Drive service-aware operations with ServiceNow® Service Mapping

The IT challenge

Today, organizations are undergoing rapid digital transformation. Digital services are now a cornerstone of growth and competitive differentiation, powering customer interactions, increasing efficiency, and unlocking business insights. To effectively manage these business-critical services, IT needs to know how they work—which infrastructure components and applications deliver a service and how they interact. Without this service visibility, there's no easy way to resolve service outages, optimize service architectures, or assess the service impact of infrastructure changes. Unfortunately, many IT organizations still rely on manual, error-prone processes to document and track service topologies. This problem is made worse by today's rapidly expanding, dynamic cloud environments, where change is measured in minutes, not the weeks it takes to map a service by hand.

The ServiceNow solution

ServiceNow® Service Mapping automates the service mapping process, creating a complete, up-to-date, and accurate record of your digital services in the ServiceNow® Configuration Management Database (CMDB). It works hand-in-hand with ServiceNow® Discovery, building on discovered infrastructure data to identify all the Configuration Items (CIs) that support a service, along with their service-specific relationships. This includes mapping rapidly changing cloud-based services, providing service visibility in containerized, serverless, and service mesh architectures.

To understand how Service Mapping adds service context to discovered infrastructure and application CIs, think about a city bus map. The underlying road map shows all the city's roads and how they intersect. The bus map then builds on this road map, showing you the specific roads and intersections that make up each bus route. In the same way, Discovery identifies all your application and infrastructure CIs (roads) and how they are related (intersections). Service Mapping then builds on this information, showing you how specific services are routed across your digital infrastructure. And, just like roads and bus routes, Service Mapping and Discovery work seamlessly together. For instance, you can instantly see which services are impacted by a CI issue or proposed change, in the same way that a city bus map lets you see which bus routes are affected by an accident or construction.
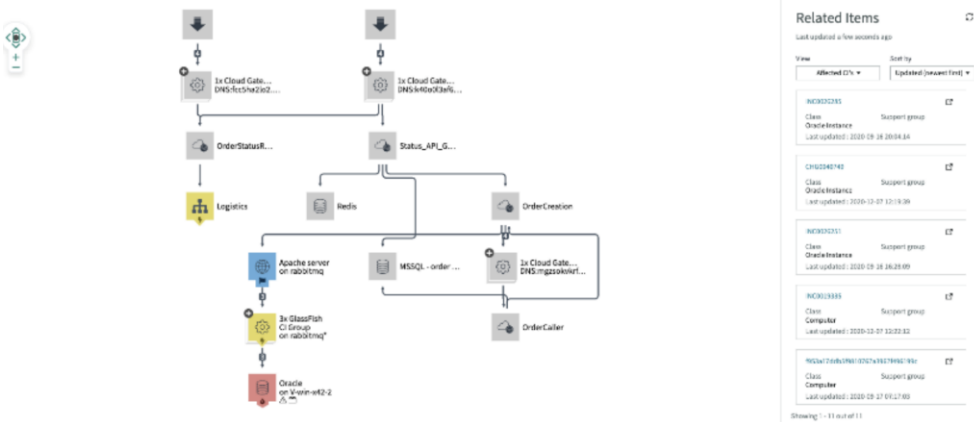
ServiceNow Service Mapping delivers end-to-end service visibility

Make your operations service-aware

- Identify and diagnose service issues faster
- Prioritize issues based on service and business impact
- See the service impact of changes
- Understand the cost of delivering services
- Simplify migrating services to the cloud
- Optimize service architectures

Accelerate your multi-cloud strategy

Keep pace with rapidly changing cloud environments. Map services across leading cloud vendors and technologies, including Amazon AWS, Microsoft Azure, Google GCP, IBM Cloud, VMWare, Kubernetes, and more.

Flexible service mapping options

Provides multiple service mapping methods, including automated service suggestions based on background AI. Other methods include top-down mapping, tag-based mapping, service mesh mapping, traffic-based mapping, and dynamic CI groups.

Always accurate and up to date

Automatically update service maps when there's a change in your IT infrastructure, ensuring you have the most accurate and up-to-date service topology information.

Leverage your existing discovery investment

Use your existing discovery data and mechanisms to build service maps. There's no need to collect data twice or implement a parallel data collection architecture.

