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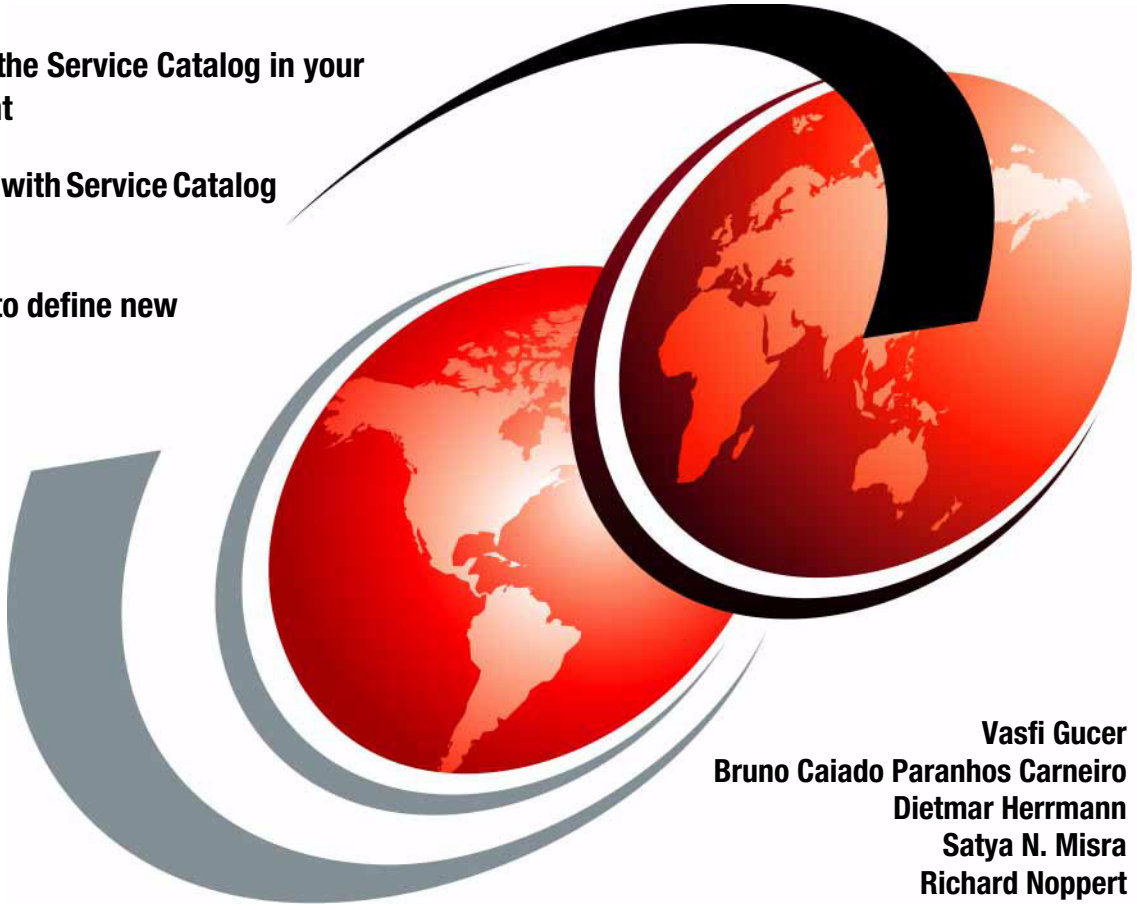
Implementing IBM Tivoli Service Request Manager V7.1 Service Catalog

- Implement the Service Catalog in your environment
- Experiment with Service Catalog scenarios
- Learn how to define new services



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Implementing IBM Tivoli Service Request Manager V7.1 Service Catalog

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Note: Before using this information and the product it supports, read the information in “Notices” on page v.

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Preface

IBM® Tivoli® Service Request Manager Version 7.1 provides a unified and integrated approach to dealing with all aspects of service requests. This approach enables a “one-touch” IT service experience, backed by an optimized delivery and support process. Tivoli Service Request Manager is a powerful solution that closely aligns IT operations and business operations, improving IT service support and delivery performance.

This IBM Redbooks® publication provides information that can be used by clients, partners. and IBM field personnel who want to implement ITIL® based Service Catalog processes in an enterprise environment. This book is a reference for IT specialists who implement IBM Tivoli Service Request Manager Service Catalog processes in client environments.

This book is divided into two parts: Part 1, “Concepts and components” provides an overview of the IBM Tivoli Service Request Manager Service Catalog functions and components as well as some of the standards that drive Service Catalog development. Part 2, “Getting started” describes the use of the product to enable readers to create a demonstration or proof-of-concept environment around core product functions.

The team that wrote this book

This book was produced by a team of specialists from around the world working at the International Technical Support Organization, Austin Center.

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Thanks to the following people for their contributions to this project:

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Part 1

Concepts and components

In this part we provide an overview of the IBM Tivoli Service Request Manager Service Catalog product functions and some of the standards that drive its development. We also discuss the various components, logical and physical, that make up the product and the functions that they provide.

1

Introduction to service concepts

This chapter provides an overview of service and service management concepts based on ITIL definitions. This chapter contains the following sections:

- “Services, a lost bridge between business and IT” on page 4
- “Service encapsulation” on page 5
- “Service management” on page 8
- “Service granularity” on page 17
- “Service complexity” on page 21

1.1 Services, a lost bridge between business and IT

Since the emergence of concepts connecting business with the IT, most notably with the publication of the first ITIL books in 1989, movement toward the use of IT as a strategic enabler has gained strength. This trend has been a natural consequence of the increasing presence of technology in the execution of various organizations' strategic objectives.

CEOs are inevitably asking CIOs and their IT services departments to help achieve their companies' strategic goals. This trend follows a maturity path that originated with the technological approach of simply reducing costs and automating tasks to an approach in which IT is part of both strategic planning and execution.

Some initiatives to increase the involvement of IT have failed, and a common reason for this failure can be summarized as a misunderstanding by or an inability of some IT environments to deliver *value* from the clients' point of view. Moreover, the search for value is so deeply attached to service provisioning that *services* are even defined around the value concept. The following ITIL definition illustrates this statement:*

Service definition: A service is a means of delivering value to clients by facilitating outcomes clients want to achieve without the ownership of specific costs and risks.

The service definition proposed by ITIL is centered on two fundamental concepts:

- A service, by definition, must help clients achieve their desired objectives.
- Clients buy services to transfer costs and risks to an expert.

Value is achieved when the expert seamlessly delivers a service that is a necessary and an acknowledged part of the client's business goals. Defining and managing the necessary services to achieve specific business outcomes is a fundamental objective for any IT department that wants to be recognized as a business enabler, not solely as a commoditized technological function of the organization.

* Iqbal, Majid, Nieves, Michael, Service Strategy, London, Crown Publishing, 2007, ISBN 9780113310456.

1.2 Service encapsulation

Encapsulation is a means of grouping tasks in a controlled, value-driven way that meets clients' needs. Providers are in control of the delivery process. The providers execute specific tasks and produce the result; thus, the providers themselves undertake the difficulties and risks of accomplishing the result. The client is, in fact, buying solely the result, not the process of producing it or the *encapsulated* process.

Are clients also users?: ITIL differentiates a client (called customer in ITIL terminology) from a user by defining a client as the entity that buys the service and defines the service-level targets. Alternatively, ITIL defines a user as the entity that uses the service on a daily basis. The differentiation is relevant because not all clients use the services (and users may use a different service than those used by clients). At times, clients and users may have conflicting interests. A client invariably has to balance various factors to justify buying a service, while users are typically focused on their own needs. You must consider this differentiation when evaluating a service value proposition.

The delivery of services can occur at different levels. From a business perspective, services are the continual delivery of a defined value. Services are supported by transactions to fulfill users' demands, which are called *service requests*. The following definitions are relevant to this discussion:

Service request	Transactional delivery of value to fulfill a user demand. A service request is an atomic, one-off delivery of a predefined output that supports a user demand. For example, a password reset, server installation, mobile computer delivery, and an application installation fulfill service requests.
Service	Continual delivery of value to the business. A service is the delivery of continual support, during a specific period of time, that achieves a given client outcome. Service level agreements (SLAs) are made at this level. For example, providing application hosting, storage support, and backup services are all services.

Service requests support service lines, providing a framework for service encapsulation. For example, a continual backup service can be supported by various service requests such as backup creation or backup restore. This relationship is a multilevel service definition, in which a service (a backup service, for example) meets a client-specific request. The request, alternatively, is supported by different transactional services that meet user demands. The

encapsulation defines reusable service requests that support a defined service, and the encapsulated requests are called *service offerings*.

This relationship is not simply a classification hierarchy where backup service offerings are grouped around a backup service. In fact, *services and service requests have different outputs.* The output of services supports business outcomes, whereas the output of service requests support specific users. Thus, a backup service must guarantee, for example, that data redundancy prevents the loss of business data caused by eventual failures of storage systems. Contrast this example with a server backup, which can be delivered by a service request instead. An IT manager or a CIO (or even a CEO) can offer the output of a backup service. The encapsulation works at different levels because the CEO does not know the necessary steps for securing data but only wants the business to keep working without any data loss. Figure 1-1 shows how multiple service offerings can support a service output and the different audiences involved.

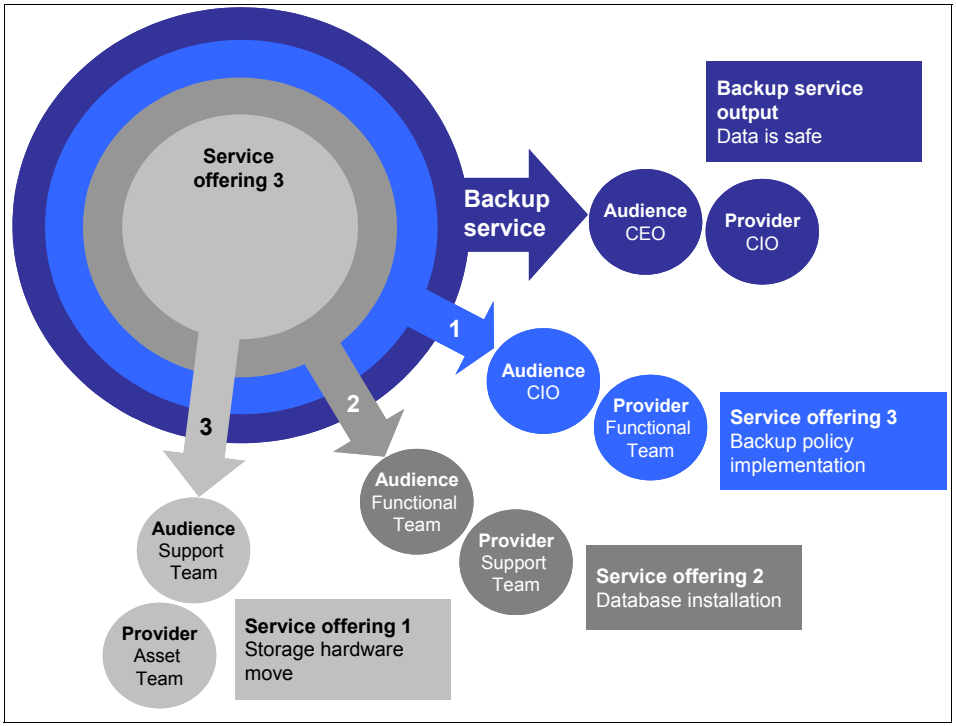


Figure 1-1 Service offerings support a service, each with outputs, audiences, and providers

In general, different simultaneous and sequential tasks are necessary to deliver the rather complex output of securing data. Although the process of delivering this offering may seem simple to clients who are aware of and receive the result, in fact, a considerable number of steps are required, and different groups are involved in achieving this output. Controlling the complexity of the “securing data” mission can be challenging. Encapsulation defines boundaries for the required elements that support this mission.

Every time an entity provides a means that facilitates the outcomes of another business function, and risks or costs are transferred to the provider, a service is being delivered. So why not define intelligently combined, reusable service requests that ultimately support business outcomes? Or why not simply define service requests that can be easily accessed by users so the requests can fulfill their demands?

Reusable service offerings might have more controllable costs, more reliable delivery, and higher quality standards due to best practice utilization. Moreover, they encapsulate tasks, reducing complexity and transferring risks or costs to “specialists.” When in charge of the “securing data” mission, CIOs can return to the teams and request reusable service offerings rather than numerous and poorly controlled tasks. These offerings are service requests with predefined tasks and approval workflows, encapsulated to specific audiences such as technical or nontechnical users or teams.

The IBM Tivoli Service Request Service Catalog module provides a foundation for encapsulating services, linking them to specific SLAs, assets, tasks, and service offerings. Each offering is also encapsulated by predefined workflows, roles, approvals, and fulfillment methods. Key performance indicators (KPIs) and reports, established at different levels of the organization, from execution analysts to service managers, ensure the proper control and view of the offerings, through user-specific interfaces.

Terminology and positioning: The Service Catalog module (covered in Chapter 2, “Introduction IBM Tivoli Service Catalog” on page 35) is part of IBM Tivoli Service Request Manager V7.1 and provides functionalities mainly related to ITIL Service Catalog Management, Service Level Management, and Request Fulfillment processes. However, the ITIL processes and the Service Catalog tool represent different entities and, in this book, the processes and the tool are differentiated by the spelling of the word *catalog*, using *catalog* whenever the reference is to the process and its related objects and using *catalogue* whenever the reference is to the tool.

Defining this difference is significant because the Service Catalog is a framework for implementing processes and workflows that are described by the ITIL books. However, installing the Service Catalog does not mean ITIL processes are in place. ITIL is a set of best practices that must be implemented at different levels, from operational processes and managing to tools that can support the defined processes. In this chapter, we discuss best practices that are not executed in the tool, such as portfolio definitions. We recommend these best practices to better explore the Service Catalog functionalities as a service management instrument.

1.3 Service management

Services, as value-driven entities, must be managed to ensure the fulfillment of client requirements. The set of organizational capabilities used to provide value to clients in the form of services is called *service management*.

Service management is accomplished in concurrent interconnected levels, from enterprise strategy to the tracking of a single service offering. These levels work in analogous cycles of creation, design, implementation, operation, and monitoring (see Figure 1-2 on page 9).

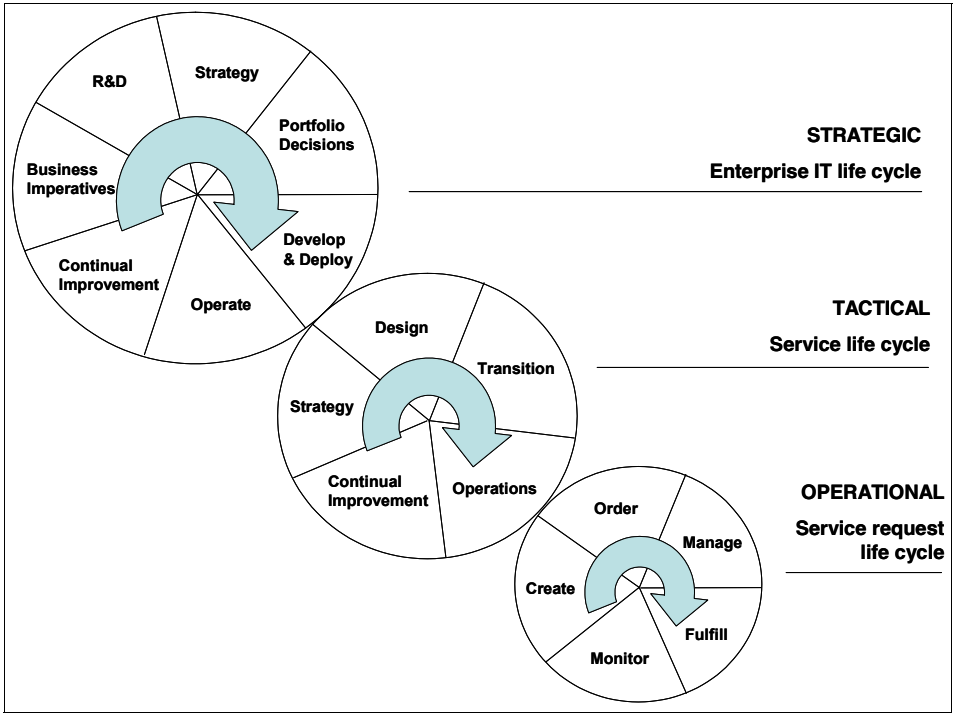


Figure 1-2 Multilevel perspective of IT service cycle

Figure 1-2 provides a multilevel representation of the ITIL cycle core. Splitting the original cycle is useful for clearly understanding the connection between the cycle of a single service request and of service definitions that occur at strategic and tactical levels. Strategic levels represent executive spheres that make the decisions about priorities and investments. The tactical level represents the managerial and coordination layers that establish the framework that facilitates strategic decisions. Finally, the operational level executes the tasks, fulfilling the defined service requests. All cycles can be understood as different perspectives of the generic service life cycle.

1.3.1 IT service cycles

The link between the cycles in Figure 1-2 is not only conceptual. Understanding the connection between offered services and an organization's priorities and strategies can optimize investments and fulfill the organization's needs as a whole, from the business perspective to the daily issues that users face. These levels are not restricted to large companies. When a small or mid-size company defines and designs their offered services, the company is working on strategic

and tactical levels. These services must be supported by service requests that carry out their own particular functional cycle when ordered by an user.

For example, a company may decide to offer firewall support to its internal users, either due to high demand or to support a specific outcome such as protecting sensitive information. Offering firewall support to internal users does not involve a transaction but is a service that demands various transactional service offerings such as firewall rule modification or port configuration. From the decision to protect sensitive information to the fulfillment of a specific firewall rule modification request, a path connects the functional cycles. The path is composed of the continuous feeding of and feedback between specific responsibilities from each cycle. Figure 1-3 and Figure 1-4 on page 11 show examples of the feed and feedback paths, respectively.

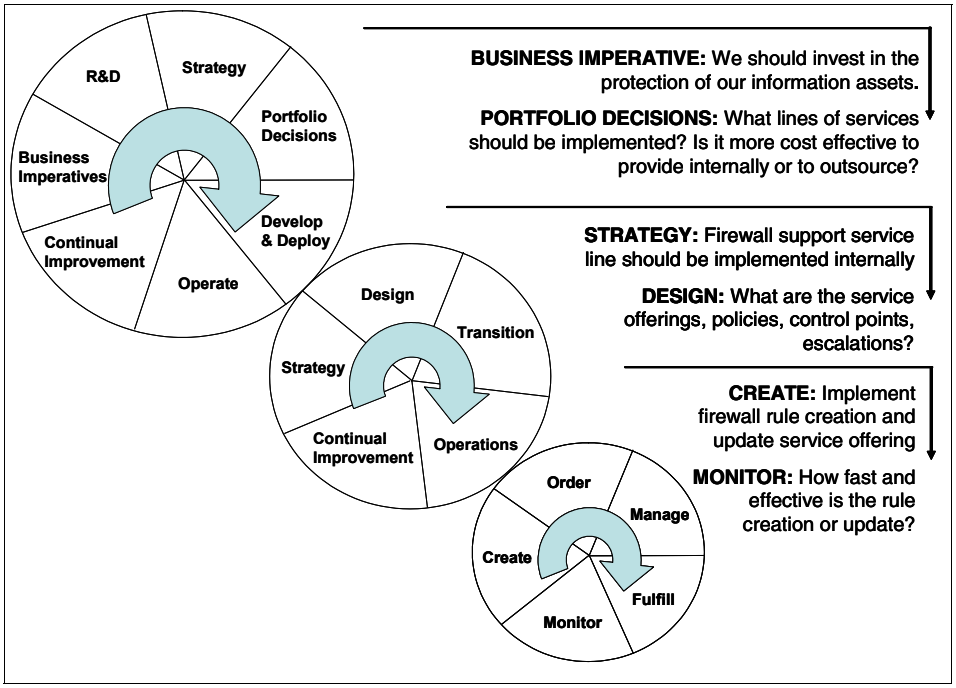


Figure 1-3 Feed path: different actions and common concerns

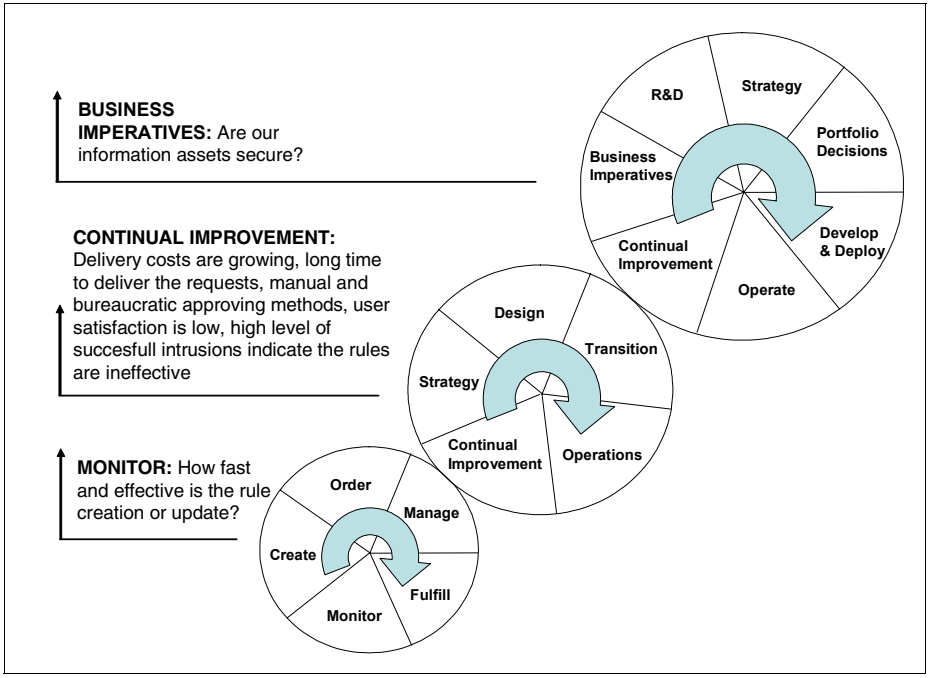


Figure 1-4 Feedback path: different actions and common concerns

1.3.2 Service portfolio and catalogue

The section discusses the service portfolio and the service catalog, two essential parts of the ITIL-based service catalogue management process. For more information about service catalogue management, refer to the ITIL publication *Service Design* (ISBN 9780113310470).

Service portfolio

The objective of a service portfolio is to maximize the value offered by the services while managing risks and costs. The portfolio principle defines lines of services that can be linked to client assets (such as information, in our previous example). The service catalog is the visible part of the portfolio and represents a single reference for all available services. In other words, the portfolio provides strategy guidance for the creation of a service catalog that is accessible by the organization and describes all the available services. Figure 1-5 on page 12 shows types of content for each.

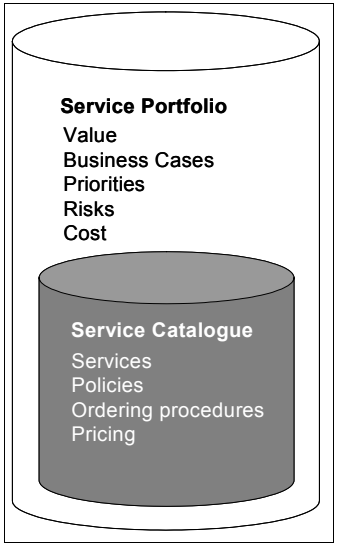


Figure 1-5 Examples of content for service portfolio and catalog

The portfolio must prioritize and define investments in accordance with the business strategy and required outcomes. The firewall service discussed in 1.3.1, “IT service cycles” on page 9 is a good example. When defining a portfolio, the business imperative of securing information assets might be originated by a business case that showed potential financial losses due to unprotected information. In the same way, various service requests, grouped by different lines of services, can also be created according to business outcomes. To organize the possible service lines, *market spaces* can be defined that combine a utility and a client asset, forming clear opportunities for the creation or redefinition of existing services (see Figure 1-6 on page 13).

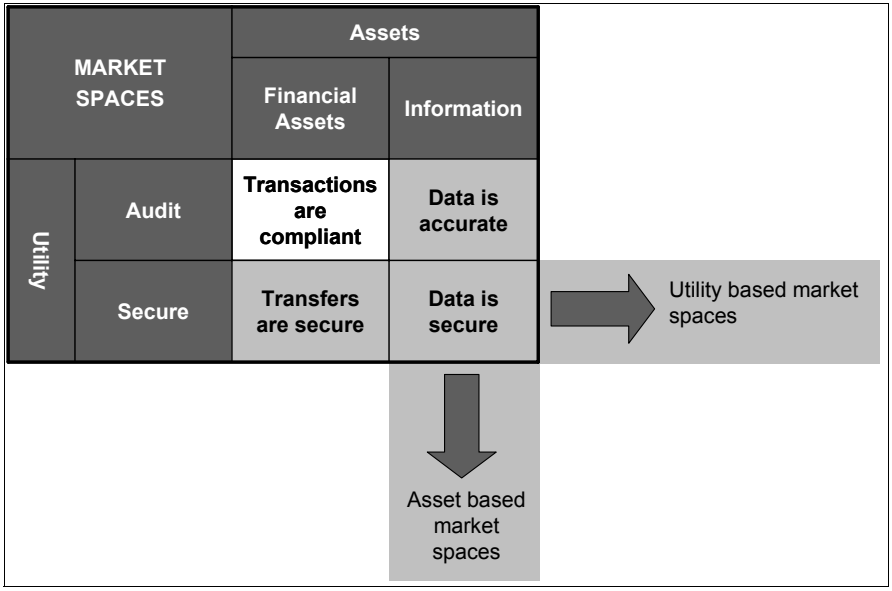


Figure 1-6 Market spaces in terms of supported outcomes

Combining different utilities and assets and defining market spaces that fulfill the needs of the organization provide a solid base for defining services that make up a catalog. In this case, the services are not defined simply in terms of available resources, but also in terms of the context in which the resources are useful and in terms of the business outcomes that justify the investment in them. Figure 1-7 shows examples of utilities and assets.

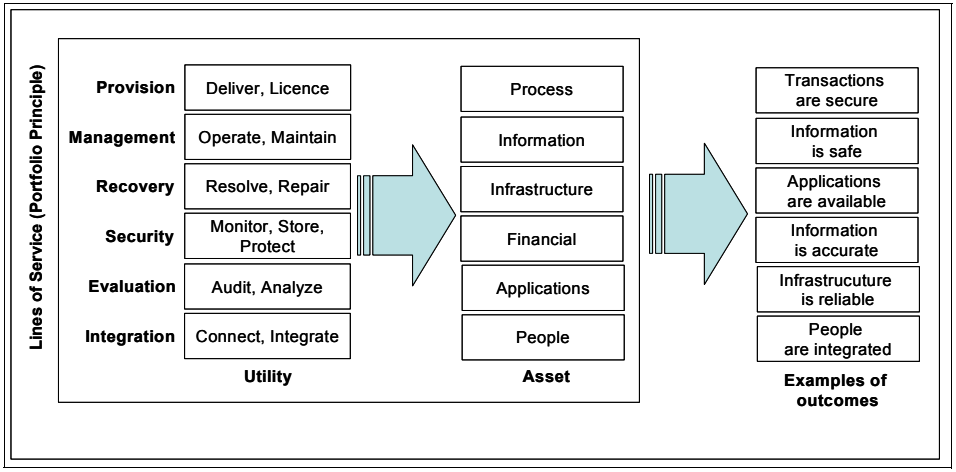


Figure 1-7 Connecting lines of services and client assets to define outcomes that form different market spaces

The risk of not using a market space approach is offering services that do not have a clear connection to the outcome the audience, including users and clients, wants to achieve. Having the market space as a guide can orient the strategy and design toward business outcomes and avoid unnecessary expenses. See the following market space scenario for an example.

Market space scenario, wasting money on financial reports: The IT department of a large bank generated a report of all transactions that occurred in a certain period of time. The creation of the report consumed a considerable amount of time and machine resources and was composed of millions of entries. Because the bank had always generated the report, no one ever questioned whether it was useful. An observant IT manager noticed that the entire report could be generated by demand. The IT manager also realized that the financial team required smaller reports listing specific transactions. The manager built a centralized services portal that provided the necessary predefined reports and an option for requesting customized reports.

In our financial report market space scenario, the delivery of the full transaction report was not defined in the context of its utility, leading to a sometimes useless and resource-consuming operation. Although the market space framework was originally intended to help define new services, it can be used in service reformulation through a reverse engineering strategy. For example, the transaction financial report can be situated in the “transactions are compliant” market space because the final outcome supported by the report is to check the compliance of transactions with different criteria.

Some organizations face serious difficulties with this form of reverse engineering, simply because they have never thought about what kind of outcome is supported by their services. Indeed, this lack of understanding makes this exercise even more valuable. In our specific example, knowing that the final objective was to check transactions for compliance (which in this case was somewhat obvious but objectives sometimes can be nebulous) led to the reformulation of the report content and of even the delivery method.

Service catalog

The importance of a service catalog is frequently underestimated. Creating a service catalog is not the same as simply listing or describing services. The catalog is part of a cyclic design process that involves continually providing an IT portfolio strategy, linking and defining IT services, systematically monitoring the strategy and services, proving feedback to close the loop, and eventually redesigning the services and the catalog, which can mean adding, retiring, or redefining services. A service list that is not part of this process cannot be defined as a service catalog, or at least, as a service catalog that works as a service management instrument. The value that can be delivered by the services

in a catalog is not provided by the catalog alone, but by the evaluation cycle that considers which services must be included in the catalog and which ones must be retired from it. Figure 1-8 illustrates this cycle.

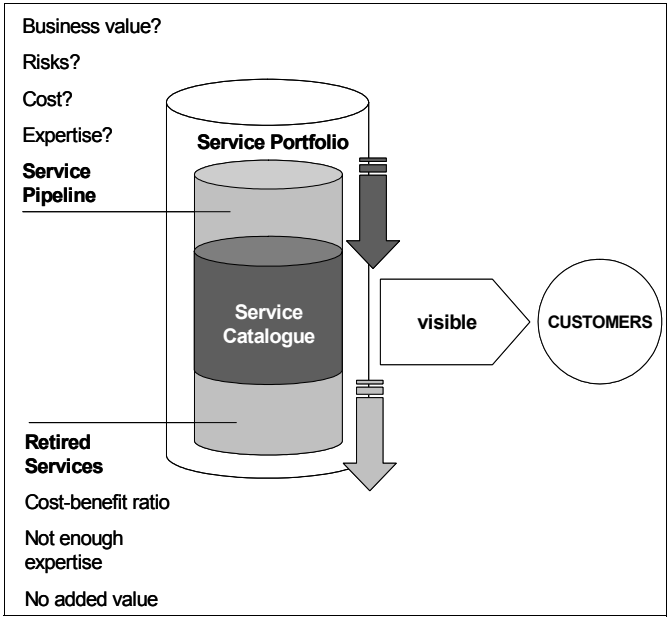


Figure 1-8 Service catalog

The fact that the service catalog is the visible part of the cycle is essential. It basically answers the question: What can providers do for me? Note that the catalog must contain the services that support the client business, not transactional service requests.

The services in a service catalog are in fact *packages* that support business demands. That is why SLAs are closed at this level: They must represent a measurable value for the business, not for a single user. This value can be defined at different levels, from a technical orientation to more business-oriented deliverables. One possible design is to define both business and technical catalogs (see 1.4, “Service granularity” on page 17 for details).

These service packages generally support one or more types of transactions such as incidents and service requests and can also define multiple classes of services at different service levels. Figure 1-9 on page 16 shows an example of a service with basic attributes. Possible subsets of the attributes of a service are

the types of service requests and the response and resolution times. However, notice in Figure 1-9 that the firewall service itself is described as the *provision of protection*, not the provision of a port modification or a report, which are service requests, not the delivered service.

FIREWALL SERVICE

Description

Provision of protection against external and internal access to sensitive applications and data through the installation, support and maintenace of firewall components and software.

Options

The service can include internal, external or both types of protection

Service Levels

Class	Hours of Support	Response time
I	24X7	5min
II	7AM-8PM	15min

Class	Service offerings	Delivery time
I	Port modification, Network component security report	1h
II	Port modification	3h

Charge

Monthly fixed charge and transaction charge per service request.

Figure 1-9 Example of a service

Service requests are a form of ongoing support for an established service, and an intelligent choice of which types of requests to encapsulate and how they are to be delivered can considerably influence service quality. The fact that the response and resolution times of transactions related to a service are among the most common types of SLAs is a clear demonstration of this influence.

Suppose the client bought the firewall service and numerous other services that provide different transactions (such as port modification) that can be ordered by users. An answer to the question “what can the IT department do for me?” still remains unanswered. Frequently, the answer to that question is dispersed among dozens of delivery interfaces, applications, or subcontracted providers.

In some cases, even the provider does not know all the service requests that are being delivered. The latter case can easily lead to a point where it is impossible to control the delivery process of all requests or to understand why users are unsatisfied. In addition, the users do not know how to find the necessary services or what to expect from poorly defined (or encapsulated) service requests that are executed in different ways each time. The solution is to define a central service request catalog that is visible to the users and contains reusable, well-defined service offerings. Multiple-offering catalogs with specific offerings can also be defined for different audiences or user profiles.

1.4 Service granularity

Service granularity specifies the element of the organization supported by the service. This specification is a guide to defining the necessary service offerings to support it, or if current offerings are already defined, the specification is a means of considering expected outcomes. Figure 1-10 shows a granularity range of elements supported by services and examples of supporting service offerings.

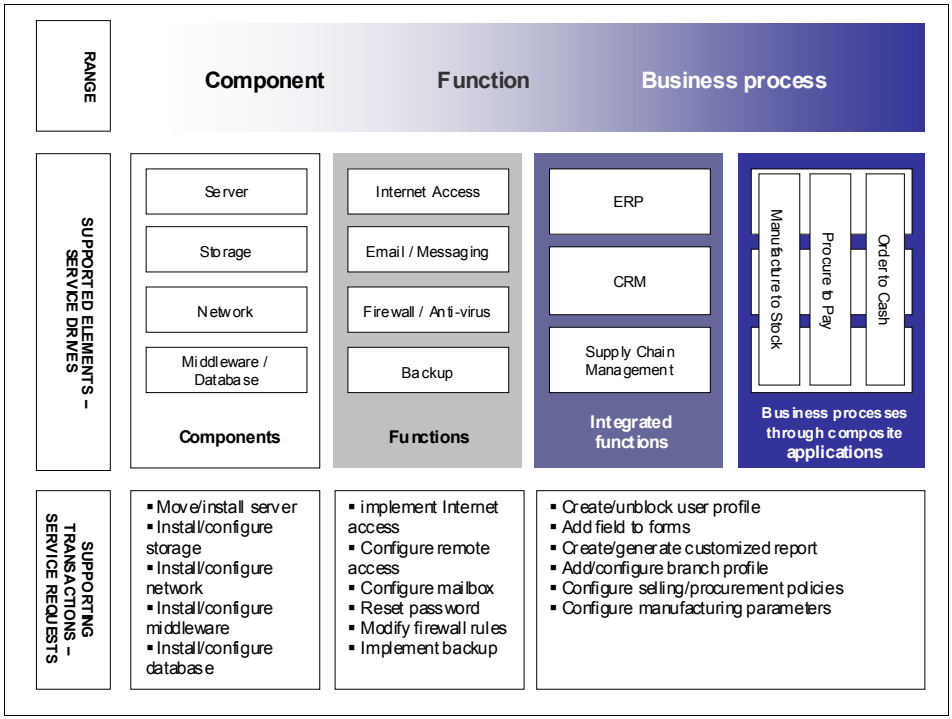
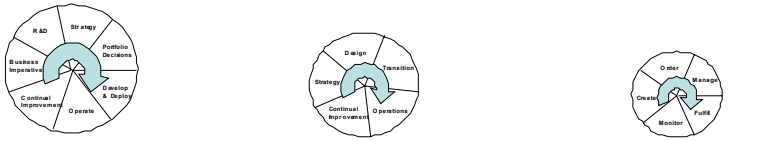


Figure 1-10 Elements supported by services and service requests through granularity range

The service offerings in Figure 1-11 have diverse audiences and support different elements of the business, ranging on the granularity scale from IT components to business processes. The specification of which elements of the organization are supported is an initial link between portfolio market spaces and the creation of a service. For example, the market space “Information is safe and protected” can be chosen as a priority during portfolio definition. In the process of defining the portfolio, the requirement that no specific data can be prioritized is included, and then a function-based element “backup” is chosen as one of the supported elements of the organization.

A backup service is defined as a service catalog entry, and an SLA that defines the service levels is created for this service between the provider and the client. Finally, service requests such as backup creation, policy modification, and backup restore are defined to support the backup service. As described earlier in the market space scenario, the opposite can also be accomplished, reorganizing already established service requests around an outcome and possibly adjusting them to better support the outcome. Figure 1-11 illustrates the service structure of a given organization.



Strategic	Tactical		Operational
Outcome	**Supported elements**	**Services**	**Service offerings**
Applications are integrated.	Middleware (component)	Middleware architecture	Bus specification
		Middleware support	Middleware installation
Information is safe and protected.	Firewall (function)	Firewall support	Port modification
	Backup (function)	Backup support	Backup restore
			Backup creation
Financial transactions are compliant.	Reporting (function)	Report services	Custom report request
		Report tool support	Run database optimization tools
	Portal (function)	User administration service	Account creation
	ERP (integrated function)	Financial module support	Parameters modification
	Transfer to charge (business process)	Transaction support	Transaction tracking

Figure 1-11 Simplified view of a service structure

Granularity is an essential part of the service definition because it structures how the client views the IT department and everything it offers to the organization. Defining a service based on an element that supports a component is, from the client viewpoint, different from defining a service that supports a function or even a business process. An ERP (enterprise resource planning) support service is closer to the business compared to middleware or operational system support, and the service design role is to balance the level on which the services can be defined. In Figure 1-11 on page 18, the designer can choose to support a “Reporting function” and group together technical offerings (such as “Run database optimization tools”) and more business-oriented offerings (such as fulfill “Custom report request”). Another possibility is that the designer can define the report tool as a supported element and define technical services to support it. The definition of the supported elements drives the nature of potential services and ultimately the service offerings.

Granularity has serious implications for service management because it determines the *object*, or *service*, on which SLAs are applied and managed for continual improvement. For example, managing middleware support for continual service improvement is a different matter than managing an Internet access function, with different key performance indicators (KPIs) and client needs. Service requests are also defined with the purpose of establishing the granularity of the service, ranging from technical-oriented to business-oriented transactions. Moreover, *linking services and service requests is not a classification but a relationship*.

Classifications

A classification can be used to define a hierarchy for service offerings and expose them to users in an offering catalog, but this hierarchy is usually only a view or grouping, not a relationship for managing services. Managing demands a link to services and client requirements. For example, the relationship between service offerings and services does not have to follow the internal structure of the IT department. If an Internet access service defines an SLA for the time to deliver a user profile-creation service request, the Internet access service and the SLA can be linked. They can be linked even if the department that provides the infrastructure of the Internet access is not the same as the one that modifies user profiles. This relationship controls how fast the user profile is created and how it affects the SLAs of the Internet access service. A discussion of relationships is provided in 1.5.1, “Designing services” on page 21.

Do not be tempted to create services or even service offerings based only on the needs of a specific team. Services package what is considered of value to the business, even if tasks from different teams are demanded. The encapsulation of tasks in service offerings, the definition of workflows, and linkages to services through relationships help advance this mission. Reusable technical service requests can be an effective way to control the fulfillment process, making it more

agile or reliable through predefined job plans according to technical best practices. Alternatively, nontechnical service requests can automate approval workflows for common user demands or even critical business needs that are locked in bureaucratic bottlenecks.

Best practices for designing a CMDB

Relationships are an important instrument in any service management system. They are generally established between configuration items (CIs) and between CIs and other objects such as incidents, changes, service offerings, and problems. CIs are components that define infrastructure configurations that must be controlled and audited by the change management process. The relationships are used to evaluate impacts and retrieve information, keeping a record of infrastructure snapshots. You can use the IBM Tivoli Change and Configuration Management Database (CCMDB) V7.1 product to discover infrastructure components and their dependencies, create CIs and relationships, and control eventual changes through their change management module. This product is based on the same process foundation of Service Request Manager and can be seamlessly integrated.

The IBM Tivoli Service Request Manager Service Catalog module provides predefined objects that can be related (such as services and service offerings) and also a configuration management foundation to define and establish relationships to and between CIs. Note, however, that the module is not capable of making discoveries, nor does it have a change management capability. Therefore, if the Service Catalog is implemented without CCMDB V7.1, you have to manually define CIs and assets, and they must be under the control of a change process that is executed outside the module, either by a system or by manual procedures.

For environments that are not controlled by a configuration management tool, you can use the Service Catalog module to create initial CIs to define relationships between IT components or between IT components and specification documents, SLAs, and services. In scenarios that demand these controls, creating CIs can be an early step toward the design and further implementation of a CMDB (configuration management database). The backup-creation offering described in 1.5.1, “Designing services” on page 21 is a possible scenario. Remember, however, that the manual or external implementation of a change management process is still required and might be impracticable in environments that demand complex relationships and strict controls over defined CIs. For a structured and precisely maintained CMDB implementation, we recommend Tivoli CCMDB V7.1.

See *IBM Tivoli CCMDB Implementation Recommendations*, SG24-7567, for details.

1.5 Service complexity

If granularity is the *what,* the complexity is the *how*. The complexity dimension deals directly with design, implementation, and tracking issues and is addressed in the step that follows the process of defining granularity. We can summarize the service encapsulation process as the attempt to meet the client's needs and, at the same time, maintain manageable complexity. Figure 1-12 lists illustrative questions.

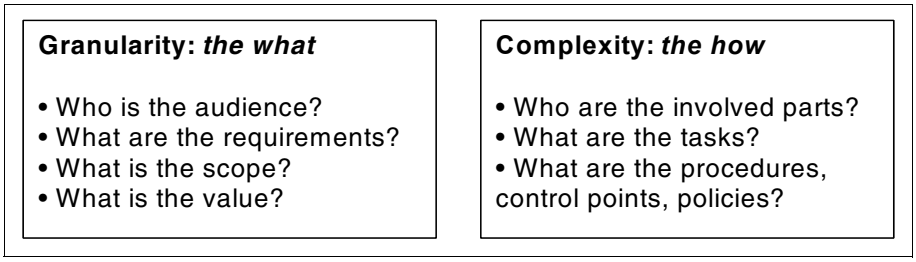


Figure 1-12 Service complexity

Service encapsulation using granularity and complexity concepts including two necessary aspects of a valuable service, a *fit for purpose* (the *what*) and a *fit for use* (the *how*). A fit-for-purpose service has a clear connection with client or user outcomes, and a fit-for-use service guarantees that the service is provided in a timely manner and is correctly sized, secure, and available. Thus, the *what* (that is, the granularity) defines what the clients need and what is to be provided, and the *how* (the complexity) transforms client requirements through the definition of procedures, escalations, workflows, and control points. ITIL defines the *how* concept as the *warranty* of a service.

Functionality is only part of the game: Defining a corporate communication service with extended functionalities such as instant messaging and voice over IP can perfectly fulfill the client needs. However, if the systems are not correctly sized to fit demand or if common tasks such as account configuration or password reset are not provided in a timely manner, the service can fail miserably to provide value.

1.5.1 Designing services

In this chapter, we first described a backup service as an example of service. The output, rather than a simple backup performed on a server, was sold to the CEO as a solution that implied "do not worry, all our data is safe." Continuing with this example, the CIO tells his teams, "if these backups do not work, I have to fire all

of you." Before any one has to be fired, a smart Service Designer defines service offerings that support the backup service, making it reliable and fulfilling the business need of securing the data.

Service definition

Services must be defined in terms of value. Although value cannot be fully translated into numbers, defining SLAs is a good practice to set measurable targets for the service. The service conditions, constraints, and SLAs in a service catalog are usually a primary guide to defining the proper offerings that support it. These offerings encapsulate tasks providing specific outputs for external or internal users. However, additional controls and specific processes, systems, and resources are necessary to fulfilling a service to its full extent. The defined service offerings can serve as reusable components to deliver user demands, or the offerings can be combined to deliver macro-objectives, which are not the sole components of a service.

It is important to ask ourselves, to whom are our offerings being provided and what offerings are we providing? Offerings are created to facilitate user access, to define delivery standards, and to track the fulfillment steps and quality of the delivery. The primary guide for answering our two questions is a supported service. SLAs, because of their tangible nature, are generally a direct source. Ultimately, service offerings are reusable ways to obtain the necessary components for providing the final output of an internal or external service (see Figure 1-1 on page 6).

Sometimes, a clear link between an offering and a service is lacking, for example, an account creation offering. The service request itself seems to be simply an account creation, and no business value or business outcomes can be derived from it. However, if an offering, even a simple one, has no business value and no connection with any business outcome, then it simply should not exist. An account creation in fact supports a user administration service or an application-specific service that has to support the business in some way.

Figure 1-8 on page 15 shows the portfolio and catalog cycle with a way in and a way out of the catalog. Both ways are the consequence of a constant evaluation of the kind of value provided by the services. If a service provides no value, keeping it in the catalog is a waste of resources. However, a service can be improved, and a significant part of an evaluation is to define how to improve it. The evaluation of the service offerings that are linked to a service must be part of this continual improvement cycle (see the example in Figure 1-4 on page 11).

Table 1-1 lists the types of offering fulfillment that you can create in the Service Catalog module, and Table 1-2 lists examples of sources for the creation of offerings.

Table 1-1 Service fulfillment types

Types of service fulfillment	Concept	Example
Description	Necessary steps to accomplish an objective or the conditions in which an offering is provided	Security procedures or instructions
Action	Link to a self-service page or application	Password reset or change application
Supply chain	Tasks to be assigned to specific people or groups of people	Install server

Table 1-2 Sources and examples of service offerings

Sources of information for offering creation	Type of fulfillment	Common examples
Project tasks or groups of tasks (depends on the defined granularity)	Supply chain	Backup creation, server installation
Operational-level agreements	All types	Job batch running, code transport to production
Common internal service requests	All types	Access to team database
Common service requests provided to users	All types	Account creation, application installation, password reset, on-demand reports
Service catalog and SLAs	All types	Backup restore, port modification
Common tasks that are fulfilled using specific applications or Web pages	Action	Travel expenses reimbursement, vacation request

Sources of information for offering creation	Type of fulfillment	Common examples
Procedures for accomplishing specific objectives, frequently demanded by users	Description	Travel procedures, security procedures, agreements and contacts with third parties
Predefined, usual changes that do not require a Change Advisory Board (CAB) meeting	Supply chain	Usual application or server parameter modifications that are acknowledged not to generate impact and do not modify CIs

Conjunct utilization of CCMDB V7.1, IBM Tivoli Service Desk, Service Catalog modules: If you implement IBM Tivoli Service Request Manager V7.1 Service Catalog and Service Desk modules together with CCMDB V7.1, you can create new types of offerings. For example, in this scenario, the service catalog can consist of a form that provides predefined service requests that must be linked to CIs or even must proceed through incident or problem management paths. This synergy creates an environment on which precise planning of tasks, labor, and related assets can be accomplished and in which a comprehensive view of the provider capability is achieved.

Limits for service offering granularity

Just like services, service offerings also have different granularities. The service offering granularity determines the degree of what can be encapsulated in a reusable way. A service offering can be as simple as the steps for accomplishing an objective or link to a Web page or application.

Or a service offering can be as complex as implementing an ERP on a Web portal, linked to an ERP support service, for example. It is possible that during service design, you may need to encapsulate extensive service offerings. These offerings can be full implementations of large environments or complex business transactions. When you do need to encapsulate extensive service offerings, you must ask the following important questions:

- How frequently do we have to repeat the delivery of this output to an internal team or to an external user?
- Are we trying to encapsulate a complex offering because of poor project management practices?
- Are we trying to encapsulate an offering because of poorly defined service management responsibilities and accountabilities?

If the demand frequency is low and project management practices are currently poor, we recommend you not define an offering. Although you can track the tasks for completion, time, and cost, a service offering catalog cannot be a substitute for project management tools and is not a solution for tracking projects. The offerings are reusable, meaning they are a grouping of recurring tasks that do not require project management coordination. In addition, defining offerings is no substitute for governance models that establish the responsibilities and accountabilities for tracking and evaluating services.

In some cases, however, you can consider larger offerings. The service offering granularity is in fact linked to the granularity of the supporting tasks on jobplans or to the level of automation that can be provided. If an output is extensive, the related tasks cannot be detailed with specific instructions but with more extensive steps. You can nest more detailed steps in larger ones, and you can define the entire path in more detail. However, we recommend this kind of encapsulation only in the case of frequent delivery of larger outputs. In other words, if the service offering is part of the daily life of an organization, the procedures are well known and documented, and the creation of a project is not necessary, you might consider a service offering encapsulation.

Composing services

Table 1-3 shows an initial mapping of a service according to the granularity scale described in Figure 1-10 on page 17 and to the market space definitions.

Table 1-3 Composing services

Strategic	Tactical		Operational
Outcome	**Supported elements**	**Services**	**Service offerings**
Data is safe	Backup (function)	Backup support	?

Table 1-4 shows a simplified requirement study for a service, illustrating that the requirements can vary depending on user profiles, components, branches, or business lines. These requirements are a determinant factor when creating a service definition.

Table 1-4 Backup support service simplified requirements study

Functional service: Backup support	
User profile	Only the owner of the server or component can order a new backup.
Localization	Branch office must have a backup retention period of 4 months.
Component	Restore times for ERP database must be less than 12 hours.
Business line	Marketing department demands a restore within a maximum of 12 hours for their file server.

Figure 1-13 on page 27 shows the backup support service based on the requirement study provided in Table 1-4.

BACKUP SUPPORT

Description

Delivery of backup for servers, databases, and business applications avoiding the loss of critical business data.

Conditions and constraints

- The backups are provided continuously in accordance to defined policies.
- The supported specifications of the components are listed on **<link>** and the policies of each component must be defined between the provider and the customer.
- Limit of 10 TB of total storage, provided by backup service provider.

Service level agreements

Servers, databases, and business applications		
	Servers: Max 50	**Other components: Max 50**
Retention period	Max 6 months (according to policy)	Max 3 months (in accordance to policy)
Backup creation response time	<= 1h (defined as request approval or rejection due to financial or technical constraints)	<= 1h (defined as request approval or rejection due to financial or technical constraints)
Backup creation delivery time	<= 12h for max 1 TB	<= 12h for max 1 TB
Backup restore response time	<= 30min (defined as request approval or rejection due to financial or technical constraints)	<= 30min (defined as request approval or rejection due to financial or technical constraints)
Backup restore delivery time	<= 12h for max 1 TB	<= 12h for max 1 TB
Policy modification	Takes effect before the next scheduled backup, except if it is scheduled earlier than after the 12h.	Some components **<link>** demands to be stopped to modify policy parameters. A change is demanded for these components and follows change management policies **<link>**. The other components follow the same server stardards.

Charge

Fixed charge for max 100 backups implemented. Transactional charge per additional backups up to limit of 150.

Demands that exceed the specifications of total storage, total number of servers and components, creation and restore time, retention period, or 150 total backups are subject to evaluation or contract renegotiation.

Figure 1-13 Backup support service

In the next section, we examine in more detail the service offerings required to support the backup support service. These service offerings include specifying different fulfillment methods, defining roles, and controlling SLAs and approvals. The Service Designer is responsible, when specifying both the requirements and service definition, to build the necessary steps to ensure that the service is fit for its purpose and use.

Backup support service offerings

You must balance different factors to determine the service offerings that are related to a service. In our example, the offerings are backup creation, backup restore, and policy modification, all of which are included in the SLA. However, these offerings are not the only possibilities. You also must consider internal, technical offerings, encapsulated to deliver the necessary outputs, and nontechnical requests that demand financial approvals, such as the demand for a new limit for backups. Table 1-5 shows specific drivers for offering creation; these drivers represent the capabilities provided by an encapsulated service request.

Table 1-5 Drivers for service offering creation

Reference	Driver
1	Facilitate the access and ordering process by an internal or external audience
2	Manage SLA or other quality and efficiency parameters
3	Encapsulate tasks for better control over approvals or fulfillment

Table 1-6 provides an initial list created by a Service Designer based on the drivers in Table 1-5, on an analysis of the requirements, and on the service definition. Although any offering always takes advantage of all three capabilities, the drivers show the main reasons for encapsulating service requests as offerings. (The numbers in the “Core design driver” column in Table 1-6 correspond to the numbers in the “Reference” column in Table 1-5.)

Table 1-6 Initial list of service offerings

Service offering	Core design driver
Backup restore	2
Backup creation	2
Policy modification	2
New backup limit request	3
New storage limit request	3

Service offering	Core design driver
New component specification request	3
Backup creation (internal)	1
Backup restore (internal)	1
Database backup (internal)	1

After creating an initial list of service offerings, you define the controls and methods to ensure the offerings are provided according to the expected value. Although the negotiations about service specifications are over at this point, you must consider the value proposition and client expectations when defining control points, escalations, and fulfillment options. For example, if you estimate that the time to deliver an offering is 12 hours, what exactly does the client expect to receive in 12 hours? You can always just implement a backup policy, but sending an e-mail to specific individuals who are members of the client team is a form of establishing clear communication and a higher value service.

The source of miscommunication in client relations is not usually the fulfillment of the offering but unclear followup communications. Implementing the backup policy can fail to provide value if the right individuals on the client team are not properly aware of the policy fulfillment, that is, they do not receive the expected information at the right time. The objective of this example is to show that fulfillment is only part of the service, not the complete package. A proper definition of the offering takes into account its many aspects.

In the next section, we describe the Service Catalog framework that enables you to define services and to create, control, and fulfill a service offering.

1.5.2 Service Catalog framework

The Service Catalog module provides a framework for you as a Service Designer to link defined services to service offerings, encapsulating the necessary controls, approvals, and tasks. You can use the module to facilitate access to the offerings, control the delivery procedures, and provide proper KPIs and reports to manage the services.

Note: This section introduces the main system objects and applications that compose a framework for designing offerings and operations. Chapter 2, “Introduction IBM Tivoli Service Catalog” on page 35, describes the functions and how they are organized in the Tivoli Service Request Manager Service Catalog. Chapter 3, “Scenarios” on page 89, describes implementations of various scenarios, including the backup creation offering, and explains how to manage services through the Service Catalog KPI and reporting capabilities.

Figure 1-14 shows the basic objects (shopping cart, purchase request, catalog order, and work order) that are used by the Service Catalog module when an offering is ordered, managed, and fulfilled. Because action and description offerings do not follow a procurement process, the figure illustrates a supply chain offering, which represents the most complete cycle.

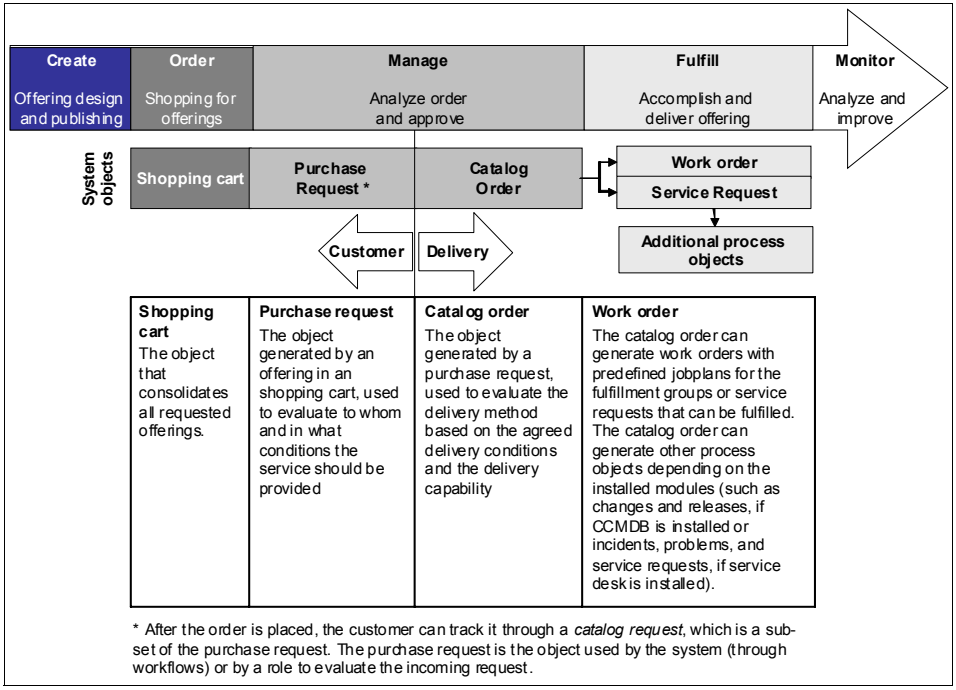


Figure 1-14 Consider both client and delivery perspectives in the offering cycle

Terminology: A *purchase request* is an example of a system object. When a specific purchase request is created, it is instantiated and a purchase request record is created, along with a specific record ID.

