



CRAY®

Cray Support Services Customer Edition

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1. Introduction

1.1 Scope of Document

This document serves as an introduction and guide to Cray customer support services. Cray supports customers with a variety of services including hardware maintenance, software support, training, and additional services, all of which may be purchased by a customer. It outlines the policies, processes, and procedures to ensure a successful customer experience. It is not intended to replace any legal agreements between Cray and the customer.

1.2 Cray Customer Service

Cray Customer Service is committed to helping customers achieve and maintain the level of performance required for demanding workloads. Cray service teams are highly skilled and experienced in the fields of high-performance computing (HPC), storage, and analytics. Cray support engineers, field engineers, and field analysts undergo a full range of product, technology, and support system training that qualifies them to deliver services that include installation, troubleshooting, system maintenance, system administration, and system optimization.

Cray support and field engineers are closely aligned with Cray hardware and software product groups, aiding in system troubleshooting and issue resolution.

Cray support is available for purchase in support of all product lines:

- CS series cluster supercomputer
- XC series supercomputer
- Urika-GX agile analytics platform
- Sonexion storage system
- ClusterStor storage system

2. Hardware Maintenance Service Levels

This section describes Cray hardware maintenance service levels and the Cray warranty.

2.1 Warranty

Cray offers a 13-month warranty on all Cray-branded hardware components that begins at the time of shipment and provides replacement or repair of failed hardware at Cray's discretion. This warranty provides only the most basic customer hardware support and is designed for highly skilled customers that intend to maintain their own systems. This Cray limited warranty does not provide any support or warranty obligation for software, even if sold, delivered, or installed by Cray.

Warranty customers have access to CrayPort, the online customer support portal that includes knowledge articles and Cray documentation to assist with troubleshooting and repair. Requests for warranty support may be opened in CrayPort and will receive a response during local business hours, but Cray makes no guarantee or commitment as to any specific response time.

If Cray subsequently determines that a Cray hardware component has suffered a complete failure, Cray will ship a replacement part with the expectation that customer will return the failed part to Cray within 15 days of receipt. If the defective part is not returned after 15 business days from the time the replacement part is delivered to the customer, Cray may invoice the customer for the replacement part and the customer is responsible for immediate payment for the non-returned part. Cray will pick, pack and ship the replacement component using reasonable commercial effort; however, Cray makes no guarantee or commitment as to any specific timeframe. Shipment of the replacement component will be at Cray expense using means of transport selected by Cray. The customer will return the part to Cray using the same packaging at customer expense. Installation of the repaired or replaced component is the customer's responsibility. Assistance is available from Cray at time and materials rates.

Cray's obligation to replace the failed Cray hardware components ends upon the expiration of the term of this Cray limited warranty.

2.2 Hardware Maintenance Service Levels

Customers may choose from three hardware service levels, depending on their support requirements, as shown in the following table. In certain circumstances, customers may purchase a hardware maintenance service level without software support, such as when software is discontinued and updates are no longer available. See section 3 for a description of software support.

Table 1. Hardware Support Levels

Feature	Hardware Package		
	Cray Basic	Cray Pro Assist	Cray Complete Care
24x7 Call Logging – CrayPort / Telephone	Yes	Yes	Yes
Maintenance Coverage Window	9x5	9x5, 16x5, 24x7	9x5, 16x5, 24x7
Onsite Response Time	N/A	NBD, 4 hr ¹	NBD, 4 hr ² , 2 hr, 1 hr ³
Customer / Cray Repair	Customer ⁴	Cray	Cray

¹ Onsite response time is post-issue identification

² Minimum price applies for 4 hr or better response

- 3 Triage is undertaken onsite by onsite Cray team
- 4 Customers replace CRUs, Cray replaces FRUs. CRU replacement by Cray can be purchased at T&M rates.

2.2.1 Hardware Maintenance Service Level Features

24x7 Call Logging – CrayPort/Telephone

Customers can log issues 24 hours a day, seven days a week. Customers may log issues via the CrayPort customer portal (described later in this document) or by telephone. It is recommended that critical issues be logged by telephone. Customers must enter all relevant information and capture any critical information required to help diagnose an issue. Customers will receive an acknowledgement that their case has been logged, but follow-up by Cray Level 1 support and work by Cray to solve any reported cases happens only during the coverage window, local time.

