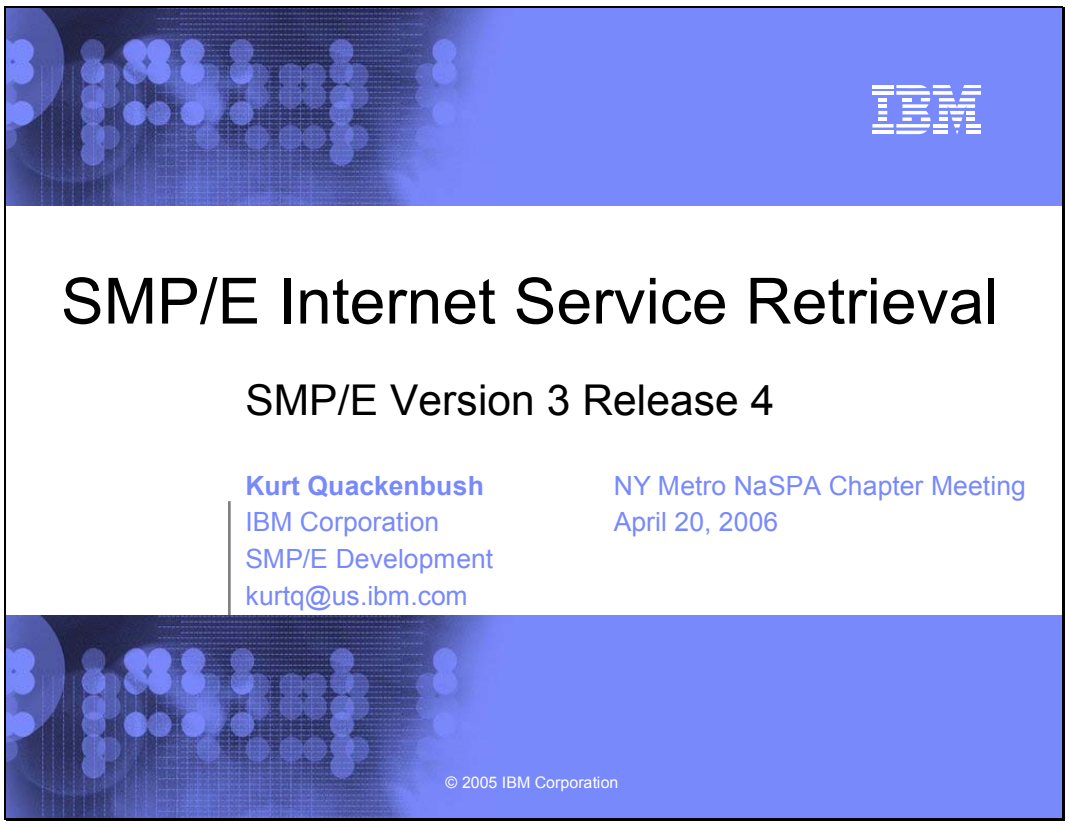


SMP/E Internet Service Retrieval

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 V3.4 Introduction

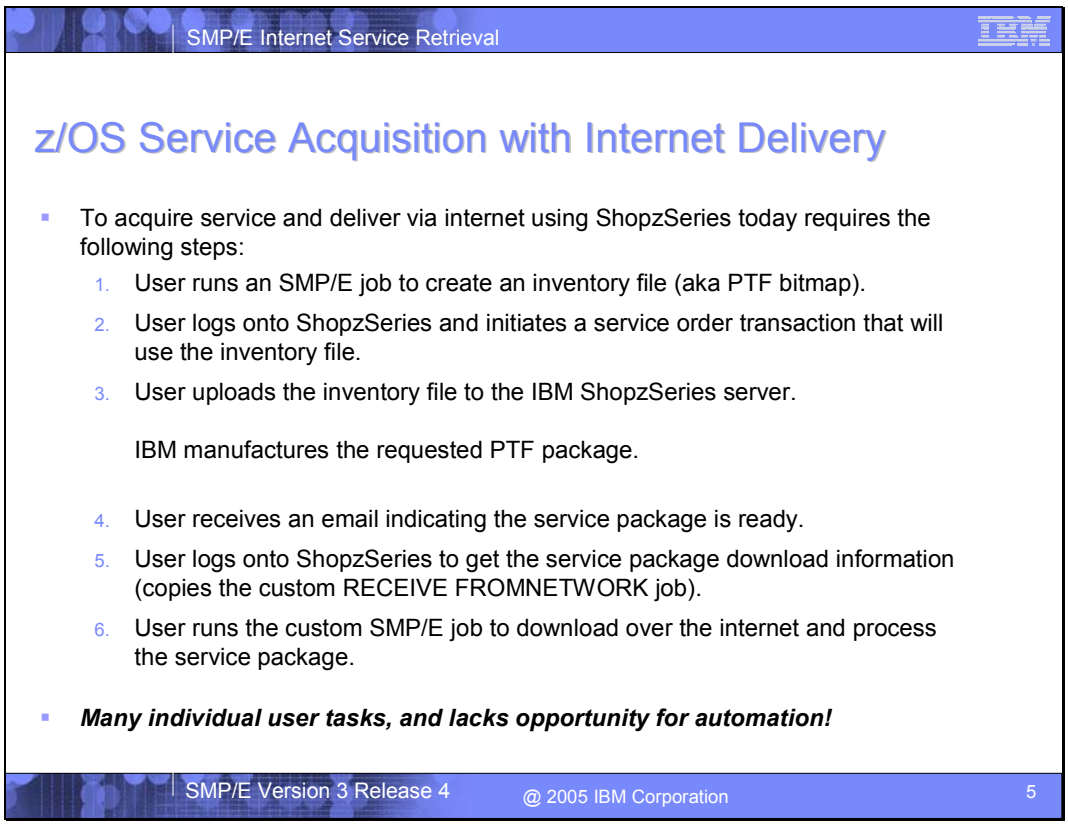
- ***IBM SMP/E for z/OS Version 3 Release 4***
  - Program number 5655-G44
  - Entitled (zero-price) to licensees of all currently supported z/OS or z/OS.e releases
- Availability:
  - SMP/E V3.4 is an independent and separately orderable product, and
  - SMP/E V3.4 is a base element of z/OS V1.7
- Ordering 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

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.

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

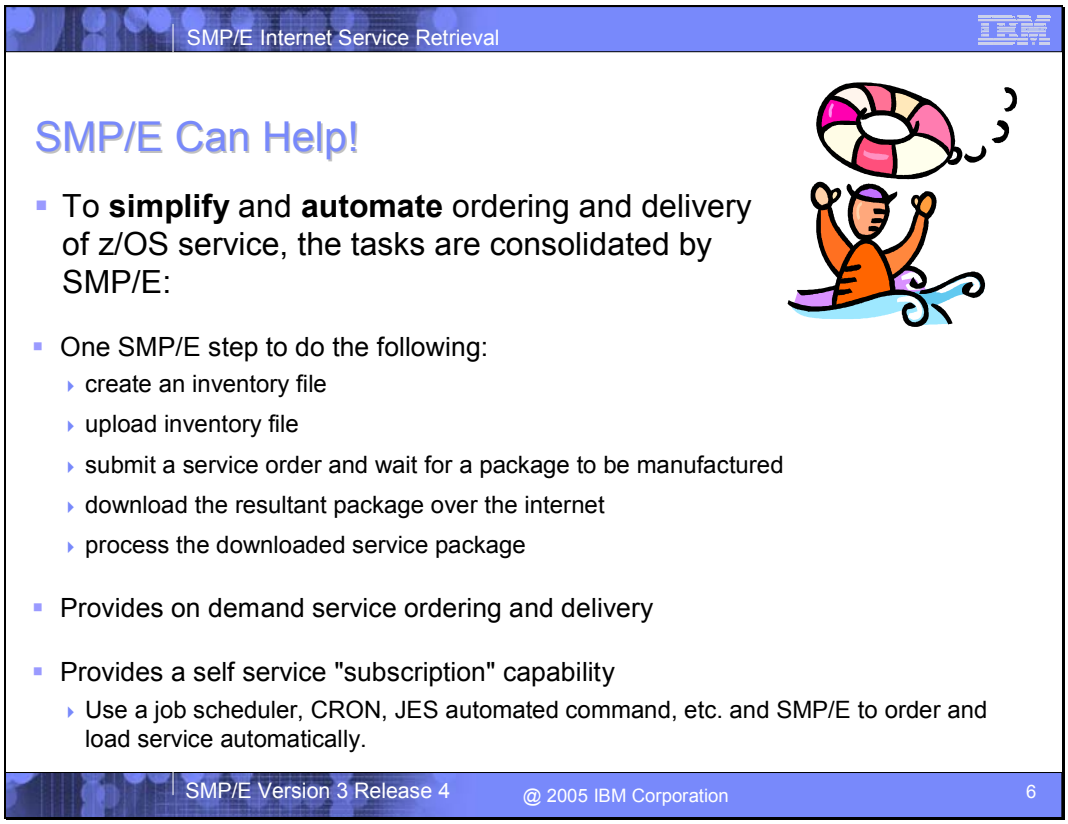
z/OS Service Acquisition: Internet Delivery



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.

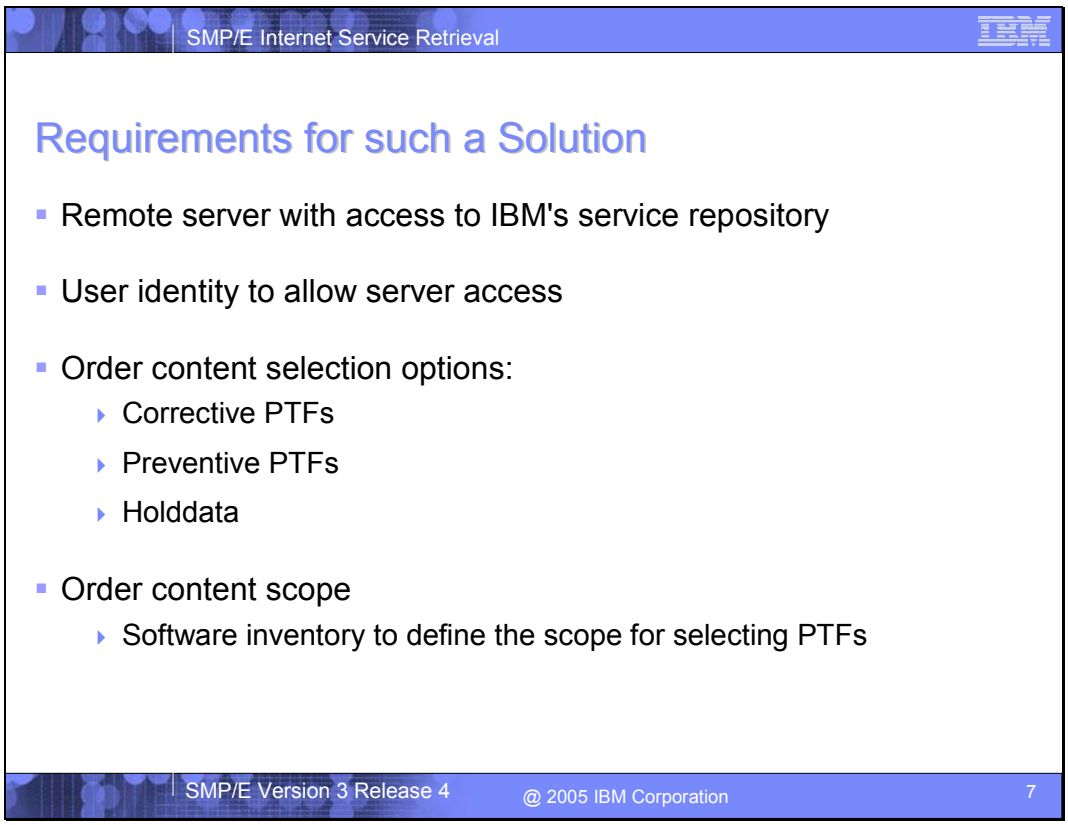
To summarize, there are many individual tasks you must perform, with several opportunities for error. In addition, the process is a series of manual steps with little opportunity for automation of these steps.



SMP/E 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.

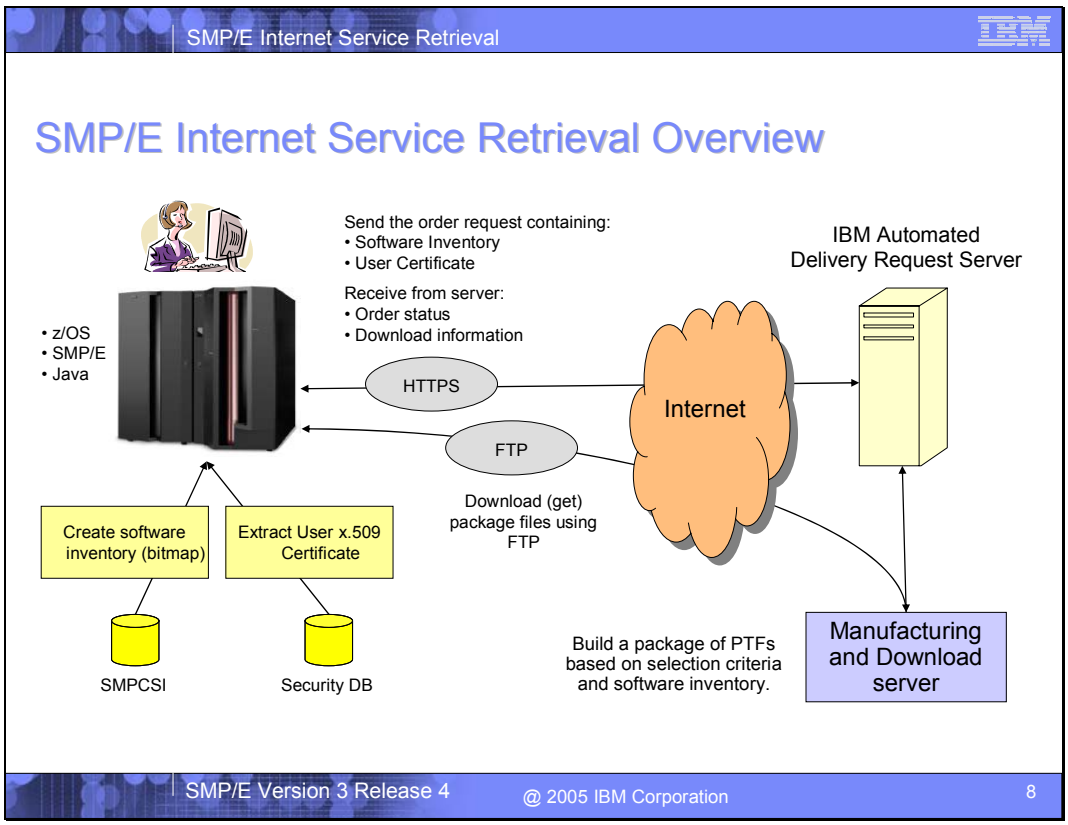


To make such an SMP/E step work, there are several things that must be in place and several pieces of information SMP/E must need.