In the backup creation scenario, the user includes this offering in the shopping cart and submits it for delivery. An intermediate control before the purchase request can be established is to check, for example, whether the total amount of the cart is compatible with the user profile. Each offering in the cart generates a purchase request that an individual or an automated criteria checks to verify against applicable SLAs or other agreed terms (such as a limit of 150 backups). When the purchase request is verified, the delivery part of the flux begins, generating a catalog order and checking the delivery options and, possibly, internal SLAs. The process of checking the delivery option is usually performed by a delivery role, which can be an individual or a workflow. If an assignment must be made, a work order is created and job plans are assigned to individuals or groups.

Figure 1-15 shows the basic framework through which the offering flows. At first, the flux does not occur automatically, and an individual or a defined workflow are required to execute actions using specific applications to generate object records, change the record status, evaluate conditions, apply SLAs, and assign tasks.

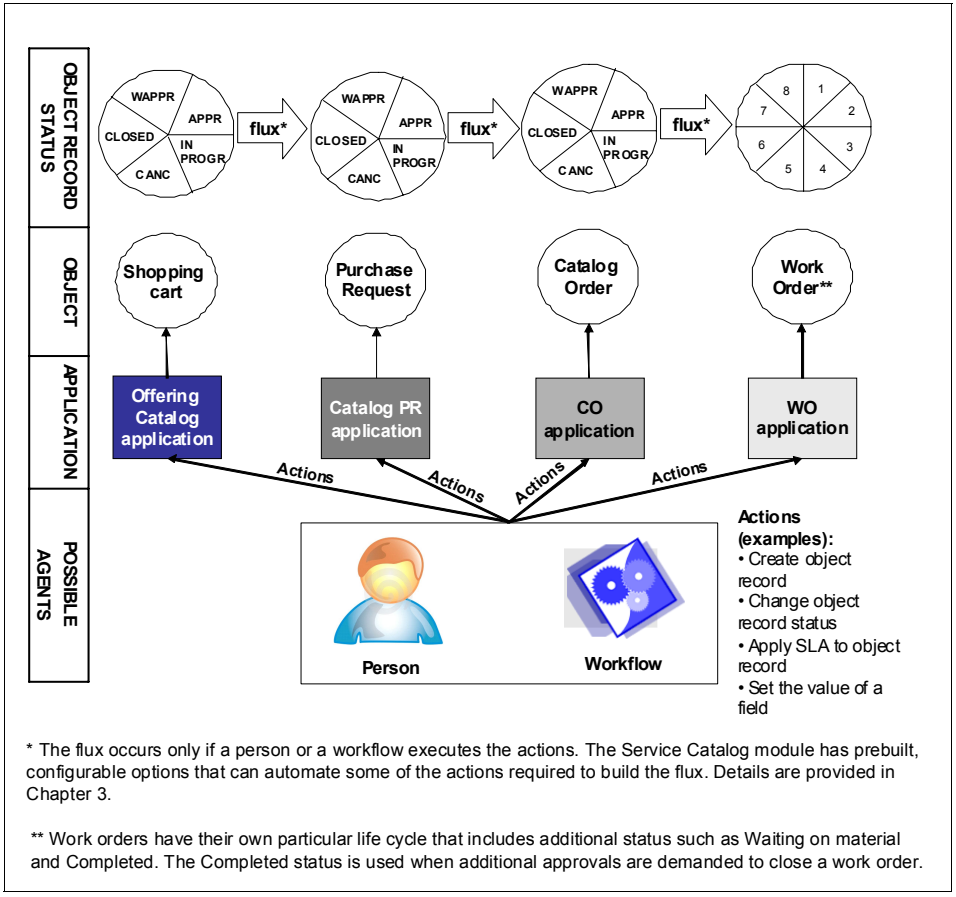


Figure 1-15 Actions trigger flux through the system objects

The applications shown in Figure 1-15 are used during the life cycle of an existing offering. To define the offering, you can use specific design applications that generate the configurations of the objects and the flux.

Figure 1-16 shows the main applications used in the context of the complete service offering lifecycle.

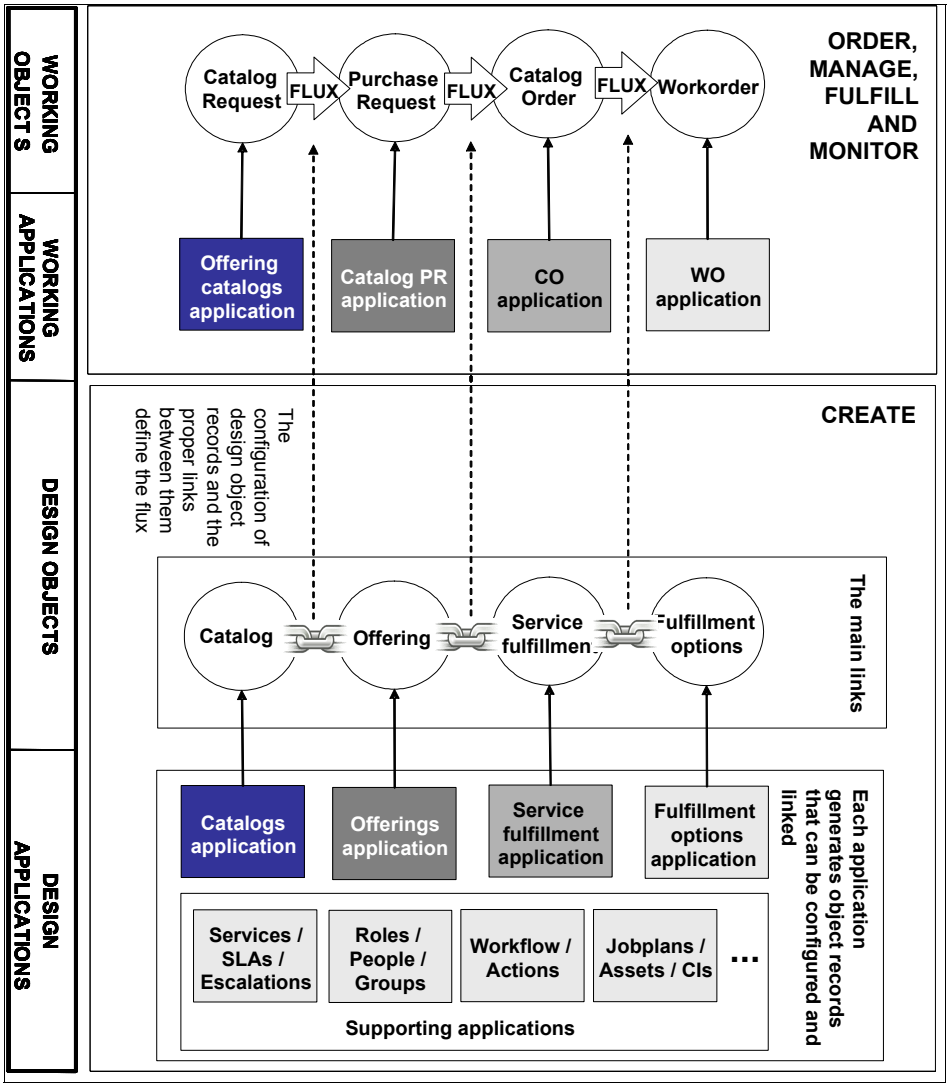


Figure 1-16 Service Request Manager main applications

2

Introduction IBM Tivoli Service Catalog

This chapter introduces the Tivoli Service Request Manager Service Catalog and includes the following sections:

- “Introduction” on page 36
- “Terminology” on page 37
- “Architecture overview” on page 40
- “Service Catalog life cycle” on page 46

2.1 Introduction

The IBM Tivoli Service Request Manager Service Catalog provides a complete end-to-end set of functions that enable you to define different types of requests for services. In addition, the Service Catalog provides a way to shop for those services and a structured process that manages the delivery of the services. Organizations can choose to utilize all or some of these functions.

To name this set of functions, IBM Tivoli uses the term *Service Catalog*. The *service catalog* term is also often used to indicate a list or itemized display of IT services, including description, options, service levels, and costs. ITIL documentation and the IBM IT Process Community also use *service catalog* in this manner. We use the term *service catalog* to identify the service offerings that we build.

The Tivoli Service Request Manager Service Catalog provides the functions and capabilities necessary to make services available to clients who wish to requisition those services. To this end, the Tivoli Service Request Manager Service Catalog supports the following types of capabilities:

- Integrating service request management
- Defining services and service providers
- Managing service definitions
- Shopping and browsing for services
- Requisitioning and specifying service instances
- Enabling service entitlement
- Approving services
- Planning service fulfillment
- Delivering service fulfillment
- Integrating and managing service providers
- Monitoring service requisition and status and informing clients of these functions
- Logging and analyzing service requisition data

2.2 Terminology

We use the following terms in this chapter and subsequent chapters of this book:

- Basic Service

  A complete unit of service that can be rendered by one or more Service Delivery teams. Basic Services can be aggregated into composite services that can be ordered by service requestors.

- Capabilities definition

  The definition of information that describes a particular Basic Service, which can be performed by a particular Service Provider. A particular Basic Service can be performed by more than one Service Provider, and a particular Service Provider can perform multiple Basic Services. Different Service Providers can perform the same Basic Service in different manners.

- Catalog order

  Used by the delivery mechanism of the service catalog to identify the work (services) that has to be delivered.

- Catalog request

  An instance of a service offering that has been ordered by a service requestor. Catalog requests are fulfilled through the activities of the Service Catalog Supply Chain.

- Jobplan

  A detailed description of how a job is to be performed and the resources needed to complete it. A jobplan describes the tasks and resources necessary for a Service Provider to accomplish a Basic Service.

- Service

  Providing a service provides something of value to a customer that is not goods (that is, not physical items with material value). Examples of services include banking and legal support. *Service* is also used as a synonym for IT service.*

- Service catalog

  A document listing all IT services, with summary information about their SLAs and customers. The service catalog is created and maintained by the IT Service Provider and is used by all IT Service Management processes.*

* Iqbal, Majid, Nieves, Michael, *Service Strategy*, London, Crown Publishing, 2007, ISBN 9780113310456.

- Service Catalog product

  A complete end-to-end set of functions that enable the definition of services, provide a way to shop for those services, and offer a structured process that manages the manner in which each service is delivered. Organizations can choose to utilize all or some of these functions. Service definitions are stored in Service Definition Repositories (which some organizations might choose to label as *catalogs of services* or *service catalogs*).

- Service Catalog Supply Chain

  The chain of Service Catalog product components that accomplishes the full set of Service Delivery tasks. The chain starts with the ability of a service requestor to search for and requisition a service from the Service Catalog. The chain ends with the complete fulfillment of the service requisition.

- Service Delivery

  The core IT Service Management processes that have a tactical or strategic focus. In ITIL publications, these processes are Service Level Management, Capacity Management, IT Service Continuity Management, Availability Management, and Financial Management for IT Services. Service Delivery is also can mean the delivery of IT Services to customers.*

- Service Delivery team

  Same as an IT Service Provider but used throughout this document instead of *IT Service Provider* to avoid confusion with the IBM Tivoli Maximo Service Provider Industry Solution application. Designates a team that is responsible for the fulfillment of a service element.

- Service Desk

  The Single Point of Contact between the Service Provider and the Users. A typical Service Desk manages incidents and catalog requests. In addition, it handles communication with the Users.*

- Service element

  See Basic Service.

* Iqbal, Majid, Nieves, Michael, *Service Strategy*, London, Crown Publishing, 2007, ISBN 9780113310456.

- Service Fulfillment component

  The component of the Service Catalog Supply Chain responsible for the execution of a set of work orders that correlate to a service requisition.

- Service Fulfillment Planning component

  The component of the Service Catalog Supply Chain responsible for converting a set of service orders (that correlate to a service requisition) into a set of work orders (that completely and correctly fulfill the service requisition).

- Service level

  Measured and reported achievement against one or more Service Level Targets. Service level is sometimes used as an informal term to mean Service Level Target.*

- Service Level Agreement (SLA)

  An agreement between an IT Service Provider and a customer. The Service Level Agreement describes the IT service, documents Service Level Targets, and specifies the responsibilities of the IT Service Provider and the customer. A single SLA might cover multiple IT Services or multiple customers.*

- Service Level Management (SLM)

  The Process responsible for negotiating Service Level Agreements, and ensuring that these are met or eventually improved. SLM is responsible for ensuring that all IT Service Management Processes, Operational Level Agreements, and Underpinning Contracts, are appropriate for the agreed Service Level Targets. SLM monitors and reports on Service Levels, and holds regular customer reviews.*

- Service Level Target (SLT)

  A commitment that is documented in a Service Level Agreement. Service Level Targets are based on Service Level Requirements, and are needed to ensure that the IT Service design is “fit for purpose”. Service Level Targets must be measurable, and are usually based on KPIs.*

- Service offering

  A service stored within a service catalog that can be ordered by a service requestor. A service offering references one service definition. The reference can be to a composite service, which is composed of a sequence of one or more Basic Services.

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* Iqbal, Majid, Nieves, Michael, *Service Strategy*, London, Crown Publishing, 2007, ISBN 9780113310456.

- Service Order Planning component

  The component of the Service Catalog Supply Chain that is responsible for converting a service requisition into a set of service orders that correlate to that service requisition.

- Service Provider

  An organization supplying Services to one or more customers. Service Provider is often used as an abbreviation for IT Service Provider. A Service Provider typically supplies its services in an opaque manner. There might be multiple Service Providers that can render a particular service.*

- Service request

  Refers to the IBM Tivoli Maximo Service Request Maximo Business Object. It is a subclass of the Ticket MBO. It is used to submit requests to the Service Desk component and submit requests for the CCMDB Process Manager Programs (PMPs).

- Service Requisition Management Approver

  Role responsible for the entitlement confirmation and management approval of catalog requests.

- Service Shopping component or Service Shopping environment

  The set of applications, which are part of the Service Catalog Supply Chain, that enable a service requestor to search for service offerings, fill out the particulars of a service requisition, submit the service requisition, and then monitor the status of the service requisition while it is being fulfilled.

2.3 Architecture overview

Figure 2-1 on page 41 shows the main components of the Tivoli Service Request Manager Service Catalog product. The product contains the following three classes of components:

- Administrative and Service Definition tool
- Data Layer with Service Catalog related MBOs
- Service Catalog Supply Chain application components

* Iqbal, Majid, Nieves, Michael, Service Strategy, London, Crown Publishing, 2007,ISBN:9780113310456.

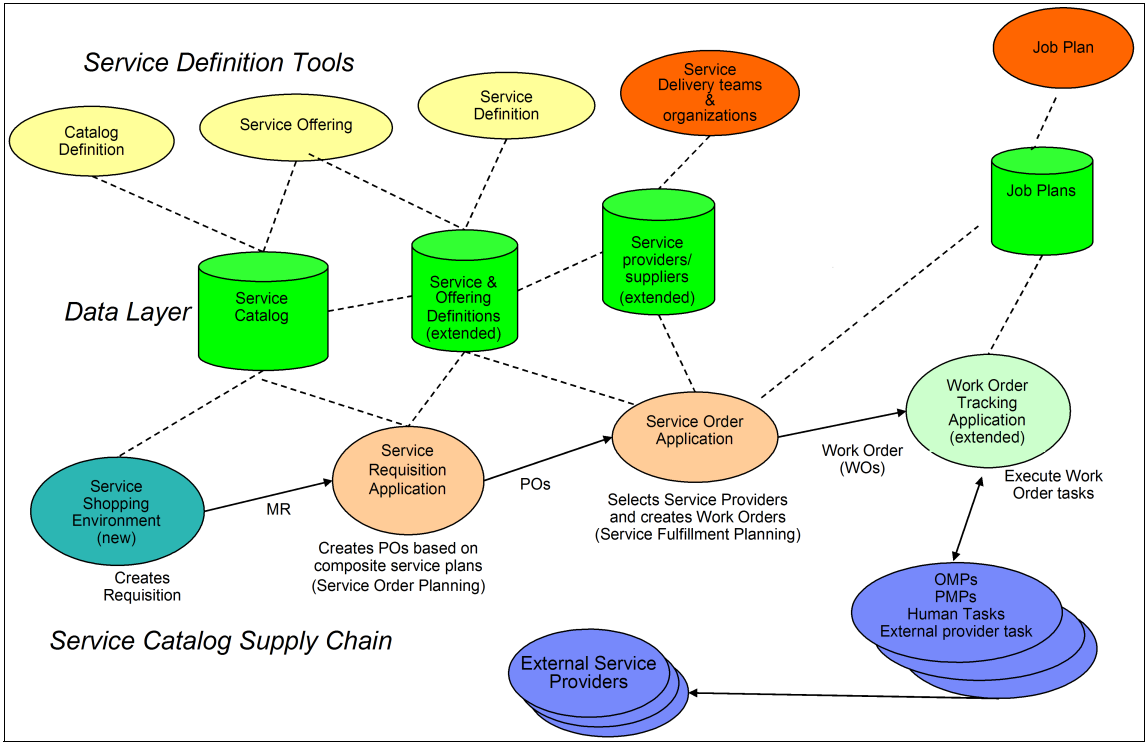


Figure 2-1 General overview of Service Catalog

The Administrative and Service Definition tool is a collective set of applications that manage the definition of the content necessary for the execution of the supply chain flow. The Administrative and Service Definition tool includes, among other applications, applications for defining services, offerings, and catalogs and for identifying suppliers and providers of those services and their capabilities.

The Maximo Business Objects (MBO) or data layer (accessible from the Products window) displays the main set of data objects (and associated business logic) that supports the execution of the Service Catalog Supply Chain.

The Service Catalog Supply Chain application flow is a concept that represents the complete service requisition fulfillment path, from service requisition submission, all the way through to the complete fulfillment of the requisition. Four generic components of the Service Catalog Supply Chain represent service oriented architecture (SOA) components that interact with each other in a well-defined manner. Clients can replace any of the four components with custom implementations of their own.

We define the following four generic set of components within the supply chain:

- Service Shopping environment

  This component enables a user to locate and order a service item, specifying all required input arguments for the service requisition. The component handles tasks such as user entitlement and service requisition approval processing. The output of a service requisition is in the form of a material requisition (MR) MBO. The requisition includes a reference to a Service Definition ID in a format that all the other supply chain components can recognize.

- Service Order Planning component (service requisition management)

  This component accepts a service requisition in the form of an IBM Service Management (ISM) material requisition and then transforms that requisition into a set of related service orders in the form of catalog orders. The Service Order Planning component also accepts a service requisition in the form of a material requisition and then transforms that requisition into a set of related service orders in the form of catalog orders.

- Service Fulfillment Planning component (service order management)

  Service Fulfillment Planning accepts a set of related catalog orders and then generates a single (possibly hierarchical) work order that can be used to accomplish the Basic Service steps necessary to fulfill the service requisition.

- Service Fulfillment component

  The Service Fulfillment component accepts a work order that defines all the tasks that must be accomplished in order to fulfill a service requisition and then oversees the execution of those tasks.

The out-of-the-box version of the Service Catalog product includes an instance of each of these four supply chain components.

At any point in the flow of the supply chain components, generating notifications of changes in key service fulfillment states must be possible, and all other components must be able to interpret these notifications. The notifications are generated by e-mail messages, using the e-mail listeners provided in the Tivoli process automation engine platform. The implementation in Tivoli Service Request Manager Service Catalog regards the Service Operation part (the ITIL Service Management phase) and is explained in the request fulfillment workflow (see Figure 2-2 on page 44).

Tivoli process automation engine: The Tivoli process automation engine (which was formerly called *base services* or the *Tivoli process automation*) is a set of solutions from IBM. The solutions leverage a common process automation platform and combine asset management and service management in one environment with a federated configuration management system for data integration. Refer to *Deployment Guide Series: IBM Tivoli CCMDB Overview and Deployment Planning*, SG24-7565, for detailed information about the Tivoli Process Automation Engine.

The two main areas of the Service Catalog architecture are the operational where we use the implemented services and the development area where the designed services are implemented.

The main interface for users to access the Tivoli Service Request Manager Service Catalog is the *offering catalog*. A user in the PMSCSRU security group works with the Start Center window in Figure 2-3 on page 44.

In the Offering Catalog, all available and implemented services are listed. Users choose a service and add it to the shopping cart. The following types of offerings are available:

- Descriptive service

  A descriptive service fulfillment type stores information, documents, procedures, and direction for a provided service.

- Action service

  An action service fulfillment type is used to set up a link to an external function, a Web site, or external software.

- Supply chain service

  A supply chain service fulfillment type is used to define and operate a service in Tivoli Service Request Manager with all available functions, such as work orders and jobplans, of the Service Catalog application.

Depending on the fulfillment type, an action is started in the background for a predefined service (see Figure 2-2 on page 44).

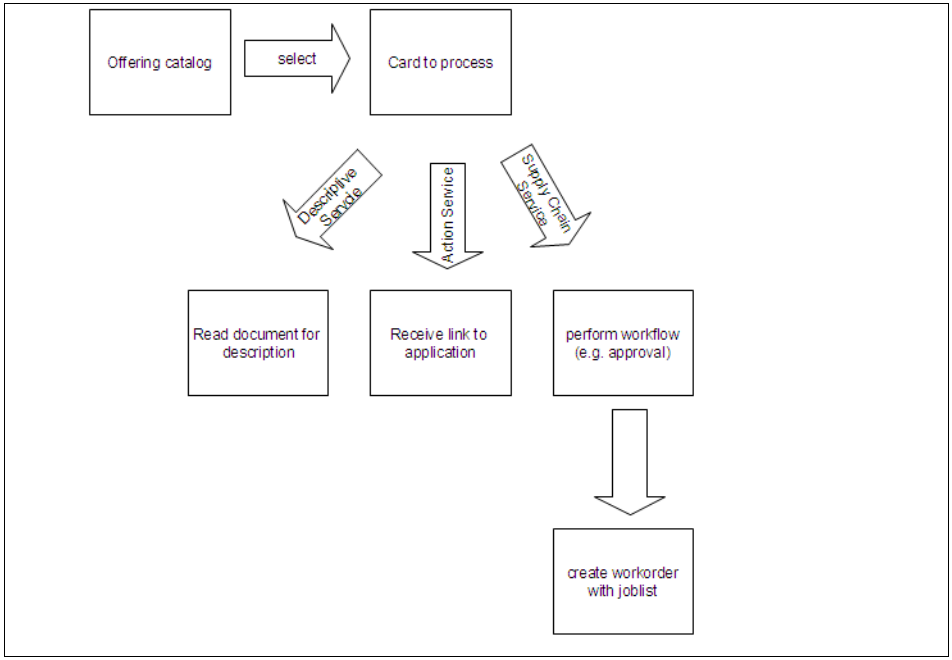


Figure 2-2 Simple Service Catalog function

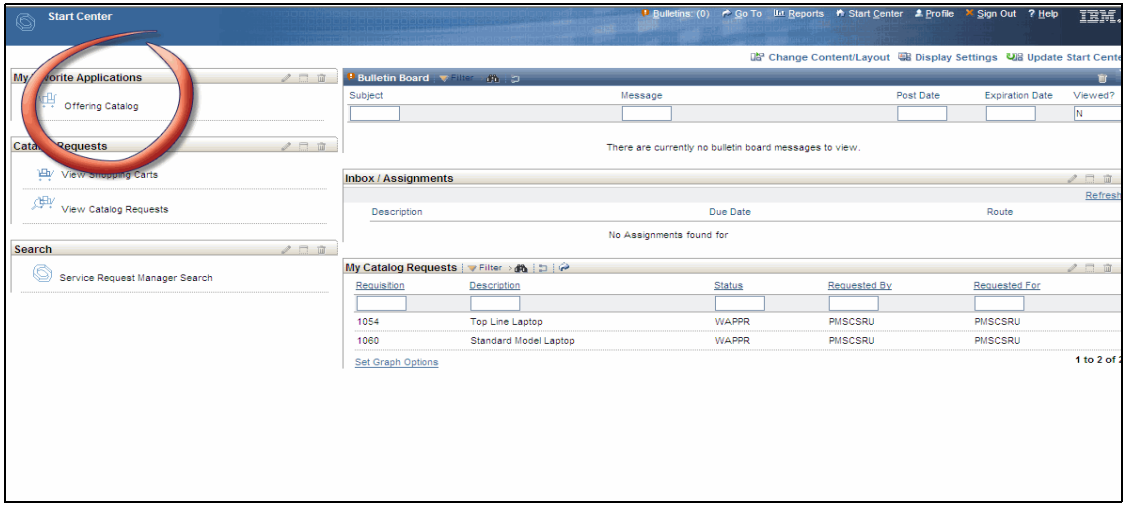


Figure 2-3 Start Center window for Service Requisition User role

In Figure 2-4, the user views a list of the descriptions for Enterprise Security Management service offerings.

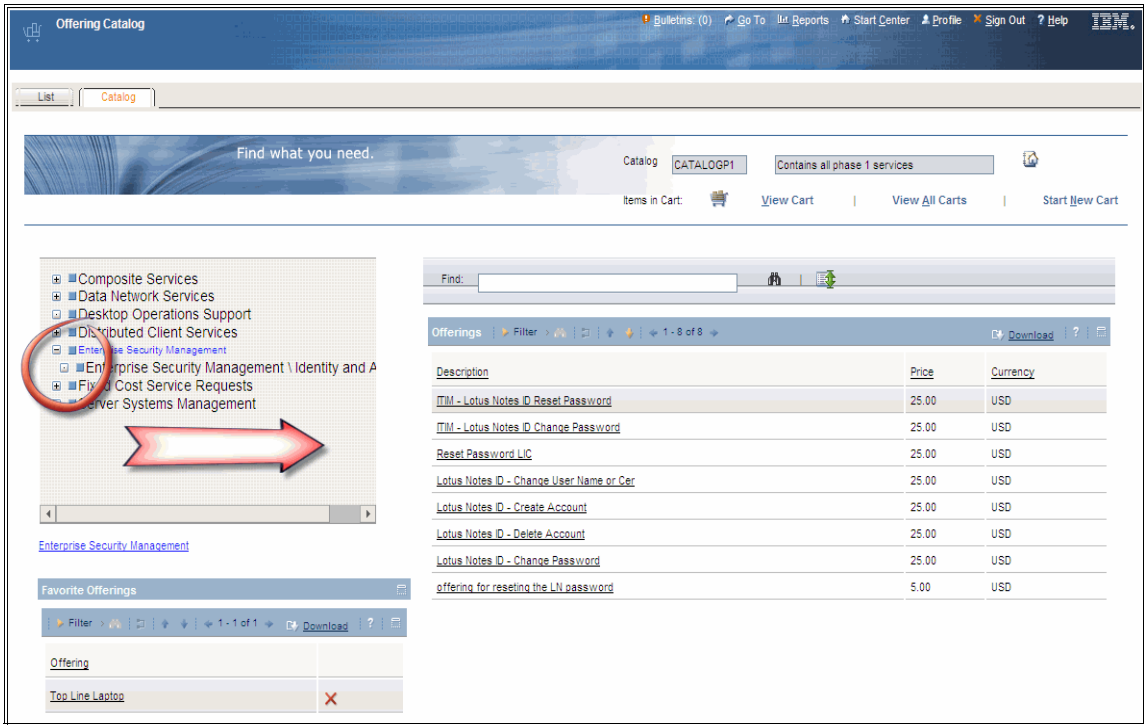


Figure 2-4 Select an offering

The user can use the form shown in Figure 2-5 to request the creation of a Lotus® Notes® account.

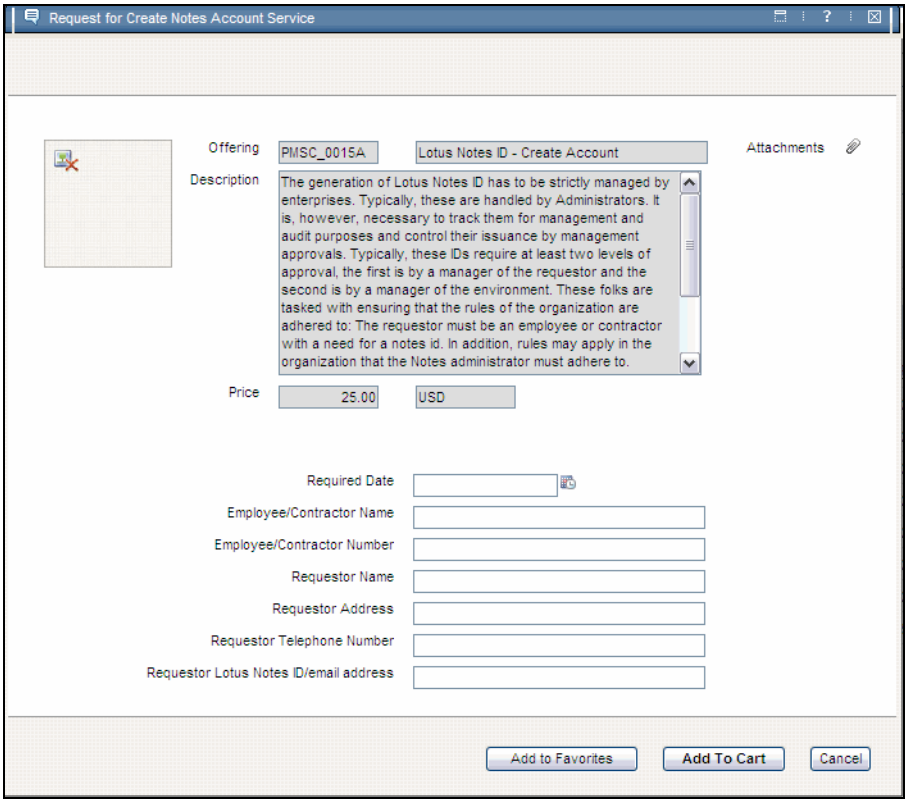


Figure 2-5 Example form for requesting a Lotus Notes Account Service

2.4 Service Catalog life cycle

The high-level Service Catalog life cycle provides the following functions:

1. Defining and publishing services using the Service Creation and Publishing tools
2. Shopping and requesting services using the Shopping Experience
3. Fulfillment of service requests by optionally leveraging the supply chain applications of the Service Order Management component

The IBM Tivoli Service Request Manager Service Catalog is comprised of the following three major parts:

- Service Ordering - The user “shopping experience”
- Service Order Management - The supply chain that is further broken down into the service fulfillment and monitoring aspects of providing a service
- Service Creation and Publishing - The application tool that designers use to create services

Figure 2-6 shows basic objects (shopping cart, purchase requisition, catalog order, and work order) that are used by the Service Catalog module when an offering is ordered, managed, and fulfilled.

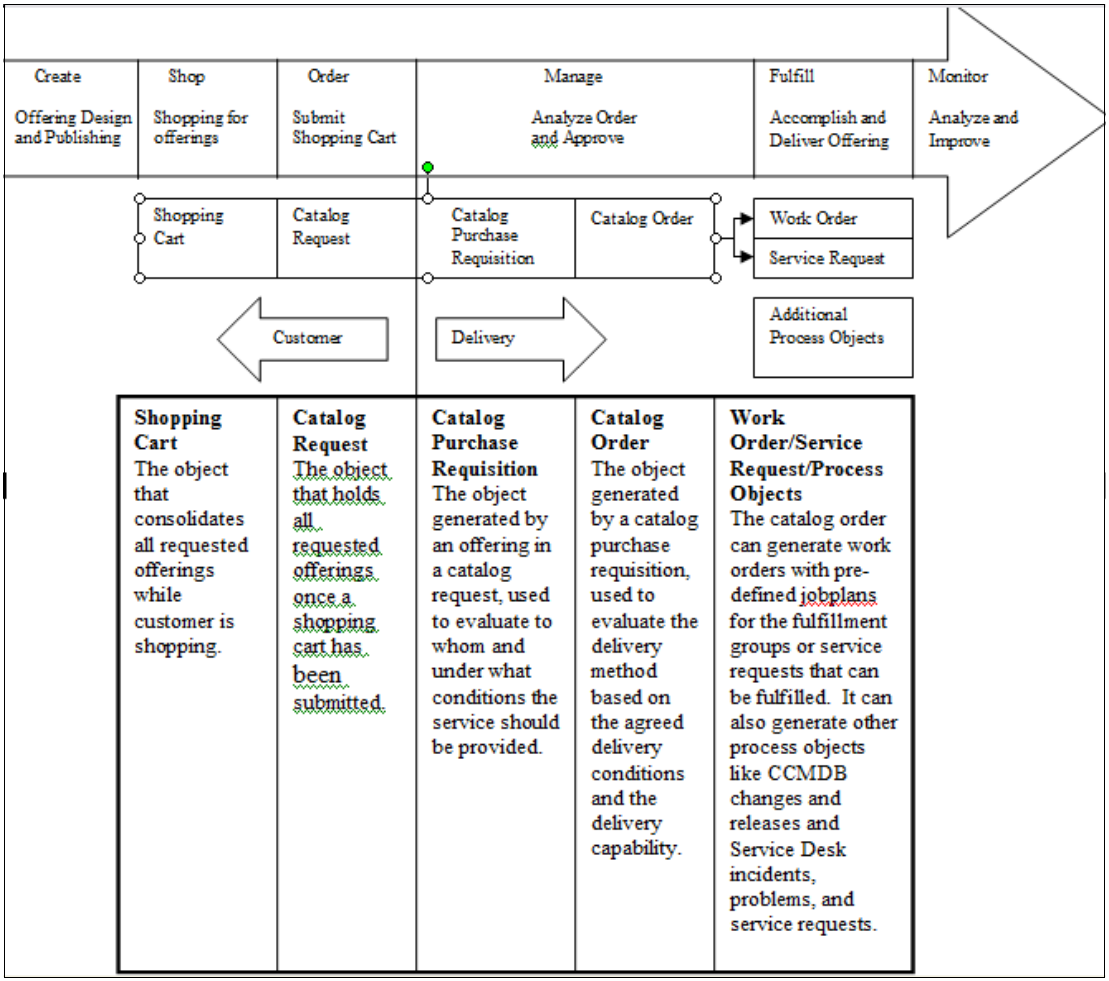


Figure 2-6 Service Catalog flow

ITIL defines roles for service ordering, management, and fulfillment. Figure 2-7 shows how these roles map to the Service Catalog applications.

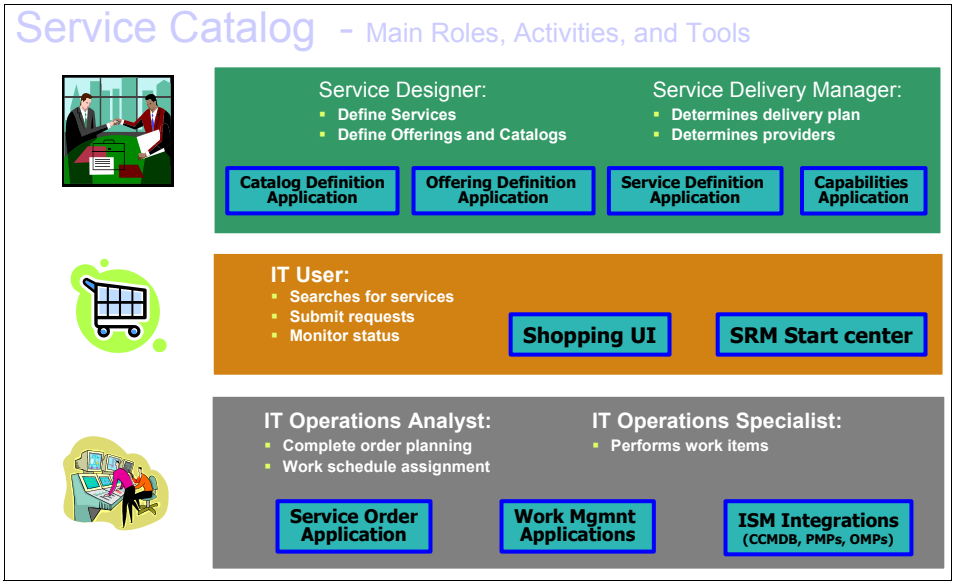


Figure 2-7 Main roles, activities, and tools

Figure 2-8 lists the tools and functions that are used in each phase of the service.

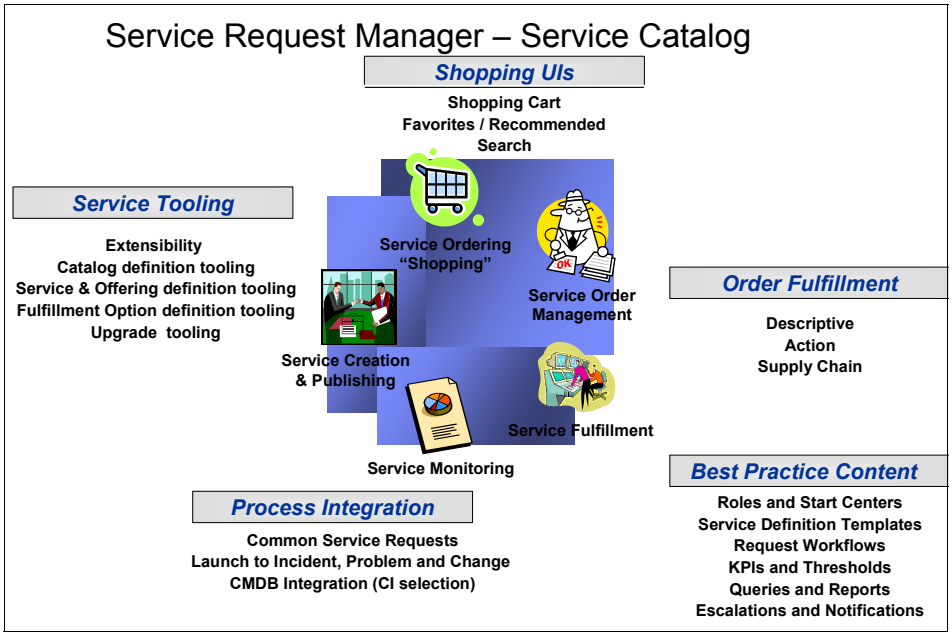


Figure 2-8 Five cycles of the Service Catalog

We describe these capabilities in the following sections.

2.4.1 Service tool

In Tivoli Service Request Manager, open the **Go To** menu. The Service Request Manager Catalog menu contains the Service Inventory submenu, which includes the following options (see Figure 2-9 on page 50):

- Catalogs
- Service Fulfillment
- Offerings
- Fulfillment Options

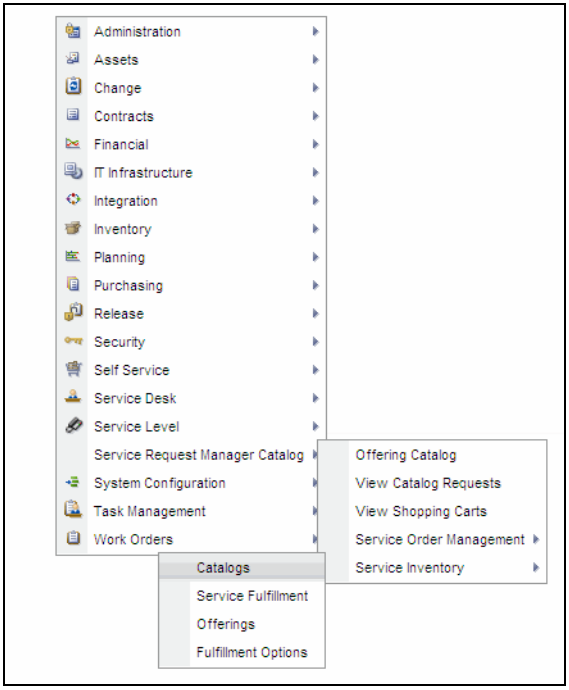


Figure 2-9 Menu navigation

Catalog definition

Figure 2-10 shows the Catalog window.

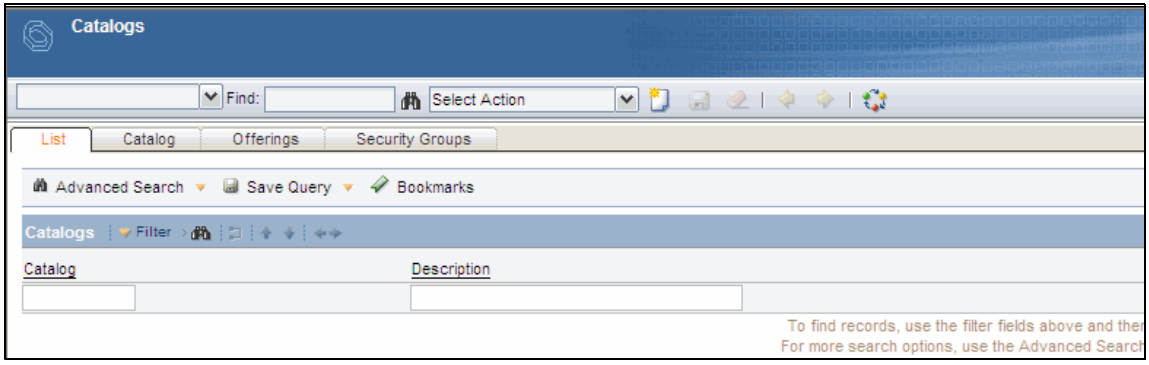


Figure 2-10 Catalog window

The following four tabs are in the Catalog window:

- List
- Catalog
- Offerings
- Security Groups

The List tab lists the existing catalogs (see Figure 2-11).

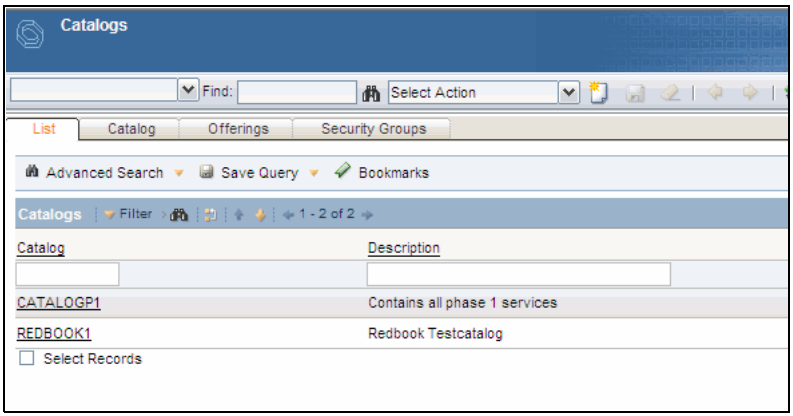


Figure 2-11 Catalog list

The Catalog tab displays information about the chosen catalog, as shown in Figure 2-12.

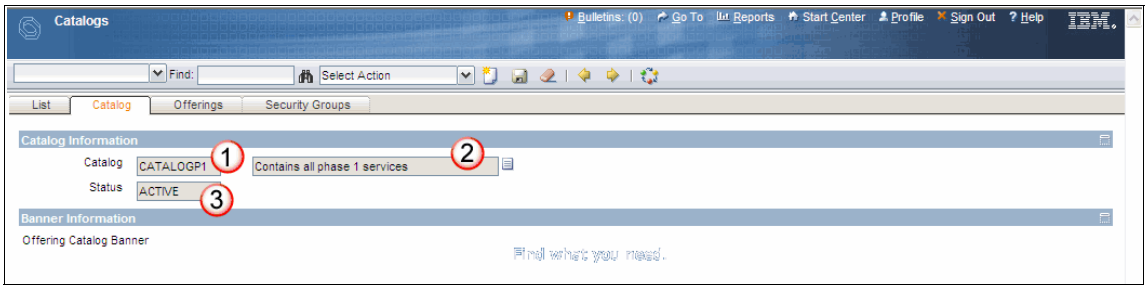


Figure 2-12 Catalog attributes

The following fields are available in the Catalog tab (the numbers shown in Figure 2-12 on page 51 correspond to the following three list items):

1. Name of the selected catalog
2. Comment for the selected catalog
3. Status of the selected catalog, which includes the following options:
   - Active: The catalog is in use and cannot be changed.
   - Pending: The catalog is not in use and can be changed.
   - Pending obsolescence: The catalog is obsolete (no longer in use).
   - Planning: The catalog is in development.

Figure 2-13 displays the actions that can be selected from the catalog.

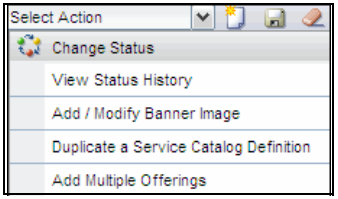


Figure 2-13 Actions available from the catalog

The following actions are available:

- Change Status: Opens the change status window.
- View Status History: Lists the status changes in the catalog.
- Add/Modify Banner Image: Enables the user to access a window to change the graphic shown with the catalog listing.
- Duplicate a Service Catalog Definition: Creates a new catalog with the definition of the selected one.
- Add Multiple Offerings: Opens a window with offerings not included in the catalog and provides the opportunity to add offerings to the selected catalog.

In the Offerings tab of the Catalog window, the offerings connected with the selected catalog are listed. It is possible to add and delete connected offerings (see Figure 2-14).

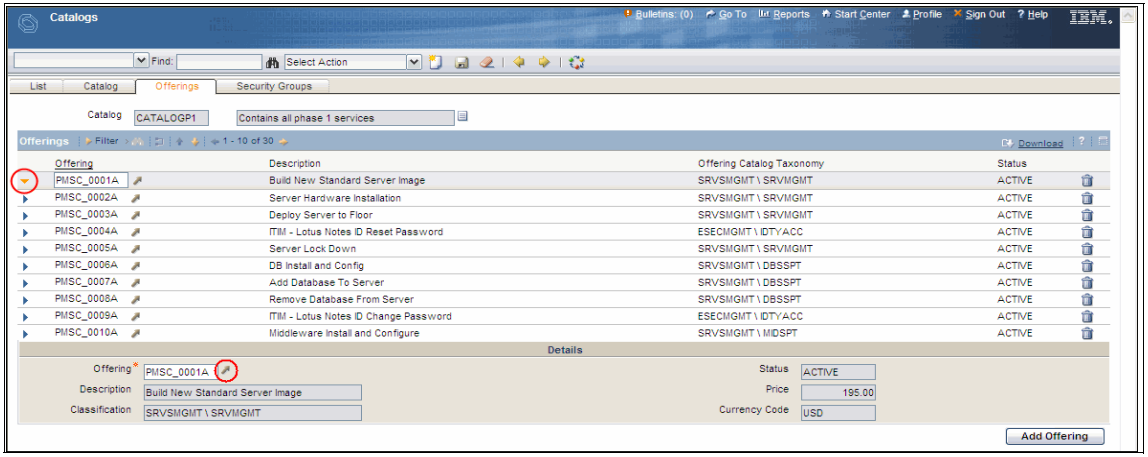


Figure 2-14 Catalog offering list

When you select an offering entry, you obtain information about that specific offering, such as Name, Description, Classification (connection to the offering catalog definition), Status, Price, and Currency Code. You can edit this data in the Offerings application by clicking the icon on the right side of the Offering field (see Figure 2-15).

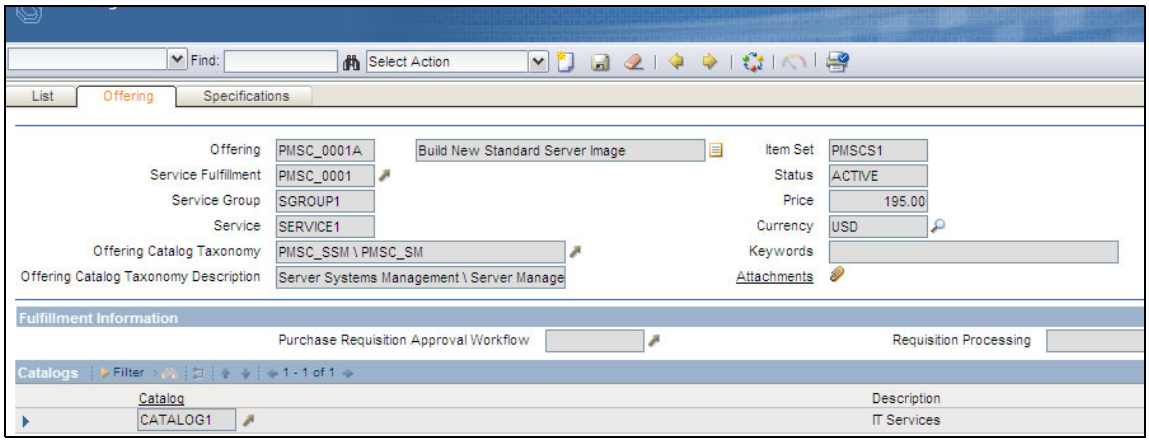


Figure 2-15 Offering definition

When you click the Security Groups tab, shown in Figure 2-16, you can find information about the connected groups. You can add and remove a group to the catalog. To create a new group or to edit a group, choose **Go To** → **Security** → **Security Groups**.

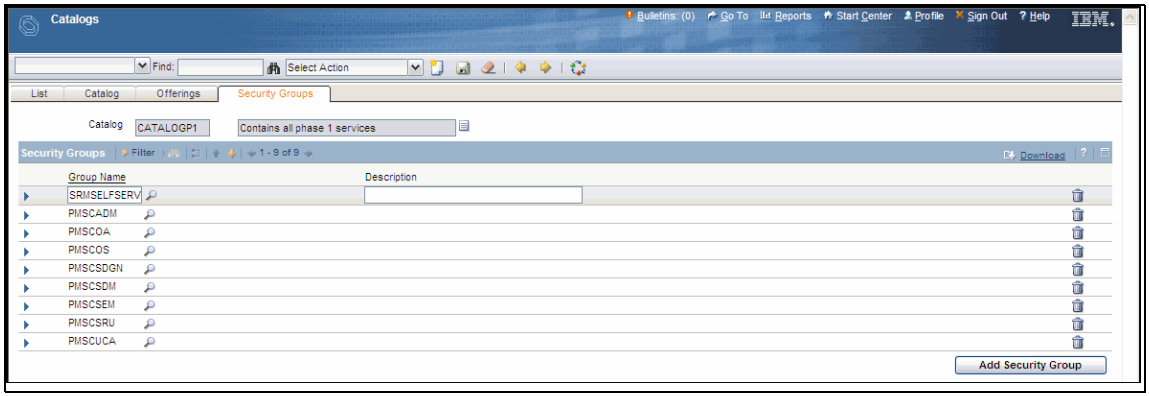


Figure 2-16 Catalog Security Groups tab

Service fulfillment definition

Figure 2-17 shows the Service Fulfillment application.

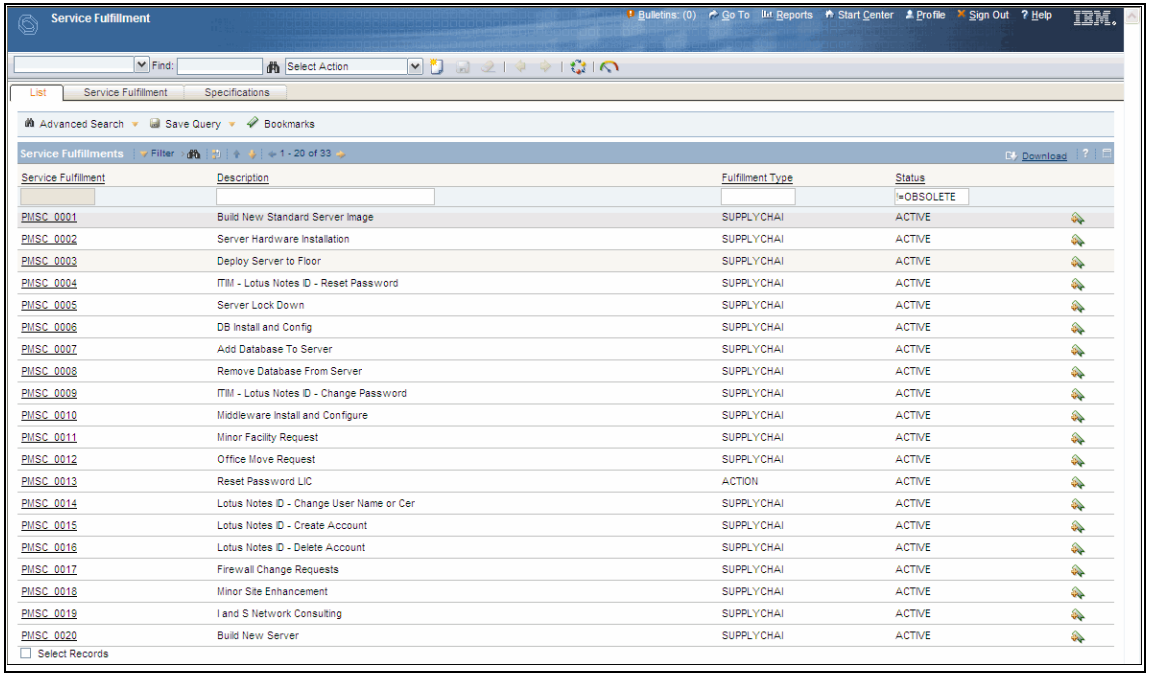


Figure 2-17 Service Fulfillment list

On the List tab of the Service Fulfillment application, the following information about the service fulfillments are listed:

- Name of the service fulfillment
- Description
- Fulfillment Type
- Status

By clicking the icon on the far right of each row, you can add selected service fulfillments to the bookmarks.

The Service Fulfillment tab, shown in Figure 2-18, displays details for the selected service fulfillment.

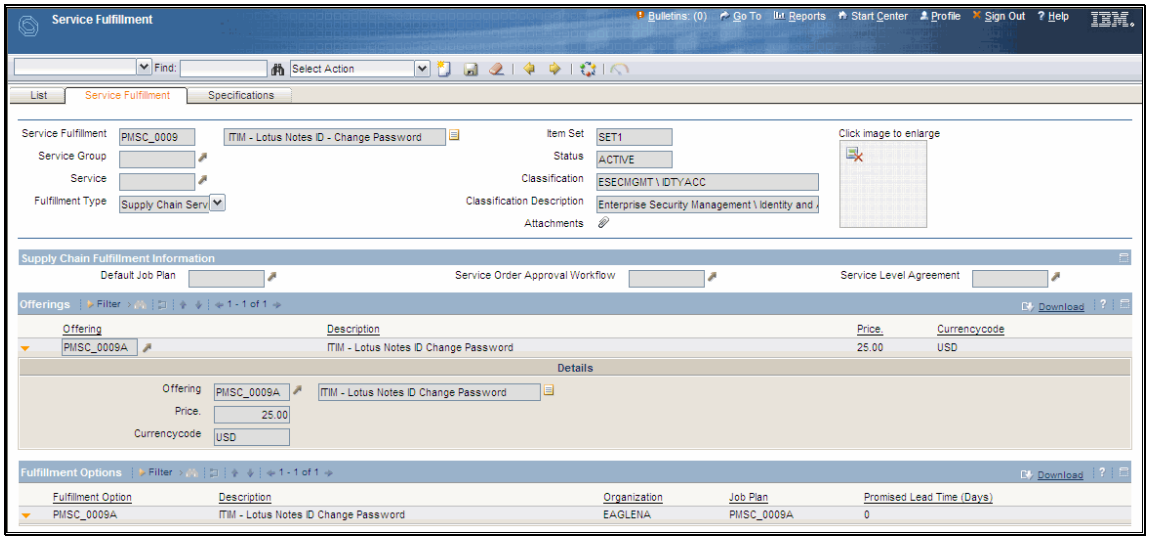


Figure 2-18 Service Fulfillments attributes

The following fields are shown in the Service Fulfillment tab:

- Service Fulfillment: Name and description of the service fulfillment.
- Service Group: Team that supports the service.
- Service: Defined service.

