



Tibco Fulfillment Orchestration Suite R

TM Forum Framework 17.0 Certification

Business Process Framework (eTOM) Release 17.0

Self-Assessment Process Mapping Report

Level 2 Processes in Scope – Resource Domain

1.5.6 - Resource Provisioning

Version 1.0

January 3rd, 2018

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Guidelines

- For each Level 2 process in scope a Mapping Document should be created.
- In each Level 2 based document, the mapping team should provide mappings for each of the underlying Level 4 processes belonging to the Level 3 processes within the Level 2s in scope.
- If there are no Level 4 processes defined for a Level 3 process in scope for the assessment, the member should provide the mapping support against the Brief & Extended descriptions of the Level 3 process.
- Note that the descriptions should be the descriptions of the underlying Level 4 processes and specifically the description in the “Mandatory” field of the process.
- If the Level 4 process does not have a completed “Mandatory” field, then the “Extended Description” should be used. If there is no “Extended Description” available (sometimes this can happen), then the mappings should be provided against the “Brief Description”.
- This template provides the structure for the Self-Assessment Mapping Document taking into account the use of Level 4 processes to demonstrate mapping support and also Level 3 processes for the situations where a Level 3 process does not or cannot decompose further to a Level 4 process with Business Process Framework 17.0

1.5.6 Resource Provisioning

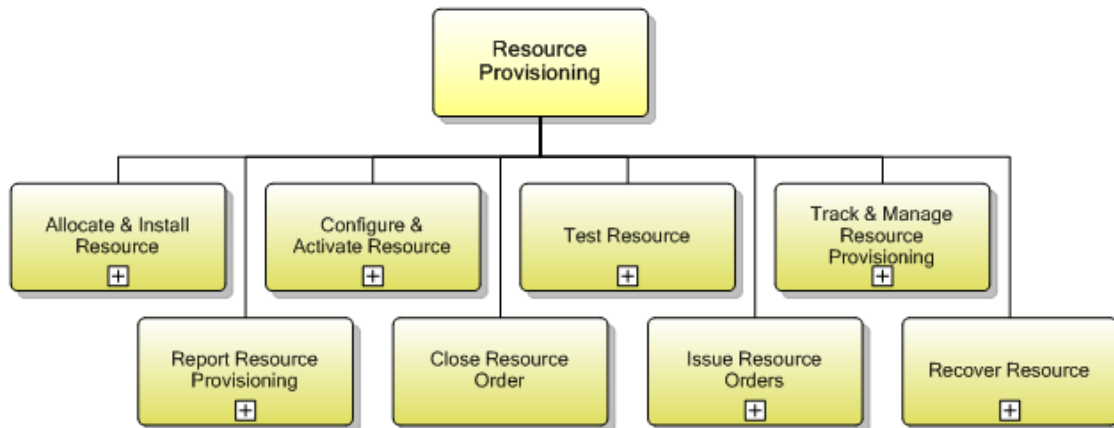


Figure 1 1.5.6 Resource Provisioning decomposition

Process Identifier: 1.5.6

Brief Description

Allocation, installation, configuration, activation and testing of specific resources to meet the service requirements, or in response to requests from other processes to alleviate specific resource capacity shortfalls, availability concerns or failure conditions.

Extended Description

Resource Provisioning processes encompass allocation, installation, configuration, activation and testing of specific resources to meet the service requirements, or in response to requests from other processes to alleviate specific resource capacity shortfalls, availability concerns or failure conditions.

Responsibilities of the Resource Provisioning processes include, but are not limited to:

- Verifying whether appropriate specific resources are available as part of pre-order feasibility checks;
- Allocating the appropriate specific resources to support service orders or requests from other processes;
- Reserving specific resources (if required by the business rules) for a given period of time until the service order is confirmed;
- Possibly initiating delivery of specific resources to the central office, to site or to the customer premise;
- Installation and commissioning of specific resources after delivery;
- Configuring and activating physical and/or logical specific resources, as appropriate;
- Testing the specific resources to ensure the resource is working correctly;
- Recovery of resources;

- Updating of the Resource Inventory Database to reflect that the specific resource has been allocated to specific services, modified or recovered;
- Assigning and tracking resource provisioning activities;
- Managing resource provisioning jeopardy conditions
- Reporting progress on resource orders to other processes.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

1.5.6.1 Allocate & Install Resource

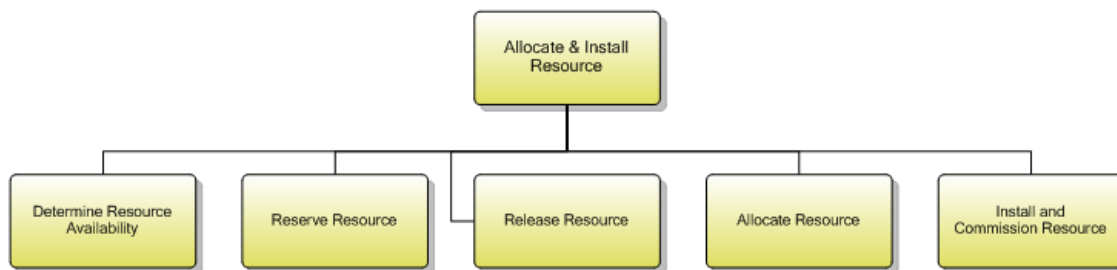


Figure 2 1.5.6.1 Allocate & Install Resource decomposition

Process Identifier: 1.5.6.1

Brief Description

Allocate specific resources required to support a specific service

Extended Description

The objective of the Allocate & Install Resource processes is to allocate specific resources required to support a specific service.

These activities include but are not limited to:

- Investigating the ability to be able to satisfy specific service orders as a part of a feasibility check;
- Reserving or allocating specific resources in response to issued resource orders;
- Confirming availability of, or initiating an order for, equipment or software with a related party
- Installing and commissioning specific resources following delivery.

Where the Allocate & Install Resource processes are requested by a resource order issued as part of a pre-order feasibility check, these processes determine whether there are adequate specific resources available to fulfill the request. Where there are not sufficient specific resources available, these processes may initiate enquiries using the relevant party management and/or Resource Support & Readiness processes to determine lead times for specific resource availability. Depending on business rules, and on any specific levels of commitment contained in the initiating service order, these processes may reserve specific resources linked to the initiating service order for a period of time, and releasing them when the time period has expired. These processes are responsible for creating a response to the initiating processes with respect to the feasibility assessment.

Where the Allocate & Install Resource processes are requested by a resource order issued in response to a confirmed service order, these processes are responsible for allocating the specific resources required to satisfy the initiating service order. Any previously reserved specific resources are marked as allocated.

These process are responsible for initiating, using the party management processes,

resource requisition orders for any specific resources in shortfall. Sufficient information is supplied with the resource requisition orders to ensure that the appropriate specific resources are delivered to the appropriate location for installation and configuration. This may include, for example, a central office, a transmission room, or the customer premise.

