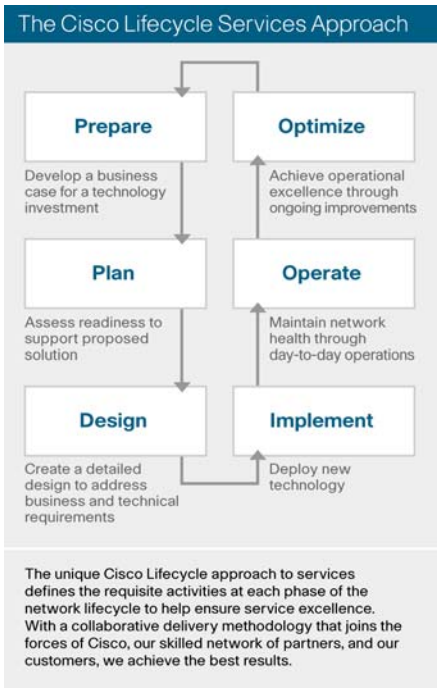
Cisco Service Provider Test and Validation Services

Accelerate deployment of new technologies with service assurance.



The unique Cisco Lifecycle approach to services defines the requisite activities at each phase of the network lifecycle to help ensure service excellence. With a collaborative delivery methodology that joins the forces of Cisco, our skilled network of partners, and our customers, we achieve the best results.

Service Overview

Service providers are under constant pressure to migrate to IP next-generation networks (NGNs), compress the technology introduction cycle, or bring innovative services to market in order to generate new revenue streams and build more differentiated, value-added services to attract and retain customers. Mergers and acquisitions or a strategic expansion of capabilities to enter new markets can also necessitate dramatic, and potentially disruptive, network changes. In addition, service providers are now investing in strategic convergence programs to set the foundation for advanced solutions running over more efficient and profitable IP NGNs. Advanced technologies running over converged networks can be especially challenging to test and validate in order to help ensure program success. Whether the goal is to launch a single service or undergo an entire network transformation or optimize your existing network for higher availability, one of the most important considerations is minimizing the effect on customers.

Cisco® Service Provider Test and Validation Services use Cisco laboratory environments and test engineering expertise to help service providers accelerate deployment of advanced technologies and services and lower the cost of service deployment by catching problems early in the development cycle before they cause project delays, outages, or trouble tickets in production networks. Service providers benefit greatly from the Cisco prevalidated or precertified solutions to efficiently test and certify advanced solutions in order to provide a superior customer experience.

Bringing Advanced IP NGN Experience Centers to Your Programs

Cisco IP NGN Experience Centers include lab test engineering expertise and state of the art processing tools to validate software, hardware, and systems early in the technology adoption cycle. These laboratory resources can also be used throughout the lifecycle from the architecture and design of the service provider's network through operational support. Service providers can take advantage of Cisco ISO 9001-compliant, highly secure test laboratories, located in the United States, Europe, and India, where a representative network is created using the latest Cisco hardware and software (including prerelease software and equipment). These laboratory resources are dedicated to the service provider's program for the duration of the engagement, whether three months or three years. The requirements and test cases are developed in close collaboration with the service provider using a joint test agreement (JTA) and Cisco best practices. These best practices include automation to help ensure consistent application of high-quality test results. The

Test and Validation Services are:

- Architecture and Design Validation Service
- Hardware and Software Validation Service
- Interoperability and Integration Testing Service

All three services share a consistent set of activities and deliverables (Table 1), but focus on different aspects of the technology and services lifecycle.

Architecture and Design Validation Service

Design validation is an important first step in the successful deployment of complex or advanced solutions. Using the Architecture and Design Validation Service, service providers can mitigate the risk of deploying new services in live networks by helping ensure that the network architecture and designs are validated as an end-to-end Cisco solution within the service provider's actual operating environment. Providers have greater confidence that production systems will meet the original design goals and that issues are caught early in the development cycle to avoid costly reworks or, worse yet, service disruption and dissatisfaction for customers. Working with the service provider, Cisco design engineers review the program requirements identified in the high-level systems design to develop a JTA for testing and validation of the architecture and design. The services include standard test and validation deliverables as well as feature-function combination, operations and availability, and scale capacity testing.

The Architecture and Design Validation Service can help accelerate new technology adoption and time to market with new services.

Hardware and Software Validation Service

The Hardware and Software Validation Service enhances the service provider's existing testing operations by uncovering operational issues earlier in the process, eliminating problems that might affect network availability, delay deployment, or cause expensive or disruptive workarounds postdeployment. By trial testing hardware and software in a representative reference model that mirrors their operating environment, service providers can determine whether the hardware and software will perform as specified in a production network. The Hardware and Software Validation Service delivers a precertified solution requiring minimal acceptance testing.

The Hardware and Software Validation Service helps accelerated deployment of new software and hardware, reduces deployment risk, and establishes a higher confidence for deployment while supporting adherence to customer service level agreements (SLAs).

Interoperability and Integration Testing Service

The Interoperability and Integration Testing Service validates that the deployed equipment can be operated and managed by the service provider's business systems. The service includes building an environment incorporating the provider's existing operations support system/business support system (OSS/BSS) as well as other network domains and elements for integration testing and feature interaction. The Interoperability and Integration Testing Service enables providers to recreate problems faster and implement and test fixes.

