Cisco ServiceGrid Features and Functions

This document is intended to provide clients with information about the basic concept, functions, and features of Cisco® ServiceGrid™.

ServiceGrid™ is a registered Trademark. The ServiceGrid Core is covered by the US Patent 8,468,233 B1, issued: 06/18/2013.

Contents

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1. Definitions

1.1 Cisco ServiceGrid

Cisco ServiceGrid is an integration platform in the cloud that seamlessly connects organizations to enable real time multi-party support collaboration for key processes including service request, incident, change, problem and more.

1.2 Ecosystem Trading Partner

Ecosystem Trading Partner is the general term for a customer's business partner that has an active B2B connection with the customer that is enabled by Cisco ServiceGrid. Examples of partners and relationships are shown in Table 1.

Table 1. Ecosystem Trading Partners

End Customer	Has a direct business relationship with Cisco ServiceGrid customer.
Managed Service Provider	Has service contract with Cisco ServiceGrid customer; might have service relationships with other service providers and vendors.
Service Provider	Has service contract with Cisco ServiceGrid customer; might have service relationships with other service providers and vendors.
Vendor	Has service contract with Cisco ServiceGrid customer; might have service relationships with other service providers and vendors.

1.3 Ecosystem Trading Partner ITSM Applications

Information Technology Service Management (ITSM) applications are typically used by Ecosystem Trading Partners to execute and manage service cases internally.

Cisco ServiceGrid enables companies to integrate and automate support processes with Ecosystem Trading Partners by creating Cisco ServiceGrid B2B connections between their Ecosystem Trading Partners' ITSM applications and the Cisco ServiceGrid platform.

1.4 Ecosystem

An ecosystem consists of a customer and at least one Ecosystem Trading Partner collaborating and managing ITSM service cases. Cisco ServiceGrid enables customers to create and manage two ecosystem types (Table 2).

Table 2. Ecosystem Relationships

One–to–many	Create, collaborate and manage support interactions between the customer and one or more Ecosystem Trading Partner.
Many–to–many	Create, collaborate and manage support interactions between the customer and multiple Ecosystem Trading Partners.

1.5   Connect Once – Connect All

Within an ecosystem, the contracting customer and the Ecosystem Trading Partners use Cisco ServiceGrid to integrate their service processes and workflows to exchange service case transactions.
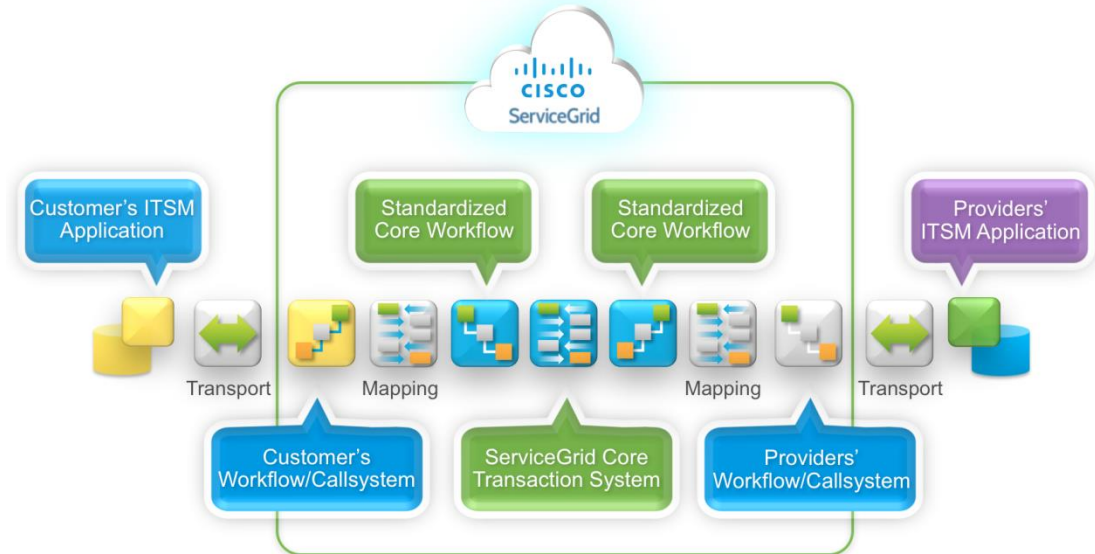

Figure 1. Connect Once to Connect with Everyone in the Ecosystem

Instead of integrating with each member of the ecosystem one at a time, everyone connects to Cisco ServiceGrid only once, which gives everyone the ability to connect to the others in the ecosystem (Figure 1). Cisco ServiceGrid securely integrates service processes using a rich B2B framework based on exchanging transactions and mapping workflows between different ITSM applications. The exchange of transactions uses the principle of double translation and a central database with data stored in a normalized (canonical) format. Incoming data is mapped from the customer-specific format to the normalized format and then to the receiver-specific format.

The workflow mapping defines the possible status and transactions on both sides. Workflows are mapped through status code mapping tables using Cisco ServiceGrid patented technology. Using these tables, each incoming transaction can be automatically transformed into the transaction type that the Ecosystem Trading Partner expects.

1.6   Service Cases

Service Cases

Service cases are service requests, incidents, problems, change requests, or other types of workflow processes covered by the service agreement between Ecosystem Trading Partners.

Service Case Creation

Ecosystem Trading Partners create service cases via their ITSM application, which, in turn, creates and sends an initial transaction to Cisco ServiceGrid to initiate a service case workflow.

Service Case Workflow

Service cases are directed through a pre-defined set of workflow tasks, and transactions are triggered through a series of updates made by the customer or the Ecosystem Trading Partner. Each update and its data are stored in Cisco ServiceGrid database. This data is used to:

- Track service cases, including the ability to drill down into the history
- Track messages, including the ability to drill down into the message details
- Generate real-time reports on case volume, service time, and service level

1.7   Workflows

Workflows (as illustrated in Figure 2) are the basic method to manage service cases. Cisco ServiceGrid supports three workflow types as shown in Table 3. Table 4 shows the workflow elements.

Table 3. Workflow Types

Workflow Type	
Standard	Four Cisco ServiceGrid core standard workflows (including service request, incident, change and problem management) and 12 transactions to quickly implement multi-party workflow process.
Configured	Four Cisco ServiceGrid core standard workflows (including service request, incident, change and problem management) that have been modified or extended by adding new transactions, data lookups, specific logic, rules, and event triggers.
Custom	Custom integration workflow built from scratch using Cisco ServiceGrid features and functions, including the workflow designer and workflow template library.

Table 4. Workflow Elements

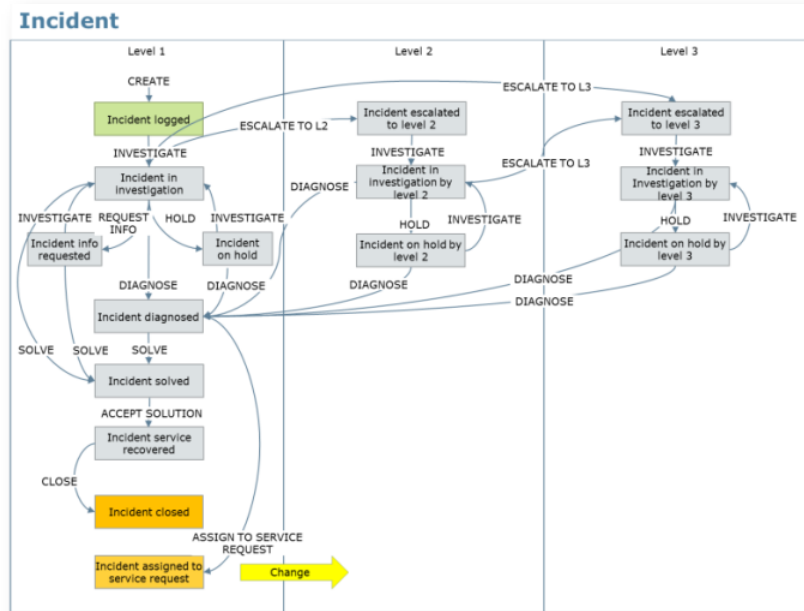| Workflow Elements	
Status Codes	The list of status codes.
Actions	The actions leading from one status code to the successor status.
Code Tables	Code tables for Priority Codes, Urgency Codes, Impact Codes, Failure Types, Problem Types, Categories, and Severity Codes.
Setups (optional)	Detail and list setups for displaying and managing the service cases in the portal.

