

IBM Resiliency Consulting Services Availability Assessment

Identify and mitigate availability risks to maintain business operations



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1. The Service

The need for high availability

Today's businesses need continuous availability for many of their applications and services. The pressure for near-constant availability comes from disparate sources, everywhere from regulatory requirements to consumer and client desire for around-the-clock access to online and mobile applications. Only through high availability services can organizations meet these demands while concurrently seizing the opportunities presented by today's always-on business world.

However, a host of disruptive events threaten IT availability. You know all about the potentially devastating effects of hurricanes, tsunamis, tornadoes, floods, earthquakes and malicious activities. What may come as more of a surprise is that, in IBM's experience with clients around the world, most unplanned outages are **internal and avoidable**. These include outages caused by failed software upgrades, facilities disruptions, equipment failures and even routine programming updates.

What is the IBM availability assessment?

IBM Resiliency Consulting Services — assessment — availability assessment is a service designed to help organizations identify and mitigate availability risks. It uses a methodology-driven approach to assess the quality of the business's IT availability architecture with the goal of improving availability and preventing outages. Three components of IT and business are examined: technology, process management and the organization itself — specifically, its people and their interactions.

IBM employs information obtained from this assessment to provide you with suggestions for corrective actions. You'll also receive recommendations for enhancing system availability to meet specified requirements.

- The ability to maintain business operations through disruptive events
 - The achievement of their resilience objectives
-

As a result of the availability assessment and implementation of IBM recommendations, businesses often achieve:

- A clearer definition of their business resilience and availability requirements
- A deeper understanding of the root causes of availability risks
- The ability to limit the number and severity of disruptive events, attaining a higher level of availability

Uncovering the root cause of recent outages

Has your organization recently suffered a costly outage? If so, you may want to contact IBM for an outage analysis of recent and historical events. We'll work with you to determine the root causes of unplanned outages you specify. We then develop recommendations to help prevent future outages and provide you with implementation roadmaps. This service can be delivered on its own, or as an optional component of the availability assessment.

2. Engagement deployment

An availability assessment generally begins with IBM deploying two teams—a technical team and a process/organization team—to work with your organization’s technical and business divisions to create common definitions of availability and shared availability objectives. The goal is to align IT availability standards with business needs. (See sidebar, *The importance of aligning IT and business definitions of availability.*) Required service availability levels are sorted into tiers of platinum, gold, silver or bronze—according to target business availability expectations for specified services and applications. (See Figure 1.)

PLATINUM Continuous operations model	GOLD Near-continuous operations model	SILVER High availability model	BRONZE Standard availability model
<ul style="list-style-type: none"> Typically assigned to the five or ten percent of applications that drive the most revenue and profit, and whose outage can significantly impact brand reputation Outage has enterprise-wide impact plus significant financial or legal penalties for failure to meet regulatory requirements <p>Requirements</p> <ul style="list-style-type: none"> Minimum availability: 99.999% (Acceptable outage time of 5.3 minutes per year, or six seconds per week) Return to service in less than five minutes (all events) 	<ul style="list-style-type: none"> Enterprise wide impact due to outage—internal and external. Significant revenue impact. Significant customer impact Severe negative impact to brand reputation Subject to significant regulatory/legal penalties for unplanned outages <p>Requirements</p> <ul style="list-style-type: none"> Minimum availability: 99.99% (Acceptable outage of 52.5 minutes per year or 1 minute per week) Return to service in less than five minutes (local) Return to service in less than two hours (data center) 	<ul style="list-style-type: none"> Outages cause widespread line of business impact Negative, but tolerable, customer impact Some impact on brand reputation Moderate penalties for failing to comply with regulatory/legal requirements <p>Requirements</p> <ul style="list-style-type: none"> Minimum availability: 99.9% (Acceptable outage of 8.8 hours per year, or 10.1 minutes per week) Return to service in less than two hours (all events) 	<ul style="list-style-type: none"> Non-critical to revenue Limited internal client impact, customer impact Limited or no impact on brand reputation Minor legal/regulatory penalties <p>Requirements</p> <ul style="list-style-type: none"> Minimum availability: 99.5 percent (Acceptable outage of 1.8 days per year, or 50.4 minutes per week) Return to service in less than eight hours (local) Return to service in less than specified time frame (data center)

Figure 1. This chart lists some of the criteria IBM uses to decide whether to assign a service or application to a platinum, gold, silver or bronze tier. Note that revenue, customer and regulatory/legal considerations are important in tier determination.

Examining IT technology, processes and organization

IBM teams continue their work. Through questionnaires, workshops and interviews with key personnel, the technology team examines system architecture to conduct IT configuration analyses and maintenance analyses, while also studying issues such as systems configuration and setup, database placement and use of automation. Technology components studied include automation monitoring, testing, middleware, databases, operating systems, servers, storage, networks and facilities.