Table 2. Cray Support Telephone Numbers

Country	Telephone Number
United States	1-888-279-2729
United Kingdom	08003289182
Germany	08007243455
France	0805542069
Italy	0287103725
Switzerland	0800002218
Poland	800080387
Norway	80054379
Finland	80251562
Denmark	80251563
Sweden	0201408146
Iceland	8008397
South Africa	0800333442
Saudi Arabia (telco 1)	8008441510
Saudi Arabia (telco 2)	8008500193
Qatar	TBD
Japan	0120977789
Australia	1800316687
South Korea	0800105712

The numbers listed above can be dialed / accessed only by an in-country caller.

Maintenance Coverage Window

This is the time period when support is provided. Customers may contact Cray 24x7 and will receive an acknowledgement that their case has been logged. Follow-up by Cray support and work by Cray to solve any reported cases takes place during the coverage window, local time.

Onsite Response Time

This is the time it takes the Cray technical representative to arrive on site to work the case after it has been determined by Cray that an onsite presence is required. For Cray Pro Assist customers with NBD or 4-hour response, this is the response time after issue identification. For Cray Complete Care customers, this is the time period between the time the problem is reported and the time when a Cray technical representative arrives on site to triage the issue.

Customer/Cray Repair

This indicates who is responsible for performing hardware repairs to the Cray system. Depending on the service level, either the customer or a Cray technical representative is responsible for performing hardware repairs. Customers may purchase a spare parts inventory to expedite their time to repair.

2.2.2 Hardware Maintenance Service Level Packages

Cray Basic

The Cray Basic level of support is tailored to customers who have in-house knowledge and skills and prefer to maintain their systems themselves. For self-assistance, customers have access to the CrayPort customer portal, where they can log calls and access knowledge articles, videos, documentation, and other resources (see section later in this document). Case logging is also available by telephone 24x7. The maintenance coverage window for Cray Basic is 9x5 local business hours.

When hardware fails, customers replace customer replaceable units (CRUs) themselves, and a Cray technical representative performs the field replaceable unit (FRU) procedures. Cray defines which components are customer replaceable. Instructional videos by component are available in Crayport to assist with this effort. If a customer chooses to not perform a CRU procedure, a Cray technical representative will perform the procedure using reasonable commercial effort and the customer will be charged on a time and materials basis.

Cray Pro Assist

Cray Pro Assist is for customers who desire a higher level of engagement with Cray. This service level offers customers access to the CrayPort customer portal (see section later in this document). Case logging is available 24x7 by telephone or via CrayPort. There is a choice of three maintenance coverage windows: 9x5, 16x5, or 24x7. During this time, Cray will work remotely with the customer to identify the issue. If Cray determines that an onsite response is required, Cray will respond either the next business day (NBD) or within 4 hours of issue identification. With Cray Pro Assist, Cray performs all replacement procedures. To expedite a repair, customers have the option to perform their own CRU procedures.

Customers with Pro Assist are assigned a customer care manager who is familiar with their environment and able to assist with issues and escalations. This person provides an annual report and review of open cases and upcoming activities like larger maintenance upgrades, updates, system expansions, etc.

Cray Complete Care

Cray Complete Care is Cray's highest level of support, with Cray presence onsite. This service level offers customers access to the CrayPort customer portal (see section later in this document). Case logging is available 24x7 by telephone or via CrayPort. There is a choice of three maintenance coverage windows: 9x5, 16x5, or 24x7.

Onsite response time options are NBD, 4 hours, 2 hours, or 1 hour. When an issue is reported, a Cray technical representative will arrive onsite within the response time window to identify and begin resolving the issue. With Cray Complete Care, all repairs are conducted by a Cray technical representative. Customers who have high availability requirements or require personnel with security clearance require this level of service.