Figure 2. Standard Incident Workflow

1.8 B2B Integration Architecture

The Cisco ServiceGrid B2B integration architecture is based on the principle of double translation and a central database with data stored in a normalized (canonical) format.

Normalized Data

In all cases the data is translated into the Cisco ServiceGrid normalized format (Figure 3). This enables Cisco ServiceGrid to connect and integrate different service processes and different ITSM tools quickly, either one-to-many or many-to-many.
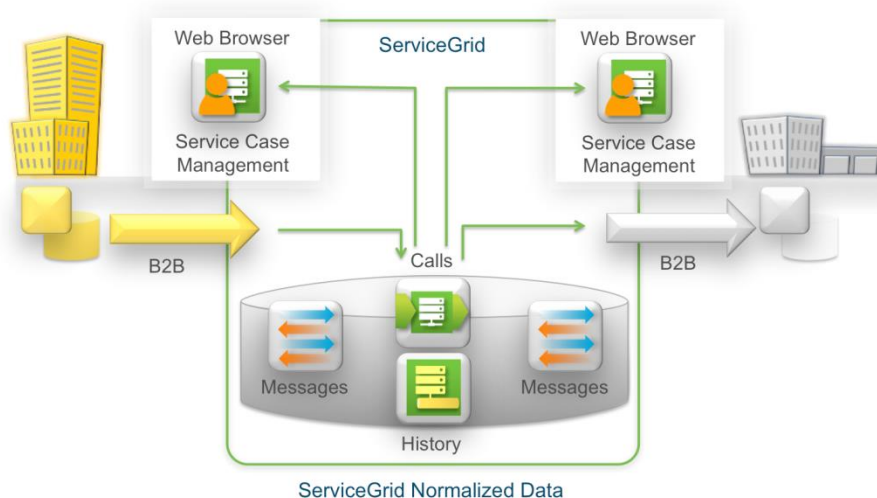

Figure 3. Service Case Transaction Data is Always Stored in the Cisco ServiceGrid Normalized Data Format

Elements of B2B Integration

To integrate different service processes and different ITSM tools one-to-many or many-to-many, three elements have to be taken into consideration:

- Workflows and their mapping
- Data and their mapping
- Transport methods for the data

1.9   Cisco ServiceGrid Core: The Standard Component

The Cisco ServiceGrid Core is a standard component that provides a set of well-defined standard definitions to support service request, incident, change, and problem management workflow processes.

Each customer and Ecosystem Trading Partner can take advantage of Cisco ServiceGrid Core to create standardized integration, workflow, and data mappings to other Ecosystem Trading Partners.

The Cisco ServiceGrid Core contains a set of 24 transactions (including new, update, solve, and close) that cover the different mapping situations required to onboard an Ecosystem Trading Partner to exchange service cases.

There are two options to connect to the Cisco ServiceGrid Core:

1. Onboarding an ITSM application to Cisco ServiceGrid with a number of available transport methods (including SMTP, SFTP, HTTPS POST, and HTTPS SOAP), and mapping the transactions of the ITSM tool to the transaction model Cisco ServiceGrid Core.
2. Using the Cisco ServiceGrid Portal Service Case Management mapped to the Cisco ServiceGrid Core.
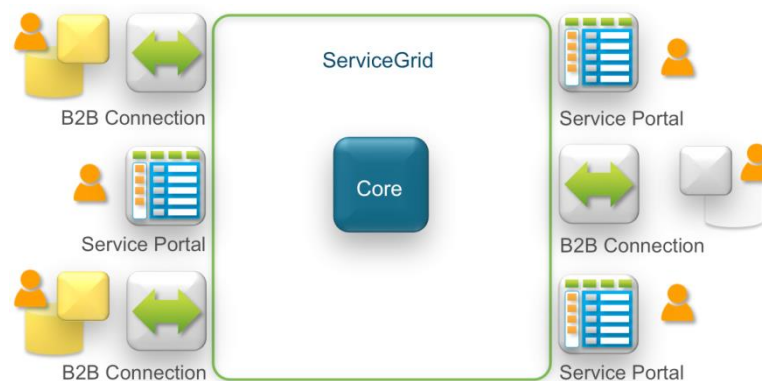

Figure 4. Two Options to Connect to the Cisco ServiceGrid Core

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For each of the transaction types, a set of required data and optional data is defined. Through this connection, the customer clearly defines process and workflow capabilities, as well as requirements, and is able to publish this definition to other Ecosystem Trading Partners.

1.9.1 Cisco ServiceGrid Core Standard Mapping

Instead of mapping each Ecosystem Trading Partner workflow to each workflow of the connected partners, Cisco ServiceGrid Core is designed to map the partner workflow to a central standardized component (Figure 5).

All integrations in the Cisco ServiceGrid are handled via the Cisco ServiceGrid Core. To exchange service cases with the Ecosystem Trading Partners, it is necessary to connect only once to the Cisco ServiceGrid Core.
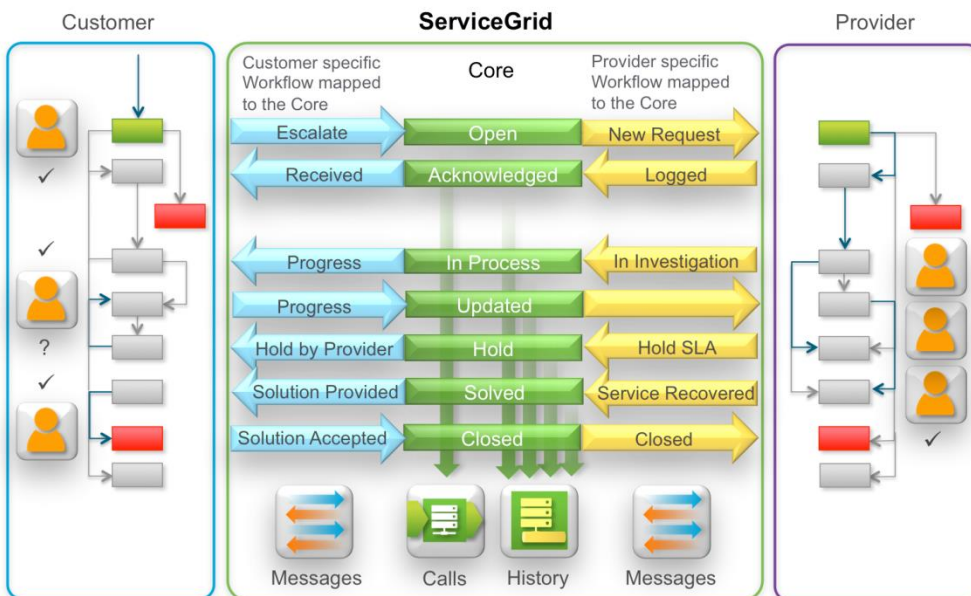

Figure 5. Sample Mapping of Two Different Ecosystem Trading Partner Workflows via the Cisco ServiceGrid Core
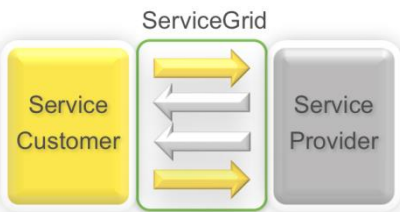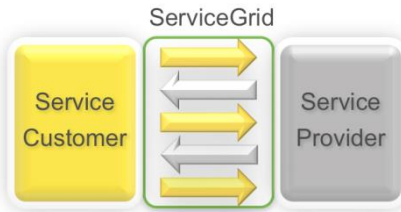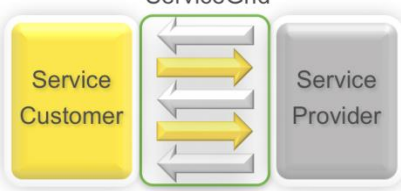
Once an Ecosystem Trading Partner is connected with its individual workflow to the Cisco ServiceGrid Core workflow, the first connection to another partner can be activated without additional process and workflow mapping discussions.

