



360Store[®]

**Unleashed POS
Administrator Guide**

Confidential

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PREFACE

Audience

The audience for this document is administrators and developers who install and configure the 360Store® Unleashed POS application.

About this Book

An administrator or developer who reads this document will be able to do the following:

- Install Unleashed POS
- Configure Unleashed POS server and handheld devices

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Text Conventions

The following table shows the text conventions used in this document:

Table P-1 Text Conventions

Sample	Description
<i>Italic text</i>	This is used for emphasis. It calls attention to crucial information and important terms defined in the text, for example, <i>quantity on hand</i> is
Bold text	This is used for text (in an application window or on a keyboard) that is acted upon by the user, for example, Click Next .
Courier Text	This is used for code, including file and directory names, paths, syntax, and commands, for example, <code>/opt/jboss-3.2.1/server/default/lib</code> .
< <i>Italics and angle brackets</i> >	This is used for text that needs to be supplied by the user, for example, Set the parameter <code>AccessViaIniFilePath = /opt/accessvia/program/<AccessVia ini file name></code> .. If it is within a code sample, the text is in Courier font.

INSTALLATION

Unleashed POS is a subset of 360Store Point-of-Sale. It provides wireless access to Point-of-Sale functions through the use of a handheld device. This chapter contains the following information:

- “Hardware and Software Requirements”
- “Installing Unleashed POS”
- “Results of Unleashed POS Installation”
- “Setting Up Wireless Access”
- “Setting Up JMS Queues for JBoss”
- “Setting Up JMS Queues for WebSphere MQ”

Unleashed POS runs as a process on the store server. The server process passes Point-of-Sale information to the wireless devices. The wireless devices run a web browser interface and connect to a specific URL to talk to the server process. The server process does not have a user interface.

Install Unleashed POS on the same machine on which you plan to install your store server.

Unleashed POS transactions propagate the same way as POS transactions. They are stored in a POSlog and can be sent to Central Office in an .xml file or by queue.

Hardware and Software Requirements

The Unleashed POS software has been certification tested with the following hardware and software components:

Table 1-1 Hardware and Software Requirements

Component	Product
Handheld wireless device	Symbol 8146
Printer	Zebra Cameo II Printer/MSR with Zebra Active X control version 1.8 preinstalled
Operating System	Microsoft Windows Mobile 203 version 4.20
Web browser	Microsoft Pocket Internet Explorer 4.01

Note: All testing was completed with 128-bit encryption turned on.

Installing Unleashed POS

The Unleashed POS software needs to be installed on the store server that is running Point-of-Sale. The installation scripts also install the Apache Tomcat web server. The web server works with the Unleashed POS process to respond to requests from the wireless devices.

Note: The current version of the Unleashed POS installation script assumes that it will be installed on the store server. The store server is the machine that runs the Point-of-Sale server component. To install on a machine that is not on the store server, manual configuration is required.

To install Unleashed POS on the store server:

1. Get an installation program for the appropriate version of Unleashed POS from your configuration management or deployment team.
2. If Unleashed POS was previously installed, uninstall it by deleting its installation directory `c:\360Store\unleashed`.
3. Launch the installation program. The installation script asks for the following information.

Table 1-2 Unleashed POS install script information

Screen	Recommended values under Windows	Recommended values under Linux	Description
Installation Location	<code>c:\360Store</code>	<code>/opt/360store</code>	Enter the directory in which Unleashed POS should be installed. This should be the same directory as other 360Commerce applications. An Unleashed POS subdirectory is created within this directory for Unleashed POS-specific files.
Choose Install Set	Ntier	Ntier	Ntier is the only configuration supported and installs the Unleashed POS server only.
Java Location	<code><none></code>	<code><none></code>	Enter the correct location of your JDK.
Tomcat Version	<code>jakarta-tomcat-4.1.18</code>	<code>jakarta-tomcat-4.1.18</code>	Select this version of Tomcat to use. It is the only one supported.
Unleashed POS Server Hostname	<code><host name of current machine></code>	<code><host name of current machine></code>	Enter the hostname or IP address of the machine running the Unleashed POS server component.

4. Answer each question.
5. To move to the next screen, click **Next**. To return to a previous screen, click **Previous**.
6. When you have answered all the questions, the Pre-Installation Summary Screen is displayed. To complete the installation, click **Install**.

Note: If an existing copy of a file being installed is found, you are asked if the file should be overwritten. Click **Yes to All**. This enables all previously installed files to be overwritten.

Note: The JDK location should not include the `JRE` subdirectory.

