

SMP/E Internet Service Retrieval

SMP/E Version 3 Release 4

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NY Metro NaSPA Chapter Meeting
April 20, 2006

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SMP/E Internet Service Retrieval

SMP/E Version 3 Release 4


Are you currently enjoying the benefits of internet delivery for z/OS platform service? Now may be the time to give it a try. Current internet delivery users and new users alike, get ready for SMP/E Internet Service Retrieval, the latest enhancement in IBM's service delivery evolution. Come to this session to see how the latest release of SMP/E, V3.4, has addressed the common inhibitors to internet delivery of service, and has gone further to simplify and automate the entire z/OS service acquisition process.

SMP/E Internet Service Retrieval can be used to request corrective service, preventive service, and HOLDDATA, from a dedicated IBM server, download a service package directly to z/OS, and process the package contents, all in one simple step. With SMP/E Internet Service Retrieval, you can request service on demand, and even automate the service delivery process. By scheduling an SMP/E job to run once a week, or even every night, you can order and download the latest HOLDDATA and PTFs and have these service updates available exactly when you want. Set it and forget it!

Speaker: Kurt Quackenbush (IBM Corp) is a Senior Software Engineer in Poughkeepsie, NY. He is the lead architect and team leader for SMP/E, and has been a member of the SMP/E team since 1987.

SMP/E Internet Service Retrieval

SMP/E V3.4 Introduction



- **IBM SMP/E for z/OS Version 3 Release 4**
 - ▶ Program number 5655-G44
 - ▶ Entitled (zero-price) to licensees of all currently supported z/OS or z/OS.e releases
- Availability:
 - ▶ SMP/E V3.4 is an independent and separately orderable product, and
 - ▶ SMP/E V3.4 is a base element of z/OS V1.7
- Ordering and Delivery
 - ▶ Individual product order via ShopzSeries (CPBDO package)
 - Both physical and Internet delivery options available
 - ▶ Included in system replace ServerPac orders for z/OS V1.7
 - ▶ Internet download on "Download zone"
 - SMP/E V3.4 is **not** available on the download zone.
 - Existing SMP/E V3.3 download will remain because it is required for Internet delivery of ServerPac


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SMP/E Version 3 Release 4 is an independent product and also a base element of z/OS V1.7. SMP/E V3.4 is entitled to licensees of all currently supported releases of z/OS and z/OS.e, and can be installed and used on those releases.

SMP/E Internet Service Retrieval

Agenda

- z/OS Service Acquisition and Internet Delivery
- SMP/E RECEIVE Command Extensions
- Installation, Migration, and Coexistence Considerations
- Dependencies
- Configuration and Setup
- ICSF Mitigation
- Summary
- Appendix



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SMP/E Internet Service Retrieval

z/OS Service Acquisition: Internet Delivery

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SMP/E Internet Service Retrieval

z/OS Service Acquisition with Internet Delivery

- To acquire service and deliver via internet using ShopzSeries today requires the following steps:
 1. User runs an SMP/E job to create an inventory file (aka PTF bitmap).
 2. User logs onto ShopzSeries and initiates a service order transaction that will use the inventory file.
 3. User uploads the inventory file to the IBM ShopzSeries server.

IBM manufactures the requested PTF package.


 4. User receives an email indicating the service package is ready.
 5. User logs onto ShopzSeries to get the service package download information (copies the custom RECEIVE FROMNETWORK job).
 6. User runs the custom SMP/E job to download over the internet and process the service package.
- **Many individual user tasks, and lacks opportunity for automation!**

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Today ShopzSeries is the standard application for ordering PTF service for the z/OS platform with an option for internet delivery. To acquire PTF service using ShopzSeries today requires you to perform the following steps:


1. You may run an SMP/E job to create an inventory file for your currently installed z/OS platform software (also known as a PTF bitmap file).
2. You must log onto ShopzSeries (<https://www14.software.ibm.com/webapp/ShopzSeries/ShopzSeries.jsp>) and initiate a service order transaction that may use the afore mentioned inventory file.
3. Using ShopzSeries you may upload the inventory file to the IBM server. IBM then manufactures a service package containing the PTFs you requested. The package is customized to your unique z/OS environment by using the uploaded inventory file.
4. When the service package is ready, you receive an email indicating it is ready for download.
5. You must log onto ShopzSeries to obtain the service package download information. At best this is a copy of the custom SMP/E RECEIVE FROMNETWORK job available on the download page of ShopzSeries.
6. You then must run the custom SMP/E RECEIVE FROMNETWORK job on your z/OS system in order to download the service package over the internet and process the PTFs contained in the package.

To summarize, there are many individual tasks you must perform, with several opportunities for error. In addition, the process is a series of manual steps with little opportunity for automation of these steps.

SMP/E Internet Service Retrieval


SMP/E Can Help!

- To **simplify** and **automate** ordering and delivery of z/OS service, the tasks are consolidated by SMP/E:
 - create an inventory file
 - upload inventory file
 - submit a service order and wait for a package to be manufactured
 - download the resultant package over the internet
 - process the downloaded service package
- Provides on demand service ordering and delivery
- Provides a self service "subscription" capability
 - Use a job scheduler, CRON, JES automated command, etc. and SMP/E to order and load service automatically.

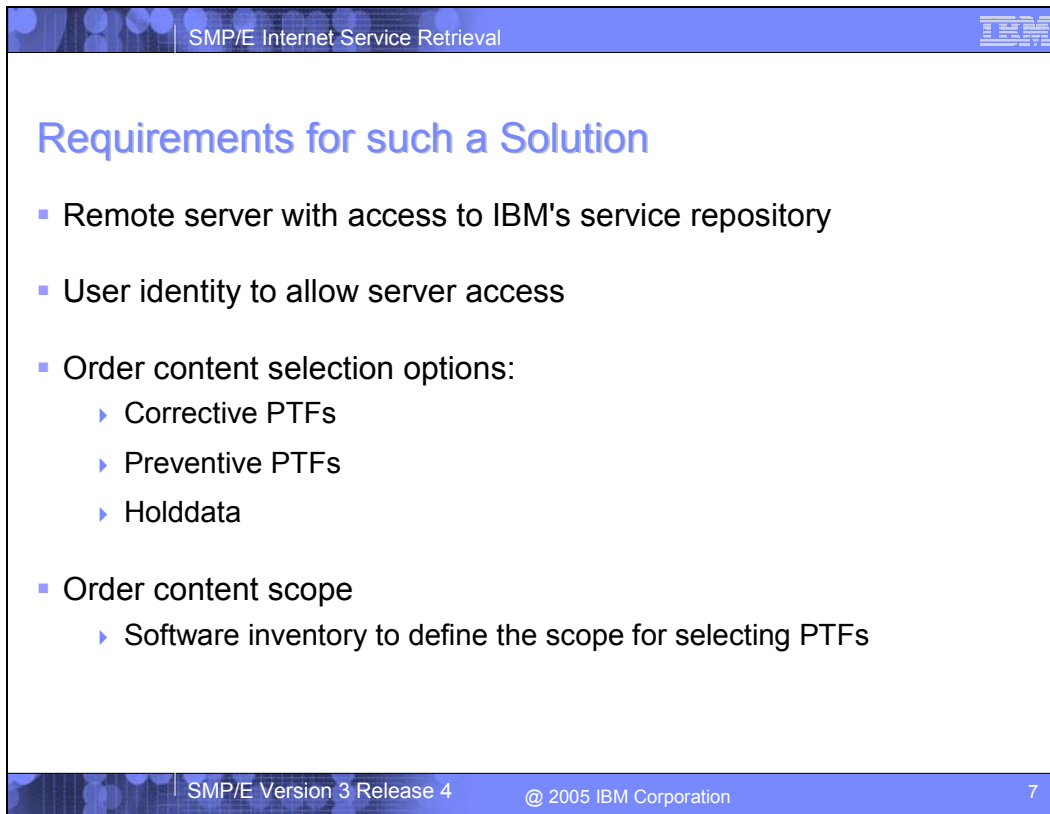


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SMP/E can help by consolidating the tasks. That is, in one step SMP/E can perform all of the manual tasks:

1. Create an inventory file.
2. Upload the inventory file.
3. Submit a service order and wait for the service package to be manufactured.
4. Download the service package over the internet to your z/OS system.
5. Process the PTFs contained in the downloaded service package.

This single SMP/E step provides you with a PTF service ordering and delivery capability that you can use as needed for unique PTF requests. In addition, using a job scheduler, it also allows you to automate service ordering and delivery on whatever frequency you desire, thus providing a self-service subscription capability.



The image is a screenshot of a presentation slide. At the top, there is a blue header bar with the text 'SMP/E Internet Service Retrieval' on the left and a small IBM logo on the right. The main content area is white with a blue title 'Requirements for such a Solution'. Below the title is a bulleted list of requirements. At the bottom, there is a blue footer bar with the text 'SMP/E Version 3 Release 4' on the left, '@ 2005 IBM Corporation' in the center, and the number '7' on the right.