- Fulfillment Type

  The following options are available:

  - Descriptive service
  - Action service
  - Supply chain service

- Item Set: The information provided here is defined in the Organization application and assigned to the service fulfillment.
- Status: Status of the offering.
- Classification: The classification code, such as ESECMGMT\IDTYACC.
- Classification Description: Description of the Classification, such as Server Systems Management\Server Management.
- Attachments: Using the Attachments icon, the administrator who defines these offerings can view and add files and URLs to the service fulfillment. Doing so is helpful in providing information or documents to the user.
- Image: Click the icon under Click image to enlarge to add a graphic to the service fulfillment to enhance the description.

The Supply Chain Fulfillment Information area on the Services Fulfillment tab provides the following fields:

- Default Job Plan: You can add a list of sequenced tasks that must be completed by the assigned service group.
- Service Order Approval Workflow: Connects a standard approval workflow to the offering.
- Service Level Agreement: Connects to an SLA, which you can define by choosing **Go To** → **Service Level** → **Service Level Agreements**.

In the Offerings area, information about the related offering is provided.

We describe fulfillment options in 2.4.3, “Order fulfillment” on page 63.

The fields on the Specifications tab apply to the selected service fulfillment (see Figure 2-19).

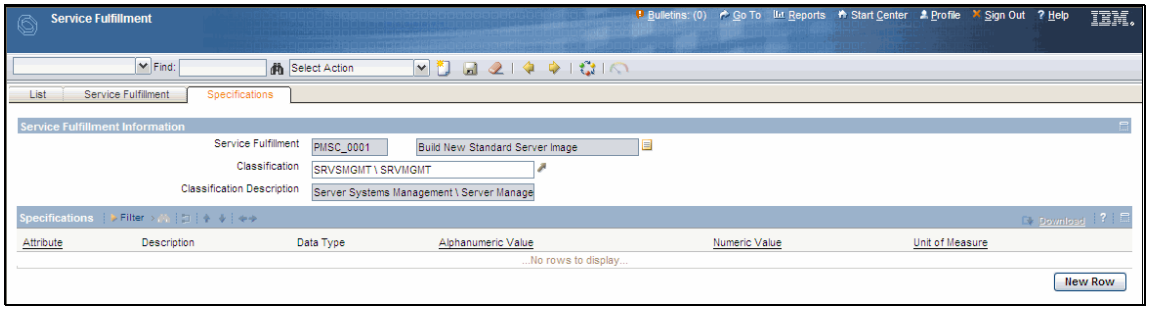


Figure 2-19 Service Fulfillment Specifications tab

The following fields are displayed in the Service Fulfillment Information area on the Specifications tab:

- Service Fulfillment
- Classification
- Classification Description

The following columns are displayed in the Specifications area on the Specifications tab:

- Attribute
- Description
- Data Type
- Alphanumeric Values
- Numeric Value
- Unit of Measure

2.4.2 Shopping user interfaces

In this section, we discuss the shopping user interfaces.

Shopping cart and favorites

In the Start Center for the Service Requisition, choose **Offering Catalog** from the **My Favorite Applications** panel (see Figure 2-20).

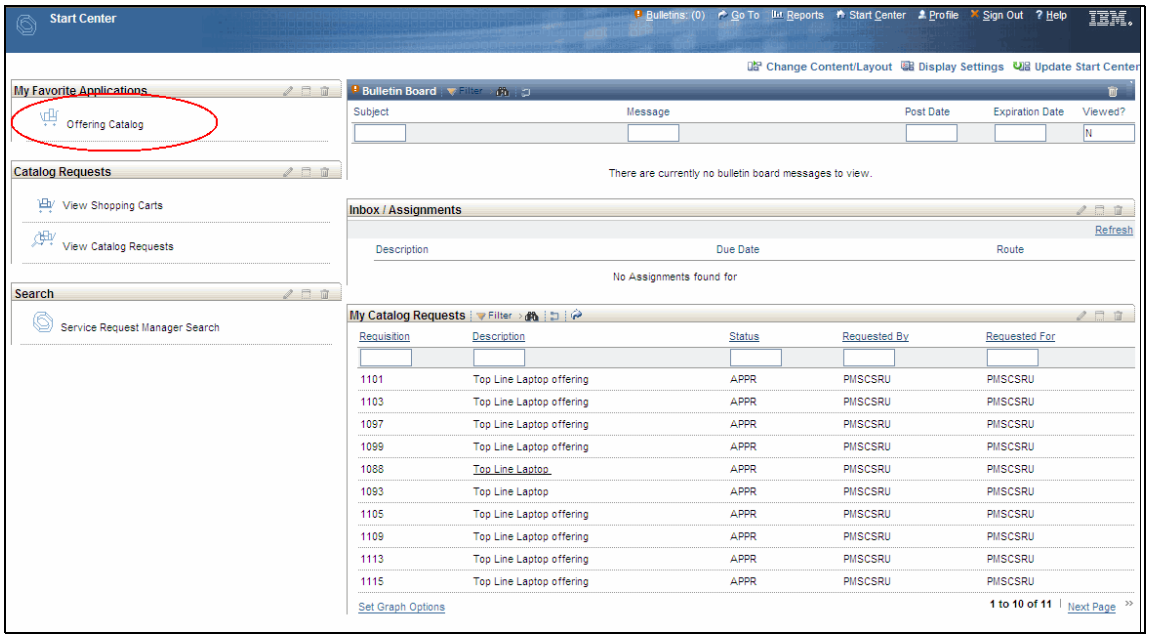


Figure 2-20 Start Center for the Service Requisition User

After selecting the catalog or by choosing the Catalog tab, you access the Offering Catalog window (see Figure 2-21). This is the starting point where you can shop for an available service. You can order offerings that you are authorized to order by your administrator.

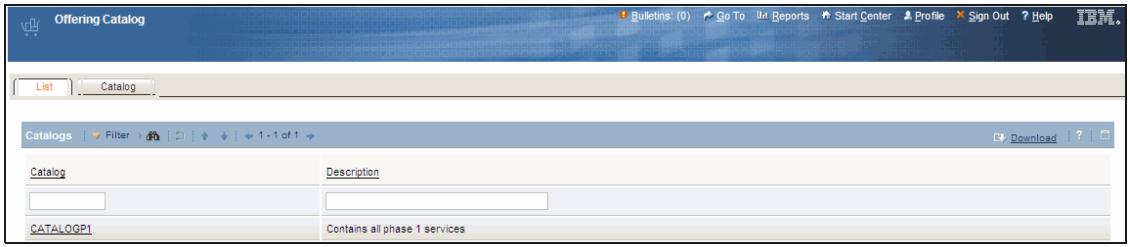


Figure 2-21 Offering Catalog window

Figure 2-22 shows the Offering Catalog Find what you need window. We explain the possible actions in the following list of menu items.

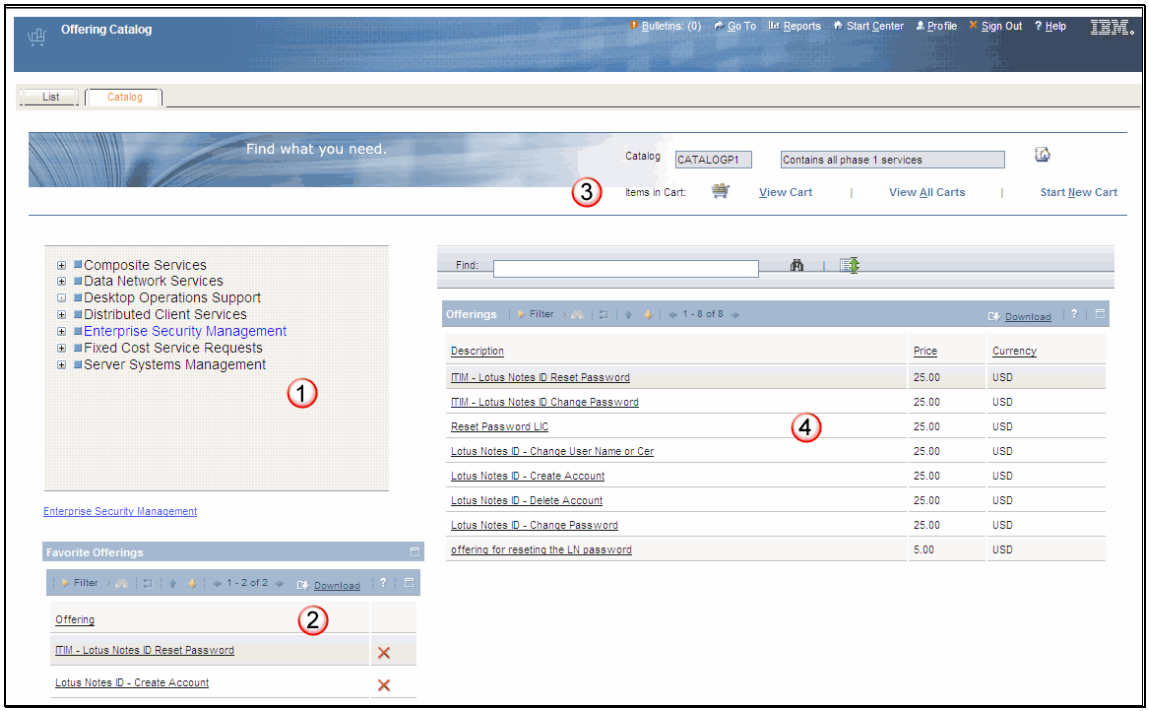


Figure 2-22 Offering Catalog Find what you need window

You can choose the following list of actions from the Offering Catalog Find what you need window (the numbers in Figure 2-22 correspond to the numbers of the list items):

1. Offering catalog taxonomy: Grouping of service offerings.
2. Favorite Offerings area: You can add favorite offerings for future use. Select an offering in the Offerings area (number 4). On the Details page of the offering, you can find the **Add to Favorites** button (see Figure 2-23 on page 60).

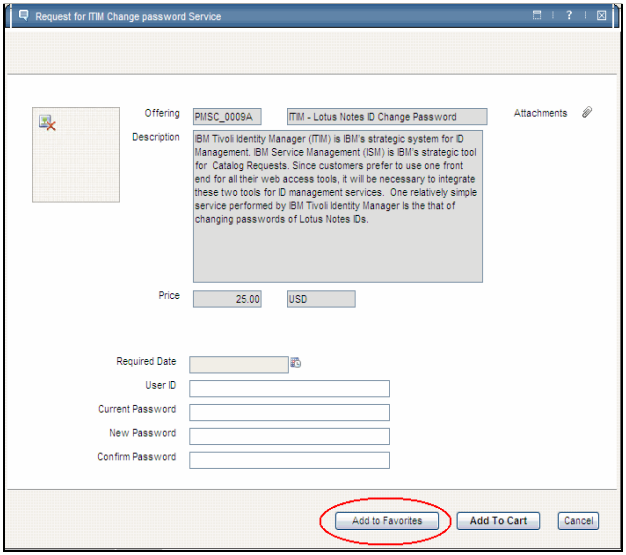


Figure 2-23 Offering form

In this list, you can store frequently used service offerings and easily add them to your shopping cart.

3. Shopping cart (see Figure 2-24)

Figure 2-24 Shopping Cart area

The following three areas of the shopping cart are shown in Figure 2-24:

- Items in cart: Clicking the icon accesses a list of items in your shopping cart.
- View Cart: Displays the number of added service offerings and can access the list.
- View All Carts: Provides a list of items in all carts. You can use the search function to manage the carts. Fill in the appropriate information in the textbox, and click the **Find** button. Those carts that fit this criteria are displayed.

  Clicking the cart number accesses the Get the Cart Details page. Click the **Reset** button to access a list of carts. Additional functions at the end of each row in the View Shopping Carts window offer the choice of reading and editing the details or deleting a cart. Only the unsubmitted carts are displayed.

Figure 2-25 shows a shopping cart list.

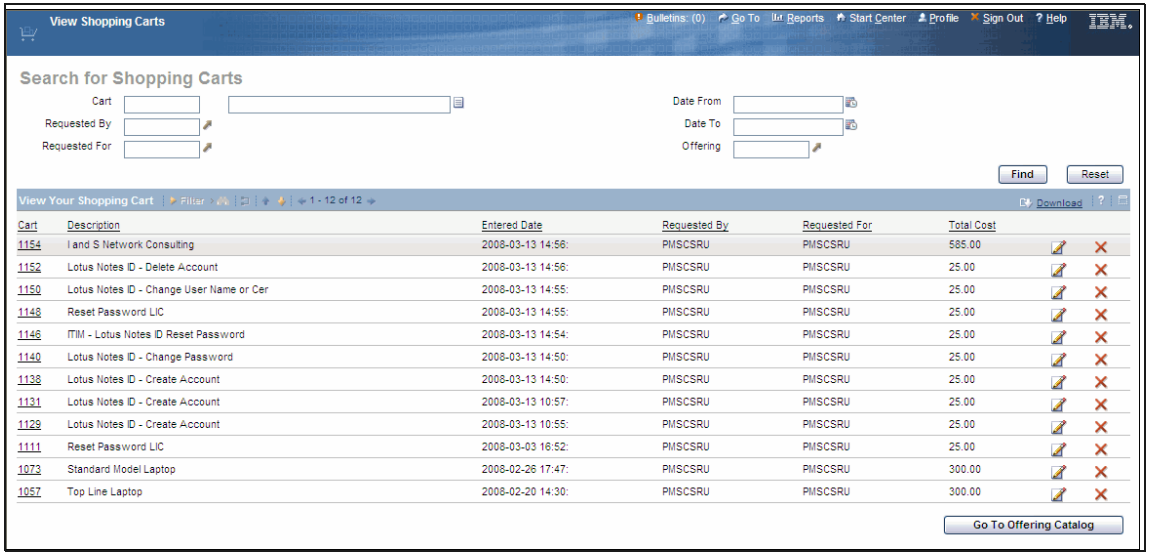


Figure 2-25 Shopping Cart list

– Start New Cart: This tab saves the selected service offerings in a cart and creates a new cart.

4. Offerings depending on the selected offering catalog:

   In this area you find the service offerings depending on the selected offering catalog and the chosen taxonomy. The Tivoli Service Request Manager functions for lists are available. Click the name of a service offering to access the form shown in Figure 2-26 on page 62.

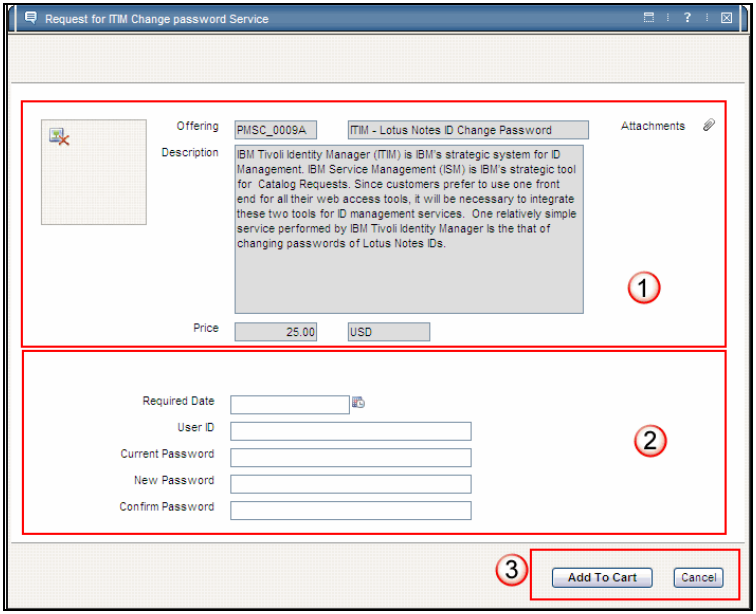


Figure 2-26 Form of an offering

The following information is available in the form shown in Figure 2-26 (the numbers in the list correspond to the numbers in the figure):

1. This area displays information about the name, description, price, and available attachments for the selected service offering.
2. In this area, you provide the requested information about the selected service offering. You define these fields by choosing **Service Fulfillment Application** → **Specification**.
3. Click the **Add To Cart** button to add this service offering to the cart. Click **Cancel** to exit the form without adding a service offering to the cart.

When you click the **Add To Cart** button, you access the Shopping Cart window (see Figure 2-27 on page 63), information about the cart, and further actions that you can perform. You can verify your input and select whether you want to return to the catalog (click **Continue Shopping**), submit the cart for execution (click **Submit**), save the cart and go back to the Start Center (click **Save**), or delete the form (click **Cancel**). After submitting the cart, it is executed according to your input.

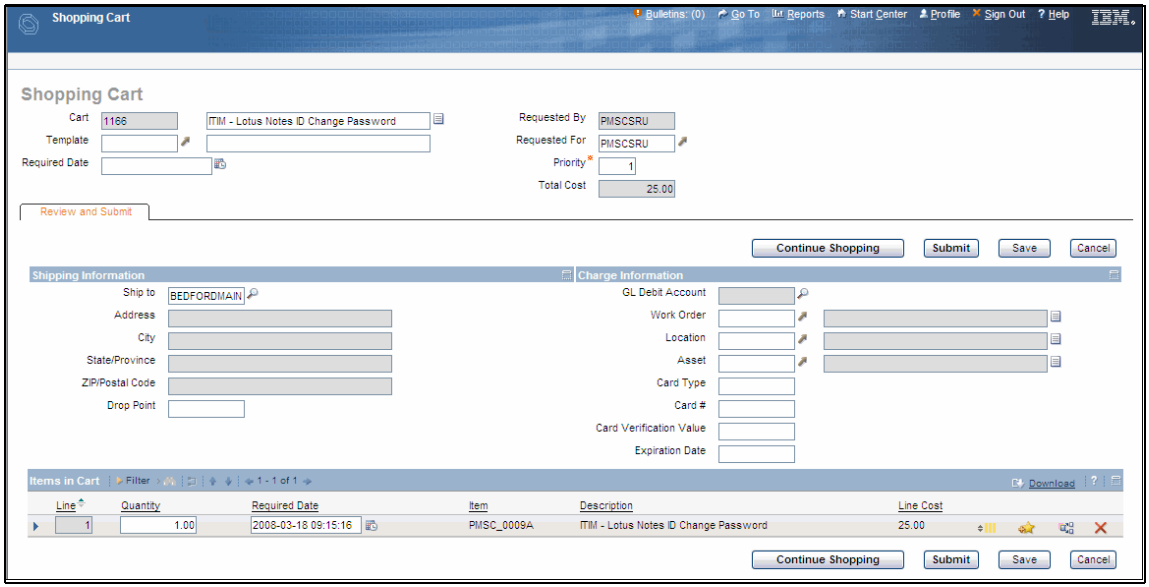


Figure 2-27 Detailed Shopping Cart view

Search

A search field is displayed on the Offering Catalog form. Enter the text you are searching for in the Find field and click the binoculars icon (see Figure 2-8 on page 49). All service offerings with this text in the description are listed. Clicking the list icon displays the list.

Figure 2-28 Search functionality

2.4.3 Order fulfillment

Order fulfillment is also referred to as *service fulfillment*. The three different types of services that a Service Designer can create are described in the following sections.

Descriptive service

You use a descriptive service when an organization wants to advertise an existing, unautomated service that requires a request path not integrated into the service catalog.For example, a descriptive service for “Add Toner” might include the following instructions in the service description: “To order toner for a printer, call our external office supplier at 512 555-1234.”

When you select a descriptive service in the Offering Catalog application, an offering dialog is displayed; you can view the offering information in this dialog. You cannot submit requests for a descriptive service from the dialog.

Action service

An action service is used when an organization wants to integrate pre-existing service applications into the service catalog. For example, an action service for “Reset Intranet Password” might invoke a pre-existing URL for the organization that resets intranet passwords.

When you select an action service in the Offering Catalog application, an offering dialog is displayed; you can view the offering information in this dialog. The offering dialog also enables you to input information required by the offering (as defined by the offering attributes) and to execute the offering.

The service application associated with an action service can be one of the following several types:

- An external URL: You can designate external URLs by Service Request Manager Launch-in-Context entries.
- Another Service Request Manager application: You can invoke alternate Service Request Manager applications either through Service Request Manager Launch-in-Context entries (using relative URL addressing) or through Service Request Manager workflows.
- A standalone executable: You can invoke standalone executables through Service Request Manager workflows. Action services can pass information, including attribute information, to a launched service.

Supply chain service

A supply chain service is used when you want to create a new service in the service catalog that utilizes the full service catalog fulfillment capabilities. For example, catalog purchase requisitions, catalog orders, jobplans, and work orders are Service Catalog fulfillment capabilities.

When you select a supply chain service in the Offering Catalog application, an offering dialog is displayed; you can input information required by the offering (as defined by the offering attributes) and add the offering to a shopping cart.

2.4.4 Best practice content

In this section, we describe best practice content, beginning with roles and Start Centers defined in the IBM Tivoli Service Request Manager Service Catalog.

Roles

Defining roles is a way to ensure the right people are aware of the need for service fulfillment, make the necessary financial and technical evaluations to provide the output, and fulfill and evaluate the services. These actions are performed by roles that are linked to specific users or groups of users. The role mechanism ensures easier maintenance and provides a process-oriented (rather than department-oriented) framework, focusing on delivery of the service offering and not on departmental outputs or subproducts. Excessive delays in the authorization process can be remedied with escalations, and KPIs can verify the performance of the delivery of specific offerings or groups of offerings that support the entire service.

Figure 2-29 on page 66 depicts the service offering cycle and illustrates how different roles act to deliver an offering. These roles represent only an initial service offering configuration and can be modified. A role does not represent a person on Service Catalog module, but rather a responsibility in the cycle that can be linked to one or more persons or even an application. The workflows are created around roles, not people; thus, carefully linking people or groups of people to their responsibilities in the process is important.

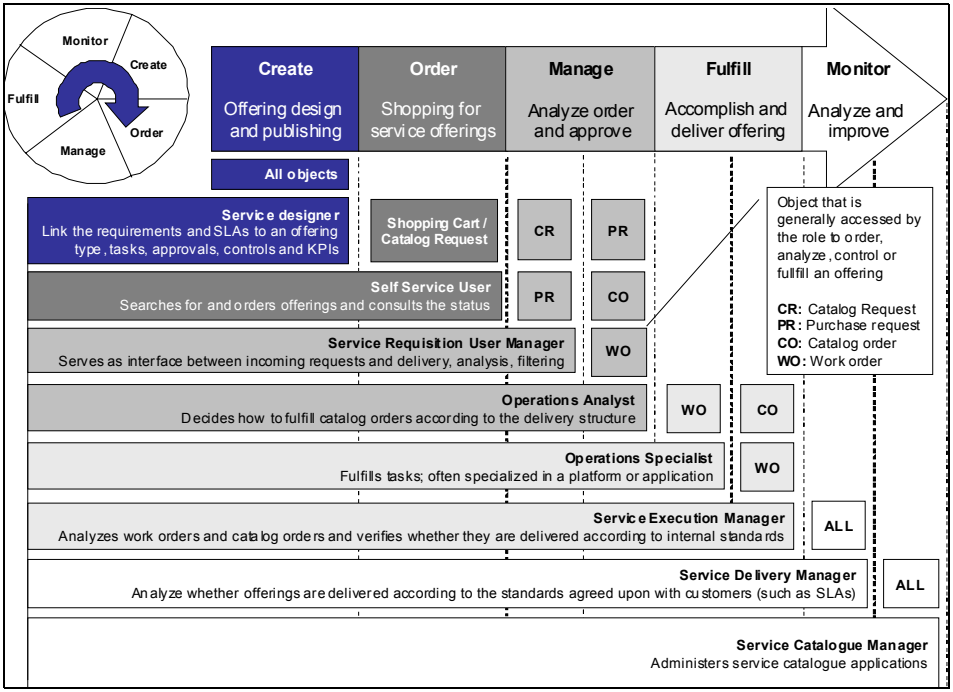


Figure 2-29 Different roles involved in the service offering cycle

Elements associated with system users

In the Tivoli Service Request Manager Service Catalog, various elements are defined and associated with specific users, which restricts access to certain parts of the system or defines how a particular user can act according to the general service offering flow. Table 2-1 summarizes these definitions.

Table 2-1 Common elements associated with system users

Element	Definition
Role	A logical grouping of common tasks in the service offering cycle that users can automate or execute
User	An entity that can log onto the system

Element	Definition
Security Group	A security definition associated with users that defines the level of access to application modules and functions
Person	An individual (usually an employee) who stores personal data
Start Center	Application templates associated with security groups

In the Tivoli Service Request Manager Service Catalog, security groups enable administrative users to manage user authorizations and access rights to sites, applications, storerooms, labor, and other aspects of the organization. In addition, a Service Catalog Administrator security group that is authorized to access all IBM Tivoli Process Automation Engine applications is created.

Security groups

The section discusses the following typical security groups and their associated roles:

- PMSCADM security group: Service Catalog Administrator

  These users have rights to every action and application. Figure 2-30 shows the Start Center for PMSCADM.

.

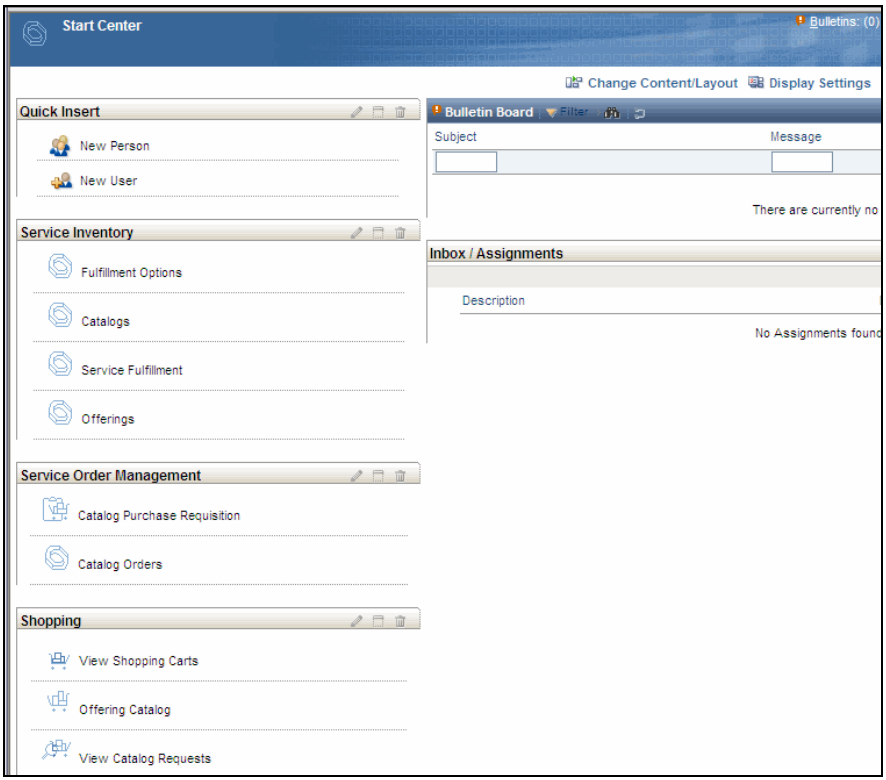


Figure 2-30 Start Center PMSCADM

- PMSCSDGN security group: Service Designer

  This role is a specialization of the IBM Tivoli Unified Process Service Level Manager or Service Level Administrator role. In IBM Tivoli Unified Process, the Service Level Manager is responsible for creating the service catalog and defining what the service is all about. Figure 2-31 shows the Start Center for PMSCSDGN.

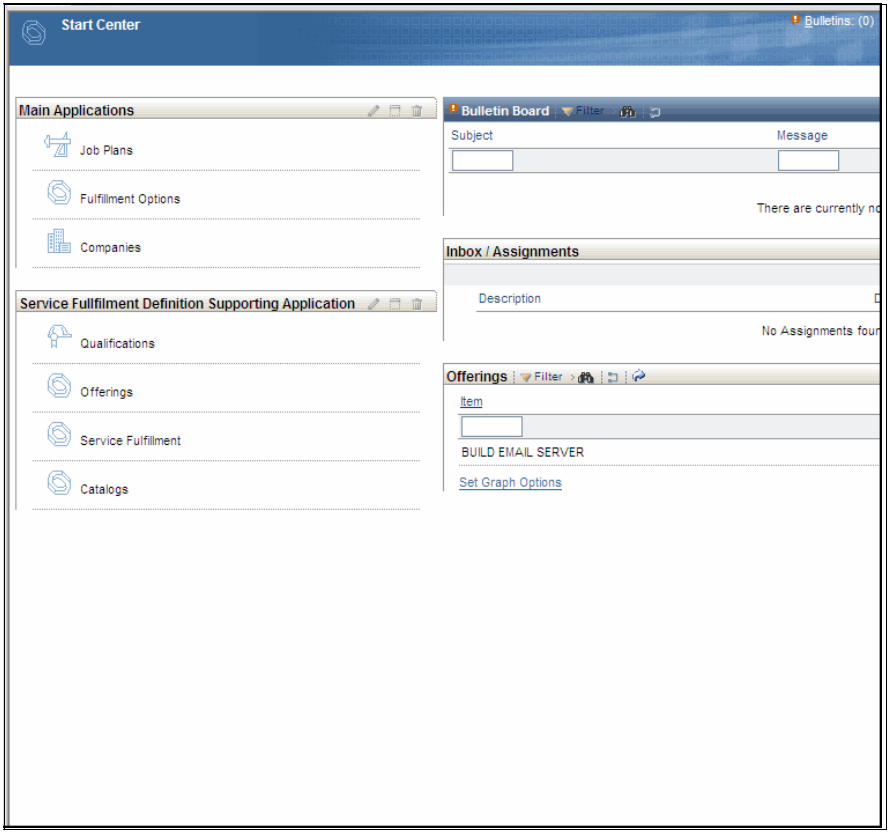


Figure 2-31 Start Center PMSCSDGN

- PMSCSDM security group: Service Delivery Manager

  In the Service Catalog, this role is responsible for identifying how a service defined by the Service Designer is fulfilled. Figure 2-32 shows the Start Center for PMSCSDM.

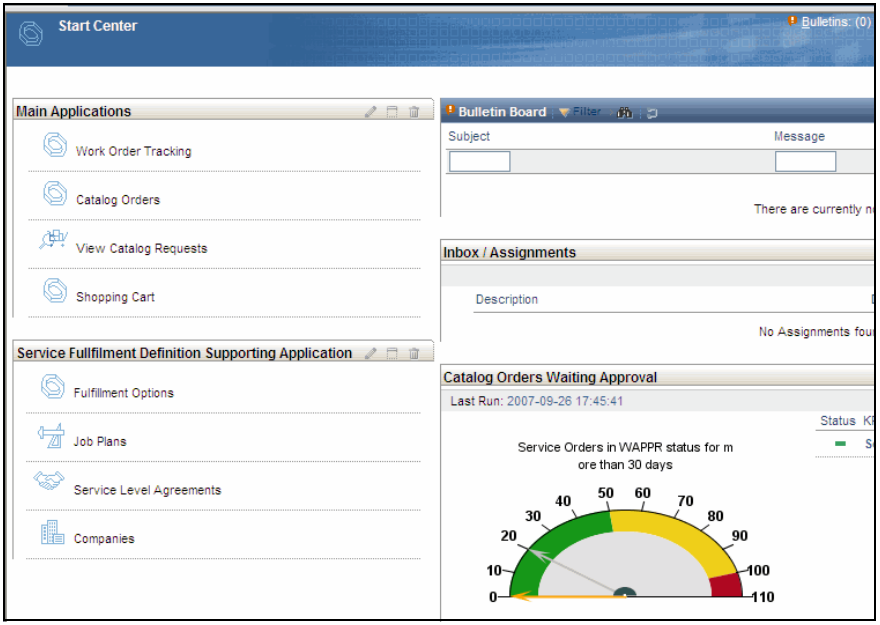


Figure 2-32 Start Center PMSCSDM

- PMSCSEM security group: Service Execution Manager

  This role is responsible for overseeing the fulfillment of the catalog requests in the service catalog. Figure 2-33 shows the Start Center for PMSCSEM.

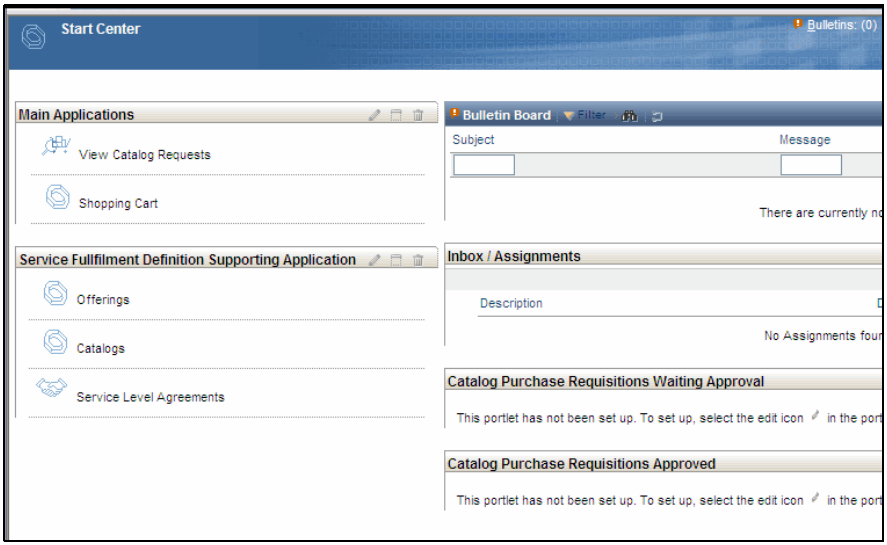


Figure 2-33 Start Center PMSCSEM

- PMSCOA security group: Operations Analyst

  This role represents the fulfillment operations. A user in this role works under supervision of the Service Execution Manager and is responsible for the following tasks:

  - Performing all operational processes and procedures involved with order planning and fulfillment, thus ensuring that all IT services and infrastructure meet operational targets.
  - Runs and monitors infrastructure components.

  Figure 2-34 shows the Start Center for PMSCOA.

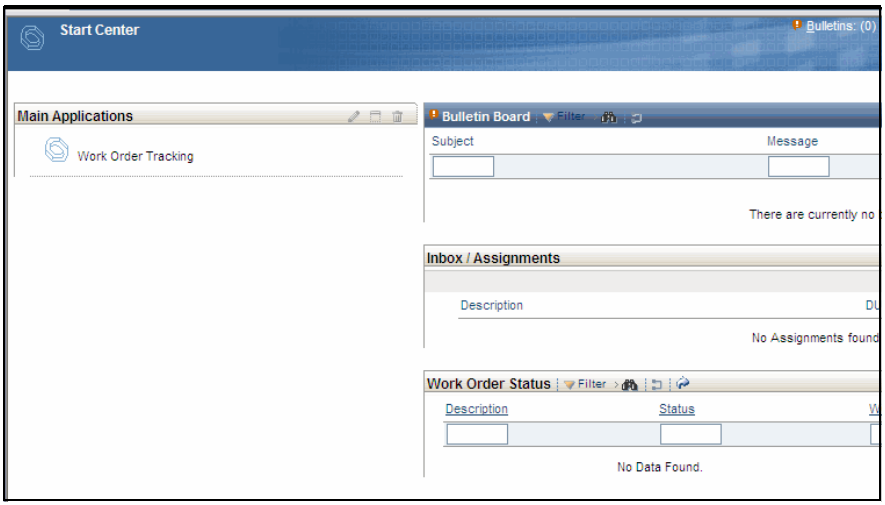


Figure 2-34 Start Center PMSCOA

- PMSCOS security group: Operations Specialist

  This role is responsible for performing all the activities described in work items. Operations Specialists often specialize by platform or application.

  Figure 2-35 shows the Start Center for PMSCOS.

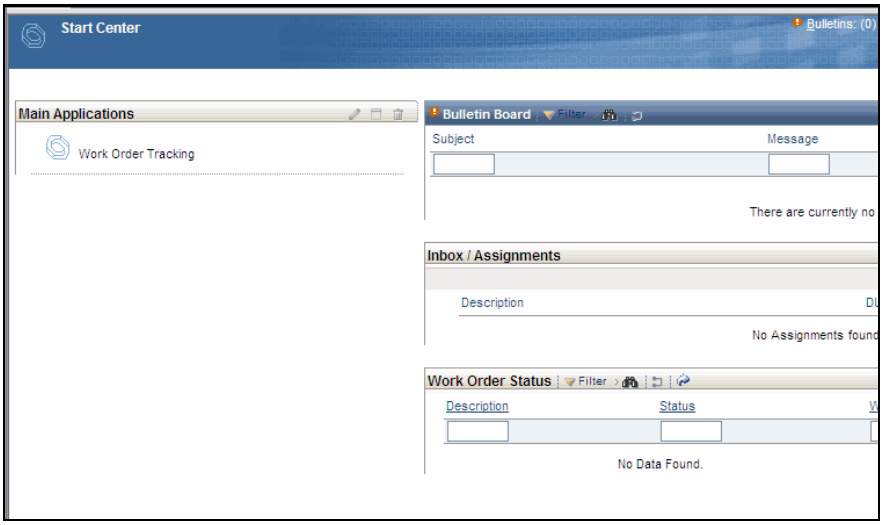


Figure 2-35 Start Center PMSCOS

- PMSCSRU security group: Service Requisition User

  This role searches for and requisitions services from the service catalog, consults regarding the status of the requisitioned services, and receives the services performed by the IT organization.

  Figure 2-36 shows the Start Center for PMSCRU.

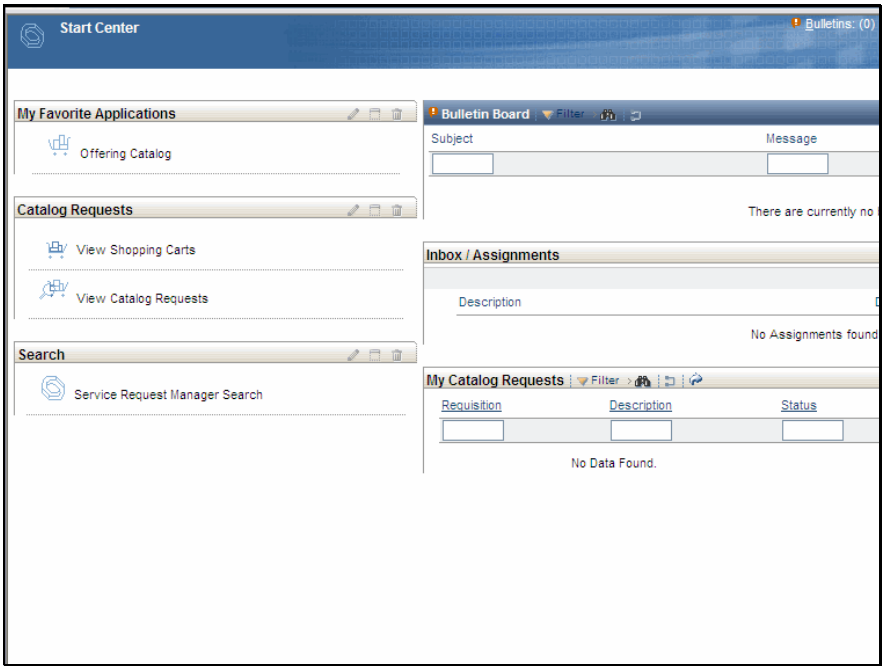


Figure 2-36 Start Center PMSCRU

- User Contact Analyst

  This role is an IBM Tivoli Unified Process-defined role that, in the context of the Service Catalog, manages (analyzes, receives, and approves) the Service Requisition (see Figure 2-37 on page 75), as part of the Service Order Planning phase.

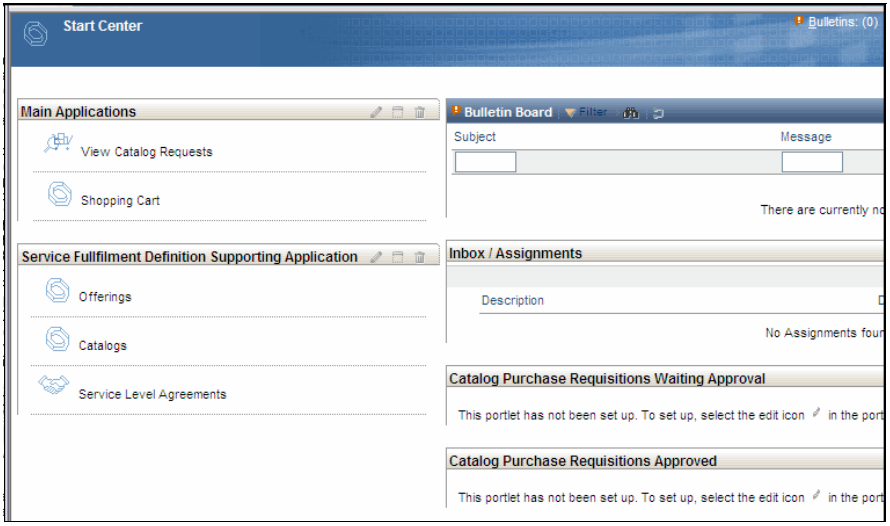


Figure 2-37 Start Center, User Contact Analyst

Mapping security groups to applications

Tivoli Process Automation Engine enables an administrator to specify which applications a security group can access. Table 2-2 on page 76, Table 2-3 on page 77, and Table 2-4 on page 78 list the applications each of the previously described security groups has access to and the type of access each group has. In the tables, the letter R stands for Read, I means Insert, S means Save, and D means Delete. The list of applications includes only those applications that automatically are enabled during installation. Add-ons are not included.

Table 2-2 Security mappings 1*

Application	AppName	Service Catalog Admin	Service Designer	Service Delivery Manager	Service Execution Manager	User Contact Analyst	Oper Analyst	Oper Specialist	Service Req User
Actions	ACTION	RISD	RISD						
Activities and Tasks	ACTIVITY	RSD	R	R	RSD	RSD	RSD	RS	R
Application Designer	DESIGNER	RIS	RIS	RIS	RIS				
Assets	ASSET	RISD							
Asset Link Results	RCNASTLINK	RD							
Assignment Manager	WORKMAN	RS					RS		
Bulletin Board	BBOARD	RISD	RISD	RISD	RISD	RISD	RISD	RISD	RISD
Calendars	CALENDR	RISD					RISD		
Catalog Orders	PMSCSO	RIS	R	R	RIS	R	RIS		
Catalog Purchase Requisition	PMSCPR	RIS					RIS		
Catalogs	PMSCCATAPP	RIS	RIS	R	RIS	R	R		
Change Password	CHANGEPSWD	RS							
Chart of Accounts	CHRTACCT	RS							
CI Link Results	RCNCILINK	RD							
CI_Types	CITYPE	RS							
Classifications	ASSETCAT	RISD	RISD	R	R	R	R	R	R
Collections	COLLECTION	RISD							
Communication Templates	COMMTMPLT	RISD	RISD	RISD	RISD	RISD	RISD		
Companies	COMPANY	RISD	RISD	R	RISD		RISD		
Company Master	COMPMASTER	RISD	RISD		RISD		RISD		
Computers	DPLDASSET	RD							
Conditional Expression Manager	CONDEXPMGR	RISD	RISD						
Configuration Items	CI	RISD							
Crafts	CRAFT	RISD							
Create Service Request	CREATESR	RI							
Cron Task Setup	CRONTASK	RISD							
Currency Codes	CURRENCY	RISD							

* *Self Service User* and *Service Requestor User* are different names for the same security group.

Table 2-3 Security mappings 2

Application	AppName	Service Catalog Admin	Service Designer	Service Delivery Manager	Service Execution Manager	User Contact Analyst	Oper Analyst	Oper Specialist	Service Req User
Database Configuration	CONFIGUR	RISD							
Domains	DOMAINADM	RISD	RISD						
E-mail Listener Configuration	EMAILSTNER	RSD							
End Points	ENDPOINT	RISD	RISD						
Enterprise Services	INTSRV	RISD							
Escalations	ESCALATION	RISD	RISD				RISD		
Exchange Rates	EXCHANGE	RISD							
External Systems	EXTSYSTEM	RISD							
Favorite Applications Setup	FACONFIG	RS	RS	RS	RS	RS	RS	RS	RS
Forgotten Password	FORGOTPSWD	RSI	RS	RS	RS	RS	RS	RS	RS
Fulfillment Options	PMSCCAP	RISD	RISD	RISD	R		R		
Global Search	PMSCSEARCH	R	R	R	R	R	R	R	R
Inbox / Assignment Setup	INBXCONFIG	RS	RS	RS	RS	RS	RS	RS	RS
Integration Modules	IM	RISD	RISD						
Invocation Channels	INVOKE	RISD	RISD						
Item Master	ITEM	RIS	R	R					
Job Plans	JOBPLAN	RISD	RISD	RISD	R		RISD		
KPI Graph Setup	KPIGCONFIG	R	R	R	R	R	R	R	R
KPI List Setup	KPILCONFIG	R	R	R	R	R	R	R	R
KPI Manager	KPI	RISD	RISD	RISD	RISD	RISD	RISD		
Labor	LABOR	RISD					RISD		
Launch in Context	LAUNCH	RISD	RISD						
Layout and Configuration	SCCONFIG	RS	RS	RS	RS	RS	RS	RS	RS
Link Rules	RCNLNKRULE	RISD							
Locations	LOCATION	RISD							
Logging	LOGGING	RS							
Logical Management Operations	LMO	RISD	RISD						
Message Reprocessing	INTERROR	RD							
Message Tracking	INTMSGTRK	R							
Migration Groups	DEPLGROUPS	RISD							
Migration Manager	DM	RISD							
Network Devices	NDASSET	RD							
Network Printers	NPASSET	RD							
Object Structures	INTOBJECT	RISD							

Table 2-4 Security mappings 3

Application	AppName	Service Catalog Admin	Service Designer	Service Delivery Manager	Service Execution Manager	User Contact Analyst	Oper Analyst	Oper Specialist	Servi Req User
Offerings	PMSCSRVOFF	RIS	RIS	R	R	R	R		
Organizations	MULTISITE	RISD							
People	PERSON	RISD							
Person Groups	PERSONGR	RISD							
Publish Channels	PUBLISH	RISD							
Qualifications	QUAL	RISD		RISD			RISD		
Quick Insert Setup	ACTIONSCFG	RS	RS	RS	RS	RS	RS	RS	RS
Quick Reporting	QUICKREP	RISD					RISD	RISD	
Reconciliation Tasks	RECONTASK	RISD							
Relationships	RELATION	RISD							
Report Administration	REPORT	RISD							
Result Set Setup	RSCONFIG	RS	RS	RS	RS	RS	RS	RS	RS
Roles	ROLE	RISD	RISD						
Offering Catalog	PMSCSHOPEX	RISD	R	R	R	R	R	R	RISD
Security Groups	SECURGROUP	RISD							
Service Fulfillment	PMSCSRVDEF	RIS	RIS+	R	R	R	R		
Service Groups	SRVCOMMOD	RISD							
Service Level Agreements	SLA	RISD	RISD	R	R	R	R		
Service Requests	SR	RISD							
Sets	SETS	RISD							
Shopping Cart	PMSCCRDR	RIS			RIS	RIS			RIS
Start Center	STARTCNTR	RISD	R	R	R	R	R	R	R
System Properties	PROPMAINT	RS							
Terms and Conditions	TERMCOND	RS							
Ticket Templates	TKTTEMPLATE	RISD							
User Self Registration	SELFREG	RIS							
Users	USER	RISD							
View Catalog Requests	PMSCVIEW	R	R	R	R	R	R		R
View Service Requests	VIEWSR	R							
View Shopping Carts	PMSCSHCART	R							R
Warranty Contracts	CONTWARRTY	RIS							
Web Services Library	WSREGISTRY	RSD							
Work Order Tracking	WOTRACK	RISD	R	RISD	RISD	RISD	RISD	RS	R
Work View	WORKVIEW	R							
Workflow Administration	WFADMIN	R	R	R	R	R	R		
Workflow Designer	WFDESIGN	RISD	RISD	R	R	R	R		

Request workflows

The supply chain between the components of the service catalog is developed with the IBM Tivoli Service Request Manager workflow tool. The workflows shown in Figure 2-38 are used in new and standard service offerings The figure depicts the supply chain workflow.

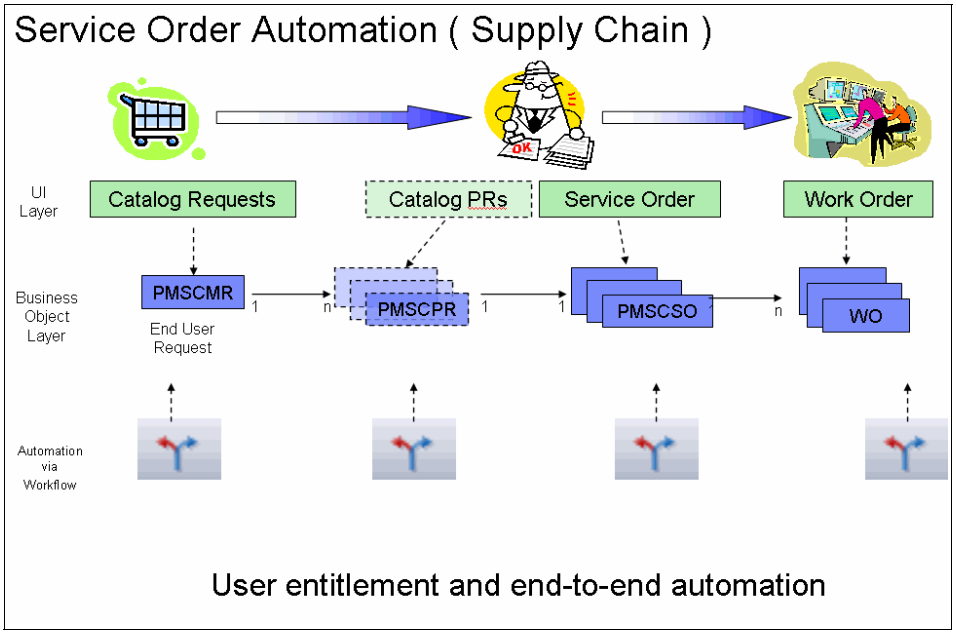
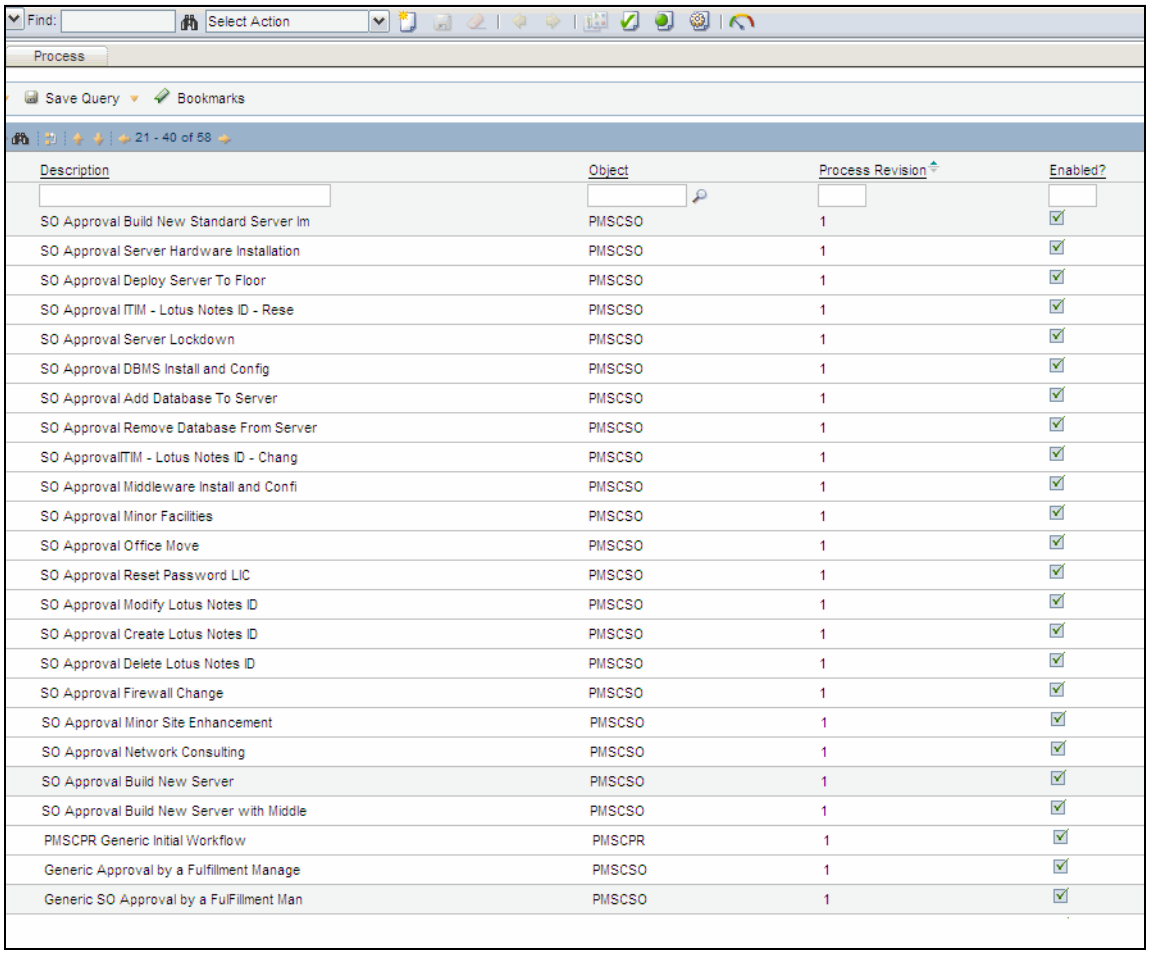


Figure 2-38 Service automation with workflows

To understand how workflows are implemented in Service Catalog, see the Workflow Designer Canvas application, as shown in Figure 2-35 on page 73. Figure 2-39 on page 80 shows the preconfigured workflows for Service Catalog. These workflows are preconfigured so you do not need to create them from scratch. You can also create new workflows by using these workflows as templates.



Description	Object	Process Revision	Enabled?
SO Approval Build New Standard Server Im	PMSCSO	1	☑
SO Approval Server Hardware Installation	PMSCSO	1	☑
SO Approval Deploy Server To Floor	PMSCSO	1	☑
SO Approval ITIM - Lotus Notes ID - Rese	PMSCSO	1	☑
SO Approval Server Lockdown	PMSCSO	1	☑
SO Approval DBMS Install and Config	PMSCSO	1	☑
SO Approval Add Database To Server	PMSCSO	1	☑
SO Approval Remove Database From Server	PMSCSO	1	☑
SO ApprovalITIM - Lotus Notes ID - Chang	PMSCSO	1	☑
SO Approval Middleware Install and Confi	PMSCSO	1	☑
SO Approval Minor Facilities	PMSCSO	1	☑
SO Approval Office Move	PMSCSO	1	☑
SO Approval Reset Password LIC	PMSCSO	1	☑
SO Approval Modify Lotus Notes ID	PMSCSO	1	☑
SO Approval Create Lotus Notes ID	PMSCSO	1	☑
SO Approval Delete Lotus Notes ID	PMSCSO	1	☑
SO Approval Firewall Change	PMSCSO	1	☑
SO Approval Minor Site Enhancement	PMSCSO	1	☑
SO Approval Network Consulting	PMSCSO	1	☑
SO Approval Build New Server	PMSCSO	1	☑
SO Approval Build New Server with Middle	PMSCSO	1	☑
PMSCPR Generic Initial Workflow	PMSCPR	1	☑
Generic Approval by a Fulfillment Manage	PMSCSO	1	☑
Generic SO Approval by a FulFillment Man	PMSCSO	1	☑

Figure 2-39 List of preconfigured workflows for Service Catalog

Service Catalog and SLAs

Service Level Management (SLM) is the process of defining, agreeing upon, documenting, and managing the levels of service that a service provider delivers to clients (either internal or external), and services received from vendors. Typically, SLM also includes monitoring and reporting functions that verify that the agreed-upon service levels are maintained.