The Cray Support Snapshot Analyzer (SSA) collects, analyzes, and reports support information for Cray XC, Sonexion and ClusterStor systems. Its functionality is described in more detail in section 6.4. While all Cray Support customers have access to SSA and the ability to collect system data to monitor the

health of their systems, only Complete Care customers are monitored by Cray and receive proactive alerts.

Customers with Cray Complete Care are assigned a customer care manager who is familiar with their environment and able to assist with issues and escalations. This person provides quarterly reports and reviews of open Issues and upcoming activities like larger maintenance upgrades, updates, system expansions etc.

Table 3. Additional Service Level Features

Feature	Warranty	Cray Basic	Cray Pro Assist	Cray Complete Care
Software Updates¹				
Access	Yes	Yes	Yes	Yes
Remote installation assistance ²	No	No	Yes	Yes
Onsite installation	No	No	No	Yes
Proactive Alert Monitoring with SSA (System Snapshot Analyzer)³	No	No	No	Yes
Customer Care Manager	No	No	Yes	Yes
Annual Account Review	No	No	Yes	Yes
Quarterly Account Review	No	No	No	Yes

¹ Must have software support contract (see section 3)

² Cray may remotely assist a customer-led install while the customer remains actively engaged. Must have Cray SRS-Bomgar installed.

³ Currently available for XC, CS-Storm and ClusterStor systems

3. Software Support

This section describes the software support services provided by Cray.

3.1 Software Support Definitions

Software support is a remote service provided to a customer when designated Cray-supplied products are not functioning as expected and assistance is required to resolve or mitigate an issue. Software support is available only to customers who have purchased hardware and software maintenance contracts. The coverage hours for software support align with the coverage hours contracted for hardware maintenance.

Cray develops and builds many of the software components within its products. Products may also include software packages provided by third-party vendors. The definitions below identify the specific benefits received when purchasing software support from Cray.

3.2 Software Category Definitions

Cray-Developed Software

Cray-developed software includes any software package developed and sold by Cray. This may include open-source and third-party software and any derivatives thereof that Cray may license for use on Cray systems.

Third-Party Software

Third-party software includes software components and/or packages developed by an outside supplier. These software offerings are available through Cray via an OEM or reseller agreement with each vendor. Depending on the software product offering purchased, Cray may or may not provide support for these third-party software packages. Cray will direct customers to a third-party supplier for support-related issues for software products that Cray does not support.

3.3 Software Support Features

This section describes the support features of Cray-developed software and third-party software.

3.3.1 Cray Developed Software

Support for Cray developed software includes the following features:

- Access to self-help resources on CrayPort
 - Ability to open and submit a support case
 - Access to Cray knowledge articles
 - Ability to download:
 - Major and minor versions of software
 - Updates
 - Patches

Customers are responsible for the installation of all software changes with Cray Basic and Cray Pro Assist levels. With Cray Pro Assist, customers can receive remote advice and assistance with the installation. Cray Complete Care customers may have a Cray onsite representative assist in software installation.

- Notification of key operational items through the field notice (FN) process
- Assistance from Cray Service to resolve issues within the service level coverage window for the hardware contract; assistance includes:
 - Triage to investigate/analyze issues
 - Confirmation whether the issue is hardware or software
 - Confirmation if the issue is related to a Cray-supported product or a third-party-supported product. If the issue is with a Cray-supported product, Cray Service may provide configuration recommendations, possible work arounds, directions to install a later version or patch, and/or submit a bug to get the issue fixed. For Cray products, Cray reserves the right to determine whether and how an issue will be resolved.

3.3.2 Third-Party Software

Support for third-party software includes the following features:

- Access to self-help resources on CrayPort
- Ability to open and submit a support case
- Access to Cray knowledge articles
- Ability to download:
 - Major and minor versions of software
 - Updates
 - Patches
 - These may be supplied via CrayPort or from third party supplier website.

Customers are responsible for the installation of all software changes with Cray Basic and Cray Pro Assist levels. With Pro Assist, customers can receive remote advice and assistance with the installation. Complete Care customers are entitled to have a Cray representative install software for them.