The Interoperability and Integration Testing Service provides validation that the deployed equipment can be operated and managed by the service provider's business systems and helps avoid disruptions to the operation of the network and to the end customer experience.

These three services can also facilitate network migration and in-life service operations with fault replication and training.

Features and Descriptions

Table 1 shows the features and descriptions employed by each of the Cisco Service Provider Test and Validation Services.

Table 1. Service Provider Test and Validation Features and Descriptions

Feature	Description
Test Assessment and Plan	Consult with customer networking staff in a series of meetings to develop a thorough understanding of customer's network design requirements. Provide a detailed test plan with recommendations that take into consideration, among other things, the following: • Customer's design requirements, priorities, and goals • Analysis of effects of new requirements on existing network • Protocol selection and configuration • Feature selection and configuration • Security considerations
Test Setup and Execution	Provide lab test execution of agreed-upon documented plan, which can include, among other information, the following: • Review of customer's design requirements, priorities, and goals • Analysis of effects of new requirements on existing network • Setup of lab infrastructure, configuration, integrations, and aggregation points for the testing and validation deployment, including protocols, security, and network management software (NMS) considerations • Conducting of tests based on the test plan described above
Test Results Report	Provide a test result report, which can include: • Review of new software feature releases for that specific operations area • Overall software/hardware/configuration recommendation to proceed with testing and feature set upgrade deployment or wait for future maintenance release • Contingency plan for transitioning change in customer networking environment
Final Consultation Delivery	Provide in a conference call consultation with the results of the test as executed. Typically includes, among other information, the following: • Collection of primary performance data • Identification of exception reports • Showstopper issues and workarounds

Incorporate Cisco Automation Tools to Accelerate Certification

Service providers may choose to take advantage of Cisco Service Provider Automation Services to accelerate validation testing and bring new revenue-generating services to market faster. Cisco Service Provider Automation Services provide custom compliance test suites built on the deep Cisco knowledge base of regression testing for converged networks. The test suites encompass functional, system, performance, and service compliance. Requirements and test cases are defined in close collaboration with the service provider. The test suites can also be customized to your specific needs.

The automation services use a tiered execution model that helps ensure a structured, efficient approach to validation testing (see Table 2). This model can highlight issues earlier in the certification process, saving time and money in the development and introduction of new services. Following an orderly, efficient execution model can also support a more predictable outcome.

Benefits of the Cisco Service Provider Automation Services include:

- Faster verification of new technologies and services for converged networks
- More efficient use of staff resources by reducing repetitive tasks
- More consistent and replicable testing and documentation to reduce variability across projects and staff

With all of these services you ultimately have fewer implementation and operational issues related to Cisco products and technologies. Testing and validating software and hardware also have direct implications for meeting major business goals and metrics, such as faster time to adoption, more test cycles, and higher network availability. This leads to lower operating and capital equipment costs, better return on investment and investment protection, and improved utilization of one of the most critical assets in day-to-day network operations: human resources.

Table 2 shows the tiered execution model of Cisco Service Provider Automation Services providing gated milestones in a certification cycle.

Table 2. Service Provider Automation Services

Tiered Execution Model	Description
Functional Compliance	• Validate feature-specific technologies to demonstrate the correct behavior as defined by requirements, specifications, and designs • Verify that a product or system conforms to a standard protocol
System Compliance	• Verify feature combinations with deployed scale. multiple features, whether or not they interact functionally, may use common system resources such as memory, processing, and bandwidth • Verify features can coexist at deployment load levels with varying operational parameters • Verify that a product or system can be installed, migrated, and deployed with acceptable effects
Performance Compliance	• Measure real-time behavior in accordance with deployment load levels, such as throughput, connection establishment, failure response, and data integrity • Verify that the system satisfies deployment requirements and provides an early warning of potential challenges
Service Compliance	• Measure baseline performance for the current network, and then measure the performance of changes against the baseline to help predict the effects of service changes

Why Cisco Services

Cisco is the renowned name in networking, with extensive experience in delivering IP NGN solutions. Cisco Services deliver comprehensive support encompassing the service provider's network lifecycle. Through a lifecycle approach to services, Cisco has developed consistent and proven methodologies to help service providers successfully deploy and operationalize their IP NGN.

Cisco Services bring together specialized tools, knowledge, methodologies, best practices, and a collaborative delivery model that combines Cisco's expertise with our partners' and customers' capabilities to help ensure the success of your network and service transformation. These services are customized to your needs and are delivered through an extensive global support infrastructure, which includes our award-winning Technical Assistance Center (TAC), Advanced Services' resources, Centers of Excellence, IP NGN labs, and ecosystem partners. Through this relationship with the Cisco service organization, you have access to a large collection of certified IP experts with experience in managing large systems and network integration projects globally.

Using Cisco Services, helps you to mitigate risks, accelerate your time to market for new services, reduce your cost, improve your customer experience through service assurance, and increase the value of your investment.

For More Information

For more information about the Cisco Test and Validation Services, contact your local account representative.

Cisco Services.
Making Networks Work.
Better Together.

Americas Headquarters
Cisco Systems, Inc.
San Jose, CA

Asia Pacific Headquarters
Cisco Systems (USA) Pte. Ltd.
Singapore

Europe Headquarters
Cisco Systems International BV
Amsterdam, The Netherlands

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at www.cisco.com/go/offices.

Printed in USA C78-432750-01 10/08