SMP/E Internet Service Retrieval

Requirements for such a Solution

- Remote server with access to IBM's service repository
- User identity to allow server access
- Order content selection options:
 - ▶ Corrective PTFs
 - ▶ Preventive PTFs
 - ▶ Holddata
- Order content scope
 - ▶ Software inventory to define the scope for selecting PTFs

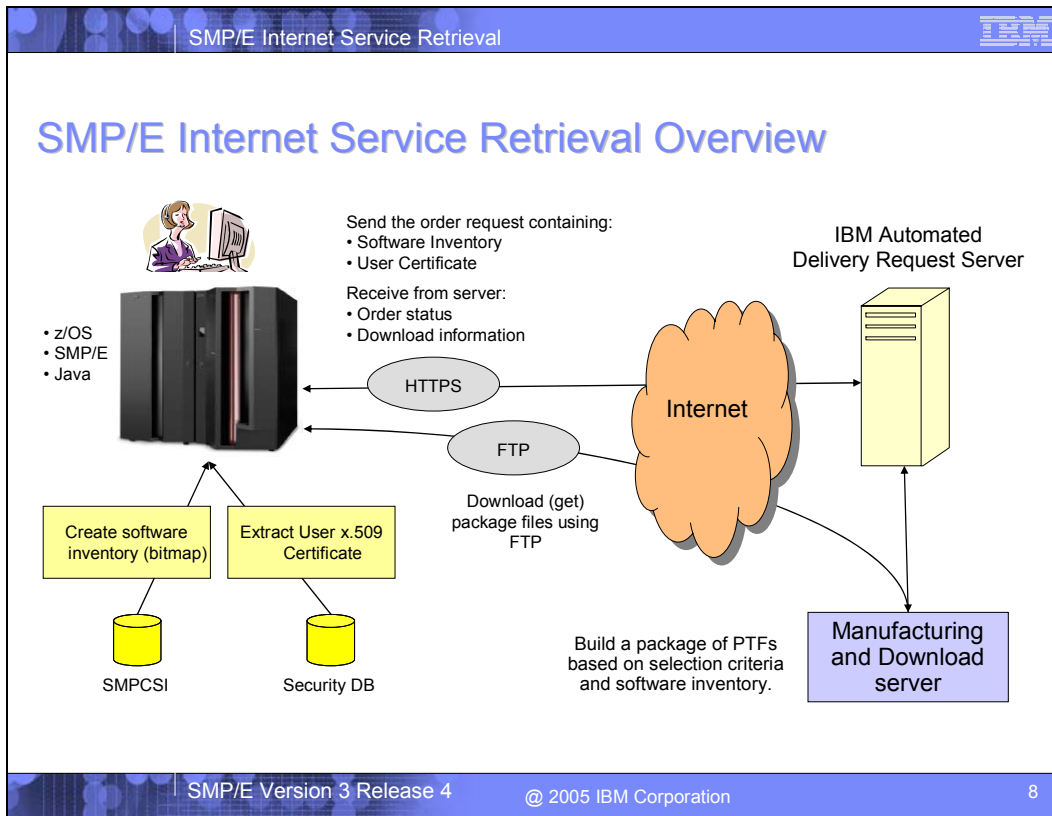
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To make such an SMP/E step work, there are several things that must be in place and several pieces of information SMP/E must need.

First is access to IBM's service repository. That is, from your local z/OS system SMP/E must be able to access a remote server that is connected to IBM's PTF service repository. In addition, to use this remote server, you must provide a user identity so the server can determine if you should have access to the service repository.

To submit a PTF service order transaction, you must indicate what PTFs you want. Is this a corrective service order where you specify one or more PTFs by name, or by specifying the APARs for which you desire fixing PTFs? Is this a preventive service order where you want all recommended PTFs? Or do you simply want all of the latest HOLDDATA?

Finally is the scope of the PTF service order. This is defined by the software inventory file. The software inventory file is used to determine what PTFs are applicable to your z/OS platform environment and to determine what PTFs you already have. This allows the service package to be customized for your order.



The flow for a typical SMP/E internet service retrieval order transaction is as follows:

1. Build a software inventory.
2. Extract the named user certificate from the specified keyring.
3. Submit the order request to the server.
 - Client/server communication uses HTTP 1.1 protocol with SSL (HTTPS).
 - Web service using SOAP messages
4. The server accepts the order request.
5. SMP/E creates an ORDER entry in the global zone to describe the order.
6. SMP/E polls the server periodically for status of the order.
7. When order is fulfilled the server responds with package download information.
 - FTP server, uid, pw, package SHA-1 hash.
8. SMP/E uses existing FROMNETWORK infrastructure to automatically download (get) the package into the SMPNTS using FTP.
9. The contents of the package are expanded and received into the global zone and SMPPTS.

SMP/E Internet Service Retrieval

Solution Attributes

- The solution operates as a client/server application:
 - ▶ SMP/E is the **client** that runs on a user's local z/OS system.
 - ▶ The IBM Automated Delivery Request server is the remote IBM **server**.
- The SMP/E RECEIVE command is extended:
 - ▶ Order selection options:
 - Corrective service:
 - PTFs specified by name
 - PTFs to resolve APARs specified by name
 - Preventive service:
 - Critical - PTFs to fix HIPER or PE problems
 - Recommended - PTFs with an RSU sourceid and Critical PTFs
 - All - All available PTFs
 - Holddata:
 - No PTFs, only 2-year file of Enhanced HOLDDATA
 - ▶ Inventory file (bitmap) is generated automatically.
 - ▶ The request and inventory are sent to the remote IBM server.

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The SMP/E solution operates as a client/server application, where SMP/E is the client that runs on your local z/OS system, and the *IBM Automated Delivery Server* is the remote IBM server that can access IBM's service repository. More specifically, the SMP/E RECEIVE command is extended to support this solution. The RECEIVE command is extended to provide PTF order selection criteria:

Corrective service

- PTFs specified by name
- PTFs to resolve specified APARs

Preventive service

- PTFs to resolve HIPER problems or PTFs in Error (PE)
- Recommended PTFs. That is, PTFs identified with an RSUxxxx sourceid, and PTFs to resolve HIPERs and PEs.
- All PTFs.

You can also simply order HOLDDATA with no PTFs.

The RECEIVE command will automatically create the software inventory file (PTF Bitmap) and upload the inventory file to the IBM server.

SMP/E Internet Service Retrieval

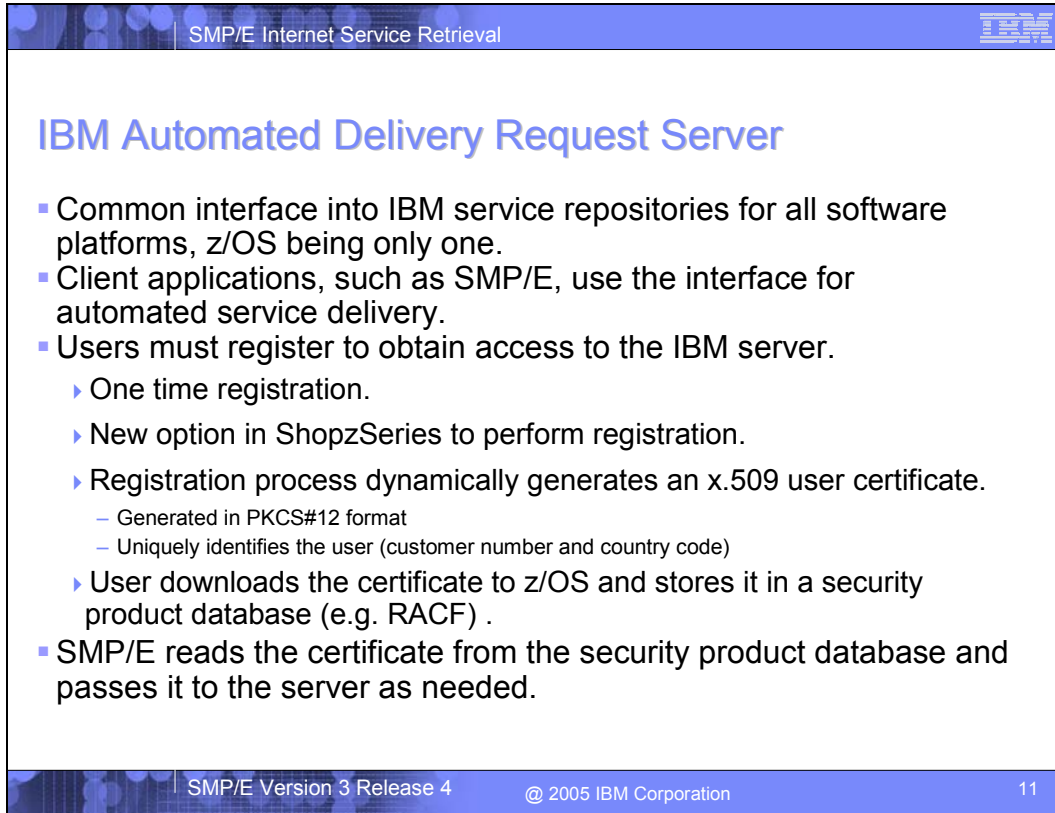
Solution Attributes...

- Content of manufactured package:
 - ▶ PTF content is customized based on the selection options and inventory file
 - ▶ All available requisite PTFs are always included
 - ▶ 2-years of Enhanced HOLDDATA is always included
 - ▶ ASSIGN statements are always included
 - For all PTFs in the order **and** all PTFs identified in the inventory file
 - Ensures you have the latest RSU, HIPER and PRP sourceids
 - ▶ GIMZIP package format
- Package is downloaded directly to the z/OS host using FTP
 - ▶ Uses existing RECEIVE FROMNETWORK capability under the covers
 - ▶ No store-and-forward or physical media options

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The *IBM Automated Delivery Server* will oversee the manufacturing of a PTF service package to satisfy your request. Using the software inventory file to define the scope of the order, the package will contain the PTFs for only the FMIDs in your inventory file and that satisfy your selection criteria, as well as any requisite PTFs you do not already have. In addition, the ++ASSIGN statements necessary to define all of the known sourceids for all PTFs in the order and all PTFs identified in the inventory file are included with all PTF orders, as well as 2-years of Enhanced HOLDDATA. Of course you can order just the HOLDDATA without any PTFs as well.

The package will be constructed using the GIMZIP packaging service and will be downloaded directly to your z/OS system using FTP (this makes use of the existing infrastructure SMP/E uses for the RECEIVE FROMNETWORK command).



The screenshot shows a presentation slide with a blue header and footer. The header contains the text 'SMP/E Internet Service Retrieval' and a small IBM logo. The main content area has a white background with a blue title 'IBM Automated Delivery Request Server'. Below the title is a bulleted list of features and registration details. The footer contains 'SMP/E Version 3 Release 4', '@ 2005 IBM Corporation', and the page number '11'.

SMP/E Internet Service Retrieval


IBM Automated Delivery Request Server

- Common interface into IBM service repositories for all software platforms, z/OS being only one.
- Client applications, such as SMP/E, use the interface for automated service delivery.
- Users must register to obtain access to the IBM server.
 - ▶ One time registration.
 - ▶ New option in ShopzSeries to perform registration.
 - ▶ Registration process dynamically generates an x.509 user certificate.
 - Generated in PKCS#12 format
 - Uniquely identifies the user (customer number and country code)
 - ▶ User downloads the certificate to z/OS and stores it in a security product database (e.g. RACF) .
- SMP/E reads the certificate from the security product database and passes it to the server as needed.

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The *IBM Automated Delivery Server* is the remote IBM server that manages access to IBM's service repository. It is intended to be the common interface into IBM's service repositories for all software platforms, z/OS being only one. Client applications, such as SMP/E, can use the interface to automate the service acquisition process.