- Notification of key operational items through the field notice (FN) process
- Assistance from Cray Service to resolve an issue; assistance includes:
 - Triage to investigate/analyze issues
 - Confirm whether the issue is hardware or software
 - Confirmation if the issue is related to Cray-supported product or a third-party-supported product. If the issue is with a third-party product that is supported by Cray, Cray service may provide configuration recommendations, possible workarounds, location for directions to install a later version or patch, and/or may submit a bug report with the supplier to get the issue resolved.

3.3.3 Customized Software

Support is provided for products sold by Cray and with a valid Cray service agreement. Support for third-party products without a related Cray service agreement requires the user to contact the third-party vendor for assistance. If customers modify Cray-delivered software without authorization from Cray, any issues resulting from the unapproved modifications fall outside of the standard support service agreement. Cray may require the user to remove custom modifications to confirm that a modification is not the source of the issue. Customers may request that Cray Service assist in making modifications to a product. Cray will do its best to implement the request via a billable statement of work (SOW).

4. Cray Training

Training courses are taught by Cray system experts and combine lectures with hands-on labs to enhance understanding and retention. The courses cover all aspects of using and maintaining a Cray system, from system administration to application development, porting, and optimization. A full listing of the standard Cray training courses, along with their descriptions, can be found at <http://www.cray.com/support/training/schedule>.

Subject to separate ordering arrangement, classes are scheduled on regular cycles at the Cray training facilities and can be scheduled for onsite delivery. Cray also offers customized training courses and can provide quotes for these courses based on the customer's needs.

To expedite a repair, customers have the option to perform their own CRU procedures. For supercomputer products, CRU training is required.

5. Additional Services

Cray offers additional services to ensure the success of customers' business. Cray has a deep staff with many years of HPC experience to help solve the most complex business issues. Below is a list of some common services. Please contact your account representative for additional information and pricing.

- Site planning and readiness
- Customer environment assessments
- Service account management
- System administration
- System monitoring
- Performance tuning
- Installation of software updates/upgrades
- Custom software support

6. Self-Support Tools

Cray provides several resources to assist customers in maintaining their systems. These resources may be accessed through the CrayPort user portal.

The CrayPort user portal enables registered subscribers to view published information that includes news, knowledge articles, instructional videos, technical tips, as well as hardware and software service documents. CrayPort users may subscribe to field notices and enable bug notifications. CrayPort also includes service announcements, issue tracking, and case management functionality. Users can search for and view Cray product documentation and download system software including major releases, revisions, updates, and individual fixes.

To register and for additional information, please visit <https://portal.cray.com/Support>.

6.1 Cray Documentation Access

Cray provides a full suite of documentation for all software and hardware products delivered with Cray systems. System documentation is kept current and is made available to customers with successive releases of system software. Cray provides customers with a searchable online documentation set in an industry standard format (PDF or HTML). Reference information in the form of manual pages is provided with Cray software release packages using the `man (1)` command. The documentation is written in the English language.

Documentation is also available on Cray's public website: <https://pubs.cray.com/>.

6.2 Knowledge Database

CrayPort's Knowledge base is a collection of "how-to" guides, user tips, problem resolution instruction, administrative policies/procedures, articles, videos and other information that is helpful in managing and supporting Cray systems. Look up a question, find documentation, or get a refresher on CRU or FRU procedures.

CrayPort users can access the Knowledge base in one of three ways:

- Use the global search bar on the CrayPort Home Page, or from any search form within the portal, to search key words and phrases used within Knowledge.
- To see a list of the most recently published Knowledge articles, select the "Latest Knowledge" menu option in the lower section of the CrayPort home page.
- To access a list of Knowledge articles related to specific system types, browse to the "Manage My Systems" pages and select "Knowledge" from the menu options immediately following the systems list.

6.3 Instructional Videos

A search on "Video" in CrayPort yields a list of videos that feature instructions on routine maintenance of Cray systems, CRU replacement procedures, and other topics. Customers can search for a specific CRU or spare part by entering the part number in the search box.

6.4 Field Notices (FNs)

Field notices (FNs) are important communications specific to the products a customer owns. These notifications include information updates, product updates, security updates, critical notifications (e.g., product end of life), breaking news, and announcements.

