Technical White Paper

Universal Personalization Services: UPSUpdatePrintInfo web method

A Basic Guide

Table of Contents

UPS Console

Universal Personalization Services (UPS) supports on-site operations with a versatile solution called UPS Console. This solution provides the manufacturing site to integrate with HP custom integration services. This document illustrates one proposed method to save time and money on operator training at manufacturing sites. The reduced ramp-up eliminates the need for significant operator re-training that would normally ensue from a full-fledged integration of UPS with the factory shop-floor automation system.

Introduction

UPS offers extensive capabilities to support unit personalization in conjunction with support for Custom Integration Services (CIS) by HP in close cooperation with manufacturing sites across the world. A standard approach to supporting CIS services envisages that all factory sites process data in a service-oriented manner that relies on industry standards and best practices for an efficient manufacturing supply chain.

Goal

This document illustrates a web method that will allow site to store the tag information that will be printed later.

Objective
The use of this web method will permit the factory site to send all the Chassis/Box tag info and store it in the UPS DB so it can be printed using other methods such as UPSClient, UPSGetTags or UPSGetATRP.

This web method must be executed separately for Chassis and Box as each tag must require different information to be printed based on the Part Number AV specification.

Key Operation
The key operation is:

- Update UPS Site database to link the UUT Serial Number scanned with the tag information that will be printed as well as to link the SystemID of the platform so the SOP Image can be shown to site in order to know the exact location where the label must be placed on the Chassis or Box.

Important Assumption and Limitation
This document is not the comprehensive reference guide for any UPS activity. You should contact the UPS Development team for more detailed information on UPS. This document is limited to the illustration of the key operation described in the following sections.

Key Definitions

The proper consideration of the following terms will lead to a better understanding of the proposed web method:

- Serial Number

  A string that defines the bar code scanned value from the UUT being processed.

- HPPO

  Order reference number that was previously communicated to UPS Site server using a SendBOM method.

- Part Number AV

  UPS Part Number or SKU used by the HPPO which will contain the Label format and information that will be printed (BarTender) as well as other info like asset number to be used, Print Routing, Order specific information and Unit specific information.

- Asset Number AV

  UPS unique Identifier -commonly named the same as the Part Number AV- which contains the mask definition for an asset tag number.

Web Method

Method Syntax

```
[WebMethod]
public ATMStruct UPSUpdatePrintInfo(string SerialNumber, string PartNumber, string AssetNumber, string HPPO, string MAC, string MAC2,  string SystemID, string Placement, string TagData)
```

Parameters

The following table lists the parameters for the proposed `UPSUpdatePrintInfo` method:

Parameter	Type	Description
SerialNumber	string	UUT Serial Number. If empty or null, method will return code -1. i.e. "SHG1234567, CZC4362L1Z, etc…"
PartNumber	String	UPS Part Number AV Setup. If empty or null, method will return code -1. i.e. "AY123AV"
AssetNumber	string	Name of the asset number as defined by CS Engineering. If empty or null, method will return code -1. i.e. "AY123AV" (It is usually named the same as the UPS Part Number AV)
HPPO	string	Order reference number that was previously communicated to UPS Site server using a SendBOM method. If empty or null, method will return code -1. i.e. "123456-001, 475869362, etc…"
MAC	string	MAC parameter is mandatory, the MAC address info is needed to store the Tag information as appropriate in the UPS DB, as well as needed in case MAC key word is used under the TagData parameter configuration. i.e. "40A8F0A4C293, A0481CA9E64E, etc…" or NULL
MAC2	String	MAC parameter is optional except when "MacAddress2" is specified in the TagData string. NULL value must be sent if NOT used. i.e. "40A8F0A4C293, A0481CA9E64E, etc…" or NULL
SystemID	string	System ID parameter is mandatory. The System ID of the UUT is needed in order to match the SOP to be shown at printing station. i.e. "18E5, 1589, etc…" or NULL
Placement	string	Mandatory parameter, Site must specify if the tag is Chassis or Shipping (Box). i.e. "Chassis" or "Shipping"
TagData	string	Mandatory parameter used to define the data to be attached to the BarTender template used for printing, it will have to be defined by a comma separated string. Key words: [AssetTag] – This keyword will be replaced with the Asset Tag number assigned by UPS [SerialNumber] - This keyword will be replaced by the first parameter sent to the web method (SerialNumber) [MacAddress] - This keyword will be specified in case the MAC needs to be printed in the Tag. [MacAddress2] - This keyword will be specified in case the MAC2 needs to be printed in the Tag.