The importance of aligning IT and business definitions of availability

A bank advertises 24x7 internet banking to its customers. The IT division, meanwhile, performs regularly scheduled server maintenance monthly, on Sundays at 3AM local time. This maintenance makes banking information and services unavailable to customers for two hours. In this hypothetical scenario, both arms of the bank—business and IT—believe they are offering continuous availability, because their definitions of continuous availability differ. Such misalignment can needlessly alienate the portion of the bank’s customer base that accesses their accounts early Sunday, or even during business hours in a different time zone, and can cause internal friction between IT and the business units.

The IBM availability assessment helps align IT and business definitions to avoid this type of disconnect. It accomplishes this in part by assigning availability needs to certain resilience tiers agreed upon by both business and IT. (See Figure 1.) To keep business and IT availability definitions in alignment for the long term, IBM often suggests that you hire an on-staff availability manager to coordinate, communicate and monitor availability needs, expectations and goals among all pertinent business divisions.

Concurrently, the process/organization team examines the business's organizational structure and processes and their effects on resiliency and availability. Problem management, change management, test management, recovery management and situation management processes can all be examined, along with other processes that may impact availability. This team also analyzes the structure of the IT support organization: the people,

programs, practices, systems and tools that support the IT architecture; decision-making processes; and information-sharing processes. The IBM team further examines the linkages between IT and business. Implementation procedures and process documentation are also examined.

Identifying availability gaps

The work completed by the two IBM teams helps you identify areas of exposure in

your technology environment, evaluate the effectiveness of your failover capabilities and identify the areas that are potentially exposing your business to risks from planned or lengthy unplanned outages. The disparities between your current availability levels and your desired availability levels and/or technical best practices are illustrated through a gap analysis of your availability architecture. Each component of your availability architecture is assigned a

Domain	Enterprise Assessment	Key Inhibitors
Automation Monitoring	Significant gaps	Limited deployment on distributed platform; limited proactive monitoring; no automatic ticketing of incidents; no historical incident data
Testing	Moderate gaps	Limited ability to test availability (clustering, failover)
Middleware	No gaps	No identified inhibitors
Database	Moderate gaps	Unsupported versions of SQL server; proprietary databases exist; access databases exist
Operating System	No gaps	Unsupported operating systems (NT 4.0) exist in the enterprise
Server	Significant gaps	Wide-spread SPOF on distributed platform; aging servers; unsupported software versions
Storage	Significant gaps	SPOF inhibits effective clustering of downstream applications; no between building failover capability
Network	Moderate gaps	Single ISP, SPOF; suboptimal packet routing complicates troubleshooting
Facilities	No gaps	Ease of access to facility; limited critical situation plan

classification: green, yellow or red. A green rating means the component adheres to best practices and presents a low risk to availability. A yellow rating means the component only partially adheres to best practices and poses a moderate risk to availability. Finally, the red designation indicates that the component fails to adhere to best practices and poses a significant risk to availability. (See Figure 2.)

Figure 2. This chart represents a gap analysis of the technology aspects of a hypothetical business’s availability architecture. Components studied appear on the column to the left. The middle column indicates that the business’s most severe availability gaps appear in its automation monitoring capabilities, servers and storage.

3. Results/Deliverables

Our reports

Based on our understanding of your desired business resilience goals and the identification of your availability gaps, IBM develops a series of reports recommending prioritized, actionable initiatives across your IT availability architecture, systems management processes and support organization. If implemented, these recommended initiatives can help you reduce your outages and improve your availability to help you meet your business

resilience goals. Each suggested initiative comes with a project roadmap, outlining:

- Objective, scope and availability gaps
- Time needed for implementation
- Initial cost
- Staffing requirements
- Projections of ongoing ownership costs

In addition to the types of recommendations discussed above, the **Strategy and Requirements Report** also documents

information used in the analysis of your availability environment, including guiding availability principles, enablers, and constraints. Further, this report lists the technology and business requirements for meeting your business resilience goals and outlines the potential business impact of an unplanned outage.

In the **Availability Assessment Report**, you'll find detailed information on the findings of the availability assessment

itself. (See Figure 3.) If you have requested an optional system outage analysis, its results are included in this report. Finally, the **Availability Assessment Executive Management Presentation**, typically presented during a meeting with IT and business executives, presents highlights of each section of the Strategy and Requirements and Availability Assessment reports. An executive summary is included.

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Figure 3. The Availability Assessment Report includes information on resilience tiers, the availability assessment itself, application profiles and IBM recommendations.

4. Service Delivery

Delivery time frame

The availability assessment usually takes between 6 and 12 weeks to complete, depending on scope and complexity. (See Figure 4.) Investment typically starts at \$25,000.