1.9.2   Cisco ServiceGrid Core Standard Workflow Maps

The Cisco ServiceGrid Core provides four types of workflow maps as shown in Table 5. Ecosystem Trading Partners mutually determine the type of workflow mapping as part of the integration implementation.

Table 5. Standard Workflow Maps

	Without Ownership	With Ownership
Active	**Active without Ownership Change** 1. The customer escalates a service case to the service provider 2. The service provider processes the case and informs the customer about progress 3. The service provider provides a solution to the customer 4. The customer closes the service case	**Active with Ownership Change** 1. The customer escalates a service case to the service provider 2. The service provider processes the case and can also assign the service case back to the customer together with ownership of the case 3. The customer passes back the ownership to the service provider 4. The service provider provides a solution to the customer 5. The customer closes the service case
Passive	**Passive without Ownership Change** 1. The service provider informs the customer about a service case 2. The service provider processes the service case and informs the customer about progress 3. The service provider closes the case after a solution is found	**Passive with Ownership Change** 1. The service provider informs the customer about a service case 2. The service provider processes the case and can also assign the service case back to the customer together with the ownership of the case 3. The customer passes back the ownership to the service provider 4. The service provider provides a solution to the customer 5. The service provider closes the service case

1.9.3 Cisco ServiceGrid Core Standard Transaction Types

The Cisco ServiceGrid Core provides up to 24 (2 x 12) standard transaction types (Table 6) to support the end-to-end lifecycle of Ecosystem Trading Partner workflows.

Table 6: Cisco ServiceGrid Core Standard Transaction Types

Direction: Ecosystem Trading Partner to Core			
Partner Transactions	**Direction**	**Cisco ServiceGrid Transaction**	**Description (Use Case)**
TBD, Optional	·	OPEN	Opens a ticket at the partner side and moves responsibility to partner
TBD, Optional	·	OPEN_INFO	Opens a ticket at the partner side for information, responsibility stays with sender
TBD, Optional	·	ACKNOWLEDGE	Acknowledges an OPEN request
TBD, Optional	·	REJECT	Rejects an OPEN or ASSGIN_PARTNER request
TBD, Optional	·	UPDATE	Updates a ticket without changing the status
TBD, Optional	·	PROCESS	Updates a ticket and declares that the sender is working on the case
TBD, Optional	·	HOLD	Updates a ticket and declares that the service level is set to hold
TBD, Optional	·	SOLVE	Updates a ticket and declares that a solution was provided and the task is completed
TBD, Optional	·	ASSIGN_PARTNER	Assigns the ticket to the partner and moves responsibility to partner
TBD, Optional	·	CLOSE	Closes a ticket as final
TBD, Optional	·	CANCEL	Aborts a ticket and ticket will be closed as final
TBD, Optional	·	ERROR	Sets the ticket to error state because of an illegal transaction
Direction: Core to Ecosystem Trading Partner			
Partner Transactions	**Direction**	**Cisco ServiceGrid Transaction**	**Description (Use Case)**
TBD, Mandatory	·	OPEN	Opens a ticket at the partner side and moves responsibility to partner
TBD, Mandatory	·	OPEN_INFO	Opens a ticket at the partner side for information, responsibility stays with sender
TBD, Mandatory	·	ACKNOWLEDGE	Acknowledges an OPEN request
TBD, Mandatory	·	REJECT	Rejects an OPEN, or ASSGIN_PARTNER request

TBD, Mandatory	·	UPDATE	Updates a ticket without changing the status
TBD, Mandatory	·	PROCESS	Updates a ticket and declares that the sender is working on the case
TBD, Mandatory	·	HOLD	Updates a ticket and declares that the service level is set to hold
TBD, Mandatory	·	SOLVE	Updates a ticket and declares that a solution was provided and the task is completed
TBD, Mandatory	·	ASSIGN_PARTNER	Assigns the ticket to the partner and moves responsibility to partner
TBD, Mandatory	·	CLOSE	Closes a ticket as final
TBD, Mandatory	·	CANCEL	Aborts a ticket and ticket will be closed as final
TBD, Mandatory	·	ERROR	Sets the ticket to error state because of an illegal transaction

- **Note**: All transactions from Cisco ServiceGrid Core to an Ecosystem Trading Partner have to be mapped on the partner side (mandatory).
- **Note**: If an Ecosystem Trading Partner does not use all Cisco ServiceGrid Core transactions, a status of "not applicable" (NA) must be created and mapped to these transactions (Direction: Cisco ServiceGrid Core to Ecosystem Trading Partner).

1.10 Individual B2B Integration

In the event that Ecosystem Trading Partners determine that they cannot use the standard Cisco ServiceGrid Core transaction types and data structures, then individual connections are used.

In this scenario, each Ecosystem Trading Partner must individually agree to customized workflow and data mappings that will be used to exchange and manage service cases.

To set up a connection between an ITSM application and Cisco ServiceGrid, it is necessary to define:

- The **transactions** that will be used to send and receive tickets (examples are: new, update, solve, close)
- The **fields** that will be used to update the content in every transaction
- The **form of the content** communicated (examples are:. XML, Name-Value-Pair, simple text)
- The **type of communication** (examples are: SMTP, SOAP, FTP, POST)

All custom workflow and mappings are designed and deployed via the Cisco ServiceGrid platform.

1.11 Deployment

The Cisco ServiceGrid solution is delivered as a cloud-based SaaS application on the Cisco ServiceGrid public cloud. For companies developing large ecosystems with specific security requirements, Cisco offers private cloud deployments.

2 Features and Functions

This section provides details on important features and functions available in Cisco ServiceGrid.

2.1   Workflow Mapping

Workflows are mapped through status code mapping tables.

Mapping tables define the correct mapping between the Ecosystem Trading Partner status codes and the Cisco ServiceGrid Core transaction types (when used) or the other Ecosystem Trading Partner status codes when using an individual B2B Integration (Figure 6).

In addition, successor rules can be defined to omit incorrect orders of transactions and enable the creation of errors and warnings.
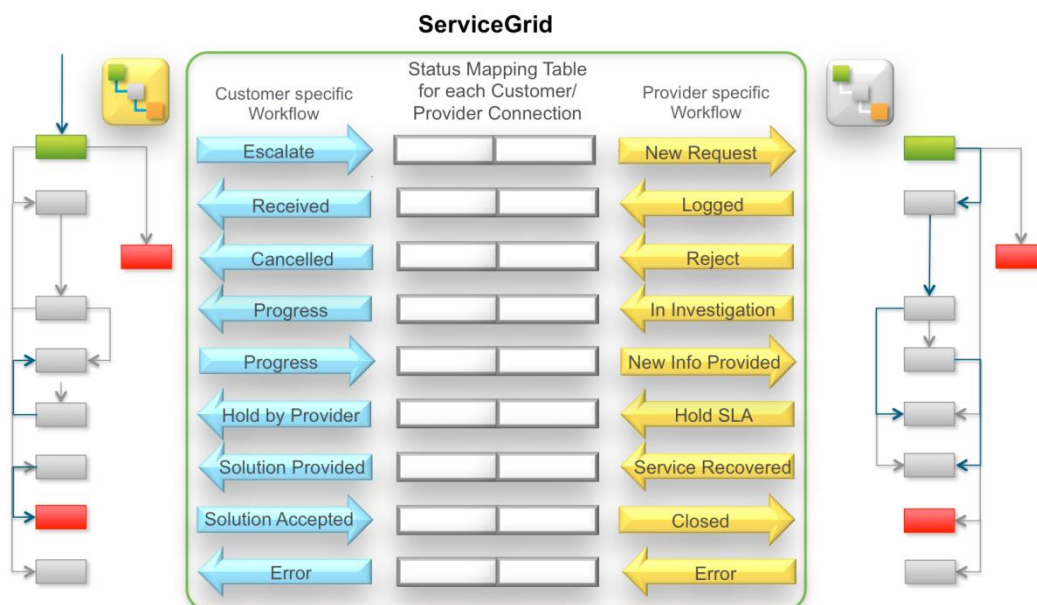

Figure 6. Sample of Mapping Different Workflows via a Status Code Mapping Table

Using the status code mapping tables and the successor rules, each incoming transaction can be automatically transformed into the transaction type that the connected partner expects.