Following delivery, these processes are responsible for installing and commissioning specific resources, and updating the resource inventory as part of these processes. Where installation of the specific resources requires an upfront major resource infrastructure, the installation of both the resource infrastructure and specific resources may be undertaken under the control of the Support Resource Provisioning processes. The Allocate & Install Resource processes will closely interact with the Manage Resource Inventory processes to determine availability of physical and logical specific resources to select from, thereby applying specific selection criteria.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

Determine Resource Availability

Process Identifier: 1.5.6.1.1

Brief Description

This process investigates the ability to be able to satisfy specific service orders as a part of a feasibility check. Where the Allocate & Install Resource processes are requested by a pre-feasibility resource order, or by the Design Resources processes, these processes determine whether the requested resources are available. **AM**

TIBCO Fulfillment Subscriber Inventory stores product, service, or other tangible or intangible entities that have been ordered by a party, and are present as components of that party's image to determine what is available. Although FSI, does not implement the complete behavior, TIBCO Fulfillment Orchestration Suite permits to implement the process and interaction(s) with an external resource inventory.

This process can be modeled, in Fulfillment Provisioning, as a separate action for RFS specifications or RFS order specification (called Technical Product Order in FP) which can be instantiated and invoked through service orders by north bound systems including

Fulfillment Order Management. The process will implement the steps required to determine the resource availability.

This RFS order specification can be associated to a dedicated CFS order specification and possibly to other CFS order specifications so that it can be instantiated and executed at the beginning of the resource implementation or activation processes as a pre-requisite which will make the service order fail in case of unavailability.

FSI User's Guide: "Data Managed by Inventory"

FP Dev Guide: "TIBCO Fulfillment Provisioning Catalog Details - Object Model and Processing" / "TIBCO Fulfillment Provisioning Catalog Details - Defining Verbs" / "Product Order Flows"

Extended Description

Not used for this process element

Explanatory

This process investigates the ability to be able to satisfy specific service orders as a part of a feasibility check.

Mandatory

Where the Allocate & Install Resource processes are requested by a pre-feasibility resource order, or by the Design Resources processes, these processes determine whether the requested resources are available. **AM**

See Brief Description

Optional

Not used for this process element

Interactions

Not used for this process element

Reserve Resource

Process Identifier: 1.5.6.1.2

Brief Description

This process reserves specific resources in response to issued resource orders. Depending on business rules, and on any specific levels of commitment contained in the initiating resource order or resource design request, these processes may reserve specific resources linked to the initiating resource order or resource design request for a period of time. **AM**

Fulfillment Orchestration Suite does not implement the complete behavior but permits to implement the process and interaction(s) with external resource inventory.

This process can be modeled, in Fulfillment Provisioning, as a separate action for RFS specifications or RFS order specification (called Technical Product Order in FP) which can be invoked through service orders by north bound systems including Fulfillment Order Management. The process will implement the actions required to reserve specific resources for a RFS order.

Designers model graphically processes in Fulfillment Studio as a workflow of actions on resource type (called Work Order in FP) per RFS order specification. A type of resource can be anything ranging for resource inventory to access network elements or service platforms. The instance of the resource type such as a specific HLR from a specific vendor is resolved during routing. The transitions between actions on resource types can be conditional and permit to execute certain branches based on order input data or previously executed step.

Moreover, a RFS order specification can be linked to other RFS order specifications through rules in Fulfillment provisioning catalog. Rules (such as Append and Prepend) can permit to add pre-requisite RFS orders that satisfies conditions. These conditions are based on order input data.

This RFS order specification can be associated to a dedicated CFS order specification and possibly to other CFS order specifications so that it can be instantiated and executed at the beginning of the resource implementation or activation processes as a pre-requisite which will make the service order fail in case of unavailability.

FP Dev Guide: “TIBCO Fulfillment Provisioning Catalog Details - Object Model and Processing” / “TIBCO Fulfillment Provisioning Catalog Details - Defining Verbs” / “Product Order Flows” / “Fulfillment Provisioning Flow Overview”

Extended Description

Not used for this process element

Explanatory

Not used for this process element

Mandatory

This process reserves specific resources in response to issued resource orders. AM

Optional

Depending on business rules, and on any specific levels of commitment contained in the initiating resource order or resource design request, these processes may reserve specific resources linked to the initiating resource order or resource design request for a period of time

Interactions

Not used for this process element

Release Resource

Process Identifier: 1.5.6.1.3

Brief Description

Release the reservation when the time period has expired. **AM**

TIBCO Fulfillment Orchestration Suite does not implement the complete behavior but permits to implement the process and interaction(s) with external resource inventory.

TIBCO Fulfillment Provisioning does not manage the reservation through a time period but through a reserve, commit or abort approach. The reservation of resource is defined by a RFS order specification and implemented by its attached process. It can be released by the rollback process which will be called during RFS order recovery.

FP Dev Guide: “TIBCO Fulfillment Provisioning Catalog Details - Object Model and Processing” / “Product Order Flows”

FP User’s Guide: “Fulfillment Provisioning Modules - Service-order level rollback”

Extended Description

Not used for this process element

Explanatory

Not used for this process element

Mandatory

Release the reservation when the time period has expired. **AM**

Optional

Not used for this process element

Interactions

Not used for this process element

Allocate Resource

Process Identifier: 1.5.6.1.4

Brief Description

This process allocates specific resources in response to issued resource orders. Where the Allocate & Install Resource processes are requested by a resource order issued in response to a confirmed customer order, this process is responsible for allocating the specific resources required to satisfy the initiating resource order. Any previously reserved specific resources are marked as allocated. **AM**

TIBCO Fulfillment Orchestration Suite does not implement the complete behavior but permits to implement the process and interaction(s) with an external resource inventory.

This process can be modeled, in Fulfillment Provisioning, as a separate action for RFS specifications or RFS order specification (called Technical Product Order in FP) which can be instantiated and invoked through service orders by north bound systems including Fulfillment Order Management. The process will implement the steps required to allocate specific resources.

This RFS order specification can be associated to a dedicated CFS order specification and possibly to other CFS order specifications so that it can be instantiated and executed at the beginning of the resource implementation or activation processes as a pre-requisite which will make the service order fail in case of unavailability.

FP Dev Guide: “TIBCO Fulfillment Provisioning Catalog Details - Object Model and Processing” / “TIBCO Fulfillment Provisioning Catalog Details - Defining Verbs” / “Product Order Flows”

Extended Description

Not used for this process element

Explanatory

This process allocates specific resources in response to issued resource orders.

Mandatory

Where the Allocate & Install Resource processes are requested by a resource order issued in response to a confirmed customer order, this process is responsible for allocating the specific resources required to satisfy the initiating resource order. Any previously reserved specific resources are marked as allocated. **AM**

Optional

Not used for this process element

Interactions

Not used for this process element

Install and Commission Resource

Process Identifier: 1.5.6.1.5

Brief Description

This process is responsible for installing and commissioning specific resources, and updating the resource inventory as part of these processes. **AM**

TIBCO Fulfillment Orchestration Suite does not implement the complete behavior but permits to implement the process and interaction(s) with external resource inventory.

This process can be modeled, in Fulfillment Provisioning, as a separate action for RFS specifications or RFS order specification (called Technical Product Order in FP) which can be instantiated and invoked through service orders by north bound systems including

Fulfillment Order Management. The process will implement the steps required to install and commission specific resources and update the resource inventory.

This RFS order specification can be associated to a dedicated CFS order specification and possibly to other CFS order specifications so that it can be instantiated and executed at the beginning of the resource implementation or activation processes as a pre-requisite which will make the service order fail in case of unavailability.

