud/Hybrid solution in collaboration with client, cross-service teams, and third-party partners. Works closely with IT consultants, cloud solution architects and cloud engineers in translating IT strategic goals, roadmaps, and business requirements into future state architectures designed to leverage the cutting-edge functionality delivered through commercial and private cloud service providers.		
54151S	Technical Architect II	Provide high-end technical expertise to provide innovative, cost-effective and efficient IT solutions to an organization. Participates in or oversees the development, testing and implementation of the technical solutions related to: Requirements, Design, Database, Data Analytics, Architecture, Agile, Development, Testing, Documentation, Administration, Network, Engineering, Operations, Security and/or Infrastructure Development roadmap for the cloud management platform. Responsible for bridging the gaps between complex business problems and solutions in the cloud. Coordinate with DevOps engineers and developers etc. to ensure that the right solutions are being built. Recommend strategies to improve resiliency, security, and optimize costs in cloud and Hybrid environments.	12 Years	Bachelor's Degree in Business/Management/IT or related field.
54151S	Technical Architect I	Provide high-end technical expertise to provide innovative, cost-effective and efficient IT solutions to an organization. Participates in or oversees the development, testing and implementation of the technical solutions related to: Requirements, Design,	8 years	Bachelor's Degree

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SIN	Labor Category	Description	Minimum Experience	Minimum Education
		Database, Data Analytics, Architecture, Agile, Development, Testing, Documentation, Administration, Network, Engineering, Operations, Security and/or Infrastructure. Development roadmap for the cloud management platform. Responsible for bridging the gaps between complex business problems and solutions in the cloud. Coordinate with DevOps engineers and developers etc. to ensure that the right solutions are being built. Recommend strategies to improve resiliency, security, and optimize costs in cloud and Hybrid environments.		
54151S	Software Developer III	Leads development teams and provides highly skilled expertise in designing, developing, coding, testing, and debugging new software or significant enhancements to existing software. Works with technical staff to understand problems with software and develops specifications to resolve them. Resolves customer complaints and responds to suggestions for improvements and enhancements. Participates in the development of software user manuals. Provides subject matter expertise and mentors less experienced software development staff. Designs and develops secure cloud applications, services, and products. This includes back-end, front-end, web application, full-stack, data and application integration, and cloud application deployment.	10 years	Bachelor's Degree in Computer Science/Information Systems/Engineering or related field. Additional technical training preferred.
54151S	Software Developer II	Under general direction, participates as high-level technical expert in design development, coding, testing and debugging new software or significant enhancements to existing software. Works with technical staff to understand problems with software and develops specifications to resolve them. Resolve customer complaints and responds to suggestions for improvements and enhancements. Participates in the development of software user manuals. May act as team leader on less complex projects. Assists in training less experienced software development staff. Develops secure cloud applications, services, and products. This includes back-end, front-end,	5 years	Bachelor's Degree in Computer Science/Information Systems/Engineering or related field.

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SIN	Labor Category	Description	Minimum Experience	Minimum Education
		web application, full-stack, data and application integration, and cloud application deployment.		
54151S	Software Developer I	Under general supervision, develops code, tests and debugs new software or enhancements to existing software. Has good understanding of business applications. Works with technical staff to understand problems with software and resolve them. Resolves customer complaints with software and responds to suggestions for improvements and enhancements. May assist in development of software user manuals. Develops secure cloud applications, services, and products. This includes back-end, front-end, web application, full-stack, data and application integration, and cloud application deployment.	3 years	Bachelor's/Associates Degree in Computer Science/Information Systems or related field.
54151S	Systems Engineer III	Formulates and defines specifications for complex operating software programming applications or modifies/maintains complex existing applications using engineering releases and utilities from the manufacturer. Designs, codes, tests, debugs and documents programs. Responsible for applications dealing with the overall operating system. Competent to work at this highest technical level on all phases of software systems programming applications. May assist other systems programmers to effectively utilize the system's technical software. Responsible for the design, development, implementation of Cloud Service offerings across Infrastructure as a Service (IaaS), Platform as a Service (PaaS) and Software as a Service (SaaS) cloud environments. Administer virtual environments effectively including cloud storage and optimization. Designs/Architects and provides specifications for complex IT infrastructure environments. Modifies/maintains complex existing IT infrastructure applications using IT best practices (ITIL) and ensuring IT compliance (C&A). Responsible for IT infrastructure environments hosting complex applications and data. Competent to work at high technical level on all phases of infrastructure management (Datacenter, cloud, hybrid,	8 years	Bachelor's Degree in Computer Science/Information Systems/Engineering or related field. Additional technical training preferred.

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SIN	Labor Category	Description	Minimum Experience	Minimum Education
		Networking, Security, Virtualization, Hardware, Operating System etc.). Very good in assessing, preparing, refactoring, migrating, integrating, managing IT workloads to cloud or into hybrid configurations.		
54151S	Systems Engineer II	Formulates and defines specifications for complex operating software programming applications or modifies/maintains complex existing applications using engineering releases and utilities from the manufacturer. Designs, codes, tests, debugs and documents programs. Responsible for applications dealing with the overall operating system. Competent to work at this highest technical level on all phases of software systems programming applications. May assist other systems programmers to effectively utilize the system's technical software. Responsible for implementation of Cloud Service offerings across Infrastructure as a Service (IaaS), Platform as a Service (PaaS) and Software as a Service (SaaS) cloud environments. Administer virtual environments effectively including cloud storage and optimization. Modifies/maintains complex existing IT infrastructure applications using IT best practices (ITIL) and ensuring IT compliance (C&A). Responsible for IT infrastructure environments hosting complex applications and data. Competent to work at moderate technical level on all phases of infrastructure management (Datacenter, cloud, hybrid, Networking, Security, Virtualization, Hardware, Operating System etc.). Good in assessing, preparing, refactoring, migrating, integrating, managing IT workloads to cloud or into hybrid configurations.	6 years	Bachelor's Degree in Computer Science/Information Systems/Engineering or related field. Additional technical training preferred.
54151S	Systems Engineer I	Performs a variety of systems engineering tasks and activities that are broad in nature and are concerned with major systems design, integration and implementation. Provides quality assurance review and the evaluation of new and existing software products. Responsible for implementation of Cloud Service offerings across Infrastructure as a Service (IaaS), Platform as a Service (PaaS)	3 years	Bachelor's Degree in Computer Science/Information Systems/Engineering or related field.

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SIN	Labor Category	Description	Minimum Experience	Minimum Education
		and Software as a Service (SaaS) cloud environments. Administer virtual environments effectively including cloud storage and optimization. Maintains complex existing IT infrastructure applications using IT best practices (ITIL) and ensuring IT compliance (C&A). Responsible for IT infrastructure environments hosting complex applications and data. Competent to work at moderate technical level on all phases of infrastructure management (Datacenter, cloud, hybrid, Networking, Security, Virtualization, Hardware, Operating System etc.). Adequate in assessing, preparing, refactoring, migrating, integrating, managing IT workloads to cloud or into hybrid configurations.		
54151S	Product Owner / Business Systems Analyst III	Formulates and defines system scope and objectives based on both user needs and a good understanding of applicable business systems and industry requirements. Devises or modifies procedures to solve complex problems considering computer equipment capacity and limitations, operating time, and form of desired results. Includes analysis of business and user needs, documentation of requirements and translation into proper system requirement specifications. Guides an advises less-experience Business Analysts. Competent to work at the highest technical level of most phases of systems analysis while considering the business implications of the application of technology to the current and future business environment.	10 Years	Bachelor's Degree in Computer Science/Information Systems/Engineering or related field.
54151S	Product Owner / Business Systems Analyst II	Formulates and defines system scope and objectives based on both user needs and a good understanding of applicable business systems and industry requirements. Devises or modifies procedures to solve complex problems considering computer equipment capacity and limitations, operating time, and form of desired results. Includes analysis of business and user needs, documentation of requirements and translation into proper system requirement specifications. Guides an advises less-experience Business Analysts. Competent to work at the highest technical level of most phases of systems analysis while considering the business implications	6 years	Bachelor's Degree in Computer Science/Information Systems/Engineering or related field.