Consulting services with the IBM difference

IBM Resiliency Consulting Services can help you improve IT availability in order to better cope with, and profit from, an always-on business world. We accomplish this by:

- Helping you align IT and business definitions of availability

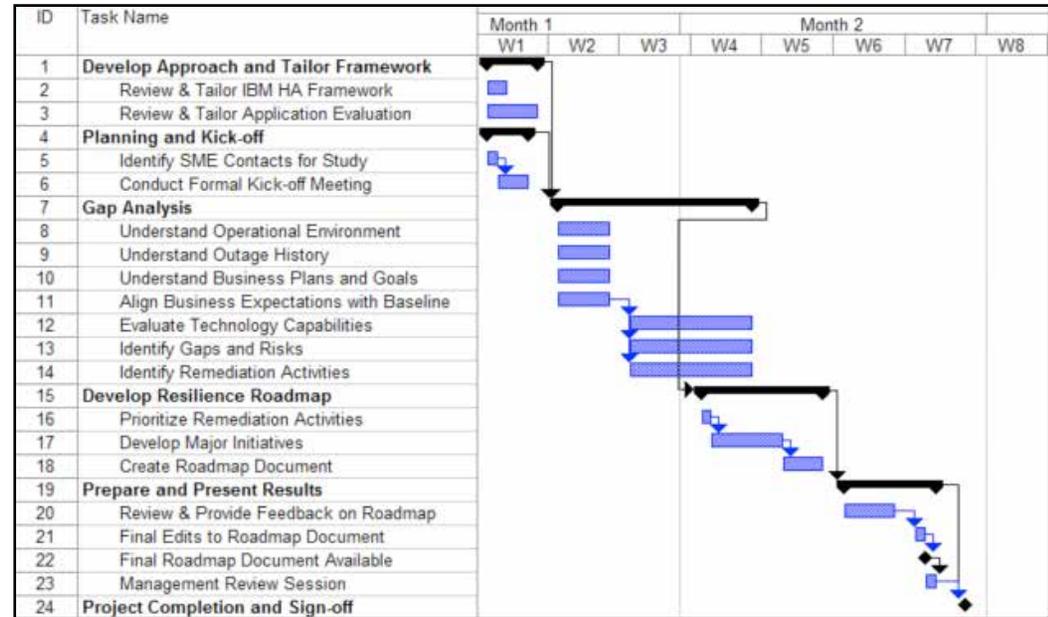


Figure 4. This is a schedule for a hypothetical, seven-week availability assessment. Assessment steps, tailored to client needs, are listed on the left.

- Assessing the quality of your IT architecture, processes and organization and measuring them against your business resilience and availability requirements
- Charting the disparity between your current availability levels and your desired availability levels
- Providing you with recommendations for corrective actions and roadmaps for executing those recommendations
- Helping you enhance system availability to meet specified business resilience requirements through recommendations developed to help reduce the frequency, duration and scope of IT operational disruptions.

IBM is not the only technology company to offer an availability assessment, but we believe we are the company best qualified to do so. Our depth and breadth of experience, coupled with our ability to act as a “one stop shop” for fulfillment of availability needs, sets us apart in the high-availability marketplace.

Over the last 15 years, the availability assessment offered by IBM has been used by world-class companies operating in fields where high availability is paramount.

Over the past 15 years, the IBM availability assessment has been used by major companies operating in fields where high availability is of paramount importance: financial services, telecommunications, insurance, manufacturing and transportation companies. These world-class businesses turn to IBM because they know we have well-documented, proven methodologies for helping clients achieve their availability goals and improve business resilience. IBM expertise in this field has been forged through more than 50 years of working in the business resilience arena. We currently serve more than 10,000 resiliency and recovery clients worldwide. From these engagements, we have honed our skills

in improving availability for organizations working with a huge array of hardware, operating system and application types.

Related availability products and services

Should they need it, IBM also offers clients hardware, software and services that that can help improve the availability of their IT systems. Our Geographically Dispersed Parallel Sysplex™ mainframes

allow multiple computing systems to share a workload, improving availability. The IBM PureSystems™ line of integrated servers and associated components have been designed with high availability in mind. IBM Tivoli® offers a full suite of IT monitoring and availability products. And, for those organizations that want in-house help implementing and maintaining higher availability standards, we offer availability management services.

5. Getting Started

Getting started is easy. IBM availability specialists can help you create a business case for deploying the availability assessment so that you can maximize returns from availability investments.

Contact us

Get in touch with an IBM representative to discuss your availability requirements and objectives. You can also visit the following web site:

ibm.com/services/continuity

Read more about the assessment, high availability and improving continuity

For more information about IBM's availability assessment, visit our [web page](#).



Download the [availability assessment data sheet](#) “Assess availability risk to improve business continuity” to learn more about how the IBM availability

assessment can help you identify and mitigate availability risks.



imperative that business availability needs are met.

Watch the [YouTube webinar](#), “Reputational risk and IT,” to better understand why it’s



Read the [thought leadership white paper](#) “Transitioning business continuity to the cloud” to learn how cloud computing is helping many companies improve resilience by improving availability.

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