Note: Workflow mappings can be based on the ITIL[©] best practice standards for Request Incident, Problem, and Change.

2.2   Data Mapping

Data is mapped from the incoming data record to the Cisco ServiceGrid normalized format using XSL transformation (XSLT).
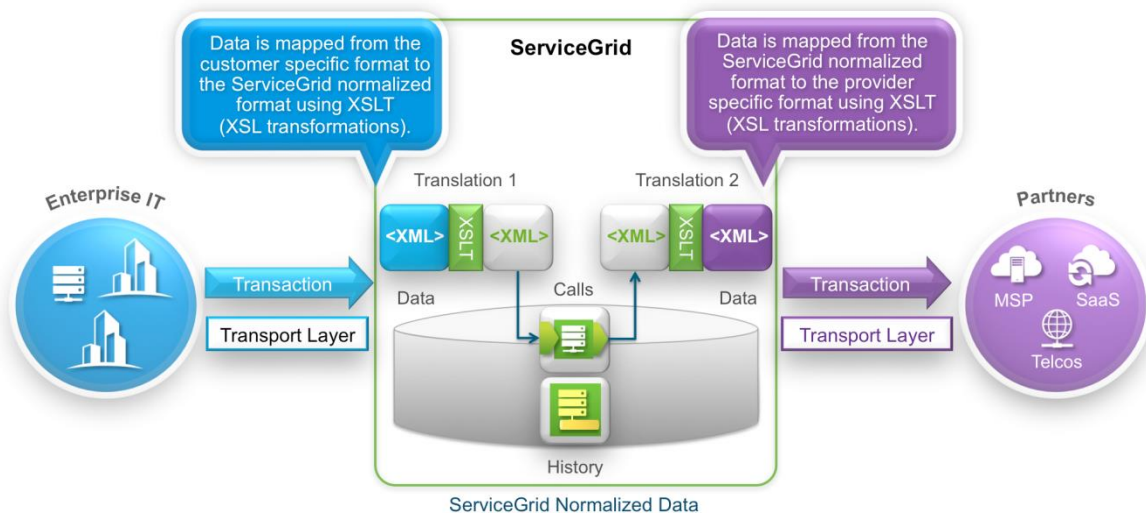

Figure 7. Sample Mapping of XML Documents into the Normalized Format and from the Normalized Format

Incoming data is mapped from the Ecosystem Trading Partner's specific format to the Cisco ServiceGrid normalized format using XSLT.

To create the correct message for the receiving partner, the data in the Cisco ServiceGrid normalized format is again mapped to the receiver specific format using XSLT.

2.3   Data Elements in the Cisco ServiceGrid Normalized Format

The Cisco ServiceGrid normalized format for service cases consists of more than 300 data fields that Ecosystem Trading Partners can take advantage of to map to the Cisco ServiceGrid Core. Table 7 shows the data elements.

Table 7. Data Elements

Group	Description
Identification	The identification data fields are used for the unique identification of the service case on both sides (service customer and service provider) and on the Cisco ServiceGrid platform.
Service Contract	The service contract identification is required for proper routing of the service case from the service customer to the service provider. This identification is required in the first (open) transaction. The transactions that follow are automatically routed using the unique service case IDs. Service contract data and contract element data are also used to define the service level in terms of committed response and recovery time.
Text	The text data is the description of a service case. In nearly all cases, the text consists of the initial text description and the text remarks for each status update. Additionally, fields for solution descriptions are available.
Status	The status is used to distinguish between different transaction types. Each partner in the service process may have different status codes. The status codes are mapped on the Cisco ServiceGrid platform.
Time Stamps	For documentation of the open time, acknowledge time, response time, recovery time, and close time of a service case, different time stamps can be used.
Priority, Severity	Priority and Severity codes can also be used. These codes are mapped on the Cisco ServiceGrid platform between the service customer codes used and the service provider codes.
Category	A number of codes for categorization of the service case are available.
Help Desk Agent	Name and contact data of the help desk agent can be used.
Caller (End User)	Name and contact data of the end user can be used.
Contact Person	Name and contact data of the person to be contacted can be used.
Component	Serial number, inventory number, and attributes of the component can be used.
Location	Information about the location of components can be used.

2.4   Batch Data Enrichment

Cisco ServiceGrid can enrich the incoming transactions (with information like location, device, contract, and user data) by building up references to the Cisco ServiceGrid inventory database to load and refresh the data into specified service cases. Data references are maintained via batch uploads to the inventory database at specified days and times. Following is a typical use case for reference:

Use Case
The receiver of a service case transaction needs additional data about the location, device or component, contract or user. The additional data is mapped to the service case from the data in the Cisco ServiceGrid database. Load and refresh data from third-party applications to support process integration requirements on a per data connection basis.

Capabilities

- Reference to location data
- Reference to device data
- Reference to contract data
- Reference to user data

2.5   Real–time Enrichment

Cisco ServiceGrid can enrich incoming data via web service requests to other applications in real time. Following is a typical use case for reference:

Use Case
The receiver of a service case transaction needs additional entitlement data about the location, device or component, contract, or the user. The additional data is retrieved via a web service from an external application and added to the service case data.

Capabilities
Individual implementation of web service requests to external applications to retrieve data required to support service cases

2.6   Content Types

The content of a transaction is sent or received using a structured message format. Three different formats can be used (Table 8), depending on the transport protocol.

Table 8: Structured Message Formats

Format	Sample

ServiceGrid XML
The ServiceGrid XML uses the ServiceGrid name space. Each field in the XML document has a unique name.
	`<?xml version="1.0" encoding="ISO-8859-1"?>`
	`<CALL>`
	`<Calls.CustCallID>`
	`TT4711`
	`</Calls.CustCallID>`
	`<ContractElements.ShortName>`
	`SL1`
	`</ContractElements.ShortName>`
	`<Contracts.ShortName>`
	`Hardware`
	`</Contracts.ShortName>`
	`<CallStates.ShortName>`
	`Open`
	`</CallStates.ShortName>`
	`<Calls.Remarks>`
	`Screen jitters`
	`</Calls.Remarks>`
	`</CALL>`

Client XML
The Ecosystem Trading Partner may wish to use its own XML name space. When using a client-specific XML name space, the XML document has to be transformed into the ServiceGrid name space. The same is true in reverse.
	`<?xml version="1.0" encoding="ISO-8859-1"?>`
	`<Ticket>`
	`<Number>`
	`TT4711`
	`</Number>`
	`<Servicelevel>`
	`SL1`
	`</Servicelevel>`
	`<Contract>`
	`Hardware`
	`</Contract>`
	`<Status>`
	`Open`
	`</Status>`
	`<Text>`
	`Screen jitters`
	`</Text>`
	`</Ticket>`

Name-Value Pair
The NVP syntax is an old-fashioned way to structure data. It cannot be used with SOAP or POST as a transport protocol.
	`Calls.CustCallID=4711`
	`ContractElements.ShortName=SL1`
	`Contracts.ShortName=Hardware`
	`CallStates.ShortName=Open`
	`Calls.Remarks=Screen jitters`

2.7   Transport Methods, Options, and Parameters

Cisco ServiceGrid provides a set of industry standard transport methods (Table 9) to connect ITSM applications to the Cisco ServiceGrid platform.