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SIN	Labor Category	Description	Minimum Experience	Minimum Education
		of the application of technology to the current and future business environment.		
54151S	Product Owner / Business Systems Analyst I	Under general supervision, formulates and defines scope and objectives through research and fact-finding combined with an understanding of applicable business systems and industry requirements. With this knowledge, develops or modifies moderately complex information systems. Includes analysis of business and user needs, documenting requirements, and revising existing system logic difficulties as necessary. Guides and advises less-experienced Business Systems Analysts. Competent to work in some phases of systems analysis and considers the business implications of the application of technology to the current business environment.	3 years	Bachelor's Degree in Computer Science/Information Systems/Engineering or related field.
54151S	Subject Matter Expert II	Possesses extensive functional and technical knowledge of highly specialized applications and operational environments. Possesses extensive experience in analyzing and solving exceptionally complex problems that need extensive knowledge of the subject matter for effective implementation. Capable of providing expert advice as needed in all phases of software development with emphasis on the planning, analysis, testing, integration, documentation and implementation strategies.	12 Years	Bachelor's Degree in Business/Management/IT or related field. Advanced degree/relevant professional certification preferred.
54151S	Subject Matter Expert I	Possesses extensive functional and technical knowledge of highly specialized applications and operational environments. Possesses extensive experience in analyzing and solving exceptionally complex problems that need extensive knowledge of the subject matter for effective implementation. Capable of providing expert advice as needed in all phases of software development with emphasis on the planning, analysis, testing, integration, documentation and implementation strategies.	10 years	Bachelor's Degree
54151S	Information Assurance Specialist II	Establishes and satisfies complex system-wide information security requirements based upon the analysis of user, policy, regulatory and resource demands. Designs, develops, engineers and implements solutions that meet security requirements. Provides integration and implementation of the computer system security solution.	5 years	Bachelor's Degree in Computer Science/Information Systems/Engineering or related field. Additional technical training preferred.

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SIN	Labor Category	Description	Minimum Experience	Minimum Education
54151S	Information Assurance Specialist I	Establishes and satisfies complex system-wide information security requirements based upon the analysis of user, policy, regulatory and resource demands. Designs, develops, engineers and implements solutions that meet security requirements. Provides integration and implementation of the computer system security solution.	3 years	Bachelor's Degree
54151S	Quality Assurance Specialist II	Meet with system users to understand usage profiles and user needs. Write test plans for small systems, including plans for integration testing, system testing, stress testing, acceptance testing, and regression testing. Design strategies and write scripts for automated testing of small programs. Write, execute, and analyze the results of test procedures. Write test reports or problem reports indicating whether or not a test passed and, if necessary, provide an analysis. Participate in reviews at any point in the software life cycle. For projects involving small systems, design and implement the software configuration management process and problem reporting system. Help implement a metrics system, i.e., a system that gathers various metrics on software and performance; help write a report on the metrics for the project.	7 years	Bachelor's Degree in Computer Science/Information Systems/Engineering or related field. Additional technical training preferred.
54151S	Quality Assurance Specialist I	Meet with system users to understand usage profiles and user needs. Write test plans for small systems, including plans for integration testing, system testing, stress testing, acceptance testing, and regression testing. Design strategies and write scripts for automated testing of small programs. Write, execute, and analyze the results of test procedures. Write test reports or problem reports indicating whether or not a test passed and, if necessary, provide an analysis. Participate in reviews at any point in the software life cycle. For projects involving small systems, design and implement the software configuration management process and problem reporting system. Help implement a metrics system, i.e., a system that gathers various metrics on software and performance; help write a report on the metrics for the project.	4 years	Bachelor's Degree
54151S	DBA III	Provides highly technical expertise in the use of DBMS. Evaluates and recommends	9 years	Bachelor's Degree in Computer

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SIN	Labor Category	Description	Minimum Experience	Minimum Education
		available DBMS products to support validated user requirements. Defines file organization, indexing methods and security procedures for specific user applications.		Science/Information Systems/Engineering or related field. Additional technical training preferred.
54151S	DBA II	Participates in the design, creation and maintenance of computerized databases. Responsible for quality control and auditing of databases to ensure accurate and appropriate use of data. Works with management to develop database strategies to support company needs. Consults with and advises users on access to various databases. Works directly with users to resolve data conflicts and inappropriate data usage. Directs the maintenance and use of the corporate data dictionary.	6 years	Bachelor's Degree in Computer Science/Information Systems/Engineering or related field. Additional technical training preferred.
54151S	DBA I	Designs, implements and maintains moderately complex databases, access methods, access time, device allocation, validation checks, organization, protection and security, documentations and statistical methods. Maintains database dictionaries, monitors standards and procedures and integration of systems through database design.	2 years	Bachelor's Degree in Computer Science/Information Systems/Engineering or related field. Additional technical training preferred.
54151S	Support Analyst V	An analyst who has a technical concentration and has the ability to support with duties including leading systems business and technical requirements development, design and data analysis, database design, network design, and quality assurance, system operations and implementation, help desk, technical documentation writing, presentation graphics design, business process, activity and data modeling, applying modern business management methods, identifying best practices, and creating and assessing performance measurements. Provides group facilitation, interviewing, training, and other forms of knowledge transfer, and other support duties. Implements requirements at the direction of more senior team member.	10 years	Bachelor's Degree
54151S	Support Analyst IV	An analyst who has a technical concentration and has the ability to support with duties including leading systems business and technical requirements development, design and data analysis, database design, network design, and quality	8 years	Bachelor's Degree

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SIN	Labor Category	Description	Minimum Experience	Minimum Education
		assurance, system operations and implementation, help desk, technical documentation writing, presentation graphics design, business process, activity and data modeling, applying modern business management methods, identifying best practices, and creating and assessing performance measurements. Provides group facilitation, interviewing, training, and other forms of knowledge transfer, and other support duties. Implements requirements at the direction of more senior team member.		
54151S	Support Analyst III	An analyst who has a technical concentration and has the ability to support with duties including leading systems business and technical requirements development, design and data analysis, database design, network design, and quality assurance, system operations and implementation, help desk, technical documentation writing, presentation graphics design, business process, activity and data modeling, applying modern business management methods, identifying best practices, and creating and assessing performance measurements. Provides group facilitation, interviewing, training, and other forms of knowledge transfer, and other support duties. Implements requirements at the direction of more senior team member.	6 years	Bachelor's Degree
54151S	Support Analyst II	An analyst who has a technical concentration and has the ability to support with duties including leading systems business and technical requirements development, design and data analysis, database design, network design, and quality assurance, system operations and implementation, help desk, technical documentation writing, presentation graphics design, business process, activity and data modeling, applying modern business management methods, identifying best practices, and creating and assessing performance measurements. Provides group facilitation, interviewing, training, and other forms of knowledge transfer, and other support duties. Implements requirements at the direction of more senior team member.	4 years	Bachelor's Degree
54151S	Support Analyst I	An analyst who has a technical concentration and has the ability to support	2 years	Associate Degree

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SIN	Labor Category	Description	Minimum Experience	Minimum Education
		with duties including leading systems business and technical requirements development, design and data analysis, database design, network design, and quality assurance, system operations and implementation, help desk, technical documentation writing, presentation graphics design, business process, activity and data modeling, applying modern business management methods, identifying best practices, and creating and assessing performance measurements. Provides group facilitation, interviewing, training, and other forms of knowledge transfer, and other support duties. Implements requirements at the direction of more senior team member.		
54151S	System Administrator III	Responsible for activities related to system administration. Assigns personnel to various projects, directs their activities and evaluates their work. Ensures long-term requirements of systems operations and administration are included in the overall information systems planning of the organization. Oversees installation, maintenance, configuration and integrity of computer systems and operating environments. Implements operating system enhancements that will improve the reliability and performance of the system.	9 years	Bachelor's Degree in Computer Science/Information Systems/Engineering or related field. Additional technical training preferred.
54151S	System Administrator II	Responsible for activities related to system administration. Assigns personnel to various projects, directs their activities and evaluates their work. Ensures long-term requirements of systems operations and administration are included in the overall information systems planning of the organization. Oversees installation, maintenance, configuration and integrity of computer systems and operating environments. Implements operating system enhancements that will improve the reliability and performance of the system.	6 years	Bachelor's Degree in Computer Science/Information Systems/Engineering or related field. Additional technical training preferred.
54151S	System Administrator I	Under general supervision, responsible for installing, configuring and maintaining operating system workstations and servers, including web servers, in support of business processing requirements. Performs software installations and upgrades to operating systems and layered software packages. Schedules installations and	3 years	Associate Degree in Computer Science/Information Systems/Engineering or related field.