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.

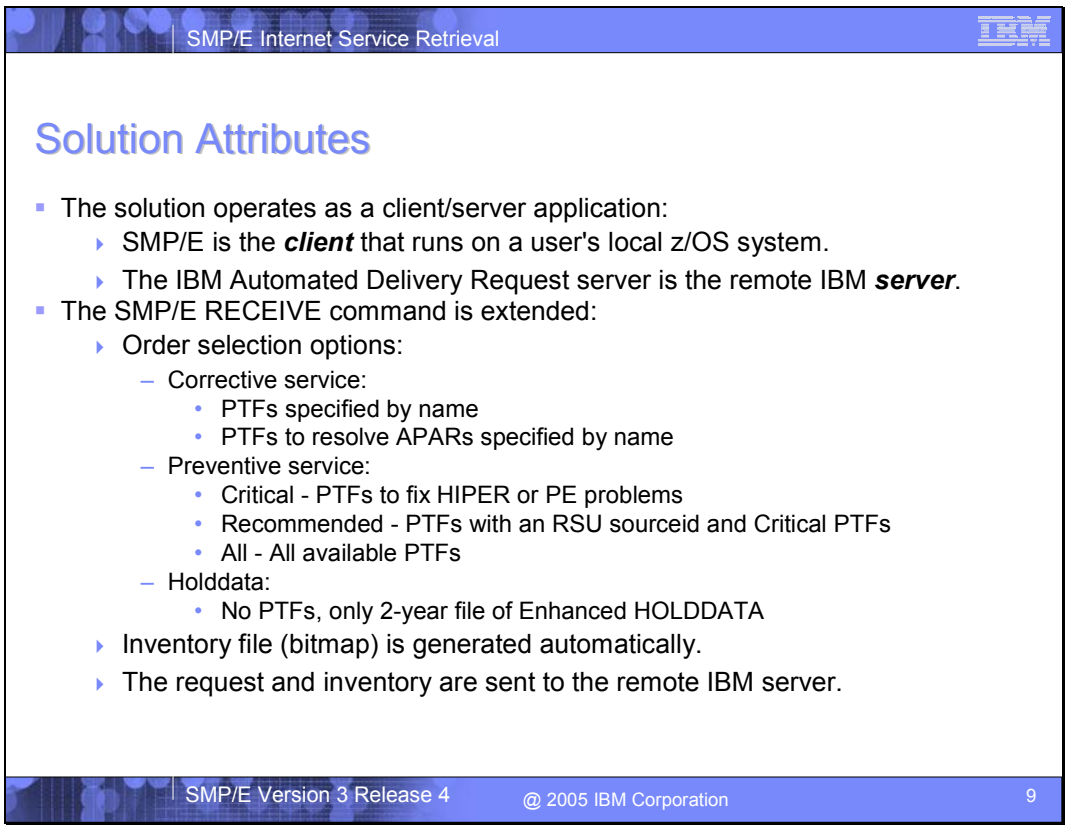
To submit a PTF service order transaction, you must indicate what PTFs you want. Is this a corrective service order where you specify one or more PTFs by name, or by specifying the APARs for which you desire fixing PTFs? Is this a preventive service order where you want all recommended PTFs? Or do you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



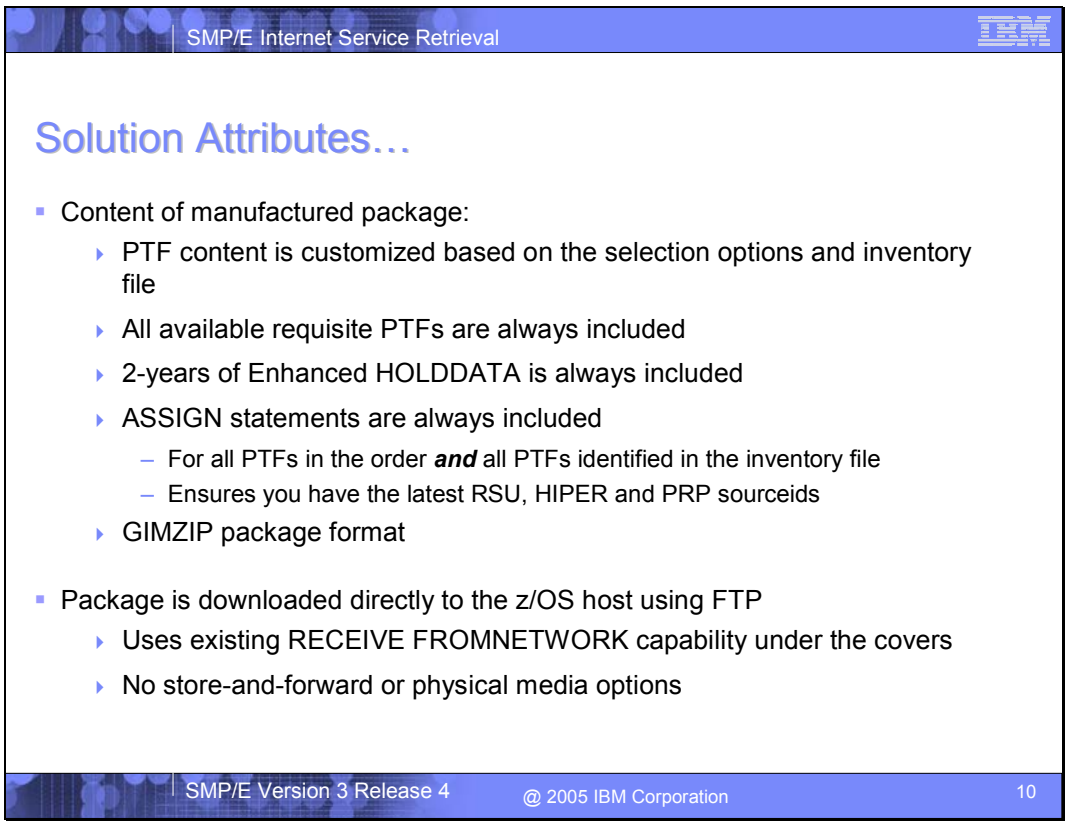
The SMP/E solution operates as a client/server application, where SMP/E is the client that runs on your local z/OS system, and the *IBM Automated Delivery Server* is the remote IBM server that can access IBM's service repository. More specifically, the SMP/E RECEIVE command is extended to support this 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 RSUnnnn sourceid, and PTFs to resolve HIPERs and PEs.
- All PTFs.

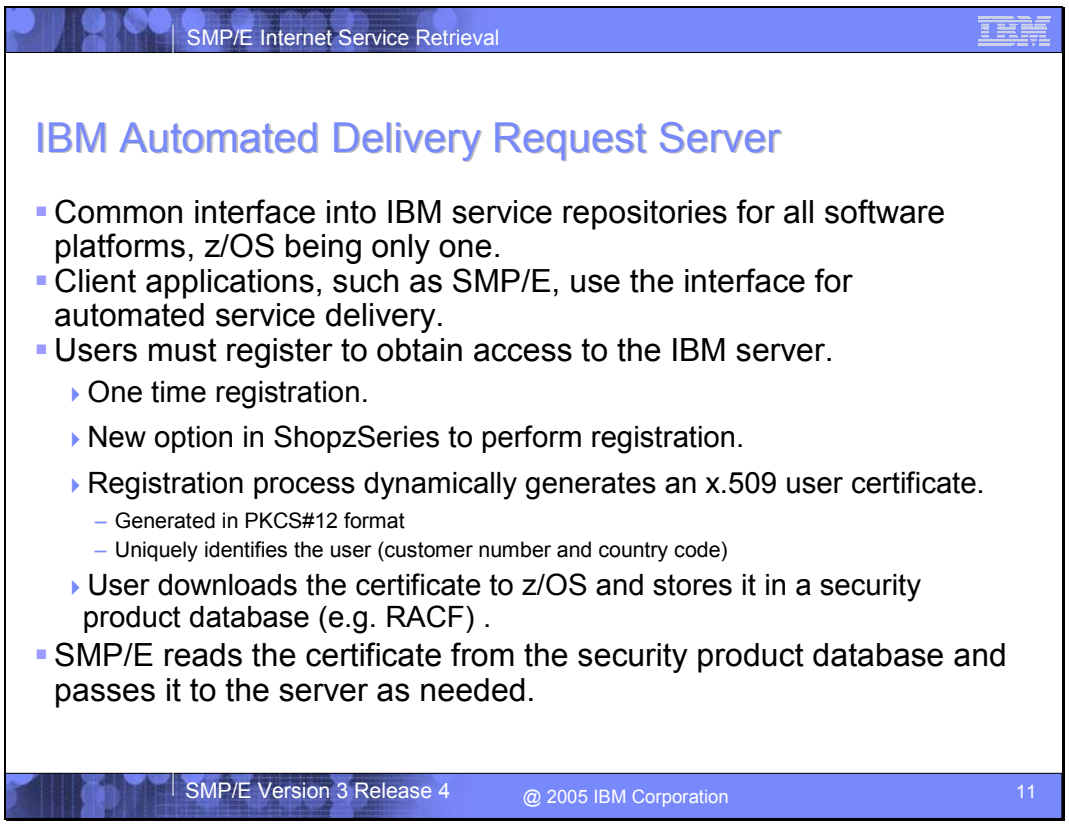
You can also simply order HOLDDATA with no PTFs.

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



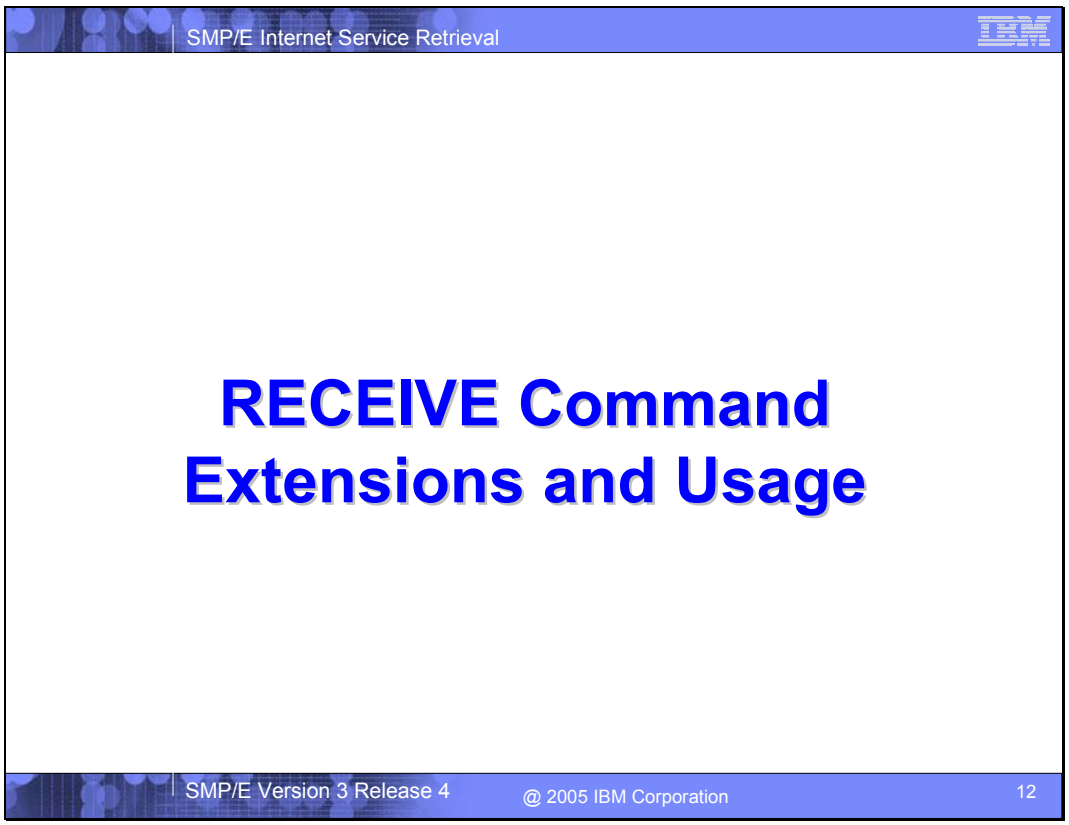
The *IBM Automated Delivery Server* will oversee the manufacturing of a PTF service package to satisfy your request. Using the software inventory file to define the scope of the order, the package will contain the PTFs for only the FMIDs in your inventory file and that satisfy your selection criteria, 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.