FP Dev Guide: “TIBCO Fulfillment Provisioning Catalog Details - Object Model and Processing” / “TIBCO Fulfillment Provisioning Catalog Details - Defining Verbs” / “Product Order Flows”

Extended Description

Not used for this process element

Explanatory

Not used for this process element

Mandatory

responsible for installing and commissioning specific resources, and updating the resource inventory as part of these processes. **AM**

Optional

Not used for this process element

Interactions

Not used for this process element

1.5.6.2 Configure & Activate Resource

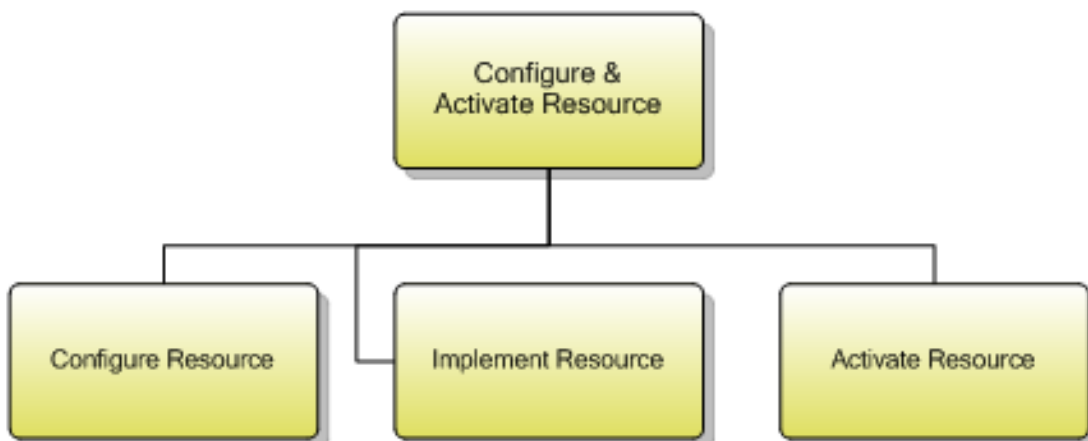


Figure 3 1.5.6.2 Configure & Activate Resource decomposition

Process Identifier: 1.5.6.2

Brief Description

Configure and activate the specific resources allocated against an issued resource order

Extended Description

The objective of the Configure & Activate Resource Processes is to configure and activate the specific resources allocated against an issued resource order. These processes are responsible for, but not limited to:

- Assessing and planning the approach to be undertaken for configuration and activation;
- Re-use standard configuration and activation processes applicable to specific resources;
- Providing notifications as required if the activation activity requires a planned outage or is likely to initiate false specific resource alarm event notifications
- Updating the information contained in the resource inventory as to the configuration of specific resources and their status.

At the successful conclusion of these activities, the status of the specific resources will be changed from allocated to activated, which means they are in use.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

Configure Resource

Process Identifier: 1.5.6.2.1

Brief Description

This process assesses and plans the approach to be undertaken for configuration. A

Fulfillment Provisioning retrieves the process model attached to the RFS Order specification dedicated for configuration using the catalog, instantiates it and executes it. The Fulfillment provisioning executes each action on resource defined in the process model following the workflow.

FP User's Guide: "Fulfillment Provisioning Flow Overview"

Dev Guide: "Product Order Flows"

It re-uses standard configuration and processes applicable to specific resources. A

Designers model graphically processes in Fulfillment Studio as a workflow of actions on resource type (called Work Order in FP) per RFS order specification. A type of resource can be anything ranging for resource inventory to access network elements or service platforms. The instance of the resource type such as a specific HLR from a specific vendor is resolved during routing and is implemented by cartridge. A Fulfillment Provisioning cartridge provides implementation of all the actions on a specific resource which is re-usable in many RFS order specification processes. Each action on a resource can be modeled as a workflow (called Work Order Flow in FP).

FP Dev Guide: "Product Order Flows" / "Cartridge Network Element Configuration"

FP User's Guide: "Product Order Flow"

It configures and reconfigures specific resources, including customer premises equipment if part of the resource provider offering. A

A RFS order specification process can configure and reconfigure many resources of any kind including customer premises at different steps in the workflow. Additionally, a RFS order specification can also require through rules (defined as part of the resource provider offering in the catalog) the addition of pre-requisite RFS order specification which could configure associated resources such as customer premises equipment.

It provides notifications as required if the configuration activity requires a planned outage or is likely to initiate false specific resource alarm event notifications. AM

A step can be added in the RFS order specification process workflow to notify an external system that a planned outage is required or the generation of false alarm may be produced. This step can be re-used in other RFS order specification.

It updates the information contained in the resource inventory as to the configuration of specific resources and their status. AM

The TIBCO Fulfillment Subscriber Inventory can implement CRUD operations for data management for both parties and items or Fulfillment.

TIBCO Fulfillment Provisioning permits to model in the RFS order specification process activating the resource as a separate step the interaction(s) with external resource inventory to reflect the result of the resource activation. The update of the resource inventory can also be modeled in a separate RFS order specification which can be sequenced to be executed after the execution using catalog rules.

FSI User's Guide: "Uses of Fulfillment Subscriber Inventory"

FP Dev Guide: "Product Order Flows" / "Object Model and Processing"

Extended Description

Not used for this process element

Explanatory

This process re-uses standard implementation processes applicable to specific resources.

Mandatory

This process assesses and plans the approach to be undertaken for configuration. It configures and reconfigures specific resources, including customer premises equipment if part of the resource provider offering. **A**

It provides notifications as required if the configuration activity requires a planned outage or is likely to initiate false specific resource alarm event notifications. **AM**

It updates the information contained in the resource inventory as to the configuration of specific resources and their status. **AM**

See Brief Description

Optional

Not used for this process element

Interactions

It provides notifications as required

Implement Resource

Process Identifier: 1.5.6.2.2

Brief Description

This process re-uses standard implementation processes applicable to specific resources. **A**

Designers model graphically processes in Fulfillment Studio as a workflow of actions on resource type (called Work Order in FP) per RFS order specification. A type of resource can be anything ranging for resource inventory to access network elements or service platforms. The instance of the resource type such as a specific HLR from a specific vendor is resolved during routing and is implemented by cartridge. A Fulfillment Provisioning cartridge provides implementation of all the actions on a specific resource which is re-usable in many RFS order specification processes. Each action on a resource can be modeled as a workflow (called Work Order Flow in FP).

FP Dev Guide: “Product Order Flows” / “Cartridge Network Element Configuration”

FP User’s Guide: “Overview - Architectural Components – Cartridges”

It implements specific resources, including customer premises equipment if part of the resource provider offering. A

A RFS order specification process can implement many resources of any kind including customer premises at different steps in the workflow. Additionally, a RFS order specification can also require through rules (defined as part of the resource provider offering in the catalog) the addition of pre-requisite RFS order specification which could implement associated resources such as customer premises equipment.

FP Dev Guide: “Product Order Flows” / “TIBCO Fulfillment Provisioning Catalog Details - Object Model and Processing”

It provides notifications as required if the implementation activity requires a planned outage or is likely to initiate false specific resource alarm event notifications. AM

The Fulfillment Provisioning retrieves the process model attached to the RFS Order specification using the catalog, instantiates it and executes it. The Fulfillment provisioning executes each action on resource defined in the process model following the workflow.

