

Understanding the Tests

The Appvance Test Methodology defines common test goals used when testing Internet application services. Because application architectures and service technologies continue to evolve, the methodology is not limited to these test goals.

The following concepts are used to understand the tests defined in the methodology:

- **Test Name** identifies the test being performed.
- **Test Benefit** describes the primary benefit or objective of the test.
- **Test Type** determines whether the test is **stateful** or **stateless**. Each type requires a different testing strategy and addresses different performance goals.
- **Scalability Index Parameters** define the test inputs used to measure the Scalability Index. These inputs represent expected usage patterns and help determine how service performance is expected to behave under production-like conditions.

Test Name	Test Benefit	Test Type	Parameters Related to the Scalability Index
Service Interface	Decrease time for service request responses to lower network bandwidth and server hardware costs.	Stateless	Message size and concurrent request level.
XML Parsing	Decrease time for routing service messages to lower network bandwidth and server hardware costs.	Stateless	Schema complexity (depth and element count), document size and concurrent request level.
Data Persistence	Decrease time for storing and retrieving messages to lower network bandwidth, server hardware and disk costs.	Stateful	Schema complexity (depth and element count), document size, concurrent request level.
Data Transformation	Decrease time for transforming a message into a given XML schema to lower network bandwidth and server hardware costs.	Stateless	Source and destination schema complexity (depth and element count), request and output document size, concurrent request level.
Data Aggregation and Federation	Decrease time for responding to service requests requiring up-stream data to reduce network bandwidth and server hardware costs.	Stateful	Schema complexity (depth and element count) for up-stream services, data persistence quantities, message time-to-live (TTL) values.
Data Mitigation	Reduce time when a service is unavailable at peak usage to improve service availability and user satisfaction.	Stateful	Schema complexity (depth and element count) for each request, document size, concurrent request level.

Test Types

Stateless Testing

Stateless testing is used for services that process each request independently of other requests. The test evaluates how the service responds as factors such as **concurrent requests** and

message payload size change.

Stateful Testing

Stateful testing is used for services that maintain state or depend on information from previous requests. This can include services that provide:

- Data persistence
- Workflow or transaction processing
- Message queuing
- User sessions
- Data indexing

Stateful testing evaluates how these state-dependent operations affect service performance and scalability under different workloads.

Scalability Index Parameters

The parameters associated with the **Scalability Index** define the inputs used during the test, such as concurrency levels and payload sizes.

These parameters represent the expected usage pattern of the service in production and are used to determine how service performance changes as the workload increases.

The Appvance Test Methodology defines the series of steps required to plan, execute, and analyze these tests.

For more information, see [Appvance Method](#)

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If you have any feedback on this topic, please contact us at documentation@appvance.ai

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