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SIN	Labor Category	Description	Minimum Experience	Minimum Education
		upgrades and maintains them in accordance with established IT policies and procedures. Monitors and tunes the system to achieve optimum performance levels. Ensures workstation/server data integrity by evaluating, implementing and managing appropriate software and hardware solutions. Ensures data/media recoverability by implementing a schedule of system backups and database archive operations. Develops and maintains a comprehensive operating system hardware and software configuration database/library of all supporting documentation.		
54151S	Test Engineer IV	Subject matter expert providing testing know-how for the support of user requirements of complex to highly complex software/hardware applications. Directs and/or participates in all phases of risk management assessments and software/hardware development with emphasis on analysis of user requirements, test design and test tools selection.	8 years	Bachelor's Degree in Computer Science/Information Systems/Engineering or related field. Additional technical training preferred.
54151S	Test Engineer III	Subject matter expert providing testing know-how for the support of user requirements of complex software/hardware applications. Directs and/or participates in all phases of risk management assessments and software/hardware development with emphasis on analysis of user requirements, test design and test tools selection	6 years	Bachelor's Degree
54151S	Test Engineer II	Subject matter expert providing testing know-how for the support of user requirements of moderately complex software/hardware applications. Directs and/or participates in all phases of risk management assessments and software/hardware development with emphasis on analysis of user requirements, test design and test tools selection	4 years	Associate Degree
54151S	Test Engineer I	Performs testing of user requirements of software/hardware applications. Participates in all phases of risk management assessments and software/hardware development with emphasis on analysis of user requirements, test design and test tools selection.	2 years	Associate Degree
54151S	DevOps Engineer	Deploying and configuring services using infrastructure as a service provider.	7 years	Bachelor's Degree

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SIN	Labor Category	Description	Minimum Experience	Minimum Education
		Configuring and managing Linux-based servers to serve a dynamic website. Debugging cluster-based computing architectures. Using scripting or basic programming skills to solve problems. Installation and management of open source monitoring tools. Configuration management tools. Architecture for continuous integration, deployment, and monitoring. Containerization technologies. Design, Develop, Build & Deploy applications to streamline the deployment and operational reliability in cloud environments. Compare, evaluate, and implement new features and technologies, and integrated them with the current environment. Work with other technical professionals to develop standards and implement best practice. Serve as a technical resource for new applications designs. Document system and application design, configuration and maintain and update documentation as needed.		
54151S	DevOps Practitioner	Implements configuration management, deployments and follows identification, change control, configuration status accounting and audits. Regulates the change process so that only approved and validated changes are incorporated into product documents and related software. Design, Develop, Build & Deploy applications to streamline the deployment and operational reliability in cloud environments. Compare, evaluate, and implement new features and technologies, and integrated them with the current environment. Work with other technical professionals to develop standards and implement best practice. Serve as a technical resource for new applications designs. Document system and application design, configuration and maintain and update documentation as needed.	5 years	Bachelor's Degree
54151S	Technical Writer II	Writes a variety of technical articles, reports, brochures and/or user manuals for documentation of a wide range of uses. Coordinates the display of graphics and the production of the document.	5 years	Bachelor's Degree
54151S	Technical Writer I	Writes a variety of technical articles, reports, brochures and/or user manuals for documentation of a wide range of uses.	1-4 years	Associate Degree

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		Coordinates the display of graphics and the production of the document.		
54151S	Graphics Specialist	Responsible for graphics design and use, operation, and setup of computer graphic systems for business communications. Executes graphic projects and assists in coordination of all graphic production scheduling. Coordinates production support with outside vendors, as needed. Trains other personnel in proper use of computer graphic software	3 years	Bachelor's Degree
54151S	Scrum Master	Scrum Master is responsible for monitoring the scrum processes and scrum meetings. He increases his team efficiency, motivates his team, spins, argues for changes that will ensure quality and timeliness. He ensures the DoD (Definition of done) is being followed.	6 years	Bachelor's Degree
54151S	Trainer	Prepare training materials. Conduct training programs. Technical Writing/Documentation. Facilitation and implementation support. Technical Support. End User Support. SDLC, Operations and Security	4 years	Bachelor's Degree
54151S	Help Desk Specialist	Help Desk Analyst has experience in planning, implementing, and managing customer service systems. Is able to handle customer satisfaction issues. Has experience in reviewing data to identify trends and issues. Is able Provides phone and in-person support to users in areas which include e-mail, LAN/WAN, directories, standard desktop images and applications, COTS and GOTS applications. Serves as the initial point of contact for troubleshooting all IT related problems, including hardware/software, passwords and printer problems.	5 years	Associate Degree
54151S	Agile Coach	Embed an agile culture using techniques from a wide range or agile and lean methodologies and frameworks but be methodology agnostic. Help to create an open and trust-based environment, which enables a focus on delivery and facilitates continuous improvement. Assess the culture of a team or organization and delivery processes in place to identify improvements and facilitate these improvements with the right type of support. Showcase relevant tools and techniques such as coaching, advising, workshops, and mentoring. Engage	6 years	Bachelor's Degree

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SIN	Labor Category	Description	Minimum Experience	Minimum Education
		with stakeholders at all levels of the organization. Develop clear lines of escalation, in agreement with senior managers. Ensure any stakeholder can easily find out an accurate and current project or program status, without disruption to delivery. Work effectively with other suppliers and agencies. Apply best tools and techniques to team roles, behaviors, structure and culture, agile ceremonies and practices, knowledge transfer and sharing, program management, cross- team coordination, and overall governance of digital service delivery. Ensure key metrics and requirements that support the team and delivery are well defined and maintained. Equip staff with the ability to coach others. If organization level, executive coaching on the fundamental considerations of digital service delivery design		

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SIN	Labor Category	Description	Minimum Experience	Minimum Education
54151HEAL	Health IT Project Manager III	Responsible for all aspects of development and implementation of large Health IT projects and provides a single point of contact for those projects. Takes projects from original concept through final implementation. Interfaces will all Health IT service areas affected by project. Defines project scope and objectives. Develops detailed work plans, schedules, project estimates, resource plans and status reports. Conducts project meetings and is responsible for project tracking and analysis. Ensures adherence to Health IT standards and regulations. Manages the Health information exchanges. Provides Health informatic and Health analytics guidance to project team. Recommends and takes action to direct the analysis and solutions of problems related to Emerging research.	8 years	Bachelor's Degree in Business/Management/IT or related field. Advanced degree/relevant professional certification (e.g. PMP) preferred.
54151HEAL	Health IT Project Manager II	Responsible for all aspects of development and implementation of moderate Health IT projects and provides a single point of contact for those projects. Takes projects from original concept through final implementation. Interfaces will other Health IT service areas affected by project. Defines project scope and objectives. Develops detailed work plans, schedules, project estimates, resource plans and status reports. Conducts project meetings and is responsible for project tracking and analysis. Ensures adherence to Health IT standards and regulations. Manages the Health information exchanges. Provides Health informatic and Health analytics guidance to project team.	5 years	Bachelor's Degree in Business/Management/IT or related field.
54151HEAL	Health IT Project Manager I	Responsible for all aspects of development and implementation of small Health IT projects and provides a single point of contact for those projects. Takes projects from original concept through final implementation. May	3 years	Bachelor's Degree in Business/Management/IT or related field.

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SIN	Labor Category	Description	Minimum Experience	Minimum Education
		Interfaces will other Health IT service areas affected by project. Defines project scope and objectives. Develops detailed work plans, schedules, project estimates, resource plans and status reports. Conducts project meetings and is responsible for project tracking and analysis. Ensures adherence to Health IT standards and regulations.		
54151HEAL	Health IT Technical Architect II	Provide high-end technical expertise to provide innovative, cost-effective and efficient large Health IT solutions to an organization. Participates in or oversees the development, testing and implementation of the technical solutions related to Health informatics: Requirements, Design, Database, Data Analytics, Architecture, Agile, Development, Testing, Documentation, Administration, Network, Engineering, Operations, Security and/or Infrastructure Development roadmap. Responsible defining the Health information exchanges. Architects the systems that are compliant with Health IT standards and regulations. Coordinate with DevOps engineers and developers etc. to ensure that the right solutions are being built. Recommend strategies to improve resiliency, security, and optimize costs.	12 Years	Bachelor's Degree in Business/Management/IT or related field.
54151HEAL	Health IT Technical Architect I	Provide high-end technical expertise to provide innovative, cost-effective and efficient moderate Health IT solutions to an organization. Participates in or oversees the development, testing and implementation of the technical solutions related to Health informatics: Requirements, Design, Database, Data Analytics, Architecture, Agile, Development, Testing, Documentation, Administration, Network, Engineering, Operations, Security and/or Infrastructure Development roadmap. Architects the systems that are compliant with Health IT standards and regulations. Coordinate with DevOps engineers and developers etc. to ensure that the right solutions are being built.	8 years	Bachelor's Degree