Customers with an active service contract receive email for FN that are related to their Cray products. Customers also have an option to customize their FN subscriptions on the CrayPort customer portal to receive only FN that are considered appropriate for their role.

6.5 Case Creation and Management

Support for both hardware and software is initiated after the customer opens a case in CrayPort. Customers may also log an incident outside of their local business hours by calling the Cray 24x7 global customer service hotline.

After a case is created by the customer, it is assigned to a Cray Level 1 support engineer for problem evaluation and management. Cray Level 1 support engineers respond to case initiation to identify and document an issue. The Level 1 support engineer will ask the customer to provide information and data related to the issue such as log data, system configuration, configuration history, firmware and software levels, and related information needed to diagnose the issue. Upon analysis, Cray Level 1 will provide a recommendation to mitigate or resolve the issue or may escalate your request within our service and support structure. The next step or resolution may be in the form of a part replacement or configuration change to the product or your environment. In addition, Cray support may require a clarification of how you are using the product, a recommendation to upgrade to a later software level, or a workaround. If the Cray Level 1 support engineer is not able to recreate the issue that is the subject of the support request, the case may be closed without further action by Cray.

If Cray Level 1 requires assistance to resolve the issue, it will be escalated to either Cray Level 2 or the appropriate third-party supplier for assistance.

If the service required is outside a valid support service agreement, Cray Customer Service may perform the applicable work under a time and materials (T&M) quote. Work will commence after the T&M quote is approved and payment terms are in place.

The Cray Complete Care offering includes named onsite field support engineers to analyze failure information and perform repairs and maintenance on-site. Level 1 engineers may also manage available onsite spares inventory, monitor operation of the Cray-provided cooling system, analyze hardware component failure trends, and report and escalate issues to Cray Level 2 or the appropriate third-party supplier for assistance as required.

6.6 Software Downloads

Customer-entitled software releases and updates are available via CrayPort, where customers can browse and search for software packages and related information.

7. Additional Support Tools

7.1 24x7 Telephone Support

Cray's Global Technical Services (GTS) team offers global 24x7 technical response telephone support. Cray customers can dial a local telephone number in 19 countries and automatically be routed to a Level 1 Cray engineer. Currently, all support is provided in English.

The responding Cray representative accepts calls to confirm existing details on an open CrayPort case or escalate critical technical situations as appropriate. Critical cases are responded to according to the escalation procedures described in the previous section.

Open cases are worked according to the customer SLA and coverage window, local time.

7.2 System Snapshot Analyzer (SSA)

The Cray Support Snapshot Analyzer (SSA) collects, analyzes, and reports support information for many Cray compute and storage systems*. SSA can optionally (and ideally) securely upload this support data to the Cray support organization where it can be analyzed using a rich set of analytical facilities.

SSA offers the following advantages:

- Provides opportunities for proactive versus reactive customer service and support
- Reduces time to resolution for support issues
- Provides access to system facts, triage data, and configuration information
- Provides methods to enumerate differences between a system at two points in time (based on reported data)

The SSA software architecture has been designed to allow systems administration staff to selectively disable any collection tasks based on site policy and have full control of the support data upload capability. Systems administration staff may also incorporate custom collection tasks into SSA to support monitoring emergent system issues or conditions.

SSA health checks leverage information obtained via the data collection process to provide a pass, fail, or unknown status to key health indicators on a system.

Details on Cray's SSA, the SSA client license agreement, and a security whitepaper can be found at Cray's support website: [Cray SSA](#).

See CrayPort documentation and knowledge articles for more information on SSA.

**Currently available for XC, CS-Storm and ClusterStor systems*

7.3 Cray Secure Remote Support (SRS) via Bomgar™

Cray's SRS-Bomgar tool is a worldwide standard method for providing remote access and support to customers while still allowing customers full session control. Capabilities range from a customer having full control of a remote screen-sharing session to the Cray team having the ability to log in securely as needed to resolve issues and perform administrative functions.

SRS-Bomgar is based on Bomgar Secure Remote Support (SRS) solution. SRS-Bomgar has a comprehensive set of security features and is based on Federal Information Processing Standard (FIPS) 140-2 technology.

