IBM High Availability Services for resilient infrastructure

Frequently Asked Questions

**Definition / Terms**

**Q1)** What is High Availability by definition and what is the industry definition?

**A1)** Defining “High Availability” depends on whom you ask. High Availability will be defined somewhat differently by individual customers. Typically, it is the need for a customer’s IT environment to be able to access and manipulate data in the most expedient manner and produce a desired result in support of their business needs.

**Q2)** What is a bounded system?

**A2)** A bounded system is defined as a group of interactive, interrelated components, acting as a whole to deliver an expected result or achieve an expected end. As an example, a bounded system might include all hardware and software elements required to deliver an order-entry function including the server(s) and its options or features, operating system, middleware, applications, external tape and/or hard drive storage, databases, transport devices and software, networking elements, hubs, bridges, routers, carrier, and end-user hardware and software required for input and output. A bounded system can only be part of a customers IT shop as with the example above or it may be their entire IT environment. It is totally at a customers discretion what they want IBM to evaluate in a high availability engagement. Experience has shown that it is usually their most critical application environment and will become the focus and scope of the engagement.

**Q3)** How is a bounded system configured?

**A3)** Configuring the bounded system is a collaborative effort between the customer and the IBM team. The bounded system concept approach to High Availability is that it takes an application view of the environment. It builds upon the user’s application data relationships that make a business system work for a company. It is completely independent of the technology, the size of the system or the size of the environment. A configuration for the bounded system organizes the system into a model that is explainable and managed and sets the base for ongoing availability support of the customer’s business system environment.

**Q4)** Why is the bounded system important?

**A4)** Once defined, it provides a known inventory and allows us to support and manage the environment and set expectations. By clearly defining what IBM Global Services can and cannot support or manage for a customer in unambiguous terms, we provide the basis for managing expectations. We can also clearly define those areas which will be our focus for availability improvement. The customer will have the capacity of understanding the services IBM can provide, and the impact to the success of the business through a specific target availability level.

**Assessment**

**Q5)** What is a High Availability Assessment?

**A5)** A High Availability Assessment is one of the phases of the High Availability Services engagement. It is a consultative engagement that will evaluate a customer’s IT environment with focus on improving availability. The assessment will look at hardware, software, operational processes, systems management disciplines and environmental for an availability evaluation. The deliverables include the results of that evaluation and a set of recommendations focused on resolving a customer’s availability deficiencies or inhibitors.

**Q6)** How is the availability “goal” set by the customer and the assessment team?

**A6)** The availability goal is not set by the assessment team. As part of the deliverables, the assessment is designed to determine a current availability level (CAL). A customer may have an
availability goal in mind and through the assessment and follow-on Solution Development phase, IBM will evaluate this goal and determine a realistic Target Availability Level (TAL).

Q7) What is the customer's commitment for the assessment?
A7) The customer will need to agree to supply resources (a primary interface or contact and technical personnel from the client IT staff), onsite facilities (suitable office space with telephone access, as well as meeting space to conduct interviews, meetings, and review sessions), and access to the customer's information during the assessment phase.

Q8) Do customers understand the cost of downtime for their business, i.e., the cost per hour for downtime of mission-critical applications?
A8) Most customers do not understand the cost for downtime. We have generic industry data on the cost of an hour of downtime that can be used to help you describe the offering value to the customer. Also, customer-specific figures can be developed during the assessment.

Q9) What are “mission-critical” applications?
A9) Mission-critical applications are applications that are one of the keys to the customer's successful operation of their business. This may include sales, marketing, logistics, or manufacturing operations within the plant environment.

A very limited subset of possible mission-critical applications are: customer service applications, such as banking, customer help desk, warranty support center; plant floor operations and control, and enterprise resource planning.

Q10) Who performs the High Availability Services Assessment, and are the training and skills available today?
A10) The High Availability Services Assessment teams will be composed of an integrated team of highly skilled and qualified individuals from the following service disciplines: Infrastructure and Systems Management (I&SM) Services, Networking and Connectivity Services (N&CS), Software Support Services and Technical Support Services. This team will be led by the National Availability Management engagement leader assigned to the project.

Q11) What does the customer receive as a result of the assessment?
A11) Based on observations, research and interviews, IBM's consultant team will document and provide a set of recommendations to help eliminate the deficiencies or key inhibitors that are affecting availability levels.

Q12) Is the current availability of data measured during the assessment?
A12) The customer's current availability level (CAL) will be determined during the assessment engagement if the appropriate data is available. If it is not, the engagement should take a different direction, including recommendations which establish systems management disciplines, such as problem and change management processes, which can capture and create valid data to be used at a later date in determining the CAL. If possible, the assessment engagement should be postponed until enough data is gathered to produce a valid set of assessment recommendations.

Q13) Is the cost of downtime calculated within the assessment for the customer?
A13) Yes. With customer-supplied data, IBM can determine the cost of an hour of downtime for a specific customer’s business environment.

Q14) Are planned outages addressed in our High Availability Services? (Does the 99.99% availability include planned outages?)
A14) Yes, planned outages are analyzed as part of both the assessment and the recommendations with focus on reducing or eliminating them. However, when we measure the “up to 99.99%” availability, we do not include planned outages in the calculation.
Q15) For what clients have we performed High Availability Assessment-like studies? Can you provide details of these studies and the resulting deliverables?
A15) We have performed High Availability Assessments for companies of all sizes. These studies contain customer proprietary data and are not available. However, selected samples (company name removed) are available upon request.