You can use the Service Level Agreements application to define and document agreements between the service provider and the client, that is, documenting the agreed-upon service levels for the provided services. Information included on an SLA record includes the type of commitment, how the commitment is measured, and what escalations are in place to help the service organization meet the commitments.

You can define escalations on an SLA or use the Administrative Escalations application to define escalation criteria, and the actions and notifications that occur when a record reaches or exceeds the criteria set on the escalation. You can also create key performance indicator (KPI) reports for SLAs or apply KPIs that you created in the KPI Manager application.

Service Catalog application

The Service Catalog application is used to create a high-level definition of the categories of services that a company provides or procures. Service groups and services can be used to categorize services associated with assets, asset types, contracts, locations, SLAs, tickets, work orders, among other objects.

Note: You can create, view, modify, or delete service type commodities only in the Service Catalog application.

Using the Service Catalog application, click the application link on the Start Center or select **Service Management** → **Service Catalog** from the Go To menu.

The Service Catalog application contains the following tabs:

- List: On the List tab, you can search for service catalog records.
- Service Group: On this tab, you can create, view, or modify service group records and delete services.

Service catalog and offering catalog

You can associate an SLA with a work order so that all work orders are measured against this SLA. For the offering catalog, you can choose an SLA in the Service Fulfillment module. When you insert an SLA in the offering catalog, a purchase requisition is created and assigned to the SLA.

Figure 2-40 shows an SLA in the Service Fulfillment dialog.

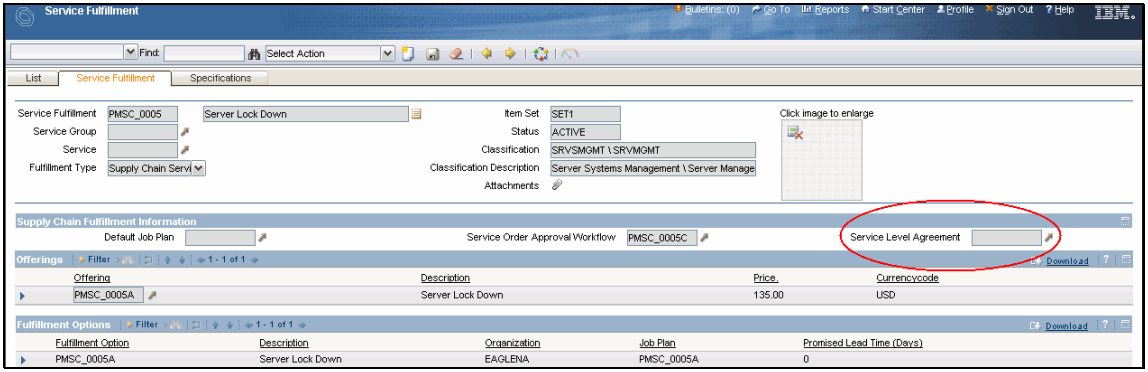


Figure 2-40 SLA in Service Fulfillment tab

Reports

The Service Catalog application provides a number of reports that you can access by selecting **Reports** → **Service Request Manager Catalog**. The report categories are shown in Figure 2-41.

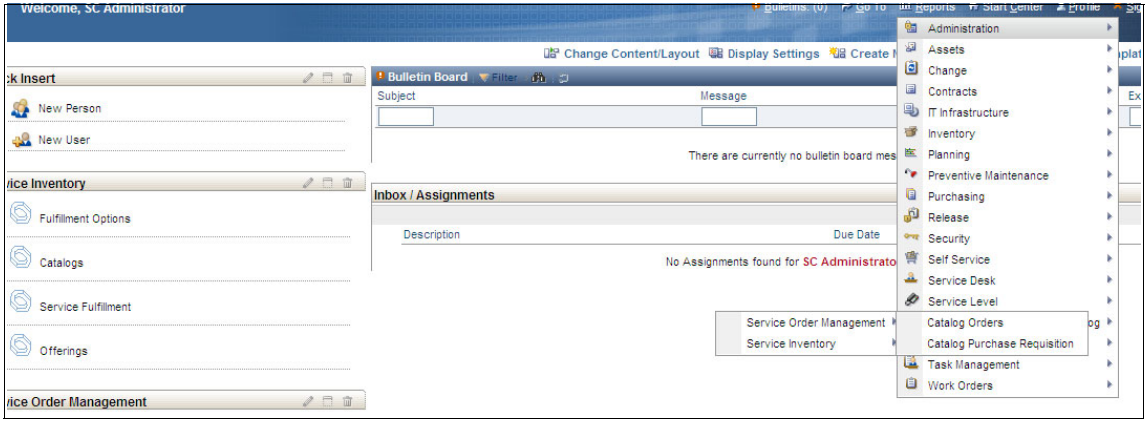


Figure 2-41 Accessing reports

Figure 2-42 shows an example report.

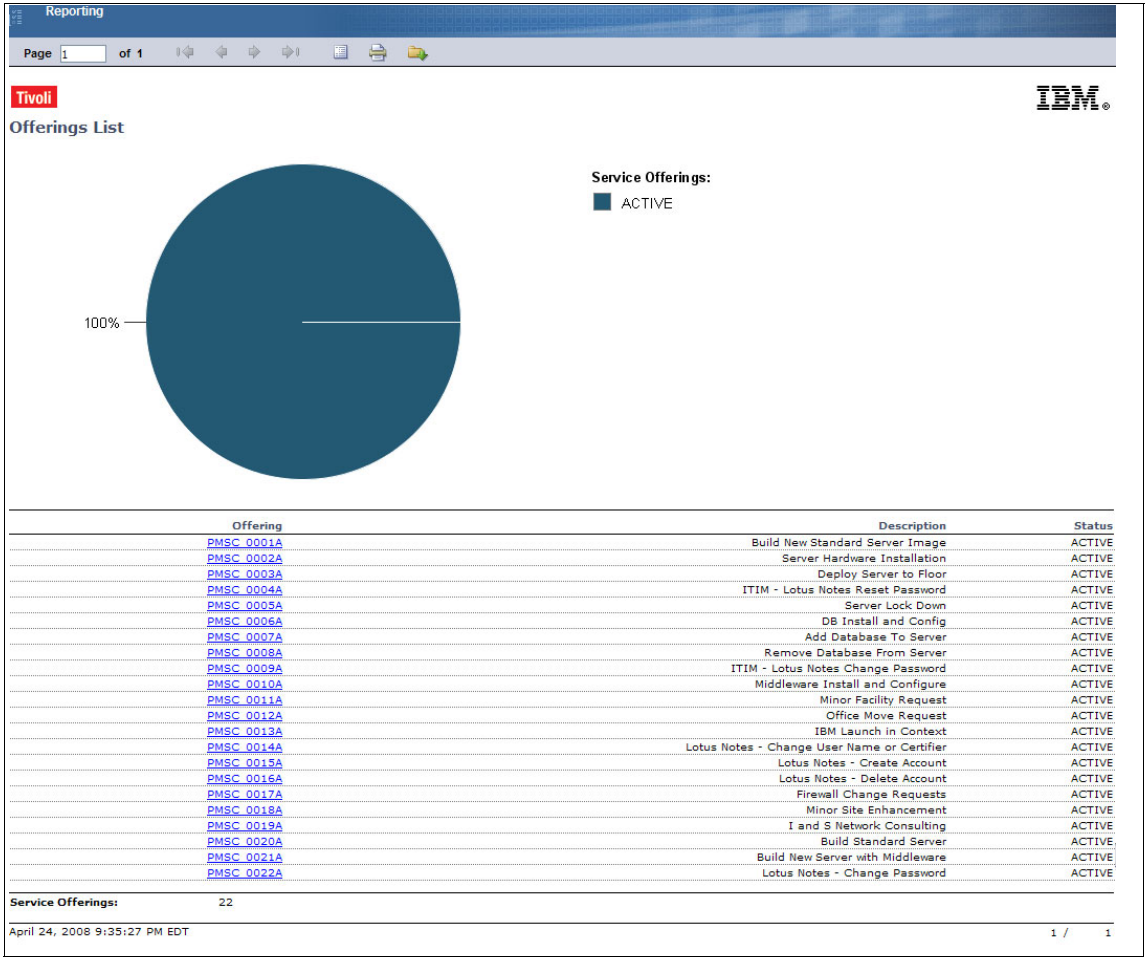


Figure 2-42 Service Catalog reports

In addition, a number of Business Intelligence and Reporting Tools (BIRT) reports are to be shipped through OPAL.

Note: BIRT is an Eclipse-based open source reporting system for Web applications, especially those based on Java™ and J2EE™.

Escalations and notifications

An escalation is a process that monitors time-sensitive records and initiates actions and notifications when those records are not acted upon in a timely manner. You use escalations to ensure that the service provider complies with the commitments specified in the SLA. You can schedule escalations to automatically monitor and evaluate conditions and then trigger actions, ownership changes, and notifications based on those conditions. The IBM Tivoli Process Automation Engine includes a default escalation for the following commitment types:

- Contact
- Response
- Resolution
- Other

You use the Escalation tab to modify default escalations, define new escalation points, and define the actions and notifications that must be performed and be issued, respectively, when those points are reached.

Note: You can use the Escalations application in the Configuration module to define escalations.

2.4.5 Process integration

The IBM Tivoli Release Process Manager, the IBM Tivoli Change and Configuration Management (CCMDB), and the Service Catalog are shipped together out of the box, providing tight integration between your Service Catalog and the Release Process Manager and Configuration and Change Management processes.

Note: IBM Tivoli Release Process Manager and IBM Tivoli Change and Configuration Management Database (CCMDB) must be licensed separately. They are not included in the Tivoli Service Request Manager Service Catalog package.

To apply formal change approval to a service catalog request or to coordinate service catalog request implementations through the release management process with other similar requests, you can open a process request directly from a catalog order or from a catalog work plan task. Use the Process Request application to create IT process requests for Tivoli Release Process Manager and IBM Tivoli Change and Configuration Management Database (CCMDB).

Note: CCMDB must be licensed separately. It is not included in the Tivoli Service Request Manager Service Catalog product.

Figure 2-43 depicts a scenario of a Service Catalog user requesting a new database.

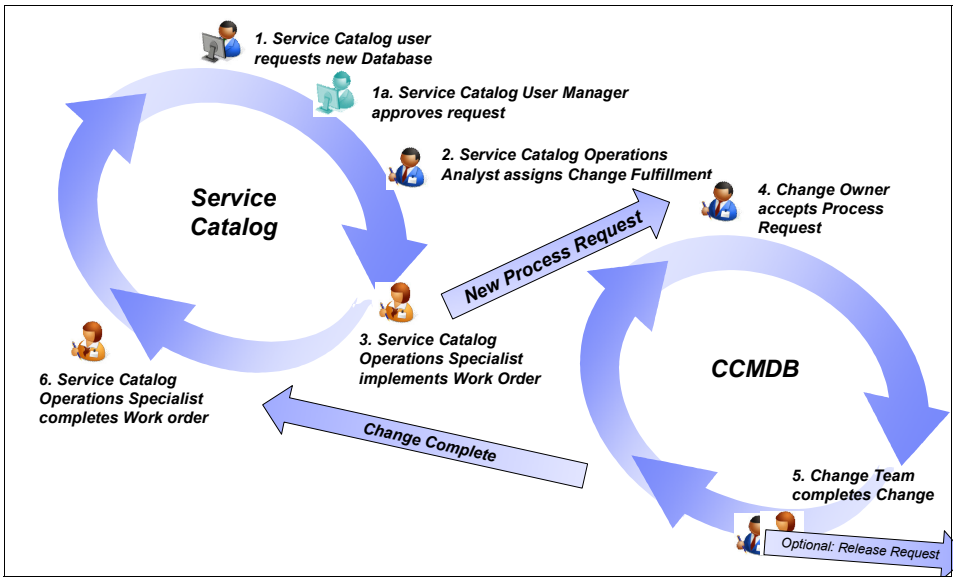


Figure 2-43 Integration with CCMDB

Similarly the Service Desk and Service Catalog components are tightly integrated and increase the productivity of Service Desk personnel.

Part 2

Getting started

This part describes the initial use of the product. The information in this part enables the reader to create a demonstration or proof-of-concept around core product functions.

3

Scenarios

In this chapter we cover several different usage scenarios for IBM Tivoli Service Request Manager Service Catalog. These scenarios provide an understanding of Service Catalog concepts, and they describe ways to implement and configure Service Catalog functionalities and processes. You can use these scenarios for your planning and deployment strategy. Remember that proper planning helps ensure a successful implementation.

This chapter contains the following scenarios:

- "Scenario 1: Searching for offerings" on page 91
- "Scenario 2: Accessing external sources" on page 121
- "Scenario 3: Creating workflows" on page 127

3.1 IBM Tivoli Service Request Manager Service Catalog scenarios

To better understand the service offering flux from ordering to fulfillment and to more deeply consider the issues that a Service Designer must take into account when configuring a service offering, this chapter discusses two service offerings from two perspectives, service offering design and the service offering ordering and fulfillment cycle. The former perspective describes the design process that you undertake when configuring service offerings. The latter perspective shows how the Tivoli Service Request Manager Service Catalog product actually works when you order and receive a predefined service offering. These two perspectives are integrated into the three scenarios that we present in this chapter.

Our scenarios use the standard roles, security groups, and users, which are listed in Table 3-1. (Refer to “Roles” on page 65 in Chapter 2 for additional details on system users and security constraints.) We use the default password “maxadmin”. In the Service Catalog Administrator role, you can make changes to user passwords or to the security groups associated with each user by selecting **Security** → **Users**.

Table 3-1 User profiles

Role	Security Group	User
Self Service User	SRMSELFSERVICE	Sarah
Self Service User	SRMSELFSERVICE	Sharan
Self Service User	SRMSELFSERVICE	Kimberley
Self Service User	SRMSELFSERVICE	Will
Service Requisition User Manager	PMSCSRU	Manny
Service Designer	PMSCSDGN	Desi
Operations Analyst	PMSCOA	Oscar
Operations Specialist	PMSCOS	Sally
Service Catalog Administrator	PMSCADM	Adam
Service Delivery Manager	PMSCSDM	Delvin
Service Execution Manager	PMSCSEM	Axel

Role	Security Group	User
Service Requisition User	PMSCSRU	Roxy
User Contact Analyst	PMSCUCA	Connie

Note: These scenarios assume that you have installed the Tivoli Service Request Manager Service Catalog V7.1 application successfully in your environment. For installation instructions, you can refer to *Implementing Implementing IBM Tivoli Service Request Manager V7.1 Service Desk*, SG24-7579.

At the time of writing, Tivoli Service Request Manager V7.1 was not generally available (GA), so we used an early version of the product. In the following scenarios you might see slight differences in the product panels compared with the GA version of the product.

3.2 Scenario 1: Searching for offerings

In this first scenario we show you how to search for offerings in the context of a firewall change request ordering and fulfillment scenario.

Sarah works for a network infrastructure company and frequently needs to modify firewall rules or router configurations. She makes her requests using dozens of different interfaces and using e-mail or the telephone. In many cases, she is unable to find the right person or the right channel to fulfill her requests. In other cases, she finds what she thinks might be the right channel, but getting a response seems to take forever and she cannot track the progress of her requests through various channels.

Her company recently has implemented Tivoli Service Request Manager V7.1 Service Catalog, and Sarah is ready to use the new system. She needs to open a port on a firewall, a task that she used to execute while trying to discover who was responsible for the firewall. Once she determined who was responsible, she sent an e-mail to this individual.

3.2.1 Service offering roles and flow

The procedures in the following sections provide steps that illustrate the flow of the service offering and the roles involved when ordering and fulfilling the offering.

Note: This scenario does not show how the service offering was implemented. 3.2.2, “Firewall change request design” on page 106 presents the designer perspective and how the designer implements the offering. It also discusses design alternatives that can affect the flow and alternatives that implement different offerings.

cron task setup

A cron task defines frequently executed routine tasks, for example, updating the application server users to link to the objects they might want to search for. To use the search functionality shown in this scenario, complete the following tasks:

1. Adam, the Service Catalog Administrator, logs on.
2. Adam selects System Configuration → Platform Configuration → Cron Task Setup.
3. He then searches for “PmObjSearchCron”.
4. In the Schedule field, Adam sets the frequency at which he wants to run the cron task, for example, five minutes.

Self Service User role perspective

The following steps demonstrate requesting an offering from the Self Service User role perspective:

1. Sarah signs on as the Self Service User.
2. On the left menu of the Start Center, she clicks Service Request Manager Search. Figure 3-1 shows the window that is displayed.

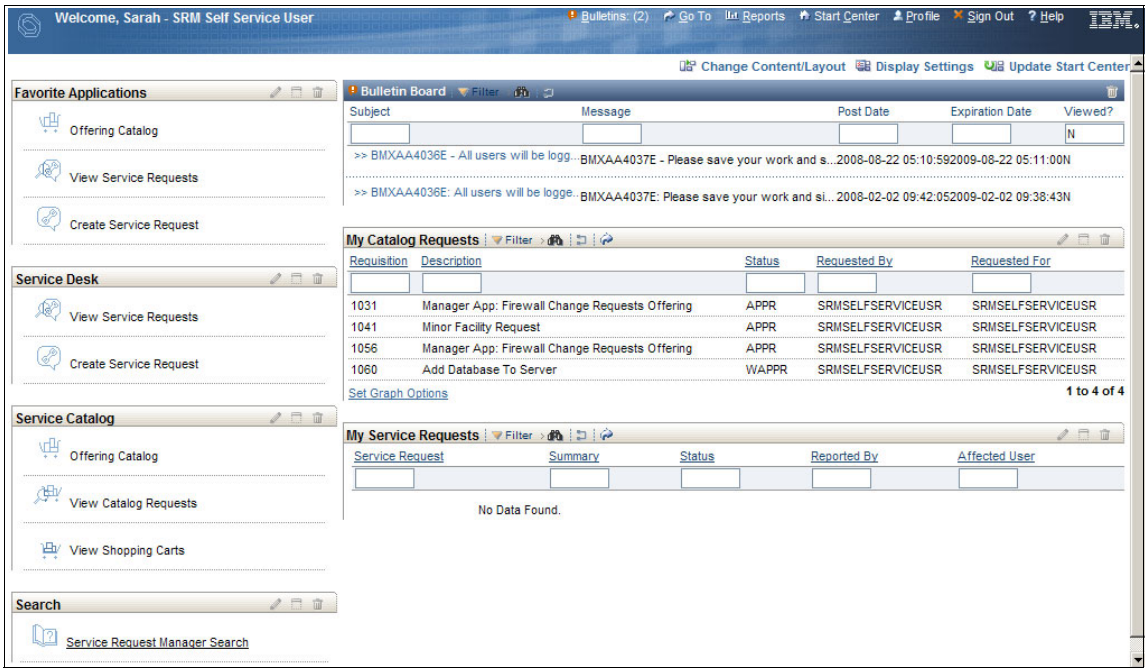


Figure 3-1 The Self User Start menu

3. Sarah then searches for “open firewall port”. The Tivoli Service Request Manager Service Catalog tool conducts a comprehensive search, looking through offerings, catalogs, and catalog requests. In Figure 3-2, Sarah decides to narrow the search to look through the offerings only. She found a Firewall Change Requests offering.

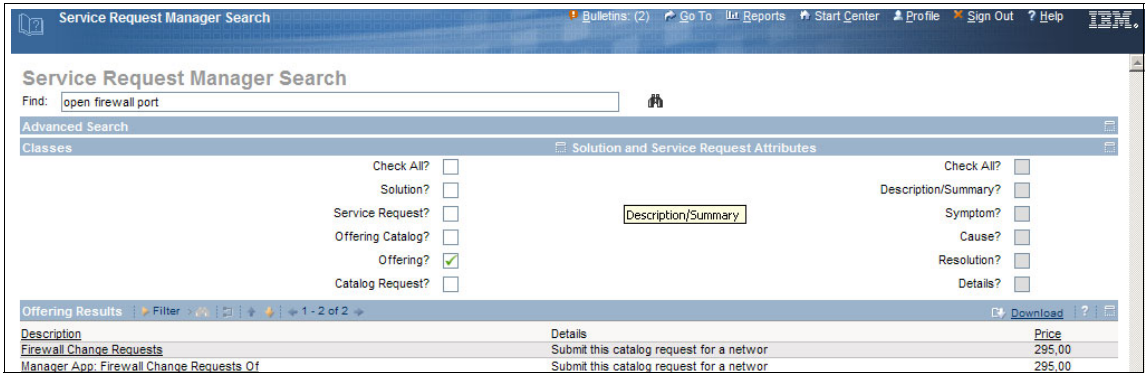


Figure 3-2 Searching for offerings

Figure 3-3 shows the Offering Catalog window. A user also can choose Service Request Manager Catalog → Offering Catalog to access the same catalog and search for the offering using the taxonomy on the left menu. Sarah can click the List tab to check for additional catalogs, such as the Human Resources Offering Catalog. On the Offerings tab, she can search for offerings using the Search field, or she can click the View All Offerings link next to the search icon to access the entire list.

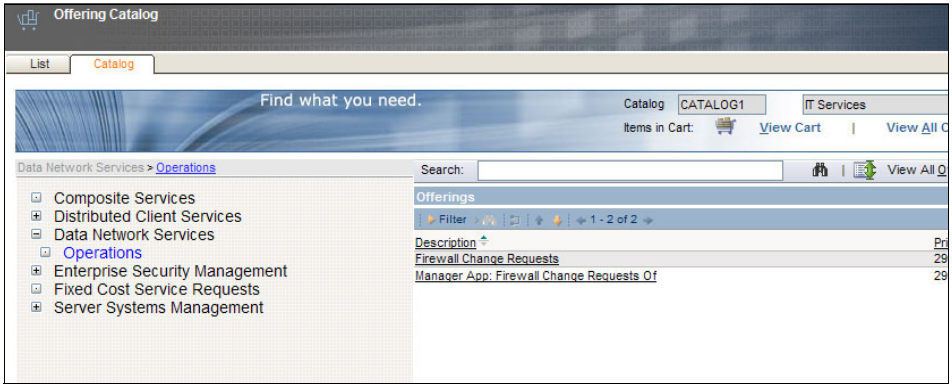


Figure 3-3 Offering Catalog window

4. Sarah then clicks Firewall Change Requests.

Note: If this kind of offering is not configured in your system, you can still test the search using other keywords.

5. She then clicks the Firewall Change Requests offering to access the form shown in Figure 3-4. As the requester, Sarah must fill in a number of fields. She fills in these fields according to the specifications of the offering and service fulfillment. At this point, Sarah can add the offering to the Favorites list or add it to the cart.

Note: The specifications can require mandatory or optional fields to be filled in. They can also be used to display the fields to the requester or even define hidden data to be exchanged with certain roles during the offering flow. The fields can be text free or chosen among predefined domains. See 3.2.2, “Firewall change request design” on page 106 for further details.

6. Sarah clicks Add To Cart (see Figure 3-4).

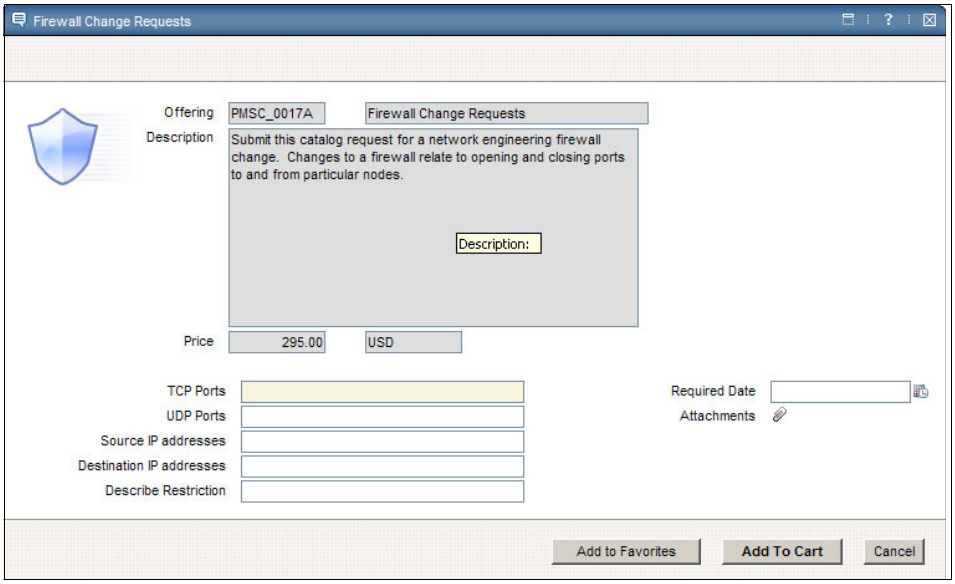


Figure 3-4 Offering description

Figure 3-5 on page 96 shows the shopping cart. At this point, Sarah can change the quantity ordered, save the cart and order at a later time, continue shopping, or order the offering right away. She can also define a Required Date and change the way the offering is charged, choosing a different charging account (in the GL Debt Account field).

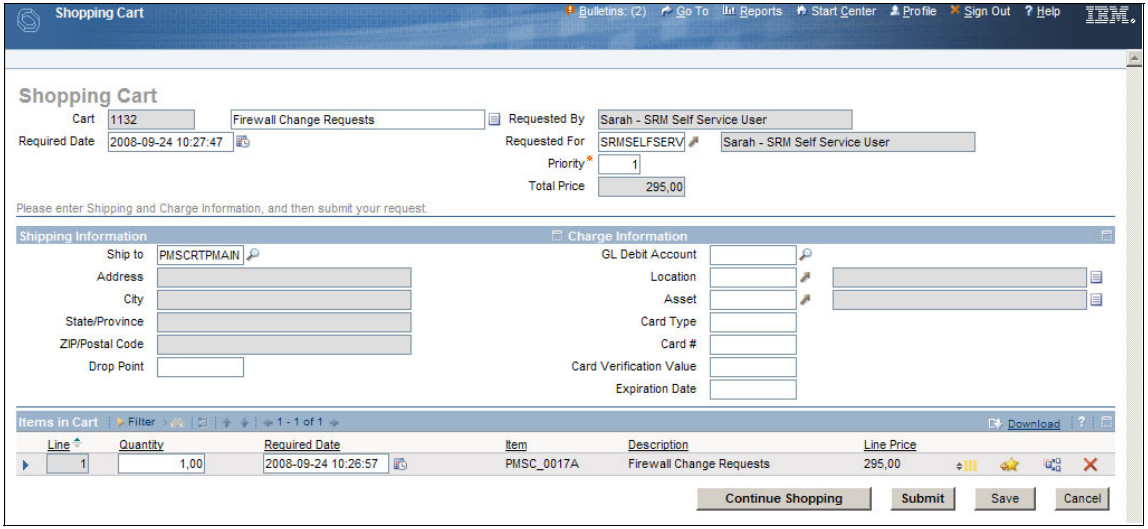


Figure 3-5 Shopping cart

7. Sarah defines a Required Date and clicks Submit. In the View Catalog Requests window (see Figure 3-6), Sarah clicks the Details tab to view the details of the catalog request.

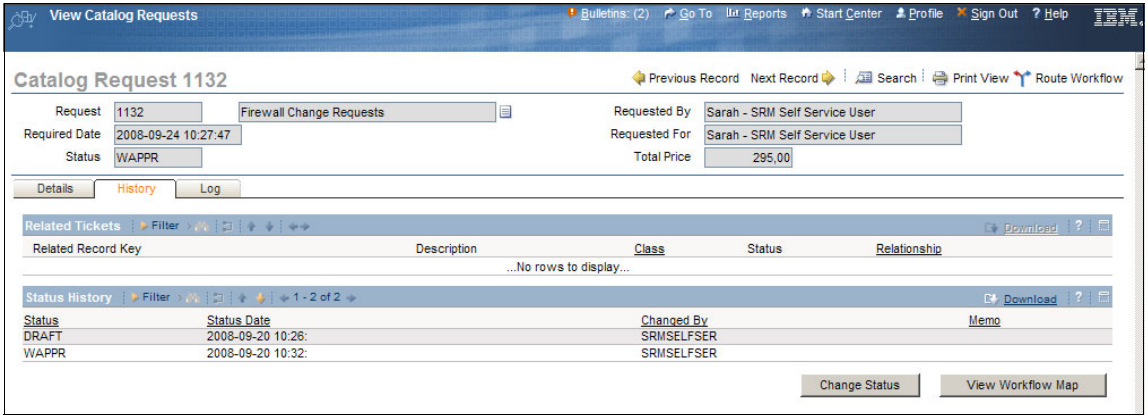


Figure 3-6 Tracking the catalog request

Figure 3-6 on page 96 shows the following three tabs:

- The Details tab shows the items ordered and the shipping information.
- The History tab makes tracking easy because it shows the current status of the fulfillment process.
- The Log tab provides a way to register communications between the requester and the delivery organization.

Service Requisition User Manager perspective

Now that the order is complete, a business-level approval is required. This level of approval checks, for example, whether the requester can order this kind of offering or whether any kind of contractual constraints or charging policies might apply to the offering. In this scenario, Manny, the Service Requisition User Manager, completes the following steps:

1. Manny logs onto the system as the Service Requisition User Manager.
2. Manny selects Service Request Manager Catalog → View Catalog Requests.
3. Sarah's request is designated WAPPR (Waiting for Approval). He clicks it.
4. Then Manny clicks Change Status and approves the request.

After approving the catalog request, a purchase requisition is generated, and Sarah's request is ready to go to the delivery organization.

Operations Analyst perspective

Oscar, the Operations Analyst, works at the delivery organization, and he routinely checks for purchase requisitions, catalog orders, and work orders. After Manny approves Sarah's request, Oscar has to review the generated purchase requisition.

In this scenario, we demonstrate the different levels of approvals that can be selected, all of which can be automated by workflows. As Operations Analyst, Oscar completes the following steps:

1. Logs on as the Operations Analyst.
2. Oscar checks for Catalog Purchase Requisitions Waiting for Approval. Each item of the catalog order generates a different purchase requisition.

3. Oscar clicks the Catalog Purchase Requisition Line tab (see Figure 3-7 on page 98) to review the details of the order, including pricing and the linked catalog order.

   Oscar can apply an SLA to the purchase requisition or even reject it if, for some reason, the delivery organization is not able to fulfill it. He can add a communication to the Log tab, alerting Manny that it is not possible to complete the order. In this case, he approves the purchase requisition, clicking the Change Status button.

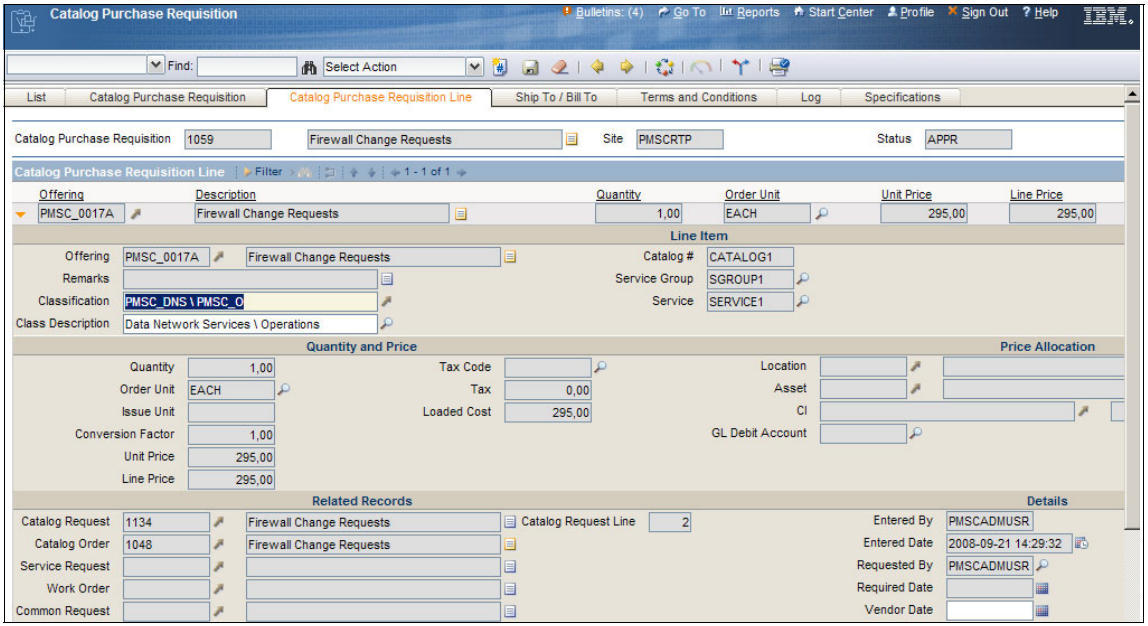


Figure 3-7 Purchase requisition details

The approved purchase requisition generates a catalog order, which generates work orders for the order fulfillers or initiates a change request, if this path is included in the fulfillment options.

4. On the Start Center, Oscar checks for Catalog Orders Waiting for Approval. He clicks the catalog order and checks the Catalog Order Line.

5. He approves the catalog order by clicking the **Change Status** button. This action generates a work order according to the Fulfillment Option defined in the External Receipts section (see Figure 3-8).

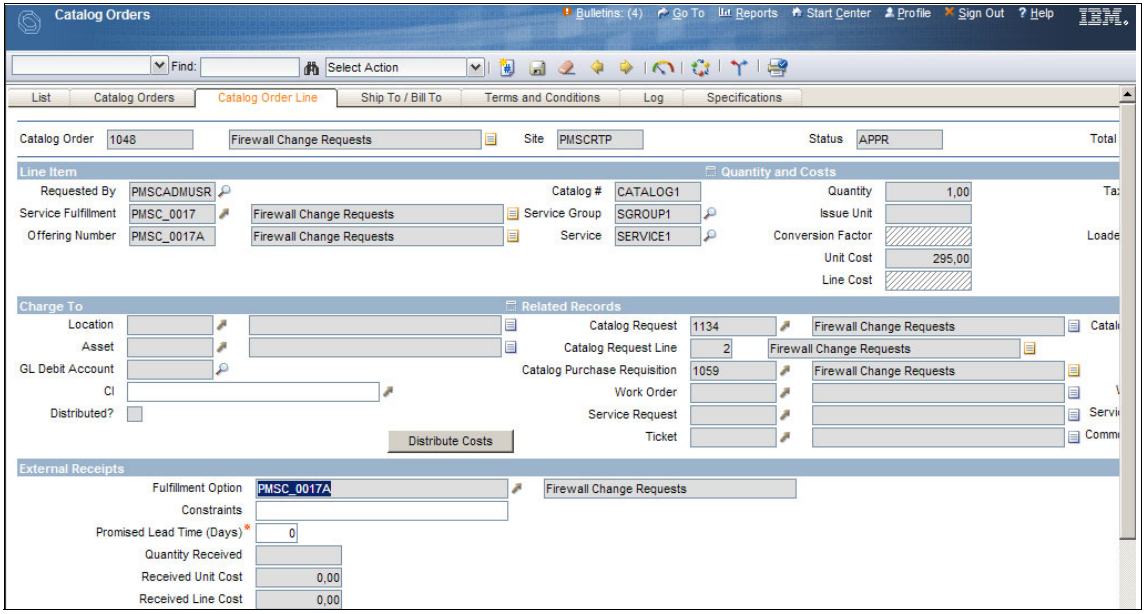


Figure 3-8 Catalog order details

At this point, Oscar must approve the work order and decide who executes the tasks involved in fulfilling the work order. The predefined jobplan can include a default assignment of the tasks, but in this example, we define it as a manual step.

6. Oscar returns to the Start Center and checks for the work orders pending for approval. He selects the work order for Sarah's Firewall Change Request. Figure 3-9 on page 100 shows the work order.
7. Oscar can select an owner for each task or select one for the entire work order. To select a single owner, he clicks the Select Owner button or uses the Select Action menu (see Figure 3-9 on page 100). He looks for PMSC and selects the Operations Specialist to execute the work order. Oscar can check team availability using the Assignment Manager (by selecting Start Center → Work Orders → Assignment Manager), apply SLAs, and define schedules and dates for completion.
8. Oscar approves the work order by clicking Change Status.

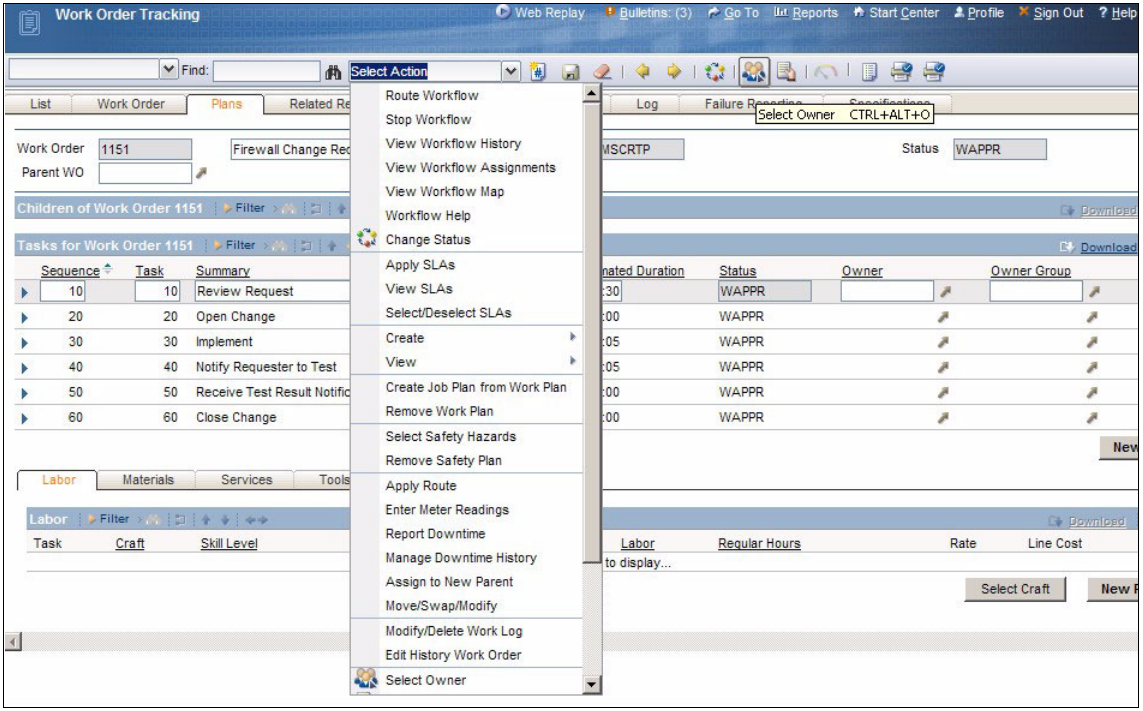


Figure 3-9 Select owner

Operations Specialist perspective

In this section, we consider the procedure from the Operations Specialist perspective:

1. As the Operations Specialist, Sally logs on.
2. Sally checks for work orders that are waiting for approval and clicks the Firewall Change Request work order to access the Workorder Tracking application.
3. Sally verifies the information and all the necessary tasks on the Plans tab. To access the long descriptions available for some tasks, she clicks the Long Description icon next to the task name.
4. As she completes a work order, Sally sets the status to Completed.

Offering completion

Oscar, the Operations Analyst, receives a notification indicating that the work order is complete. He checks that all tasks were performed according to the request. If he decides that the work was correctly executed, he closes the catalog order linked to the work order. When Oscar does so, the purchase requisition and the catalog request are automatically closed.

Delivery organization tracking offering cycle

How can you determine that offerings are being timely and correctly delivered to requesters? The Tivoli Service Request Manager Service Catalog provides a reporting functionality that you can use to track the delivery cycle and make the necessary adjustments.

Axel is a Service Execution Manager who wants to ensure his employees are doing their jobs. He signs onto the system and verifies the service offering reports each day. Axel completes the following steps to verify the service offering requests:

1. As the Service Execution Manager, Axel logs on.
2. He chooses Reports → Service Request Manager Catalog → Service Order Management → Catalog Orders to access the Reports window shown in Figure 3-10 on page 102. The window lists predefined reports.

Keeping track of service delivery: We recommend keeping track of both work orders and catalog orders. Tracking work orders shows whether the delivery team is executing the tasks, and tracking the catalog orders shows whether the Operations Analyst has verified the work orders and has closed the related catalog orders. This tracking is specially useful when no workflow automatically closes the work orders when they are completed. When the work orders are completed and the catalog orders are not closed, the user has no feedback that completion has occurred, which can lead to service dissatisfaction. Alternatively, when the Operations Analyst simply closes the catalog order (or a workflow, for example) without checking the work performed, a poorly executed work order can result, which also leads to service dissatisfaction. The maturity of the delivery organization must be evaluated to define the level of control and automation that must be implemented.

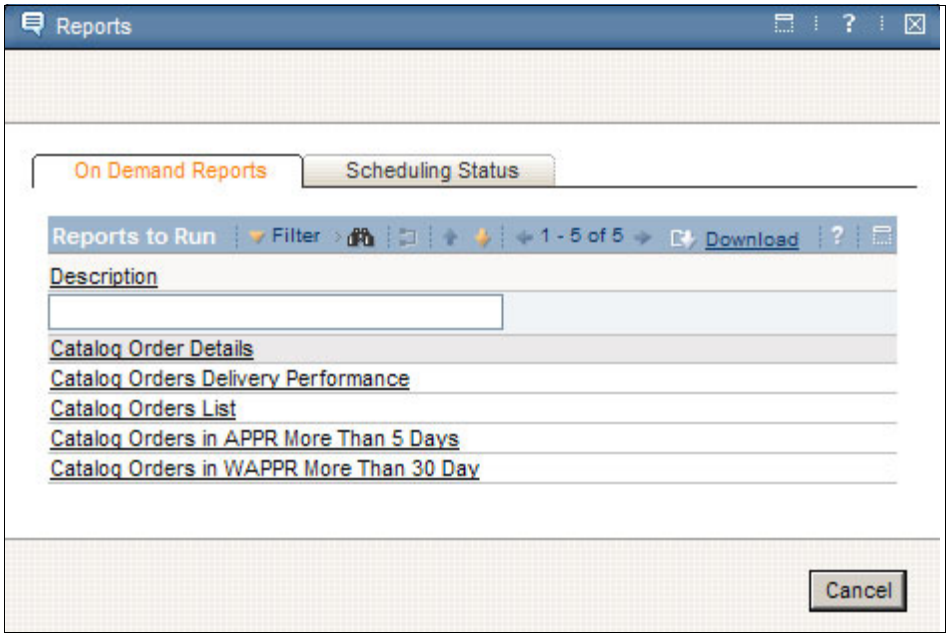
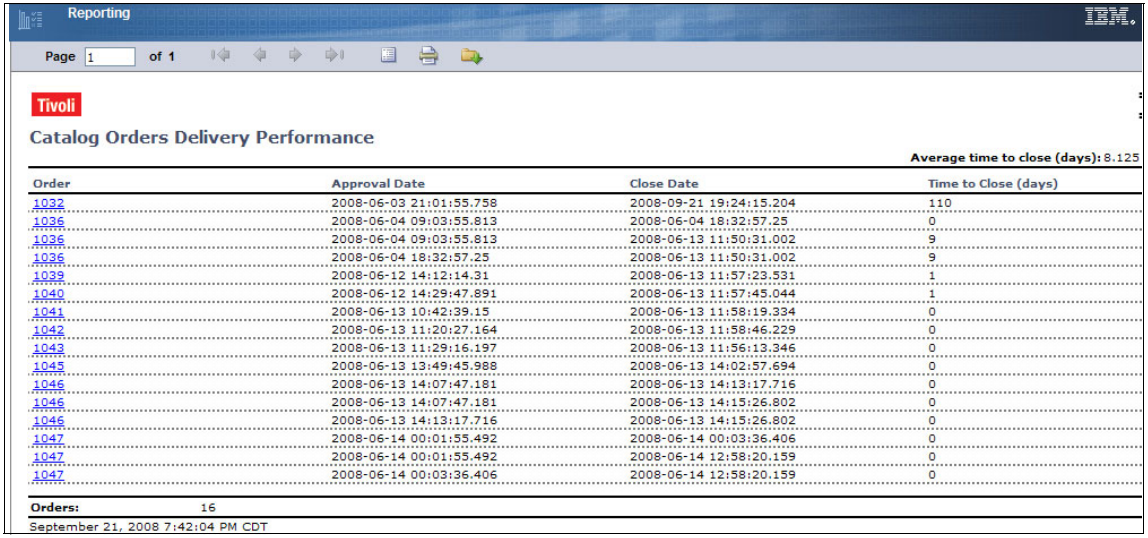


Figure 3-10 List of predefined reports for the catalog order object

Figure 3-11 on page 103 shows the report accessed by clicking the Catalog Orders Delivery Performance link. The report can be configured so it is delivered to Axel by e-mail or so it is provided on demand. In reviewing the Catalog Orders Delivery Performance report, Axel notes that order 1032 took 110 days to complete, which is an item he wants to investigate.

Other reports available include catalog orders in WAPPR (Waiting for Approval) or APPR (Approved) status. Catalog orders that are in APPR status for more than five days might indicate that the work orders are taking too long to be completed or that the Operations Analyst is not verifying them. Catalog orders that are left Waiting for Approval (WAPPR) might indicate that the organization is not capable of fulfilling them or that the Operations Analyst is a bottleneck to the flow of operations. In either case, users probably are anxiously waiting to determine the status of their requests. The Service Execution Manager must ensure the delivery organization does not forget them.


Reporting

Page 1 of 1

Tivoli

Catalog Orders Delivery Performance

Average time to close (days): 8.125

Order	Approval Date	Close Date	Time to Close (days)
1032	2008-06-03 21:01:55.758	2008-09-21 19:24:15.204	110
1036	2008-06-04 09:03:55.813	2008-06-04 18:32:57.25	0
1036	2008-06-04 09:03:55.813	2008-06-13 11:50:31.002	9
1036	2008-06-04 18:32:57.25	2008-06-13 11:50:31.002	9
1039	2008-06-12 14:12:14.31	2008-06-13 11:57:23.531	1
1040	2008-06-12 14:29:47.891	2008-06-13 11:57:45.044	1
1041	2008-06-13 10:42:39.15	2008-06-13 11:58:19.334	0
1042	2008-06-13 11:20:27.164	2008-06-13 11:58:46.229	0
1043	2008-06-13 11:29:16.197	2008-06-13 11:56:13.346	0
1045	2008-06-13 13:49:45.988	2008-06-13 14:02:57.694	0
1046	2008-06-13 14:07:47.181	2008-06-13 14:13:17.716	0
1046	2008-06-13 14:07:47.181	2008-06-13 14:15:26.802	0
1046	2008-06-13 14:13:17.716	2008-06-13 14:15:26.802	0
1047	2008-06-14 00:01:55.492	2008-06-14 00:03:36.406	0
1047	2008-06-14 00:01:55.492	2008-06-14 12:58:20.159	0
1047	2008-06-14 00:03:36.406	2008-06-14 12:58:20.159	0

Orders: 16

September 21, 2008 7:42:04 PM CDT

Figure 3-11 Catalog Orders Delivery Performance report

Service Delivery Manager tracking services

As the Service Delivery Manager, Delvin has a broader mission than that of the Service Execution Manager. Delvin is responsible for the contracts and the quality parameters that the delivery organization establishes with other parties. He must check for SLA attainment and analyze whether the defined services that are supported by the service offerings are under control. SLAs can include not only the time at which service offerings must be delivered, but also other parameters such as asset availability or response time. In general, SLAs are tracked using KPI functionality (see “Key performance indicators and visual boards” on page 104 for details).

Another useful source of information about services is the related records section of the Service Level application. Delvin accesses this information by completing the following steps:

1. As Service Delivery Manager, Delvin signs on.
2. He selects Service Level → Service Groups.
3. Then Delvin selects the a service group he wants to obtain information about and clicks Select Action.
4. He clicks View Related Records.

Delvin accesses a comprehensive view of the service, including related work orders, assets, SLAs, contracts, offerings, configuration items, and service fulfillments. Refer to Chapter 1, “Introduction to service concepts” on page 3 for a discussion about the differences between and similarities of services and service requests.

Key performance indicators and visual boards

You can configure the Start Centers to automatically display certain types of data, either graphically or in lists. This feature can help the employees in charge of tracking the services or service offerings, alerting them of unexpected trends or events. Click Graphical View under the list you want to view as a graphic or Set Graph Options (see Figure 3-12) to configure an unconfigured list.

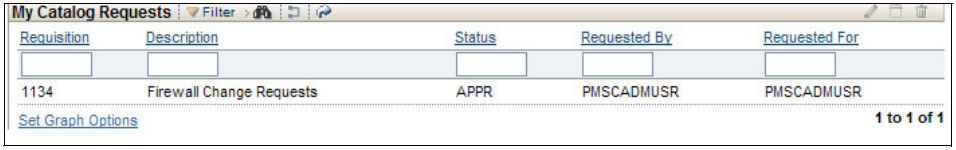


Figure 3-12 Predefined content with the Set Graph Options link

You can also configure Start Centers to automatically display KPIs (see Figure 3-13), which can provide an historical trend functionality for checking how the indicator evolved compared to other KPIs. You can define thresholds for specific KPIs.

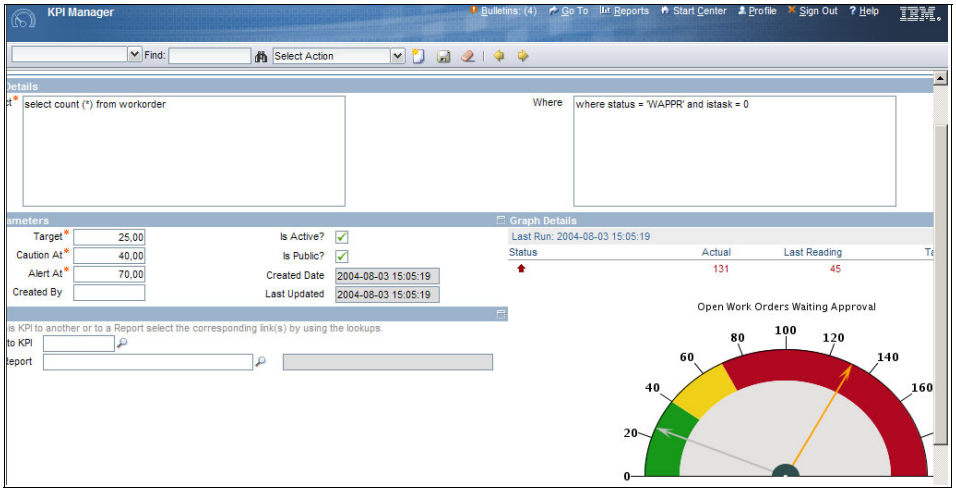


Figure 3-13 KPIs in the Start Center window

As Service Delivery Manager, Delvin defines thresholds for KPIs by completing the following steps:

1. As Service Delivery Manager, Delvin logs on.
2. Delvin selects Administration → Reporting → KPI Manager. Alternatively, Delvin can click the Create KPI button, which is a menu item available in most applications.
3. Delvin types “Work Orders” in the Description field. A list of predefined KPIs is displayed.
4. He then clicks Open Work Orders Waiting for Approval.
5. Delvin configures the Target, Caution, and Alert fields in the KPI Parameters section. The threshold colors vary depending on the configuration.
6. He marks the Is Public? option. By doing so, any user can run the KPI and add it to the user’s Start Center.
7. Delvin saves the record.

To add a KPI to his Start Center, Delvin completes the following steps:

1. He selects Start Center → Change Content / Layout.
2. Delvin then clicks Select Content, selects KPI Graph, and clicks Finish.
3. Returning to the Start Center, Delvin clicks the pencil icon next to the KPI area.
4. He then clicks Select KPIs and looks for KPI-4 or another KPI that he wants to add.
5. Finally, Delvin clicks Finish.

3.2.2 Firewall change request design

We described the cycle of ordering, fulfillment, and tracking processes in the previous section. In this section, we discuss how the Service Designer configures the offering described in the previous section. We also describe offering design options.

Service Groups

First, the Service Designer, Desi, configures the Service Groups by completing the following steps:

1. As the Service Designer, Desi logs on.
2. Desi selects Service Level → Service Groups.

   The Service Catalog module includes two levels for the definition of services, the service group and the service itself. In this example, Desi can define a service group based on a target asset (data or information) of a market space (see 1.3.2, “Service portfolio and catalogue” on page 11 for details). Because all services that support the same asset can be grouped under this classification, the structure facilitates a service catalog and portfolio linkage. Although the Service Catalog module does not directly support portfolio management and the content of a service portfolio cannot be inserted in the system, service groups can be defined according to a portfolio grouping, leveraging the value of the tool as an IT management system.

If the Service Catalog module is not used exclusively for IT services, Desi can use another option, defining the service group as IT, which can also be part of the portfolio grouping of a given organization. The services then can be defined using a different granularity such as applications and network.Table 3-2 provides an example. The service group type determines whether a service is provided, procured, or both.

3. Desi configures the application according to the parameters listed in Table 3-2.
4. Then Desi saves the record.

Table 3-2 Service group application configuration

Domain	Attribute	Value
Service group (main object)	Name	Data
	Long description	Services related to data assets
	Type	PROVIDE
Service (tab)	Name	Network Support
	Long description	Support of network infrastructure

Figure 3-14 on page 108 shows the data service group in the Service Groups window. The figure also shows the related records functionality (which is accessible through the Select Action menu after selecting a service group). This important function provides a comprehensive view of the objects that are related to a service and also to a service group.

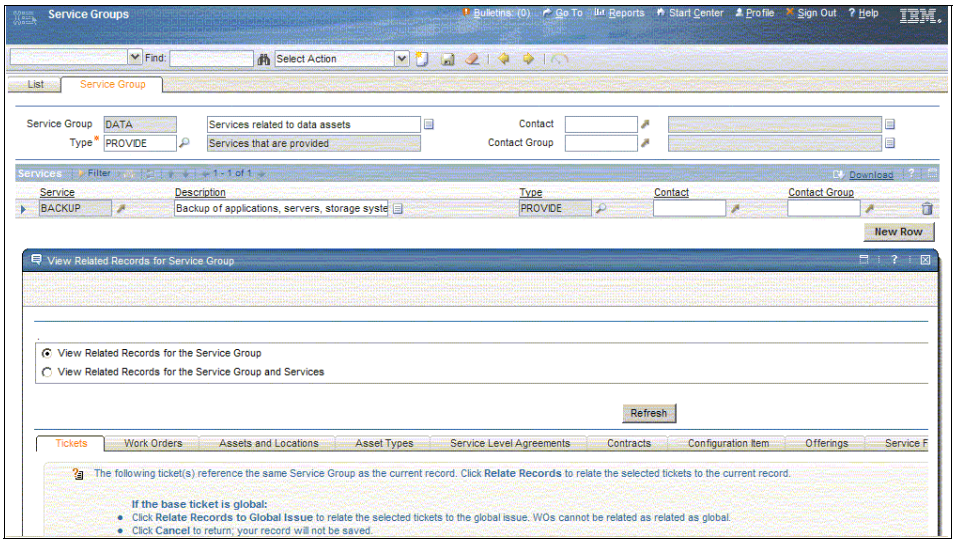


Figure 3-14 Related records functionality

Catalogs

This section describes a catalog where the offering is displayed. As Service Designer, Desi can define multiple catalogs for specific audiences (see Table 3-3 on page 109). These catalogs can contain completely different offerings or even variances of the same offering, with specific service levels. Alternatively, Desi can define catalogs for internal users and other catalogs for external users. The level of access is determined by the Tivoli Service Request Manager security group object.