FP Dev Guide: “Product Order Flows”

FP User’s Guide: “Overview - Architectural Components – Cartridges”

Extended Description

Not used for this process element

Explanatory

This process re-uses standard implementation processes applicable to specific resources.

Mandatory

It implements specific resources, including customer premises equipment if part of the resource provider offering. A

It provides notifications as required if the implementation activity requires a planned outage or is likely to initiate false specific resource alarm event notifications. AM

See Brief Description

Optional

Not used for this process element

Interactions

It provides notifications as required

Activate Resource

Process Identifier: 1.5.6.2.3

Brief Description

This process assesses and plans the approach to be undertaken for activation. A

TIBCO Fulfillment Provisioning retrieves the process model attached to the RFS Order specification using the catalog, instantiates it and executes it. Fulfillment Provisioning executes each action on resource defined in the process model following the workflow.

FP User's Guide: "Fulfillment Provisioning Flow Overview"

FP Dev Guide: "Product Order Flows"

It re-uses standard activation processes applicable to specific resources. A

Designers model graphically processes in Fulfillment Studio as a workflow of actions on resource type (called Work Order in FP) per RFS order specification. A type of resource can be anything ranging for resource inventory to access network elements or service platforms. The instance of the resource type such as a specific HLR from a specific vendor is resolved during routing and is implemented by cartridge. A Fulfillment Provisioning cartridge provides implementation of all the actions on a specific resource which is re-usable in many RFS order specification processes. Each action on a resource can be modeled as a workflow (called Work Order Flow in FP).

FP Dev Guide: "Product Order Flows" / "Cartridge Network Element Configuration"

FP User's Guide: "Overview - Architectural Components – Cartridges"

It provides notifications as required if the activation activity requires a planned outage or is likely to initiate false specific resource alarm event notifications. AM

A step can be added in the RFS order specification process workflow to notify an external system that a planned outage is required or the generation of false alarm may be produced. This step can be re-used in other RFS order specification.

FP Dev Guide: "Product Order Flows"

FP User's Guide: "Overview - Architectural Components – Cartridges"

At the successful conclusion of this activity, the status of the specific resources will be changed from allocated to activated, which means they are in-use. AM

TIBCO Fulfillment Orchestration Suite does not implement the complete behavior but permits to model in the RFS order specification process activating the resource as a separate step the interaction(s) with external resource inventory to reflect the result of the resource activation. The update of the resource inventory can also be modeled in a

separate RFS order specification which can be sequenced to be executed after the execution using catalog rules.

FP Dev Guide: “Product Order Flows” / “TIBCO Fulfillment Provisioning Catalog Details - Object Model and Processing”

Extended Description

Not used for this process element

Explanatory

This process re-uses standard implementation processes applicable to specific resources.

Mandatory

This process assesses and plans the approach to be undertaken for activation. A

It provides notifications as required if the activation activity requires a planned outage or is likely to initiate false specific resource alarm event notifications. AM

At the successful conclusion of this activity, the status of the specific resources will be changed from allocated to activated, which means they are in-use. AM

Optional

Not used for this process element

Interactions

It provides notifications as required

1.5.6.4 Track & Manage Resource Provisioning

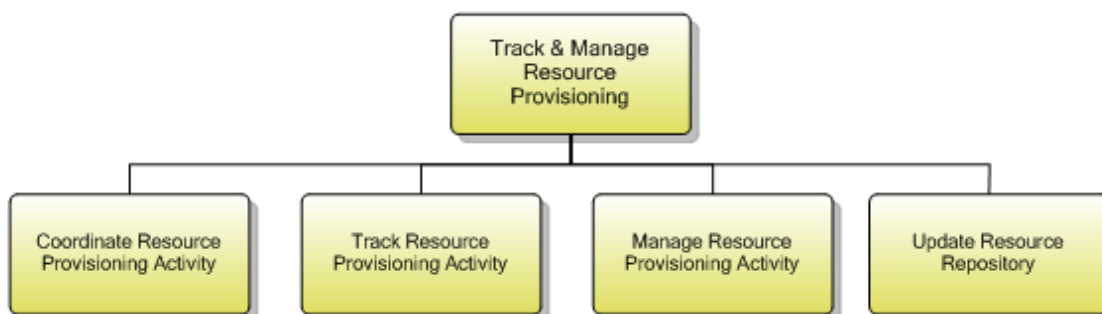


Figure 4 1.5.6.4 Track & Manage Resource Provisioning decomposition

Process Identifier: 1.5.6.4

Brief Description

Ensure resource provisioning activities are assigned, managed and tracked efficiently

Extended Description

The objective of the Track & Manage Resource Provisioning process is to ensure resource provisioning activities are assigned, managed and tracked efficiently.

Responsibilities of these processes include, but are not limited to:

- Scheduling, assigning and coordinating resource provisioning related activities;
- Escalating status of resource orders in accordance with local policy;
- Undertaking necessary tracking of the execution process;
- Adding additional information to an existing resource order;
- Modifying information in an existing resource order;
- Modifying the resource order status;
- Canceling a resource order when the initiating service order is cancelled;
- Monitoring the jeopardy status of resource orders, and escalating resource orders as necessary
- Indicating completion of a resource order by modifying the resource order status.

These processes will co-ordinate all the actions necessary in order to guarantee that all tasks are finished at the appropriate time and in the appropriate sequence.

The Track & Manage Resource Provisioning processes are responsible for engaging external suppliers in provisioning activities when these have been outsourced or contracted to external parties.

The Track & Manage Resource Provisioning processes will also inform the Close Resource Order processes by modifying the resource order status to complete when the resource order has been fulfilled.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

Coordinate Resource Provisioning Activity

Process Identifier: 1.5.6.4.1

Brief Description

This process schedules, assigns and coordinates resource provisioning related activities.

A

TIBCO Fulfillment Provisioning defines resource provisioning activities in catalog component as RFS specifications and supported actions which are implemented by modeled processes. These RFS specifications are associated to CFS specifications and are instantiated, scheduled, assigned and coordinated as part of the service provisioning process which is defined in “Assign Service Provisioning Activity (1.1.2.2.3.1)”.

FP User’s Guide: “Fulfillment Provisioning Flow Overview”

FP Dev Guide: “Product Order Flows”

Extended Description

Not used for this process element

Explanatory

Not used for this process element

Mandatory

This process schedules, assigns and coordinates resource provisioning related activities.

A

Optional

Not used for this process element

Interactions

Not used for this process element

Track Resource Provisioning Activity

Process Identifier: 1.5.6.4.2

Brief Description

This process tracks the order execution process. A

TIBCO Fulfillment Provisioning executes RFS order by executing its attached process model. A RFS specification process is modeled as a workflow of resource orders (called work orders in FP) that are assembled together through workflow elements (transitions, fork & join and guards). When a resource order is executed, it is first assigned and routed to a cartridge that connects physically to the external resource instance.

A cartridge is specific to a resource and is responsible to establish the communication session with that resource and implement the actions supported for that resource including the coding and submission of action request and reception and decoding of the action response in a session manner.

Upon resource order execution completion, the resource order status is updated and Fulfillment Provisioning continues the execution of the depending resource actions in workflow. The Fulfillment Provisioning can execute resources orders in parallel in a same RFS order specification process if there are not dependent to each of other.