For details on Cray's SRS-Bomgar tool, the Remote Jump Client license agreement, and security whitepapers can be found at Cray's support website: [Cray SRS Secure Remote Support](#).

8. Escalation Procedures

The Cray escalation process is based upon the case priority levels, which are shown in the following table.

Table 4. CrayPort Case Priority Levels

Case Priority	Definitions
Critical	System is down and inoperable
	Critical business impact to customer
	Defining statements: - Prevents running normal production - Data integrity impact - Critical security vulnerability - Prevents critical applications from running
	No acceptable workaround is available
	NOTE: As soon as the system is back up when an acceptable workaround or a fix is available, the case may be downgraded to one of the below priorities.
	NOTE: Cray remains engaged in critical issues, based on the customer asset SLA, until a resolution or an acceptable workaround is implemented, provided that the customer site has trained technical resource(s) available to actively assist Cray Service if required. Remote access availability does not reduce this requirement.
Significant	System is significantly impaired
	Significant business impact to customer
	Limits running normal production
	No acceptable workaround is available
	NOTE: Response coverage is based on the customer asset SLA, with ongoing work during regional business hours to provide a resolution or an acceptable workaround, provided that the customer site has trained technical resource(s) available to actively assist Cray Service if required. Remote access availability does not reduce this requirement.
Important	System is minimally impaired
	Minimal business impact to customer
	Nominal impact to running normal production
	Issue with little or no user impact, bypassed easily

Customer responsibilities include:

- Submit technical requests electronically via CrayPort.
- Keep one problem per support request/case.

- Provide a trained technical resource(s) if the SLA does not include onsite Cray personnel, to actively assist Cray Service with timely responses/feedback as we work together to resolve the issue and close the case.

Cray's escalation procedure for critical problems (the system is down and inoperable) as defined above:

- The customer logs a CrayPort support request to Cray at any time. Critical issues can also be initiated by contacting Cray on the 24x7 global technical response telephone line. Technical troubleshooting support and response to reported incidents will take place during the contracted coverage hours with the appropriate Level 1 support person responding within the time frame defined in the SLA.
- After a maximum of four hours following the "start work" time, Level 1 engages with Level 2 support.
- After six more hours, if the case is still critical, the district/regional service manager (DSM/RSM) is notified.
- After two more hours, the account manager and regional service directors are informed.
- If the case is still critical after 24 hours, Cray executive management is informed of the situation.

Notes:

1. All times begin based on the CrayPort case "start work" time.
2. The current Cray case owner takes responsibility for initiating each subsequent level of escalation.
3. Recurrent or intermittent problems that occur with increased frequency may be escalated within the Cray priority schema by one level.

9. Parts Management

9.1 Spare Parts

Cray recognizes the importance of having mission-critical spare parts readily available to rectify an issue to minimize downtime and achieve the contracted service level agreement. Cray determines which spare parts are mission-critical versus non-critical.

For **Cray Basic** level support, Cray will determine which spare parts to stock at Cray's distribution center. The customer may choose to purchase additional spare parts to be placed onsite. Upon request, Cray can provide a recommended list of critical spares to purchase, but is not responsible for the customer's spare parts stocking strategy.

For **Cray Pro Assist** and **Cray Complete Care** levels of support, Cray provides critical spare parts to reduce any downtime associated with failures or maintenance. Critical spare parts may be located either onsite or at professionally managed regional spare part depots that provide rapid transportation of spare parts to customer sites. Customers may elect to supplement the Cray-owned spare parts inventory by purchasing additional spare parts.

Customers with Cray-owned spare parts onsite are entitled to use them solely for products covered under the Cray Pro Assist or Cray Complete Care maintenance agreement. Cray reserves the right, at its own expense, to perform an audit either remotely or onsite to ensure that the on-hand quantity of spare parts agrees with Cray's records and the spares are in good condition and have not been damaged. The customer will provide Cray with reasonable access during normal business hours to conduct such an audit. Customers will reimburse Cray for any loss or damage to spare parts while in the customer's facility or otherwise under the care, custody, or control of the customer or not returned at conclusion of Cray support.