Results of Unleashed POS Installation

The default root directory for 360Store application on Windows is c:\360Store. The default root directory for 360Store applications on Linux is /opt/360Store. In either operating system, the subdirectories listed in the following table are created:

Table 1-3 360Store Subdirectories

Name	Contents
360common	Files shared by multiple 360Store applications including 360Platform, Domain, and 3rd party jar files.
databases	Resources for various database types
jre	Container for the Java runtime environment
pos	Point-of-Sale files
backoffice	Back Office files (if the 360Store Back Office product is installed)
unleashed	Unleashed files

Important subdirectories of the \unleashed directory on Windows and Linux include the following:

Table 1-4 360Store\Unleashed Subdirectories

Name	Description
bin	Startup batch files and shell scripts
lib	Unleashed POS application and resource .jar files
lib/config	XML configuration files, .properties files and .dat files
3rd party	3rd party source .jar files
logs	Log files (additional log files are in the bin directory)
UninstallerData	Files for uninstalling Unleashed POS

Setting Up Wireless Access

Before you can use wireless handheld devices, you must set up appropriate wireless access points in your facility and configure the access points and the handheld devices to communicate with each other.

Refer to the documentation that came with your access point hardware for detailed instructions on setting up the required Symbol Technologies 8146. Detailed documentation is available on the Symbol website at <http://www.symbol.com>.

Important Configuration Settings

Make sure the following configuration settings for Pocket Internet Explorer access points and Symbol 8146 terminals agree. The agreement of these settings prevents the opportunity for security problems. The configuration setup considerations are as follows:

- **WEP**—Wired Equivalent Privacy (WEP) aims to provide security by encrypting data over radio waves so that it is protected as it is transmitted from one end point to another. This also prevents unwanted access with the wireless access point.
- **IP addresses**—IP addresses are used to communicate between different devices on a network. For the Unleashed POS product, the last three digits of the last octet are used to determine the register number for each device. There are two methods to set the IP address:
 1. **Static:** Static IP addresses can be used by manually setting the IP address on the device. This method is best if strict control of the IP address is needed. It is also harder to manage and maintain.
 2. **Dynamic:** Dynamic IP addresses are assigned and updated on the device by the DHCP server. This does not require manually setting the IP address on the device and is easy to maintain. Other settings can also be managed and automatically set by the DHCP server, including DNS (Domain Name Server) and WNINS (Windows Internet Name Service).
- **Extended Service Set ID (ESS ID)**—This is the name of the wireless access point that devices use to communicate to the network. Use the same ESS ID for all the access points and handheld devices in your facility.
- **Domain Name Server (DNS)**—The Domain Name Server is used to translate a network device name to an IP address for communications. Use the dynamic IP address process or manually set this on the device. This enables the user to use a name instead of an IP address when configuring the device to talk to the server.

Note: The last three digits of the IP address of each wireless device are used as the register number for the device. These digits must be unique among the wireless devices and among the standard POS registers in the same store. 360Commerce recommends using static IP addresses with the wireless handheld devices, otherwise the register accountability setting in the store database might need to be reconfigured each time the IP address of the device is changed.

Setting Register Accountability

The register accountability setting for each wireless device must be updated to enable register-authorized mode as opposed to cashier-authorized mode. Each device is treated as a register with a register number equal to the last three digits of its IP address.

Note: An example of a register IP address is 172.16.33.4. The actual IP address is 172.016.033.004, where 004 are the last three digits.

Execute the following SQL statement once for each device. In this example, 001 are the last three digits of the actual IP address of the device.

```
update as_ws set cd_act='0' where id_ws='001'
```

Setting Up JMS Queues for JBoss

A Java Messaging Service (JMS) enables Java applications to exchange messages. JMS queues are used by Unleashed POS for distribution of Electronic Journal (EJournal) data. The EJournal is used to record register transactions. It provides the ability to view every action performed by a cashier during a transaction. The journal information can be used to audit transactions.

The following steps are needed to enable Unleashed POS to write data to the EJournal.

Setting Up Unleashed POS and JBoss for Windows

Set up the location of the files needed by JBoss. Set up the call to start up JBoss.

To set up the files needed for JBoss:

1. Edit the `c:\360Store\unleashed\bin\ulenv.bat` file by uncommenting the line to call `jboss.bat`:

Change

```
rem sets environment for Jboss  
rem call jboss.bat  
to  
rem sets environment for Jboss  
call jboss.bat
```

2. Set up the JNDI properties files for the Back Office and Central Office applications:

- a. If Back Office is installed, edit the `backoffice.jndi.properties` file in `c:\360Store\unleashed\lib\config`. Edit the line:

```
java.naming.provider.url=jnp://<store_server_host_name>:<store_server_port_number>
```

<store_server_host_name> = location of the Back Office application

<store_server_port_number> = port number of the machine running Back Office

Note: If Back Office is installed on the same machine as Unleashed POS and Back Office is using default ports, then no change is required.