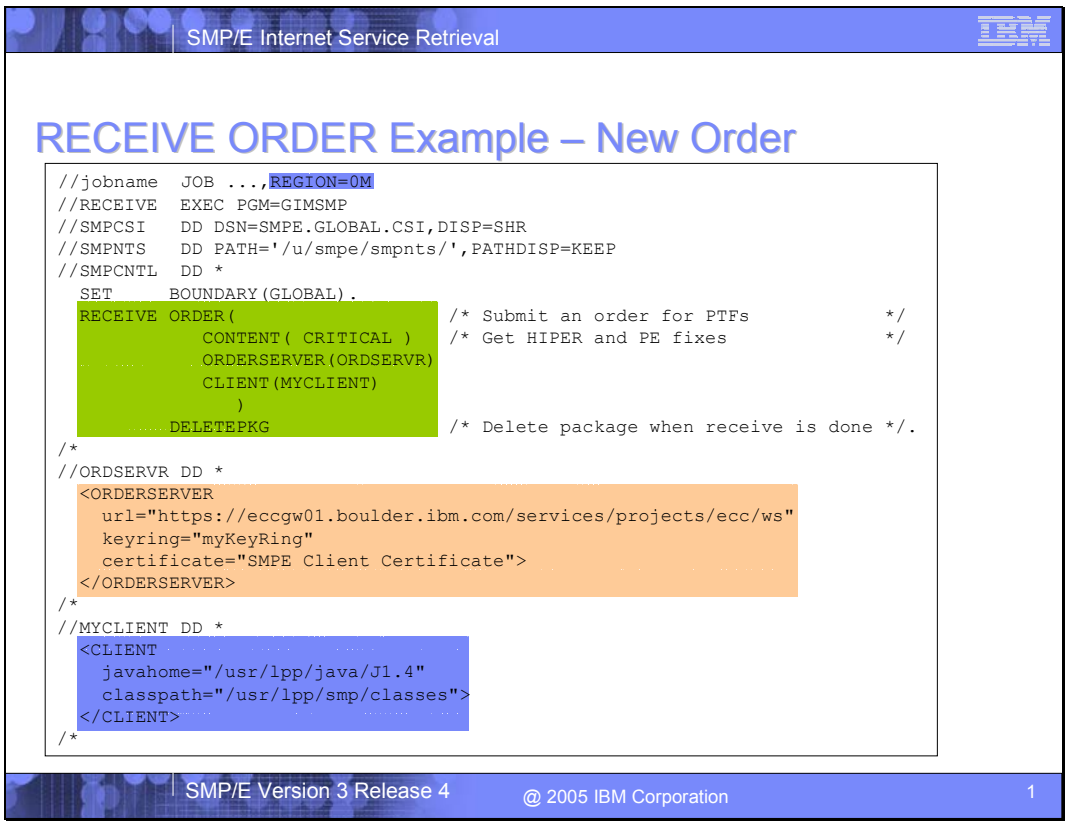
The package will be constructed using the GIMZIP packaging service and will be downloaded directly to your z/OS system using FTP (this makes use of the existing infrastructure SMP/E uses for the RECEIVE FROMNETWORK command).



The *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*.

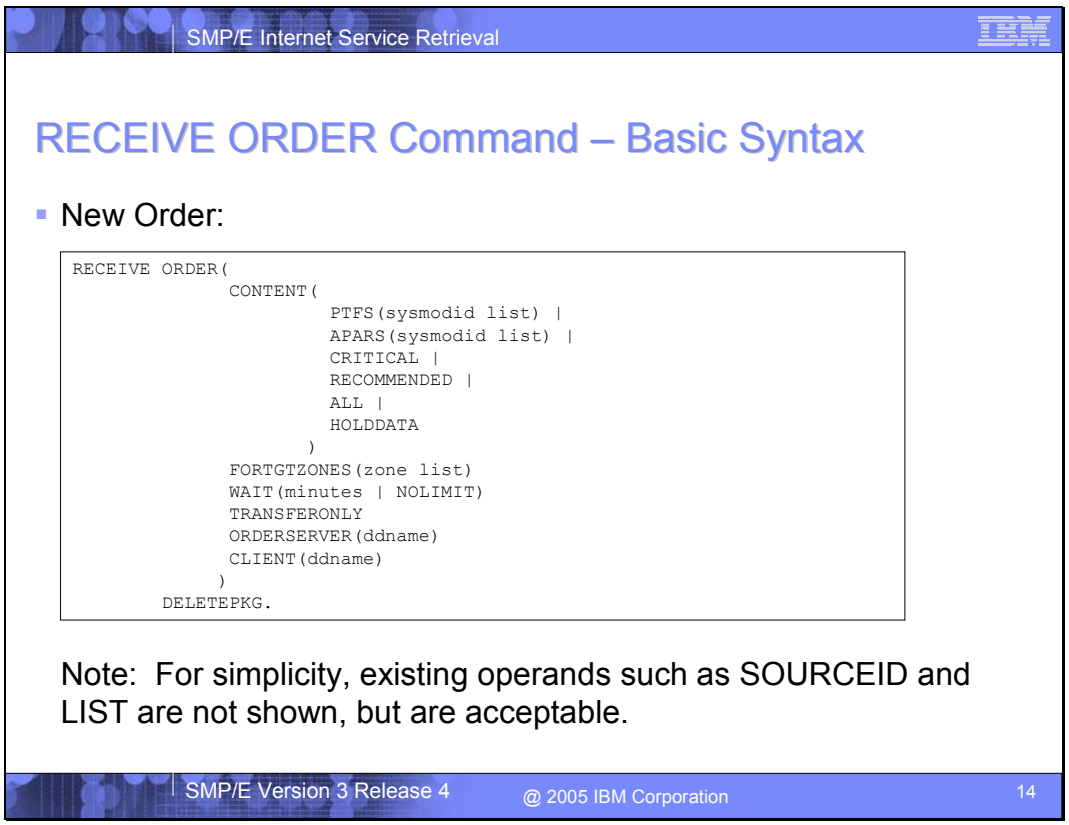

SMP/E Internet Service Retrieval
RECEIVE Command
Extensions and Usage
SMP/E Version 3 Release 4
@ 2005 IBM Corporation
12



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).



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.

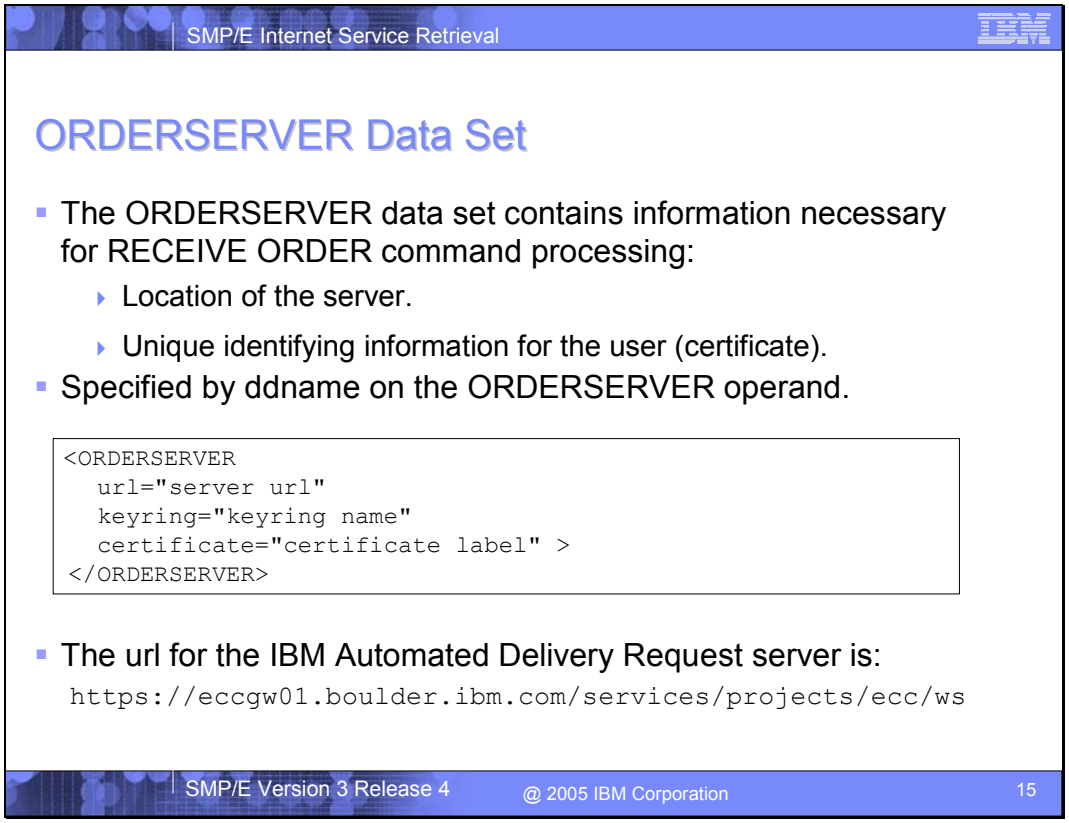
TRANSFERONLY

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

DELETEPKG

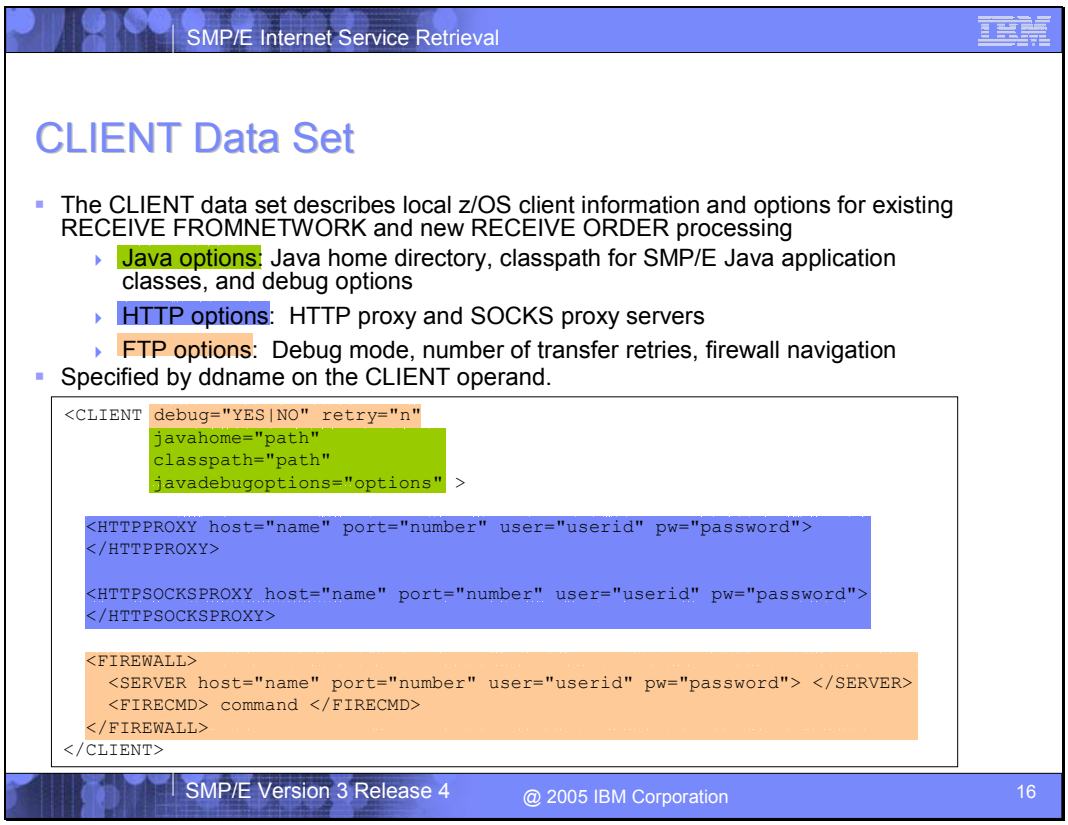
The package files should be deleted from the SMPNTS directory after the PTF and HOLDDATA contents of the package have been processed.

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



The 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.



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.