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SIN	Labor Category	Description	Minimum Experience	Minimum Education
		Recommend strategies to improve resiliency, security, and optimize costs.		
54151HEAL	Health IT Software Developer III	Leads development teams and provides highly skilled expertise in designing, developing, coding, testing, and debugging new software or significant enhancements to Health IT systems. Develops the systems that are compliant with Health IT standards and regulations. Integrates with other systems for Health information exchanges. Works with technical staff to understand problems with software and develops specifications to resolve them. Resolves customer complaints and responds to suggestions for improvements and enhancements. Participates in the development of software user manuals. Provides subject matter expertise and mentors less experienced software development staff.	10 years	Bachelor's Degree in Computer Science/Information Systems/Engineering or related field. Additional technical training preferred.
54151HEAL	Health IT Software Developer II	Under general direction, participates as high-level technical expert in design development, coding, testing and debugging new Health IT systems or significant enhancements to existing Health IT systems. Develops the systems that are compliant with Health IT standards and regulations. Integrates with other systems for Health information exchanges. Works with technical staff to understand problems with software and develops specifications to resolve them. Resolve customer complaints and responds to suggestions for improvements and enhancements. Participates in the development of software user manuals. May act as team leader on less complex Health IT systems. Assists in training less experienced software development staff	5 years	Bachelor's Degree in Computer Science/Information Systems/Engineering or related field.
54151HEAL	Health IT Software Developer I	Under general supervision, develops code, tests and debugs new Health IT systems or enhancements to existing Health IT systems. Develops the systems that are compliant with Health IT standards and regulations. Works with technical staff to understand problems with software and resolve them. Resolves customer complaints with	3 years	Bachelor's/Associates Degree in Computer Science/Information Systems or related field.

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SIN	Labor Category	Description	Minimum Experience	Minimum Education
		software and responds to suggestions for improvements and enhancements. May assist in development of software user manuals.		
54151HEAL	Health IT Systems Engineer III	Formulates and defines specifications for complex Health IT systems or modifies/maintains complex existing Health IT systems using engineering releases and utilities from the manufacturer. Designs, codes, tests, debugs and documents Health IT systems. Responsible for applications dealing with the overall operating system. Competent to work at this highest technical level on all phases of software systems programming applications. May assist other systems programmers to effectively utilize the system's technical software.	8 years	Bachelor's Degree in Computer Science/Information Systems/Engineering or related field. Additional technical training preferred.
54151HEAL	Health IT Systems Engineer II	Formulates and defines specifications for complex Health IT systems or modifies/maintains complex Health IT systems using engineering releases and utilities from the manufacturer. Designs, codes, tests, debugs and documents Health IT systems. Responsible for applications dealing with the overall operating system. Competent to work at this highest technical level on all phases of software systems programming applications. May assist other systems programmers to effectively utilize the system's technical software.	6 years	Bachelor's Degree in Computer Science/Information Systems/Engineering or related field. Additional technical training preferred.
54151HEAL	Health IT Systems Engineer I	Performs a variety of Health IT systems engineering tasks and activities that are broad in nature and are concerned with major systems design, integration and implementation. Provides quality assurance review and the evaluation of new and existing software products.	3 years	Bachelor's Degree in Computer Science/Information Systems/Engineering or related field.
54151HEAL	Health IT Product Owner / Business Systems Analyst III	Formulates and defines system scope and objectives based on both user needs and a good understanding of applicable Health IT systems and health care industry requirements. Devises or modifies procedures to solve complex problems considering computer equipment capacity and limitations, operating time, and form of desired results. Includes analysis of business and	10 Years	Bachelor's Degree in Computer Science/Information Systems/Engineering or related field.

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SIN	Labor Category	Description	Minimum Experience	Minimum Education
		user needs, documentation of requirements and translation into proper system requirement specifications. Guides an advises less-experience Business Analysts. Competent to work at the highest technical level of most phases of systems analysis while considering the business implications of the application of technology to the current and future business environment.		
54151HEAL	Health IT Product Owner / Business Systems Analyst II	Formulates and defines Health IT systems scope and objectives based on both user needs and a good understanding of applicable Health IT systems and health care industry requirements. Devises or modifies procedures to solve complex problems considering computer equipment capacity and limitations, operating time, and form of desired results. Includes analysis of business and user needs, documentation of requirements and translation into proper system requirement specifications. Guides an advises less-experience Business Analysts. Competent to work at the highest technical level of most phases of systems analysis while considering the business implications of the application of technology to the current and future business environment.	6 years	Bachelor's Degree in Computer Science/Information Systems/Engineering or related field.
54151HEAL	Health IT Product Owner / Business Systems Analyst I	Under general supervision, formulates and defines scope and objectives through research and fact-finding combined with an understanding of applicable Health IT systems and health care industry requirements. With this knowledge, develops or modifies moderately complex information systems. Includes analysis of business and user needs, documenting requirements, and revising existing system logic difficulties as necessary. Guides and advises less-experienced Business Systems Analysts. Competent to work in some phases of systems analysis and considers the business implications of the application of	3 years	Bachelor's Degree in Computer Science/Information Systems/Engineering or related field.

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SIN	Labor Category	Description	Minimum Experience	Minimum Education
		technology to the current business environment.		
54151HEAL	Health IT Subject Matter Expert II	Possesses extensive functional and technical knowledge of highly specialized Health IT systems and health care operational environments. Possesses extensive experience in analyzing and solving exceptionally complex problems that need extensive knowledge of the health care subject matter for effective implementation. Capable of providing expert advice as needed in all phases of software development with emphasis on the planning, analysis, testing, integration, documentation and implementation strategies.	12 Years	Bachelor's Degree in Business/Management/IT or related field. Advanced degree/relevant professional certification preferred.
54151HEAL	Health IT Subject Matter Expert I	Possesses extensive functional and technical knowledge of highly specialized Health IT systems and health care operational environments. Possesses extensive experience in analyzing and solving exceptionally complex problems that need extensive knowledge of the health care subject matter for effective implementation. Capable of providing expert advice as needed in all phases of software development with emphasis on the planning, analysis, testing, integration, documentation and implementation strategies.	10 years	Bachelor's Degree
54151HEAL	Health IT Information Assurance Specialist II	Establishes and satisfies complex Health IT system-wide information security requirements based upon the analysis of user, health care policy, health care regulatory and resource demands. Designs, develops, engineers and implements solutions that meet privacy (HIPPA) and security requirements. Provides integration and implementation of the computer system security solution.	5 years	Bachelor's Degree in Computer Science/Information Systems/Engineering or related field. Additional technical training preferred.
54151HEAL	Health IT Information Assurance Specialist I	Establishes and satisfies complex Health IT system-wide information security requirements based upon the analysis of user, health care policy, health care regulatory and resource demands. Designs, develops, engineers and implements solutions that meet privacy (HIPPA) and security requirements. Provides integration and implementation	3 years	Bachelor's Degree

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SIN	Labor Category	Description	Minimum Experience	Minimum Education
		of the computer system security solution.		
54151HEAL	Health IT Quality Assurance Specialist II	Meet with Health IT system users to understand usage profiles and user needs. Write test plans for Health IT systems, including plans for integration testing, system testing, stress testing, acceptance testing, and regression testing. Design strategies and write scripts for automated testing of moderately complex programs. Write, execute, and analyze the results of test procedures. Write test reports or problem reports indicating whether or not a test passed and, if necessary, provide an analysis. Participate in reviews at any point in the software life cycle. For projects involving moderate systems, design and implement the software configuration management process and problem reporting system. Help implement a metrics system, i.e., a system that gathers various metrics on software and performance; help write a report on the metrics for the project.	7 years	Bachelor's Degree in Computer Science/Information Systems/Engineering or related field. Additional technical training preferred.
54151HEAL	Health IT Quality Assurance Specialist I	Meet with Health IT system users to understand usage profiles and user needs. Write test plans for Health IT systems, including plans for integration testing, system testing, stress testing, acceptance testing, and regression testing. Design strategies and write scripts for automated testing of small programs. Write, execute, and analyze the results of test procedures. Write test reports or problem reports indicating whether or not a test passed and, if necessary, provide an analysis. Participate in reviews at any point in the software life cycle. For projects involving small systems, design and implement the software configuration management process and problem reporting system. Help implement a metrics system, i.e., a system that gathers various metrics on software and performance; help write a report on the metrics for the project.	4 years	Bachelor's Degree
54151HEAL	Health IT DBA III	Responsible for activities related to database administration related to Health IT environments. Assigns	9 years	Bachelor's Degree in Computer Science/Information