Table 9. Transport Methods, Options, and Parameters

	Transport Protocol		Direction	Service Grid XML	Client XML	Name Value Pair	Attach-ments Multipart	Attach-ments Base64	Encryption
SOAP	HTTPS SOAP		Push into SG	●	●	-	-	●	SSL
	HTTPS SOAP		Pull out of SG	●	●	-	-	●	SSL
	HTTPS SOAP		Push out of SG	●	●	-	-	●	SSL
	HTTPS SOAP		Pull into SG	●	●	-	-	●	SSL
POST	HTTPS POST		Push into SG	●	●	-	-	●	SSL
	HTTPS POST		Pull out of SG	●	●	-	-	●	SSL
	HTTPS POST		Push out of SG	●	●	-	-	●	SSL
	HTTPS POST		Pull into SG	●	●	-	-	●	SSL
SMTP	SMTP (email)		Push into SG	●	●	●	●	●	TLS (optional)
	SMTP (email)		Push out of SG	●	●	●	●	●	TLS (optional)
FTP	SFTP		Push into SG	●	●	●	-	●	SSH FTP
	SFTP		Pull out of SG	●	●	●	-	●	SSH FTP
	SFTP		Push out of SG	●	●	●	-	●	SSH FTP
	SFTP		Pull into SG	●	●	●	-	●	SSH FTP

Note: Cisco ServiceGrid Core standard is based on the exchange of web service calls using the HTTPS protocol.

2.8   Encryption

B2B connections between ITSM applications and Cisco ServiceGrid are encrypted and require authentication.

Encryption Methods

Depending on the transport method selected, Table 10 shows the encryption methods used.

Table 10: Transport and Associated Encryption Methods

Transport Method	Authentication	Encryption
Online via Web (Browser)	Authentication via Login and Password	HTTPS (SSL)
Transaction-based via SMTP (Mail)	Authentication via Mail account	TLS
Transaction-based via HTTP POST	Authentication via Login, Password	HTTPS (SSL)
Transaction-based via SOAP	Authentication via Login, Password	HTTPS (SSL)
Transaction-based via SFTP	Authentication via Login, Password	SFTP

Encryption Options

Cisco ServiceGrid supports additional encryption methods. Following are some examples:

- Client certificates
- Individual VPN tunneling
- Message content encryption

2.9   Attachments

Attachments are sent by the Ecosystem Trading Partner system to the Cisco ServiceGrid platform, or are received by the Ecosystem Trading Partner system when sent from Cisco ServiceGrid.

Formats

Attachments are transported in one of two different formats (Table 11), depending on the underlying transport protocol, or using the attachment store as an alternative method.

Table 11. Transporting Attachments

Base64	Base64 is a group of similar encoding schemes that represent binary data in an ASCII string format by translating it into a radix-64 representation. The Base64 term originates from a specific Multipurpose Internet Mail Extension (MIME) content transfer encoding. Base64 encoding schemes are commonly used when there is a need to encode binary data to be stored and transferred over media that are designed to deal with textual data. This is to ensure that the data remains intact without modification during transport. Base64 is used commonly in a number of applications, including email via MIME and storing complex data in XML.	Applicable in: SMTP, SOAP, POST, SFTP
Multipart (MIME)	MIME is an Internet standard that extends the format of email to support: text in character sets other than ASCII, non-text attachments, message bodies with multiple parts, and header information in non-ASCII character sets.	Applicable in: SMTP (email)
Attachment Store	This function can be used if the Ecosystem Trading Partner is not able to receive attachments within its application. All attachments will be stored in the Cisco ServiceGrid attachment store. Instead of sending the attachments to the Ecosystem Trading Partner's application, a link is sent to the attachment file in the attachment store.	Independent from the transport protocol used

Options

Table 12 shows the options that can be selected to enable or disable attachment processing.

Table 12: Options for Enabling or Disabling Attachment Processing

No	No attachments are sent or received.
Only Send	Attachments are sent, but not received, including: • All attachments referenced to the service case • All current attachments • Attachments not yet sent
Only Receive	Attachments are received only. The number of attachments is not restricted, but the maximum size of all attachments in a message cannot exceed 10 Mbyte.
Send & Receive	Attachments are sent and received.

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2.10 SMTP Alert and Notification

Alerts and notifications are defined as part of workflow implementation.

Alert or notification messages can be automatically sent to the Ecosystem Trading Partner based on pre-defined message triggers.

Messages are triggered by message rules. Message rules use one or many of the following parameters to trigger messages:

- Status
- Priority
- Service level fulfillment
- Customer
- Provider
- Update by customer or provider

Alert or notification messages are sent via email by default and optionally via SMS text message.

2.11 Portal

The Cisco ServiceGrid Portal is an optional component that provides customers and their Ecosystem Trading Partners with a web application to:

- Create, update, track, manage, and close service cases for enabled support processes
- Access and review standard and custom service case and service-level agreement (SLA) reports

Navigation and User Role

The portal provides the user with a selection of functions and data ordered in tabs and menus on the screen that are easy to browse through and navigate. The menu structure of the Cisco ServiceGrid Portal is customizable for different roles, providing a role-based view on functions and data.

- The navigation elements consist of a top-level menu, the tab menu, and the left-side tree menu.
- Depending on the user role, only parts of the menus can be displayed.

Figure 8. Sample Portal View

Portal Elements

The function and data elements (called portal elements) can be either:

- Reports and functions provided by the Cisco ServiceGrid application including call volume reports, service level reports, and call lists
- External data uploaded into the portal, including documents such as contracts and operating procedure, or links to other websites and applications

2.11.1 User Types

Depending on the credentials of the user, two different types of users are supported (Table 12).

Table 12: Portal User Types

Basic Access Portal User	Basic Access portal users have basic read/write access privileges on the Cisco ServiceGrid support portal. This user type is generally used for service desk personnel accessing and editing content in service cases (tickets) for their organization.
Full Access Portal User	Full Access portal users have administrator-level privileges on the Cisco ServiceGrid support portal, including the ability to set up and manage other Full Access and Basic Access user profiles for their organization.

2.11.2 Using the Portal

The portal user can take advantage of the portal to navigate through Cisco ServiceGrid functions.

Use Cases

Portal users may be end users, service desk personnel, service managers, technicians, or administrators, depending on the role they are assigned by the portal administrator.

Functions

As shown in Table 13, a set of functions is provided for portal users.

Table 13: Functions for Portal Users

Top Menu	• Select favorite color style • Select language • Select time zone • Switch between different roles • Search for portal element names and descriptions
Tab Menu	• Use the favorites tab to collect personal favorites • Get instant access to the different role specific dashboards • Use the tab menu prepared by the administrator for a specific role
Left Side Tree	• Use the left side tree for fast navigation • Collapse the left side tree for more space
Dashboard	• Find role-specific data functions and content in the windows on the dashboard • Move the mouse over the window header to read the description as a tool tip • Double click the window header to expand the window to full dashboard size • Move the windows or resize them • Read documents • Click on groups to drill down into the next level

	• Click on functions to open new service cases
	• Watch videos
	• Switch between three dashboard views: list, windows, or go back to the administrator settings

2.11.3 Customizing the Portal

The portal can be customized for different user roles.

Use Cases

The portal administrator can customize the portal to support different portal user roles using the functions shown in Table 14.