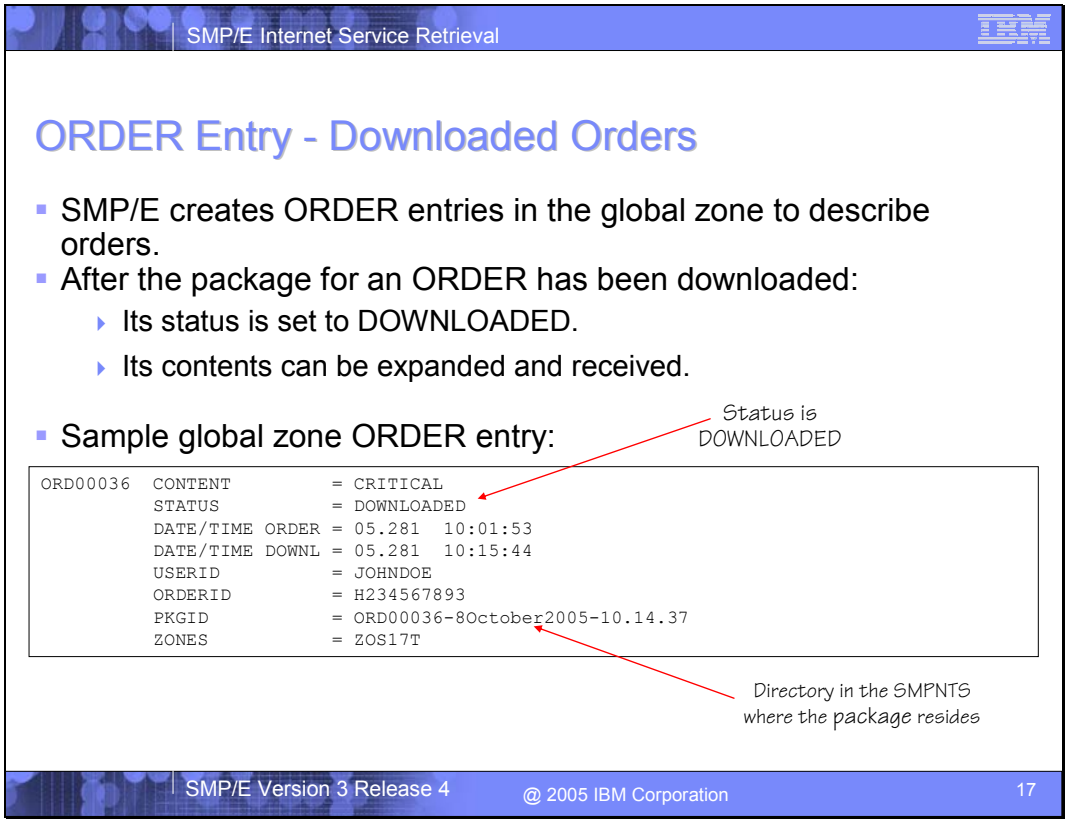
There are three groups of options specified in the CLIENT data set:

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 **javadebugoptions** 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, javadebugoptions="-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.

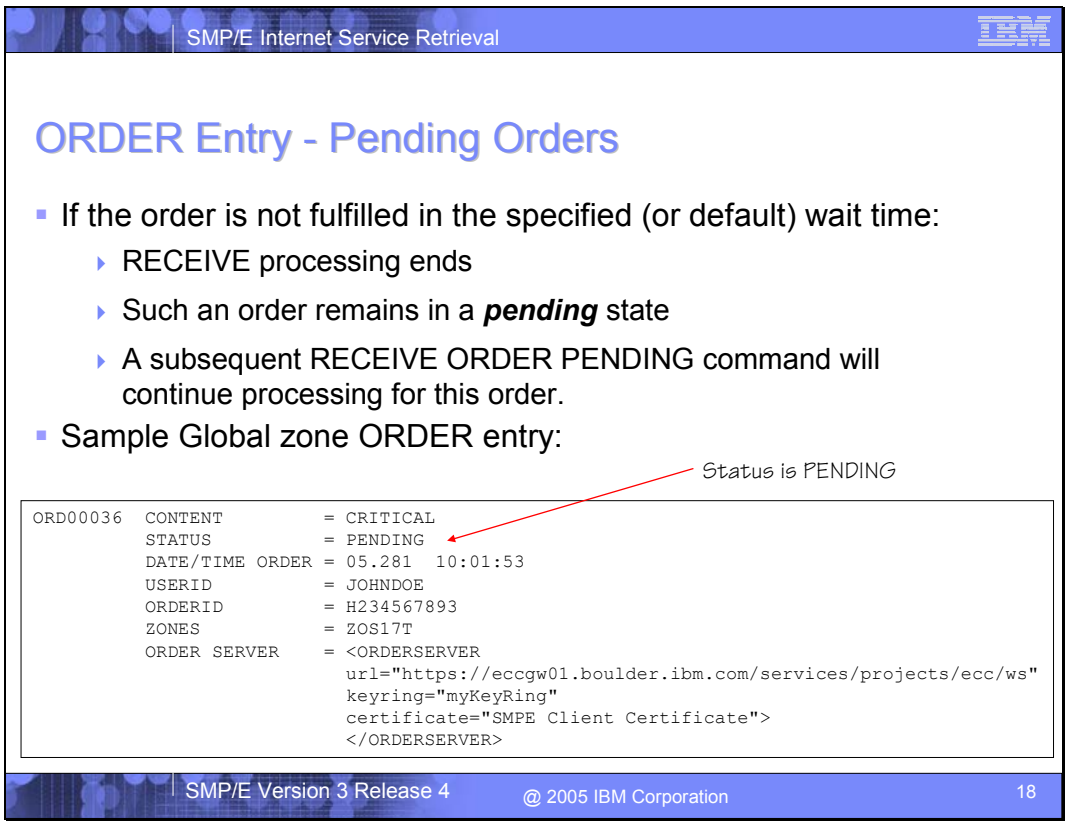
3. Options that affect FTP operations. These are existing options used for both RECEIVE ORDER and RECEIVE FROMNETWORK that indicate how many "get" retries should be performed if a file is not transferred correctly, should debug and trace output be generated, and how to navigate a local firewall.

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.

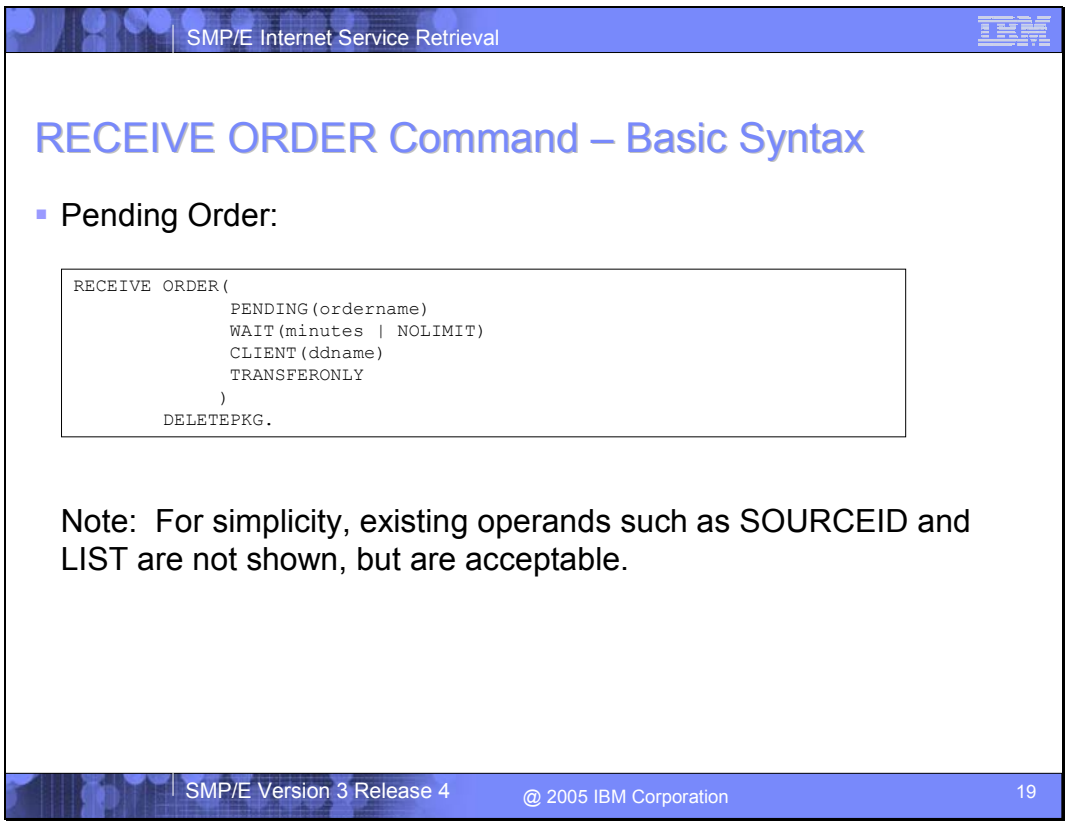


The RECEIVE ORDER command will create entries in the Global zone to describe an order placed with the IBM server. Among other things, ORDER entries indicate:

- 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.



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.



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:

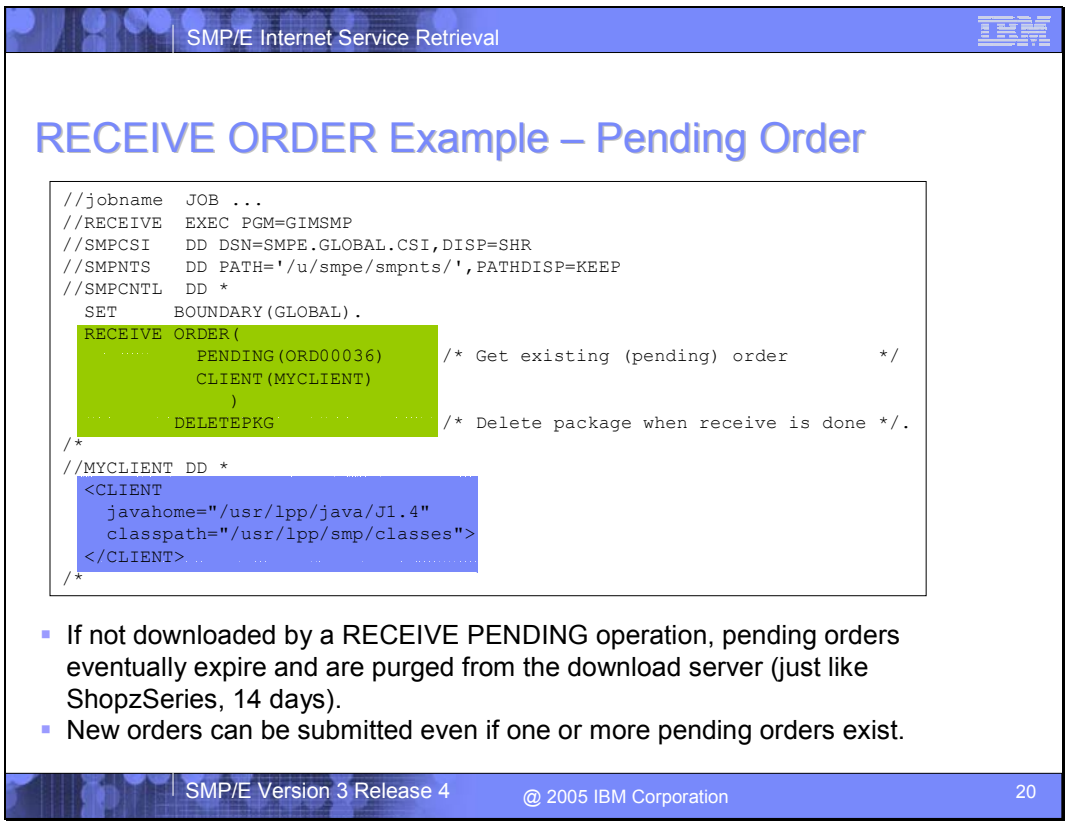
PENDING
Specifies the name of an existing ORDER entry whose package has not yet been downloaded.

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.

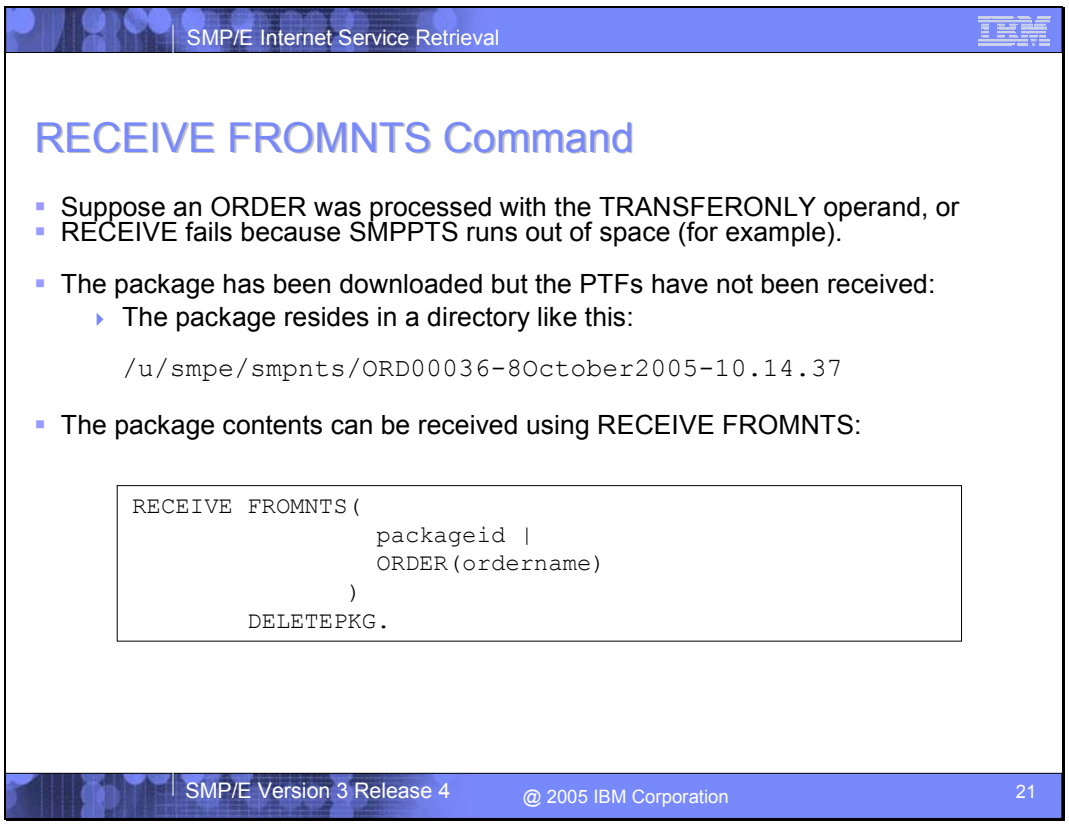
TRANSFERONLY
RECEIVE processing should stop after the package files have been downloaded into the SMPNTS directory.