Table 3-3 Defining a catalog

Domain	Attribute	Value
Catalogs (main object)	Name	Catalog1
	Long description	IT Services
Security Group (tab)	Group Name	SRMSELFSER (Service Requisition Manager Self Service) PMSCOA (Operations Analyst) PMSCOS (Operations Specialist) PMSCSDGN (Service Designer) PMSCSDM (Service Delivery Manager) PMSCSEM (Service Execution Manager) PMSCSRU (Service Requisition User) PMSCUCA (User Contact Analyst) PMSCADM (Service Catalog administrator)

Security groups are also objects of service catalogs, but the group record is linked to a specific catalog. Whenever Desi adds or modifies an object (such as a security group) inside a different application (such as a catalog) due to a linkage, he can consider it an attribute of the current record (catalogs), see Figure 3-15.

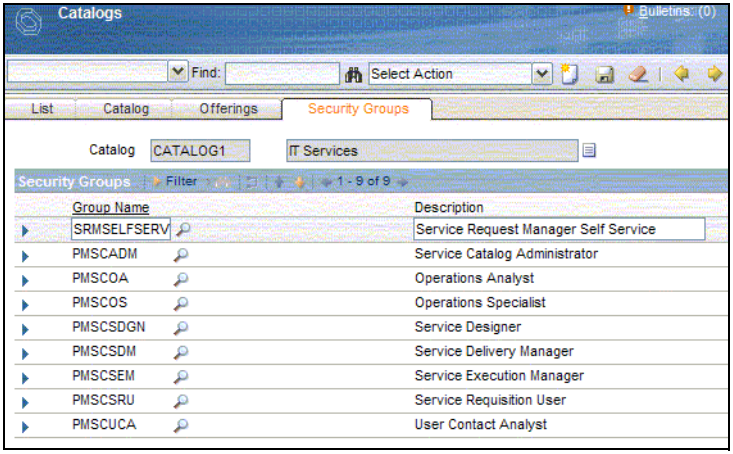


Figure 3-15 System objects linked to the catalogs record

Desi defines catalogs by completing the following steps:

1. Desi selects Service Request Manager Catalog → Service Inventory → Catalogs.
2. He configures the application according to the parameters listed in Table 3-3 on page 109.
3. He sets the status as Active.
4. Desi saves the record.

Service fulfillment

The service fulfillment object is a core part of any service offering. It represents the capability of the provider, linking what is exposed as an offering to the delivery structure. It defines whether the offerings are descriptions or links or whether they are fulfilled through assigned tasks. See Table 1-1 on page 23 for a list of all types of service fulfillment objects. A service fulfillment object can also define the workflow for the catalog order, an SLA to the associated purchase request, and a default jobplan for executing the offering. Multiple fulfillment options can also be designed. Figure 3-16 on page 111 shows the main definitions that are created in the design of a fulfillment offering and a possible configuration for fulfillment options.

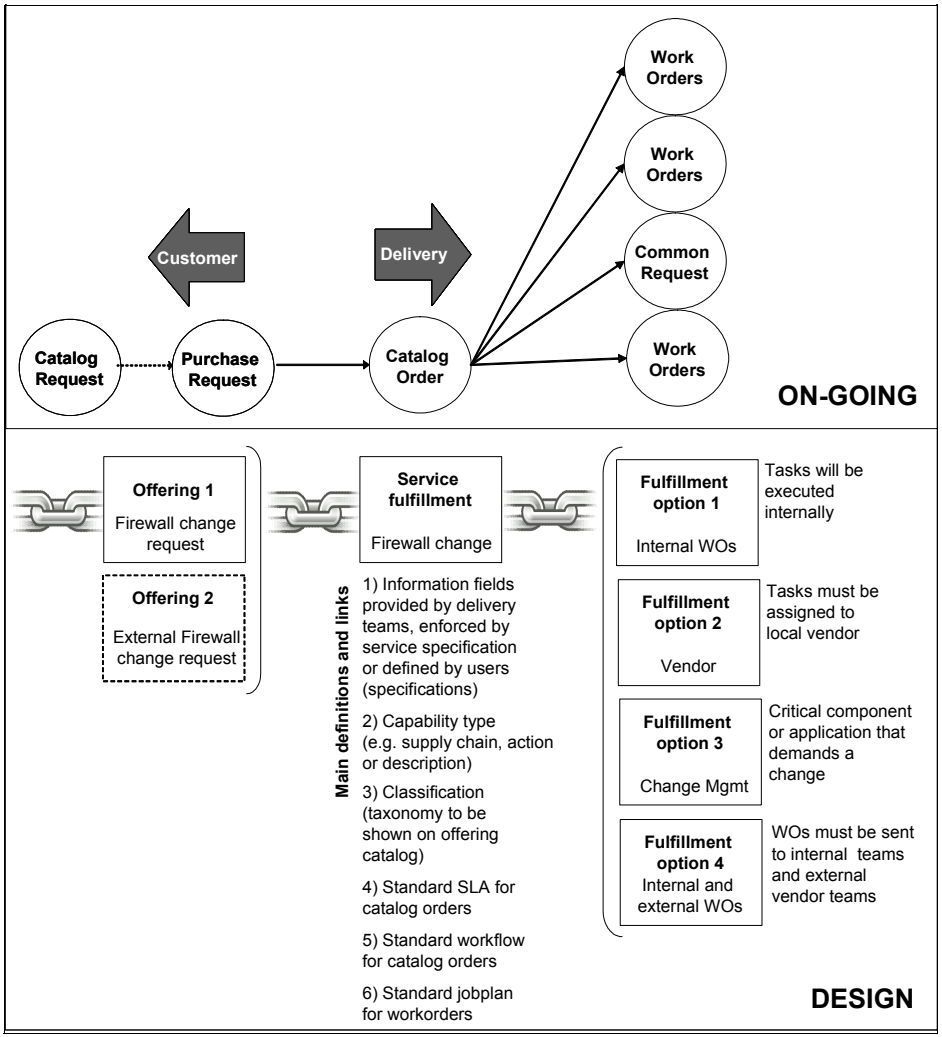


Figure 3-16 Service fulfillment object as link between offerings and fulfillment options

The Service Designer can link multiple offerings or fulfillment options to a single service fulfillment, but the opposite is not possible. It is not possible, for example, for an offering to be a simple description, and it cannot it be fulfilled through tasks. Thus, the service fulfillment offering is truly a hub for the convergence point of both offerings and fulfillment options.

In the following steps, Desi, the Service Designer, configures the Service Fulfillment main object:

1. Desi, the Service Designer, chooses Service Request Manager Catalog → Service Inventory → Service Fulfillment.
2. He then configures the Service Fulfillment main object.
3. On the Specifications tab, Desi selects Service Fulfillment Information and defines the classification as Data Network Services\Operations, or he defines it using any applicable classification.

About classifications: The classification is an important attribute because it determines how the offering that is linked to the service fulfillment appears to the requester navigating the catalog. In other words, it defines the catalog hierarchy of offerings. In Tivoli Service Request Manager, the classifications you define depend on the objects that require them, which are generally based on reports or logical groupings that you must provide. The provided services can be an initial structure that can be gradually refined and shared among different kinds of objects (such as incidents, changes, and assets), controlling the level of the classification complexity.

4. On the Specifications tab, Desi clicks Specifications. Figure 3-17 on page 113 shows examples of specifications.

About specifications: Specifications define the kind of information that must be provided both by fulfillers and users or must be enforced by the agreed-upon service terms, either technical or contractual. The service fulfillment specifications are propagated to work orders, catalog requests, or common requests so that fulfillers are properly aware of these fields (if enforced) or fulfill them (when demanded). In 3.3, “Scenario 2: Accessing external sources” on page 121, we describe how to create the offerings, map offerings and service fulfillment specifications, and define the displaying characteristics (read-only, hidden, or mandatory).

Desi must add an attribute for each specification. To add attributes, Desi completes the following steps:

1. As Service Designer, Desi selects Add/Modify attribute from the Select Action menu.
2. Desi then clicks New Row to access the Details section. For each specification in Table 3-4 on page 114, he must define an attribute, with a value and an unit of measure.

About attributes: Attributes define types of information that is stored and linked to a particular object. These fields can be text free or can be restricted to a particular domain, such as configuration items. In this case, they must be linked to a system table. The data type can be Numeric, Alphanumeric, or Table. In our scenario, Desi defines the attributes as Alphanumeric. He selects the Table type and defines a Domain to provide a list of options for each specification. Alternatively, Desi can define the data type as Numeric. He can add domains by selecting System Configuration → Platform Configuration → Domains.

About units of measure: If you cannot find the specified units of measure, choose the **Select action menu** of **Service Request Manager Catalog → Service Order Management → Catalog Purchase Requisition** and find the Unit of Measure and conversion option.

3. Desi adds the attributes that he defined in the previous step to the Specification area of Service Fulfillment, clicking New Row (see Figure 3-17).

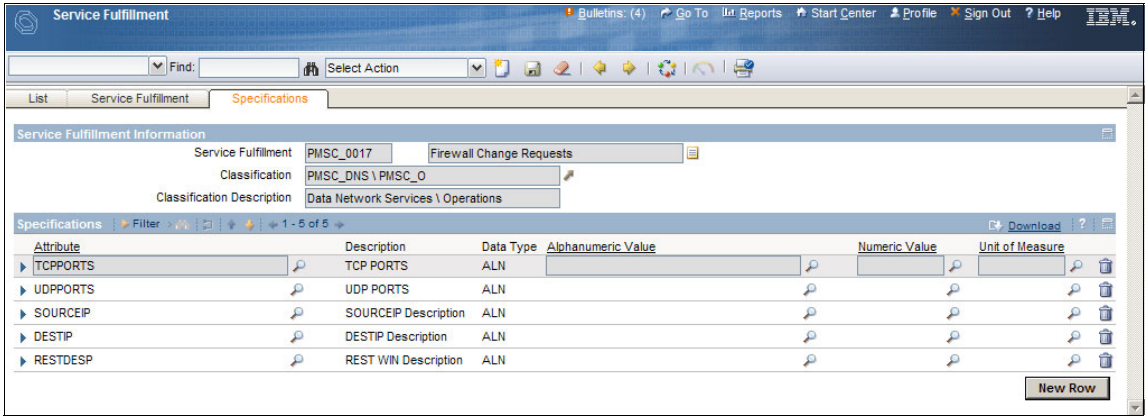


Figure 3-17 Specifications for the firewall change request

4. Desi then clicks the Change Status button and defines the status as Active.
5. He saves the Service Fulfillment record.

Offerings

An offering is a design object that defines how the purchase requisition and catalog request works and how the service is displayed to the user. An offering must not exist without a provider who provides the service, and that is why defining an service fulfillment object is mandatory before creating an offering.

The Service Designer can define the offering directly from the Select Action menu of a given service fulfillment or go to the Offering window and link it. As Service Designer, Desi defines a service fulfillment offering by completing the following steps:

1. Desi selects Service Request Manager Catalog → Service Inventory → Offerings.
2. He then configures the Offering main object according to the definitions listed in Table 3-4.

Table 3-4 Defining an offering

Domain	Attribute	Value
Offering (main object)	Name	PMSC_0017A.
	Description	Firewall Change Requests.
	Long Description	Submit this catalog request for a network engineering firewall change. Changes to a firewall relate to opening and closing ports to and from particular nodes.
	Service Fulfillment	PMSC_0017.
	Service Group	SGROUP1 (defined when selecting a service fulfillment).
	Service	SERVICE1 (defined when selecting a service fulfillment).
	Offering Catalog Taxonomy	Data Network Services \ Operations (defined when selecting a service fulfillment).
	Price	295.
	Currency	USD.
	Purchase Requisition Approval workflow	None.
	Requisition processing	None.

Oscar, as Operations Analyst, had to manually approve the purchase requisition. Optionally, Desi might have configured an automated workflow and linked it at the offering level. He opted for the manual configuration because he wants Oscar to manually check the purchase requisitions so that mistakes are not propagated automatically to the catalog orders and work orders.

Table 3-5 explains the options for requisition processing.

Table 3-5 Actions automatically triggered by each requisition option

Request processing type	Triggered actions	What happens?
Catalog purchase requisition waiting for approval	Create purchase request	After the offering is submitted by a user, a pending for approval purchase requisition is created.
Catalog purchase requisition approved	Create purchase request Approve purchase request	After the offering is submitted by a user, an approved purchase requisition is created.
Catalog order waiting for approval	Create purchase request Approve purchase request Create catalog order	After the offering is submitted by a user, an approved purchase requisition and a pending for approval catalog order are created.
Catalog order approved	Create purchase request Approve purchase request Create catalog order Approve catalog order	After the offering is submitted by a user, an approved purchase requisition and catalog order are created.

In our scenario, the Service Requisition User Manager, Manny, creates the single approval workflow. In the other cases, the users had to click unapproved objects to change their status. In Manny's case, an approval assignment reveals a workflow is working behind the scenes. This workflow is linked to the catalog request object and must be configured using the Workflow Designer. See Table 3-6 for an extensive list of the ways to trigger actions on the main system objects.

Table 3-6 Triggering actions on the main objects of the service offering flux

Object	**Method for automatically triggering action**	**Applicable to all objects or to specific instances**
Catalog request (PMSCMR)	Create workflow using Workflow Designer and link it to PMSCMR object.	All objects
Purchase requisition (PRSCPR)	Process offering requisition.	Offering instance, overriding organization-level configuration
	Create workflow using Workflow Designer and link it to Organization attributes.	All objects under particular organization
	Create workflow using Workflow Designer and link it to offering attributes.	Offering instance, overriding organization-level configuration
	Select Approved Catalog PRs at organization level.	All objects under particular organization
	Create workflow using Workflow Designer and link it to PRSCPR object.	All objects, overriding organization-level configuration

Object	Method for automatically triggering action	Applicable to all objects or to specific instances
Catalog order (PMSCSO)	Process offering requisition.	Offering instance, overriding organization-level configuration
	Create workflow using Workflow Designer and link it to organization attributes.	All objects under particular ORGANIZATION
	Create workflow using Workflow Designer and link it to Service Fulfillment attributes.	Service Fulfillment instance, overriding organization-level configuration
	Create workflow using Workflow Designer and link it to PMSCSO object.	All objects, overriding organization-level configuration
	Select Approved Catalog catalog orders at organization level.	All objects under particular ORGANIZATION
Work order (WO)	Create workflow using Workflow Designer and link it to Work Order object.	All objects
	Create workflow using Workflow Designer and link it to Organization attributes.	All objects under particular organization

Linking workflows as object attributes: Objects such as offerings and service fulfillments have, under their configurations, the option to link a workflow to PRs and COs. For example, select Service Request Manager Catalog → Service Inventory → Offerings and list one of the offerings as an example. Under fullfilment information, you can define a Purchase Requisition Approval workflow. For the organizational-level configurations, select Administration → Organizations → Select Action menu → Service Catalog Options → Workflow options for Service Catalog to link workflows and Catalog Order options to define automatic approvals.

3. Desi saves the offering record.
4. He selects the Specifications tab → Specification. The offering also has its own specifications, and Figure 3-16 on page 111 provides an example of how they relate to the service fulfillment ones.

5. Desi clicks New Row and adds the same Service Fulfillment attributes. He does not have to define new attributes (through the Select Action menu) but only add the ones that he created in the previous section. Some of the defined values can be different though. The values can be enforced at the offering or on the service fulfillment (the offering value overrides the service fulfillment value if both are defined). If not enforced, the specifications can be defined both by the user or fulfiller.
6. Desi selects the Specifications tab → Attribute mapping and maps the offering and service fulfillment attributes. This mapping defines the links between the fields available to users and the fields propagated to the delivery organization.
7. Desi selects the Specifications tab → Presentation and specifies whether the fields must be Mandatory, Hidden, or Read-only. If he wants to replicate the scenario, he simply leaves the fields blank.
8. Desi changes the offering status to Active.

At this point, the Service Designer has to add the offering to a catalog. If he does so inside the Catalogs application, he can add multiple offerings using the Select Action menu. Because Desi is going to add the offering from inside the Offering application, he can add only one at a time. To add the offering to a catalog, Desi completes the following steps:

1. Desi selects the Select Action menu (inside Offering Application → Add Offering to Catalog). He adds the catalog that was previously created (that is, Catalog1).
2. Desi sets the status as Active.
3. He saves the offering record.

Jobplans

Jobplans are an important tool when planning the steps to fulfill the service offering. With predefined jobplans, a Service Designer can define a time frame, labor, materials, and other components that are necessary to accomplish the offering. Depending on the task granularity, the Service Designer can even nest tasks under parent tasks, creating a detailed description of the fulfillment path. In this example, Desi creates a simple jobplan for the firewall change request by completing the following steps:

1. Desi selects Planning → Job Plans.
2. He clicks New Job Plan.
3. He then configures the jobplan object according to the definitions in Table 3-7 on page 119.

Table 3-7 Jobplan attributes

Domain	Attribute	Value
Jobplan (main object)	Name	PMSC_0017A
	Long description	Firewall Change Requests
	Template type	Activity
	Duration	0:00

4. Desi selects Job Plan tasks.
5. He clicks New Row and add tasks with specific durations. Figure 3-18 shows examples of tasks.

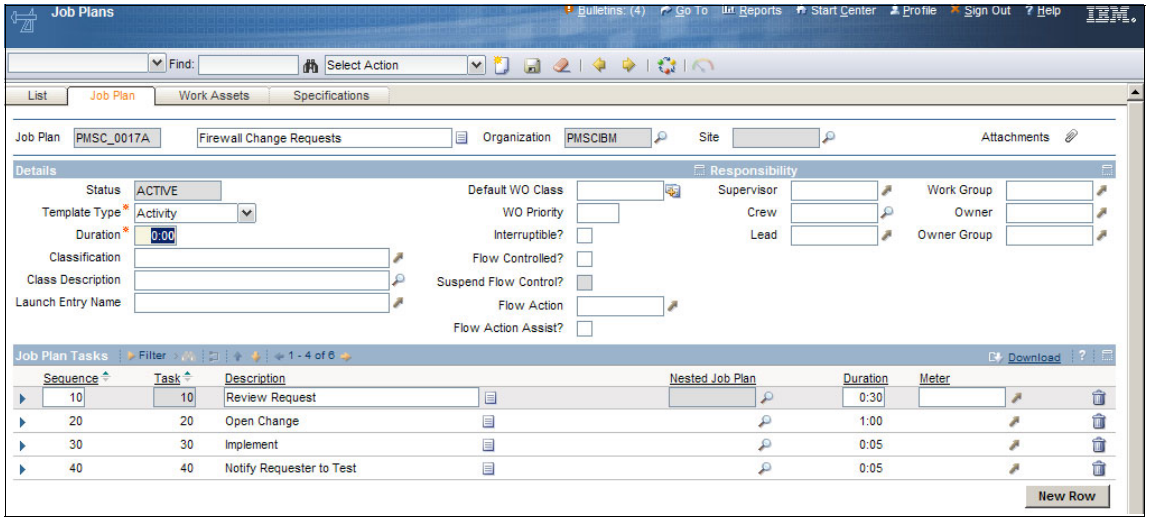


Figure 3-18 Example of tasks for jobplans

6. Desi sets the status as Active.
7. Desi saves the record.

Fullfilment options

At this point the Service Designer defines a fulfillment option to execute the offering. Multiple fulfillment options can follow different paths, which is a decision made by Oscar, the Operations Analyst.

To define a fulfillment option, Oscar completes the following steps:

1. Oscar selects Service Request Manager Catalog → Service Inventory → Fulfillment Options.
2. He configures two fulfillment options according to the definitions listed in Table 3-8 and Table 3-9. Oscar can choose either of the two options when deciding how to fulfill the firewall change request. Oscar can opt for the change fulfillment only if CCMDB is installed.
3. Oscar saves the record.

Table 3-8 Fulfillment options

Domain	Attribute	Value
Fulfillment options (main object)	Name	PMSC_0017A
	Long description	Firewall Change Requests
	Service Fulfillment	PMSC_0017
	Modality	Internal work order with jobplan
	Jobplan	PMSC_0017A

Table 3-9 Fulfillment options through change management

Domain	Attribute	Value
Fulfillment options (main object)	Name	PMSC_0017C
	Long description	Firewall Change Requests with Change Management
	Service fulfillment	PMSC_0017
	Modality	Process Manager
	Process manager type	Change
	Classification	PMCHG
	Class description	Change

3.3 Scenario 2: Accessing external sources

In this scenario we define an action service that provides password reset functionality to users, in case they forget their passwords or the passwords are locked or expired. The offering is fulfilled through a Web link to a external system (https://w3.ibm.com/profile/update/password/en-us/index). In this case, the catalog is a central repository for the offerings.In this case, the service is called “Resetting a Password”.

Sarah, the Self Service User, completes the following steps to begin the process of resetting her password:

1. Sarah logs onto the Tivoli Service Request Manager tool.
2. From the Start Center, she selects the Offering Catalog.
3. From the Catalog tab, she enters “Keyword” as a reset password, clicks the Find button, and locates the Reset Password LIC offering.
4. She selects the offering, which displays a dialog box that enables her to order the service for resetting the password.
5. When she clicks Execute, she is redirected to the following URL where she can proceed further with the remaining steps for resetting the password:

   https://w3.ibm.com/profile/update/password/en-us/index

3.3.1 Service fulfillment

The Service Designer, Desi, follows these steps to configure the Service Fulfillment application:

1. As the Service Designer, Desi logs onto the Start Center.
2. He opens the Service Fulfillment application.
3. Then Desi selects New to create a new service fulfillment, which prompts him for input as shown in Figure 3-19 on page 122.

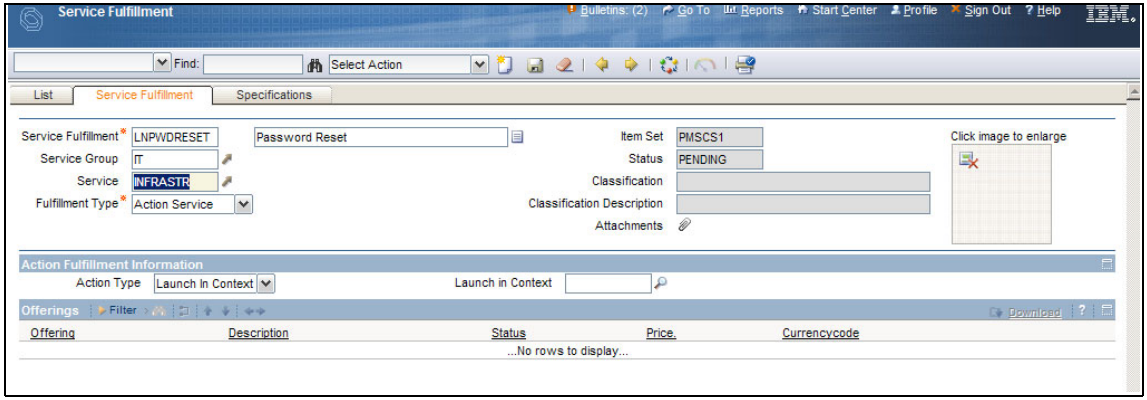


Figure 3-19 Service Fulfillment window

4. As you can see in Figure 3-19, Desi provides the name LNPWDRESET for the service fulfillment.
5. He also provides a short (“Password Reset”) and long description (by clicking the text icon next to Password Reset) of the fulfillment.
6. Desi selects Action Service as the Fulfillment Type.

> **Note:** The Service Designer can also choose Descriptive or Supply Chain for the Fulfillment Type field. Descriptive is used for informative services. This service fulfillment type stores information, documents, procedures, and general guidance about how to execute certain tasks.

7. He selects Launch-in-Context as the Action Type.
8. Then Desi selects RESETPWD as the Launch-in-Context.

> **Note:** Action Type can be based on an Activity Workflow or a context. If the Action Type is based on a workflow, the workflow must be designed using Workflow Designer. If the Action Type redirects the action to a Web link, set the Action Type as Launch-in-Context. (Launch-in-Context is used only for Web links. To run external programs, you must use workflows.)

In this scenario Desi wants to redirect the service to a different Web page in order to fulfill the service. Thus he has created a Launch-in-Context Action Type and specified the target URL where the requester can access the service.

Desi created Launch-in-Context by selecting Go To → System Configuration → Platform Configuration → Launch-in-Context. He has created a Launch-in-Context as RESETPWD, and in the Launch entry, he specified a Console URL where the user can reset a password when needed. The Console URL is:

`https://w3.ibm.com/profile/update/password/en-us/index.html`

9. Desi clicks the Classification button.
10. He classifies this service as ESECMGMT\IDTYACC, which is an Enterprise Security Management\Identity and Access classification.
11. Finally, Desi saves the record.

3.3.2 Offering

In this section, we describe the process of defining an offering for the fulfillment that Desi created in the previous section. To define an offering in the Tivoli Service Request Manager tool, Desi completes the following steps:

1. From the Service Fulfillment window, Desi chooses Select Action → Create an Offering, as shown in Figure 3-20.

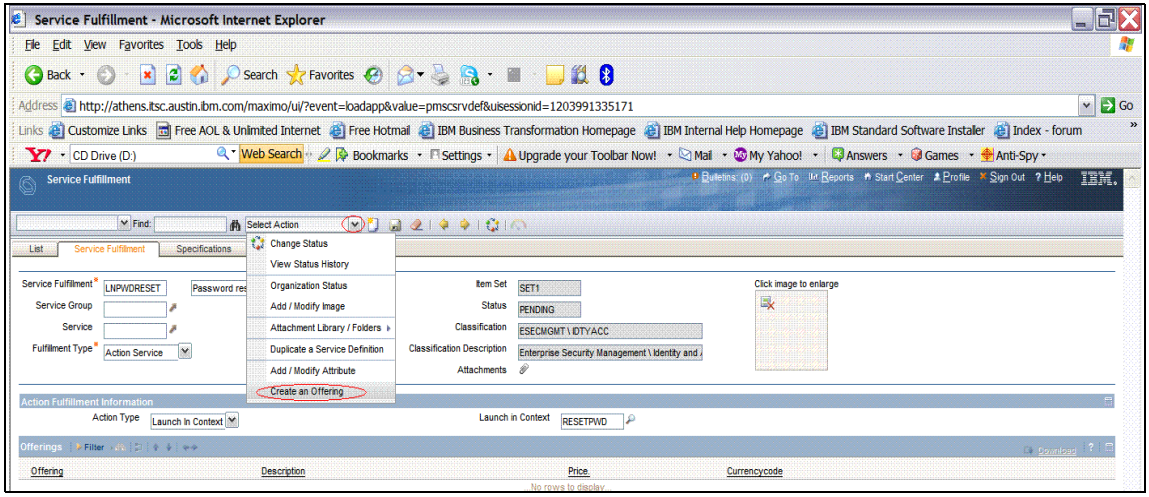


Figure 3-20 Create an offering

2. In the next window, Desi selects New Offering, accessing the window shown in Figure 3-21 on page 124, which prompts him for input.

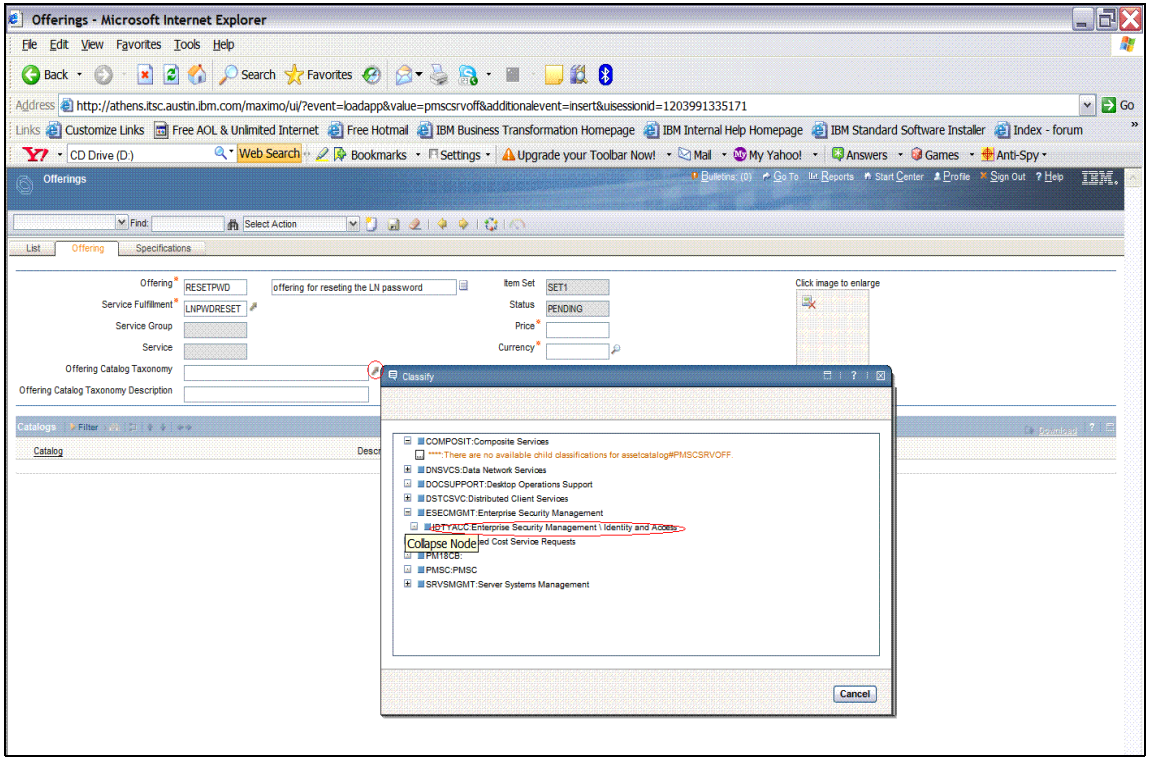


Figure 3-21 New offering

3. Desi defines an ID for the offering and then provides a long and short description. Desi makes sure that the service fulfillment option he selects is LNPWDRESET.
4. Desi selects the taxonomy under which the offering must be mapped. In our scenario, Desi selects the taxonomy ESECMGMT \ IDTYACC: Enterprise Security Management \ Identity and Access.
5. Desi specifies an agreed-upon price for the service.
6. He enters the Currency Type as USD.
7. Next, Desi checks Create and Close Requisition under service usage tracking. He checks it only if he wants to track action services.
8. Desi classifies the offering and the attributes that are required for this offering. He clicks the Specification tab.
9. Under the Specification section, Desi clicks Add New.

10. Then he clicks the Attribute icon, which displays the panel shown in Figure 3-22.

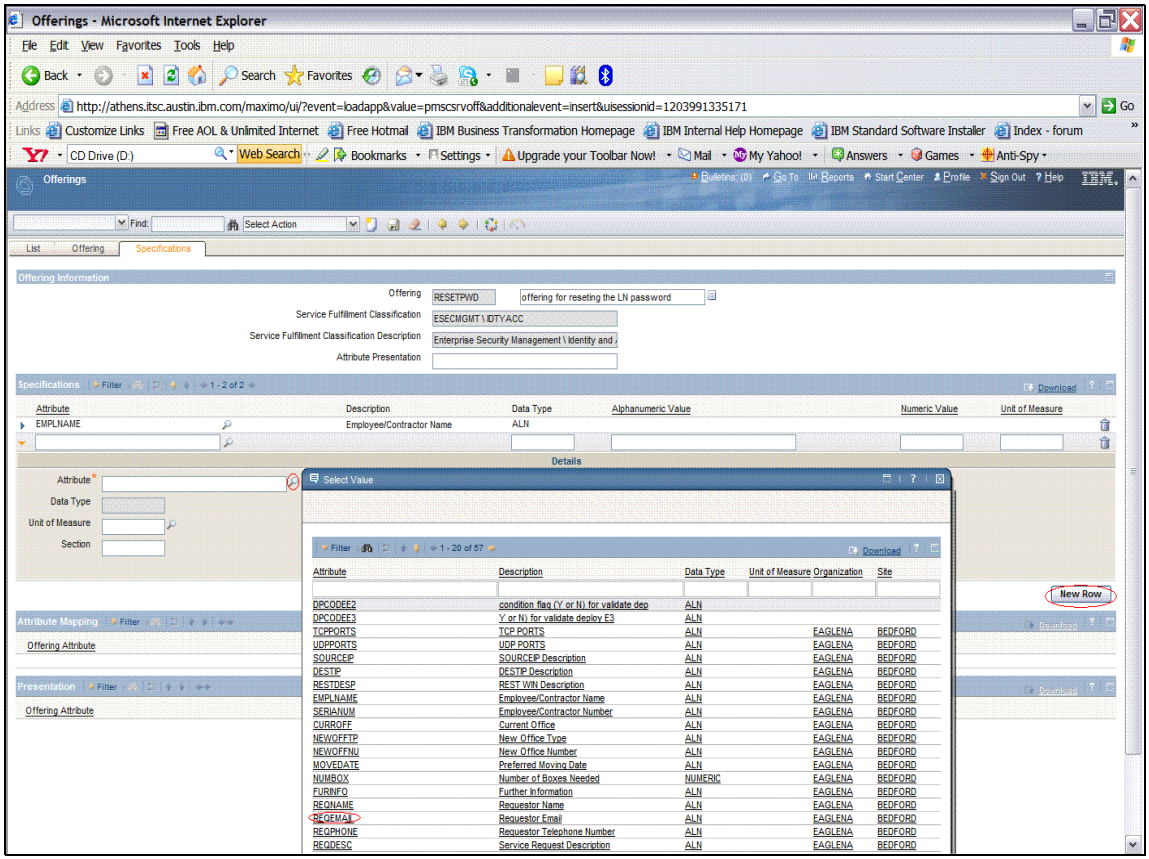


Figure 3-22 Attributes

11. Desi selects Employee Name, Employee E-Mail ID, and Current Office Address.

12. Then he selects the Mandatory Option for the three attributes, as shown in Figure 3-23.

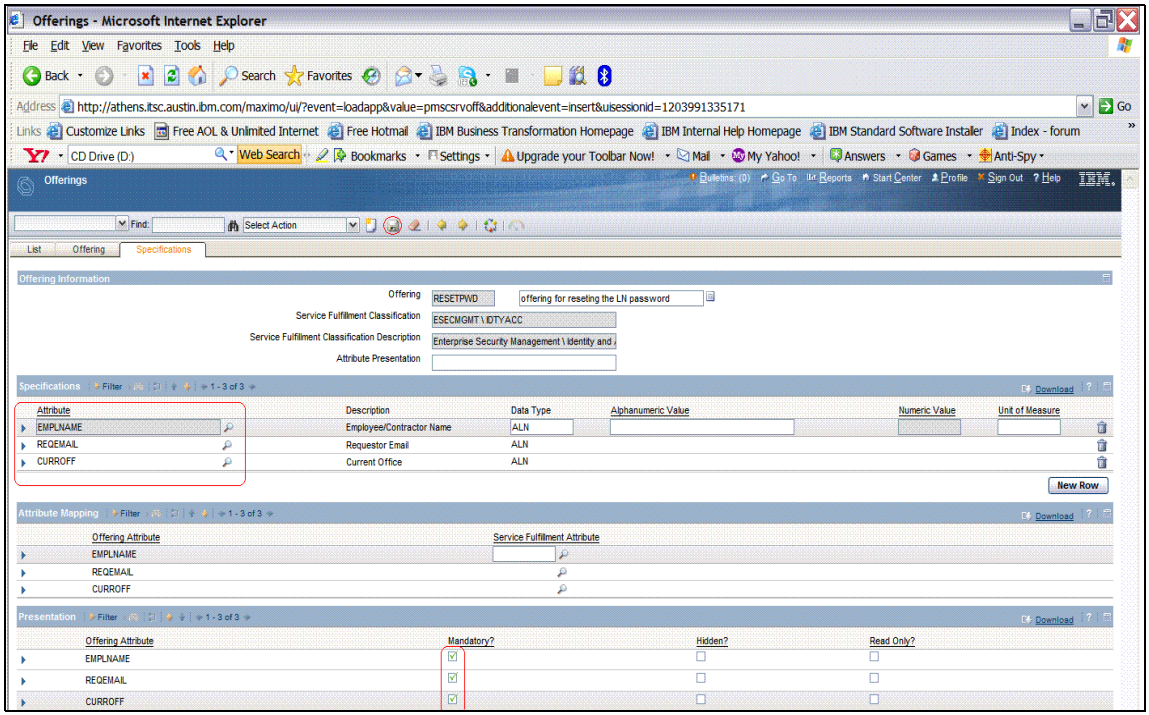


Figure 3-23 Mandatory option

13. Desi selects Select Option and then Add offering to Catalog, as shown in Figure 3-24. Then he selects the applicable catalog.

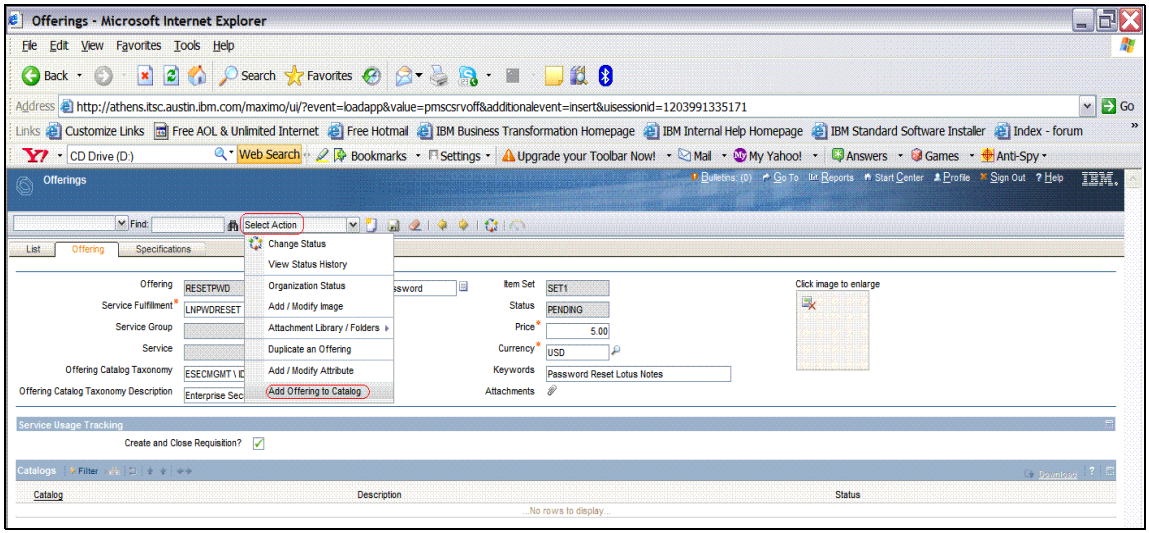


Figure 3-24 Add offering to the catalog

14. Next Desi makes the offering active by selecting Change Status.
15. From the drop-down, he selects Active and then clicks OK.
16. Desi designates the Service Fulfillment option as Active by opening the Start Center and selecting Service Fulfillment.
17. On the List tab, Desi selects the fulfillment as LNPWDRESET.
18. Then he selects the status as Active.
19. Finally, Desi checks Roll new Status To Organization and clicks the OK button.

3.4 Scenario 3: Creating workflows

In this scenario, we describe the process of creating a workflow. The name of the service is “Getting a new Laptop.” In this scenario, we use the supply chain service, as we did in 3.2, “Scenario 1: Searching for offerings” on page 91. However, in scenario 1 we manually completed all approvals and made no assignments to users (that is, the users had to access the applications and approve the objects). In this scenario, we use automatic assignments and approvals.

Note: In this scenario, we show you only those details of the configuration steps that are essentially different from those used in scenario 1. In this scenario, for example, jobplans are configured in the same way as in scenario 1, and instructions for configuring them are not repeated here (see “Jobplans” on page 118).

Sarah, a Service Request Manager Self Service User, joins EAGLENA Ltd. and needs a new mobile computer. The following actions are taken when fulfilling Sarah’s request:

1. The system must verify whether Sarah is a VIP. If not, the system must obtain her manager’s approval.
2. The catalog purchase requisition order must be approved by default, and a catalog order is created automatically.
3. The catalog order must be approved by the Service Catalog Manager. The individual who is responsible for providing this approval is SC MANAGER.
4. The work order is created automatically when the catalog order is approved.
5. Then the jobplan associated with the catalog order must be invoked automatically.
6. The owner of the jobplan must approve the work order.
7. The respective task owner specified in the jobplan must complete the tasks and close the work order.
8. When the work order is closed, Sarah must be notified of the work order status so that she closes the catalog request.

Sarah must complete the following steps to finish the transaction:

1. Sarah signs onto Tivoli Service Request Manager V7.1.
2. She opens the Offering Catalog application by selecting Service Request Manager Catalog → Offering Catalog, as shown in Figure 3-25.

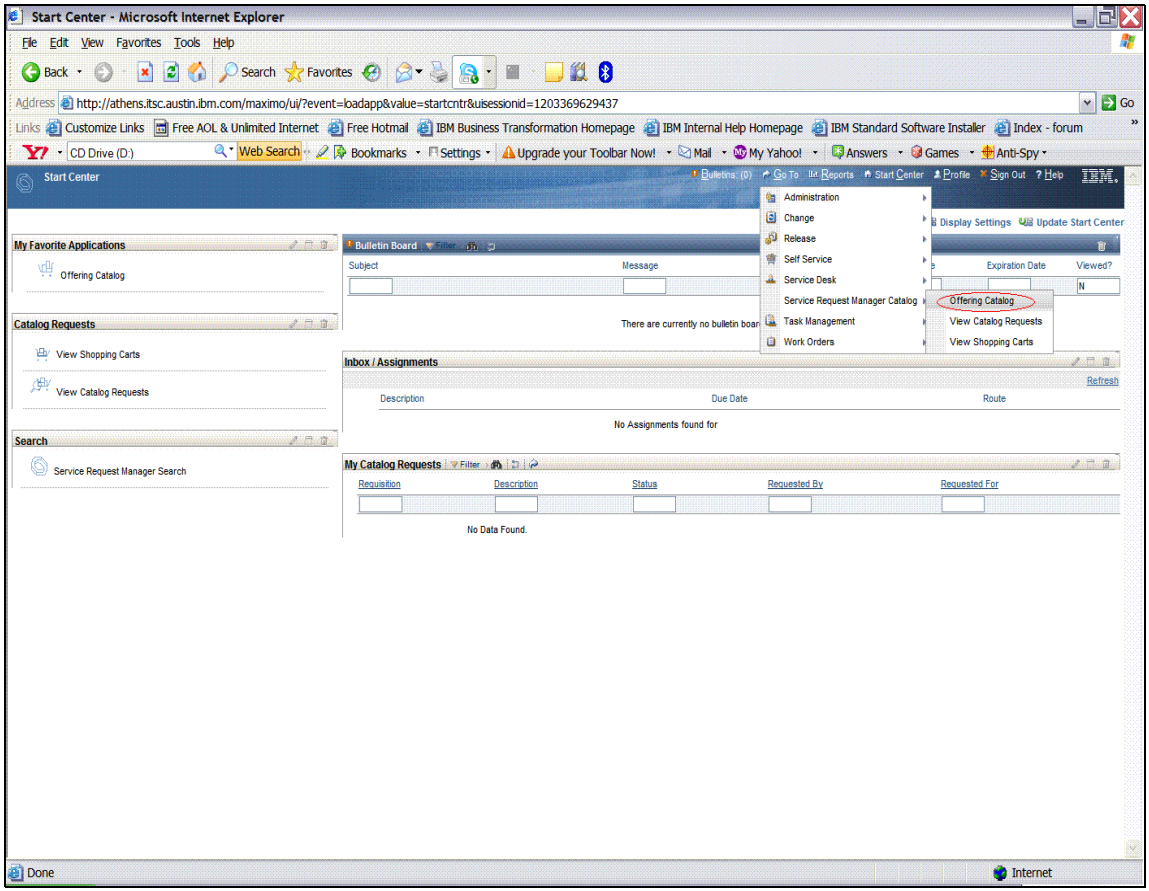


Figure 3-25 Offering Catalog application, Start Center

3. In the Offering Catalog application, Sarah enters the keywords “new laptop” in the Find field, as shown in Figure 3-26.

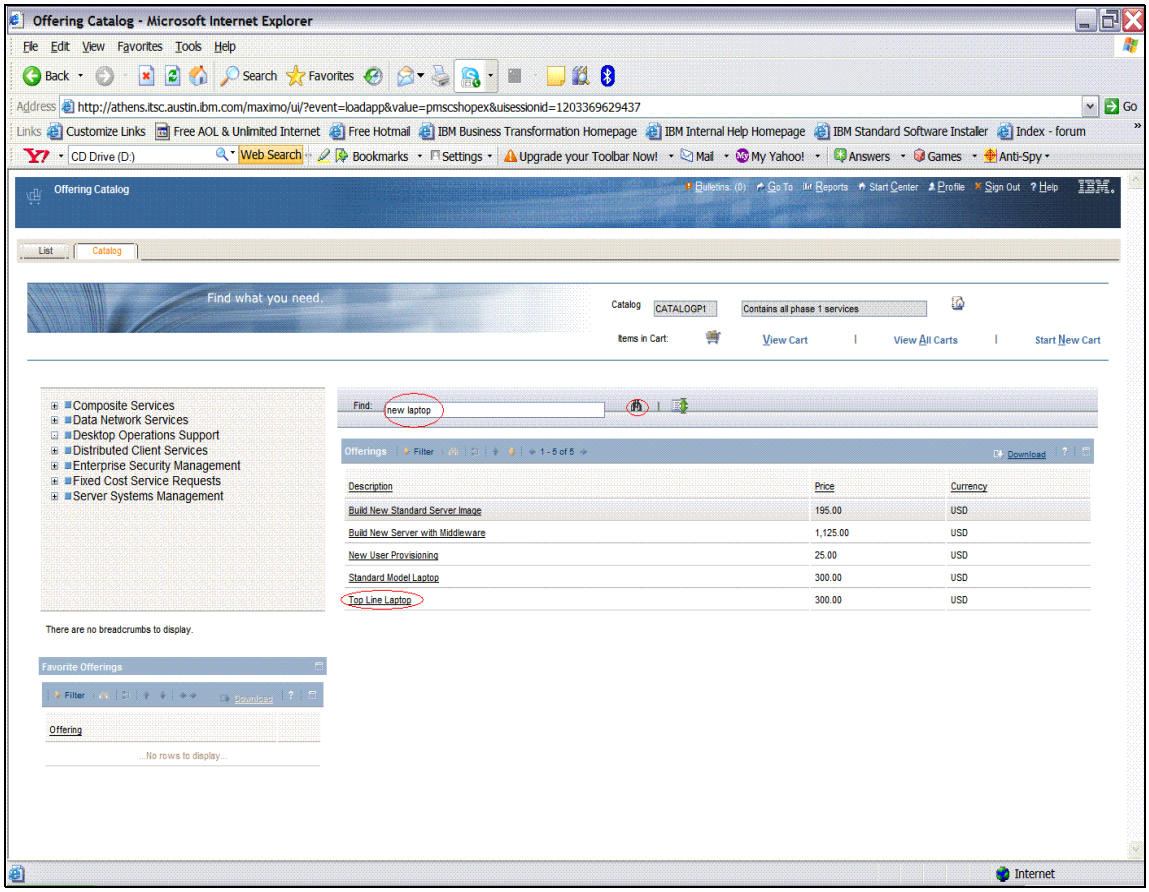


Figure 3-26 Offering Catalog application, Find what you need window

4. Sarah selects the Top Line Laptop link. The dialog shown in Figure 3-27 is displayed.

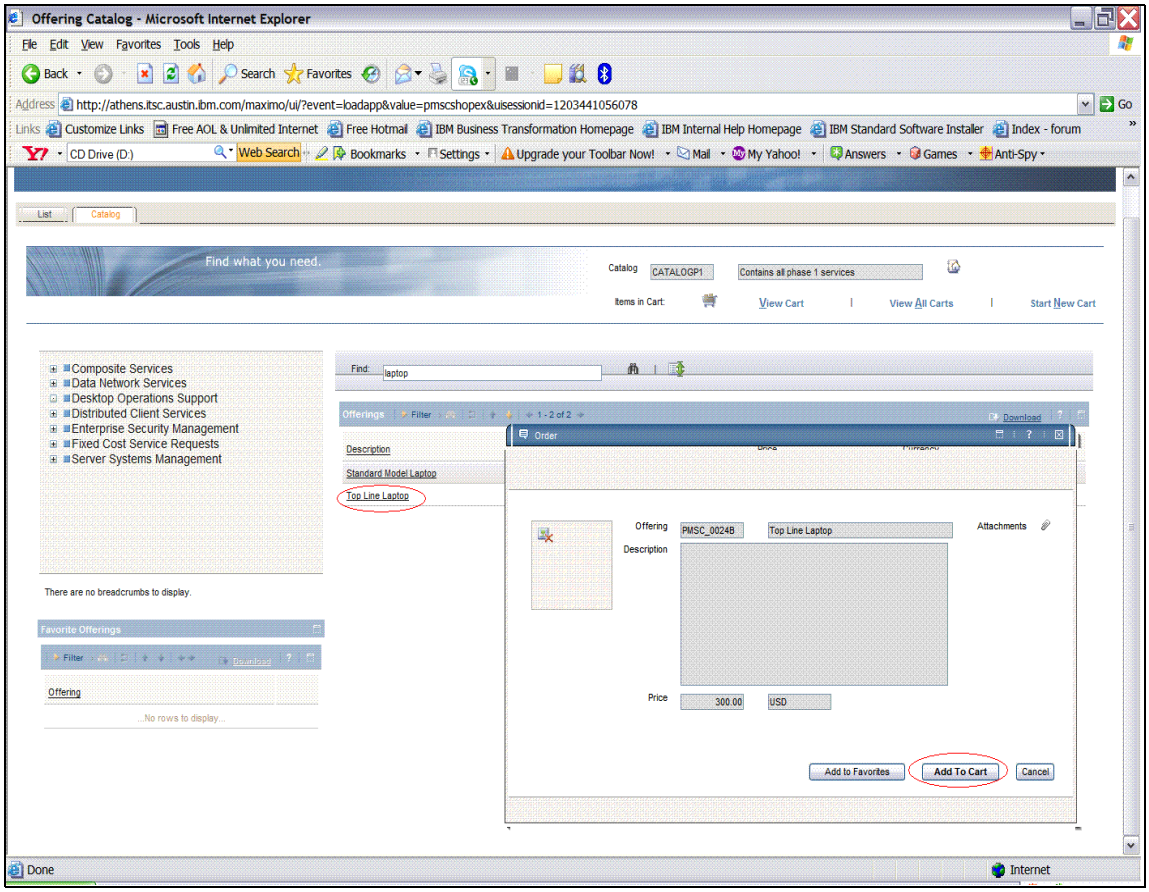


Figure 3-27 Offering Catalog application, Catalog tab

5. Sarah clicks the Add To Cart button (see Figure 3-27).

6. Sarah clicks Submit to submit the catalog material request, as shown in Figure 3-28.

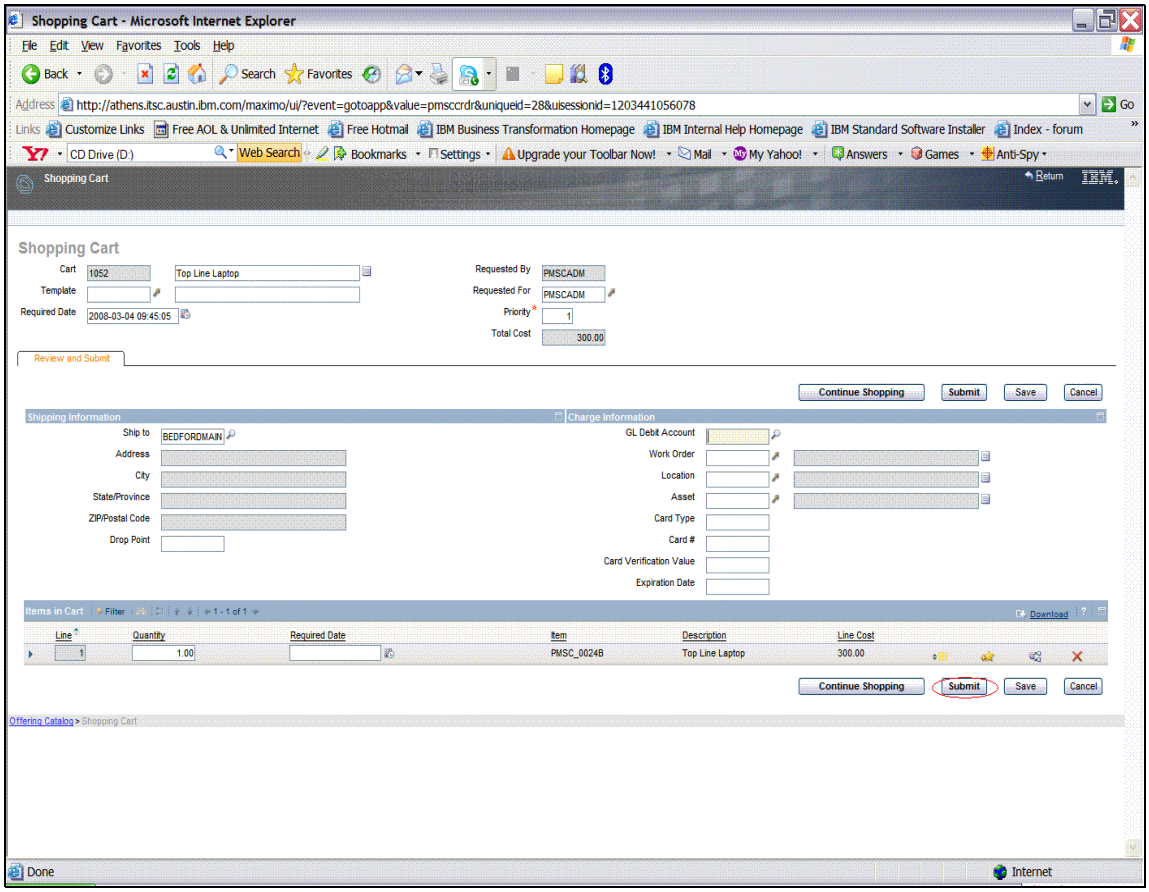


Figure 3-28 Offering Catalog application, Shopping Cart

The dialog box shown in Figure 3-29 is displayed.

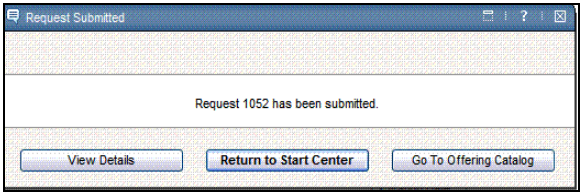


Figure 3-29 Submitted request

7. She clicks Return to the Start Center.

   After Sarah completes the steps, the request is submitted for catalog request approval. The catalog request must be approved by the supervisor if the requester is not a VIP. In our scenario, Sarah, is classified as a non-VIP user, and as a result, her supervisor must approve the catalog request.

Manny, Sarah's supervisor and a Service Requisition User Manager, completes the following steps to review the catalog request and possibly approve it:

1. Manny logs onto the IBM Tivoli Service Request Manager tool, and in the Start Center he can see a pending assignment, as shown in Figure 3-30.