To access the server, users must register and obtain a user identity. This is accomplished with a new option in ShopzSeries (and described in more detail later). In short, an x.509 client certificate will be generated for you and will contain unique identifying information such as IBM customer number and country identifier. This user certificate must be stored on z/OS in a security product data base like z/OS Security Server RACF. SMP/E will read the certificate from the security product data base and use it to gain access to the *IBM Automated Delivery Server*.



The image is a screenshot of a presentation slide. At the top, a blue header bar contains the text "SMP/E Internet Service Retrieval" on the left and a small logo on the right. The main body of the slide is white and features the title "RECEIVE Command Extensions and Usage" in large, bold, blue capital letters, centered. At the bottom, a blue footer bar contains the text "SMP/E Version 3 Release 4" on the left, "@ 2005 IBM Corporation" in the center, and the number "12" on the right.

SMP/E Internet Service Retrieval

RECEIVE ORDER Example – New Order

```

//jobname JOB ...,REGION=0M
//RECEIVE EXEC PGM=GIMSMP
//SMPCSI DD DSN=SMPE.GLOBAL.CSI,DISP=SHR
//SMPNTS DD PATH='/u/smpe/smpnts/',PATHDISP=KEEP
//SMPCNTL DD *
SET BOUNDARY (GLOBAL) .
RECEIVE ORDER ( /* Submit an order for PTFs */
                CONTENT ( CRITICAL ) /* Get HIPER and PE fixes */
                ORDERSERVER(ORDSERVER)
                CLIENT (MYCLIENT)
                )
                DELETEPKG /* Delete package when receive is done */.
/*
//ORDSERVER DD *
<ORDERSERVER
  url="https://eccgw01.boulder.ibm.com/services/projects/ecc/ws"
  keyring="myKeyRing"
  certificate="SMPE Client Certificate">
</ORDERSERVER>
/*
//MYCLIENT DD *
<CLIENT
  javahome="/usr/lpp/java/J1.4"
  classpath="/usr/lpp/smp/classes">
</CLIENT>
/*

```

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The SMP/E RECEIVE command has been extended to support the process of ordering and delivery of PTF packages. Specifically the ORDER operand of the RECEIVE command is used to indicate an order for PTFs or HOLDDATA is to be processed.

In addition to the changes to the RECEIVE command, additional input is required, in the form of the ORDERSERVER and CLIENT data sets.

This simple example SMP/E job orders, downloads, and receives critical service (HIPER and PE fixes).

SMP/E Internet Service Retrieval

RECEIVE ORDER Command – Basic Syntax

- **New Order:**

```

RECEIVE ORDER(
    CONTENT(
        PTFS(sysmodid list) |
        APARS(sysmodid list) |
        CRITICAL |
        RECOMMENDED |
        ALL |
        HOLDDATA
    )
    FORTGTZONES(zone list)
    WAIT(minutes | NOLIMIT)
    TRANSFERONLY
    ORDERSERVER(ddname)
    CLIENT(ddname)
)
DELETEPKG.

```

Note: For simplicity, existing operands such as SOURCEID and LIST are not shown, but are acceptable.

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RECEIVE ORDER is a new form of the RECEIVE command. The new and related operands of the command are as follows:

CONTENT

Indicates the desired PTF and/or HOLDDATA content for the order.

ALL

All available PTFs that are applicable to the specified target zones.

APARS

Specifies one or more APARs for which resolving PTFs are desired.

CRITICAL

All available PTFs that resolve HIPER or PE problems.

HOLDDATA

Only HOLDDATA is ordered.

PTFS

Specifies one or more PTFs that are to be ordered.

RECOMMENDED

All available PTFs identified with an RSU sourceid, or resolve HIPER or PE problems. PTFs through the most current RSU level will be included.

FORTGTZONES

Defines the scope for the order – which target zones are used for the software inventory. The default is to use all target zones.

WAIT

How long SMP/E should wait for the order to be ready for download. You can specify 0 – 1440 minutes, or NOLIMIT. The default is 120 minutes.

TRANSFERONLY

RECEIVE processing should stop after the package files have been downloaded into the SMPNTS directory.

DELETEPKG

The package files should be deleted from the SMPNTS directory after the PTF and HOLDDATA contents of the package have been processed.

Note: Existing RECEIVE command operands such as SOURCEID, LIST, and ZONEGROUP are still acceptable, but not changed or described here.

The screenshot shows a presentation slide with a blue header and footer. The header contains the text 'SMP/E Internet Service Retrieval' and the IBM logo. The main content area has a title 'ORDERSERVER Data Set' in blue. Below the title is a bulleted list:

- The ORDERSERVER data set contains information necessary for RECEIVE ORDER command processing:
 - ▶ Location of the server.
 - ▶ Unique identifying information for the user (certificate).
- Specified by ddname on the ORDERSERVER operand.

A code block is shown in a white box with a black border, containing the following XML-like structure:

```
<ORDERSERVER
  url="server url"
  keyring="keyring name"
  certificate="certificate label" >
</ORDERSERVER>
```

Below the code block is another bullet point:

- The url for the IBM Automated Delivery Request server is:

```
https://eccgw01.boulder.ibm.com/services/projects/ecc/ws
```

The footer of the slide contains the text 'SMP/E Version 3 Release 4 @ 2005 IBM Corporation' and the page number '15'.

The ORDERSERVER data set contains the information necessary for RECEIVE ORDER command processing to identify the *IBM Automated Delivery Request Server* as well as the user certificate to be used for this request. The certificate was obtained from ShopzSeries during the registration process and uniquely identifies you to the server.

The information in the ORDERSERVER data set is described using the <ORDERSERVER> tags and attributes. The **url** attribute identifies the url for the server. The url for the *IBM Automated Delivery Request* server is <https://eccgw01.boulder.ibm.com/services/projects/ecc/ws>. The **certificate** attribute identifies the certificate you want to use by specifying the certificate label, and the **keyring** attribute identifies the keyring that the certificate is connected to. A keyring is a named collection of certificates associated with a specific userid.

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CLIENT Data Set

- The CLIENT data set describes local z/OS client information and options for existing RECEIVE FROMNETWORK and new RECEIVE ORDER processing
 - ▶ **Java options:** Java home directory, classpath for SMP/E Java application classes, and debug options
 - ▶ **HTTP options:** HTTP proxy and SOCKS proxy servers
 - ▶ **FTP options:** Debug mode, number of transfer retries, firewall navigation
- Specified by ddname on the CLIENT operand.

```

<CLIENT debug="YES|NO" retry="n"
  javahome="path"
  classpath="path"
  javadefbugoptions="options" >

  <HTTPPROXY host="name" port="number" user="userid" pw="password">
  </HTTPPROXY>

  <HTTPSOCKSPROXY host="name" port="number" user="userid" pw="password">
  </HTTPSOCKSPROXY>

  <FIREWALL>
  <SERVER host="name" port="number" user="userid" pw="password"> </SERVER>
  <FIRECMD> command </FIRECMD>
  </FIREWALL>
</CLIENT>

```

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The CLIENT data set contains information to describe the local z/OS system environment, as well as some processing options for the new RECEIVE ORDER command and the existing RECEIVE FROMNETWORK command. The information in the CLIENT data set is described using the <CLIENT> tag and attributes.

There are three groups of options specified in the CLIENT data set:

1. Options that affect Java interactions for RECEIVE ORDER command processing. The **javahome** attribute indicates the directory where the Java runtime resides. The **classpath** attribute indicates the directory where the SMP/E Java application classes reside (SMP/E V3.4 supplies a set of application classes that are installed into the /usr/lpp/smp/classes directory, and this attribute is used to identify that directory). The **javadefbugoptions** attribute indicates if trace and debug output should be generated. It can also be used to specify options for the Java runtime, such as heap storage size. For example, javadefbugoptions="-Xmx128m".
2. Options that affect HTTP operations. These are new options used during HTTPS communications with the remote server to describe local HTTP or SOCKS proxy servers.
3. Options that affect FTP operations. These are existing options used for both RECEIVE ORDER and RECEIVE FROMNETWORK that indicate how many "get" retries should be performed if a file is not transferred correctly, should debug and trace output be generated, and how to navigate a local firewall.

Note: SMP/E's use of FTP is the same for the RECEIVE ORDER and RECEIVE FROMNETWORK commands. Therefore, if you are already a successful user of the RECEIVE FROMNETWORK command, then you should use the same FTP options for the RECEIVE ORDER command.

SMP/E Internet Service Retrieval

ORDER Entry - Downloaded Orders

- SMP/E creates ORDER entries in the global zone to describe orders.
- After the package for an ORDER has been downloaded:
 - Its status is set to DOWNLOADED.
 - Its contents can be expanded and received.
- Sample global zone ORDER entry:

```

ORD00036  CONTENT      = CRITICAL
          STATUS      = DOWNLOADED
          DATE/TIME ORDER = 05.281  10:01:53
          DATE/TIME DOWNL = 05.281  10:15:44
          USERID       = JOHNDOE
          ORDERID      = H234567893
          PKGID        = ORD00036-8October2005-10.14.37
          ZONES        = ZOS17T
            
```

Status is DOWNLOADED

Directory in the SMPNTS where the package resides

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The RECEIVE ORDER command will create entries in the Global zone to describe an order placed with the IBM server. Among other things, ORDER entries indicate:

- The requested content for the order
- The order's status
- When the order was submitted and when its package was downloaded
- What z/OS userid submitted the job which created the ORDER entry
- The server's identifier for the order (ORDERID)
- Where (what directory) the package for the order is stored within the SMPNTS
- The zones used when creating the software inventory for this order.

SMP/E Internet Service Retrieval

ORDER Entry - Pending Orders

- If the order is not fulfilled in the specified (or default) wait time:
 - ▶ RECEIVE processing ends
 - ▶ Such an order remains in a **pending** state
 - ▶ A subsequent RECEIVE ORDER PENDING command will continue processing for this order.
- Sample Global zone ORDER entry:

```

ORD00036  CONTENT          = CRITICAL
          STATUS          = PENDING
          DATE/TIME ORDER = 05.281  10:01:53
          USERID          = JOHNDOE
          ORDERID         = H234567893
          ZONES           = ZOS17T
          ORDER SERVER    = <ORDERSERVER
                        url="https://eccgw01.boulder.ibm.com/services/projects/ecc/ws"
                        keyring="myKeyRing"
                        certificate="SMPE Client Certificate">
                        </ORDERSERVER>
          
```

Status is PENDING

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Once an order has been submitted to the IBM server, the RECEIVE ORDER command will wait for the server to manufacture a package to satisfy the request. If the package is not ready for download within the time allowed (specified by the user or the default of 120 minutes), then SMP/E will stop processing. The order is described by an ORDER entry in the global zone and remains in a "pending" state. The package for such an order can be retrieved later by SMP/E using the RECEIVE ORDER PENDING command.