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

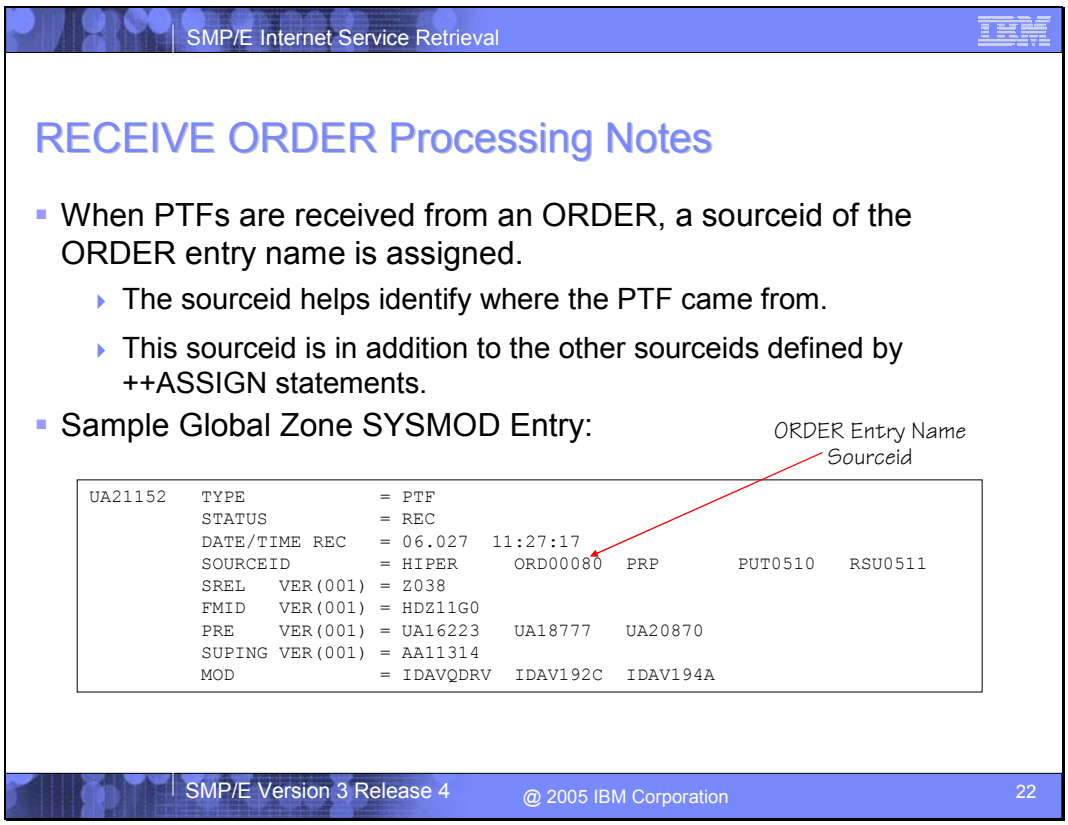
Note: Existing RECEIVE command operands such as SOURCEID, LIST, and ZONEGROUP are still acceptable, but not changed or described here.



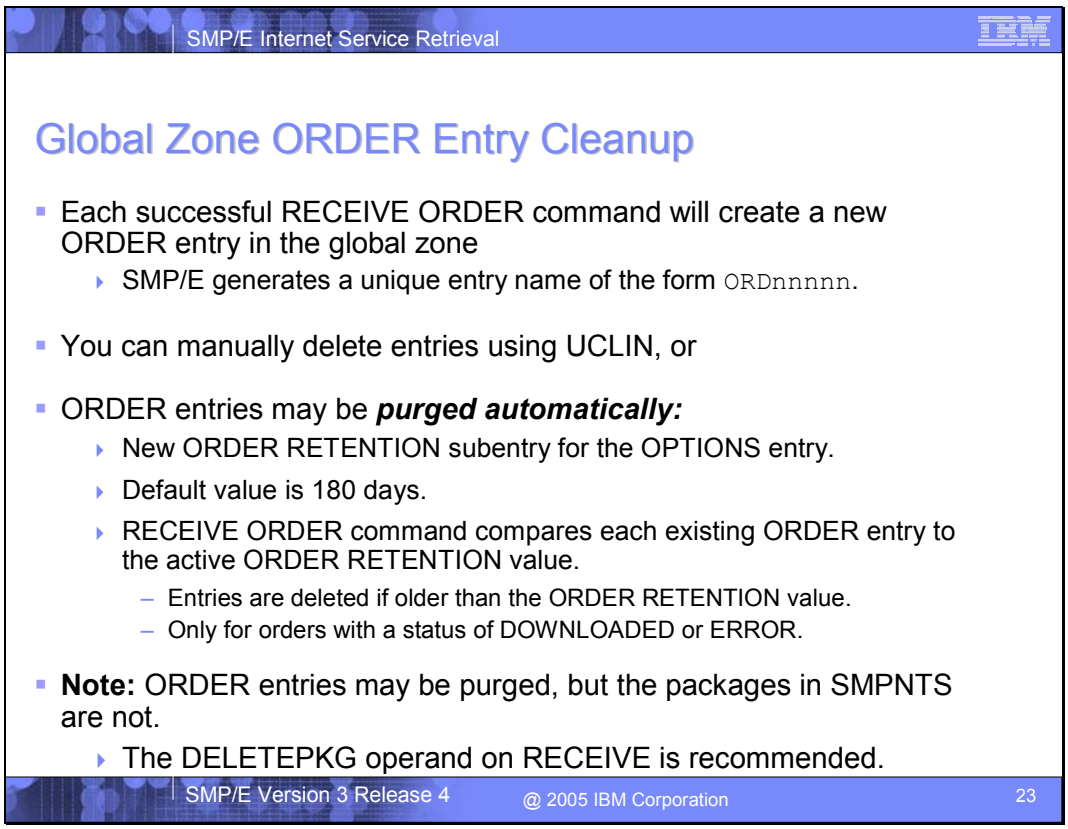
This is an example of the RECEIVE ORDER PENDING command. It is used to download the package for an order whose processing was not completed. If an order is not downloaded to z/OS by a RECEIVE ORDER PENDING operation, eventually the package for the order will expire and be deleted from the download server.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



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.



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.



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.

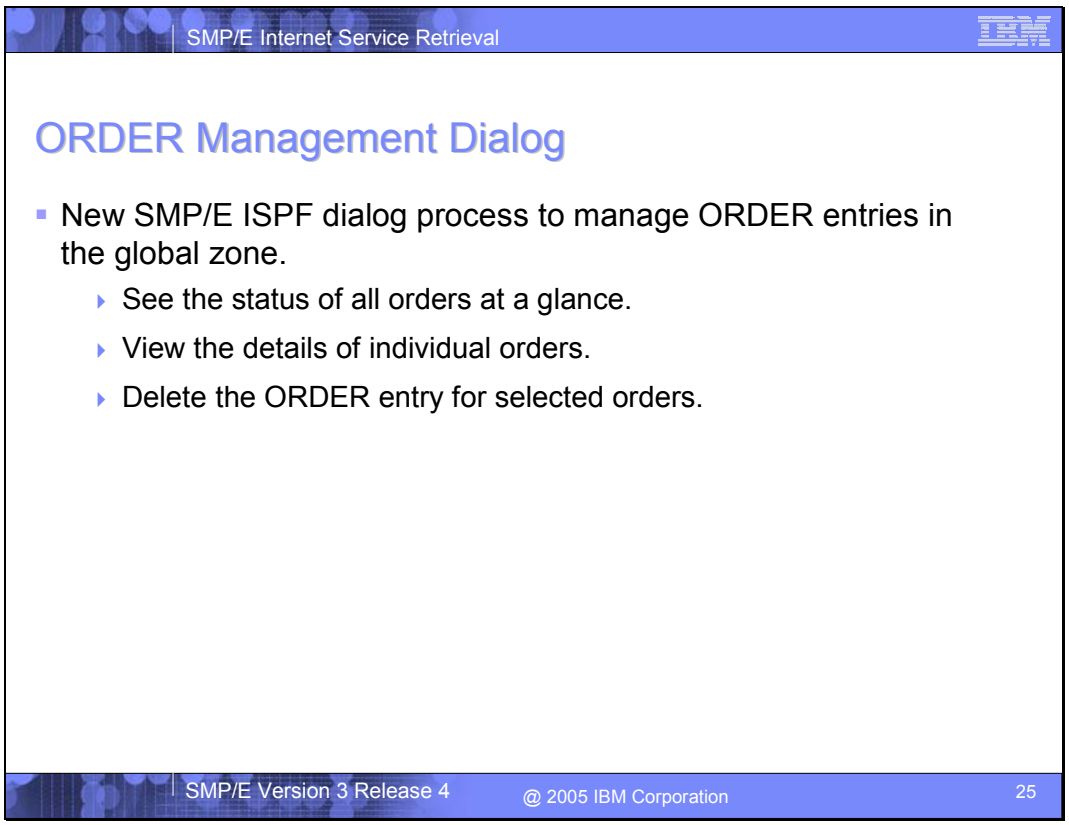
Miscellaneous Usage Notes

- 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.

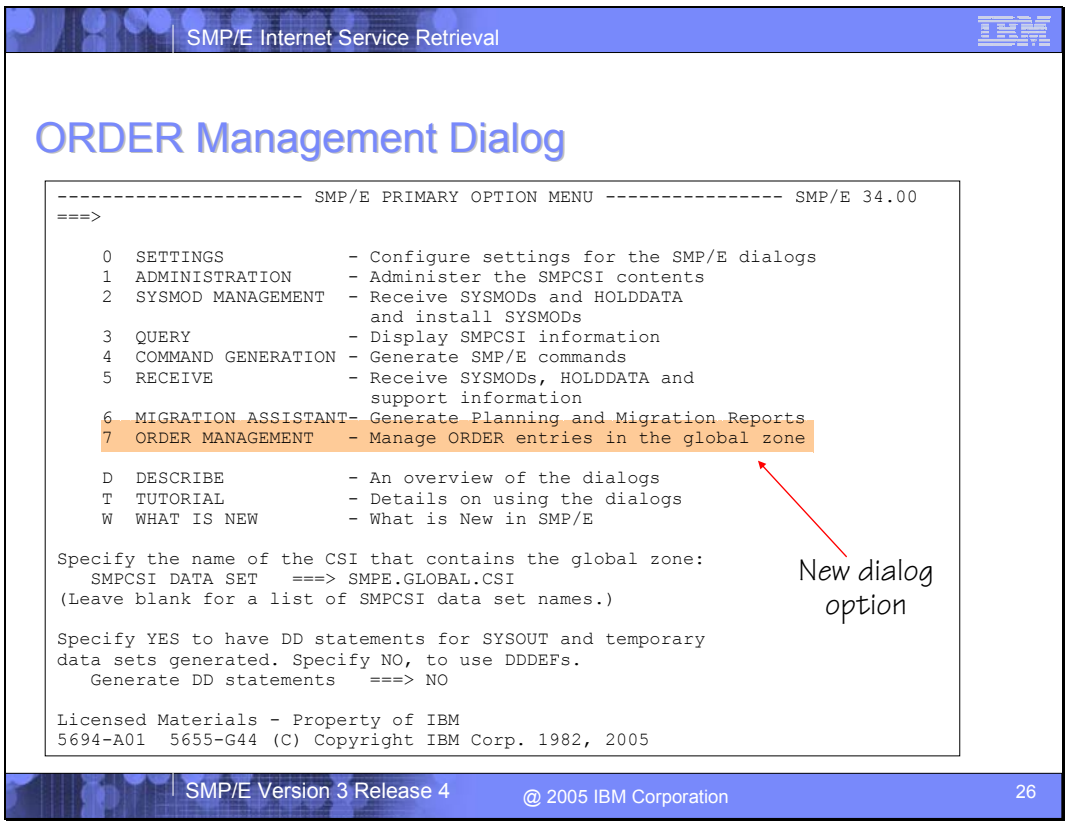
The Global zone is the resource that serializes RECEIVE ORDER processing, therefore, more than one RECEIVE ORDER job can run at the same time, to submit multiple orders to the server, as long as each job uses a different Global zone. The server can handle many orders at once.

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!

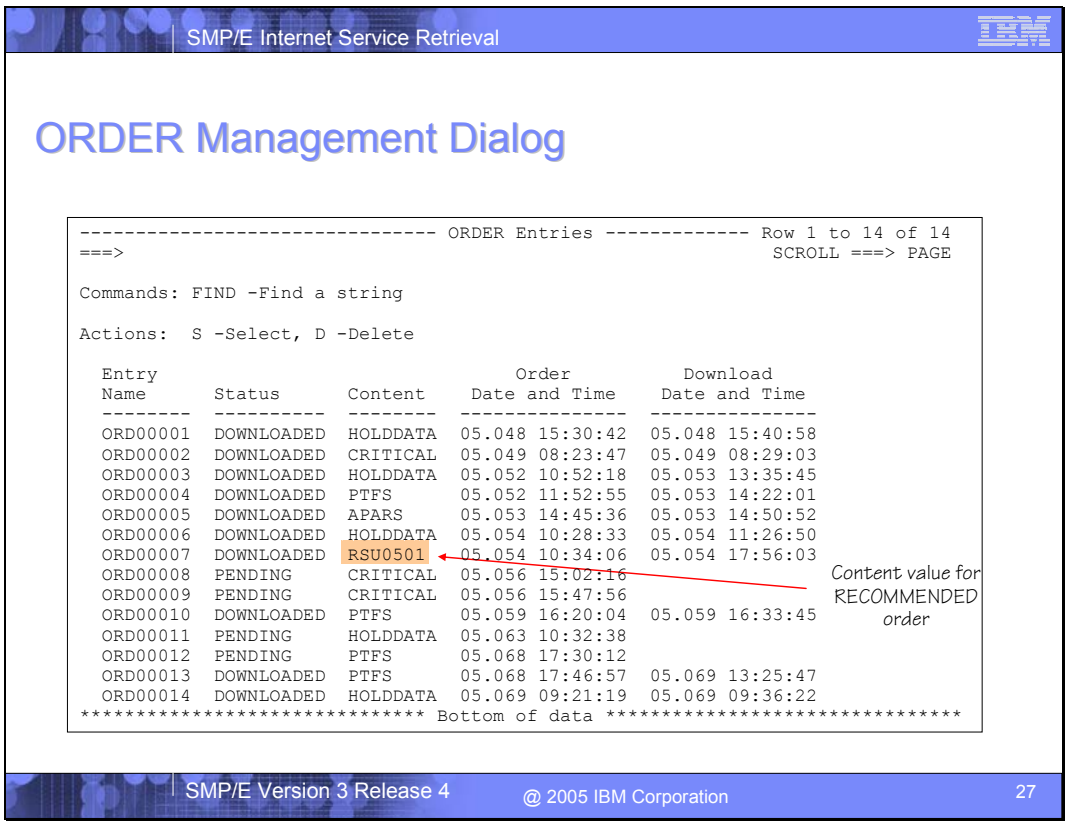
If you automate a job to order All PTFs every day, then you should never need to submit another order for any PTFs again. This is because you will have in your global zone every single PTF that is applicable to your system, ready to go when or if you need it.