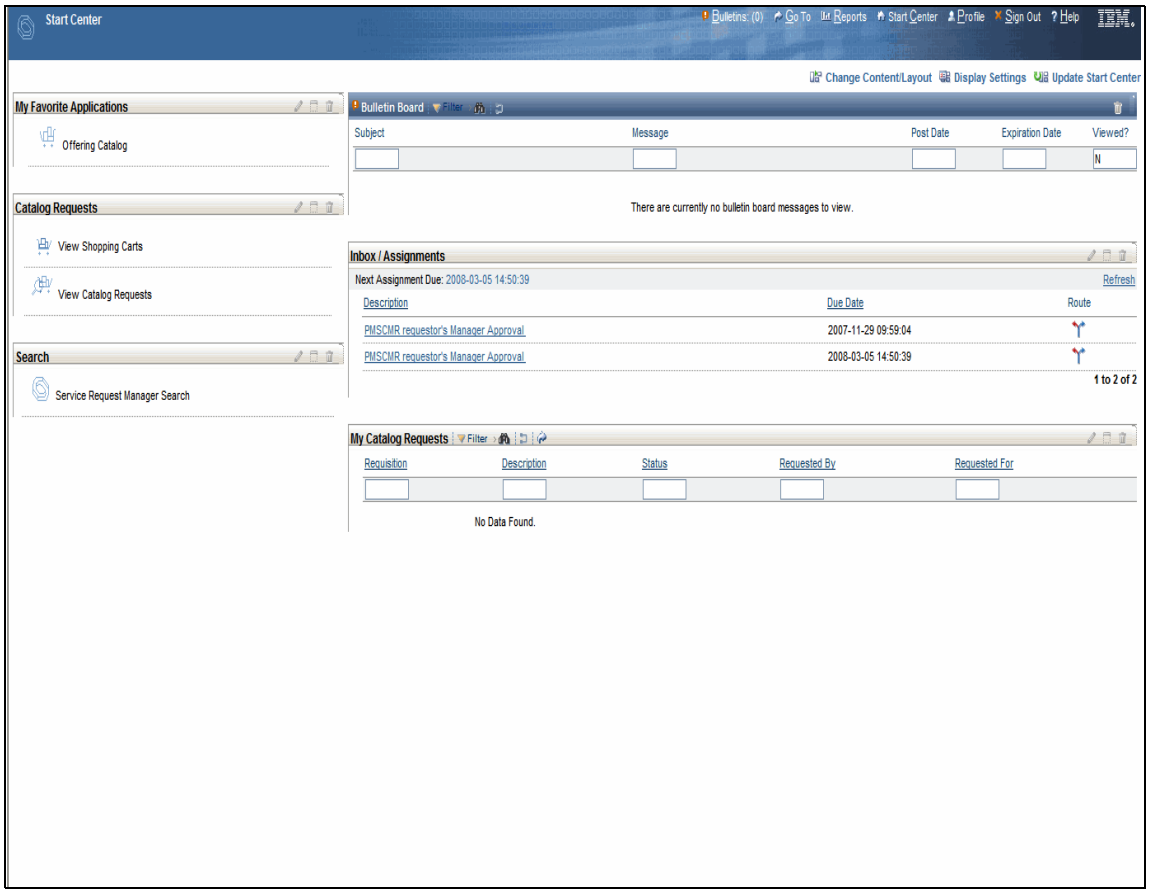


Figure 3-30 Catalog request (PMSCMR) is pending

2. Manny opens the catalog request and checks the description. He clicks Route Workflow to approve the catalog request (see Figure 3-31).

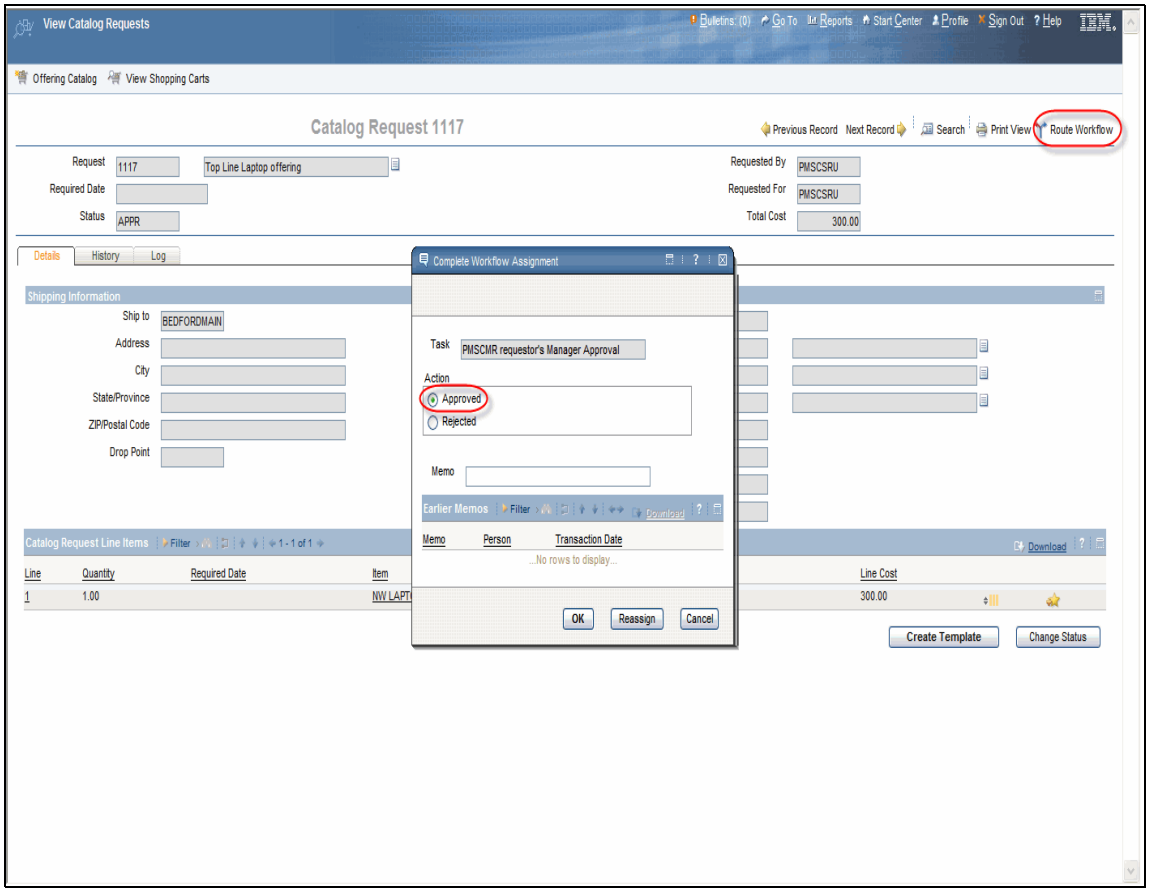


Figure 3-31 Scenario 2, route workflow

Once the catalog request is approved, the system automatically creates a purchase requisition. The purchase requisition is automatically approved, and subsequently the catalog order is created.

3. At this point, the catalog order must be approved by the Operations Analyst, Oscar. He logs onto the IBM Tivoli Service Request Manager application, and from his Start Center, he opens the assigned catalog order request. Figure 3-32 shows the assignment.

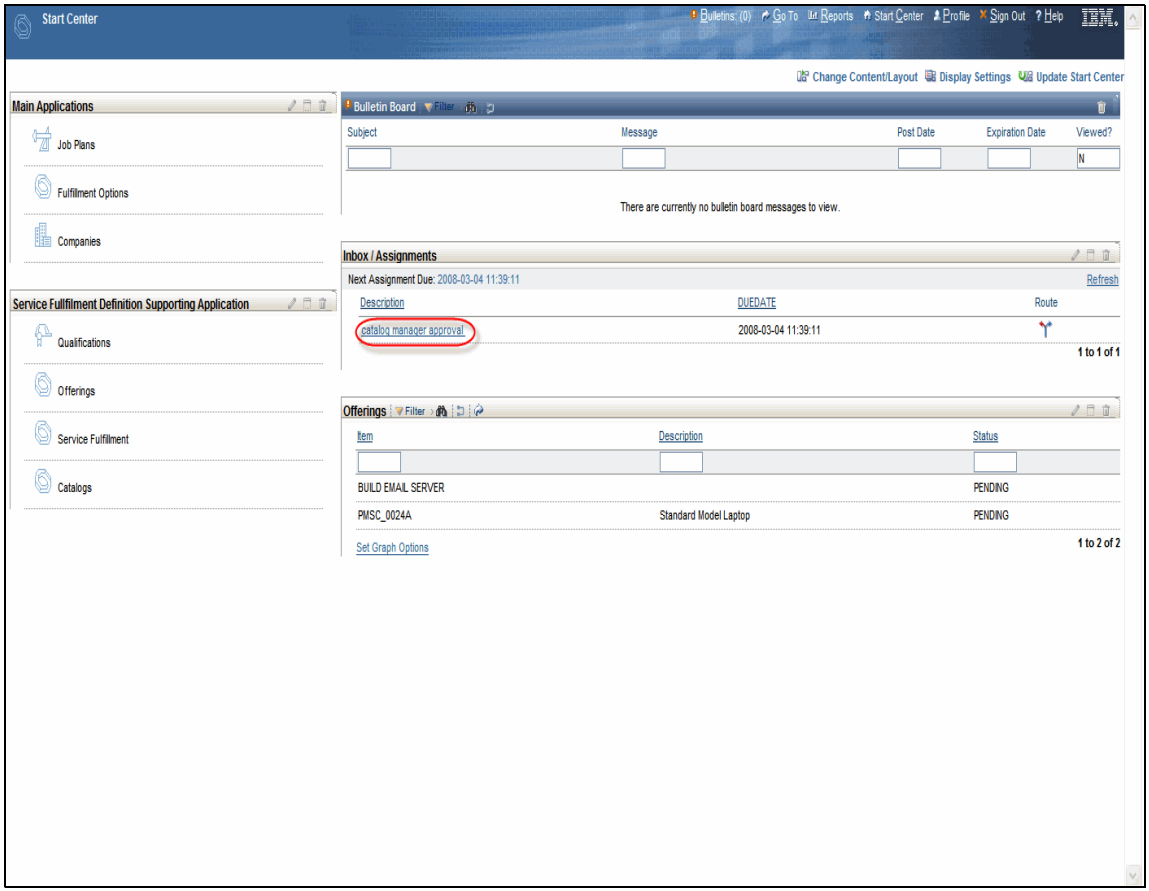


Figure 3-32 Catalog order assignment

4. Oscar clicks the Route Workflow icon and approves the request. The work order is automatically created.

Sally, the Operations Specialist, approves the work order and reviews and executes the required tasks by completing the following tasks:

1. Sally signs onto the IBM Tivoli Service Request Manager application.
2. From her Start Center, she opens the work order, which is at the WAPPR stage, as shown in Figure 3-33. This configuration differs from that in scenario 1 because in this scenario, the Operations Specialist approves and fulfills the work order. In scenario 1, Oscar approved the WO, and Sally reviewed the tasks.

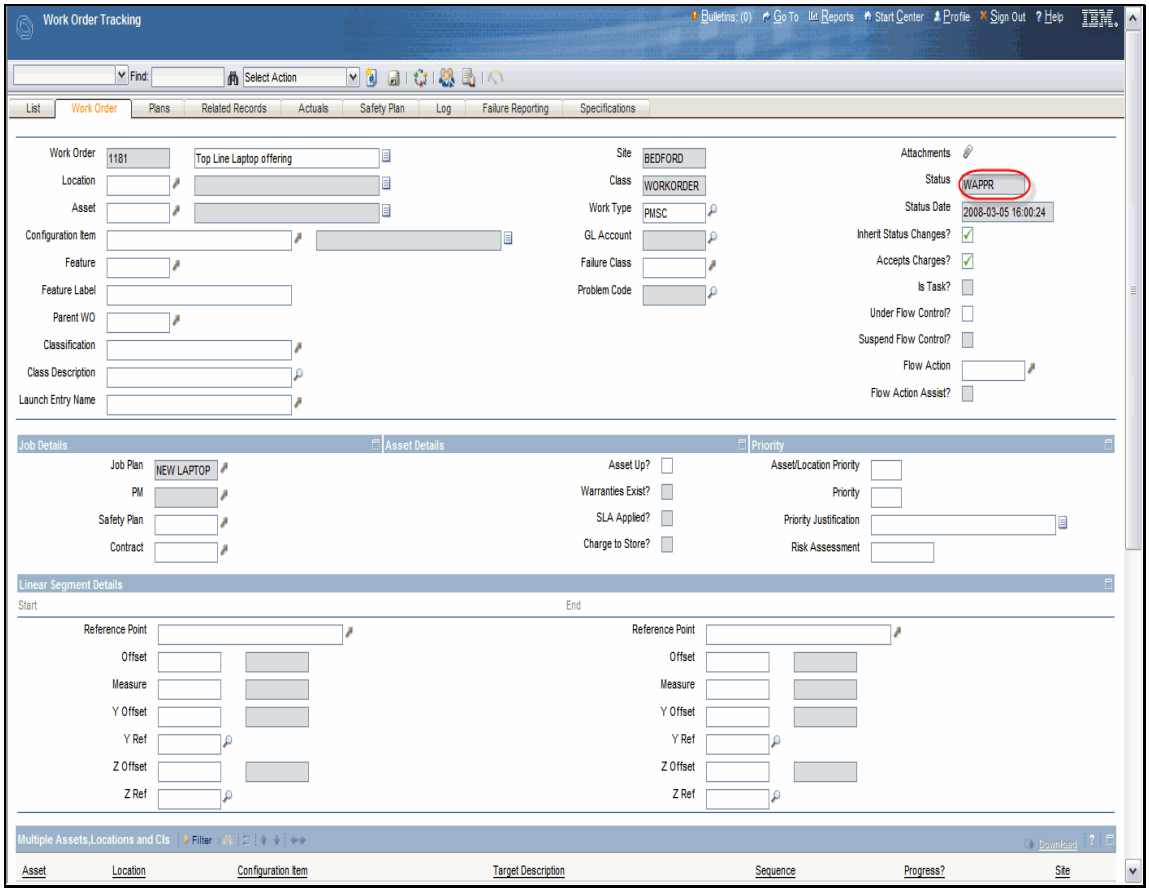


Figure 3-33 Assigned work order

3. Sally clicks the Change Status button and approves the work order.
4. After approving the work order, Sally reviews the tasks and executes them. After executing them, she changes the status to COMP.

Getting a new mobile computer design

Desi, our Service Designer, understands that designing an offering for a new mobile computer is not simple. He writes an offering definition, a basic jobplan, and an overview of the workflow before starting the configuration. Desi writes the following information:

- Offering definition

  The IT department shall provide a new mobile computer with loaded OS and required software to users and optionally provide desk-side support for customization.

- Jobplan

  The jobplan includes the following steps:

  a. Obtain the mobile computer from internal inventory or from an external vendor. If the mobile computer has to be procured from an external vendor, the task must be performed by the procurement department.

  b. Install optional devices as listed in the specification sheet provided by the user and provide memory networking device.

  c. Install OS using the image and automated scripts.

  d. Install and customize bundled software.

  e. If desk-side support is required, schedule with user a delivery time and time for assisting user. Manual task: desk-side support.

Note: If desk-side support is not required, deliver the mobile computer directly to the user.

- Approval flow for the workflow design

  Approval flow for the workflow design is shown in Figure 3-34 on page 138.

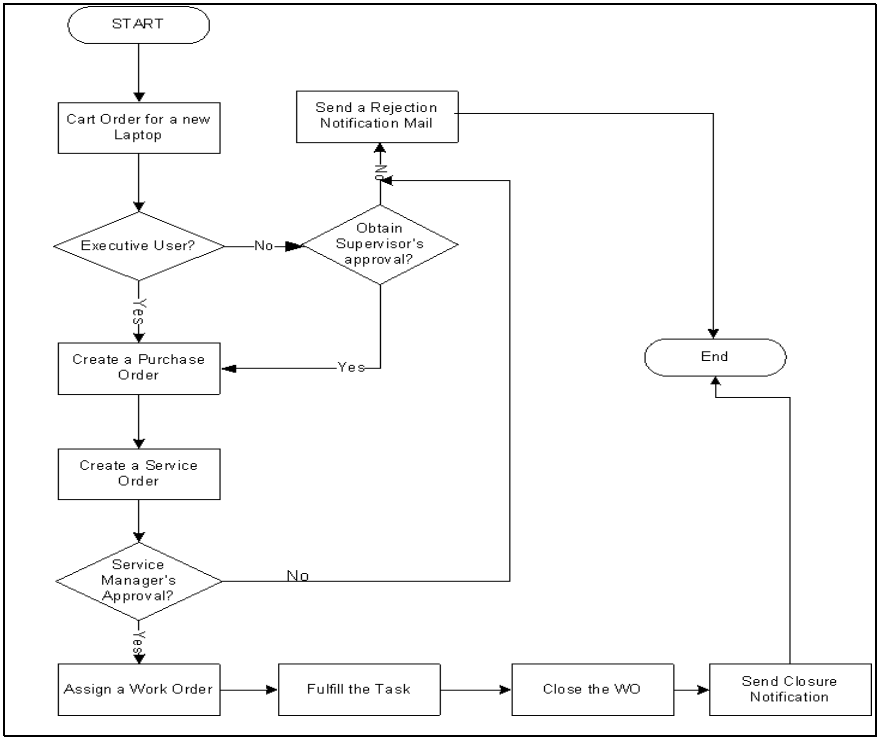


Figure 3-34 Approval flow

Developing services

The Service Designer documents the following information to define the necessary attributes:

- Information about the user, such as name, location, and department
- Mobile computer model, memory size, disk size, and requested special features
- Networking characteristics (such as LAN, wireless, fixed IP address, DHCP)
- Operating system and prepackaged bundle of software to be installed
- Possible requirements for desk-side support for customization

Based on the preceding specifications from the client, the following offerings can be created:

- Offering1
  - Definition: Deliver a standard model of mobile computer to the employees who work in the engineering department.
  - Predefined information that the user requesting the item cannot change:
    - Mobile computer model = IBM Thinkpad T42P
    - Accessories: None
    - Bundle of software: Standard office bundle
    - Desk-side support: No
    - Special considerations:
  - Information to be provided by the requesting user; choose the following items:
    - Memory requirements: 256 MB, 512 MB, 1 GB
    - Hard disk size: 60 GB, 100 GB, 160 GB, 200 GB,
    - Operating system: Linux® or Microsoft® Windows® XP
    - Networking: DHCP or fixed IP address
- Offering 2
  - Definition: A top-of-line mobile computer with high-speed configuration for an executive
  - Predefined information that the user requesting the item cannot change:
    - Mobile computer model = IBM Thinkpad Tablet X61
    - Accessories: Mobile broadband
    - Operating system: Microsoft Windows Vista®
    - Bundle of software: Standard office bundle
  - Information to be provided by the requesting user; choose the following items:
    - Hard disk size: 60 GB, 100 GB, 160 GB, 200 GB
    - Desk-side support: Yes/No
    - Special considerations:

Implementing services

In this section, we discuss the objective of this phase of the design process, which is to define or create a new service listed as “Top Line Laptop” in the service catalog. The new service is listed as an offering in the Tivoli Service Request Manager default catalog, which users can subsequently choose from. The following items are defined:

- Service fulfillment
  - Service order approval workflow
  - Jobplan
- Offerings
- Fulfillment options

Service fulfillment

The service fulfillment process requires completing the following steps:

1. Desi, the Service Designer, signs onto the system.
2. He selects Service Request Manager Catalog → Service Inventory → Service Fulfillment.
3. Desi provides an appropriate ID to the service fulfillment definition. In our scenario, the ID is NEW LAPTOP.
4. He links an appropriate service group. He creates DOC as the service group for Desktop\Laptop Support.
5. Desi links a Service for the service fulfillment definition. Because this installation is a new one, he has chosen IMAC.

Note: *IMAC* stands for Installation, Move, Add, and Change. These services are typically performed for one user at a time, and the following services are included:

- Installations of new equipment
- Equipment moves
- Additions to existing devices
- Configuration changes

6. Select the fulfillment type as Supply Chain.

Note: The Service Designer must ensure that all the service and service groups are created and linked to the offerings. Because providing a new mobile computer to new users comes under the purview of the Desktop Operation Center, this service is mapped under DOC service group.

Defining a process workflow

The objective of workflow in the supply chain is to provide the following services:

- Provide a solution that enables the Service Designer to customize the business process.
- Manage the defined process from start to finish in a supply chain service transaction.
- Deliver the appropriate notification message to the appropriate people at each stage.
- Provide access to the required application and functions at the right time and for the right people.

To build a workflow for the catalog request, Desi completes the following steps:

1. As Service Designer, Desi selects Workflow Designer, which opens a default canvas and input for a new process.
2. He enters a description in the Process Description field. To enter additional information, he clicks the Long Description button.
3. In the Object field, Desi enters a value, or he clicks the Select Value button.The purpose of entering a value is to define which application the process is associated with. Because the workflow in this scenario is required to be associated with a catalog request, Desi selects the value as PMSCMR.
4. Desi designs the process workflow as per requirements.

   The canvas opens, displaying default nodes and a start and an end node. Desi drags and drops the relevant nodes from the tools on the workflow canvas palette, as shown in Figure 3-35 on page 142.

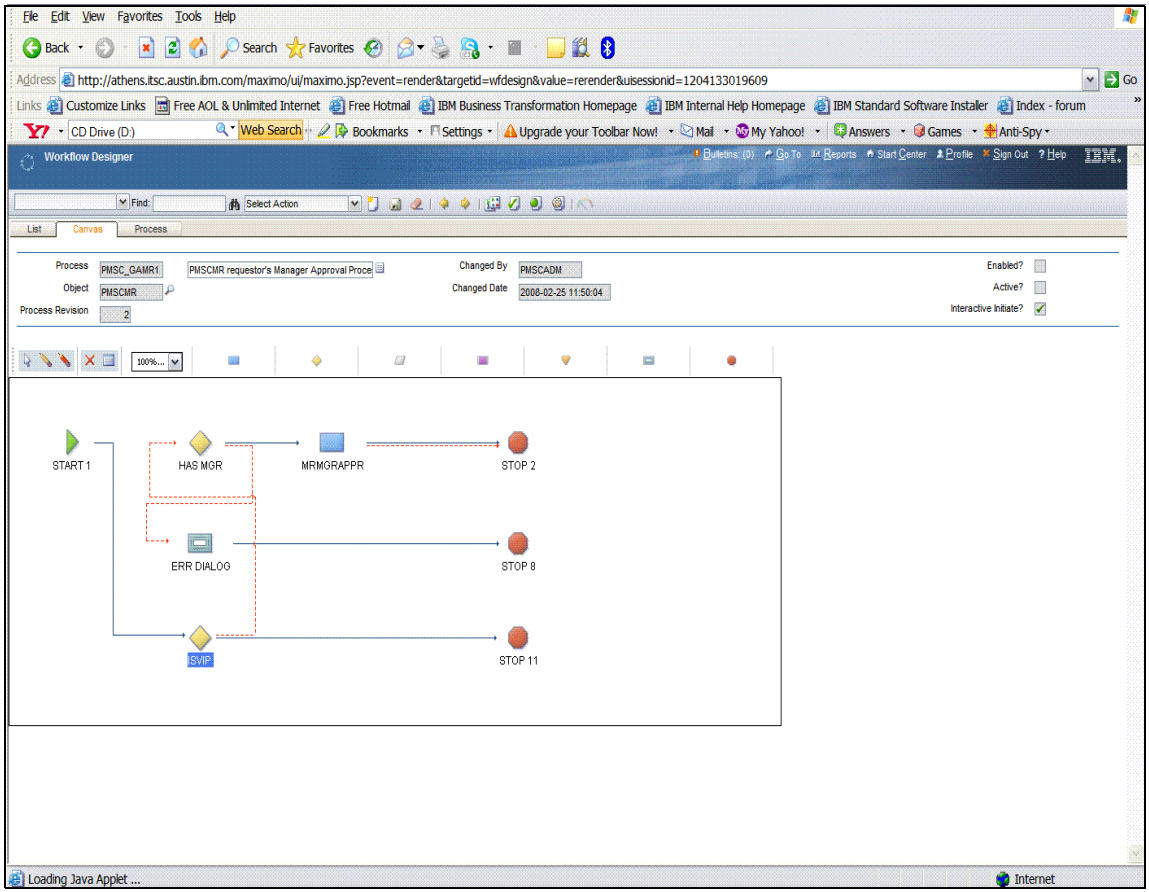


Figure 3-35 Workflow canvas palette

5. The first node Desi configures is the IS VIP Condition Node, which requires he complete the following steps:
   a. He selects the node and clicks the Properties button in the tool palette.
   b. Desi right-clicks the node and selects Properties.

c. He specifies the title as IS VIP and provides a description in the Description field.

d. In the Expression® field, Desi selects the SQL expression :isrequestedby.vip=1 and then clicks OK to close the window, as shown in Figure 3-36.

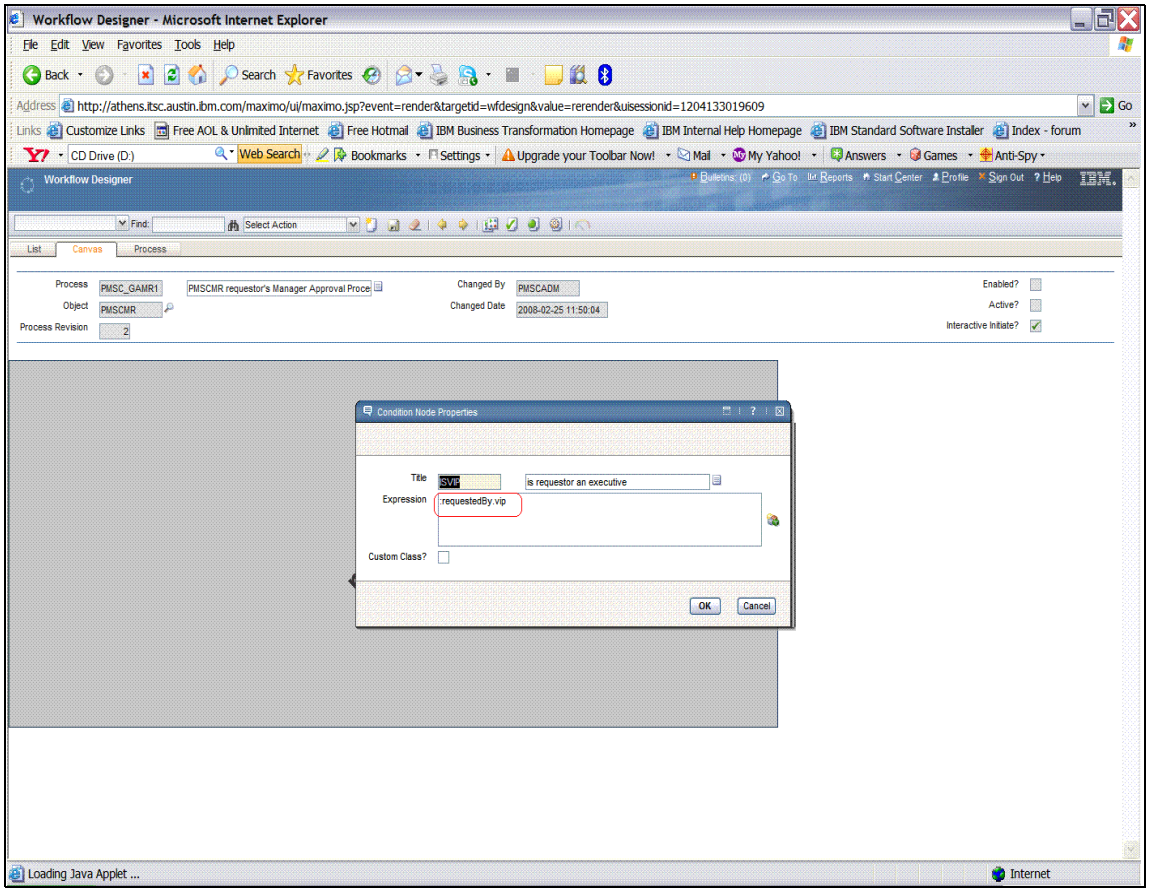


Figure 3-36 IS VIP condition node properties

6. This condition node has one Connection Nodes Property, which is configured to perform a task to approve the material request. To do so, Desi completes the following steps:

   a. He highlights the node and clicks the Properties button in the tool palette.

   b. Desi maps the action in the Action field as PMSCMR APP, which is pre-created in the application as shown in Figure 3-37. Desi undertakes this action to change the status of the catalog request to APPROVED.

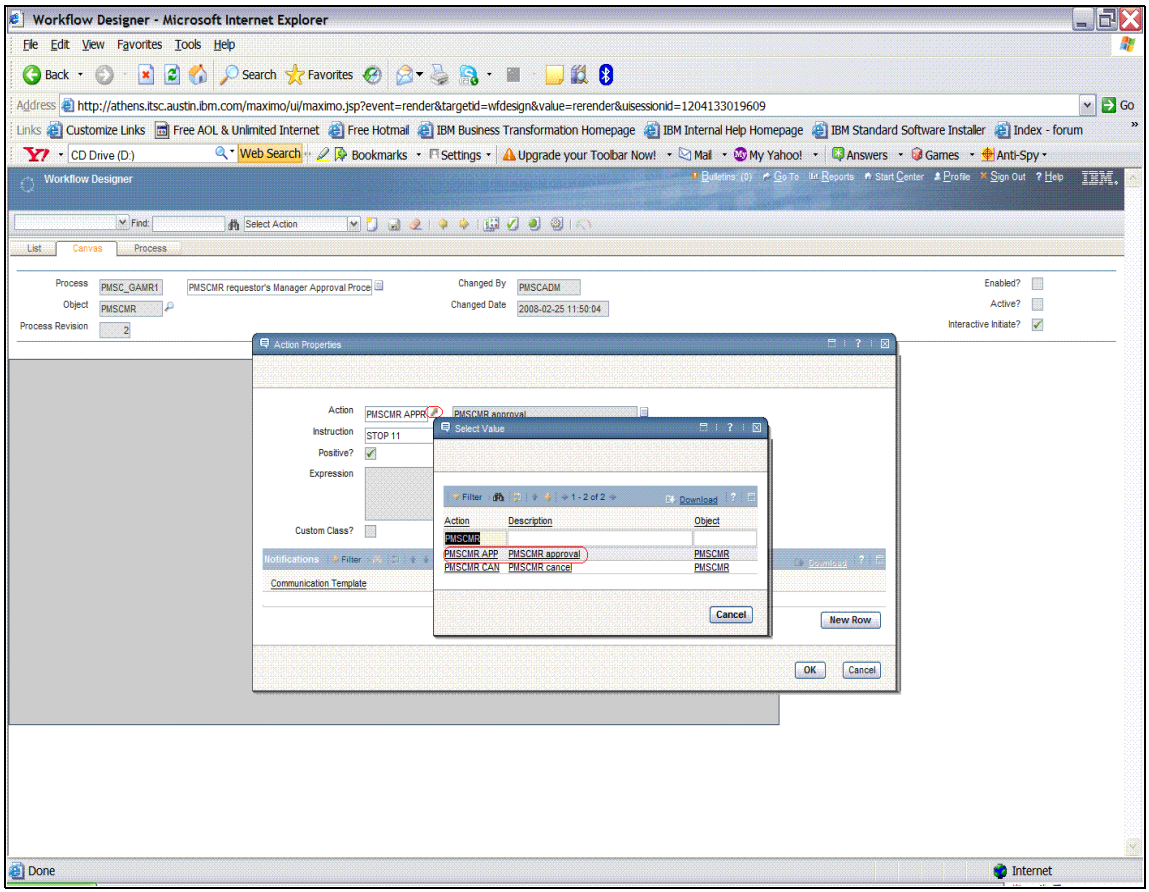


Figure 3-37 Action properties

   c. He terminates the workflow to a Stop node.

> **Note:** The action properties of a node direct the user to a specific action, such as approving the catalog request or canceling the catalog request.

The Negative Connection line terminates at another condition node with no task associated with it because it is required only to forward the flow to the next level.

7. Desi configures the next condition node in the work flow called HAS MGR. To do so, he completes the following steps:

   a. Desi selects the node and clicks the Properties button in the tool palette.

   b. He specifies the title as HAS MGR and provides a description for the title in the Description field.

   c. In the Expression field, Desi selects the SQL expression as requestedby.supervisor is not null, as shown in Figure 3-38 on page 146; then he clicks OK to close the window.

   – The Positive Connection line terminates at the task node for approval.

   – The Negative Connection Line connects the flow to an Interaction.

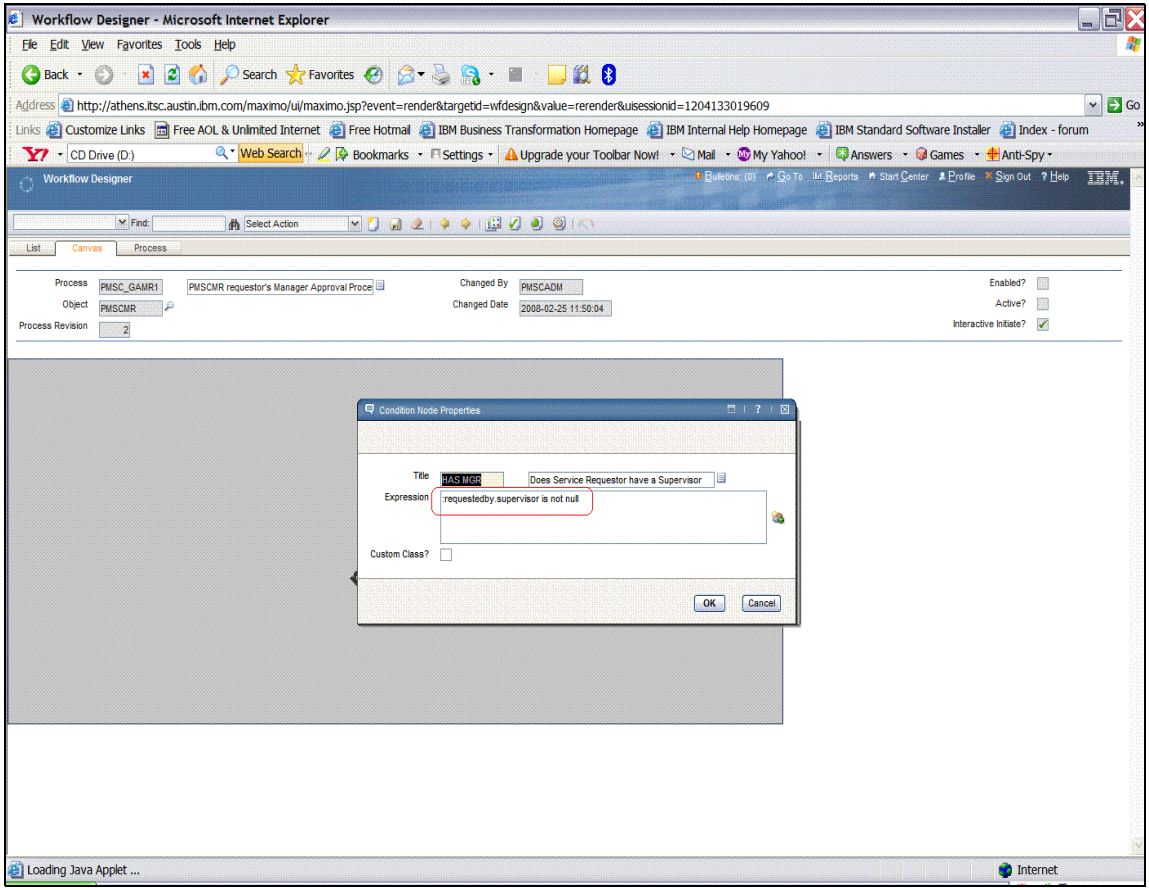


Figure 3-38 HAS MGR condition node properties

Note: The Service Designer can also use the Expression Builder to help create the SQL query.

8. The next step is for the Service Designer to configure the task node, which is created for catalog request approval. In addition, a Service Designer creates a task node to assign the work to an incident administrator to configure the mobile computer. To do so, Desi completes the following steps:

   a. Desi selects the node and clicks the Properties button in the tool palette.

   b. He specifies the title as MRMGRAPPR and provides a description for the title in the Description field.

   c. Desi selects the application as PMSCVIEW.

d. He assigns the catalog request to the register's manager for approval. In the Assignment section, Desi selects the role ID as MRREQMGR.

e. In the Notification section, he selects the notification that is flashed to the manager. He selects the PMSC_GAMR1 template as the communication template (see Figure 3-39).

> **Note:** The Action and Notification templates used in this scenario are pre-created in the tool. However, the Service Designer also can create and configure a customized task and communication template using the tool.

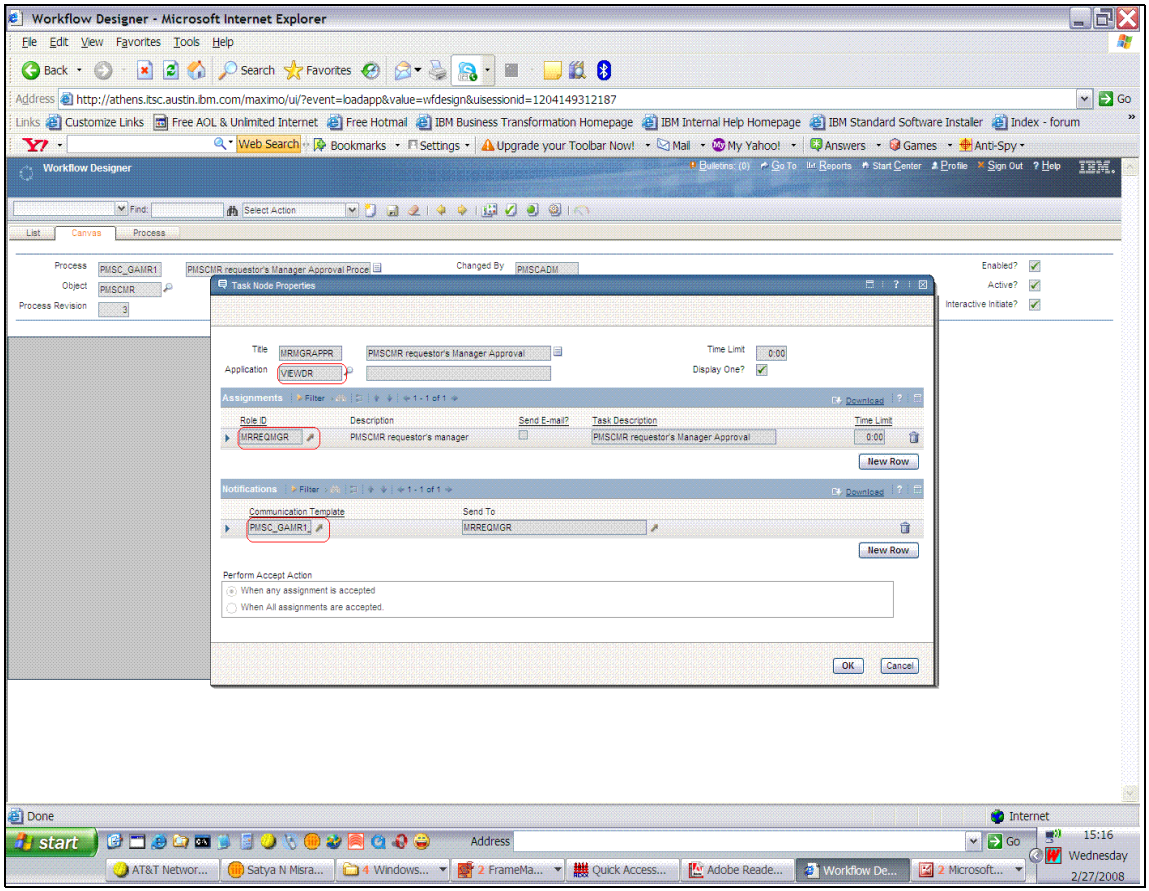


Figure 3-39 Task Node properties

9. Next Desi, as Service Designer, defines the task to be performed by the manager. The manager can either approve the request or reject it, which means two connections run from the approval node to the stop node. To configure these connections in the tool, Desi completes the following steps:
   a. Desi selects the positive connection line MRMGRAPPR and clicks the Properties button in the tool palette.
   b. He clicks the Action button, and from the drop down, he selects PMSCMR APPR. PMSCMR APPR is an action that is displayed from the installation box; this action is meant to verify the material request approval.
   c. Desi selects the communication template PMSC_GAMR1. This template also is displayed from the installation and is meant to communicate to the relevant parties the progress of the request. The Service Designer also can customized or created this template as needed.
   d. Click OK to close the window.
10. Next Desi must validate the workflow process. To do so, he chooses Select Action and clicks Validate process.
11. After he validates the workflow process, Desi enables the process. He chooses Select Action and clicks Enable Process.

12. Then Desi activates the process by opening Select Action and clicking Activate Process.

    After Desi completes the previous steps, the workflow appears as shown in Figure 3-40.

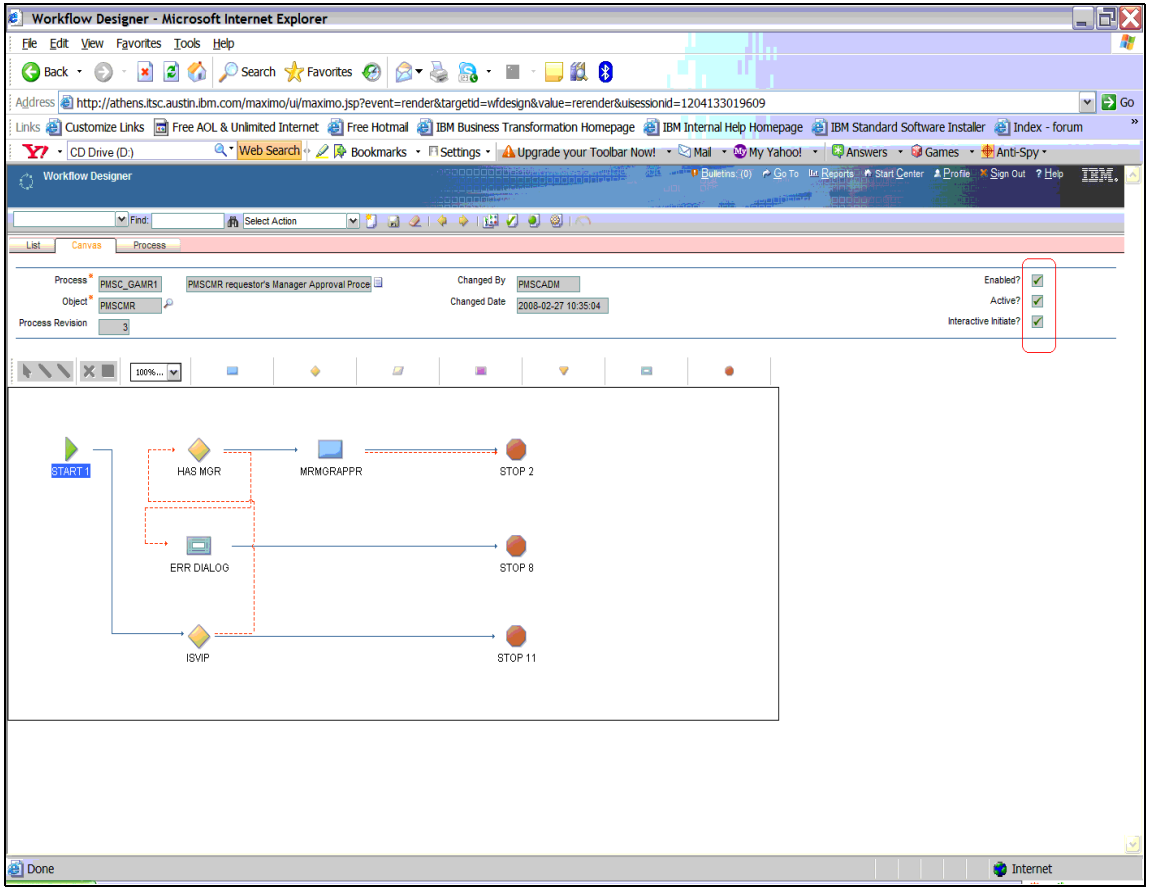


Figure 3-40 Completed workflow

Table 3-10 shows how each object must be automated. Refer to Table 3-6 on page 116 to see all available automation methods.

Table 3-10 Automation process for each object

Object	Automation
Catalog request	Workflow linked to PMSCMR
Purchase requisition	Purchase requisitions automatically approved at organizational level

Object	Automation
Catalog order	Workflow linked to service fulfillment
Work order	None

4

Migration Manager

This chapter presents an overview of the Migration Manager, which provides an easy way to migrate your IBM Tivoli Service Request Manager V7.1 configuration from a source environment to a target environment.

4.1 Development cycle

Many companies today face a problem related to the amount of time required to configure and customize applications. These companies probably have multiple IBM Tivoli Service Request Manager environments but use only one environment for development. A number of developers often operate within the same environment, working on different artifacts. This situation is a challenging one for building a consistent environment but even more challenging for migrating anything developed to actual production environments.

So how can you manage configurations and customizations in your Tivoli Service Request Manager environment? To answer that question, you first have to understand the general concept of development.

Software development is not just writing and compiling lines of code. Software development is often described as the translation of a user need or marketing goal into a software product. In most situations, a set of tools is used for different purposes, supporting each step of the development process. An example of a development environment is shown in Figure 4-1.

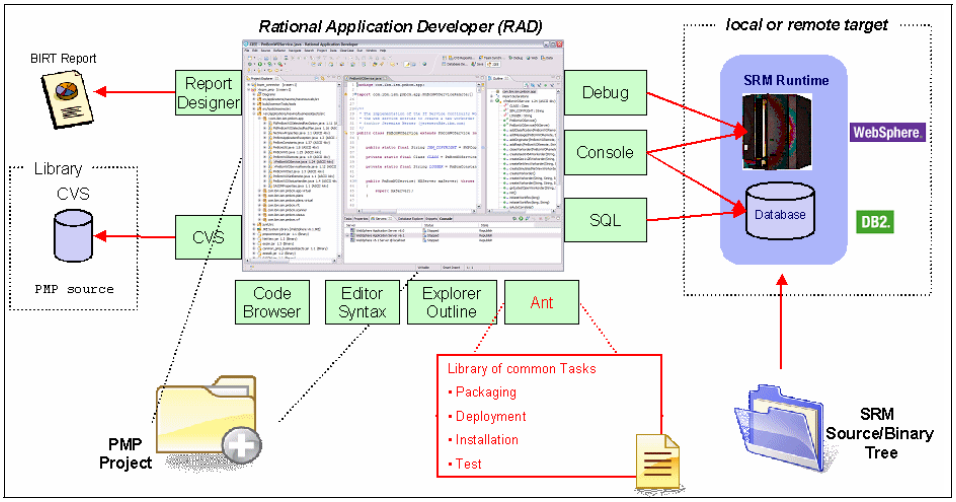


Figure 4-1 Example development environment

Note: In Figure 4-1, we refer to Rational® Application Developer and Apache Ant as examples of development and customization tools.

In this discussion, we are more interested in the development process, which is a structure imposed on the development of a software product. Synonyms for the *development process* include *software life cycle* and *software process*. Several models exist for such processes, each describing approaches to a variety of tasks or activities that take place during the process.

Because our concern in this chapter is not with the development model, but more so with the different stages of development, we further concentrate our discussion on the development cycle.

The development cycle describes the process of effectively planning, executing, recording, and reviewing development. A sample development cycle is shown in Figure 4-2.

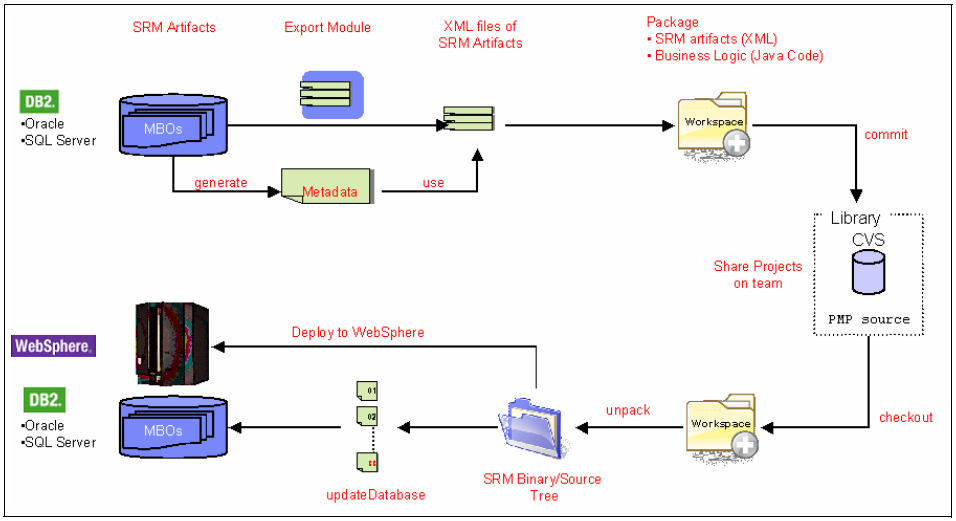


Figure 4-2 Development cycle

Some assumptions have been made depicting the cycle in Figure 4-2, for example, the use of a central repository for versioning custom-developed source code, such as the Concurrent Versioning System (CVS). A version control system is an important component of Source Configuration Management (SCM). We recommend you use a version control system.

Refer to the CVS Web site for more information about version control systems. CVS is one of the most popular open source version control systems. You can visit the CVS Web site at:

`http://www.nongnu.org/cvs`

4.2 Integrated development cycle

Once your development cycle is in place, you must make sure the code developed can be integrated with other sources. The integrated development cycle ensures this process. Figure 4-3 shows an example of an integrated development cycle.

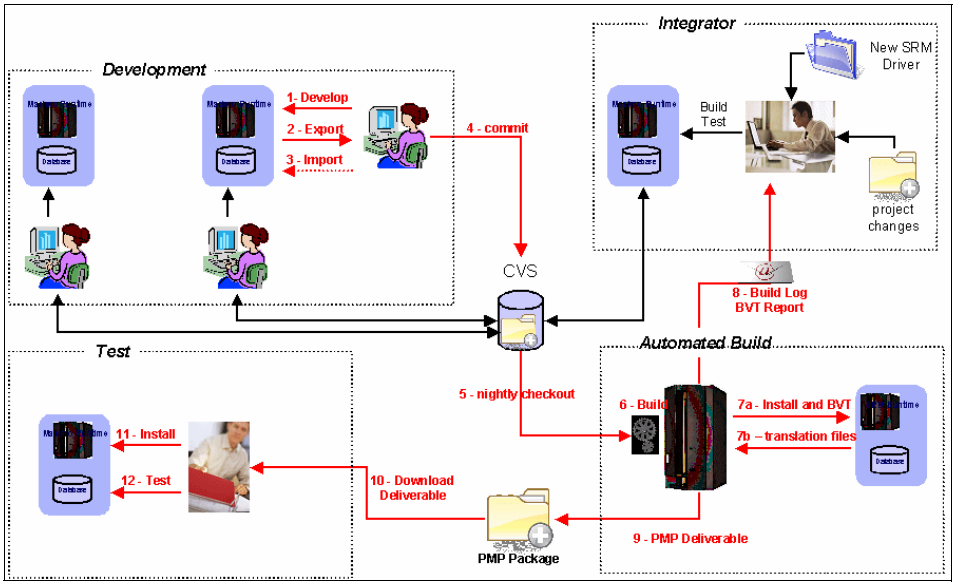


Figure 4-3 Integrated development cycle

The integrated cycle consists of a number of steps, which must be executed in a specific order to ensure a consistent process. The following steps are the most common ones you complete:

1. Develop custom code.
2. Export custom code from the development environment.
3. Import custom code back into the development environment for testing purposes.
4. Commit custom code to the central version control system, ensuring a single source for all code.
5. Schedule custom code for checkout each night.
6. Build custom code in the automated build environment.

7. Build installation and verification:
   a. Install custom code and build verification test.
   b. Build translation files.
8. Generate build log and build verification report and send to an integrator.

   The integrator ensures the custom code is integrated and tested with the latest available sources.
9. Package successful build into a PMP.
10. Download PMP package to a test environment for user acceptance testing.
11. Install PMP package.
12. Test PMP package.

Migration Manager also relies on this process, but it has no direct link to a version control system. It provides the tools to export and import database entries from any Tivoli Service Request Manager environment.

Important: At the time of writing, the Migration Manager functionality was not available for the IBM Tivoli Service Request Manager Service Catalog product (specifically for migrating service and catalog definitions). However, this functionality is expected to be available in Tivoli Service Request Manager Service Catalog. In this section, we provide an example of migrating a workflow process definition (along with related objects, such as roles, actions, and notifications) from a source environment to a target environment. The mechanism for migrating the service and catalog definitions are very similar.

4.3 Migration Manager and the development life cycle

In IBM Tivoli Maximo V6.2 it was rather difficult to migrate any type of development to new environments. The available options often produced the following results:

- Manually executed database scripts
- Manually executed exports and imports
- Sequencing errors
- Incomplete seeding (“I missed that configuration!”)

The Maximo product has evolved over the years. Its evolution has resulted in a higher number of applications in each of the different versions that were added or changed to create and manage configurations.

These results provide flexibility to customers because fewer customizations (coding) are required and more and easier user acceptance testing can be performed. It also challenges any developer when migrating configuration data; this challenge is depicted in Figure 4-4. In the figure, you see the different applications that have been added or changed to contain configuration information for each version of Maximo and Tivoli Service Request Manager.

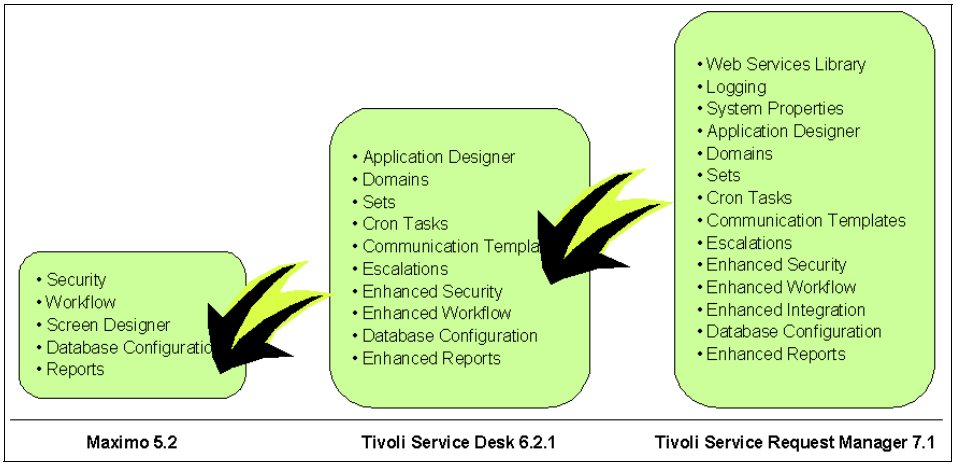


Figure 4-4 Tivoli Service Request Manager configuration applications

The need for an integrated migration tool significantly grew with each new version of Maximo. The result is a set of applications that enable you to define and create your own migration objects in source environments, with the means to distribute and deploy these migration objects in target environments.

The purpose of Migration Manager is to seed new Tivoli Service Request Manager environments with all the configurations and customizations created for a particular rollout.

4.3.1 Migration Manager benefits

Many companies want to adopt a phased rollout that includes development and test environments, but the tooling to support that process is often expensive, difficult to use, and requires customizing for each specific environment. Clients seek a repeatable rollout process that provides the following benefits:

- Lowers IT costs
- Increases ROI
- Facilitates monitoring
- Enables regulatory compliance

Configuration migration is now facilitated by the migration process. The following migration steps are enabled through Migration Manager:

- Define
- Create
- Distribute
- Deploy

To facilitate compliance with the many mandates and requirements, several tables are used to store historical information for a package. You can now trace the following items:

- Package status changes
- Package distributions

An additional advantage of the Migration Manager migration process is that history information is always carried forward from source to target, which means you can track the entire chain by examining the historical information at the target systems. A target system always contains cumulative history information.

The Migration Manager also facilitates governance and compliance through reports. The following two reports are delivered out of the box:

- Package definition: Facilitates review and approval
- Package life cycle: Assembles life cycle information about a physical package

4.3.2 Components

The Migration Manager uses packages to transport configuration and customization data from one Tivoli Service Request Manager environment to another. A package is a container for Tivoli Service Request Manager configuration information. Each package has a life cycle that reflects the previously listed migration steps that make up the migration process (see Figure 4-5).