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SIN	Labor Category	Description	Minimum Experience	Minimum Education
		personnel to various projects, directs their activities and evaluates their work. Ensures long-term requirements of database operations and administration are included in the overall information systems planning of the organization. Oversees installation, maintenance, configuration and integrity of database systems. Implements database system enhancements that will improve the reliability and performance of the system.		Systems/Engineering or related field. Additional technical training preferred.
54151HEAL	Health IT DBA II	Participates in the design, creation and maintenance of computerized databases related to Health IT environments. Responsible for quality control and auditing of databases to ensure accurate and appropriate use of data. Works with management to develop database strategies to support company needs. Consults with and advises users on access to various databases. Works directly with users to resolve data conflicts and inappropriate data usage. Directs the maintenance and use of the corporate data dictionary.	6 years	Bachelor's Degree in Computer Science/Information Systems/Engineering or related field. Additional technical training preferred.
54151HEAL	Health IT DBA I	Designs, implements and maintains moderately complex databases related to Health IT environments, access methods, access time, device allocation, validation checks, organization, protection and security, documentations and statistical methods. Maintains database dictionaries, monitors standards and procedures and integration of systems through database design.	2 years	Bachelor's Degree in Computer Science/Information Systems/Engineering or related field. Additional technical training preferred.
54151HEAL	Health IT Support Analyst V	An analyst who has a technical concentration and has the ability to support with duties including leading Health IT systems' business and technical requirements development, design and data analysis, database design, network design, and quality assurance, system operations and implementation, help desk, technical documentation writing, presentation graphics design, business process, activity and data modeling, applying modern business management methods, identifying best practices, and	10 years	Bachelor's Degree

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SIN	Labor Category	Description	Minimum Experience	Minimum Education
		creating and assessing performance measurements. Provides group facilitation, interviewing, training, and other forms of knowledge transfer, and other support duties. Implements requirements at the direction of more senior team member.		
54151HEAL	Health IT Support Analyst IV	An analyst who has a technical concentration and has the ability to support with duties including leading systems business and technical requirements development, design and data analysis, database design, network design, and quality assurance, system operations and implementation, help desk, technical documentation writing, presentation graphics design, business process, activity and data modeling, applying modern business management methods, identifying best practices, and creating and assessing performance measurements. Provides group facilitation, interviewing, training, and other forms of knowledge transfer, and other support duties. Implements requirements at the direction of more senior team member.	8 years	Bachelor's Degree
54151HEAL	Health IT Support Analyst III	An analyst who has a technical concentration and has the ability to support with duties including leading systems business and technical requirements development, design and data analysis, database design, network design, and quality assurance, system operations and implementation, help desk, technical documentation writing, presentation graphics design, business process, activity and data modeling, applying modern business management methods, identifying best practices, and creating and assessing performance measurements. Provides group facilitation, interviewing, training, and other forms of knowledge transfer, and other support duties. Implements requirements at the direction of more senior team member.	6 years	Bachelor's Degree
54151HEAL	Health IT Support Analyst II	An analyst who has a technical concentration and has the ability to support with duties including leading	4 years	Bachelor's Degree

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		systems business and technical requirements development, design and data analysis, database design, network design, and quality assurance, system operations and implementation, help desk, technical documentation writing, presentation graphics design, business process, activity and data modeling, applying modern business management methods, identifying best practices, and creating and assessing performance measurements. Provides group facilitation, interviewing, training, and other forms of knowledge transfer, and other support duties. Implements requirements at the direction of more senior team member.		
54151HEAL	Health IT Support Analyst I	An analyst who has a technical concentration and has the ability to support with duties including leading Health IT systems' business and technical requirements development, design and data analysis, database design, network design, and quality assurance, system operations and implementation, help desk, technical documentation writing, presentation graphics design, business process, activity and data modeling, applying modern business management methods, identifying best practices, and creating and assessing performance measurements. Provides group facilitation, interviewing, training, and other forms of knowledge transfer, and other support duties. Implements requirements at the direction of more senior team member.	2 years	Associate Degree
54151HEAL	Health IT System Administrator III	Responsible for activities related to system administration related Health IT environments. Assigns personnel to various projects, directs their activities and evaluates their work. Ensures long-term requirements of systems operations and administration are included in the overall information systems planning of the organization. Oversees installation, maintenance, configuration and integrity of computer systems and operating environments. Implements operating system	9 years	Bachelor's Degree in Computer Science/Information Systems/Engineering or related field. Additional technical training preferred.

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SIN	Labor Category	Description	Minimum Experience	Minimum Education
		enhancements that will improve the reliability and performance of the system.		
54151HEAL	Health IT System Administrator II	Responsible for activities related to system administration related Health IT environments. Assigns personnel to various projects, directs their activities and evaluates their work. Ensures long-term requirements of systems operations and administration are included in the overall information systems planning of the organization. Oversees installation, maintenance, configuration and integrity of computer systems and operating environments. Implements operating system enhancements that will improve the reliability and performance of the system.	6 years	Bachelor's Degree in Computer Science/Information Systems/Engineering or related field. Additional technical training preferred.
54151HEAL	Health IT System Administrator I	Under general supervision, responsible for installing, configuring and maintaining operating system workstations and servers, including web servers related Health IT environments, in support of business processing requirements. Performs software installations and upgrades to operating systems and layered software packages. Schedules installations and upgrades and maintains them in accordance with established IT policies and procedures. Monitors and tunes the system to achieve optimum performance levels. Ensures workstation/server data integrity by evaluating, implementing and managing appropriate software and hardware solutions. Ensures data/media recoverability by implementing a schedule of system backups and database archive operations. Develops and maintains a comprehensive operating system hardware and software configuration database/library of all supporting documentation.	3 years	Associate Degree in Computer Science/Information Systems/Engineering or related field.
54151HEAL	Health IT Test Engineer IV	Subject matter expert providing testing know-how for the support of user requirements of complex to highly complex Health IT software/hardware applications. Directs and/or participates in all phases of risk management	8 years	Bachelor's Degree in Computer Science/Information Systems/Engineering or related field. Additional

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SIN	Labor Category	Description	Minimum Experience	Minimum Education
		assessments and software/hardware development with emphasis on analysis of user requirements, test design and test tools selection		technical training preferred.
54151HEAL	Health IT Test Engineer III	Subject matter expert providing testing know-how for the support of user requirements of complex Health IT software/hardware applications. Directs and/or participates in all phases of risk management assessments and software/hardware development with emphasis on analysis of user requirements, test design and test tools selection	6 years	Bachelor's Degree
54151HEAL	Health IT Test Engineer II	Provides testing of user requirements of complex Health IT software/hardware applications. Directs and/or participates in all phases of risk management assessments and software/hardware development with emphasis on analysis of user requirements, test design and test tools selection	4 years	Associate Degree
54151HEAL	Health IT Test Engineer I	Provides testing of user requirements of moderate Health IT software/hardware applications. Directs and/or participates in all phases of risk management assessments and software/hardware development with emphasis on analysis of user requirements, test design and test tools selection	2 years	Associate Degree
54151HEAL	Health IT DevOps Engineer	Deploying and configuring Health IT services using infrastructure as a service provider. Configuring and managing Linux-based servers to serve a dynamic website. Debugging cluster-based computing architectures. Using scripting or basic programming skills to solve problems. Installation and management of open source monitoring tools. Configuration management tools. Architecture for continuous integration, deployment, and monitoring. Containerization technologies. Design, Develop, Build & Deploy applications to streamline the deployment and operational reliability. Compare, evaluate, and implement new features and technologies, and integrated them with the current environment.	7 years	Bachelor's Degree

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SIN	Labor Category	Description	Minimum Experience	Minimum Education
		Work with other technical professionals to develop standards and implement best practice. Serve as a technical resource for new applications designs. Document system and application design, configuration and maintain and update documentation as needed.		
54151HEAL	Health IT DevOps Practitioner	Implements Health IT system's configuration management, deployments and follows identification, change control, configuration status accounting and audits. Regulates the change process so that only approved and validated changes are incorporated into product documents and related software. Design, Develop, Build & Deploy applications to streamline the deployment and operational reliability. Compare, evaluate, and implement new features and technologies, and integrated them with the current environment. Work with other technical professionals to develop standards and implement best practice. Serve as a technical resource for new applications designs. Document system and application design, configuration and maintain and update documentation as needed.	5 years	Bachelor's Degree
54151HEAL	Health IT Scrum Master	Scrum Master is responsible for monitoring the scrum processes and scrum meetings of Health IT system development and delivery. He increases his team efficiency, motivates his team, spins, argues for changes that will ensure quality and timeliness. He ensures the DoD (Definition of done) is being followed.	6 years	Bachelor's Degree
54151HEAL	Health IT Help Desk Specialist	Help Desk Analyst has experience in planning, implementing, and managing customer service of Health IT systems. Is able to handle customer satisfaction issues. Has experience in reviewing data to identify trends and issues. Is able Provides phone and in-person support to users in areas which include e-mail, LAN/WAN, directories, standard desktop images and custom built, COTS and GOTS Health IT applications. Serves as the	5 years	Associate Degree