A RFS order completes when the workflow transitions to a final state which gives its status.

FP User's Guide: "Fulfillment Provisioning Flow Overview"

FP Dev Guide: "Product Order Flows"

Extended Description

Not used for this process element

Explanatory

Not used for this process element

Mandatory

This process tracks the order execution process. A

See Brief Description

Optional

Not used for this process element

Interactions

Not used for this process element

Manage Resource Provisioning Activity

Process Identifier: 1.5.6.4.3

Brief Description

This process escalates resource orders in accordance with local policy, M

The following mechanism is not provided with TIBCO Fulfillment Provisioning but can be implemented quite easily through customization. Designers of the system can associate to each resource order modeled in a RFS order specification process an expected duration by setting a user defined parameter (called nvset in FP) indicating its expected duration. A custom component that will have to be written and that will have for responsibility to set a timer for provided expected duration will be called at resource order execution time in forward data mapper. Another customer component that will have the responsibility to remove a timer provided the resource order identifier that initiated the time in the first place will be called at resource order execution completion in backward data mapper. Upon timer expiration, the timer handler could generate an event indicating that the resource order is in jeopardy condition and needs escalation.

FP Dev Guide: "Data Mapping – WorkOrder Data Mapping"

FP Prov Package: "P.FP - prov - SOTimerConfig, SOTimerEventHandler and ServiceOrder.setupTimer"

adds information to an existing resource order, modifies information in an existing resource order. AM

The resource order information is being added or modified at various steps including:

- During catalog enrichment which overwrites field values and/or adds new fields required for proper provisioning for each CFS order and through derivation to associated RFS order and through derivation to each resource order.
- During RFS order execution which allows any resource orders to add or modify any of its fields for the benefits of other resource orders.
- During workorder data mapping before execution of the resource order. This steps permit to adapt business field to more specific resource capabilities which include addition and modification of fields. Similar treatment can be done after execution.
- During work order execution inside the cartridge which implements a workflow of commands to a network element and for which any command can used previous command output parameter.
- By the Fulfillment Provisioning OMS order tracking function that permits to repair a resource order by adding and/or modifying fields.

FP User's Guide: "Overview - Fulfillment Provisioning Catalog" / "Product Order Processing"

FP Dev Guide: "Data Mapping – WorkOrder Data Mapping"/ "TIBCO Fulfillment Provisioning Order Management System"

cancels a resource order when the initiating service order is cancelled. A

The Fulfillment Provisioning provides support for gracefully cancelling a service order and its affiliated CFS orders, RFS orders and resource orders or forcing execution abort. When a service order is cancelled or aborted, all unprocessed CFS order, RFS order and resource orders are set to do not execute. A graceful cancellation will wait for all RFS orders in execution to complete before stopping all processing. A forced abort will wait for all resource orders in execution to complete before stopping which means that RFS orders in execution may not be complete after abort.

FP User's Guide: "Controlling Administrative States of Orders"

FP Prov Package: "P.FP – soadmin"

and also modifies the resource order status, including setting it to complete when the resource order has been fulfilled. AM

The resource order status is modified by Fulfillment Provisioning upon completion of the resource order execution but can also be modified by custom modules through custom code. The status of Resource Orders can be also forced manually using Fulfillment Provisioning OMS.

FP Dev Guide: “Developing New Modules” / “TIBCO Fulfillment Provisioning Order Management System”

FP User’s Guide: “Product Order Processing”

Extended Description

Not used for this process element

Explanatory

Not used for this process element

Mandatory

This process escalates resource orders in accordance with local policy, **M**

adds information to an existing resource order, **AM**

modifies information in an existing resource order, **AM**

Cancels a resource order when the initiating service order is cancelled, **A**

and also modifies the resource order status, including setting it to complete when the resource order has been fulfilled. **AM**

Optional

Not used for this process element

Interactions

Not used for this process element

Update Resource Repository

Process Identifier: 1.5.6.4.4

Brief Description

Update resource state and status. **A**

Upon resource order execution completion, the resource order status is updated and the Fulfillment Provisioning continues the execution of the depending resource actions in workflow. The Fulfillment Provisioning can execute resources orders in parallel in a same RFS order specification process if there are not dependent to each of other.

A RFS order completes when the workflow transitions to a final state which gives its status.

The Fulfillment Provisioning notifies resource order status changes through events defined in the event dictionary. All components that subscribe to these events receive them and can trigger necessary actions. OMS component subscribes to these events and updates database for consultation and administrative actions. Customer components can be written to implement specific behaviors.

FP Dev Guide: “Resource Order Details” / “Fulfillment Provisioning Utilities, Event Dictionary” / “Fulfillment Provisioning Order Management System Review”

Extended Description

Not used for this process element

Explanatory

Query/Update resources and their state and status at each level in Resource Provisioning.

The state of resource may be one of following:

- Open (it is available for allocation)
- Reserved (it is reserved for provisioning)
- Pending (resource allocated for provisioning but not yet activated)
- Activated (resource provisioned, activated and associated with a service)
- Suspended (resource provisioned for a service, however suspended for reasons)

Lifecycle of the state is as follows:

Open -> Reserved -> Pending -> Activated (then back to Open)-> Suspended (then back to Open)

The status of resource may be one of following:

- Pending (functional but not ready for use)
- Active (functional)
- Deprecated (marked ‘bad’ resource before purging)

Mandatory

Update resource state and status. A

Optional

Not used for this process element

Interactions

A common process that Assess Resource Request, Determine Resource Availability, Reserve Resource, Allocate Resource, Install and Commission Resource, Release Resource and Activate Resource use to Query and Update resources and their states and status

1.5.6.5 Report Resource Provisioning

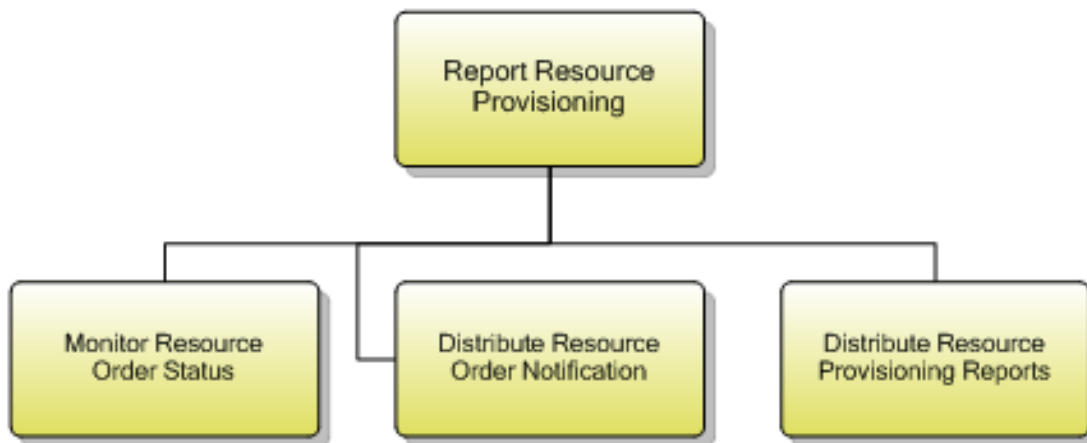


Figure 5 1.5.6.5 Report Resource Provisioning decomposition

Process Identifier: 1.5.6.5

Brief Description

Monitor the status of resource orders, provide notifications of any changes and provide management reports.