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.



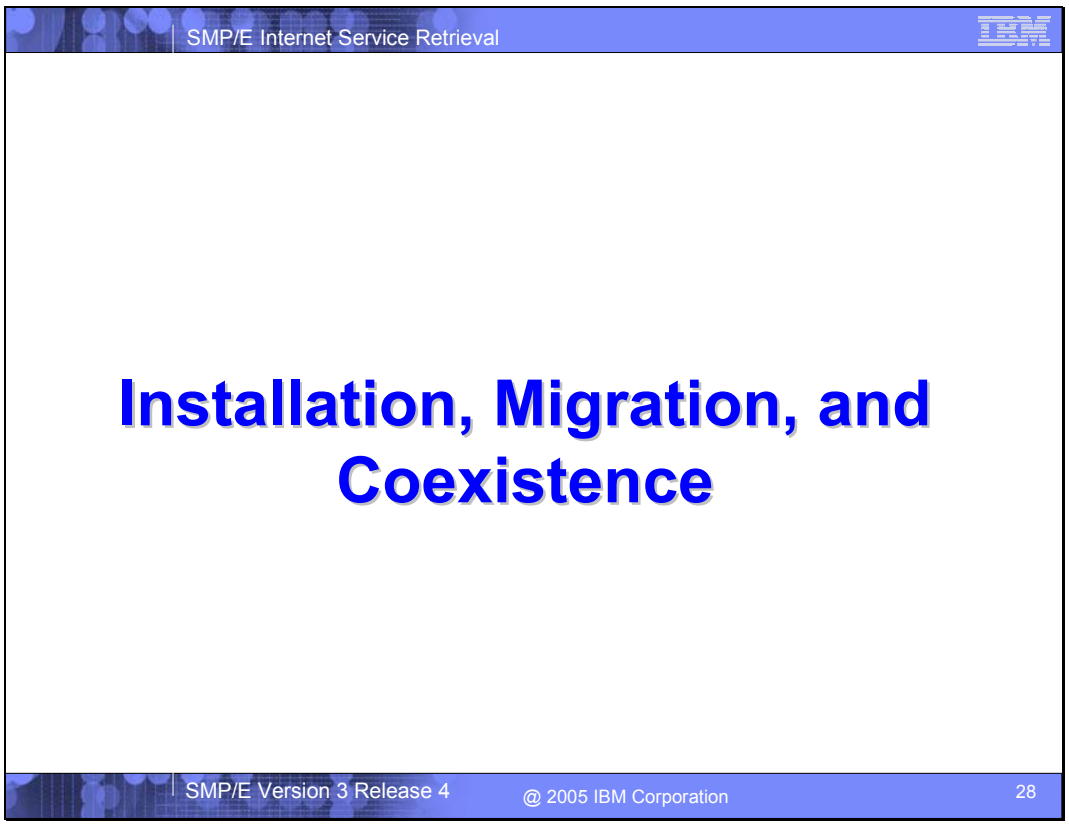
A new option 7 on the SMP/E Primary Option Menu leads to the new ORDER Management Dialog.



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 SMPNTS 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
SMP/E Version 3 Release 4
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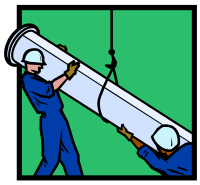
28

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



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.

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

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.

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.

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.

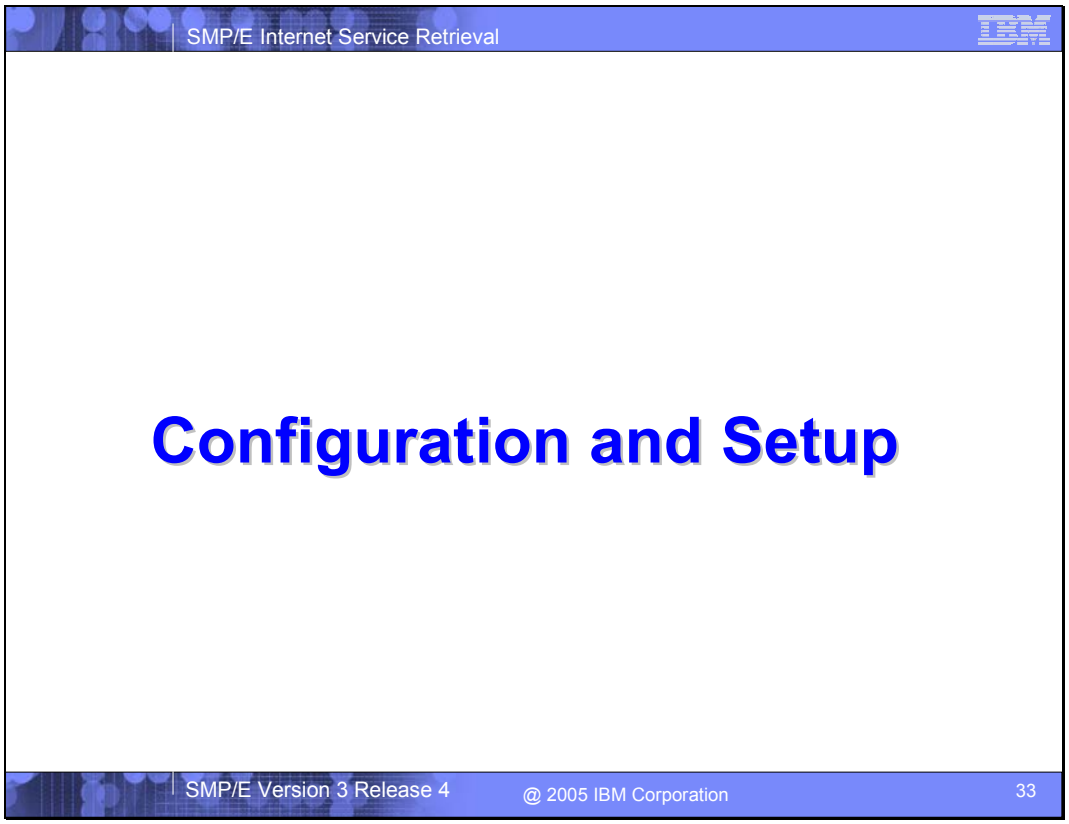
Dependencies

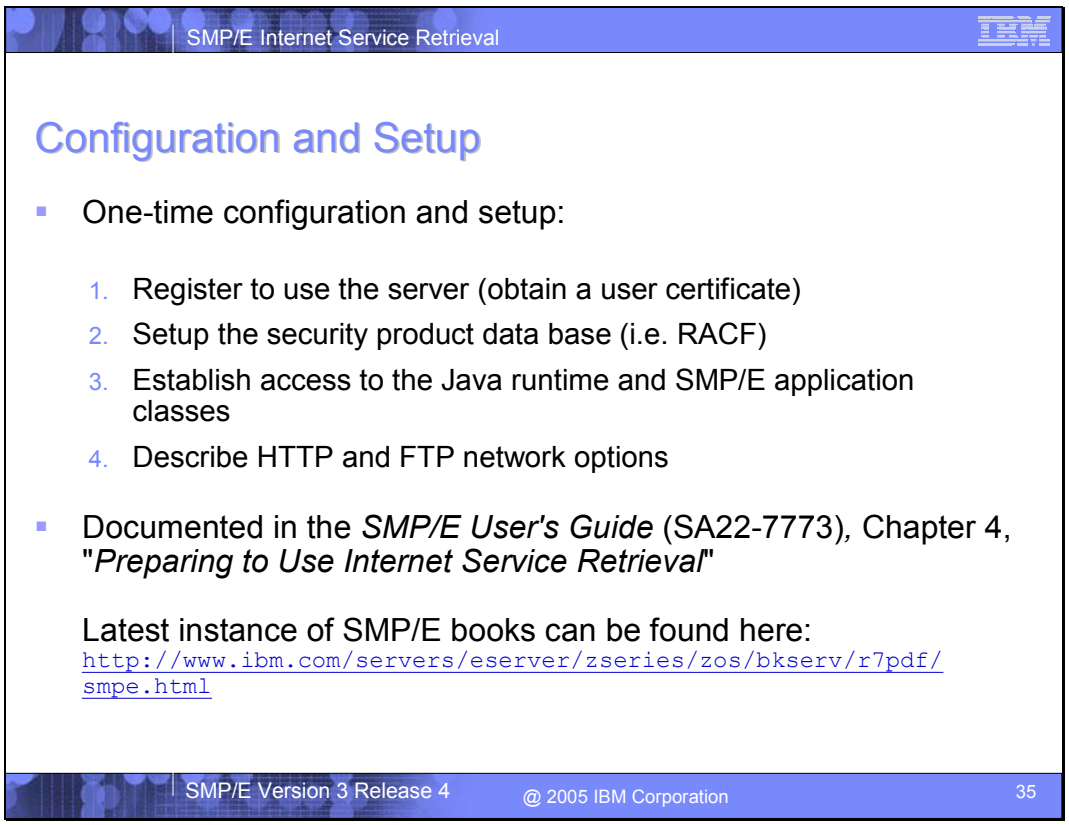
Dependencies

- 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

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.



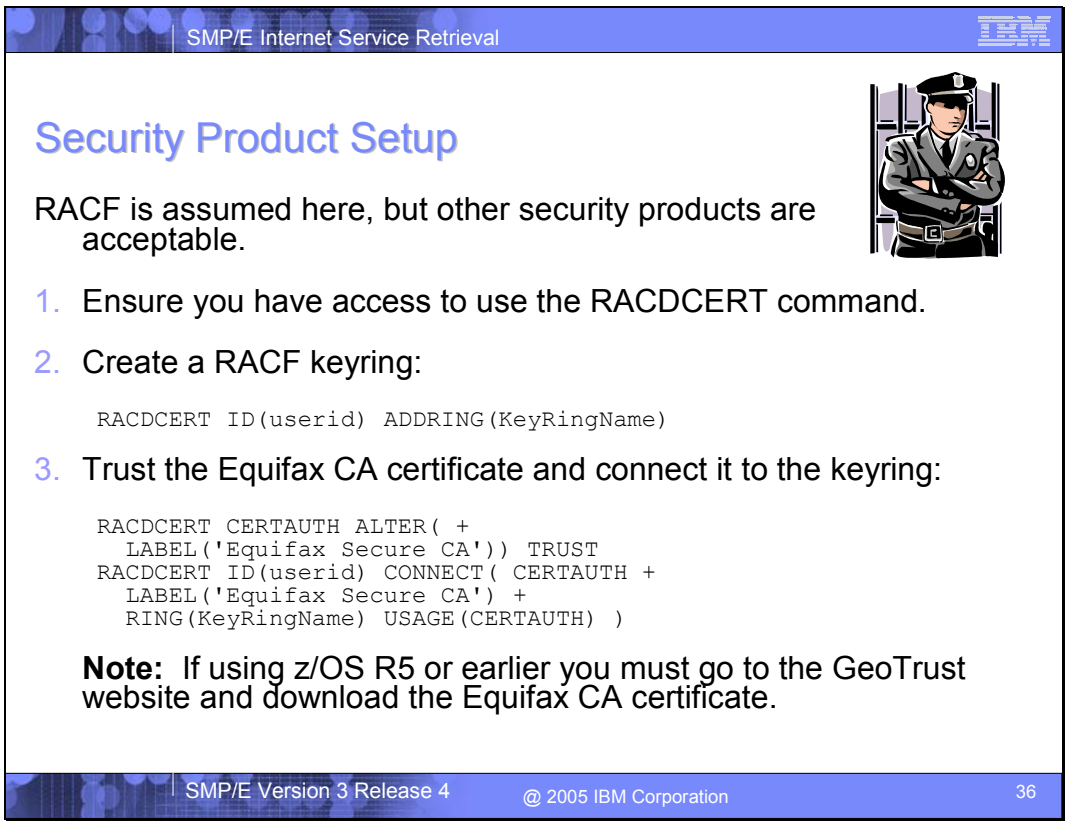


Before using the RECEIVE ORDER command there are various configuration and setup tasks that must be performed. The tasks are documented in detail in the SMP/E User's Guide (SA22-7773), Chapter 4 "Preparing to use RECEIVE ORDER Processing". The very latest instance of the SMP/E publications, including 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

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.