Table 14: Customizing the Portal

Tab Menu	• Use the portal administration tools to design role-based content views
Left Side Tree	• Add new groups, lists, functions, links, or documents to a dashboard
	• Delete or edit groups, lists, functions, URL links, or documents
	• Move or copy elements with the tree tool
Portal Groups and Elements	• Set the parameters of a group or a dashboard
	• Define content access, read/write permissions, and dashboard views by role

2.11.4 User Roles

User roles define the menu structure and access rights within the portal.

Use Case

The portal administrator defines the user roles and their menu structure and access rights. The portal administrator decides which users are assigned to which roles.

Functions

- Create a new role
- Assign top-level menu items to the role
- Assign tab menu elements to the role
- Assign portal groups of function to the role
- Assign list setups usable to the role
- Assign users to the role

2.11.5 Service Case Management

Services cases are typically created, updated, managed, and monitored via the customer's and/or Ecosystem Trading Partner's ITSM system. Optionally service cases can be managed with the Cisco ServiceGrid Portal case management capabilities detailed below.

Figure 9. Tracking and Update of Service Cases in the Portal

Service Case Management Features

- Track service cases including drill down into the history
- Create new service cases
- Update or close service cases
- Manage parent and child calls and relationships
- Send emails
- Track messages

2.11.5.1 Service Case Management

The user monitors the service cases including status, time stamps, and service level time.

Use Case
The end user, service manager, service desk personnel, or technician monitors the service cases and their status using different list setups.

Functions

- List open service case
- List closed service case
- List all service cases

The list provides standard list setups that may be customized following specific requirements.

2.11.5.2 Create and Update Service Cases

The service customer or the service provider creates (opens) or updates new service cases using the Cisco ServiceGrid web interface.

Use Case
The end user, service manager, service desk, or technician creates a new service case.

Functions

- Open a new service case:
    - By request, by caller, by SLA
    - By device, by location
- Update a service case
- Close a service case

2.11.5.3 Parent or Child Calls

Parent or child relationships between service cases are used to build references between service cases (for example between incidents, problems or changes).

Functions

- Create child call
- Create parent call
- Reference child call
- Reference parent call

The references between the calls are displayed in a reference map in the call detail, as well as a hierarchy in the call tracking list.

2.11.5.4 Sending Emails

The integrated mail client is used to send emails directly from the service, and documents the complete communication for each service case.

Use Cases

Sending emails directly from the call detail reduces the effort of selecting the receivers of the mail. All persons involved in the service case are proposed automatically, and additional recipients can be added easily.

Functions

- Send emails to:
    - All or selected persons referenced for a service call
    - Groups of email accounts
    - Other persons in the user list

Templates are provided for generating the content automatically using the information in the call.

2.11.5.5 Message Tracking

Messages sent or received are tracked and can be monitored by the administrator or service manager.

All messages sent or received are stored in the Cisco ServiceGrid database.

Message tracking summarizes all types of messages, including Mail, SOAP, SMTP, and SFTP, and allows selection by direction (inbound or outbound), message type, partner, and call identification.

Use Cases

Monitoring the messages enables the administrator or service manager to track the communication between the own organization and Ecosystem Trading Partners.

Functions

- List all messages
- List inbound messages
- List outbound messages
- Drill down into the message content and detail parameters

2.11.6 Data Administration

The Cisco ServiceGrid database contains all major data objects required for end-to-end service management. The database is structured to support shared and private data requirements as shown in Figure 10.
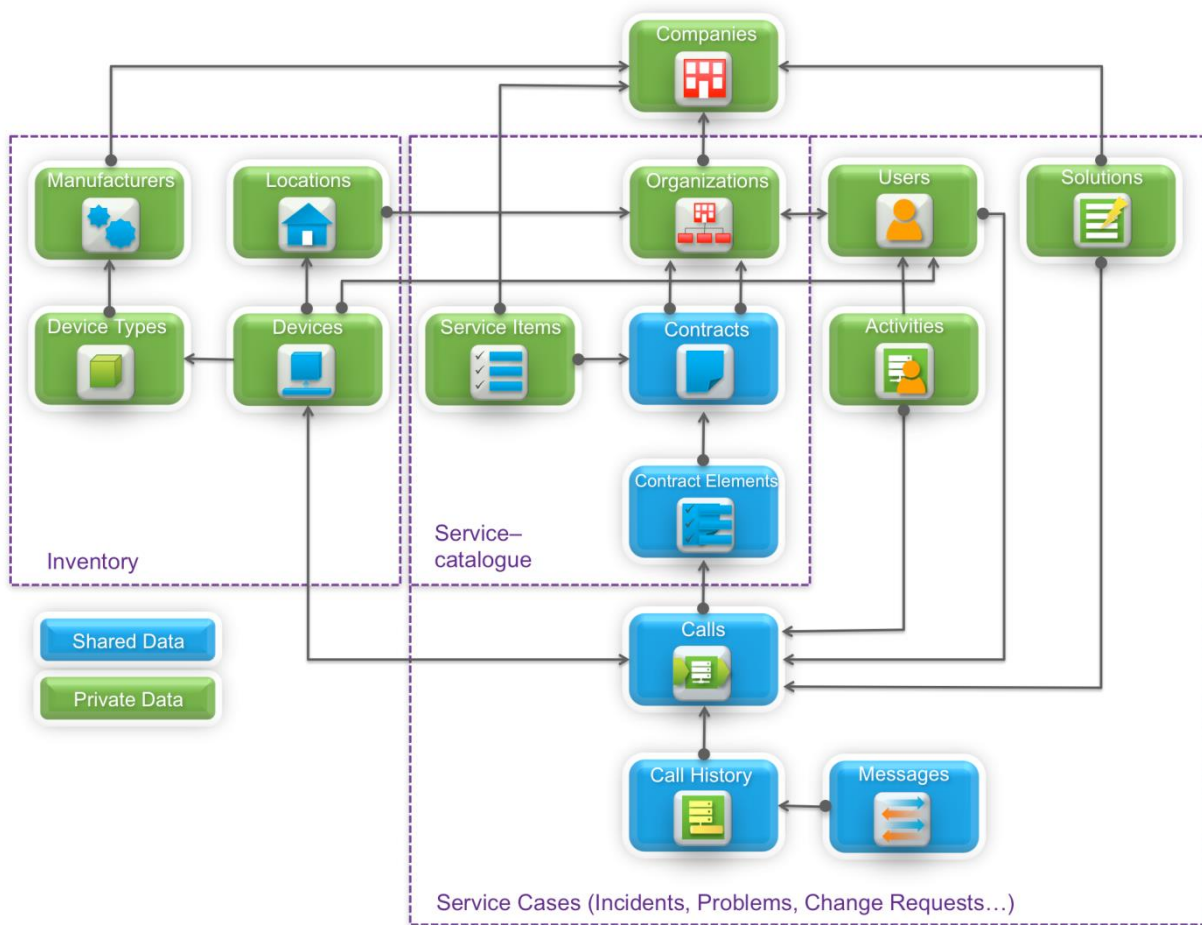

Figure 10. The Cisco ServiceGrid Database is Structured to Support Shared and Private Data Requirements

Data administration can be done via the browser-based portal interface. It can also be automated using scheduled routines to upload data from other data formats or downloaded into other formats.

Figure 11. Data Administration in the Portal

2.11.6.1 Basic Data Administration

Basic data is used to create the root record for a company and its Ecosystem Trading Partners (Table 15).