		Values: For custom and static text values the string will be passed explicitly for cases like Customer Name, Customer PO, Localization, etc… i.e. "SerialNumber,US Airforce,AssetTag, MacAddress,Wahington D.C." , "AssetTag,SerialNumber,Eaton Corp.,MacAddress2", etc… **Note: If having a comma in the string to be sent that will result on two different BarTender fields, please avoid the usage of commas for a single field.**

Return Value

Type: `ATMStruct`

Structure

The following figure illustrates the general response from the proposed `UPSUpdatePrintInfo` method:

```
public struct ATMStruct
{
        public string version;
        public int retcode;
        public string message;
        public string assetTagNum;
}
```

Field Values

The following table explains the data values in the response object:

Parameter	Type	Description
version	`string`	The web service version number
retcode	`int`	The return code from the web service in response to the current parameters submitted by the client application. Typical return codes are: 0 = success -1 = failure 1 = success – But, means the Serial Number was already processed.
message	`string`	Error or success message
assetTagNum	`String`	The return string containing the asset tag number that UPS assigned to Serial Number at the Site UPS DB.

Risk

Wrong calls to the proposed `UPSUpdatePrintInfo` method not passing the correct info specified in the Parameter table mentioned in previous section of this document may result on not getting the expected results, for that reason, Site must configure the web method accordingly in case they want to use - or not – the UPS printing solutions (UPS Client or `UPSGetATRP`) or their own print solution.

Assumptions

This method has the following underlying assumptions:

- The Site uses one of the `SendBOM` and `UPSGetATM` web methods available before invoking the proposed `UPSUpdatePrintInfo` web method.
- The Site allows sufficient time for UPS to service the range requests.
- The Site uses the same HPPO value for the invocation of the chosen `SendBOM` method first and the proposed `UPSUpdatePrintInfo` method subsequently.
- Site will be responsible to manage excpetions that can be thrown by web service call.
- Examples provided in this document are exclusively for .NET and C# if site decides to use other programming language or Framework is OK as soon as the values returned are not changed.

The following code snippet illustrates the client side operations to:

- Submit the request to the UPS Site server
- Process the response data

The code snippet does not exhaustively illustrate all the operations needed in the client application for robust handling of shopfloor practices.

CODE Example C# - UPSUpdatePrintInfo

```
public struct ATMStruct
{
    public string version;
    public int retcode;
    public string message;
   public string assetTagNum;
}

namespace UPS_ATRPConsumer
{
    class Program
    {
        static void Main(string[] args)
        {
            UPS_ATRPConsumer.localhost.ATMStruct retval = new
UPS ATRPConsumer.localhost.ATMStruct();
            UPS_ATRPConsumer.localhost.ATRP svc = new UPS_ATRPConsumer.localhost.ATRP();

        /**** site must use its own URL and not necessarily the one illustrated below ****/
            svc.Url = "http://localhost/UPSATRP/UPS_ATRP.asmx";

        /**** test data; the values for your site may be different ****/
            string serialNo = "SHG1234567";
            string partNumber = "AY115AV";
            string assetNumber = "AY115AV";
            string hppo = "TestHPPO";
            string macAddr = "A0481CA9E64E";
            string macAddr2 = "A0582AS275A04B";
            string sysID = "1546";
            string placement = "CHASSIS";
            string tagData = "AssetTag,Google,MacAddress2,SerialNumber,HP Z420 Workstation";

            int retcode = 1;
            string version = String.Empty;
            string message = String.Empty;

            retval = svc.UPSUpdatePrintInfo(serialNo, partNumber, assetNumber, hppo,
macAddr, macAddr2, sysID, placement, tagData);
// Data stored and ready to be printed in UPS Site DB
             if (retval.retcode == 0)
            {
               version = retval.version;
               message = retval.message;
               assetTagNumber = retval.assetTagNum;
               /****  site should continue their normal workflow after success ****/
            }
            else
            {
                // error condition - read retval.message
            }
        }
    }
```

Enhancement

The feature to export the assigned range of asset numbers for external transmission is under consideration. Further scoping discussions with the manufacturing sites will provide the basis for a more efficient solution.

Summary

This document provides a brief description on the use of a proposed feature in the UPS solution for manufacturing sites – Retrieve Asset Number list. This feature will permit manufacturing sites to ramp up quickly on behalf of HP to deliver asset tag services to global customers. The UPS team cannot guarantee the delivery of any proposed feature without further consultation with the business teams responsible for delivery of the services. The manufacturing sites will have to integrate their current shop floor system to this new feature. There are many additional features in the UPS solution that can assist the manufacturer to improve its TAT and Quality. Analysis of these features and their corresponding integration into the shop floor computer application can occur after the initial adoption of UPS at the manufacturing site.

Resources, contacts, or additional links
You can find more information at
hp.com

Learn more at
hp.com

Sign up for updates
hp.com/go/getupdated

Share with colleagues

Rate this document

4AA4-123xxxENW, April 2013