Drive service-aware operations

Because Service Mapping stores service maps in your CMDB, it makes your operations service aware. Now you can prioritize resolution of infrastructure issues based on their service and business impact, and you can see which infrastructure components affect your services. And the benefits aren't limited to IT operations. For instance, security teams can now understand whether a vulnerability or security incident affects mission-critical services, service owners can determine the cost of delivering a service, and architects can optimize service architectures.

Flexible service mapping options including automated service map suggestions

Service Mapping leverages multiple service mapping methods, giving you the flexibility to approach service maps with a strategy that is best for your organization and industry. ServiceNow also runs machine learning routines in the background to automate service suggestions. Because ServiceNow can analyze network traffic and create suggested services for you to select, you can start service mapping very quickly and concentrate your efforts on increasing the quality and fidelity of your most critical and complex services.

Available service mapping tactics include:

- **Top-down mapping:** This creates a very precise map of the applications and supporting infrastructure components that make up an application service or technical service. It also identifies the relationships between these components. It is well suited for mapping mission-critical services. This includes cloud native services—for instance, it can detect Lambda to Lambda calls and Lambda to RDS connections to build dynamic service maps.

- **Tag-based mapping:** If you consistently tag your cloud resources using a well-defined tagging policy, ServiceNow can discover these tags and use them to build service maps. For instance, it can create a service map containing all cloud resources tagged with a specific application service. This requires significantly less upfront effort than top-down mapping. However, it only identifies the set of components that support a service— not the relationships between these components. Tag- based mapping is well-suited for less mission-critical applications and for use cases that do not require dependency relationship information.

- **Intelligent traffic-based mapping:** This uses machine learning to identify significant service-level relationships from traffic flow data while filtering out distracting noise. It can be used to extend top-down maps or add relationships to tag-based maps. It can also be used in conjunction with ServiceNow Discovery application fingerprinting to create complete service maps with minimal effort.

- **Service mesh mapping**: This provides service mapping for cloud-native services that use an Istio-based service mesh architecture. ServiceNow can use Istio data to discover the microservices within the service and map the connectivity between microservices.

- **Dynamic CI groups:** You can also map application services using dynamic CI groups—collections of CIs based on attribute values. For example, you can create an application service that contains all servers tied to a specific location or cost center. This is particularly useful when compute power is provided as a service, such as in development and test environments.

Built for multi-cloud environments ServiceNow

Service Mapping is designed to keep pace with rapidly changing cloud environments. Because it builds on real-time infrastructure and application information from ServiceNow Discovery, it gives you service visibility across Amazon AWS, Microsoft Azure, Google GCP, and IBM Cloud, and it can be extended to support other cloud vendors. It also maps services across technologies such as Kubernetes, Docker, and AWS Lambda, as well as virtualized VMware and Citrix infrastructure.

Always accurate and up to date

Once Service Mapping has mapped a digital service, it automatically keeps the map up to date. Whenever there is a change in your IT environment that affects how the service is delivered, Service Mapping updates the service map in your CMDB. This means that you always have the most accurate and up-to-date service topology information, even in dynamic cloud environments. Service Mapping also maintains a complete history of service topology changes, allowing you to see what changes have been made to a service between any two points in time. This makes it easy to correlate service changes with service issues, so you diagnose service issues faster and reduce mean time to recovery (MTTR).

Leverage your existing discovery investment

ServiceNow Service Mapping builds on ServiceNow Discovery, so it leverages existing discovered data in your CMDB to build service maps. For example, it uses tag data already collected by Discovery for tag-based mapping. And, when it needs additional service information (for example, identifying service-specific relationships during top-down mapping) it uses the same scalable, secure mechanisms used by Discovery to interact with your infrastructure. There's no need to implement a parallel data collection architecture or collect data twice— accelerating time to value, reducing risk, and minimizing costs.

The power of Service Operations

As hybrid workforces and dynamic digital services grows, legacy tools and disparate silos create friction and increased costs, stagnating innovation. Automate and optimize technology service operations on a single platform to unlock development, innovation, and resilient, cost-effective services – even in hybrid or multi-cloud environments - while delivering extraordinary employee and customer experiences and productivity.

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