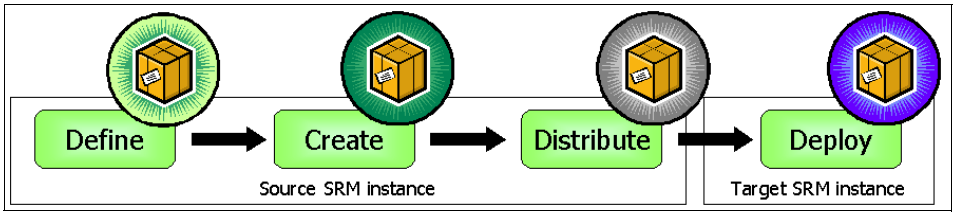


Figure 4-5 Package life cycle

You can create the following two different types of packages:

- Snapshot™

  “As is” configuration information is collected for a package on demand. The package is defined after the fact.

- Change

  Configuration information is collected over a period of time. Inserts, updates, and deletes that have occurred since the package was activated become a part of the package. In addition, configuration records created, modified, or deleted by designated users are part of the package. You must define the package before changes occur.

Each package you create has its own header. This header contains a unique identifier, source environment information (versions, installed Process Managers, and so on), information about the content of the package, and information provided by the creator of the package. You always can identify the status of each specific package and the content in that package, regardless of the environment.

To facilitate the Migration Manager process, three applications are available. These applications enable you to define, create, distribute, and deploy packages. You access them in the System Configuration module of the Go To menu in the migration object. These following applications are available:

- Object Structures

  In this application (see Figure 4-6), you manage migration objects, which represent the MBOs you want to migrate.

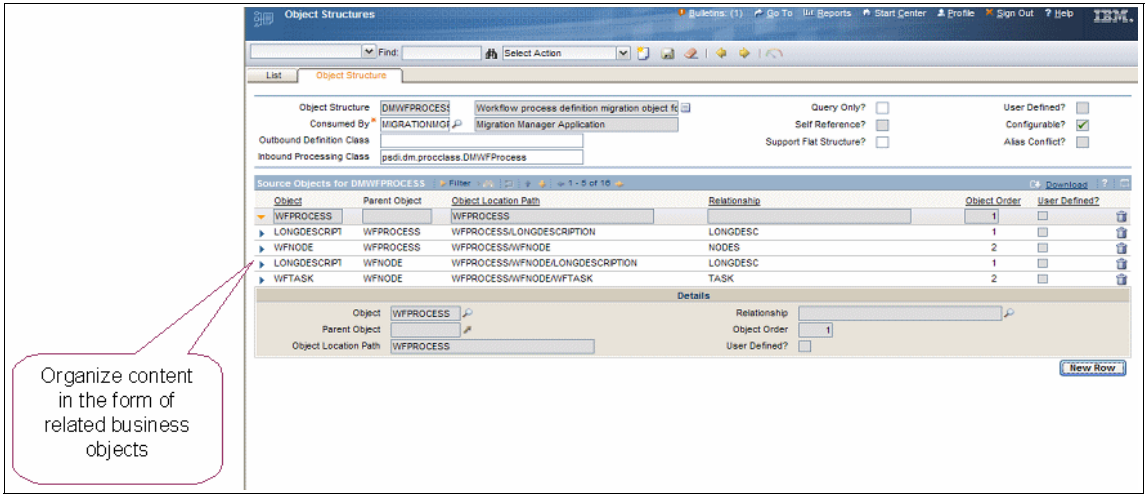


Figure 4-6 Object Structures application

An object structure is the common data layer that the integration framework uses for all outbound and inbound application data processing. An object structure consists of one or more subrecords that develop their XML content from a particular object.

An object structure can have the same object more than once in its definition. However, the objects must have a valid parent/child relationship, and you cannot reference an object more than once in the same hierarchical structure.

You can use the Object Structures application to define the processing sequence of an object. You also can use the Outbound Definition Class and Inbound Processing Class fields to filter irrelevant data from any object structure instance.

The object structure is the building block of the Integration Framework that enables integration applications to perform the following functions:

- Publish and query application data
- Add, update, and delete application data
- Import and export application data

You can configure the object structure record to integrate with the following applications:

- Integration Framework
- Deployment Manager

You can identify the integrated application in the Consumed By field, which contains MIGRATIONMGR to indicate integration with the Migration Manager application or INTEGRATION to indicate integration with the integration application. Out of the box MIGRATIONMGR records start with DM (data migration) in the object structure name, while INTEGRATION records start with MX in the object structure name.

- Migration Groups

  The Migration Groups application enables you to group objects you want to export and to create dependencies between migration groups. Figure 4-7 on page 160 shows an example migration group, containing multiple migration objects and dependencies with other migration groups.

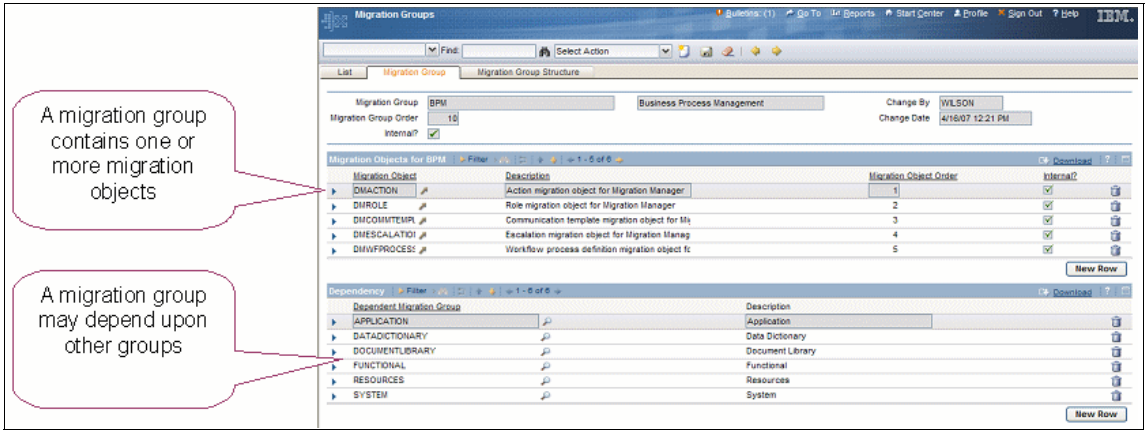


Figure 4-7 Migration Groups application

The Migration Groups application contains internal and external migration objects. If a migration object is a user-defined object, it is an external migration object and cannot be changed. Internal migration objects and dependencies cannot be changed or deleted.

- Migration Manager

  In the Migration Manager application (see Figure 4-8 on page 161), you can create, distribute, and deploy the packages you define. You can create packages; define distribution types; execute creation, distribution and deployment; and keep track of the history of each package.

  The Migration Manager application also enables you to access messages related to a package. Figure 4-8 on page 161 shows an example package, which is being prepared to migrate.

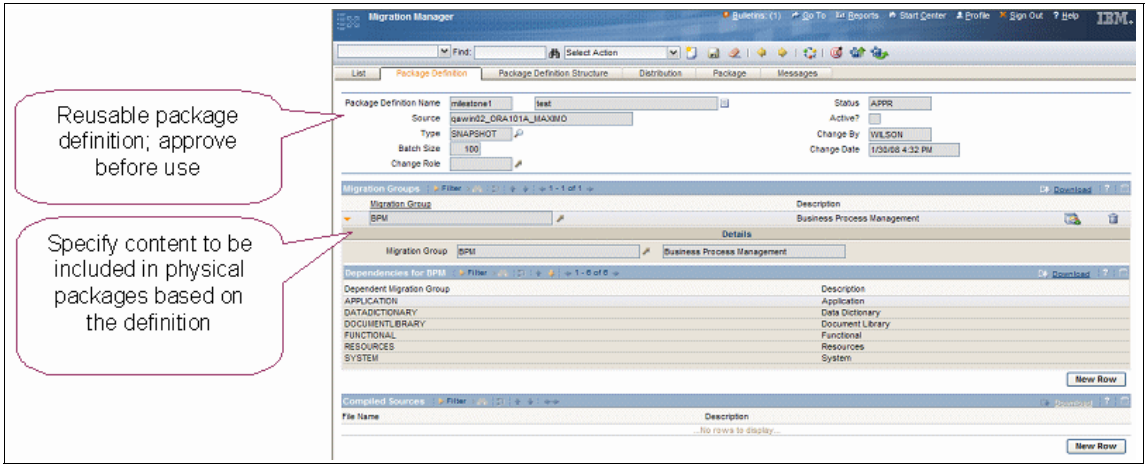


Figure 4-8 Migration Manager window

4.3.3 Prerequisites

Some restrictions limit the use of the Migration Manager. You must comply with the following restrictions to be able to use the full functionality of the application:

- Version numbers of the base product (Tivoli Service Request Manager) must be the same (for example, Tivoli Service Request Manager V7.1 and Migration Manager V7.1).

  You always can distribute packages from the source environment, but you need the same Tivoli Service Request Manager version to be able to import and deploy packages. Migration Manager checks the Tivoli Service Request Manager version used to create the package and the version of your target environment when you try to deploy a package.

- Database space or file system space in target system

  Depending on your choice of distribution, you need sufficient space in the target database (if you choose database distribution) or the shared file system (if you choose file distribution).

- Proper security settings

  When you migrate data from the source environment to the target environment, you must enable the proper security settings. You need access to the applications described in 4.3.2, “Components” on page 157.

- Migration Manager must be enabled, installed, configured, and so on.

  The Object Structures application is enabled in Tivoli Service Request Manager by default only. You must ensure the Migration Groups and Migration Manager applications are also enabled (see the following text).

The following new deployment objects are expected to be available with Service Catalog support:

- Service Catalog deployment groups
  - Services
  - Catalogs
- Service Catalog deployment objects
  - Service definition
  - Service Catalog
  - Service offering
  - Capability
- Service Catalog object structure
  - Service definition
  - Service Catalog
  - Service offering
  - Capability (INVVENDOR)
  - Item
- Dependent object structures
  - Classification
  - Jobplans
  - Integration modules, OMPs

We predict that Migration Manager may used for Service Catalog purposes in the following two ways:

- IBM Service Content Development Teams can deliver additional service definitions and taxonomy using the IBM Tivoli Open Process Automation Library (OPAL). You can migrate these service definitions to your environment using the Migration Manager.
- You can export your entire catalog of services or a group of selected services from development to test and then from test to the production environment.

4.4 Migration Manager process

The Migration Manager process consists of four steps, each of which is described later in this chapter. These steps ensure that the data to be migrated is consistent and reusable in other Tivoli Service Request Manager environments. The Migration Manager process consists of the following four steps:

1. Package definition
2. Package creation
3. Package distribution
4. Package deployment

Figure 4-9 depicts these steps and the instance that handles each step.

Figure 4-9 Migration steps

Each of these steps defines what occurs with the package in that step. Figure 4-10 represents the packages with physical data and depicts the process as though actual content is used in the migration steps.

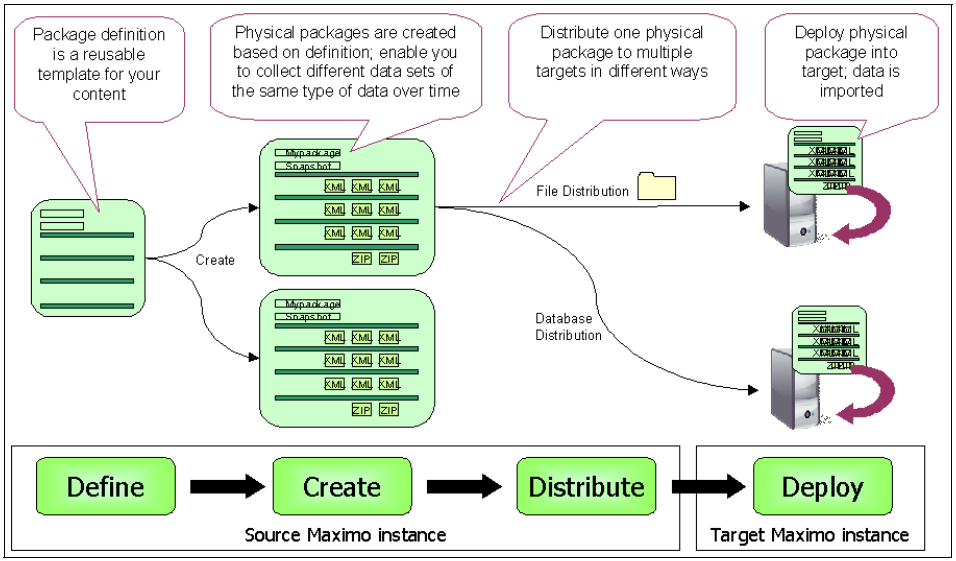


Figure 4-10 Physical migration steps

Figure 4-10 on page 163 also shows the two types of possible distributions, file distribution and database distribution, which we describe in a later section.

4.4.1 Package definition

Package definition is the process of identifying the content of a package, which has to be migrated to any target environment, in a source environment (see Figure 4-11). The following several steps are necessary to create a package definition:

1. Specify the type of package:
   - Snapshot
   - Change
2. Specify migration groups, that is, content from the database you want to migrate.
3. Specify compiled sources:
   - Content outside database
   - Content uploaded during package creation

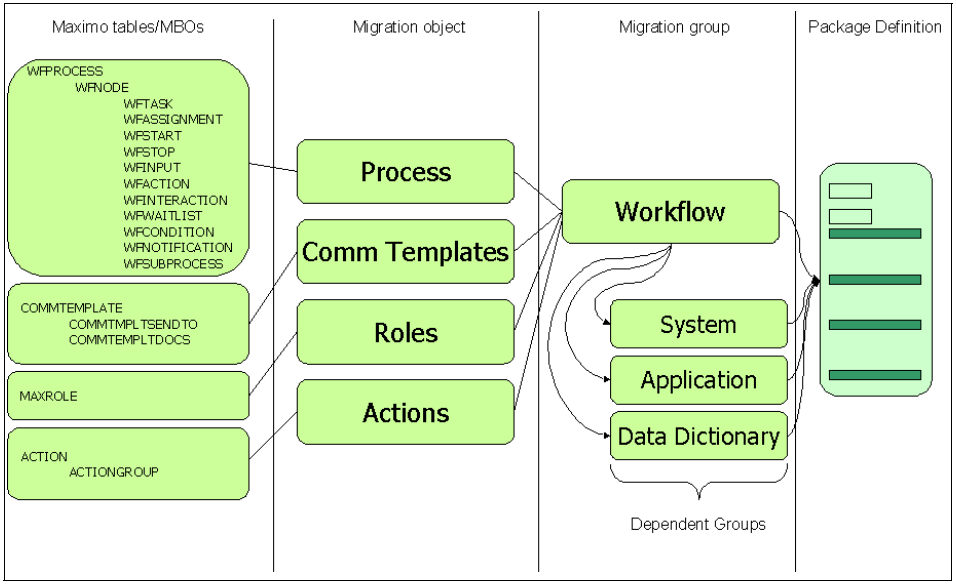


Figure 4-11 Package definition process

Each package definition has a status and must therefore be approved prior to activation. This process also enables you to route the definition through an approval workflow.

The following two types of content are recognized:

- Content in database

  Content in a database is typically tables and records in the IBM Tivoli Service Request Manager schema or the IBM Tivoli Service Request Manager encapsulation of a table, a Maximo Business Object (MBO).

- Content outside database

  This content is comprised typically of files, such as property files, on a file system. These files must be built into an Enterprise Archive (EAR) and deployed to the application server.

Content in the database

Database content can consist of several out-of-the-box objects, as shown in Figure 4-12.

Objects, attributes, relationships	Modules	External Systems	Communication Templates
Domains	Menus	End Points	Email Listeners
Services	Applications	Security Groups	Reports
Sets, Orgs, Sites	Start Centers	Users	KPIs
Currency Codes, Exchange Rates	Cron Tasks	Signature Options	GL Configuration
Language	Loggers	Document Library	Calendars
Messages	Properties	Workflow Processes	Shifts
Object Structures	Condition Expressions	Escalations	Person Groups
MAXVARS	Integration Interfaces	Actions	People

Figure 4-12 OOTB migration objects

To support easy and fast migration, Tivoli Service Request Manager is delivered with a set of migration groups out of the box; for example, Tivoli Service Request Manager is delivered with the following migration groups:

- Data dictionary (objects, attributes, and so on)
- Applications (presentations, menus, and so on)
- Functional (organizations, sites, calendars, and so on)

- Security (groups, users, sigoptions)
- System (cron tasks, properties, and so on)
- Integration (channels, external systems, and so on)
- Business Process Management (workflow, escalations, and so on)
- Document library
- Reporting
- Migration
- Resources (person, person groups, and so on)

You can find these groups in the Migration Groups application. If needed, these groups can be changed to meet your specific requirements. You can also duplicate the groups.

Content outside the database

The following three types of content exist outside the database:

- Files that must be part of IBM Tivoli Maximo EAR and therefore deployed into the application server. The following file types are examples of these files:
  - .class
  - .jar
  - .properties,
  - .xml
- Content categorized as *compiled sources*.

4.4.2 Package creation

While the package definition only defines the content, the actual configuration of the data collection occurs during package creation. Figure 4-13 on page 167 provides a representation of a package definition.

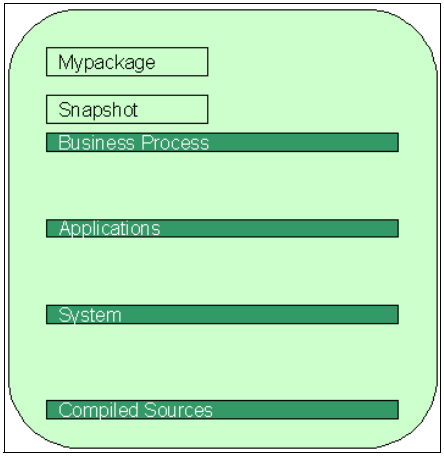


Figure 4-13 Package definition

You initiate package creation from the Migration Manager application. You can create only one package at any given time. Figure 4-14 shows a representation of package creation, where the different objects and sources are filled with content.

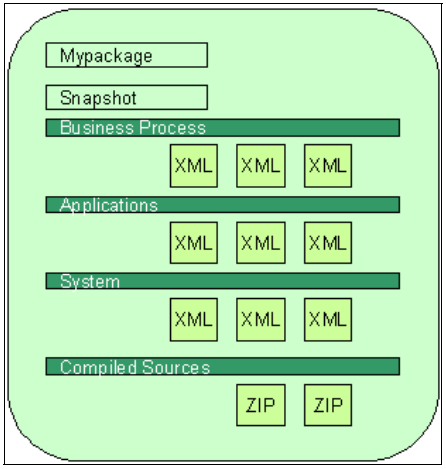


Figure 4-14 Package creation

Collecting configuration information and compiled sources based on the package definition is a user-driver task. Depending on the amount of information to be collected, this task can be long running. Each package is created in the form of records in a staging table in the source environment.

Each package contains the following information:

- Package header.
- Source environment version information.
- Types of content in package and record count for each deployment object.
- Readme information entered in source environment by administrator. The Readme information aids decision making and influences the controlling deployment process in the target environment.

4.4.3 Package distribution

Distribution of the packages is performed through the Migration Manager application. Package distribution to target environments is also a user-driven task. You can distribute your packages to the following sources:

- Tivoli Service Request Manager source database
- Tivoli Service Request Manager remote database representing your target environment
- File

  A Migration Manager-generated file must be copied to a designated folder, accessible from your source and target server. You then can export packages from your source environment and import these packages into your target environment.

Figure 4-15 on page 169 provides an example infrastructure that might be used by the Migration Manager.

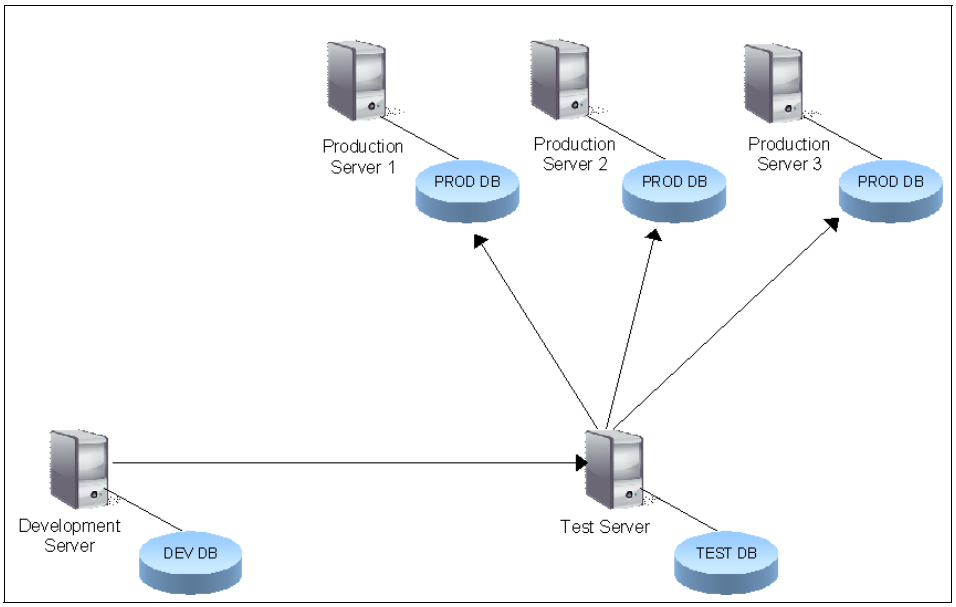


Figure 4-15 Example infrastructure

Once a package is approved, you can redistribute the *master* or *golden* package to your target production environment.

A typical redistribution takes place from your user-acceptance environment to your production environment. The benefit of this redistribution is that it encourages adherence to a more strict IT rollout/promotion. For example, a migration from your development environment directly to your production environment is not allowed.

Redistribution also ensures all content remains exactly the same. The package status is always updated to reflect the actual situation, keeping you informed of the status of the configurations and customizations in the different environments.

If you want to redistribute any package, the same rules apply as those for a regular distribution. You can distribute or redistribute content to a file or database. Redistribution is also executed through the Migration Manager application. A package redistribution is depicted in Figure 4-16 on page 170.

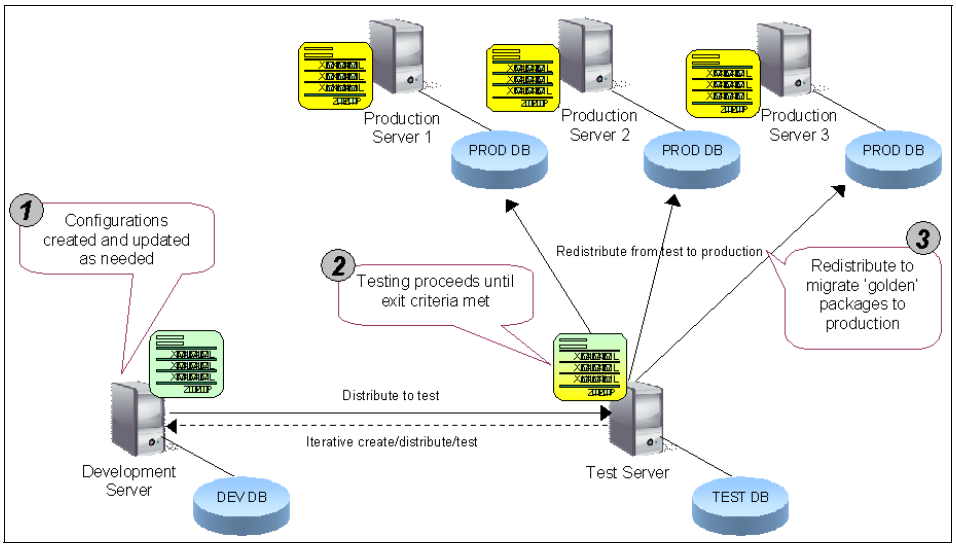


Figure 4-16 Package redistribution scenario

The following list provides the benefits of distribution and redistribution:

- Single packages can be distributed in different ways to multiple targets.
- Distribution is not tied to a package definition, meaning:
  - It can be set up at later time.
  - Package content is always available in the staging table.
- Distribution to a database is useful in moving from development to test.
- Distribution to a file is useful in moving from test to production.

  Because Migration Manager does not provide a versioning tool, you must manually transfer your package into a versioning tool.
- Distribution to a file also is useful when source and target have different RDBMS.

  The Migration Manager does not support migration to different RDBMS platforms directly.

4.4.4 Package deployment and error handling

Package deployment is a user-driven task. Using the Migration Manager application, you can process the contents of a package in a target environment. You can perform the following tasks:

- Process metadata that is associated with a package.
- Apply structural changes to Maximo tables, based on data dictionary metadata.
- Process compiled sources.
- Process other configuration data.

As a prerequisite for deployment, you must back up a database before the actual deployment starts. The Migration Manager application warns you to create the backup and also prompts you to confirm a backup has been created. If you choose to continue, a log statement records the answer.

Note: To preserve the integrity of structural changes, only one package can be deployed at a time.

The Migration Manager has a robust exception-handling mechanism. Error messages are organized and displayed on the Message tab, where errors are persisted and grouped by package. You can view errors in the Migration Manager application at any time on the Message tab.

To support error handling, error levels are specified for each error registered by the Migration Manager. This way you can create escalations to send notifications, based on error levels and error codes. This functionality enables you to schedule unattended migrations.

4.5 Using the Migration Manager

In this section, we describe a scenario using the Migration Manager. In our scenario, we describe how you can create a new workflow process definition (along with related objects, such as roles, actions, and notifications) on a source environment and migrate the workflow and related objects to a target environment.

We also discuss how you can create and change a new workflow process package definition on the source environment, how you handle the process of distribution, and how you deploy and validate content on the target environment.

To simplify our scenario, we duplicate and change an existing migration group so it migrates only the specific objects we specify. The environment we use for the scenario is shown in Figure 4-17.

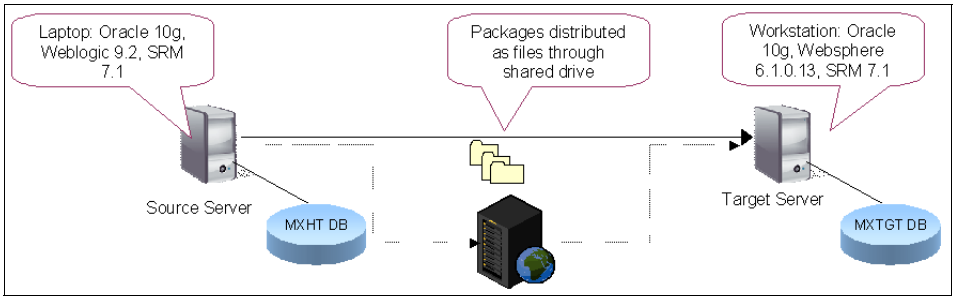


Figure 4-17 Package deployment scenario

4.5.1 Workflow example

A workflow can consist of several different types of nodes, each with its specific functions and content. The workflow we want to migrate from source to target is a simple workflow for Service Requests, as shown in Figure 4-18.

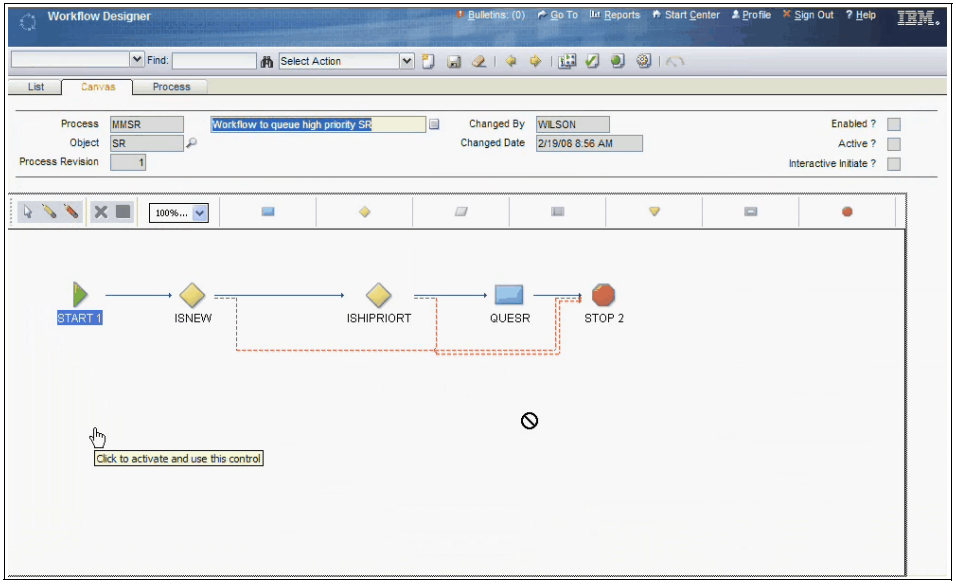


Figure 4-18 Example workflow

The workflow contains two condition nodes and one task node and is created to set the internal priority of a Service Request to 1, in case the request is created with a high (external) priority. The first condition node checks whether the SR is new; the second condition node checks whether the SR is marked as a high-priority SR. The task node assigns and queues the SR to the Service Desk Manager, while a positive action on the node sets the internal priority to 1 and notifies the Service Desk Agent.

In this example, we define a task node with the SDMGR role to be used for the assignment, as shown in Figure 4-19.

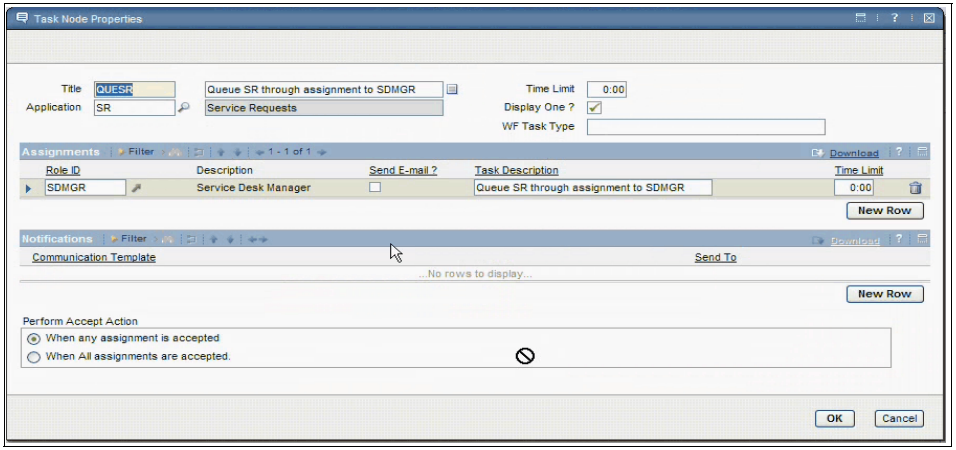


Figure 4-19 Example workflow role

After receiving a positive result from the task node, we also define the MMACT action to set the SR property and notify the owner of the SR that the priority has been set. For this purpose, we use the SDAGENT role and the MMNOTIF communication template, as shown in Figure 4-20.

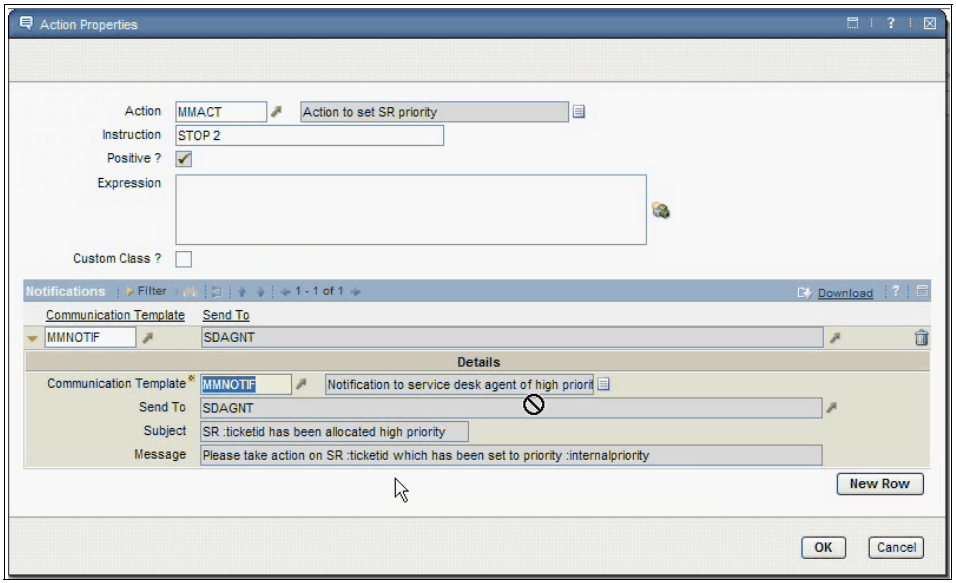


Figure 4-20 Example workflow action, role, and notification

To successfully migrate the workflow from source to target, we must migrate not only the workflow, but also the related roles, actions, and notifications used in the workflow.

4.5.2 Package definition

To migrate the example workflow using the Migration Manager, complete the following steps:

1. From the GoTo menu, select **System Configuration** → **Migration** → **Object Structures**, as shown in Figure 4-21.

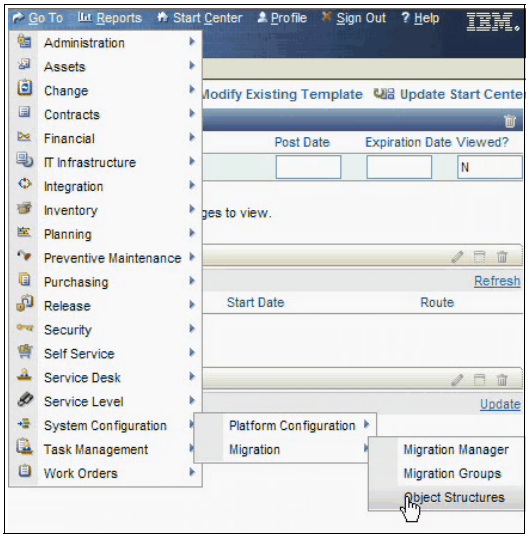


Figure 4-21 Migration menu, Object Structures

2. Search for and select the **DMWFPROCESS** object structure. The object is shown in Figure 4-22.

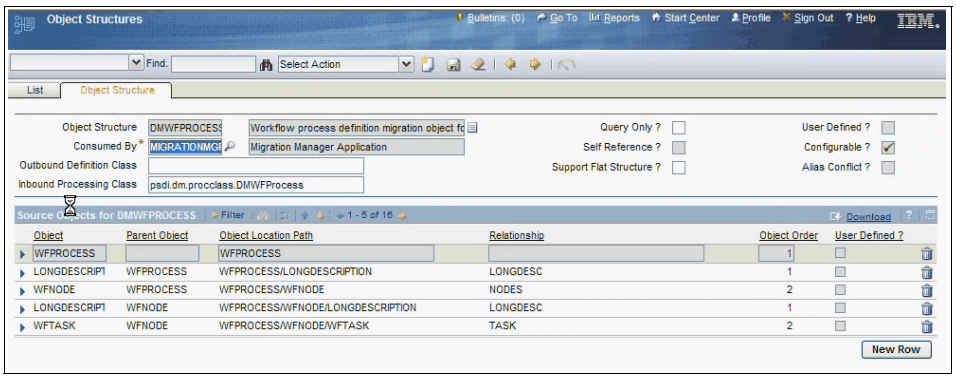


Figure 4-22 DMWFPROCESS object structure

In the Object Structure application, find the source objects (MBOs) you want to migrate. These objects have a parent/child relationship you can find in the Object Order and Object Location Path columns. Because we use an out-of-the-box object structure for the workflow, the User Defined? field for each source object is not selected and is read only.

This example includes all workflow-related source objects and specifies an inbound Processing class psdi.dm.procclass.DMWFProcess. This processing class ensures the imported objects are processed through the appropriate business logic, in case you deploy these objects.

Leave the object structure as it is and move onto the next step.

3. From the GoTo menu, select **System Configuration** → **Migration** → **Migration Groups**, as shown in Figure 4-23.

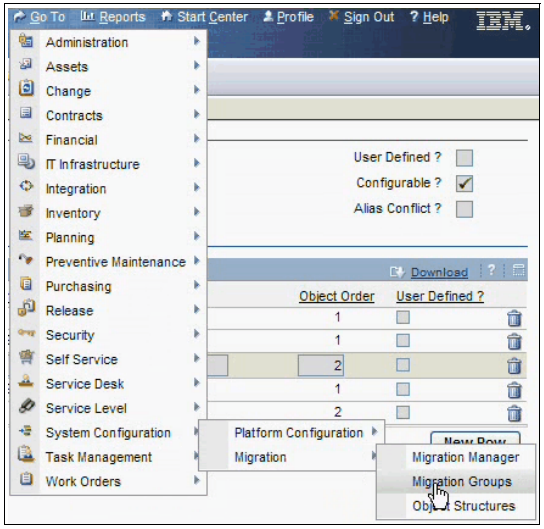


Figure 4-23 Migration menu, Migration Groups

4. Search and select the (out-of-the-box) BPM migration group. You can find the group as shown in Figure 4-24.

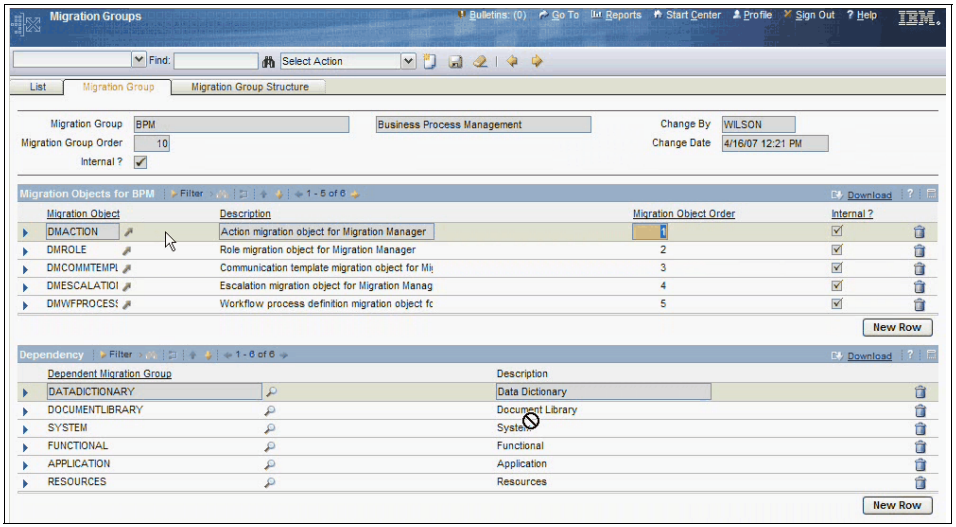


Figure 4-24 BPM migration group

The BPM migration group contains all the migration objects you need to migrate, as identified earlier in this chapter. By default you can find action, role, communication template, escalation, workflow, and e-mail listener (inbound communication) objects in the BPM migration group.

Looking at dependencies, several other migration groups have dependencies with the BPM migration group, such as Data Dictionary, Application, and Resources. You can find these migration groups with dependencies in the Dependency section of the Migration Groups application.

Figure 4-25 shows a representation of the migration group structure with the migration objects and migration group dependencies in the form of a tree.

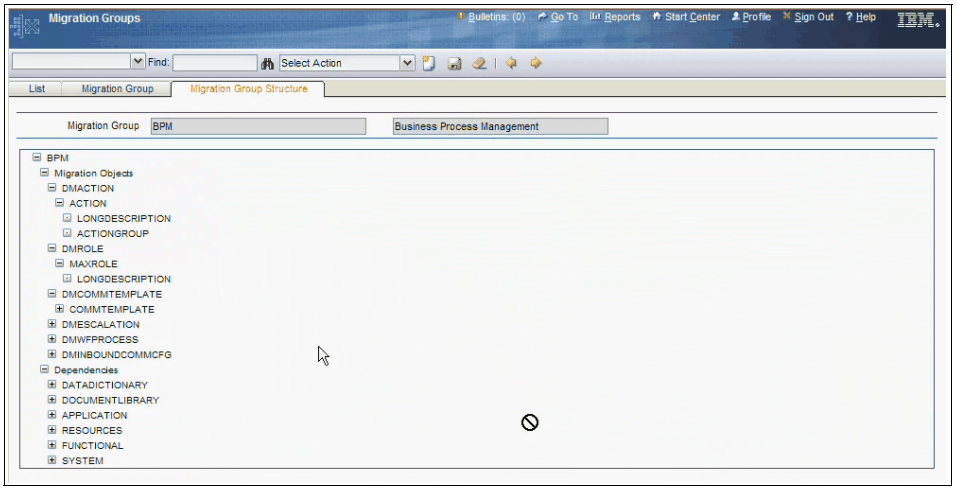


Figure 4-25 BPM Migration Group Structure tab

5. In this example, because you want to migrate only specific workflow artifacts and not all dependent objects, you duplicate the existing BPM group. From the Select Action menu, select **Duplicate Migration Group**.
6. We call the new migration group MYBPM, so enter MYBPM in the Migration Group field.

   You have one workflow, one action, one notification, and two roles to migrate and are not interested in any dependant objects and escalations.
7. Remove the DMESCALATION migration object from the Migration Object list by clicking the recycle bin icon to the right of the record. Remove all Dependency records by clicking the recycle bin icon to the right of each record.

8. Save the new MYBPM Migration Group by clicking the **Save** icon (the disk icon in the toolbar). At this point, the MYBPM migration group looks like the group shown in Figure 4-26.

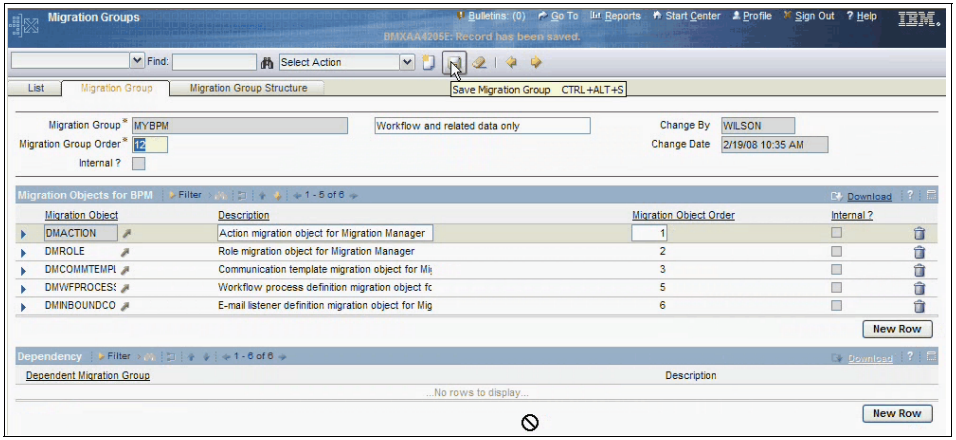


Figure 4-26 MYBPM migration group

You are ready to create the package definition and start the migration, which you can do by completing the following steps:

1. From the GoTo menu, select **System Configuration** → **Migration** → **Migration Manager**, as shown in Figure 4-27.

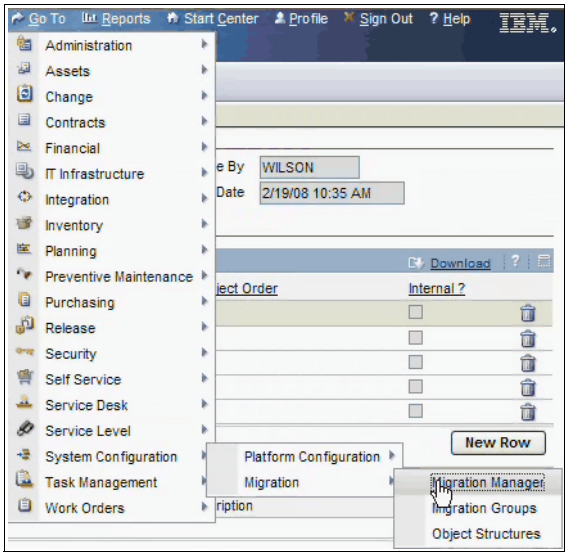


Figure 4-27 Migration menu, Migration Manager

2. Click the new record icon in the toolbar on the Migration Manager window, as shown in Figure 4-28.

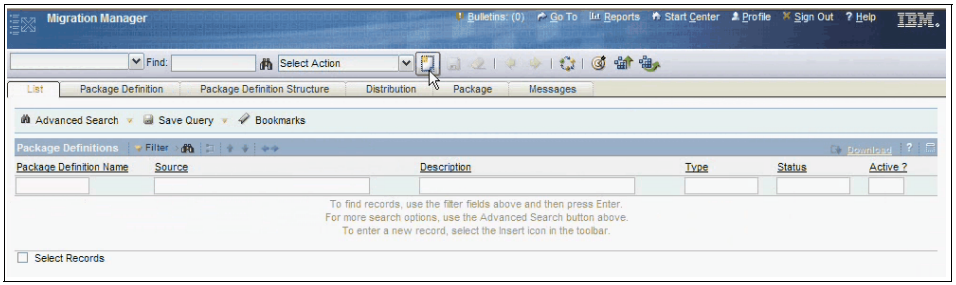


Figure 4-28 New package definition

A window for creating a new package definition is displayed, as shown in Figure 4-29.

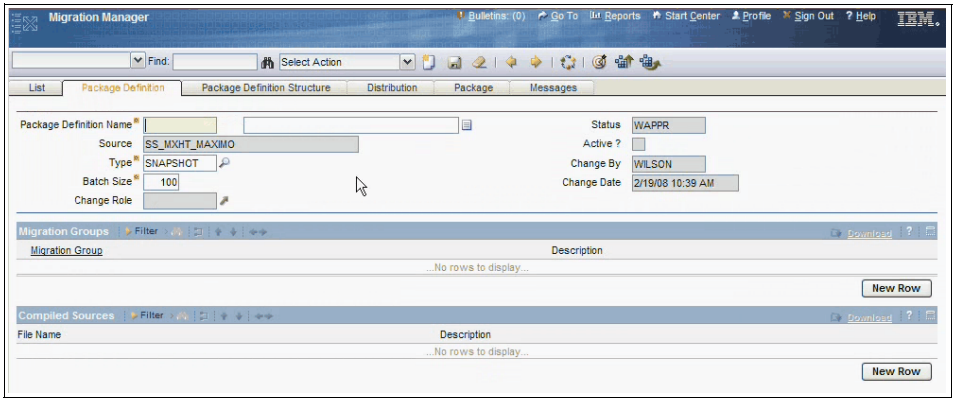


Figure 4-29 Package definition information

3. Name the package SRWF and describe it as SR priority workflow to specify that you want to migrate only the new SR priority workflow.

   The Source field is an identifier from the source environment, which ensures uniqueness of the package throughout the landscape. The Source field is automatically generated and contains an identifier for the originating application server host name (in this example, SS), DB system identifier (SID) or instance name (in this example, MMHT), and schema name (MAXIMO), separated by the underscore character. Each package created in the source environment always contains the source identifier.

4. You can use the Type field to select the type of package, SNAPSHOT or CHANGE. In this example, use a SNAPSHOT package because you want to migrate the entire workflow and related objects.

5. The Batch field is used to limit the load on your application server. You can set the number of XML records exported at one time, limiting memory usage. Use the default of 100 records.
6. In the Migration Groups section, you can select the groups representing the database content you want to migrate in the package. Select the **MYBPM group**.
7. In the Compiled Sources section, you can also select content outside the database, such as Java classes or properties files. In this example, we do not use any compiled sources for migration, so leave this section empty.
8. After selecting the MYBPM migration group, you want to further specify which specific objects you want to migrate. You can do so by clicking the **Where Clause** icon to the right of the MYBPM migration group, as shown in Figure 4-30.

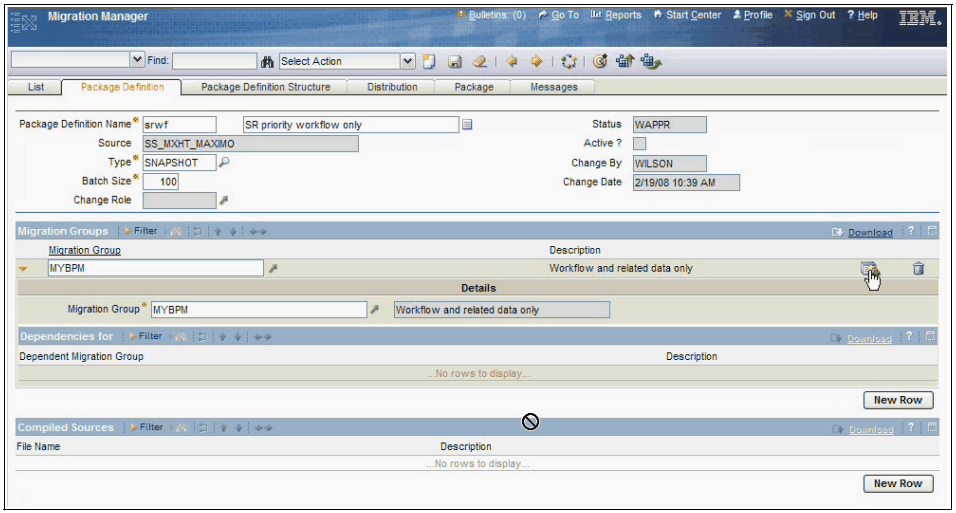


Figure 4-30 Package definition, Where Clause icon

Figure 4-31 shows the Set Where Clause dialog box, displaying the migration objects and related MBOs you can use.

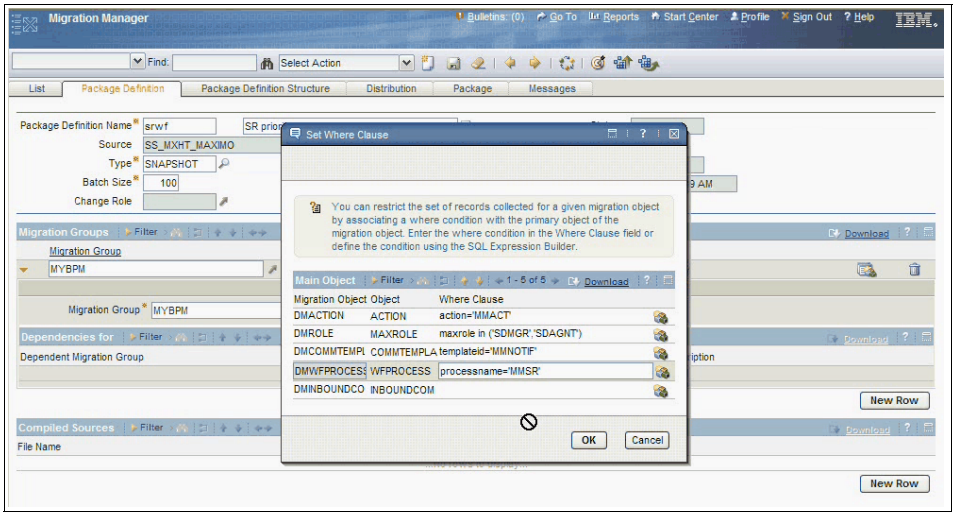


Figure 4-31 Package definition, Migration Groups Set Where Clause

In this example, we created a Where Clause for the following migration objects to make sure only the example workflow and related objects are migrated:

- DMACTION: The Where Clause action='MMACT' ensures only the MMACT action used in the workflow is migrated as part of the package being created.
- DMROLE: The Where Clause maxrole in ('SDMGR','SDAGNT') ensures only the roles used in the workflow are migrated as part of the package being created.
- DMCOMMTEMPLATE: The Where Clause templateid='MMNOTIF' ensures only the MMNOTIF communication template used in the workflow is migrated as part of the package being created.
- DMWFPROCESS: The Where Clause processname='MMSR' ensures only the MMSR example workflow is migrated as part of the package being created.

To create a Where Clause for any object, without thorough knowledge of SQL and the database fields, you can use the SQL Expression Builder by clicking the rightmost button on the Object line. A SQL Expression Builder dialog box is displayed. In this dialog box, you can create the required SQL statement, as shown in Figure 4-32.

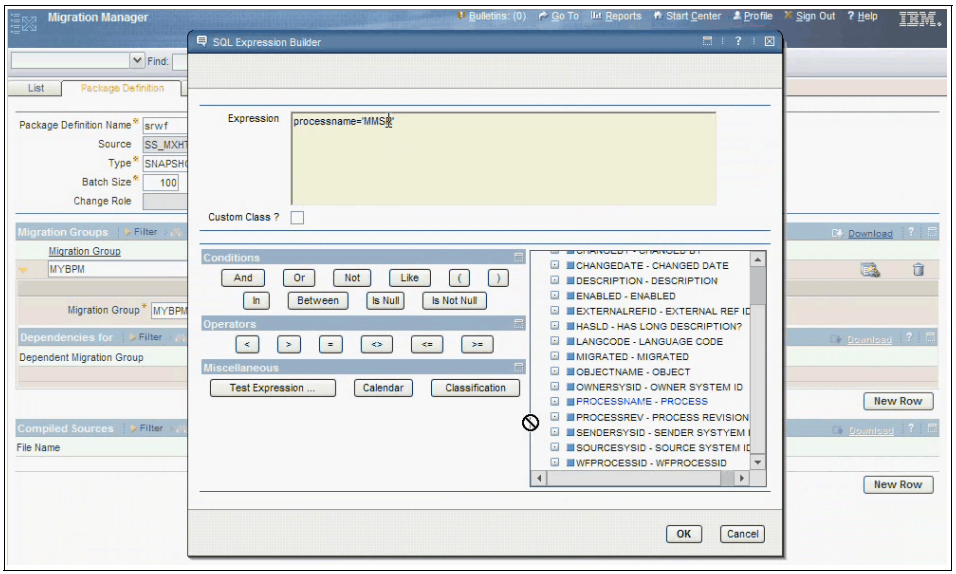


Figure 4-32 Package definition, SQL Expression Builder

You can select attributes for the specific object (MBO) and use conditions and operators to limit or specify the content. To be sure the Where Clause you create is correct, you click the **Test Expression** button in the Miscellaneous section to verify the SQL statement.

Click the **OK** button on the SQL Expression Builder dialog box to use the SQL expression you created for the object. Repeat this step for each of the objects you want to further specify, filter, or manipulate.

Click the **OK** button in the Set Where Clause dialog box to use the Where Clauses created for all objects and continue.

9. At this point, you save the new srwf package definition by clicking the **Save** icon (the disk icon in the toolbar) as shown in Figure 4-33.

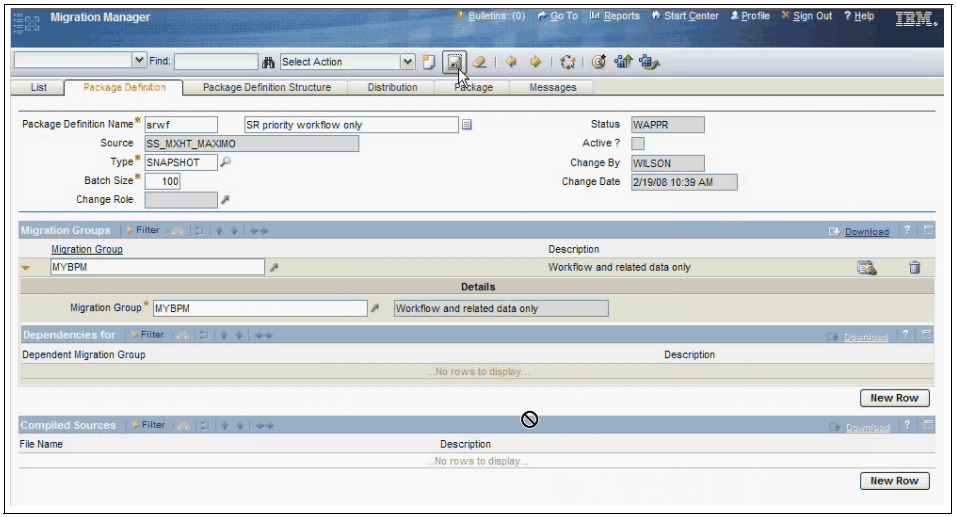


Figure 4-33 Save package definition

At this point, you must approve the package definition to continue. You can use this step to have a Change Manager, or other responsible role in the organization, review the package definition and approve the content.

10. Click the **Change Status** icon on the toolbar as shown in Figure 4-34. You can also use the **Change Status** action from the Select Action menu.