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RECEIVE ORDER Command – Basic Syntax

- Pending Order:

```

RECEIVE ORDER(
    PENDING(ordername)
    WAIT(minutes | NOLIMIT)
    CLIENT(dname)
    TRANSFERONLY
)
DELETEPKG.

```

Note: For simplicity, existing operands such as SOURCEID and LIST are not shown, but are acceptable.

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To receive a pending order, an alternate form of the RECEIVE ORDER command is used. The new and related operands of the command are as follows:

PENDING

Specifies the name of an existing ORDER entry whose package has not yet been downloaded.

WAIT

How long SMP/E should wait for the order to be ready for download. You can specify 0 – 1440 minutes, or NOLIMIT. The default is 120 minutes.

TRANSFERONLY

RECEIVE processing should stop after the package files have been downloaded into the SMPNTS directory.

DELETEPKG

The package files should be deleted from the SMPNTS directory after the PTF and HOLDDATA contents of the package have been processed.

Note: Existing RECEIVE command operands such as SOURCEID, LIST, and ZONEGROUP are still acceptable, but not changed or described here.

SMP/E Internet Service Retrieval

RECEIVE ORDER Example – Pending Order

```

//jobname JOB ...
//RECEIVE EXEC PGM=GIMSMP
//SMPCSI DD DSN=SMPE.GLOBAL.CSI,DISP=SHR
//SMPNTS DD PATH='/u/smpe/smpnts/',PATHDISP=KEEP
//SMPCTL DD *
SET BOUNDARY(GLOBAL).
RECEIVE ORDER(
  PENDING(ORD00036) /* Get existing (pending) order */
  CLIENT(MYCLIENT)
)
DELETEPKG /* Delete package when receive is done */.
/*
//MYCLIENT DD *
<CLIENT
  javahome="/usr/lpp/java/J1.4"
  classpath="/usr/lpp/smp/classes">
</CLIENT>
/*

```

- If not downloaded by a RECEIVE PENDING operation, pending orders eventually expire and are purged from the download server (just like ShopzSeries, 14 days).
- New orders can be submitted even if one or more pending orders exist.

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This is an example of the RECEIVE ORDER PENDING command. It is used to download the package for an order whose processing was not completed. If an order is not downloaded to z/OS by a RECEIVE ORDER PENDING operation, eventually the package for the order will expire and be deleted from the download server. In this case a new order can be submitted and a new package will be created.

The slide is titled "RECEIVE FROMNTS Command" and is part of an "SMP/E Internet Service Retrieval" presentation. It contains a bulleted list of information regarding the RECEIVE FROMNTS command. The first bullet point states that the command may fail if an ORDER was processed with the TRANSFERONLY operand or if SMPPTS runs out of space. The second bullet point explains that the package has been downloaded but PTFs have not been received, and provides an example directory path: /u/smpe/smpnts/ORD00036-8October2005-10.14.37. The third bullet point states that the package contents can be received using RECEIVE FROMNTS. A code block shows the syntax for the RECEIVE FROMNTS command, including the packageid, ORDER (ordername), and the DELETEDPKG option. The slide footer indicates it is from SMP/E Version 3 Release 4, © 2005 IBM Corporation, and is slide 21.

SMP/E Internet Service Retrieval

RECEIVE FROMNTS Command

- Suppose an ORDER was processed with the TRANSFERONLY operand, or
- RECEIVE fails because SMPPTS runs out of space (for example).
- The package has been downloaded but the PTFs have not been received:
 - The package resides in a directory like this:
`/u/smpe/smpnts/ORD00036-8October2005-10.14.37`
- The package contents can be received using RECEIVE FROMNTS:

```
RECEIVE FROMNTS (  
    packageid |  
    ORDER(ordername)  
)  
DELETEDPKG.
```

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Suppose the package for an ORDER has been downloaded but the PTFs and HOLDDATA in the package have not been received. This can be true if the ORDER was processed with the TRANSFERONLY operand, or if the RECEIVE command fails because of an error such as the SMPPTS data set running out of space. In either case, you can use the RECEIVE FROMNTS command variation to process the package contents. The RECEIVE FROMNTS command is not new, but it has been extended to allow you to specify the entry name for an ORDER entry as a way to identify the package you want to process.

SMP/E Internet Service Retrieval

RECEIVE ORDER Processing Notes

- When PTFs are received from an ORDER, a sourceid of the ORDER entry name is assigned.
 - The sourceid helps identify where the PTF came from.
 - This sourceid is in addition to the other sourceids defined by ++ASSIGN statements.
- Sample Global Zone SYSMOD Entry:

UA21152	TYPE	= PTF			
	STATUS	= REC			
	DATE/TIME REC	= 06.027	11:27:17		
	SOURCEID	= HIPER	ORD00080	PRP	PUT0510 RSU0511
	SREL VER(001)	= Z038			
	FMID VER(001)	= HDZ11G0			
	PRE VER(001)	= UA16223	UA18777	UA20870	
	SUPING VER(001)	= AA11314			
	MOD	= IDAVQDRV	IDAV192C	IDAV194A	

ORDER Entry Name
Sourceid

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When the PTFs contained in a package for an order are processed (stored in the Global zone and SMPPTS data set), a sourceid will be assigned to the PTFs that matches the entry name for the ORDER entry. This helps identify where the PTFs came from and how they were acquired.

SMP/E Internet Service Retrieval

Global Zone ORDER Entry Cleanup

- Each successful RECEIVE ORDER command will create a new ORDER entry in the global zone
 - ▶ SMP/E generates a unique entry name of the form ORDnnnnn.
- You can manually delete entries using UCLIN, or
- ORDER entries may be **purged automatically**:
 - ▶ New ORDER RETENTION subentry for the OPTIONS entry.
 - ▶ Default value is 180 days.
 - ▶ RECEIVE ORDER command compares each existing ORDER entry to the active ORDER RETENTION value.
 - Entries are deleted if older than the ORDER RETENTION value.
 - Only for orders with a status of DOWNLOADED or ERROR.
- **Note:** ORDER entries may be purged, but the packages in SMPNTS are not.
 - ▶ The DELETEPKG operand on RECEIVE is recommended.

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Every new order submitted by the RECEIVE ORDER command causes a new ORDER entry in the global zone to be created. SMP/E generates a unique name for each ORDER entry of the form ORDnnnnn. Depending on how often you use the RECEIVE ORDER command, over time you may have many ORDER entries in your global zone.


You can manually delete ORDER entries from the global zone using the UCLIN command of course. However, ORDER entries may also be purged automatically from the global zone. An ORDER RETENTION value determines how long ORDER entries should be retained in the global zone. The value is defined by a new subentry in the OPTIONS entry. During RECEIVE ORDER command processing, SMP/E will examine each and every existing ORDER entry in the global zone and compare it to the active ORDER RETENTION value. If the order is too old, it will be deleted from the global zone. The ORDER RETENTION value may be 0 – 9999 days, and the default is 180 days. An ORDER RETENTION value of 0 days means the ORDER entry will be deleted immediately after the package for the order has been downloaded.

Note: The package in the SMPNTS directory associated with an ORDER entry is not affected when the entry is deleted from the global zone. The DELETEPKG operand on the RECEIVE command is recommended to automatically delete the package from the SMPNTS once the PTF and HOLDDATA content of the package has been processed.

SMP/E Internet Service Retrieval

Miscellaneous Usage Notes

- More than one RECEIVE ORDER job can run at the same time, to submit simultaneous orders for different Global zones.
 - ▶ The server can handle many orders at once.
 - ▶ The Global zone (SMPCSI data set) is the serializing resource.
- Use a job scheduler to submit RECEIVE ORDER jobs automatically.
 - ▶ You choose the frequency and content. For example:
 - Order critical PTFs daily
 - Order recommended PTFs monthly
 - ▶ If you order ALL PTFs daily, you never need to submit any other order... you will have every PTF applicable to your system ready in the global zone when you need it.

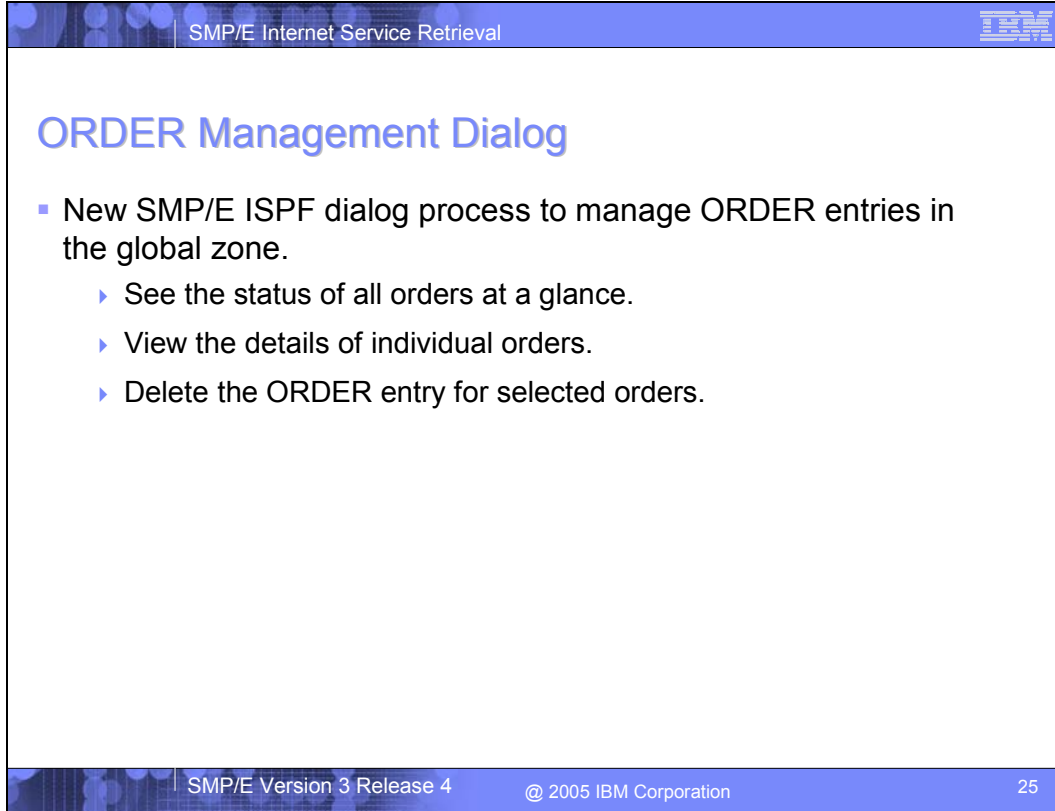


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The Global zone is the resource that serializes RECEIVE ORDER processing, therefore, more than one RECEIVE ORDER job can run at the same time, to submit multiple orders to the server, as long as each job uses a different Global zone. The server can handle many orders at once.