Extended Description

The objective of the Report Resource Provisioning processes is to monitor the status of resource orders, provide notifications of any changes and provide management reports. These processes are responsible for continuously monitoring the status of resource orders and managing notifications to processes and other parties registered to receive notifications of any status changes. Notification lists are managed and maintained by the Enable Resource Provisioning processes.

These processes record, analyze and assess the resource order status changes to provide management reports and any specialized summaries of the efficiency and effectiveness of the overall Resource Provisioning process. These specialized summaries could be specific reports required by specific audiences.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

Monitor Resource Order Status

Process Identifier: 1.5.6.5.1

Brief Description

This process is responsible for continuously monitoring the status of resource orders. A

The Fulfillment Provisioning, as part of the RFS order execution, initiates the execution of resource orders and gets notified when resource order execution completes. The status of the resource order is then used to by RFS order process workflow to determine next steps.

FP User's Guide: "Fulfillment Provisioning Flow Overview" / "Product Order Processing"

FP Dev Guide: "Product Order Flows"

Extended Description

Not used for this process element

Explanatory

Not used for this process element

Mandatory

This process is responsible for continuously monitoring the status of resource orders. A

Optional

Not used for this process element

Interactions

Not used for this process element

Distribute Resource Order Notification

Process Identifier: 1.5.6.5.2

Brief Description

This process is responsible for managing notifications to processes and other parties registered to receive notifications of any status changes. A

TIBCO Fulfillment Provisioning implements a publish & subscribe mechanism and manages the routing of events between producers and readers. Each event is defined in a dictionary. Each component is responsible to subscribe to the event topics it is interested in.

The Fulfillment Provisioning notifies resource order status changes through events defined in the event dictionary. All components that subscribe to these events receive

them and can trigger necessary actions. OMS component subscribes to these events and updates database for consultation and administrative actions. Customer components can be written to implement specific behaviors.

FP Dev Guide: “Fulfillment Provisioning Utilities, Event Dictionary” / “TIBCO Fulfillment Provisioning Order Management System”

FP User’s Guide: “Product order processing”

Extended Description

Not used for this process element

Explanatory

Not used for this process element

Mandatory

This process is responsible for managing notifications to processes and other parties registered to receive notifications of any status changes. A

Optional

Not used for this process element

Interactions

Not used for this process element

Distribute Resource Provisioning Reports

Process Identifier: 1.5.6.5.3

Brief Description

This process records, analyzes and assesses the resource order status changes to provide management reports and any specialized summaries of the efficiency and effectiveness of the overall Resource Provisioning process, including specific reports required by specific audiences. AM

TIBCO Fulfillment Provisioning OMS component permits to visualize all the details of execution of a resource order including status, data and execution logs. Resource order flow can be visualized as a process flow showing the logic of commands. Views can be configured to display or hide specific data depending on audience need. All the information is available in database and can be used by 3rd party report generator systems.

The Fulfillment Order Management OMS component provides a dashboard that displays real time indicators such as number of resource orders processed daily grouped per status, average, min and max latency of resource orders per types or specific network elements having generated technical or functional failures. Query can be configured to reflect audience need.

Each user of the system can configure the OMS dashboard and order presentation views for its own needs.

FP Dev Guide: “TIBCO Fulfillment Provisioning Order Management System”

Extended Description

Not used for this process element

Explanatory

Not used for this process element

Mandatory

This process records, analyzes and assesses the resource order status changes to provide management reports and any specialized summaries of the efficiency and effectiveness of the overall Resource Provisioning process, including specific reports required by specific audiences. **AM**

Optional

Not used for this process element

Interactions

Not used for this process element

1.5.6.6 Close Resource Order

Process Identifier: 1.5.6.6

Brief Description

This process monitors the status of the order and changes the status to closed when it is completed. **A**

The Fulfillment Provisioning initiates the execution of resource orders and sets the status of execution upon completion which indicates that resource order is closed.

FP User’s Guide: “Product order processing”

Extended Description

The objective of the Close Resource Order processes is to close a resource order when the resource provisioning activities have been completed.

These processes monitor the status of all open resource orders, and recognize that a resource order is ready to be closed when the status is changed to completed. **A**

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

1.5.6.7 Issue Resource Orders

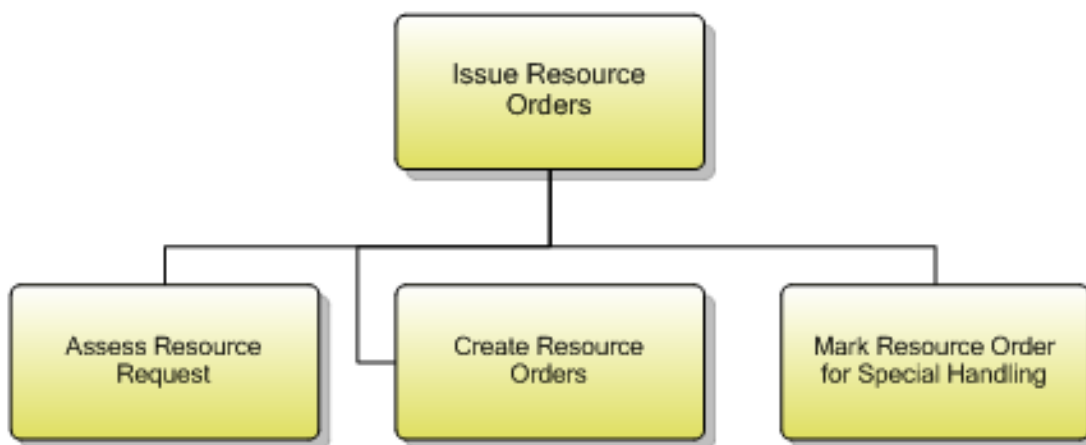


Figure 6 1.5.6.7 Issue Resource Orders decomposition

Process Identifier: 1.5.6.7

Brief Description

Issue correct and complete resource orders

Extended Description

The purpose of the Issue Resource Orders processes is to issue correct and complete resource orders.

The resource orders may be required to satisfy pertinent service order information received, may arise as a result of requests for resource provisioning to satisfy resource trouble recovery activities, may arise to alleviate resource performance issues, or may arise as a result of information received from other parties in relations to specific resources.

These processes assess the information contained in the service order, through a resource order request, initiating resource process request or other parties initiated request, to determine the associated resource orders that need to be issued.

The issued resource order may require a feasibility assessment to be undertaken, may require new provisioning activities for specific resources, may require a change to a previously issued resource order or may require the deletion/recovery of previously

delivered specific resources.

Where the initiating request or service order has a standard set of associated resource orders, this process is responsible for issuing the resource orders, and for creating a record of the relevant initiating request or service order information and the associated resource orders.

Where the initiating request or service order has special or unusual requirements, and a specific feasibility assessment has not been previously undertaken, this process marks the issued resource order as requiring special handling, and passes management for further processing to the Track & Manage Resource Provisioning process.

Where the initiating request or service order has special or unusual requirements, and a specific feasibility assessment has been previously undertaken, this process issues the previously determined resource orders.