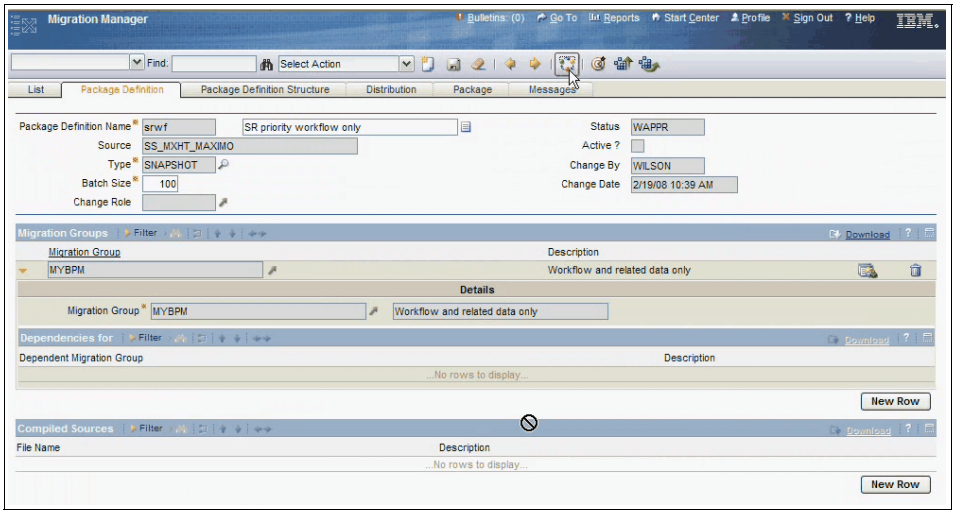


Figure 4-34 Change package definition status

A dialog box is displayed, as shown in Figure 4-35, where you can select the approved status.

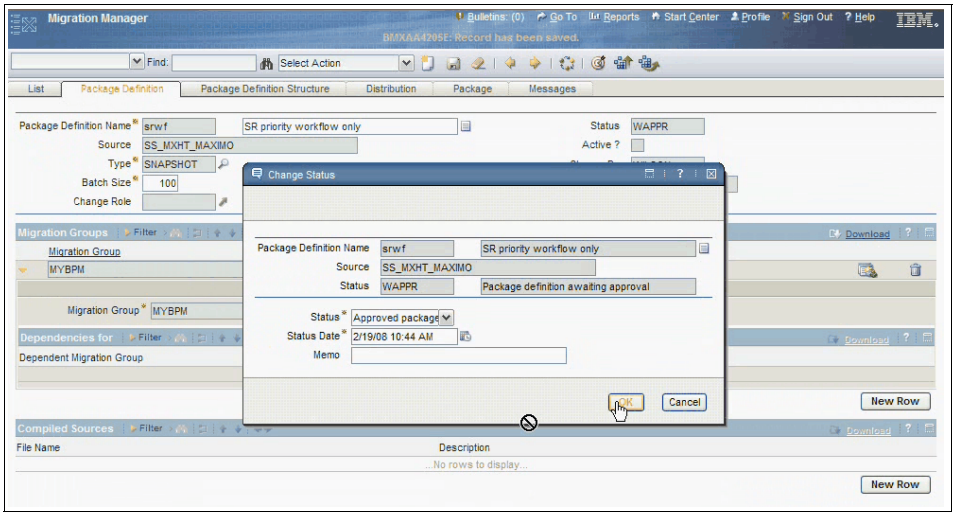


Figure 4-35 Package definition approved

11. Click the **OK** button to continue.

12. At this point, you must activate the package definition to create a package for distribution. From the Select Action menu, select **Activate/Deactivate Package Definition** to activate the package definition (see Figure 4-36).

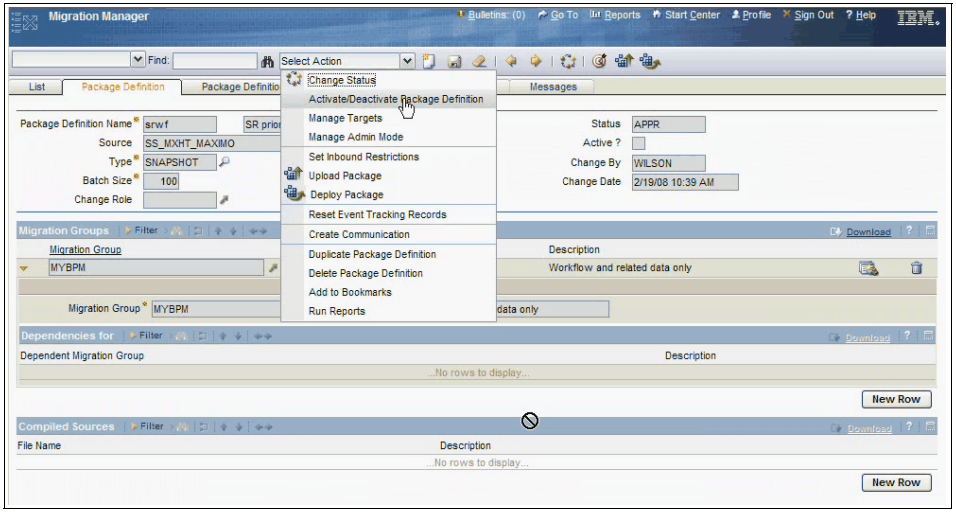


Figure 4-36 Activate package definition

The message `Package Definition srwf has been activated` is displayed in the menu bar. The Active check box contains a check mark.

13. On the Package Definition Structure tab, you can view the package definition in a tree structure. This view shows all package definition information in a parent/child relationship, as you can see in Figure 4-37.

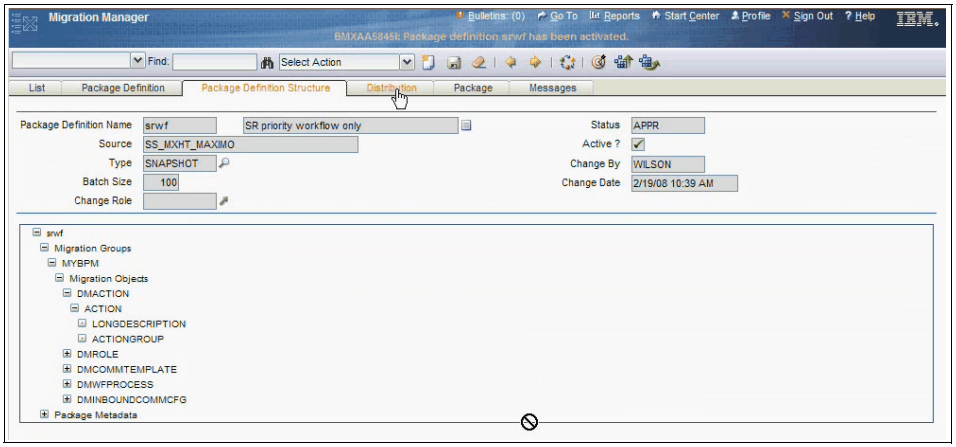


Figure 4-37 Package definition structure

14. The last step in defining a package is specifying all possible targets for the package. Click the **Manage Targets** icon in the toolbar, as shown in Figure 4-38. You can also use the Manage Targets action from the Select Action menu.

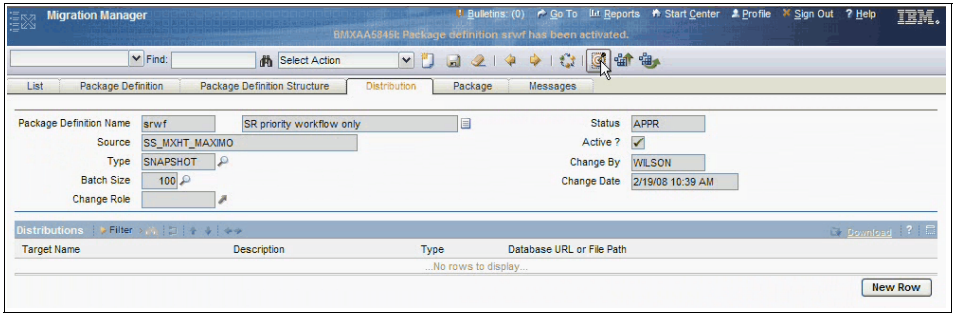


Figure 4-38 Manage package definition targets

A dialog box is displayed, as shown in Figure 4-39, where you can define all possible targets and distribution method for these targets.

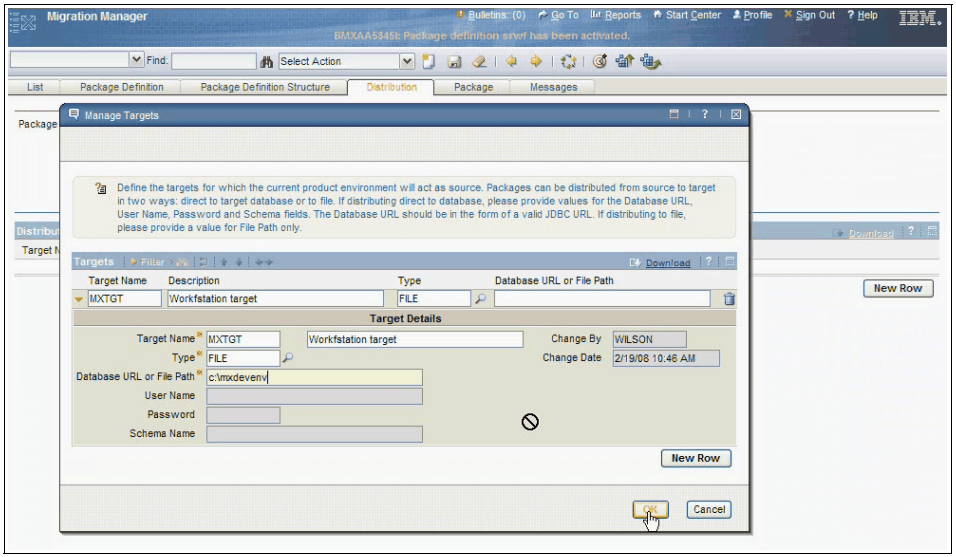


Figure 4-39 Possible package definition targets

In the example, we use the MXTGT target system, using a file distribution. We store the physical package (package file) on the local operating system, in the directory c:\mxdevenv.

Click the **OK** button to continue.

15. Select the distribution target by clicking the **New Row** button on the Distribution tab (see Figure 4-40).

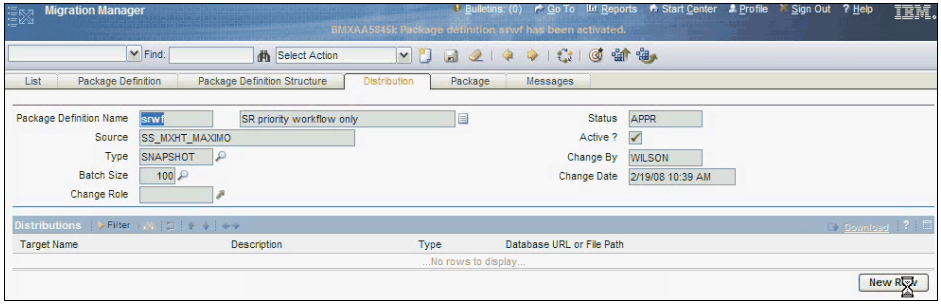


Figure 4-40 Select distribution target

16. Choose MXTGT as the target name and save the package definition by clicking the **Save** icon (the disk icon in the toolbar), as shown in Figure 4-41.

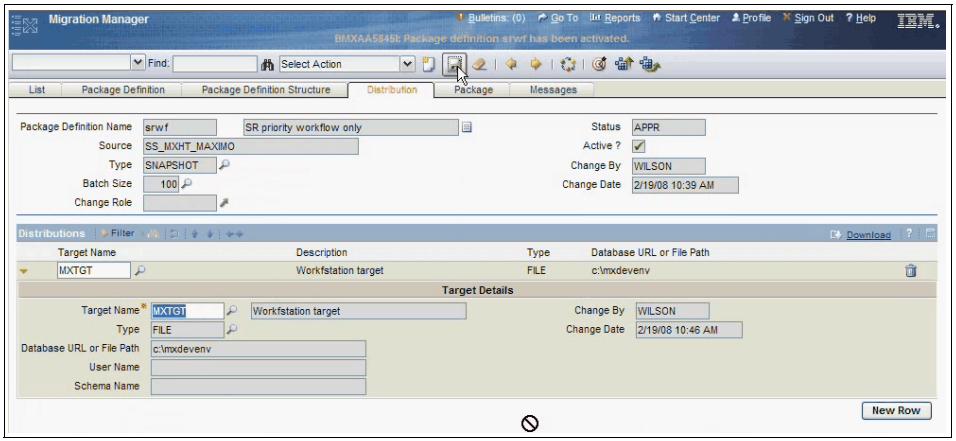


Figure 4-41 Save package distribution target

At this point, the package definition process is complete.

4.5.3 Package creation

In this section, you create a package to actually distribute and deploy. In the Migration Manager application of the source environment, complete the following steps to create a package:

1. Select the **Package** tab and click the **Create** button in the Packages section, as shown in Figure 4-42.

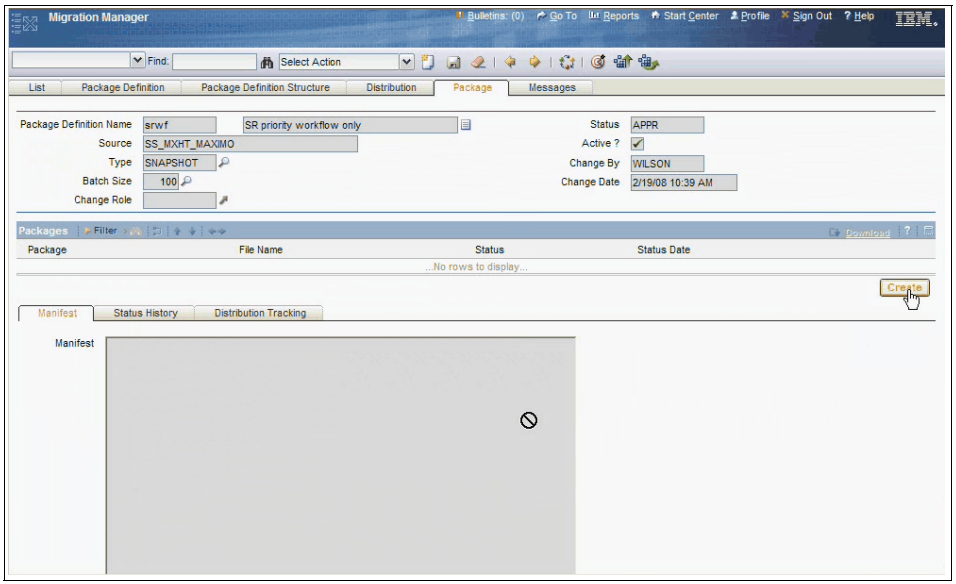


Figure 4-42 Create package

2. Enter general information about the package in the Upload Compiled Sources dialog box, as shown in Figure 4-43.

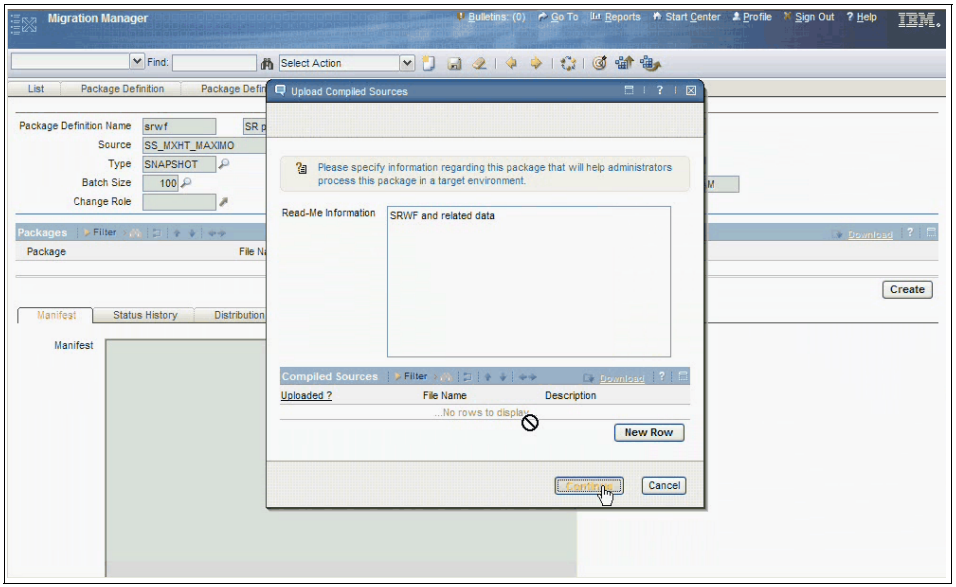


Figure 4-43 Package creation information

This information becomes part of the package manifest and is migrated. Therefore, it can be used by a Deployment Manager to identify useful information about the package before actually deploying the package.

You also have the option to select compiled sources (content outside of the database, which usually is a ZIP file containing the code and other files) in this step, which we skip in this example.

3. Click the **Continue** button in the dialog box to start package creation. A dialog box is displayed, presenting the creation progress, as seen in Figure 4-44 on page 191.

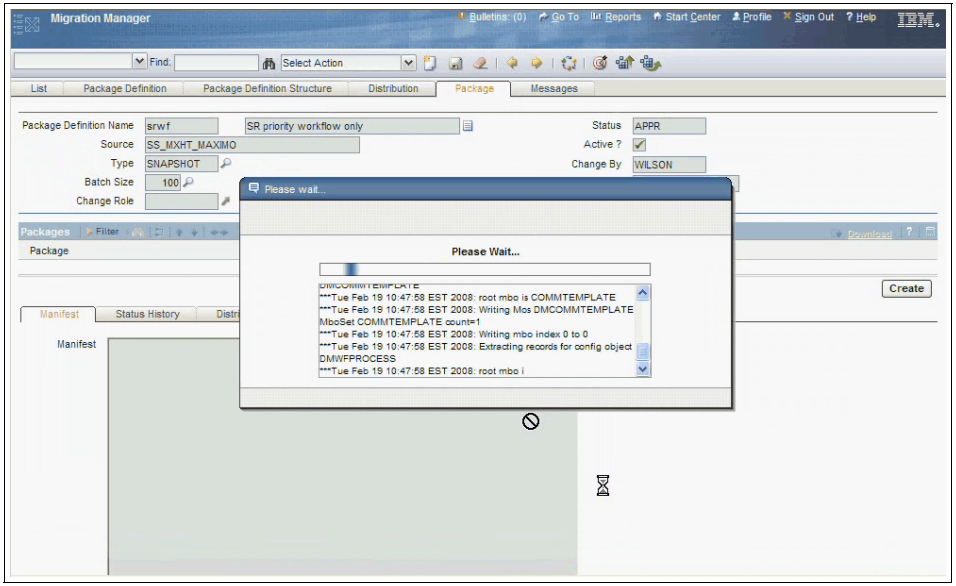


Figure 4-44 Package creation in progress

Once creation is completed, a new package is visible in the Package section, as shown in Figure 4-45.

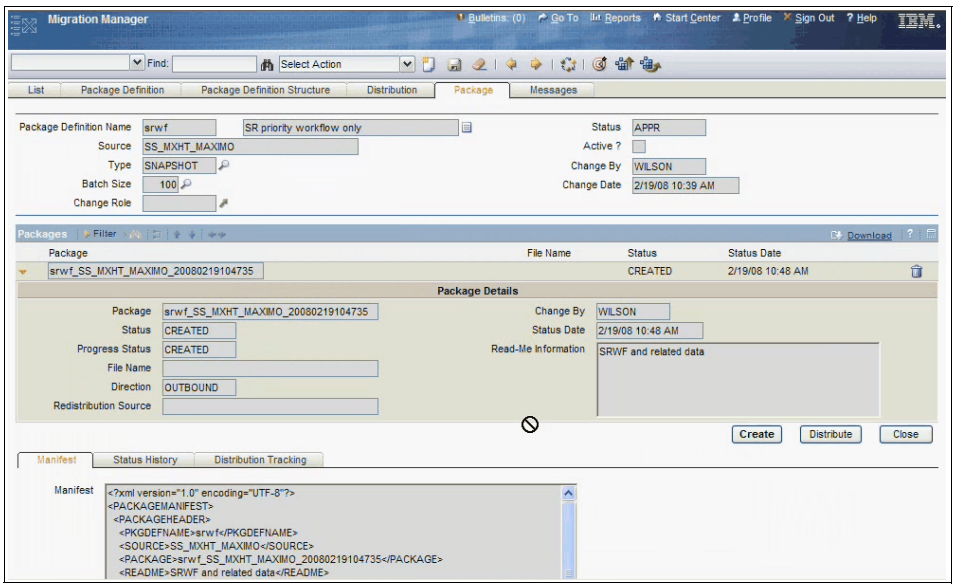


Figure 4-45 Package creation complete

Each package has a unique name, which in this example is srwf_SS_MXHT_MAXIMO_20080219104735. The name is built using the package definition name, the source identifier, and a creation time stamp.

The status field provides the status of each package, which can also depend on the direction. In this example, the status is displayed as CREATED, meaning a package is created in the source database.

The direction of the package specifies whether the package is exported from (OUTBOUND) or imported into (INBOUND) the system you are logged onto. In this example, the package is OUTBOUND.

The Manifest tab shows general package information in XML format, such as the Readme you entered earlier, but also source system version information and package content.

At this point the package is created, but, as we explained earlier, it is placed in a staging table of the database on our source environment. You have to distribute the package to actually import a physical file into the target environment. We describe the distribution process in the next section.

4.5.4 Package distribution

At this point in the process, you must complete the following steps to distribute the package:

1. Click the **Distribute** button to start package distribution, as shown in Figure 4-46.

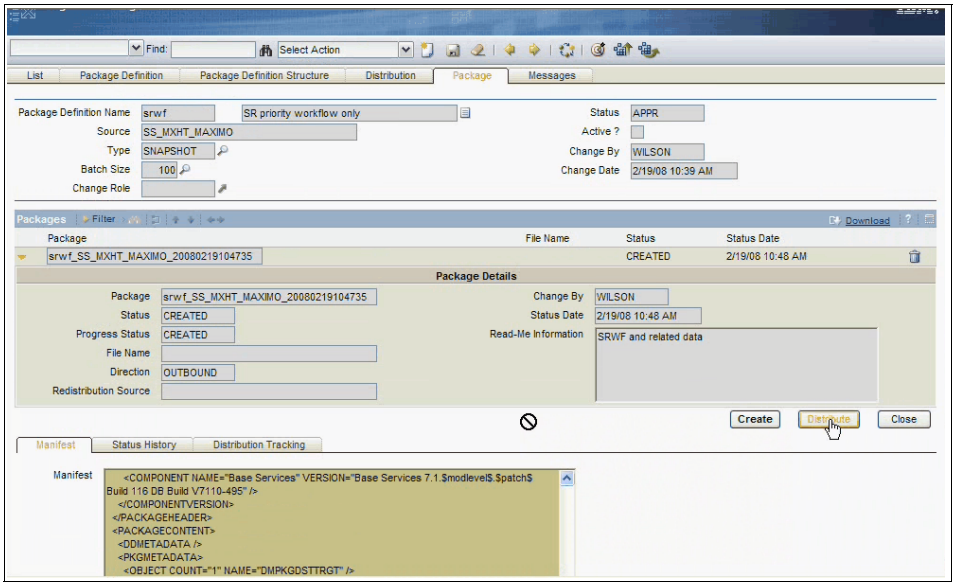


Figure 4-46 Package distribution

2. Select a target for distribution by clicking the appropriate check boxes, as shown in Figure 4-47.

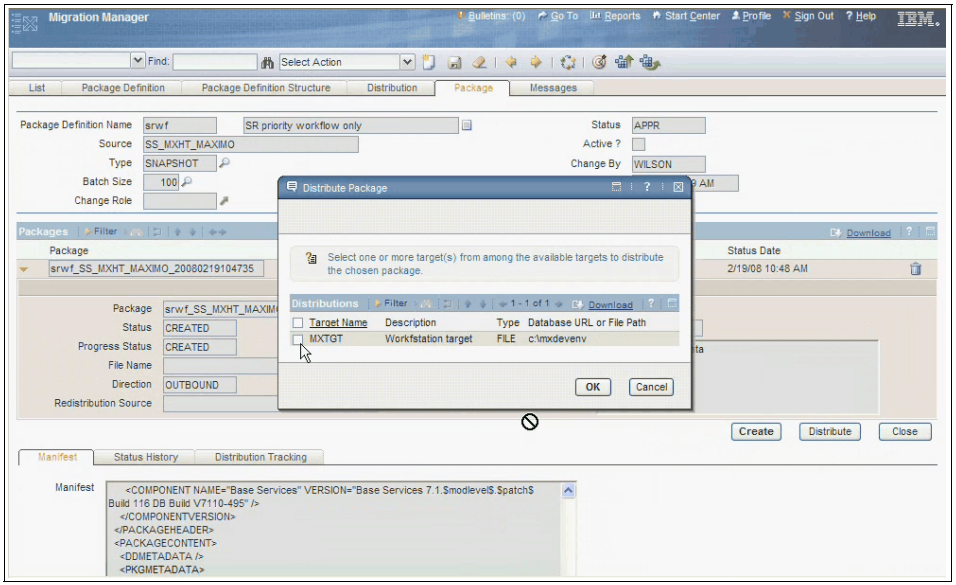


Figure 4-47 Package distribution targets

During package definition, you created one possible target, exporting the package as a file to a directory on the source application server. You can select from more targets, each of a different type and with a different export location. However, in this example, you need only the MXTGT target.

3. Click the **OK** button to continue. In Figure 4-48, the dialog box shows distribution progress.

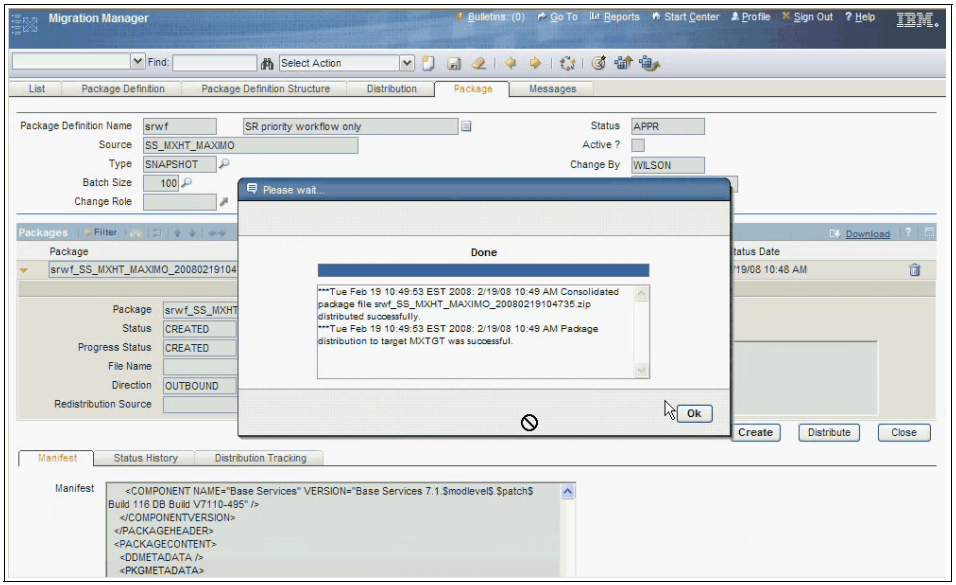


Figure 4-48 Package distribution in progress

To ensure the physical package is indeed created and stored in the correct location, you can verify whether the file is actually in the c:\mxdevenv directory on the source system. You can also download the file to use on the system you currently work on (it can be any system with a browser connection to the source environment). Downloading the file proves the physical file actually exists, but it also provides the means to store the file on a shared location for import.

4. Click the **Download** icon to the right of the package line, as shown in Figure 4-49 on page 196.

   A File Download dialog box is displayed where you can select to open the file, save the file, or cancel the download. The filename is the package name with a ZIP extension, which is also shown in the File Name field in the Package section.

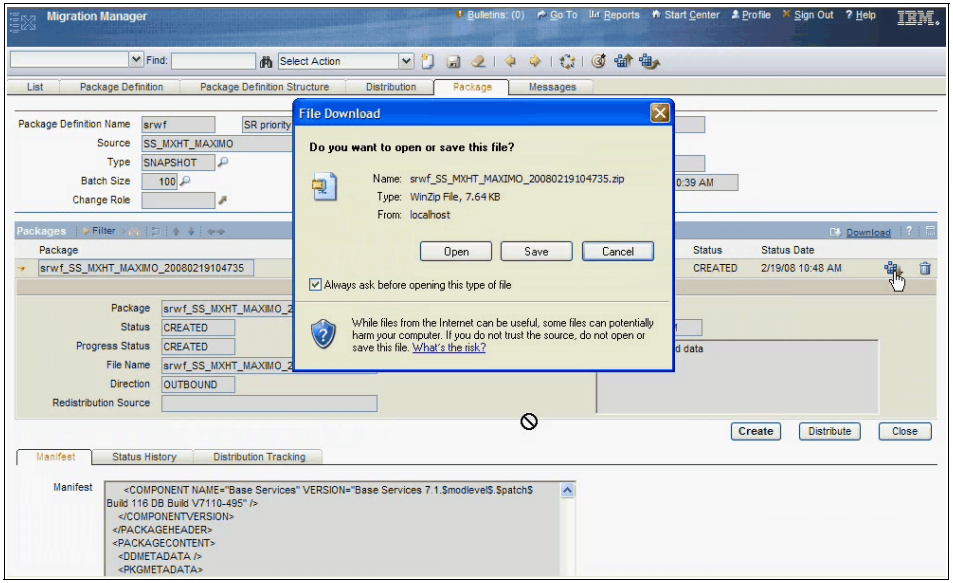


Figure 4-49 Package file download

5. Save the file on a shared file server, as shown in Figure 4-50.

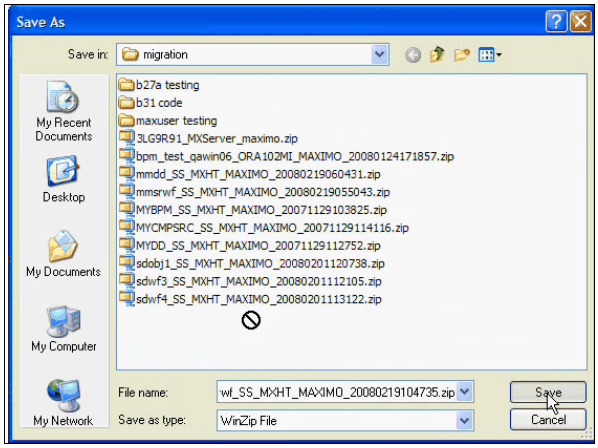


Figure 4-50 Package file download location

6. Once the file download is complete, click the **Close** button to continue.

   The Messages tab of the Migration Manager application displays informational or error messages (or both) for each of the packages created, as you can see in Figure 4-51 on page 197.

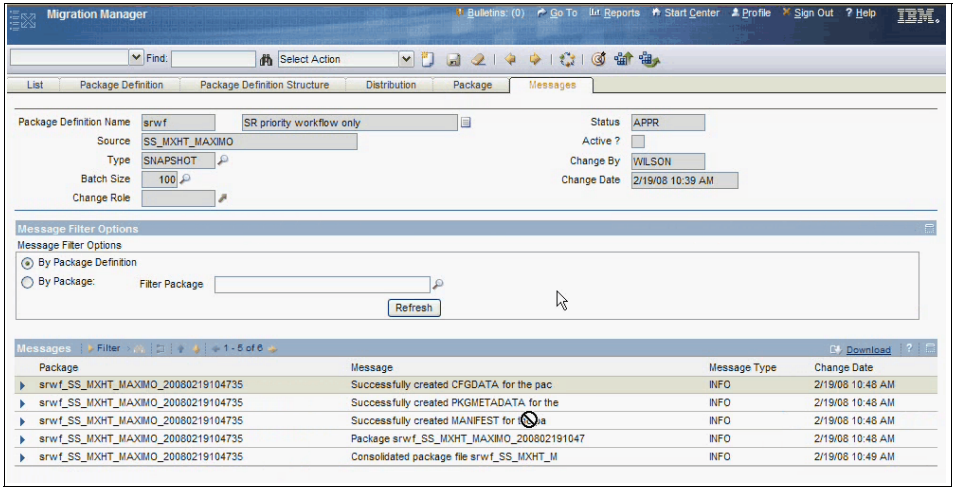


Figure 4-51 Package messages

If you experience any problems during package creation or package distribution, consult the window shown in Figure 4-51, which displays the location where you can start troubleshooting. Each message provides information about a specific step in the process for each package, including a time stamp for the event.

4.5.5 Package deployment

In this section, we describe the process of deploying the package. Complete the following steps to do so:

1. Go to your target Tivoli Service Request Manager system and log on. From the GoTo menu, select **System Configuration** → **Migration** → **Migration Manager**.
2. Click the **Upload Package** button, as shown in Figure 4-52.

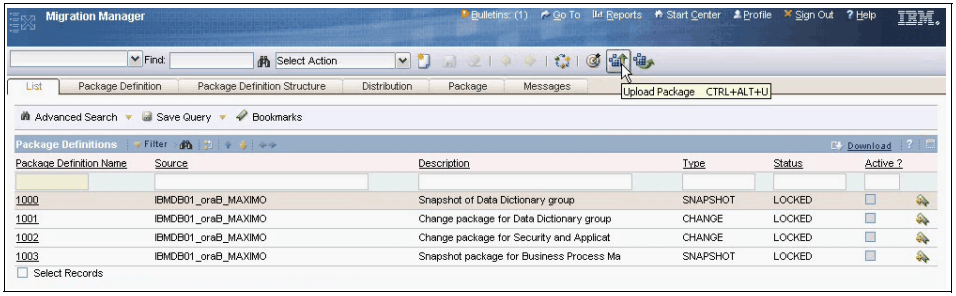


Figure 4-52 Upload package

3. In the dialog box that is displayed, select the file to upload from the location used to download the package, as shown in Figure 4-53.

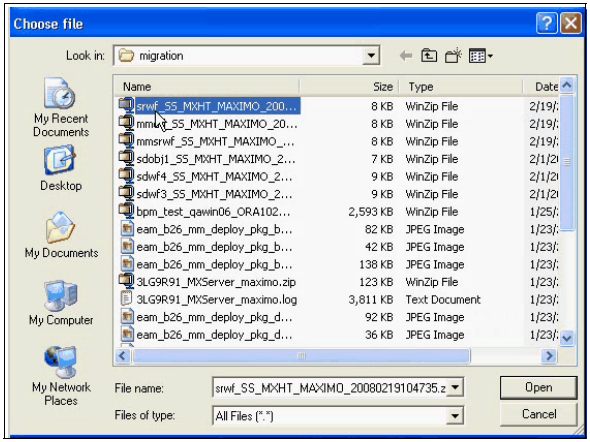


Figure 4-53 Select file to upload

4. Select the file srwf_SS_MXHT_MAXIMO_20080219104735.zip and click the **Open** button on the dialog box to start the import. You see a message (the red notification on the menu bar in Figure 4-54) `Package file srwf_SS_MXHT_MAXIMO_20080219104735.zip has been successfully uploaded`.

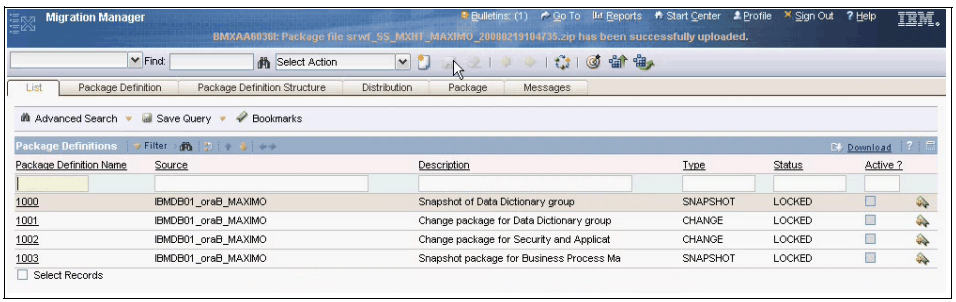


Figure 4-54 Package upload successful

At this point the package you distributed has been stored in the staging table of the target environment. You still need to deploy the package to complete the migration and be able to use the workflow.

5. Click the **Deploy Package** icon, as shown in Figure 4-55.

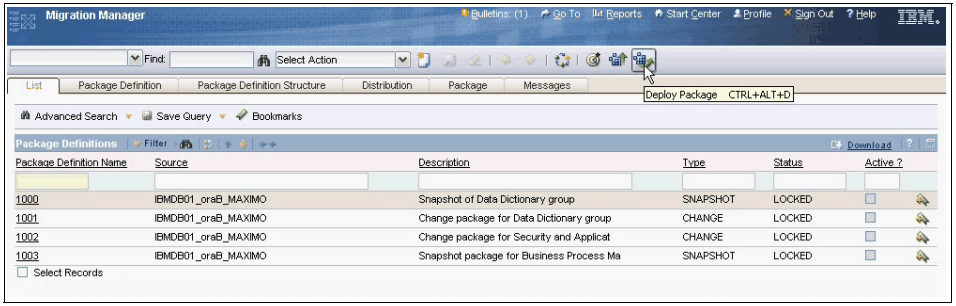


Figure 4-55 Deploy package

The Deploy Package dialog box is displayed (see Figure 4-56). This dialog box lists all the packages available for deployment. You can select the package, which in this example is srwf_SS_MXHT_MAXIMO_20080219104735.

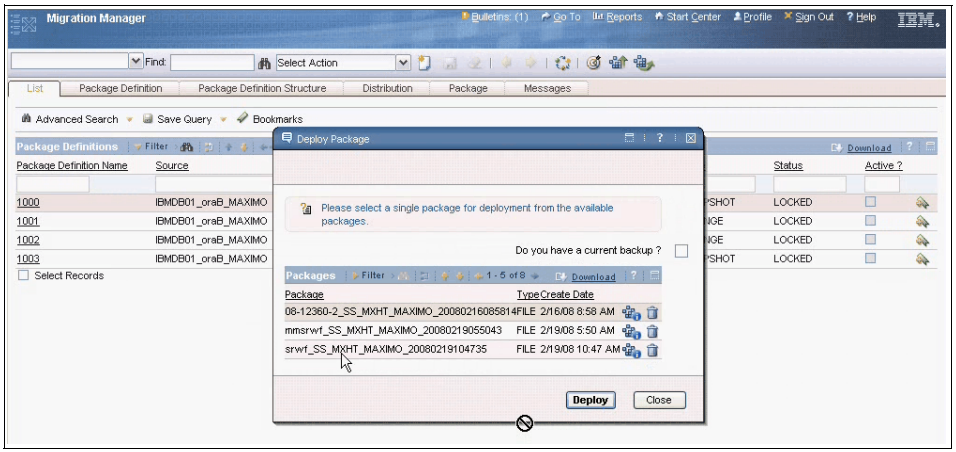


Figure 4-56 Select package to deploy

6. To view general information about the package prior to deployment, you can click the **Package Information** icon, as shown in Figure 4-57 on page 200.

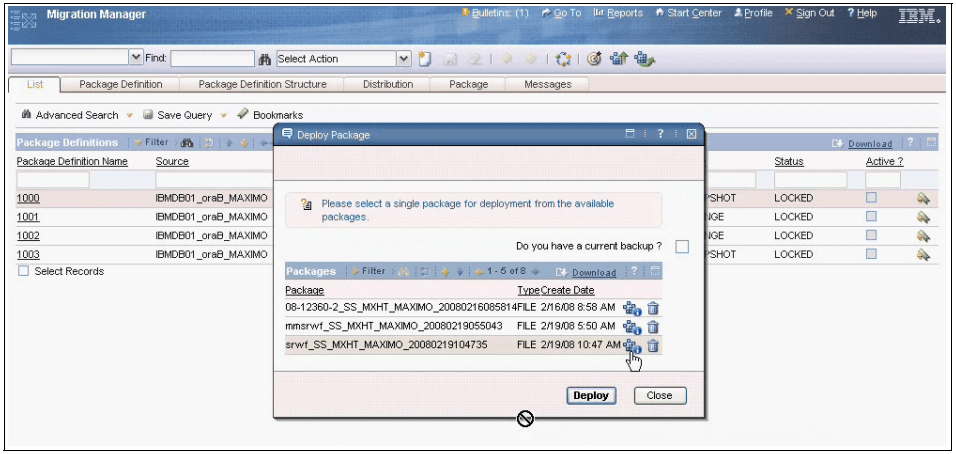


Figure 4-57 View selected package manifest

Clicking the Package Information icon accesses the package manifest, providing information about the content and source environment (see Figure 4-58).

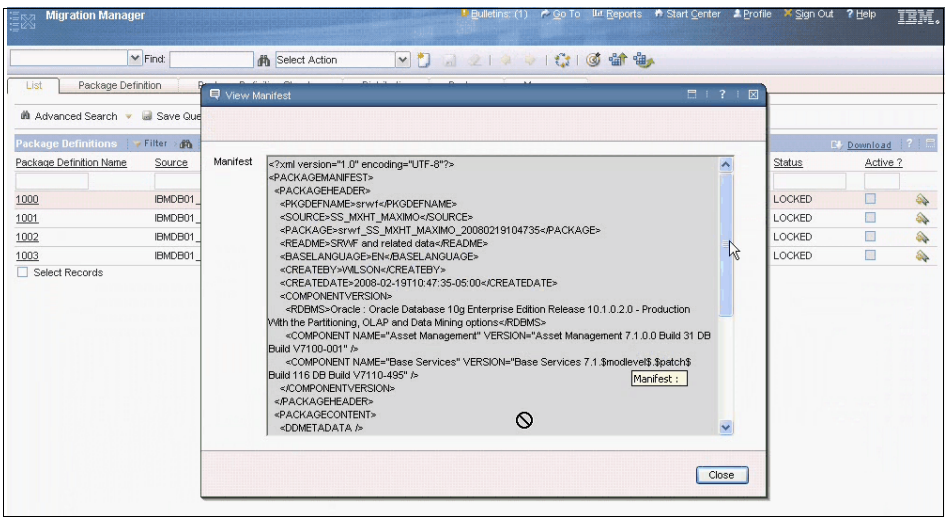


Figure 4-58 Package manifest

7. Click the **Close** button on the View Manifest dialog box to continue.

   For safety and regulation compliancy, a check box is provided in the Deploy Package dialog box, prompting you to verify and register whether you have made a recent backup (see Figure 4-59 on page 201). It is very important to have a recent (and possibly validated) backup of the entire environment. At

the least, a backup of all database content is required, but in case you also deploy compiled sources, a file backup of the target application server is also necessary. We do not expect the package deployment to fail, but in case problems occur, you have a valid backup of the target application to restore, and you can continue working on the target system. The answer to the question you provide in the check box in the Deploy Package dialog box (in Figure 4-59) is stored in the database once deployment is started.

8. Click the **Deploy** button to start package deployment (see Figure 4-59).

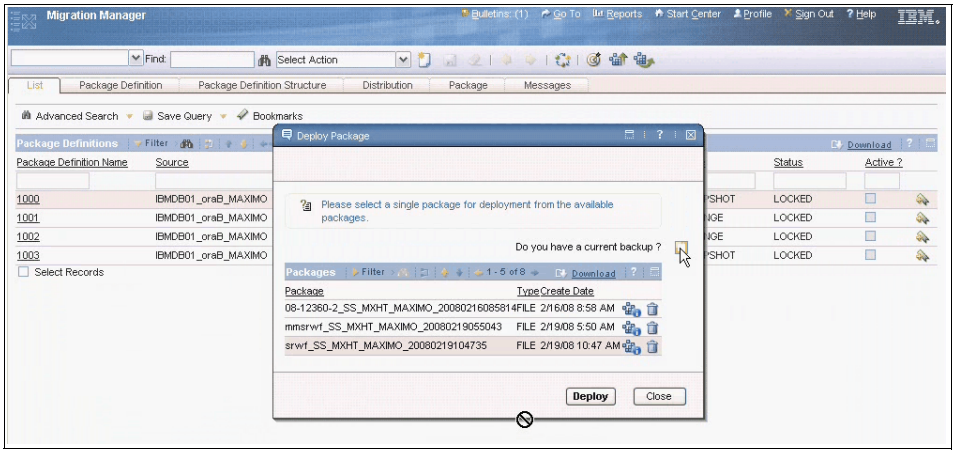


Figure 4-59 Predeployment backup

A Electronic Signature Authorization dialog box (see Figure 4-60) is displayed, prompting you for the specified user's password to continue.

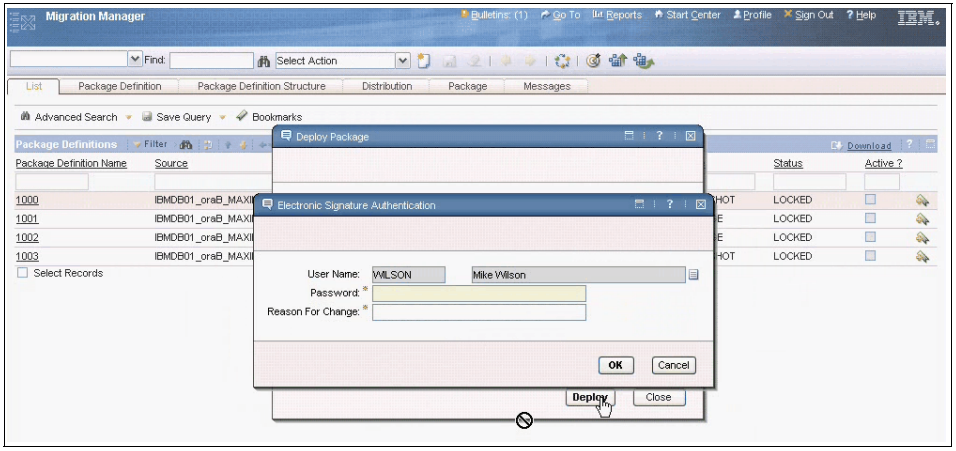


Figure 4-60 Package deployment authentication

9. Click the **OK** button to continue. The authentication is stored in the database.
10. The next dialog box is displayed, showing package deployment progress. If deployment is successful, the result is displayed as shown in Figure 4-61.

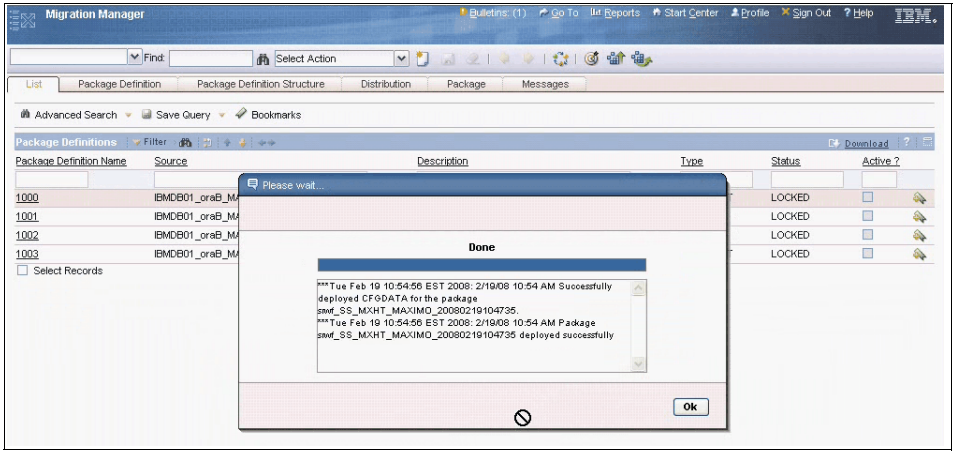


Figure 4-61 Package deployment successful

11. Click the **OK** button to continue.

12. On the Package tab of the Migration Manager application, you can view the status of the deployed package. The Packages section displays the package and status DEPLOYED (see Figure 4-62). When you click the arrow to the left of the package name, more details are provided. You can view the Direction field, which shows INBOUND because the package was uploaded and deployed in this environment.

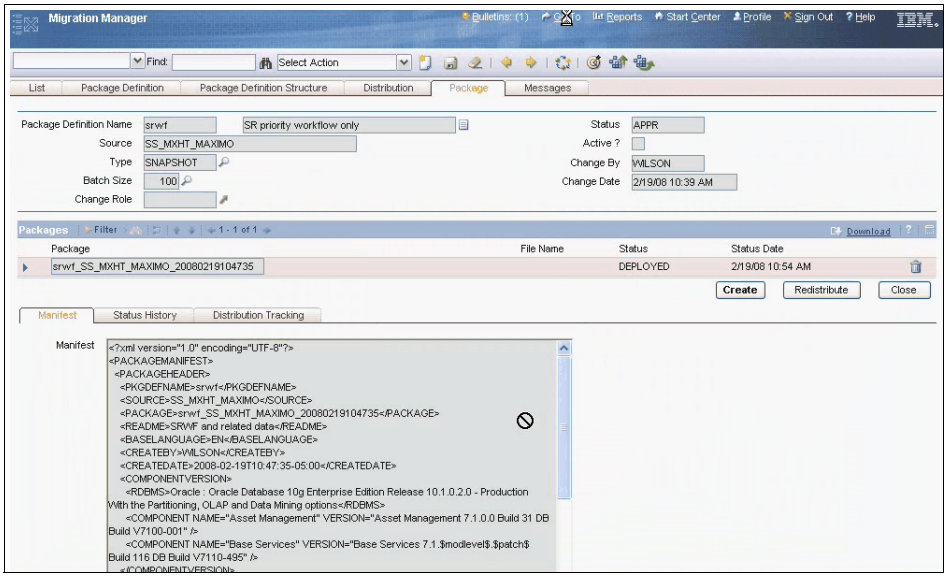


Figure 4-62 Package deployment status

13. You can now validate that the workflow and related objects were migrated successfully by validating the workflow. From the GoTo menu, select **System Configuration → Platform Configuration → Workflow Designer**, as shown in Figure 4-63.

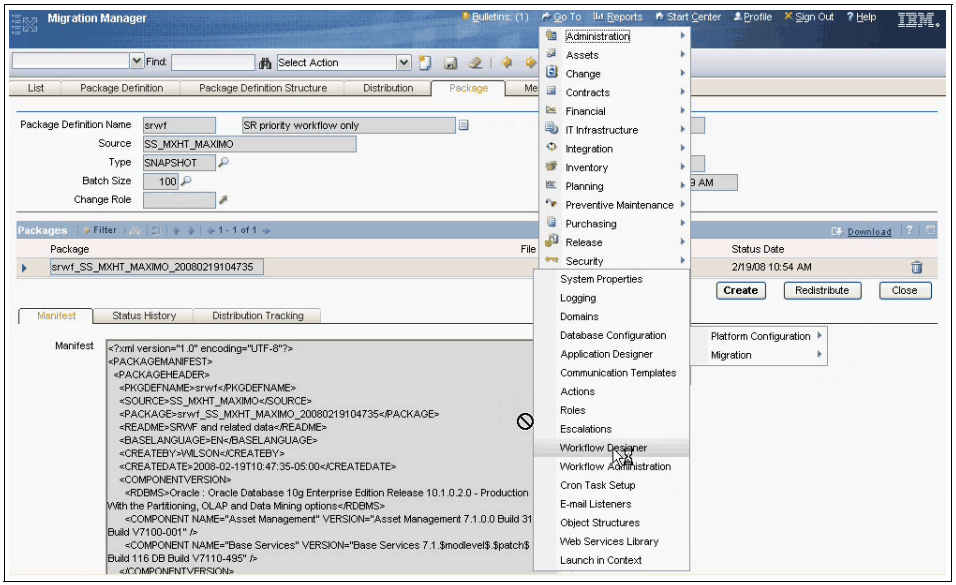


Figure 4-63 Workflow Designer

14. On the List tab, you search for and select the MMSR workflow.

15. From the Select Action menu, choose **Validate Process**. If the validation returns successful (see the red notification on the menu bar in Figure 4-64), the MMSR workflow and all related objects you selected (roles, communication template, and action) have been migrated successfully.

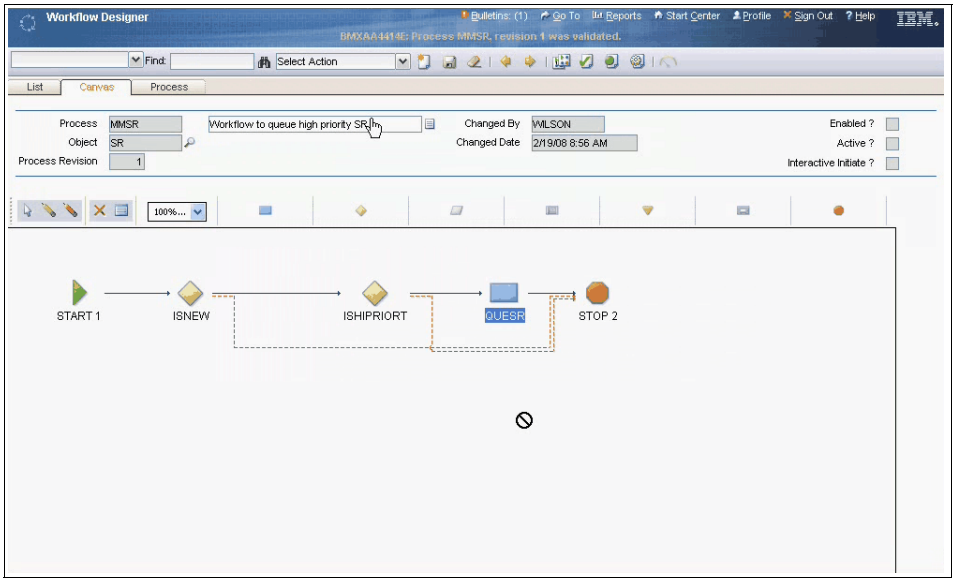


Figure 4-64 Object validation

You have successfully migrated configuration data from a source system to a target system, using a safe, automated, traceable, and reusable mechanism.

Related publications

The publications listed in this section are considered particularly suitable for a more detailed discussion of the topics covered in this book.

IBM Redbooks

For information about ordering these publications, see “How to get Redbooks” on page 208. Note that some of the documents referenced here may be available in softcopy only.

- *IBM Tivoli CCMDB Implementation Recommendations*, SG24-7567
- *Deployment Guide Series: IBM Tivoli CCMDB Overview and Deployment Planning*, SG24-7565
- *Implementing IBM Tivoli Service Request Manager V7.1 Service Desk*, SG24-7579

Other publications

This publication is also relevant as a further information source:

Service Strategy, by Majid Iqbal, Michael Nieves, London, Crown Publishing, 2007, ISBN 9780113310456.

Online resources

The Tivoli Service Request Manager 7.1 documentation Web site is also a further information source:

http://publib.boulder.ibm.com/infocenter/tivihelp/v10r1/index.jsp?topic=/com.ibm.srm.doc_7.1/srm_welcome.htm

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Implementing IBM Tivoli Service Request Manager V7.1 Service Catalog

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Experiment with Service Catalog scenarios

Learn how to define new services

IBM Tivoli Service Request Manager Version 7.1 provides a unified and integrated approach to dealing with all aspects of service requests. This approach enables a “one-touch” IT service experience, backed by an optimized delivery and support process. Tivoli Service Request Manager is a powerful solution that closely aligns IT operations and business operations, improving IT service support and delivery performance.

This IBM Redbooks publication provides information that can be used by clients, partners. and IBM field personnel who want to implement ITIL based Service Catalog processes in an enterprise environment. This book is a reference for IT specialists who implement IBM Tivoli Service Request Manager Service Catalog processes in client environments.

This book is divided into two parts: Part 1, “Concepts and components” provides an overview of the IBM Tivoli Service Request Manager Service Catalog functions and components as well as some of the standards that drive Service Catalog development. Part 2, “Getting started” describes the use of the product to enable readers to create a demonstration or proof-of-concept environment around core product functions.

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