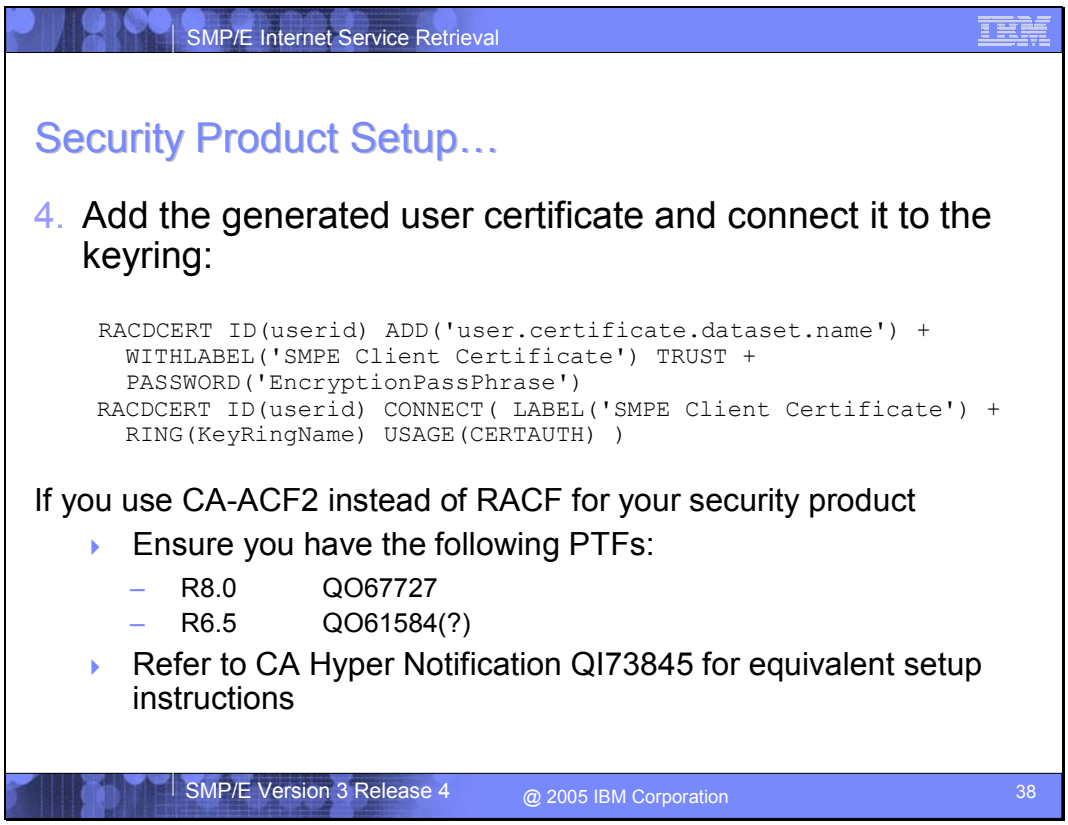
Note: The certificate file must be transferred as binary data, stored on z/OS as a sequential data set, and the sequential data set must have RECFM=VB.



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).

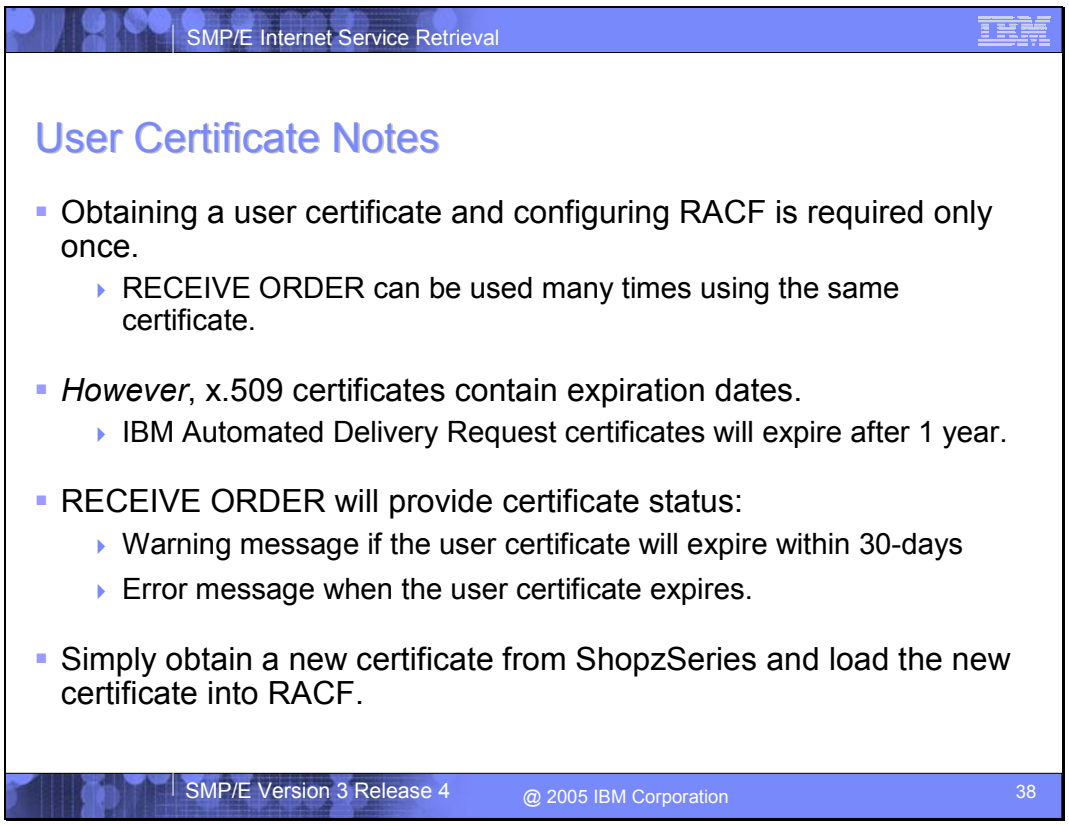


Finally you must add the generated certificate to your security product data base and connect it to the keyring.

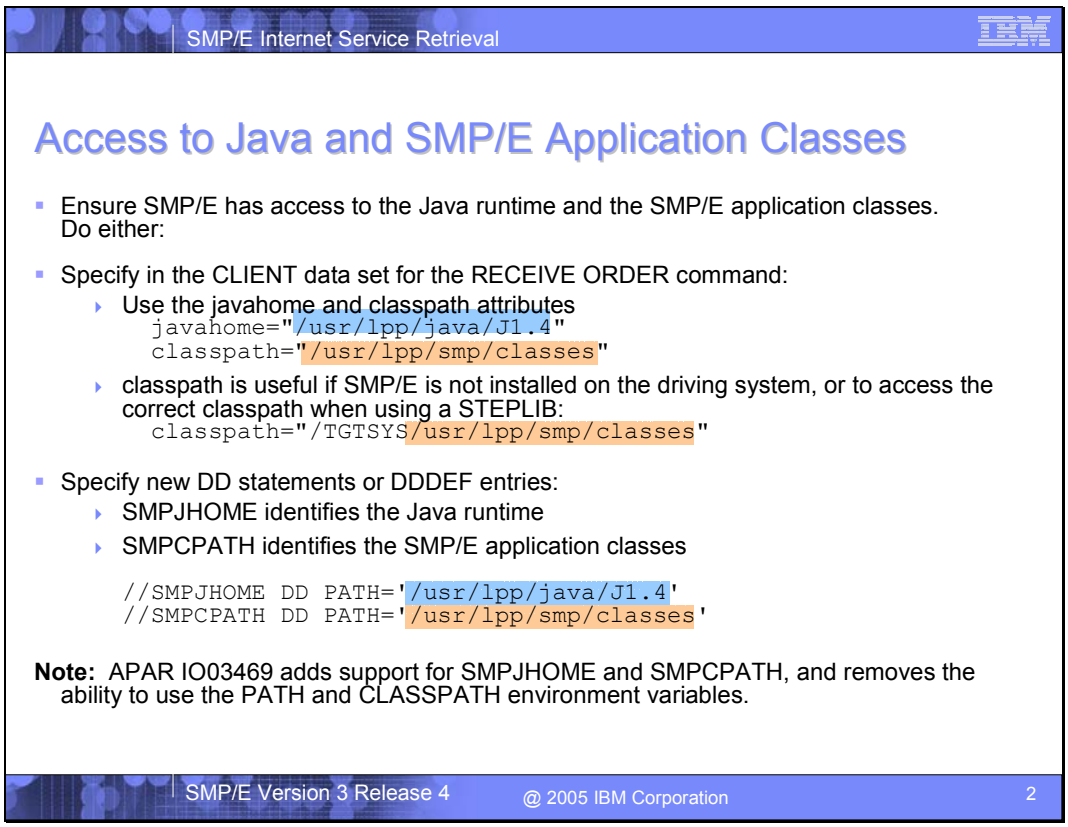
Note: If you use CA-ACF2 instead of RACF for your security product, ensure you have the following PTFs installed and operational before attempting to execute the RECEIVE ORDER command:

R8.0 QO67727
R6.5 QO61584(?)

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



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.



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:

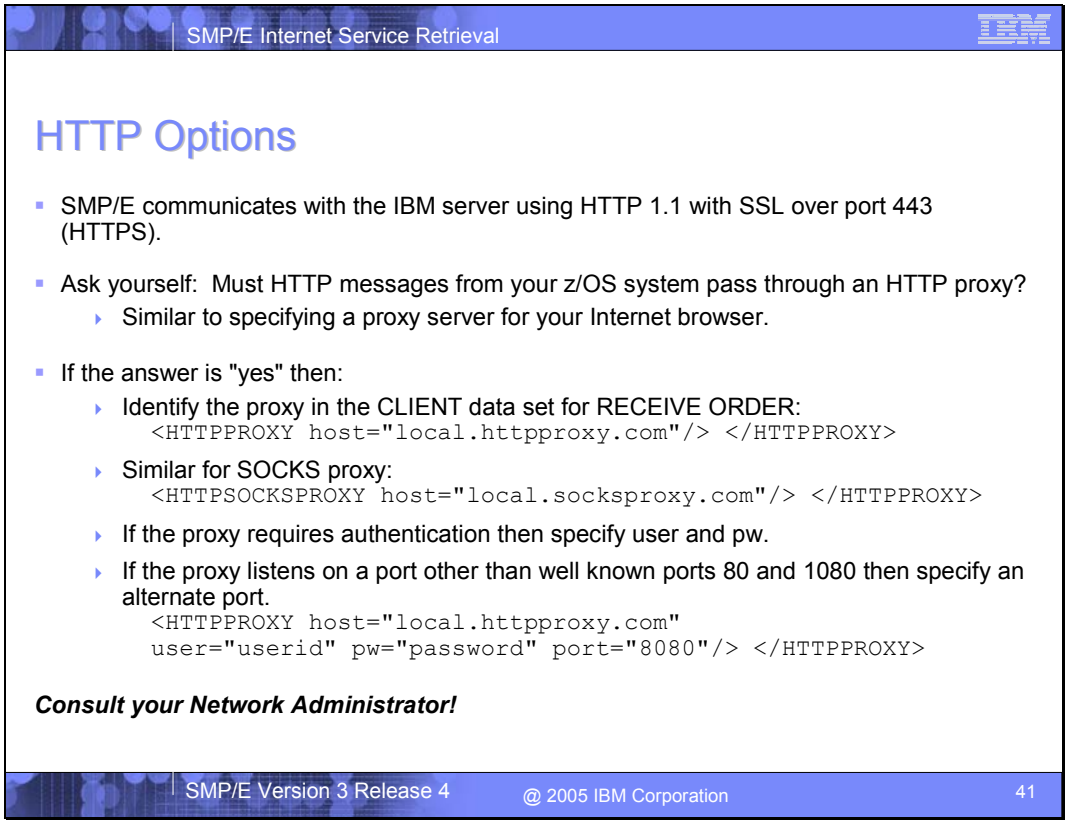
```
classpath="/TGTSYS/usr/lpp/smp/classes"
```

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 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