The orchestration, if required, and tracking of the progress of a resource order is the responsibility of the Track & Manage Resource Provisioning processes.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

Assess Resource Request

Process Identifier: 1.5.6.7.1

Brief Description

This process assesses the information contained in the service order, through a resource order request, initiating resource process request or supplier/partner initiated request, to determine the associated resource orders that need to be issued. A

TIBCO Fulfillment Provisioning (FP) receives service orders through Drivers and injects them into the provisioning flow for execution. The service order goes through a series of steps in the flow called modules. A flow controller coordinates the execution of each service order. Each module is responsible for a specific processing on the service order such as:

- *scheduling service orders for a later date,*
- *sequencing of the execution to start after completion of another service order,*
- *decomposing the provided service order line items or CFS orders (called Product Order in FP) into a workflow of RFS orders (called Technical Product Orders). This*

dynamic transformation is using the catalog that defines CFS specifications (called Product in FP) and RFS specifications (called Technical Product in FP) and how an action on a CFS specification translates into a workflow of RFS orders using decomposition and optimization rules,

- *executing the workflow of RFS orders. A static workflow of Resource Orders (called ProductOrderFlow in FP) is attached to each RFS order in the catalog. Executing an action on a RFS amounts to orchestrate the execution of Resource Orders (called Work Orders in FP). Each Resource Order is assigned to the target resource to provision.*
- *Responding to the initiator of the request*

As described in above paragraph, resource orders are automatically determined by catalog definition and service order data during decomposition step.

FP User's Guide: "Service Orders" / "Overview of The Fulfillment Provisioning Catalog"

Extended Description

Not used for this process element

Explanatory

Not used for this process element

Mandatory

This process assesses the information contained in the service order, through a resource order request, initiating resource process request or supplier/partner initiated request, to determine the associated resource orders that need to be issued. A

Optional

Not used for this process element

Interactions

Not used for this process element

Create Resource Orders

Process Identifier: 1.5.6.7.2

Brief Description

Where the initiating request or the purchased product offering has a standard set of associated resource orders this process is responsible for issuing the resource orders, and for creating a record of the relevant initiating request or customer order information and the associated resource orders.

Where the initiating request or the purchased product offering has special or unusual requirements, and a specific feasibility assessment and/or resource design has been previously created, this process is responsible for issuing the resource orders, and for

creating a record of the relevant initiating request or customer order information and the associated resource orders. A

TIBCO Fulfillment Provisioning (FP) receives service orders through Drivers and injects them into the provisioning flow for execution. The service order goes through a series of steps in the flow called modules. A flow controller coordinates the execution of each service order. Each module is responsible for a specific processing on the service order such as:

- scheduling service orders for a later date,
- sequencing of the execution to start after completion of another service order,
- decomposing the provided service order line items or CFS orders (called Product Order in FP) into a workflow of RFS orders (called Technical Product Orders). This dynamic transformation is using the catalog that defines CFS specifications (called Product in FP) and RFS specifications (called Technical Product in FP) and how an action on a CFS specification translates into a workflow of RFS orders using decomposition and optimization rules,
- executing the workflow of RFS orders. A static workflow of Resource Orders (called ProductOrderFlow in FP) is attached to each RFS order in the catalog. Executing an action on a RFS amounts to orchestrate the execution of Resource Orders (called Work Orders in FP). Each Resource Order is assigned to the target resource to provision.
- Responding to the initiator of the request

As described in above paragraph, resource orders are automatically determined and instantiated during decomposition step.

Resource orders are recorded in database and can be consulted using Fulfillment Provisioning OMS GUI.

Additionally, TIBCO Fulfillment Provisioning provides capabilities for the designers of the system to handle special use cases that need to issue not standard resource orders :

- Extend a standard RFS order process (workflow of resource orders) by adding a conditional branch that handles a special use case upon detection of the special use case. The condition can evaluate passed parameters, parameters returned by previous resource order or result of previous resource orders.
- Define a new RFS order specification that implements the special workflow of resource orders and define conditional rules to add this process to the standard RFS order process.

FP User's Guide: "Service Orders" / "Overview of The Fulfillment Provisioning Catalog"

FP Dev Guide: "TIBCO Fulfillment Provisioning Order Management System"

Extended Description

Not used for this process element

Explanatory

Not used for this process element

Mandatory

Where the initiating request or the purchased product offering has a standard set of associated resource orders this process is responsible for issuing the resource orders, and for creating a record of the relevant initiating request or customer order information and the associated resource orders.

Where the initiating request or the purchased product offering has special or unusual requirements, and a specific feasibility assessment and/or resource design has been previously created, this process is responsible for issuing the resource orders, and for creating a record of the relevant initiating request or customer order information and the associated resource orders. **A**

Optional

Not used for this process element

Interactions

Not used for this process element

Mark Resource Order for Special Handling

Process Identifier: 1.5.6.7.3

Brief Description

Where the purchased product offering has special or unusual requirements, and a specific feasibility assessment and/or specific resource design has not been previously created, this process marks the issued resource order as requiring special handling, and passes management for further processing to the Track & Manage Resource Provisioning process. **AM**

A RFS order workflow can detect that prerequisite actions have not been done after the failure or value of specific parameters returned by a resource order. This can force the RFS order to fail and require manual resubmission and/or to take a specific branch that handle a special case. Either way, an event can be produced to notify operators that an issued resource order requires special handling.

Extended Description

Not used for this process element

Explanatory

Not used for this process element

Mandatory

Where the purchased product offering has special or unusual requirements, and a specific feasibility assessment and/or specific resource design has not been previously created, this process marks the issued resource order as requiring special handling, and passes management for further processing to the Track & Manage Resource Provisioning process. **AM**

Optional

Not used for this process element

Interactions

passes management for further processing to the Track & Manage Resource Provisioning process.

1.5.6.8 Recover Resource

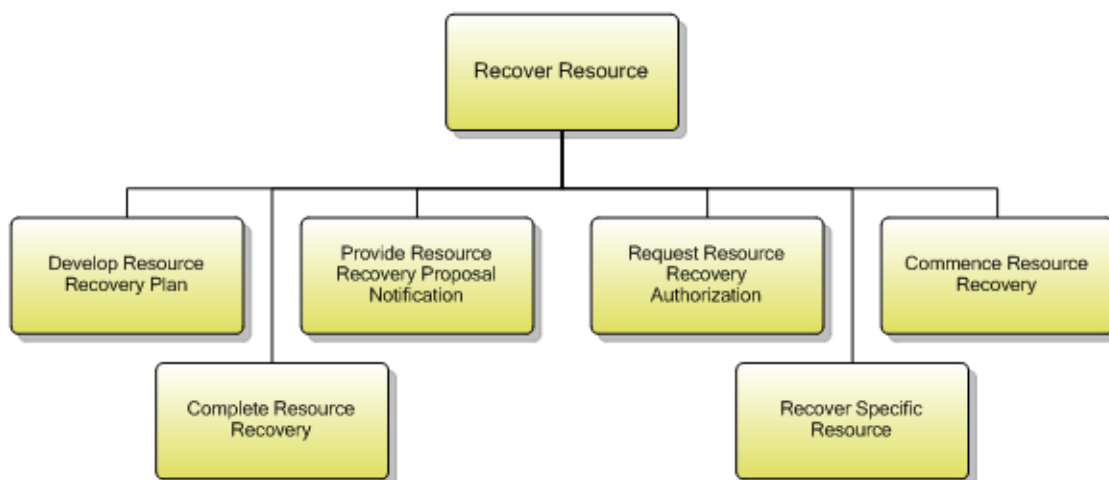


Figure 7 1.5.6.8 Recover Resource decomposition

Process Identifier: 1.5.6.8

Brief Description

Recover specific resources that are no longer required.