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SIN	Labor Category	Description	Minimum Experience	Minimum Education
		initial point of contact for troubleshooting all Health IT related problems, including hardware/software, passwords and printer problems.		
54151HEAL	Health IT Agile Coach	Embed an agile culture in building Health IT system using techniques from a wide range or agile and lean methodologies and frameworks but be methodology agnostic. Help to create an open and trust-based environment, which enables a focus on delivery and facilitates continuous improvement. Assess the culture of a team or organization and delivery processes in place to identify improvements and facilitate these improvements with the right type of support. Showcase relevant tools and techniques such as coaching, advising, workshops, and mentoring. Engage with health care stakeholders at all levels of the organization. Develop clear lines of escalation, in agreement with senior managers. Ensure any stakeholder can easily find out an accurate and current project or program status, without disruption to delivery. Work effectively with other health care suppliers and health care agencies. Apply best tools and techniques to team roles, behaviors, structure and culture, agile ceremonies and practices, knowledge transfer and sharing, program management, cross-team coordination, and overall governance of Health IT service delivery. Ensure key metrics and requirements that support the team and delivery are well defined and maintained. Equip staff with the ability to coach others. If organization level, executive coaching on the fundamental considerations of digital service delivery design.	6 years	Bachelor's Degree

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SIN	Labor Category	Description	Minimum Experience	Minimum Education
518210C	Cloud Project Manager III	In Cloud and Hybrid environment Project Manager has the overall responsibility of designing and executing a cloud/Hybrid solution in collaboration with client, cross-service teams, and third-party partners. Works closely with IT consultants, cloud solution architects and cloud engineers in translating IT strategic goals, roadmaps, and business requirements into future state architectures designed to leverage the cutting-edge functionality delivered through commercial and private cloud service providers.	8 years	Bachelor's Degree in Business/Management/IT or related field. Advanced degree/relevant professional certification (e.g. PMP) preferred.
518210C	Cloud Project Manager II	In Cloud and Hybrid environment Project Manager has the overall responsibility of designing and executing a cloud/Hybrid solution in collaboration with client, cross-service teams, and third-party partners. Works closely with IT consultants, cloud solution architects and cloud engineers in translating IT strategic goals, roadmaps, and business requirements into future state architectures designed to leverage the cutting-edge functionality delivered through commercial and private cloud service providers.	5 years	Bachelor's Degree in Business/Management/IT or related field.
518210C	Cloud Project Manager I	In Cloud and Hybrid environment Project Manager has the overall responsibility of designing and executing a cloud/Hybrid solution in collaboration with client, cross-service teams, and third-party partners. Works closely with IT consultants, cloud solution architects and cloud engineers in translating IT strategic goals, roadmaps, and business requirements into future state architectures designed to leverage the cutting-edge functionality delivered through commercial and private cloud service providers.	3 years	Bachelor's Degree in Business/Management/IT or related field.

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SIN	Labor Category	Description	Minimum Experience	Minimum Education
518210C	Cloud Technical Architect II	Provide high-end technical expertise to provide innovative, cost-effective and efficient IT solutions in cloud environment to an organization. Participates in or oversees the development, testing and implementation of the technical solutions related to: Requirements, Design, Database, Data Analytics, Architecture, Agile, Development, Testing, Documentation, Administration, Network, Engineering, Operations, Security and/or Infrastructure in cloud. Development roadmap for the cloud management platform. Responsible for bridging the gaps between complex business problems and solutions in the cloud. Coordinate with DevOps engineers and developers etc. to ensure that the right solutions are being built. Recommend strategies to improve resiliency, security, and optimize costs in cloud and Hybrid environments.	12 Years	Bachelor's Degree in Business/Management/IT or related field.
518210C	Cloud Technical Architect I	Provide high-end technical expertise to provide innovative, cost-effective and efficient IT solutions in cloud to an organization. Participates in or oversees the development, testing and implementation of the technical solutions related to: Requirements, Design, Database, Data Analytics, Architecture, Agile, Development, Testing, Documentation, Administration, Network, Engineering, Operations, Security and/or Infrastructure in cloud. Development roadmap for the cloud management platform. Responsible for bridging the gaps between complex business problems and solutions in the cloud. Coordinate with DevOps engineers and developers etc. to ensure that the right solutions are being built. Recommend strategies to improve resiliency, security, and optimize costs in cloud and Hybrid environments.	8 years	Bachelor's Degree
518210C	Cloud Software Developer III	Designs and develops secure cloud applications, services, and products. This includes back-end, front-end, web application, full-stack, data and application integration, and cloud application deployment.	10 years	Bachelor's Degree in Computer Science/Information Systems/Engineering or related field. Additional

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SIN	Labor Category	Description	Minimum Experience	Minimum Education
				technical training preferred.
518210C	Cloud Software Developer II	Develops secure cloud applications, services, and products. This includes back-end, front-end, web application, full-stack, data and application integration, and cloud application deployment.	5 years	Bachelor's Degree in Computer Science/Information Systems/Engineering or related field.
518210C	Cloud Software Developer I	Develops secure cloud applications, services, and products. This includes back-end, front-end, web application, full-stack, data and application integration, and cloud application deployment.	3 years	Bachelor's/Associates Degree in Computer Science/Information Systems or related field.
518210C	Cloud Systems Engineer III	Responsible for the design, development, implementation of Cloud Service offerings across Infrastructure as a Service (IaaS), Platform as a Service (PaaS) and Software as a Service (SaaS) cloud environments. Administer virtual environments effectively including cloud storage and optimization. Designs/Architects and provides specifications for complex IT infrastructure environments. Modifies/maintains complex existing IT infrastructure applications using IT best practices (ITIL) and ensuring IT compliance (C&A). Responsible for IT infrastructure environments hosting complex applications and data. Competent to work at high technical level on all phases of infrastructure management (Datacenter, cloud, hybrid, Networking, Security, Virtualization, Hardware, Operating System etc.). Very good in assessing, preparing, refactoring, migrating, integrating, managing IT workloads to cloud or into hybrid configurations.	8 years	Bachelor's Degree in Computer Science/Information Systems/Engineering or related field. Additional technical training preferred.

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SIN	Labor Category	Description	Minimum Experience	Minimum Education
518210C	Cloud Systems Engineer II	Responsible for implementation of Cloud Service offerings across Infrastructure as a Service (IaaS), Platform as a Service (PaaS) and Software as a Service (SaaS) cloud environments. Administer virtual environments effectively including cloud storage and optimization. Modifies/maintains complex existing IT infrastructure applications using IT best practices (ITIL) and ensuring IT compliance (C&A). Responsible for IT infrastructure environments hosting complex applications and data. Competent to work at moderate technical level on all phases of infrastructure management (Datacenter, cloud, hybrid, Networking, Security, Virtualization, Hardware, Operating System etc.). Good in assessing, preparing, refactoring, migrating, integrating, managing IT workloads to cloud or into hybrid configurations.	6 years	Bachelor's Degree in Computer Science/Information Systems/Engineering or related field. Additional technical training preferred.
518210C	Cloud Systems Engineer I	Responsible for implementation of Cloud Service offerings across Infrastructure as a Service (IaaS), Platform as a Service (PaaS) and Software as a Service (SaaS) cloud environments. Administer virtual environments effectively including cloud storage and optimization. Maintains complex existing IT infrastructure applications using IT best practices (ITIL) and ensuring IT compliance (C&A). Responsible for IT infrastructure environments hosting complex applications and data. Competent to work at moderate technical level on all phases of infrastructure management (Datacenter, cloud, hybrid, Networking, Security, Virtualization, Hardware, Operating System etc.). Adequate in assessing, preparing, refactoring, migrating, integrating, managing IT workloads to cloud or into hybrid configurations.	3 years	Bachelor's Degree in Computer Science/Information Systems/Engineering or related field.