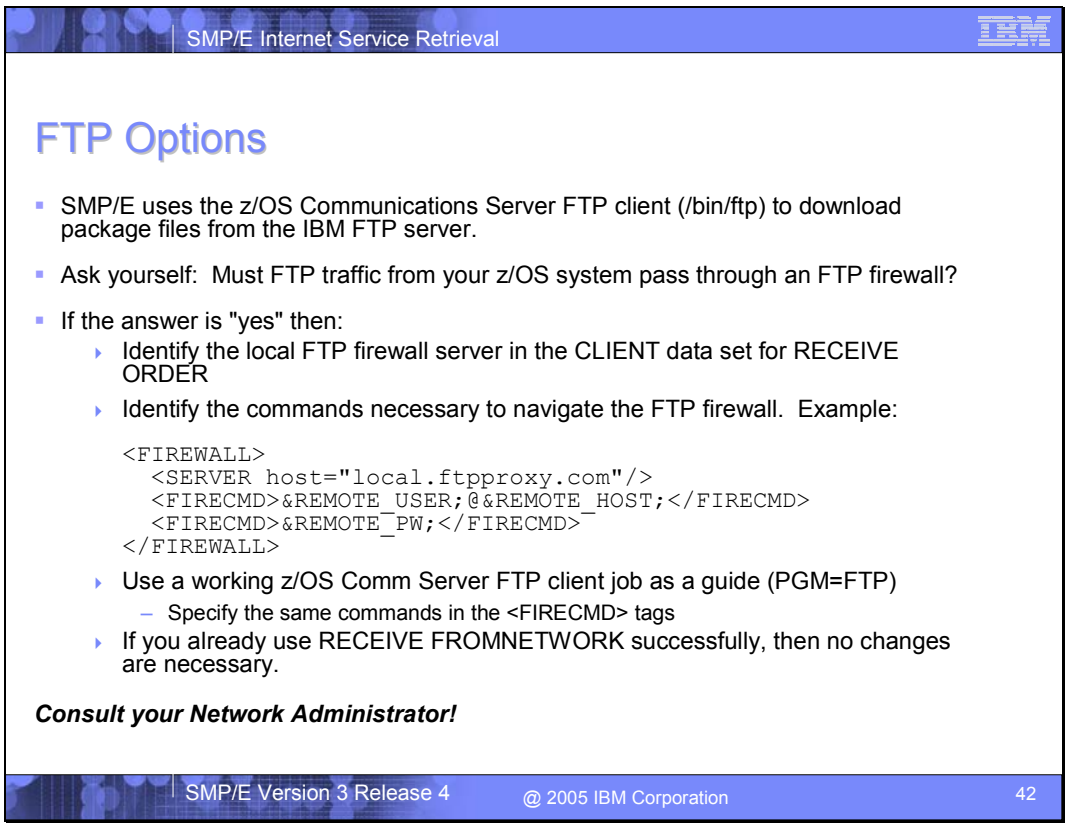
server. The specified proxy server redirects HTTP requests to the IBM Automated Delivery Request server on the Internet. For example:

```
<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 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.

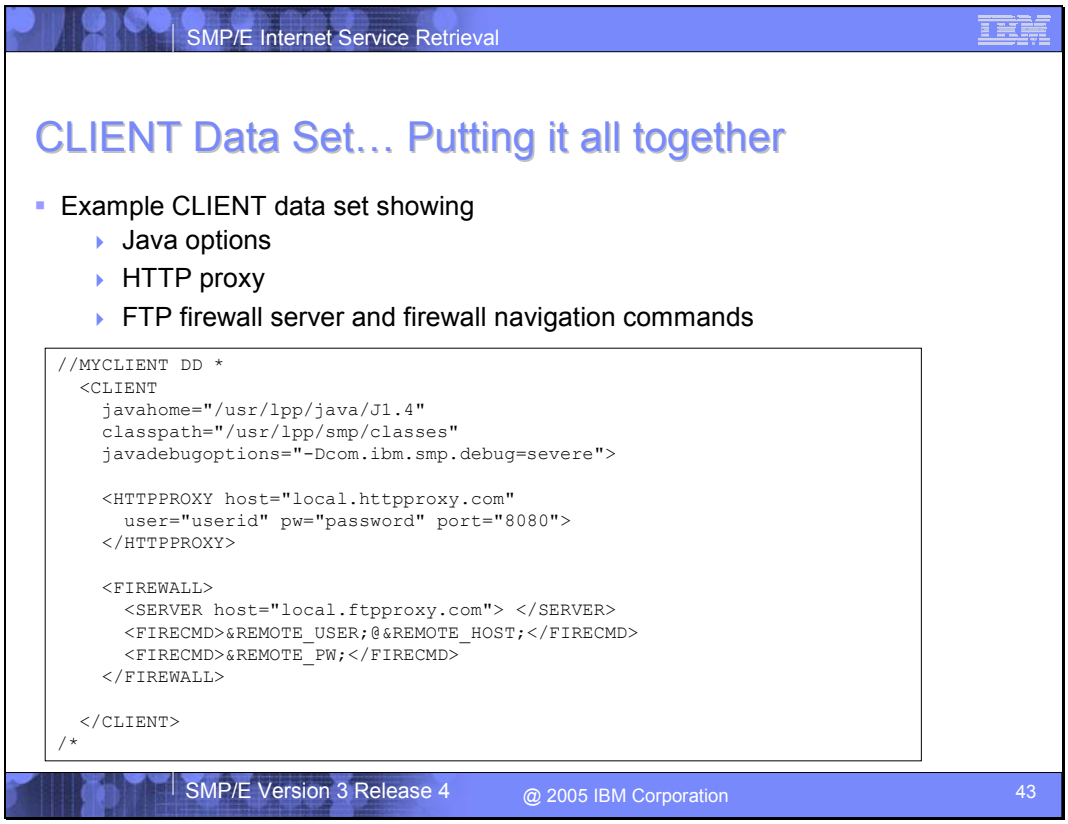
Options are available in the CLIENT data set to identify information necessary to navigate a local FTP firewall server.

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.



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.


SMP/E Internet Service Retrieval
Integrated Cryptographic Services Facility (ICSF) Mitigation
SMP/E Version 3 Release 4
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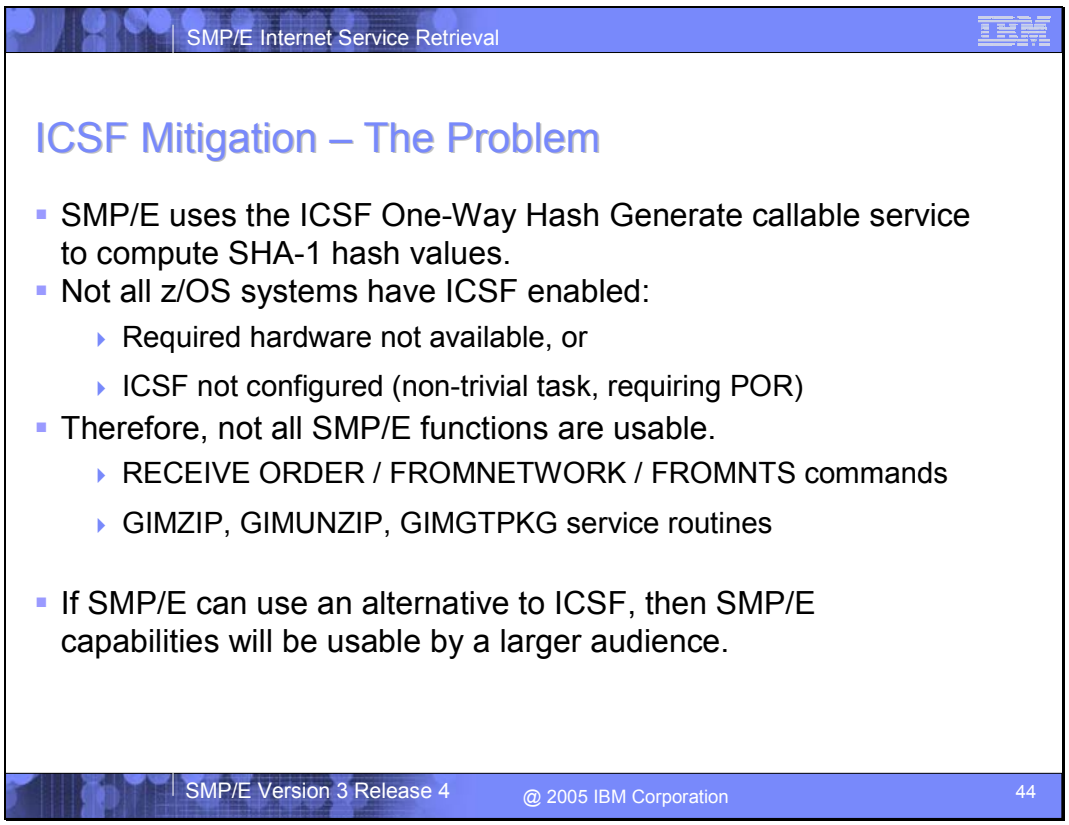
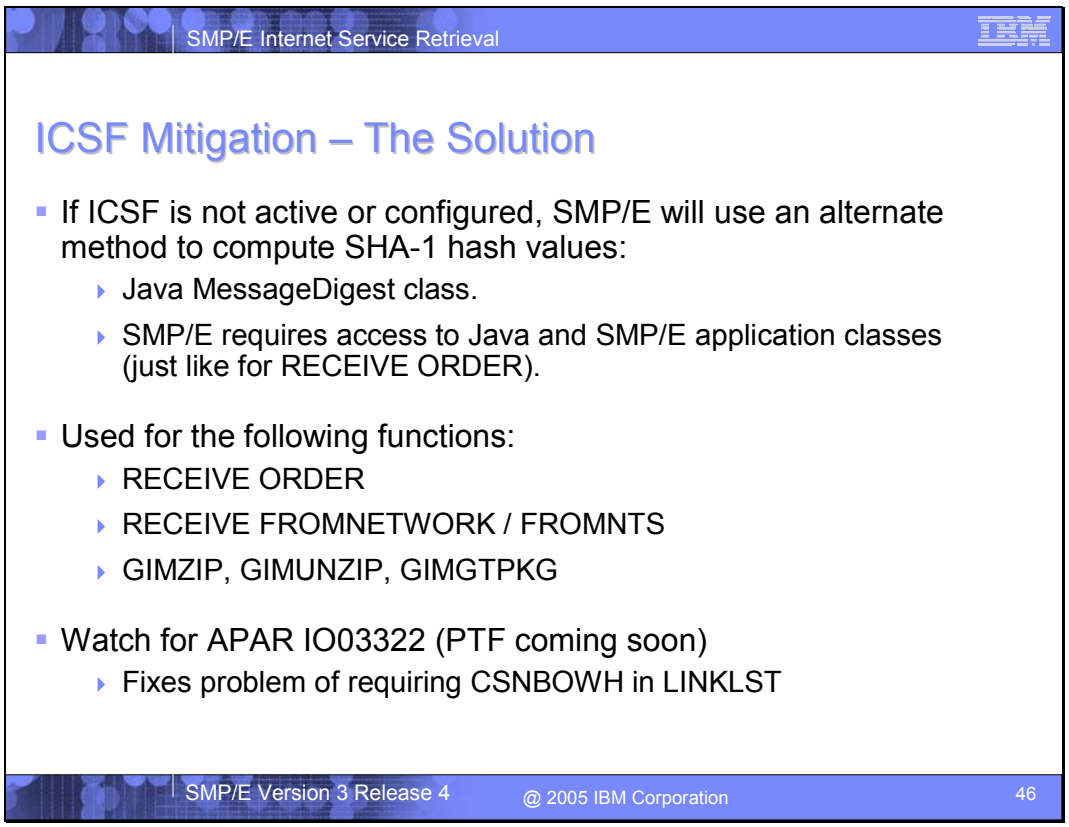
43



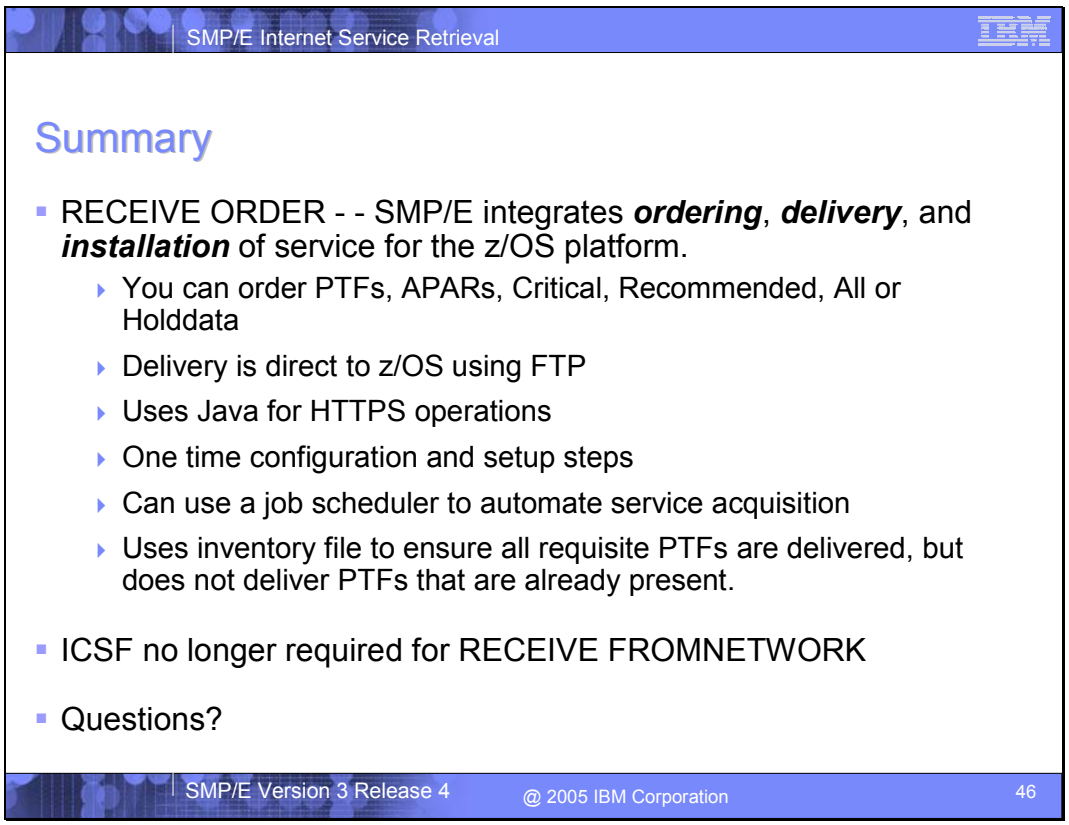
Existing releases of SMP/E use ICSF to compute SHA-1 hash values. This is done during RECEIVE FROMNETWORK command processing, as well as when using the GIMZIP, GIMUNZIP, and GIMGTPKG service routines. For a number of reasons, not all user z/OS systems have ICSF enabled. Therefore, these SMP/E functions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



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.



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.

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://www14.software.ibm.com/webapp/ShopzSeries/ShopzSeries.jsp
- Enhanced HOLDDATA:
  http://service.software.ibm.com/holdata/390holddata.html
- GeoTrust Certificate Authority web site:
  http://www.geotrust.com/resources/root_certificates/index.htm