Extended Description

The responsibility of the Recover Resource processes is to recover specific resources that are no longer required.

These processes follow recovery plans specified by the supplier/partner, or follow recovery plans developed by the service provider. Where appropriate recovery plans are not available these processes are responsible for developing appropriate recovery

plans.

Where recovery of resources is likely to impact other in-use specific resources or specific services, this process is responsible for providing appropriate notification of the recovery proposal and ensuring authorization is received to proceed with the recovery plan. When the recovery activity is about to commence, these processes are responsible for notifying when recovery work is commencing and when it is completed. When recovered, the specific resources will be marked as unallocated.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

Develop Resource Recovery Plan

Process Identifier: 1.5.6.8.1

Brief Description

Where appropriate recovery plans are not available this process is responsible for developing appropriate recovery plans. **M**

TIBCO Fulfillment Provisioning does not provide a project management function but offers capability to create process to recover a resource.

TIBCO Fulfillment Provisioning includes a catalog component that allows designers of the solution to create actions for existing specifications of RFS and Resource to model the recovery processes. The Fulfillment Studio will be used to model the RFS order process (called Product Order Flow in FP) and Resource order process (called Work Order Flow in FP) responsible for the recovery.

FP Dev Guide: “TIBCO Fulfillment Provisioning Catalog Details - Object Model and Processing” / “Product Order Flows” / “Work Order Flows”

FP User’s Guide: “Fulfillment Provisioning Flow Overview”

Extended Description

Not used for this process element

Explanatory

Not used for this process element

Mandatory

Where appropriate recovery plans are not available this process is responsible for developing appropriate recovery plans. **M**

Optional

Not used for this process element

Interactions

Not used for this process element

Provide Resource Recovery Proposal Notification

Process Identifier: 1.5.6.8.2

Brief Description

Where recovery of services is likely to impact other in-use specific services, this process is responsible for providing appropriate notification of the recovery proposal. **AM**

TIBCO Fulfillment Provisioning permits for designers of the solution to model in specific RFS order processes such as service recovery, the generation of a specific event notifying possible service impact. Once determined during service specification, designers can place the event notification in the process to occur after specific tasks or actions on resources and make it depend on the result of execution of these tasks. A possible impact on a service can be detected by the result of execution of a previous resource orders or tasks involved for that service. A way to implement that strategy is to model a dedicated task (Called Resource Order in FP) in the RFS order process that will invoke a cartridge that will generate a specific event and forward it to an external system that would need to be notified. Such a task is re-usable and can be added in multiple processes in case many services have recovery actions requiring such notification.

Alternatively, designers can customize the solution to notify an external system upon completion of specific RFS order or resource order processes. This approach is less granular as it does not permit to notify an external system at a specific step with an order process. A component can be built to receive resource recovery process start (event `EventPoExecStarted` for RFS orders and `EventWoStarted` for resource orders) and ending (event `EventPoExecEnded` for RFS orders and `EventWoEnded` for resource orders) and execute required specific actions using custom code.

It is also possible to include in the implementation of a specific resource order the generation of such notification.

FP Dev Guide: “Fulfillment Provisioning Utilities, Event Dictionary” / “Product Order Flows” / “Cartridge Network Element Configuration”

FP Prov Package: “P.FP – pop” (pop_6331248.html)

FP Prov Package: "P.FP – pop" (pop_6331248.html) : "EventPoExecStarted" / "EventWoStarted" / "EventPoExecEnded" / "EventWoEnded"

Extended Description

Not used for this process element

Explanatory

Not used for this process element

Mandatory

Where recovery of services is likely to impact other in-use specific services, this process is responsible for providing appropriate notification of the recovery proposal. AM

Optional

Not used for this process element

Interactions

Not used for this process element

Request Resource Recovery Authorization

Process Identifier: 1.5.6.8.3

Brief Description

Ensure authorization is received to proceed with the recovery plan. AM

The resource recovery process (RFS order process) can include a pre-requisite task (called Resource Order in FP) that can request an external system for authorization. A negative response can make the recovery process fail by branching out to the "Fail" final state while a positive response will transition to the recovery activity it-self.

Dev Guide: "Product Order Flows"

Extended Description

Not used for this process element

Explanatory

Not used for this process element

Mandatory

Ensure authorization is received to proceed with the recovery plan. AM

Optional

Not used for this process element

Interactions

Not used for this process element

Commence Resource Recovery

Process Identifier: 1.5.6.8.4

Brief Description

When the recovery activity is about to commence, this processes is responsible for notifying when recovery work is commencing. **A**

The resource recovery process will generate the event `EventPoExecStarted` upon RFS recovery starts and `EventWoStarted` for resource recovery tasks

FP Prov Package: "P.FP – pop" (pop_6331248.html): "EventPoExecStarted" / "EventWoStarted"

Extended Description

Not used for this process element

Explanatory

Not used for this process element

Mandatory

When the recovery activity is about to commence, this processes is responsible for notifying when recovery work is commencing. **A**

Optional

Not used for this process element

Interactions

Not used for this process element

Complete Resource Recovery

Process Identifier: 1.5.6.8.5

Brief Description

This process is responsible for notifying when it is completed. **A**

The resource recovery process will generate the event `EventPoExecEnded` upon RFS recovery completion and the event `EventWoEnded` upon resource recovery task.

FP Prov Package: "P.FP – pop" (pop_6331248.html): "EventPoExecEnded" / "EventWoEnded"

When recovered, the specific resources and/or associated resource specific parameters will be marked as unallocated. **AM**

TIBCO Fulfillment Orchestration Suite does not implement the complete behavior but permits to model in the RFS recovery process the interaction(s) with external resource inventory to set the parameters of the specific resource and/or associated resource specific parameters as unallocated.

Extended Description

Not used for this process element

Explanatory

Not used for this process element

Mandatory

This process is responsible for notifying when it is completed. **A**

When recovered, the specific resources and/or associated resource specific parameters will be marked as unallocated. **AM**

Optional

Not used for this process element

Interactions

Not used for this process element

Recover Specific Resource

Process Identifier: 1.5.6.8.6

Brief Description

This process recovers a specific resource that is no longer required. **A**

A RFS order specification process (called product Order Flow in FP) or a resource order process (called Work Order Flow in FP) it-self can implement the logic of recovering a specific resource. The logic is modeled in Fulfillment Studio. The implementation of the commands to send to the external elements on behalf of a resource order to effectively do the recovery is done in the cartridge.

FP User's Guide: "Fulfillment Provisioning Flow Overview" / "Work Order Flow"

FP Dev Guide: "Product Order Flows"

Extended Description

Not used for this process element

Explanatory

Not used for this process element

Mandatory

This process recovers a specific resource that is no longer required. **A**

Optional

Not used for this process element

Interactions

Not used for this process element