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SIN	Labor Category	Description	Minimum Experience	Minimum Education
518210C	Cloud DBA III	Responsible for activities related to database administration in the private/public/hybrid cloud environments. Assigns personnel to various projects, directs their activities and evaluates their work. Ensures long-term requirements of database operations and administration are included in the overall information systems planning of the organization. Oversees installation, maintenance, configuration and integrity of database systems. Implements database system enhancements that will improve the reliability and performance of the system.	9 years	Bachelor's Degree in Computer Science/Information Systems/Engineering or related field. Additional technical training in the areas of databases and clouds preferred.
518210C	Cloud DBA II	Participates in the design, creation and maintenance of computerized databases in the private/public/hybrid cloud environments. Responsible for quality control and auditing of databases to ensure accurate and appropriate use of data. Works with management to develop database strategies to support company needs. Consults with and advises users on access to various databases. Works directly with users to resolve data conflicts and inappropriate data usage. Directs the maintenance and use of the corporate data dictionary.	6 years	Bachelor's Degree in Computer Science/Information Systems/Engineering or related field. Additional technical training in the areas of databases and clouds preferred.
518210C	Cloud DBA I	Designs, implements and maintains moderately complex databases in the private/public/hybrid cloud environments, access methods, access time, device allocation, validation checks, organization, protection and security, documentations and statistical methods. Maintains database dictionaries, monitors standards and procedures and integration of systems through database design.	2 years	Bachelor's Degree in Computer Science/Information Systems/Engineering or related field. Additional technical training in the areas of databases and clouds preferred.
518210C	Cloud System Administrator III	Responsible for activities related to system administration in the private/public/hybrid cloud environments. Assigns personnel to various projects, directs their activities and evaluates their work. Ensures long-term requirements of systems operations and administration are included in the overall information systems planning of the organization. Oversees installation, maintenance, configuration and integrity	9 years	Bachelor's Degree in Computer Science/Information Systems/Engineering or related field. Additional technical training in the areas of system administration and clouds preferred.

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SIN	Labor Category	Description	Minimum Experience	Minimum Education
		of computer systems and operating environments. Implements operating system enhancements that will improve the reliability and performance of the system.		
518210C	Cloud System Administrator II	Responsible for activities related to system administration in the private/public/hybrid cloud environments. Assigns personnel to various projects, directs their activities and evaluates their work. Ensures long-term requirements of systems operations and administration are included in the overall information systems planning of the organization. Oversees installation, maintenance, configuration and integrity of computer systems and operating environments. Implements operating system enhancements that will improve the reliability and performance of the system.	6 years	Bachelor's Degree in Computer Science/Information Systems/Engineering or related field. Additional technical training in the areas of system administration and clouds preferred.
518210C	Cloud System Administrator I	Under general supervision, responsible for installing, configuring and maintaining operating system workstations and servers in the private/public/hybrid cloud environments, including web servers, in support of business processing requirements. Performs software installations and upgrades to operating systems and layered software packages. Schedules installations and upgrades and maintains them in accordance with established IT policies and procedures. Monitors and tunes the system to achieve optimum performance levels. Ensures workstation/server data integrity by evaluating, implementing and managing appropriate software and hardware solutions. Ensures data/media recoverability by implementing a schedule of system backups and database archive operations. Develops and maintains a comprehensive operating system hardware and software configuration database/library of all supporting documentation.	3 years	Bachelor's Degree in Computer Science/Information Systems/Engineering or related field. Additional technical training in the areas of system administration and clouds preferred.

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SIN	Labor Category	Description	Minimum Experience	Minimum Education
518210C	Cloud DevOps Engineer	Deploying and configuring services using cloud infrastructure as a service provider. Configuring and managing cloud servers to serve a dynamic website. Debugging cluster-based computing architectures. Using scripting or basic programming skills to solve problems. Installation and management of open source monitoring tools. Configuration management tools. Architecture for continuous integration, deployment, and monitoring. Containerization technologies. Design, Develop, Build & Deploy applications to streamline the deployment and operational reliability in cloud environments. Compare, evaluate, and implement new features and technologies, and integrated them with the current environment. Work with other technical professionals to develop standards and implement best practice. Serve as a technical resource for new applications designs. Document system and application design, configuration and maintain and update documentation as needed.	7 years	Bachelor's Degree
518210C	Cloud DevOps Practitioner	Implements cloud configuration management, deployments in the cloud and follows identification, change control, configuration status accounting and audits. Regulates the change process so that only approved and validated changes are incorporated into product documents and related software. Design, Develop, Build & Deploy applications to streamline the deployment and operational reliability in cloud environments. Compare, evaluate, and implement new features and technologies, and integrated them with the current environment. Work with other technical professionals to develop standards and implement best practice. Serve as a technical resource for new applications designs. Document system and application design, configuration and maintain and update documentation as needed.	5 years	Bachelor's Degree

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**LABOR CATEGORY RATES FOR INFORMATION TECHNOLOGY PROFESSIONAL SERVICES
(SPECIAL ITEM NUMBER 54151S)**

All rates below include IFF.

Labor Category	04/02/2020 - 04/01/2021	04/02/2021- 04/01/2022	04/02/2022- 04/01/2023	04/02/2023- 04/01/2024	04/02/2024- 04/01/2025
Principal	$296.65	$303.18	$309.85	$316.67	$323.64
Program Manager	$170.49	$174.24	$178.07	$181.99	$185.99
Project Manager III	$169.83	$173.57	$177.39	$181.29	$185.28
Project Manager II	$145.82	$149.03	$152.31	$155.66	$159.08
Project Manager I	$123.78	$126.50	$129.28	$132.12	$135.03
Technical Architect II	$177.60	$181.51	$185.50	$189.58	$193.75
Technical Architect I	$119.65	$122.28	$124.97	$127.72	$130.53
Software Developer III	$137.28	$140.30	$143.39	$146.54	$149.76
Software Developer II	$121.39	$124.06	$126.79	$129.58	$132.43
Software Developer I	$83.94	$85.79	$87.68	$89.61	$91.58
Systems Engineer III	$163.41	$167.01	$170.68	$174.43	$178.27
Systems Engineer II	$141.83	$144.95	$148.14	$151.40	$154.73
Systems Engineer I	$115.44	$117.98	$120.58	$123.23	$125.94
Product Owner / Business Systems Analyst III	$146.63	$149.86	$153.16	$156.53	$159.97
Product Owner / Business Systems Analyst II	$113.67	$116.17	$118.73	$121.34	$124.01
Product Owner / Business Systems Analyst I	$89.94	$91.92	$93.94	$96.01	$98.12
Subject Matter Expert II	$211.54	$216.19	$220.95	$225.81	$230.78
Subject Matter Expert I	$152.15	$155.50	$158.92	$162.42	$165.99
Information Assurance Specialist II	$141.23	$144.34	$147.52	$150.77	$154.09
Information Assurance Specialist I	$94.42	$96.50	$98.62	$100.79	$103.01
Quality Assurance Specialist II	$104.86	$107.17	$109.53	$111.94	$114.40
Quality Assurance Specialist I	$98.95	$101.13	$103.35	$105.62	$107.94
DBA III	$175.94	$179.81	$183.77	$187.81	$191.94
DBA II	$118.44	$121.05	$123.71	$126.43	$129.21
DBA I	$65.32	$66.76	$68.23	$69.73	$71.26
Support Analyst V	$142.53	$145.67	$148.87	$152.15	$155.50
Support Analyst IV	$99.81	$102.01	$104.25	$106.54	$108.88
Support Analyst III	$79.32	$81.07	$82.85	$84.67	$86.53
Support Analyst II	$63.06	$64.45	$65.87	$67.32	$68.80
Support Analyst I	$45.00	$45.99	$47.00	$48.03	$49.09
System Administrator III	$165.59	$169.23	$172.95	$176.75	$180.64
System Administrator II	$125.19	$127.94	$130.75	$133.63	$136.57
System Administrator I	$77.23	$78.93	$80.67	$82.44	$84.25
Test Engineer IV	$128.60	$131.43	$134.32	$137.28	$140.30
Test Engineer III	$119.89	$122.53	$125.23	$127.99	$130.81
Test Engineer II	$81.99	$83.79	$85.63	$87.51	$89.44
Test Engineer I	$75.77	$77.44	$79.14	$80.88	$82.66
DevOps Engineer	$109.82	$112.24	$114.71	$117.23	$119.81
DevOps Practitioner	$85.92	$87.81	$89.74	$91.71	$93.73

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Labor Category	04/02/2020 - 04/01/2021	04/02/2021- 04/01/2022	04/02/2022- 04/01/2023	04/02/2023- 04/01/2024	04/02/2024- 04/01/2025
Technical Writer II	$137.17	$140.19	$143.27	$146.42	$149.64
Technical Writer I	$70.29	$71.84	$73.42	$75.04	$76.69
Graphics Specialist	$41.25	$42.16	$43.09	$44.04	$45.01
Scrum Master	$107.21	$109.57	$111.98	$114.44	$116.96
Trainer	$91.76	$93.78	$95.84	$97.95	$100.10
Help Desk Specialist	$71.24	$72.81	$74.41	$76.05	$77.72
Agile Coach	$144.86	$148.05	$151.31	$154.64	$158.04

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**LABOR CATEGORY RATES FOR HEALTH INFORMATION TECHNOLOGY SERVICES
(SPECIAL ITEM NUMBER 54151HEAL)**

All rates below include IFF.