Table 15: Basic Data Administration

Company	The company is the root record for the Cisco ServiceGrid customers (the company account). All information about the company structure, including organizations, users, and workflows, are referenced to the company record.
Organization	Every company has one or more organizations. Service contracts are always concluded between organizations. Depending on the assigned contracts, organizations act as a service provider organization (for example: incident management, problem management), as a service customer organization, or both (for example: certain departments, regions, or external companies having service contracts with the different service organizations).
Users	All users participating in the service process are users for the Cisco ServiceGrid platform. According to the role and position, a user is a member of one or many organizations and has one or many roles. The organizations define what information a user is allowed to see. The role defines which functions and portal groups a user can access, and what information is readable or writeable by the user.
Queues	The function of a queue is to route calls to certain skills. Queues apply directly to a company and can hold an unlimited number of technicians. Queues can be structured into three levels (Levels 1/2/3), and can be assigned to specific workflows. The queue selection can be pre-set in the contract elements and appears (by default) when opening a new call.

2.11.6.2 Inventory Data Administration

Inventory data can be optionally stored in the Cisco ServiceGrid database (Table 16) to perform common data lookups and validations associated with service cases.

Table 16. Inventory Data Administration

Manufacturer	A manufacturer is the producer of a device. A manufacturer helps administrate and differentiate the inventory.
Device Types	Device types are the generic configuration items. A device type is most often manufactured by a manufacturer. Each device is referenced to a device type.
Devices	Devices (such as hardware, software, and documents) are exactly referenced to one device type, one organization, and one location. Each device has a referenced service level within a contract. A device may have an owner (user).
Locations	Locations are addresses of places where service can be delivered to or devices are installed. Locations belong to only one organization (a customer, in most cases).

2.11.6.3 Contract Data Administration

As shown in Table 17, contract data can be optionally stored in the Cisco ServiceGrid database to perform common data lookups, validate contractual obligations, and support escalation and SLA adherence.

Table 17. Contract Data Administration

Contract	Contract describes the relationship between one service customer and one service provider. It allows two organizations to work together. Contracts define only the relationship between two organizations and can hold contract elements and service items (services). Contract elements and service items hold the information about the provided services between those two organizations.
Contract Elements	Contract elements are the services provided for a specific customer organization by a specific provider organization. Contract elements are elements of service contracts. Contract elements may define all attributes of the service agreement. Contract elements are holding information about SLAs, escalation rules, categorization, and escalation to queues.
Service Items	Service items are the provided services. Service items hold all attributes of a service including SLAs, escalation rules, categorization, and escalation to queues, but have initially no reference to a contract. When service delivery is agreed on between the customer and a service provider, the service item is referenced to the contract.

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2.11.6.4 Data Upload and Download

Data can be uploaded (imported) into the Cisco ServiceGrid database or downloaded (exported) from the Cisco ServiceGrid database.

The Cisco ServiceGrid platform provides upload and download functions to access the Cisco ServiceGrid database. These functions can be performed manually or automatically.

Data can be uploaded or downloaded into the following data objects:

- Company Data
- Organization Data
- User Data
- Queue Data
- Device Data
- Manufacturer Data
- Location Data
- Device Type Data
- Contract Data
- Contract Element Data
- Service Item Data

2.11.6.5 Manual Upload and Download of Data

Manually started uploads and downloads are performed directly from the affected data list.

2.11.6.6 Automatic Upload and Download of Data

Data can be exchanged automatically with other business applications.

Use Cases

Data downloads are used to supply data (such as calls, locations, users, and devices) to other applications, stores, users, or databases. Data uploads are used for periodic synchronizations of data managed in other databases.

Features

- Automatic downloading of data is customized using time schedulers. Data can be downloaded automatically via email (data as attachment), SFTP (file transfer), or SOAP (data is pushed to an external SOAP server).
- Data can be uploaded automatically via SMTP/email (data as attachment) or FTP (file transfer).
- Data can be uploaded or downloaded using different formats (including XML, CSV, and XLS) and different transport methods (including FTP, SMTP, and SOAP).

Table 18 reviews these features.

Table 18. Features for the Automatic Upload and Download of Data

Direction	Protocol	Methods	Processing	Data Format	Encryption
Download	SMTP	Push/push	In time as scheduled	XML, CSV	TLS
Download	SFTP	Push/push or push/pull	In time as scheduled	XML, CSV	SFTP
Download	HTTPS SOAP	Push from Cisco ServiceGrid to external web service	In time as scheduled	XML, CSV	SSL
Upload	SMTP	Mail with attachment	Processed once per day	XML	TLS
Upload	SFTP	Push/push or push/pull	Processed once per day	XML	SFTP

2.11.7 Customizing

Cisco ServiceGrid provides a flexible framework to build custom workflows and setup configurations.

2.11.7.1 Standard Setups for Administration

Cisco ServiceGrid provides more than 100 standard setups for administration of the main data objects.

The setups cover list and detail forms for:

- Companies
- Organizations
- Users
- Locations
- Devices
- Contracts
- Contract Elements
- Service Items
- Activities
- Messages
- Solutions

2.11.7.2 Customizing List and Detail Forms

List and detail forms can be customized following specific requirements of the customer.

The Setup Tool allows the customization of each of the standard setups following specific requirements of the client in terms of:

- Fields displayed
- Default values
- Filter values
- Order of fields
- Used label

2.11.7.3 Standard Workflow Library

Cisco ServiceGrid provides a standard workflow library for Incident Management, Service Request Management, Problem Management, and Change Management.
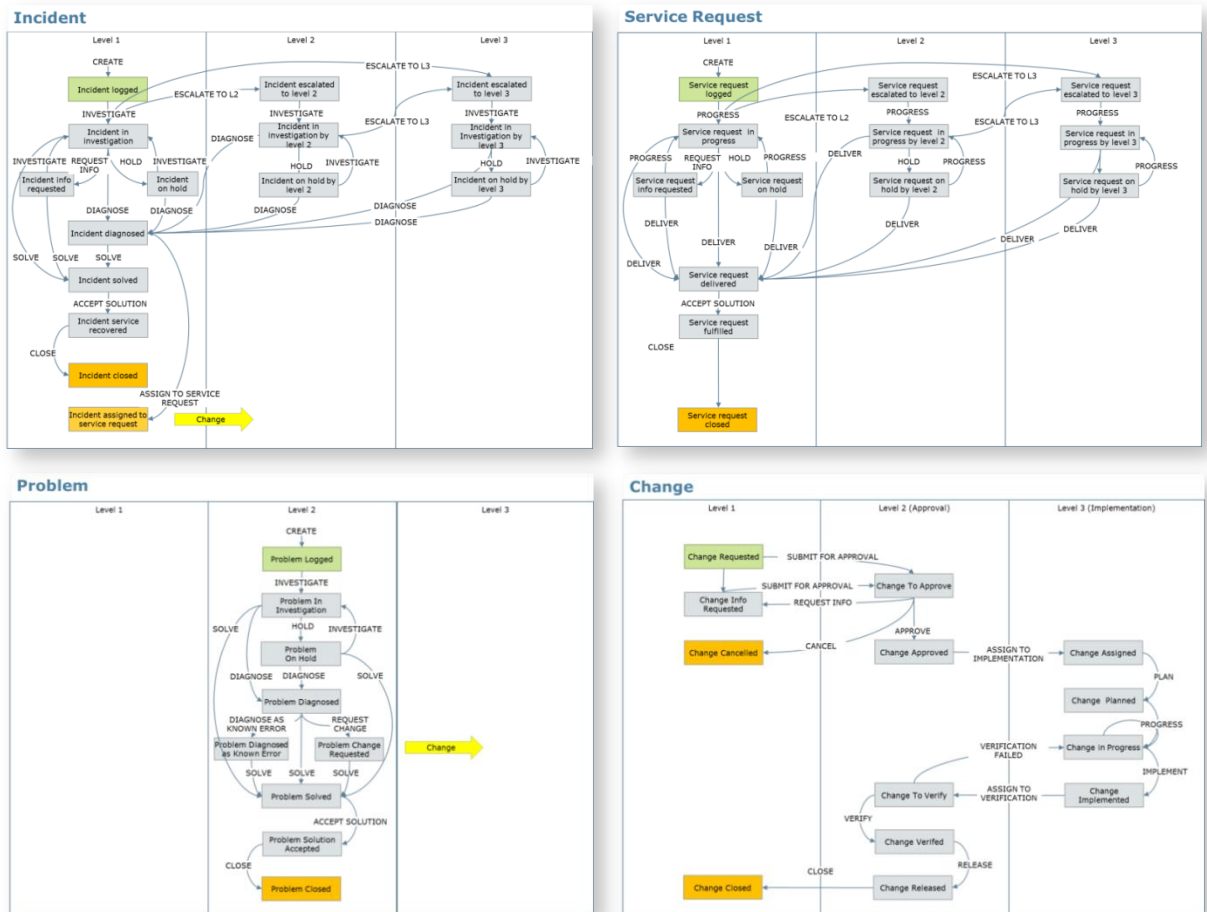