If you have an existing job scheduling package on z/OS, you can setup an SMP/E RECEIVE ORDER job to run automatically. You get to choose the frequency that the job runs, and the order content for the job. For example, you could automate a job that orders Critical PTFs every night, or Recommended PTFs once a week. Set it for whatever frequency and content you desire. Set it and forget it!

If you automate a job to order All PTFs every day, then you should never need to submit another order for any PTFs again. This is because you will have in your global zone every single PTF that is applicable to your system, ready to go when or if you need it.



The screenshot shows a presentation slide titled "ORDER Management Dialog" within the "SMP/E Internet Service Retrieval" application. The slide lists the following features:

- New SMP/E ISPF dialog process to manage ORDER entries in the global zone.
 - ▶ See the status of all orders at a glance.
 - ▶ View the details of individual orders.
 - ▶ Delete the ORDER entry for selected orders.

The footer of the slide includes "SMP/E Version 3 Release 4", "@ 2005 IBM Corporation", and the page number "25".

In an effort to help you understand and manage the ORDER entries in your global zone, SMP/E has created a new leg of its ISPF dialogs dedicated to ORDER entries. Using the ORDER Management Dialog you can see the status of all orders at a glance, view the details of individual orders, and delete the ORDER entry for selected orders.

SMP/E Internet Service Retrieval

ORDER Management Dialog

```

----- SMP/E PRIMARY OPTION MENU ----- SMP/E 34.00
====>

 0 SETTINGS          - Configure settings for the SMP/E dialogs
 1 ADMINISTRATION   - Administer the SMPCSI contents
 2 SYSMOD MANAGEMENT - Receive SYSMODs and HOLDDATA
                    and install SYSMODs
 3 QUERY            - Display SMPCSI information
 4 COMMAND GENERATION - Generate SMP/E commands
 5 RECEIVE          - Receive SYSMODs, HOLDDATA and
                    support information
 6 MIGRATION ASSISTANT- Generate Planning and Migration Reports
 7 ORDER MANAGEMENT - Manage ORDER entries in the global zone

 D DESCRIBE         - An overview of the dialogs
 T TUTORIAL         - Details on using the dialogs
 W WHAT IS NEW      - What is New in SMP/E

Specify the name of the CSI that contains the global zone:
SMPCSI DATA SET  ==> SMPE.GLOBAL.CSI
(Leave blank for a list of SMPCSI data set names.)

Specify YES to have DD statements for SYSOUT and temporary
data sets generated. Specify NO, to use DDDEFS.
Generate DD statements  ==> NO

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```

New dialog option

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A new option 7 on the SMP/E Primary Option Menu leads to the new ORDER Management Dialog.

SMP/E Internet Service Retrieval

ORDER Management Dialog

```

----- ORDER Entries ----- Row 1 to 14 of 14
====>                               SCROLL ==> PAGE

Commands: FIND -Find a string

Actions:  S -Select, D -Delete

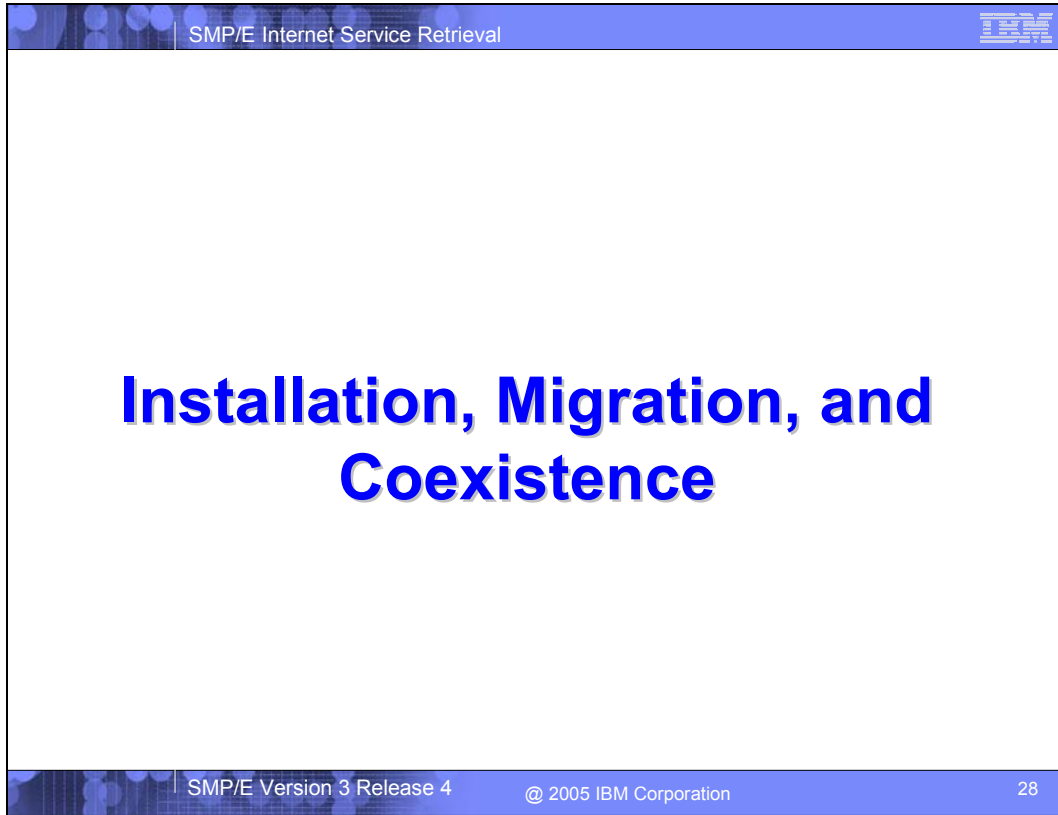
  Entry          Order          Download
  Name           Status      Content      Date and Time  Date and Time
  -----
ORD00001  DOWNLOADED  HOLDDATA    05.048 15:30:42 05.048 15:40:58
ORD00002  DOWNLOADED  CRITICAL    05.049 08:23:47 05.049 08:29:03
ORD00003  DOWNLOADED  HOLDDATA    05.052 10:52:18 05.053 13:35:45
ORD00004  DOWNLOADED  PTFS        05.052 11:52:55 05.053 14:22:01
ORD00005  DOWNLOADED  APARS       05.053 14:45:36 05.053 14:50:52
ORD00006  DOWNLOADED  HOLDDATA    05.054 10:28:33 05.054 11:26:50
ORD00007  DOWNLOADED  RSU0501    05.054 10:34:06 05.054 17:56:03
ORD00008  PENDING     CRITICAL    05.056 15:02:16
ORD00009  PENDING     CRITICAL    05.056 15:47:56
ORD00010  DOWNLOADED  PTFS        05.059 16:20:04 05.059 16:33:45
ORD00011  PENDING     HOLDDATA    05.063 10:32:38
ORD00012  PENDING     PTFS        05.068 17:30:12
ORD00013  DOWNLOADED  PTFS        05.068 17:46:57 05.069 13:25:47
ORD00014  DOWNLOADED  HOLDDATA    05.069 09:21:19 05.069 09:36:22
***** Bottom of data *****
                    