9.2 Return Material Authorization (RMA) Process by Hardware Maintenance Service Level

Warranty Support

Please reference section 2.1 of this document for additional detail on warranty terms.

When a case is reported for a part that is no longer under warranty, the Cray technical representative handling the case will inform the customer accordingly and close the case. If the customer desires, the issue may be forwarded to the appropriate district service manager who will provide the customer with a T&M quote for out-of-warranty repairs.

T&M out-of-warranty repairs are granted at the sole discretion of the district service manager, based on the following criteria:

- All parts required for the repair are available
- Replacement material does not impact service commitments to other warrantied customers

All Service Levels

After the failure is confirmed by the Cray technical representative, a replacement order is processed. A prepaid return label will be included with this shipment. After the replacement part is received by the customer, it is the responsibility of the customer to ship the failed part back. The customer should re-use the packaging material that came with the advance replacement part for ease of return. Once the

part is received, the case is updated, the part number is verified and the case is closed. If the defective part is not returned after 15 business days from the time the replacement part is delivered to the customer, Cray may invoice the customer for the replacement part.

9.3 Consumables

Some parts are classified as consumables and have a limited useful life. An example is SSDs, which are subject to a limited number of writes. While Cray's products will be serviced according to each customer's contracted service agreement, parts that fail as a result of exceeding their maximum usage, recommended environmental conditions, or the specifications of the component will not be replaced via existing service contracts. Customers can request the purchase of an equivalent replacement and professional installation.

10. Customer's Role

Cray views its relationship with customers as a partnership. Cray customers play a key role in maintaining that successful partnership. The section outlines the general role that customers play in the service relationship.

Customers must follow the standard process to submit technical requests, either electronically via CrayPort or by telephone, and to keep one problem per support request/case.

Customers should monitor Cray's field notices (FNs) and install recommended patches to maintain the health of their systems. Field notices contain other valuable information as well. For example, it is Cray's policy to post product end-of-life (EOL) notices via an FN.

Customers should access Cray's knowledge articles to find solutions to common problems prior to opening a CrayPort case.

Warranty and Cray Basic customers are expected to install customer replaceable parts and return failed parts according to the guidelines described in the parts management section of this document.

Customers should understand that software support is limited to the software specified in the SLA and that software support is limited to clarification of Cray documentation, configuration of licensed software, and maintenance at an acceptable revision level. Delays in installing software updates of more than 6 months may result in Cray limiting available support until such software updates are installed.

In the event that a customer does not comply with customer obligations or Cray expectations, then Cray may not be able to effectively provide support services as anticipated.

10.1 Qualified Customer Personnel

Cray Basic and Cray Pro Assist service level customers must provide a qualified technical resource(s) to actively assist Cray Service in the problem resolution process.

The customer's designated trained personnel should follow the support and direction provided by Cray to perform limited onsite diagnosis and physical replacement of predefined system components.

10.2 Equipment and Environment

Customers will ensure that all equipment is installed in a location that meets the environmental conditions specified by Cray. Customers must refrain from moving any Cray-supported products without prior written approval from Cray Customer Service. Cray will provide any special instructions for moving Cray-supported equipment.

10.3 Equipment Access to Cray Customer Service

Customers should ensure that Cray Customer Service has remote access to the product via the current remote support tools and ensure that all problems that require the action of Cray Customer Service are logged in accordance with Cray-specified instructions.

Cray expects customers to limit access to Cray technical information and support software in the customer's possession solely to the customer's employees on an as-needed basis.

10.4 Modifications to the System

Customers should refrain from making any non-standard modification(s) of the configuration of any Cray product without prior authorization from Cray.

10.5 Customer Data

Cray is not responsible for any file corruption, loss of data, information, work or other output that occurs during or in connection with the performance of any support services. Customers are responsible for maintaining appropriate backups to restore any customer or other data that may be lost or corrupted.

11. Renewals

Cray provides a renewal quote within 60-90 days of the impending maintenance renewal expiration date. Renewal quotes are valid until the expiration date indicated on the quote. The effective start date of the maintenance renewal is the day after the previous maintenance expiration date. For example:

Current maintenance agreement ends May 31, 2019, the effective start date for the renewal will be June 1, 2019.