Total Solution

Q16) What is included in the High Availability Services solution?
A16) High Availability Services solutions will vary tremendously from customer to customer. There is no typical scenario as each customer and group within a customer environment will be different.

A High Availability Services solution should include elements that support the correction of deficiencies in the customer’s current IT environment. Elements to be considered include: processor, network, storage and end-user hardware currency, configuration and redundancy issues; software currency, implementation, and configuration issues; and data placement, integrity and recoverability. It should also include assisting the customer in resolving process and operations procedural issues.

As the deficiencies are identified and the process of correcting these issues is started, ongoing operations and support issues should also be addressed. This may include operational automation, education, training, and ongoing hardware and software support. Emphasis should be placed on verifying that availability management disciplines are maintained and are contributing to continuous improvement efforts.

Q17) Do our High Availability Services address data availability end-to-end, i.e., from application to end user?
A17) Yes. IBM will include those elements in the bounded system that can be controlled, supported, and effectively influenced by our actions and the actions of the customer and team members. Components that we cannot control or influence will be outside the bounded system environment. We can provide guidance and assistance in dealing with issues that may be affecting those system elements.

Q17a) Are local area networks (LAN) and wide area network (WAN), telecommunications (TELCO) and applications software included in the bounded system?
A17a) The bounded system may include LANs, end-point WAN devices, in-house TELCO equipment, and core application environments. IBM will not include, within the bounded system, items which are beyond the control of IBM and customer teams, such as off-premise terrestrial or satellite communications facilities or custom application software. IBM can work with the customer to create robust environments that will support the customer’s availability targets, but we cannot be liable for items we cannot control. We can also work with the customer and their TELCO, WAN and applications providers to establish effective redundancy and service level agreements to support the desired business objectives.

Q17b) If not, how are we positioned differently than our competition who are promising High Availability on a platform basis?
A17b) To date, most of our competition is just focused on the physical and logical layers of the server configuration or the availability of the hardware or software elements. IBM, through its long experience with our customers, knows that this does not reflect our customer’s needs or business objectives. Based on the breadth of capabilities and experience IBM has in availability matters, we have structured our offering to support our customers in every way we can. Where we cannot provide the support levels that a customer expects, we will work with that customer and their other suppliers to help enable the required support. Failing that, we need to fully define to the customer those items we can’t provide to them. Most customers will accept these limitations we explain our limitations properly.
Q18) Since IBM Global Services Integrated Technology Services is driving toward maintaining other manufacturers’ IT hardware, what non-IBM platforms will we address in a High Availability solution now?
A18) IBM is not publishing a defined list of supported non-IBM platforms at this time. This list is growing rapidly and dynamically changing with new products being added almost weekly as we add new internal and managed services options to our portfolio. We also have the ability to craft customized arrangements to support our customers’ unique requirements.

Q19) Are there any services IBM requires I have in order to implement High Availability Services?
A19) All High Availability services offerings are comprised of two or more parts. The High Availability Assessment does not have any prerequisite services. However, a valid IBM maintenance contract will be a prerequisite for a High Availability Services package. The minimum contract term for a High Availability Services for resilient infrastructure solution package will be three years.

There is a set of mandatory services that need to be included in the High Availability Services resilient infrastructure solutions package. These mandatory services provide for proactive management of high availability. These mandatory services may include remote monitoring services, automation and remote monitoring tools, also may include Candle Corporation tools, Service Director, IBM Director and eService Agent. The other mandatory services in a solution package include, but are not limited to: IBM Alert Services, problem and change management processes, Onsite Availability Manager, and IBM Advanced Support Services.

Q20) What can help me move from a 99.9% to a 99.99% High Availability level?
A20) As your availability objectives increase, a greater level of focus must be placed on the details that go into the design, operation and maintenance of your systems. This includes not only adding the correct hardware and software to an environment, but the careful, detailed planning of any action that may affect the system. Proactive and preventative system management actions must be designed into the operations of the system and the environment must be ever more tightly controlled, planned and tested.

Other

Q21) What is the difference between fault tolerant vs. fault resilient? How does hardware and software play a role?
A21) Fault tolerant computer systems are specifically designed with fault tolerant attributes such as component redundancy and are more comprehensive and transparent in handling component failures and more expensive than fault resilient systems. Fault tolerant computers are for applications that cannot afford disruptions or a slow down in service level, or where the opportunities for transaction level recovery are limited. They are able to detect and seamlessly transfer system function to a spare component from a failing component without any external intervention or loss of data. Fault resilient computers have some similar elements, but rely on additional hardware and software to enable the appearance of seamlessness to the end user. A failure in a fault resilient system will generally result in some period of service unavailability (seconds to minutes) while the software processing the failure deals with the failure in some preprogrammed fashion.

Q22) How does IBM High Availability Services for resilient infrastructure differ from IBM’s High Availability Services for Business Critical System?
A21) IBM High Availability Services for resilient infrastructure is an enhancement to IBM High Availability Services for Business Critical Systems, and will continue to focus on three key elements of the IT environment: technology, process and organization.
HA for RI exploits IBM’s emerging “autonomic computing” technology attributes for self managing systems, self-configuring, self-healing, self-optimizing and self-protecting. HA for RI will also help reduce or potentially eliminate planned outages, enabling strategies for a continuous operations environment. It can provide an infrastructure that is highly resistant to unplanned disruptions, a secure environment that mitigates risk, transparently adapts to change, scales to upswings and downswings in the market, and capable of rapid recovery should a disruption occur.