```

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This is an example of the display for the new ORDER Management Dialog. ORDER entries can be selected for detailed viewing (just like in the Query dialogs), or the entries can be deleted from the global zone.

Notice the value of the CONTENT subentry for an order that requested RECOMMENDED PTFs. The value stored in the ORDER entry corresponds to the most recent Recommended Service Update level (RSU sourceid) at the time the order was submitted and fulfilled.

Note: The package in the SMPNPTS directory associated with an ORDER entry is not affected when the entry is deleted from the global zone.



SMP/E Internet Service Retrieval

Installation, Migration, and Coexistence

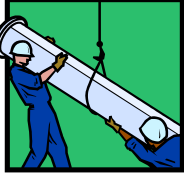
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This is a presentation slide with a blue header and footer. The header contains the text 'SMP/E Internet Service Retrieval' and a small logo on the right. The main body of the slide is white and features the title 'Installation, Migration, and Coexistence' in large, bold, blue font. The footer contains the text 'SMP/E Version 3 Release 4 @ 2005 IBM Corporation' and the number '28' on the right.

SMP/E Internet Service Retrieval

Installation

- No unique or new installation considerations, **except:**
- SMP/E supplies ++HFS elements for Java application classes
 - New for SMP/E V3.4
- New target directory
 - Ddname: SGIMDIR
 - /usr/lpp/smp/IBM/
/usr/lpp/smp/classes/com/ibm/smp/
- New distribution library
 - Ddname: AGIMBIN
 - GIM.AGIMBIN




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New for SMP/E V3.4 are ++HFS elements. That is, SMP/E V3.4 will supply Java application class files that must be installed into a UNIX file system directory. The packaging and installation of these files follows the model typical of other z/OS elements and products.

SMP/E Internet Service Retrieval

Recommended PTFs and APAR fixes




- **Recommended SMP/E PTF**
 - ▶ **UO00348** (service level 34.10)
 - ▶ This PTF and its pre-requisites include, but are not limited to, the following fixes and enhancements:
 - Add javahome attribute in CLIENT data set
 - Warning message for expiring user certificates
 - Additional debug information for certain Java and HTTPS failures
 - Correct inventory scope for PTFs
 - Guarantee HOLDDATA delivery (satisfies user requirements)
 - Do not require CSNBOWH from ICSF

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When installing SMP/E V3.4, ensure you also install PTF UO00348. This PTF provides important fixes and support for the RECEIVE ORDER command, including the javahome attribute in the CLIENT data set as described within this presentation.

SMP/E Internet Service Retrieval

Migration, and Coexistence



- Migration
 - ▶ There are no migration considerations.
 - ▶ The UPGRADE command is **NOT** required for migration to SMP/E V3.4.
- Coexistence
 - ▶ Coexistence PTFs for prior release levels are available.
 - UO00114, UO00115, UO00116
 - ▶ No incompatible changes are made to SMP/E data sets, but coexistence will ensure prior releases can operate properly when sharing SMPCSI data sets that contain new function data, such as ORDER entries in the global zone.

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There are no migration considerations when coming from a lower release level of SMP/E. That is, SMP/E V3.4 makes **NO** incompatible changes to SMPCSI data sets. Also, there are no unusual coexistence considerations. The usual coexistence PTFs are available to ensure prior SMP/E releases can operate properly when sharing SMP/E SMPCSI data sets that contain new function data, such as ORDER entries in the global zone.

SMP/E Internet Service Retrieval

Dependencies

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SMP/E Internet Service Retrieval

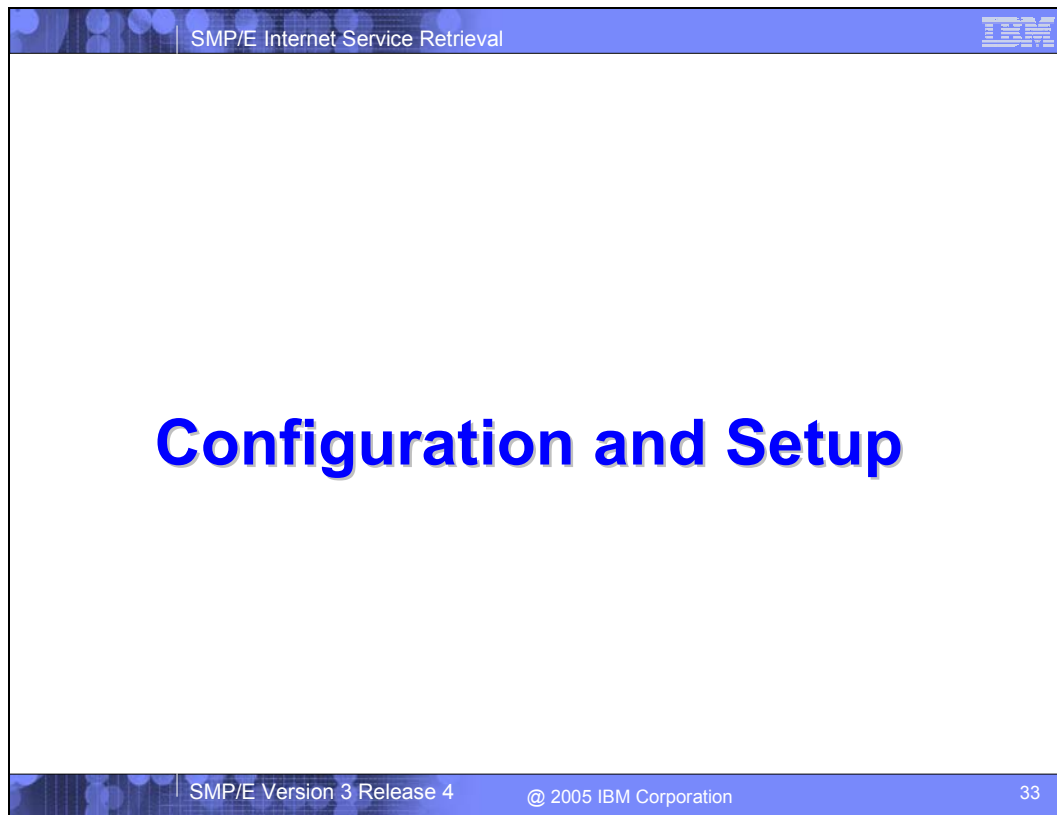
Dependencies

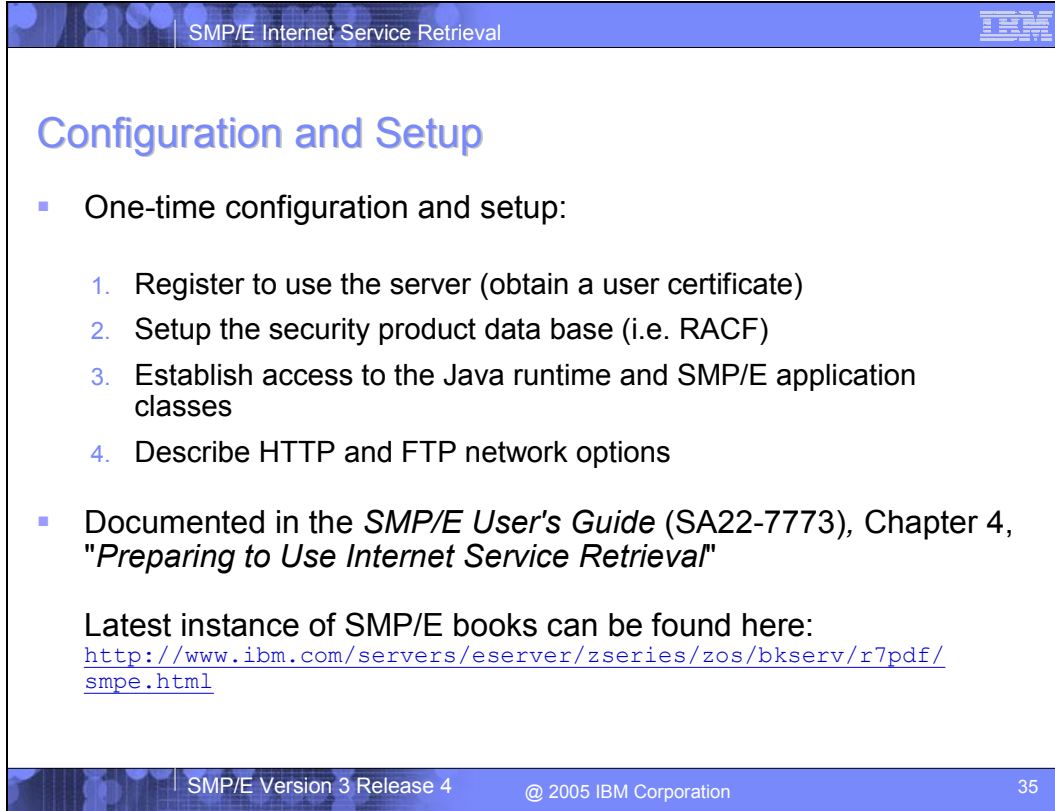
- Hardware
 - ▶ No special hardware dependencies.
- Software
 - ▶ SMP/E uses Java classes for HTTPS communication.
 - ▶ SMP/E requires *IBM SDK for z/OS, Java 2 Technology Edition, Version 1.4 (5655-I56)* with PTF UK04987 (level 1.4.2) or a logical successor:
 - IBM 64-bit SDK for z/OS, Java 2 Technology Edition, Version 1.4
 - IBM 31-bit SDK for z/OS, Java 2 Technology Edition, Version 5
 - IBM 64-bit SDK for z/OS, Java 2 Technology Edition, Version 5
 - ▶ Use of Java implies increased memory requirements for SMP/E
 - Recommend using REGION=0M

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To perform the HTTPS communications with the *IBM Automated Delivery Request Server*, SMP/E uses Java classes. Therefore, to use the RECEIVE ORDER command requires IBM SDK for z/OS, Java 2 Technology Edition, Version 1.4 (5655-I56) with PTF UK04987 (level 1.4.2) or a logical successor be installed and available on the z/OS system where SMP/E is running.

Note: The use of Java by SMP/E means the memory requirements for an SMP/E RECEIVE job step have increased. The recommendation is to specify REGION=0M to ensure SMP/E and Java have adequate memory available.





The screenshot shows a presentation slide with a blue header and footer. The header contains the text 'SMP/E Internet Service Retrieval' and a small IBM logo. The main content area has a title 'Configuration and Setup' in blue. Below the title is a bulleted list with four items. The first item is 'One-time configuration and setup:', followed by a numbered list of four steps: 1. Register to use the server (obtain a user certificate), 2. Setup the security product data base (i.e. RACF), 3. Establish access to the Java runtime and SMP/E application classes, and 4. Describe HTTP and FTP network options. The second bulleted item is 'Documented in the *SMP/E User's Guide (SA22-7773)*, Chapter 4, "*Preparing to Use Internet Service Retrieval*". Below this is the text 'Latest instance of SMP/E books can be found here:' followed by a blue underlined URL: <http://www.ibm.com/servers/eserver/zseries/zos/bkserv/r7pdf/smpe.html>. The footer contains 'SMP/E Version 3 Release 4', '@ 2005 IBM Corporation', and the page number '35'.

Before using the RECEIVE ORDER command there are various configuration and setup tasks that must be performed. The tasks are documented in detail in the SMP/E User's Guide (SA22-7773), Chapter 4 "Preparing to use RECEIVE ORDER Processing". The very latest instance of the SMP/E publications, including updates from the most recent APARs, and a significant rewrite and improvement of the SMP/E User's Guide chapter 4, can be found here:

<http://www.ibm.com/servers/eserver/zseries/zos/bkserv/r7pdf/smpe.html>

SMP/E Internet Service Retrieval

Obtaining a User Certificate



1. Sign in to ShopzSeries
<http://www.software.ibm.com/ShopzSeries>
2. Click on "create new software orders"
3. Select a Customer number, Operating environment of z/OS (or z/OS.e), and a Package category of "Automated delivery certificates"
4. Enter an encryption pass phrase and continue
 - ▶ A PKCS#12 certificate file will be generated.
 - ▶ The file is encrypted using your specified pass phrase.
5. Download the generated certificate file to your workstation.
6. Upload the certificate file to z/OS.
 - ▶ Must be transferred as binary data.
 - ▶ Must be stored in a sequential data set.
 - ▶ Sequential data set must have RECFM=VB.

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To access the *IBM Automated Delivery Request Server* you must have appropriate access permission. Permission is granted if you have an x.509 certificate generated for this specific purpose. To get a certificate you must use ShopzSeries (<http://www.software.ibm.com/ShopzSeries>). After you log onto ShopzSeries you must "create a new software order." Then you must select a Customer number from your profile, an Operating environment of z/OS or z/OS.e, and a Package category of "Automated delivery certificates." You then supply an encryption pass phrase. This pass phrase is used to encrypt the PKCS#12 certificate file that will contain the generated client certificate and its associated private key.

After you download the generated certificate file to your workstation and upload it to your z/OS system, you can then add the certificate to your z/OS security product data base.


Note: The certificate file must be transferred as binary data, stored on z/OS as a sequential data set, and the sequential data set must have RECFM=VB.

SMP/E Internet Service Retrieval

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Security Product Setup

RACF is assumed here, but other security products are acceptable.



1. Ensure you have access to use the RACDCERT command.
2. Create a RACF keyring:


```
RACDCERT ID(userid) ADDRING(KeyRingName)
```
3. Trust the Equifax CA certificate and connect it to the keyring:


```
RACDCERT CERTAUTH ALTER( +
            LABEL('Equifax Secure CA')) TRUST
RACDCERT ID(userid) CONNECT( CERTAUTH +
            LABEL('Equifax Secure CA') +
            RING(KeyRingName) USAGE(CERTAUTH) )
```

Note: If using z/OS R5 or earlier you must go to the GeoTrust website and download the Equifax CA certificate.

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Once the generated certificate file is on your z/OS system in a sequential data set, you can add it to your z/OS security product data base. In this discussion RACF is assumed, although other security products are acceptable. You must refer to your security product's documentation to determine the equivalent tasks.

First you must ensure you have access to use the RACDCERT command. The next step is to create a RACF keyring. Keyrings are named resources used to collect certificates for a particular userid. Then you need to connect the Equifax Certificate Authority (CA) certificate to your keyring. The Equifax CA certificate is used during SSL processing to authenticate the IBM server.

Note: If you are using z/OS R6 or R7 then the Equifax CA certificate is defined in RACF by default. However, if you are using z/OS R5 or R4 then you must go to the GeoTrust website to obtain the Equifax CA certificate (http://www.geotrust.com/resources/root_certificates/index.htm).

SMP/E Internet Service Retrieval

Security Product Setup...

4. Add the generated user certificate and connect it to the keyring:

```
RACDCERT ID(userid) ADD('user.certificate.dataset.name') +
  WITHLABEL('SMPE Client Certificate') TRUST +
  PASSWORD('EncryptionPassPhrase')
RACDCERT ID(userid) CONNECT( LABEL('SMPE Client Certificate') +
  RING(KeyRingName) USAGE(CERTAUTH) )
```

If you use CA-ACF2 instead of RACF for your security product

- ▶ Ensure you have the following PTFs:
 - R8.0 QO67727
 - R6.5 QO61584(?)
- ▶ Refer to CA Hyper Notification QI73845 for equivalent setup instructions

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Finally you must add the generated certificate to your security product data base and connect it to the keyring.

Note: If you use CA-ACF2 instead of RACF for your security product, ensure you have the following PTFs installed and operational before attempting to execute the RECEIVE ORDER command:

```
R8.0  QO67727
R6.5  QO61584(?)
```

In addition, refer to Computer Associates Hyper Notification QI73845 for equivalent setup instructions.

SMP/E Internet Service Retrieval

User Certificate Notes

- Obtaining a user certificate and configuring RACF is required only once.
 - RECEIVE ORDER can be used many times using the same certificate.
- *However*, x.509 certificates contain expiration dates.
 - IBM Automated Delivery Request certificates will expire after 1 year.
- RECEIVE ORDER will provide certificate status:
 - Warning message if the user certificate will expire within 30-days
 - Error message when the user certificate expires.
- Simply obtain a new certificate from ShopzSeries and load the new certificate into RACF.

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After you obtain a user certificate from ShopzSeries and load the certificate into your security product data base, you can run the RECEIVE ORDER command many times using the same certificate. However, x.509 certificates are designed with expiration dates built in. The user certificates obtained from ShopzSeries will expire one year after they are generated. When the certificate expires, the RECEIVE ORDER command will indicate so with a specific message. In addition, the RECEIVE ORDER command will warn you if the certificate will expire within 30-days. You must then reregister by obtaining a new certificate from ShopzSeries and loading this new certificate into your security product data base.

SMP/E Internet Service Retrieval

Access to Java and SMP/E Application Classes

- Ensure SMP/E has access to the Java runtime and the SMP/E application classes. Do either:
 - Specify in the CLIENT data set for the RECEIVE ORDER command:
 - ▶ Use the javahome and classpath attributes


```
javahome="/usr/lpp/java/J1.4"
classpath="/usr/lpp/smp/classes"
```
 - ▶ classpath is useful if SMP/E is not installed on the driving system, or to access the correct classpath when using a STEPLIB:


```
classpath="/TGTSYS/usr/lpp/smp/classes"
```
 - Specify new DD statements or DDDEF entries:
 - ▶ SMPJHOME identifies the Java runtime
 - ▶ SMPCPATH identifies the SMP/E application classes

```
//SMPJHOME DD PATH='/usr/lpp/java/J1.4'
//SMPCPATH DD PATH='/usr/lpp/smp/classes'
```

Note: APAR IO03469 adds support for SMPJHOME and SMPCPATH, and removes the ability to use the PATH and CLASSPATH environment variables.

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You must ensure SMP/E has access to the Java runtime and also to the SMP/E Java application classes. Neither can be accessed using a STEPLIB DD statement, therefore you must use one of the following two methods:

Specify them in the CLIENT data set for the RECEIVE ORDER command

In the CLIENT data set use the javahome attribute to specify the directory where the Java runtime resides, and use the classpath attribute to specify the search path for Java application classes:

```
javahome="/usr/lpp/java/J1.4"
classpath="/usr/lpp/smp/classes"
```

Note: The support for the javahome attribute is added by PTF UO00254.

The classpath attribute can be useful if the SMP/E Java application classes are not installed on the driving z/OS system's UNIX file system or when using the STEPLIB DD statement to access a different instance of the SMP/E programs. With the appropriate mountpoints and directory structure, you can point to a target system's directory where SMP/E is installed. For example:

```
classpath="/TGTSYS/usr/lpp/smp/classes"
```

Specify DD statements or DDDEF entries

As an alternative to the `javahome` and `classpath` attributes, you can also use the `SMPJHOME` and `SMPCPATH` DD statements or `DDDEF` entries. If specified, the `SMPJHOME` and `SMPCPATH` DD statements override any values specified on the `javahome` and `classpath` attributes. For example:

```
//SMPJHOME DD PATH='/usr/lpp/java/J1.4'
//SMPCPATH DD PATH='/usr/lpp/smp/classes'
```

Note: APAR IO03469 (PTF UO00335) adds support for the `SMPJHOME` and `SMPCPATH` ddnames, and changes the method in which SMP/E invokes Java. A by product of this change is that the UNIX environment variables `PATH` and `CLASSPATH` can no longer be used to specify the locations of the Java runtime and the SMP/E application classes. Therefore, if you currently set these variables in your `/etc/profile` or in your `$HOME/.profile`, you will need to change and use one of the other two methods described above.

SMP/E Internet Service Retrieval

HTTP Options

- SMP/E communicates with the IBM server using HTTP 1.1 with SSL over port 443 (HTTPS).
- Ask yourself: Must HTTP messages from your z/OS system pass through an HTTP proxy?
 - Similar to specifying a proxy server for your Internet browser.
- If the answer is "yes" then:
 - Identify the proxy in the CLIENT data set for RECEIVE ORDER:


```
<HTTPPROXY host="local.httpproxy.com"/> </HTTPPROXY>
```
 - Similar for SOCKS proxy:


```
<HTTPSOCKSPROXY host="local.socksproxy.com"/> </HTTPPROXY>
```
 - If the proxy requires authentication then specify user and pw.
 - If the proxy listens on a port other than well known ports 80 and 1080 then specify an alternate port.


```
<HTTPPROXY host="local.httpproxy.com"
user="userid" pw="password" port="8080"/> </HTTPPROXY>
```

Consult your Network Administrator!

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SMP/E communicates with the IBM Automated Delivery Request server using the HTTP 1.1 protocol using Secure Sockets Layer (SSL), also known as HTTPS. All communications with the server are performed using the well known HTTPS port of 443.

Options are available in the CLIENT data set for the RECEIVE ORDER command to describe local HTTP or SOCKS proxy servers. The `<HTTPPROXY>` tag is used to identify a local HTTP proxy server, and the `<HTTPSOCKSPROXY>` tag is used to identify a local SOCKS proxy

server. The specified proxy server redirects HTTP requests to the IBM Automated Delivery Request server on the Internet. For example:

```
<HTTPPROXY host="local.httpproxy.com"> </HTTPPROXY>
```

The <HTTPPROXY> and <HTTPSOCKSPROXY> tags are optional, and are only needed if HTTP requests to the Internet from your z/OS system are required to pass through a specific HTTP or SOCKS proxy server. For example, if you must specify a proxy server in your Internet browser configuration to allow you access to websites on the Internet, then you may need to specify the <HTTPPROXY> or <HTTPSOCKSPROXY> tag in the CLIENT data set. If your HTTP or SOCKS proxy server requires authentication, the **user** and **pw** attributes can be used to specify an appropriate userid and password. Also, if your HTTP or SOCKS proxy server listens on a port other than the well known ports 80 and 1080 respectively, the **port** attribute can be used to specify an alternate port value. For example:

```
<HTTPPROXY host="local.httpproxy.com"  
user="userid" pw="password" port="8080"> </HTTPPROXY>
```

See the SMP/E Commands book for complete details of the <HTTPPROXY> and <HTTPSOCKSPROXY> tags and attributes, and **consult your network administrator** for help determining what if anything you must specify for an HTTP or SOCKS proxy server.

SMP/E Internet Service Retrieval

FTP Options

- SMP/E uses the z/OS Communications Server FTP client (/bin/ftp) to download package files from the IBM FTP server.
- Ask yourself: Must FTP traffic from your z/OS system pass through an FTP firewall?
- If the answer is "yes" then:
 - ▶ Identify the local FTP firewall server in the CLIENT data set for RECEIVE ORDER
 - ▶ Identify the commands necessary to navigate the FTP firewall. Example:


```

<FIREWALL>
  <SERVER host="local.ftpproxy.com"/>
  <FIRECMD>&REMOTE_USER;@&REMOTE_HOST;</FIRECMD>
  <FIRECMD>&REMOTE_PW;</FIRECMD>
</FIREWALL>

```
 - ▶ Use a working z/OS Comm Server FTP client job as a guide (PGM=FTP)
 - Specify the same commands in the <FIRECMD> tags
 - ▶ If you already use RECEIVE FROMNETWORK successfully, then no changes are necessary.

Consult your Network Administrator!

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SMP/E uses HTTP to communicate with the IBM Automated Delivery Request server, and it uses FTP to download package files containing PTFs and HOLDDATA from an IBM FTP server to your local z/OS system.

Options are available in the CLIENT data set to identify information necessary to navigate a local FTP firewall server.

Note: SMP/E's use of FTP is the same for the RECEIVE ORDER and RECEIVE FROMNETWORK commands. Therefore, if you are already a successful user of the RECEIVE FROMNETWORK command, then you should use the same FTP options in your CLIENT data set for the RECEIVE ORDER command.

The <SERVER> tag is used to identify the FTP firewall server. You can also specify a userid and password if your firewall server requires authentication.

The <FIRECMD> tags are used to identify the commands necessary to navigate your firewall server. As a guide, the commands you specify in the <FIRECMD> tags should be the same as those you use with the z/OS Communications Server FTP client (PGM=FTP). Since the behavior of firewalls differ, the best method to determine what you should specify in the <FIRECMD> tags is to perform an FTP operation using the z/OS Communications Server FTP client in a JCL job, and then specify the same commands in the <FIRECMD> tags.

Consult your network administrator for help determining what, if anything, you need to specify for an FTP firewall server and commands.

SMP/E Internet Service Retrieval

CLIENT Data Set... Putting it all together

- Example CLIENT data set showing
 - ▶ Java options
 - ▶ HTTP proxy
 - ▶ FTP firewall server and firewall navigation commands

```
//MYCLIENT DD *
<CLIENT
  javahome="/usr/lpp/java/J1.4"
  classpath="/usr/lpp/smp/classes"
  javadebugoptions="-Dcom.ibm.smp.debug=severe">

<HTTPPROXY host="local.httpproxy.com"
  user="userid" pw="password" port="8080">
</HTTPPROXY>

<FIREWALL>
  <SERVER host="local.ftpproxy.com"> </SERVER>
  <FIRECMD>&REMOTE_USER;@&REMOTE_HOST;</FIRECMD>
  <FIRECMD>&REMOTE_PW;</FIRECMD>
</FIREWALL>

</CLIENT>
/*
```

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This is an example of an inline CLIENT data set for the RECEIVE ORDER command. It combines options to identify

- Java runtime and the SMP/E application classes,
- an HTTP proxy server, and
- the FTP firewall server and commands.

This is purely an example. Your specific required options may differ, especially regarding the firewall commands to navigate your FTP firewall.

The image is a screenshot of a presentation slide. At the top, there is a blue header bar with the text "SMP/E Internet Service Retrieval" on the left and a small logo on the right. The main body of the slide is white and contains the title "Integrated Cryptographic Services Facility (ICSF) Mitigation" in a large, bold, blue font, centered. At the bottom, there is a blue footer bar with the text "SMP/E Version 3 Release 4" on the left, "@ 2005 IBM Corporation" in the center, and the number "43" on the right.

SMP/E Internet Service Retrieval

ICSF Mitigation – The Problem

- SMP/E uses the ICSF One-Way Hash Generate callable service to compute SHA-1 hash values.
- Not all z/OS systems have ICSF enabled:
 - ▶ Required hardware not available, or
 - ▶ ICSF not configured (non-trivial task, requiring POR)
- Therefore, not all SMP/E functions are usable.
 - ▶ RECEIVE ORDER / FROMNETWORK / FROMNTS commands
 - ▶ GIMZIP, GIMUNZIP, GIMGTPKG service routines
- If SMP/E can use an alternative to ICSF, then SMP/E capabilities will be usable by a larger audience.

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Existing releases of SMP/E use ICSF to compute SHA-1 hash values. This is done during RECEIVE FROMNETWORK command processing, as well as when using the GIMZIP, GIMUNZIP, and GIMGTPKG service routines. For a number of reasons, not all user z/OS systems have ICSF enabled. Therefore, these SMP/E functions are not usable by all users on all z/OS systems.

The desire is to make these SMP/E functions accessible to a broader set of users. Therefore, an alternate to ICSF for computing SHA-1 hash values must be found.



SMP/E Internet Service Retrieval

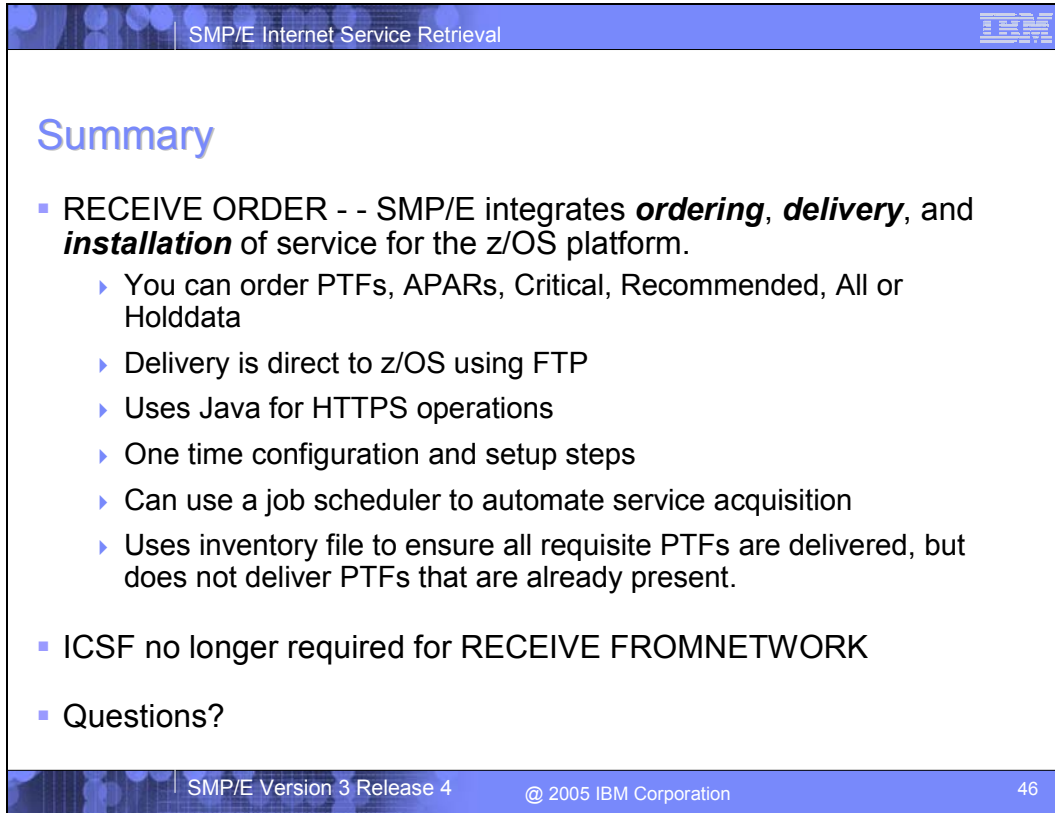
ICSF Mitigation – The Solution

- If ICSF is not active or configured, SMP/E will use an alternate method to compute SHA-1 hash values:
 - ▶ Java MessageDigest class.
 - ▶ SMP/E requires access to Java and SMP/E application classes (just like for RECEIVE ORDER).
- Used for the following functions:
 - ▶ RECEIVE ORDER
 - ▶ RECEIVE FROMNETWORK / FROMNTS
 - ▶ GIMZIP, GIMUNZIP, GIMGTPKG
- Watch for APAR IO03322 (PTF coming soon)
 - ▶ Fixes problem of requiring CSNBOWH in LINKLST

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The Java MessageDigest class provides an alternate method for computing SHA-1 hash values. SMP/E is extended to use the Java MessageDigest class to compute SHA-1 hash values if SMP/E determines ICSF is not active or configured. This allows the RECEIVE ORDER, FROMNETWORK, and FROMNTS commands, as well as the GIMZIP, GIMUNZIP, and GIMGTPKG service routines to be used on z/OS systems that can not use ICSF.

Note: Watch for current SMP/E APAR IO03322. The fixing PTF for this APAR will eliminate the requirement that ICSF callable service CSNBOWH be found in the LINKLST.

A presentation slide with a blue header and footer. The header contains the text 'SMP/E Internet Service Retrieval' and a small IBM logo. The main content area is white with a blue 'Summary' heading. It contains a bulleted list of features for the RECEIVE ORDER command. The footer contains 'SMP/E Version 3 Release 4', '@ 2005 IBM Corporation', and the page number '46'.

SMP/E Internet Service Retrieval

Summary

- RECEIVE ORDER - - SMP/E integrates **ordering**, **delivery**, and **installation** of service for the z/OS platform.
 - ▶ You can order PTFs, APARs, Critical, Recommended, All or Holddata
 - ▶ Delivery is direct to z/OS using FTP
 - ▶ Uses Java for HTTPS operations
 - ▶ One time configuration and setup steps
 - ▶ Can use a job scheduler to automate service acquisition
 - ▶ Uses inventory file to ensure all requisite PTFs are delivered, but does not deliver PTFs that are already present.
- ICSF no longer required for RECEIVE FROMNETWORK
- Questions?

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With the introduction of the RECEIVE ORDER command, SMP/E finally integrates the ordering, delivery, and installation of PTF service for the z/OS platform.

SMP/E Internet Service Retrieval

Appendix

- **SMP/E User's Guide (SA22-7773), Chapter 4, "Preparing to Use Internet Service Retrieval", most recent instance:**
<http://www.ibm.com/servers/eserver/zseries/zos/bkserv/r7pdf/smpe.html>
- **ShopzSeries:**
<https://ww14.software.ibm.com/webapp/ShopzSeries/ShopzSeries.jsp>
- **Enhanced HOLDDATA:**
<http://service.software.ibm.com/holddata/390holddata.html>
- **GeoTrust Certificate Authority web site:**
http://www.geotrust.com/resources/root_certificates/index.htm

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