Cray must receive the customer's PO, Amendment, or Modification within 30 days after expiration of current maintenance contract. If not received within this timeframe, a reinstatement fee will be applied to the pricing and a new quote will be provided. A renewal delay beyond 30 days may require a system check to verify the operability of the system. The system check would be billed to the customer at Time and Materials (T&M) rates. Cray reserves the right to cancel the maintenance agreement if the system does not pass recertification.

Some software products managed by subscription license keys may discontinue working and software downloads may become unavailable if there is a delay in finalizing the renewal beyond the maintenance expiration date. For third-party software products, please allow time for suppliers to process new license keys after receipt of your order by Cray.

Cray strives to continually invest in and improve service to customers. Renewing your contract will ensure continued access to Cray software updates and support. Renewal pricing is based on your previous service contract and reflects Cray's ongoing investment in your success. Renewal pricing is not listed in the Cray published Price Book as it is based on unique configurations.

12. Glossary

Acknowledgement – Automated response from CrayPort (Cray’s online support portal) to notify a customer that their case has been logged in the system.

Advanced Replacement – A part replacement process. When a replacement part is required, it is shipped at Cray’s expense in advance of the customer return of the failed part. Cray will provide customers with a prepaid return shipping label; parts not returned within 15 days will be billed at current prices. Customers have the option of purchasing spare parts.

Case – Logging and tracking a customer incident requiring support.

CrayPort – Cray’s online customer service portal that allows customers to start a case and interact online with Cray technical support representatives.

Cray Technical Support Representative – An individual who either is a badged employee of Cray Inc. or is a representative of Cray Inc. working for a contracted, third-party service provider.

CRU – Customer replaceable unit. Customers may replace these parts.

FRU – Field replaceable unit. Parts that should be replaced by a Cray Technical Support Representative.

Entitlement – The type of support the customer receives from Cray based upon the contracted agreement between Cray and the customer.

Field Notice (FN) – The means by which Cray communicates important information to customers.

Hardware Maintenance – The performance of preventive or remedial maintenance on hardware in order to prevent or correct a failure due to a hardware fault.

Level 1 – Customer-facing field or centrally located support. May be remote or onsite.

Level 2 – Centrally located expertise behind the customer-facing Level 1 support. Level 2 support is provided by Cray product experts who serve as the remediation contacts for problems not resolved by Level 1 support.

Level 3 – Cray R&D teams, product experts, and/or third-party vendors. Cases are escalated to Level 3 when Level 2 is unable to resolve them.

Maintenance Coverage Window – The time period when support is provided. Customers may contact Cray 24x7 and will receive an acknowledgement that their case has been logged, but follow-up by a Cray technical support representative and work by Cray to solve any reported cases happens only during the coverage window.

Onsite Response – Cray technical support representative arrives on site to work the case.

Return Material Authorization (RMA) – A numbered authorization provided by Cray to permit the customer to return a part for repair or replacement.

SLA – Service level agreement. The collective term for the support services Cray will provide. This includes the coverage hours, response times, customer and Cray responsibilities, and other details of HW and SW support that together define the specific Cray service offering.

Software Support – A remote service provided to a customer when a Cray-supplied software product is not functioning as expected and assistance is needed to resolve or mitigate an issue. Software support is available to customers who have purchased a software maintenance contract.

Spare Parts – Interchangeable parts that are kept in an inventory and used to repair or replace failed units.

Spare Parts Depot – Regional warehouse to hold spare parts to ensure rapid transportation of parts to customer sites.

Secure Remote Support (SRS) – Cray’s SRS-Bomgar tool is our standard method of providing remote access and support to customers.

System Snapshot Analyzer (SSA) – A tool that proactively addresses system health with automated and remote system status checks, or “snapshots.” When failures and issues occur, the snapshots can expedite solution turnaround time.

Third-Party Software – Software components and/or packages developed by an outside supplier.

24x7 Telephone Support – Cray’s 1-800 number that Cray customers can call at any time to open a case.

Warranty – Entitlement plan that Cray will repair or replace any part that is determined to be defective during the first 13 months after purchase.