Figure 12. Sample Workflows from the Standard Workflow Library

Each of the standard workflows consists of:

- Status
- Action
- Call detail setups
- Call list setups

Each of the standard workflows contains sample settings of:

- Priority codes
- Urgency codes
- Impact codes
- Failure types
- Problem types
- Provider categories

2.11.7.4 Workflow Customizing

Workflows can be customized to support the specific requirements of the service organization (Table 19).

Custom workflows or creating new workflows is executed via the Cisco ServiceGrid workflow administration tool. To create a new workflow or change an existing workflow, the major parameters of the workflow are administrated using web browser forms in the Cisco ServiceGrid Portal.

Table 19. Workflow Elements

Status Codes	The list of status codes
Actions	The actions leading from one status code to the successor status
Code Tables	Code tables for Priority Codes, Urgency Codes, Impact Codes, Failure Types, Problem Types, and Categories
Setups	Detail and list setups for displaying and managing the service cases in the portal

Functions

- Create a new workflow
- Create and update status codes
- Create and update actions and successor rules
- Create and update code tables

2.11.7.5 Message Rules Customizing

Message rules serve to trigger alerts or notifications to partners or persons involved in a given support process.

Use Cases

The administrator creates message rules to:

- Send a notification to a person when a certain status occurs
- Send a warning alert to a person when the service level could be missed
- Send an alert to a person when an expected transaction was not sent by the Ecosystem Trading Partner

Features

Trigger a message by:

- Status
- Priority
- Service level fulfillment
- Customer
- Provider
- Update by customer or provider

Functions

- Create a message trigger

- Create a communication (such as email or SMS)

- Create or use an existing template for the message content

2.11.8 Reporting

Cisco ServiceGrid provides optional standard and custom real-time reporting via the Cisco ServiceGrid Portal as illustrated below in Figure 13.
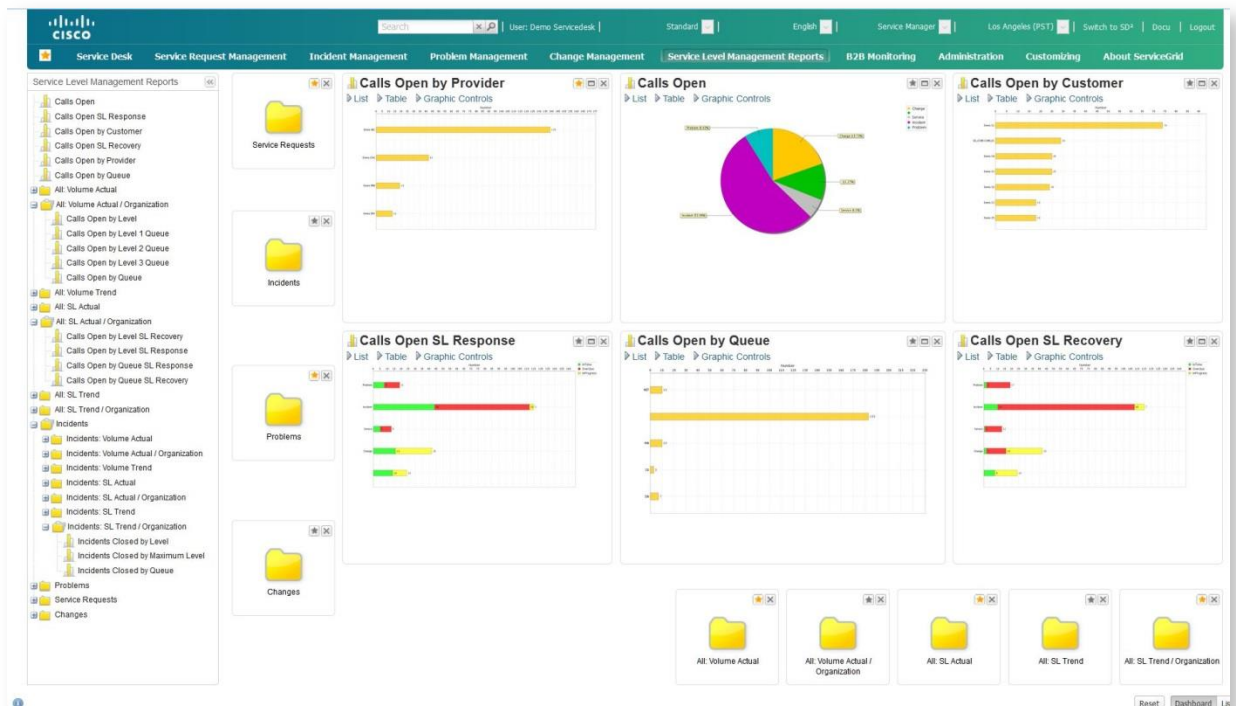

Figure 12. Sample Dashboard "Service Level Management Reports"

Reports are created from the data stored in the Cisco ServiceGrid database for each service case processed through Cisco ServiceGrid, and are retrieved in real time directly from the Cisco ServiceGrid database.

2.11.8.1 Standard Reports

Cisco ServiceGrid optionally provides a set of more than 250 standard reports for different analysis tasks and service processes.

Standard reports are available for different categories of service level monitoring including:

Volume Reports

- Volume Actual
- Volume Actual / Organization
- Volume Trend

Service Level Reports

- Service Level Actual
- Service Level Actual Organization
- Service Level Trend
- Service Level Trend / Organization

Standard reports are also available by service process, including:

- All Service Cases
- Service Requests
- Incidents
- Problems
- Changes

2.11.8.2 Customizing Individual Reports

Existing standard reports may be modified or new custom reports created to support specific customer requirements using Cisco ServiceGrid setup tools.

Reports are based on setups. The setups are database queries collecting database fields.

The result of a setup is a list of collected data fields. Within the setup, filters and sort orders can be defined. Additionally lists can be grouped by one or many of the selected fields, resulting in accumulated numbers for call volume or average service times.

Applying this method makes it very simple to create or change reports and resulting business graphics.

2.12 Mobile Call Management

Mobile Call Management is an optional application module included in the Cisco ServiceGrid Portal that provides service desk and support personnel, service managers, or field technicians using smartphones or tablet PCs (Table 20) with instant access to service case assignments, status, updates, and reports (Table 21).

Table 20: Mobile Call Management Use Cases

Service Manager	The service manager uses Mobile Call Management to get an instant overview of the service status and service levels for which he or she is responsible. Based on the overview, a service manager can take advantage of a stepwise drill down into a list of service cases, the details of each service case, and the history behind each case.
Technician	The technician on the road uses Mobile Call Management to receive his or her service orders, immediately acknowledge the receiver, and update the status. Service data, such as work or travel time and spare parts usage, can be collected on site and in real time.

Table 21: Mobile Call Management Functions

Functions for Service Managers	- Menu: Service Case Overview - List: Call Tracking - Details: Drill down into case details - History: Drill down into call history
Functions for Technicians	- Menu: Service Case Overview - List: Call Tracking - Detail: Drill Down into case details - History: Drill Down into the call history - Open New Calls - Call Update and Close - Time Recording - Collect Parts Used