Labor Category	04/02/2020 - 04/01/2021	04/02/2021- 04/01/2022	04/02/2022- 04/01/2023	04/02/2023- 04/01/2024	04/02/2024- 04/01/2025
Health IT Project Manager III	$169.83	$173.57	$177.39	$181.29	$185.28
Health IT Project Manager II	$145.82	$149.03	$152.31	$155.66	$159.08
Health IT Project Manager I	$123.78	$126.50	$129.28	$132.12	$135.03
Health IT Technical Architect II	$177.60	$181.51	$185.50	$189.58	$193.75
Health IT Technical Architect I	$119.65	$122.28	$124.97	$127.72	$130.53
Health IT Software Developer III	$137.28	$140.30	$143.39	$146.54	$149.76
Health IT Software Developer II	$121.39	$124.06	$126.79	$129.58	$132.43
Health IT Software Developer I	$83.94	$85.79	$87.68	$89.61	$91.58
Health IT Systems Engineer III	$163.41	$167.01	$170.68	$174.43	$178.27
Health IT Systems Engineer II	$141.83	$144.95	$148.14	$151.40	$154.73
Health IT Systems Engineer I	$115.44	$117.98	$120.58	$123.23	$125.94
Health IT Product Owner / Business Systems Analyst III	$146.63	$149.86	$153.16	$156.53	$159.97
Health IT Product Owner / Business Systems Analyst II	$113.67	$116.17	$118.73	$121.34	$124.01
Health IT Product Owner / Business Systems Analyst I	$89.94	$91.92	$93.94	$96.01	$98.12
Health IT Subject Matter Expert II	$211.54	$216.19	$220.95	$225.81	$230.78
Health IT Subject Matter Expert I	$152.15	$155.50	$158.92	$162.42	$165.99
Health IT Information Assurance Specialist II	$141.23	$144.34	$147.52	$150.77	$154.09
Health IT Information Assurance Specialist I	$94.42	$96.50	$98.62	$100.79	$103.01
Health IT Quality Assurance Specialist II	$104.86	$107.17	$109.53	$111.94	$114.40
Health IT Quality Assurance Specialist I	$98.95	$101.13	$103.35	$105.62	$107.94
Health IT DBA III	$175.94	$179.81	$183.77	$187.81	$191.94
Health IT DBA II	$118.44	$121.05	$123.71	$126.43	$129.21
Health IT DBA I	$65.32	$66.76	$68.23	$69.73	$71.26
Health IT Support Analyst V	$142.53	$145.67	$148.87	$152.15	$155.50
Health IT Support Analyst IV	$99.81	$102.01	$104.25	$106.54	$108.88
Health IT Support Analyst III	$79.32	$81.07	$82.85	$84.67	$86.53
Health IT Support Analyst II	$63.06	$64.45	$65.87	$67.32	$68.80
Health IT Support Analyst I	$45.00	$45.99	$47.00	$48.03	$49.09
Health IT System Administrator III	$165.59	$169.23	$172.95	$176.75	$180.64
Health IT System Administrator II	$125.19	$127.94	$130.75	$133.63	$136.57
Health IT System Administrator I	$77.23	$78.93	$80.67	$82.44	$84.25
Health IT Test Engineer IV	$128.60	$131.43	$134.32	$137.28	$140.30
Health IT Test Engineer III	$119.89	$122.53	$125.23	$127.99	$130.81

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Labor Category	04/02/2020 - 04/01/2021	04/02/2021- 04/01/2022	04/02/2022- 04/01/2023	04/02/2023- 04/01/2024	04/02/2024- 04/01/2025
Health IT Test Engineer II	$81.99	$83.79	$85.63	$87.51	$89.44
Health IT Test Engineer I	$75.77	$77.44	$79.14	$80.88	$82.66
Health IT DevOps Engineer	$109.82	$112.24	$114.71	$117.23	$119.81
Health IT DevOps Practitioner	$85.92	$87.81	$89.74	$91.71	$93.73
Health IT Scrum Master	$107.21	$109.57	$111.98	$114.44	$116.96
Health IT Help Desk Specialist	$71.24	$72.81	$74.41	$76.05	$77.72
Health IT Agile Coach	$144.86	$148.05	$151.31	$154.64	$158.04

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LABOR CATEGORY RATES FOR CLOUD RELATED IT PROFESSIONAL SERVICES
(SPECIAL ITEM NUMBER 518210C)

All rates below include IFF.

Labor Category	04/02/2020 - 04/01/2021	04/02/2021- 04/01/2022	04/02/2022- 04/01/2023	04/02/2023- 04/01/2024	04/02/2024- 04/01/2025
Cloud Project Manager III	$169.83	$173.57	$177.39	$181.29	$185.28
Cloud Project Manager II	$145.82	$149.03	$152.31	$155.66	$159.08
Cloud Project Manager I	$123.78	$126.50	$129.28	$132.12	$135.03
Cloud Technical Architect II	$177.60	$181.51	$185.50	$189.58	$193.75
Cloud Technical Architect I	$119.65	$122.28	$124.97	$127.72	$130.53
Cloud Software Developer III	$137.28	$140.30	$143.39	$146.54	$149.76
Cloud Software Developer II	$121.39	$124.06	$126.79	$129.58	$132.43
Cloud Software Developer I	$83.94	$85.79	$87.68	$89.61	$91.58
Cloud Systems Engineer III	$163.41	$167.01	$170.68	$174.43	$178.27
Cloud Systems Engineer II	$141.83	$144.95	$148.14	$151.40	$154.73
Cloud Systems Engineer I	$115.44	$117.98	$120.58	$123.23	$125.94
Cloud DBA III	$175.94	$179.81	$183.77	$187.81	$191.94
Cloud DBA II	$118.44	$121.05	$123.71	$126.43	$129.21
Cloud DBA I	$65.32	$66.76	$68.23	$69.73	$71.26
Cloud System Administrator III	$165.59	$169.23	$172.95	$176.75	$180.64
Cloud System Administrator II	$125.19	$127.94	$130.75	$133.63	$136.57
Cloud System Administrator I	$77.23	$78.93	$80.67	$82.44	$84.25
Cloud DevOps Engineer	$109.82	$112.24	$114.71	$117.23	$119.81
Cloud DevOps Practitioner	$85.92	$87.81	$89.74	$91.71	$93.73

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All rates below include IFF.

Product Name	Product Number	Product Description	Unit	04/02/2020 - 04/01/2025
EC2 Instance IaaS	L1	T3a.2xlarge with Linux Operating System, with 8 vCPUs and Memory of 32GB.	Per instance per hour	$ 0.2922
EC2 Instance IaaS	W1	T2.2xlarge with Windows Operating System, with 8 vCPU and Memory of 32GB.	Per instance per hour	$ 0.4232
EC2 Instance IaaS	L2	M5a.4x large with Linux Operating System, with 16 vCPU and Memory of 64GB.	Per instance per hour	$ 0.6851
EC2 Instance IaaS	W2	M5a.4x large with Windows Operating System, with 16 vCPU and Memory of 64GB.	Per instance per hour	$ 1.4005
Oracle RDS service PaaS	DB-O	db.r5.x large with 400 GB of db storage running Oracle Database with Multi-AZ configuration	Per instance per hour	$ 2.0252
Firewall IaaS	FW-PO	Palo Alto Application based firewall running on independent instance.	Per instance per hour	$ 1.8438
S3 Storage PaaS	S3-500	S3 standard storage up to 500 GB of space.	Per instance per hour	$ 0.0705
S3 Storage PaaS	S3-500-IA	S3 Infrequent Access storage up to 500 GB of space.	Per instance per hour	$ 0.0403
S3 Storage PaaS	S3-1T-G	S3 Glacier Archive storage up to 1TB of space.	Per instance per hour	$ 0.0302
Support for AWS services	AWS-S	Support for setup of CTIS GSA AWS services.	Per hour	$ 0.4836

End User License Agreement for Cloud Services can be found at: https://www.ctisinc.com.

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