- b. If Central Office is installed, edit the `centraloffice.jndi.properties` file in `c:\360Store\unleashed\lib\config`. Edit the line:

```
java.naming.provider.url=jnp://<co_server_host_name>:<co_server_port_number>
```

<co_server_host_name> = location of the Central Office application

<co_server_port_number> = port number of the machine running Central Office

- c. If Back Office is installed, edit the `jndi.properties` file in `c:\360Store\unleashed\bin`. Edit the line:

```
java.naming.provider.url=jnp://<store_server_host_name>:<store_server_port_number>
```

<store_server_host_name> = location of the Back Office application

<store_server_port_number> = port number of the machine running Back Office

Note: If Back Office is installed on the same machine as Unleashed POS and Back Office is using default ports, then no change is required.

Enabling Writing to the EJournal

Define whether Unleashed POS writes to the EJournal through the queue or the database or both.

To define how Unleashed POS writes to the EJournal:

1. Edit the `ntierdispatcher.xml` file in `c:\360Store\unleashed\lib\com\extendyourstore\unleashed\services\main`. Do one of the following:
 - To write to the EJournal through the queue, uncomment the `QueuedJournalManager` section.
 - To write to the EJournal through the database, uncomment the `DBJournalTech` section.
 - To write to the EJournal through both the queue and the database, uncomment both the `QueuedJournalManager` and `DBJournalTech` sections.
2. Edit the `PosJournalManager.xml` file in `c:\360Store\unleashed\lib\config\manager`. To write to the EJournal through the queue, uncomment the `JMSJournalTech` section.

Enabling Parameter Updates

You can apply parameters to multiple registers by creating parameter sets in Back Office and then distributing the parameter sets. Parameter updates are sent to a specific unleashed register. The updates are then shared by all unleashed registers.

To distribute updated parameters from Back Office to Unleashed POS:

1. Specify an unleashed register number. To define the register number to use for parameter updates, set the `WorkstationID` parameter in `c:\360Store\unleashed\lib\config\application.properties`. Any valid unleashed register can be used.
2. Edit `c:\360Store\unleashed\lib\com\extendyourstore\unleashed\services\main\ntierdispatcher.xml`. The `jmsID` must match the value specified in the Back Office file `c:\jboss-4.0.2\server\default\conf\jbossmq-state.xml`. The `ParameterTechnician` section should look like the following example:

```
<TECHNICIAN name="ParameterTechnician" class = "ParameterTechnician" package =
"com.extendyourstore.foundation.manager.parameter" export = "Y" >

    <PROPERTY propname="paramScript" propvalue="classpath://config/manager/
PosParameterTechnician.xml" />

    <PROPERTY propname="JmsProviderTopicName" propvalue="topic/parameters"/>

    <PROPERTY propname="JmsID" propvalue="001"/>

</TECHNICIAN>
```

Setting Up JMS Queues for WebSphere MQ

A Java Messaging Service (JMS) enables Java applications to exchange messages. JMS queues are used by Unleashed POS for distribution of Electronic Journal (EJournal) data. The EJournal is used to record register transactions. It provides the ability to view every action performed by a cashier during a transaction. The journal information can be used to audit transactions.

The following steps are needed to enable Unleashed POS to write data to the EJournal.

Setting up Unleashed POS and WebSphere MQ for Linux

During the Point-of-Sale store server installation, the WebSphere MQ .jar files were copied to the local server. It is necessary to add the WebSphere MQ .jar files to the classpath of Unleashed POS.

To add WebSphere .jar files to the classpath of Unleashed POS:

1. Add the following lines to `/opt/360store/unleashed/bin/ulenv.sh` after the call to `360common_env.sh`. Replace `<websphere mq jar location>` and `<websphere app server properties>` with the appropriate directories. The app server properties directory is typically `/opt/WebSphere/AppServer/properties`.

```
WASLIB_PATH=<websphere mq jar location>
CLASSPATH=$CLASSPATH:$WASLIB_PATH/com.ibm.mq.jar
CLASSPATH=$CLASSPATH:$WASLIB_PATH/com.ibm.mq.pcf.jar
CLASSPATH=$CLASSPATH:$WASLIB_PATH/com.ibm.mqjms.jar
CLASSPATH=$CLASSPATH:$WASLIB_PATH/naming.jar
CLASSPATH=$CLASSPATH:$WASLIB_PATH/jndi.jar
CLASSPATH=$CLASSPATH:$WASLIB_PATH/namingclient.jar
CLASSPATH=$CLASSPATH:$WASLIB_PATH/namingserver.jar
CLASSPATH=$CLASSPATH:$WASLIB_PATH/messaging.jar
CLASSPATH=$CLASSPATH:$WASLIB_PATH/messagingClient.jar
CLASSPATH=$CLASSPATH:$WASLIB_PATH/ecutils.jar
CLASSPATH=$CLASSPATH:$WASLIB_PATH/bootstrap.jar
CLASSPATH=$CLASSPATH:$WASLIB_PATH/iwsorb.jar
CLASSPATH=$CLASSPATH:$WASLIB_PATH/ffdc.jar
CLASSPATH=$CLASSPATH:$WASLIB_PATH/idl.jar
CLASSPATH=$CLASSPATH:$WASLIB_PATH/Utils.jar
CLASSPATH=$CLASSPATH:$WASLIB_PATH/ras.jar
CLASSPATH=$CLASSPATH:$WASLIB_PATH/wsexception.jar
CLASSPATH=$CLASSPATH:<websphere app server properties>
```

2. Configure the JNDI .properties file for Back Office and Central Office.
 - a. Replace `/opt/360store/unleashed/lib/config/backoffice.jndi.properties` with the following lines. In these lines, replace `<back_office_host_name>` and `<back_office_port>` with the correct information.

```
java.naming.factory.initial=com.ibm.websphere.naming.WsnInitialContextFactory
java.naming.provider.url=iiop://<back_office_host_name>:<back_office_port>
```

```
java.naming.factory.url.pkgs=com.ibm.ws.naming
```

- b. Replace** `/opt/360store/unleashed/lib/config/centraloffice.jndi.properties` with the following lines. In these lines, replace `central_office_host_name` and `<central_office_port>` with the correct information.

```
java.naming.factory.initial=com.ibm.websphere.naming.WsnInitialContextFactory
```

```
java.naming.provider.url=iiop://<central_office_host_name>:<central_office_port>
```

```
java.naming.factory.url.pkgs=com.ibm.ws.naming
```

- c. Copy the** `/opt/360store/unleashed/lib/config/backoffice.jndi.properties` file over the existing `/opt/360store/unleashed/bin/jndi.properties` file.

Enabling Writing to the EJournal

Define whether Unleashed POS writes to the EJournal through the queue or the database or both.

To define how Unleashed POS writes to the EJournal:

1. Edit `/opt/360store/unleashed/lib/com/extendyourstore/unleashed/services/main/ntierdispatcher.xml` in one of the following ways:
 - To write to the EJournal through the queue, uncomment the `QueuedJournalManager` section.
 - To write to the EJournal through the database, uncomment the `DBJournalTech` section.
 - To write to the EJournal through both the queue and the database, uncomment both the `QueuedJournalManager` and `DBJournalTech` sections.
2. Edit `/opt/360store/unleashed/lib/config/manager/PosJournalManager.xml`. To write to the EJournal through the queue, uncomment the `JMSJournalTech` section.

Enabling Parameter Updates

You can apply parameters to multiple registers by creating parameter sets in Back Office and then distributing the parameter sets. Parameter updates are sent to a specific unleashed register. The updates are then shared by all unleashed registers.

To distribute updated parameters from Back Office to Unleashed POS:

1. Specify an unleashed register number by setting the `WorkstationID` parameter in `/opt/360store/unleashed/lib/config/applications.properties`. Any valid unleashed register can be used.
2. Create a Linux user ID/password combination for the register number used in `application.properties`. The user ID/password combination is used later in the `ntierdispatcher.xml` file. The password must be `eyes`. Add the user to the `mqm` group. An example user ID/password combination is `reg001/eyes`.
3. Edit `/opt/360store/unleashed/lib/com/extendyourstore/unleashed/services/main/ntierdispatcher.xml`. The `clientID` and `jmsID` must be the user ID specified in step 2 and the `jmsPassword` must be `eyes`.

The `ParameterTechnician` section should look like the following example:


```
<TECHNICIAN name="ParameterTechnician" class = "ParameterTechnician" package =
"com.extendyourstore.foundation.manager.parameter" export = "Y" >
    <PROPERTY propname="paramScript" propvalue="classpath://config/manager/
PosParameterTechnician.xml" />
    <PROPERTY propname="JmsProviderTopicName" propvalue="jms/parameters" />
    <PROPERTY propname="clientID" propvalue="reg001" />
    <PROPERTY propname="jmsID" propvalue="reg001" />
    <PROPERTY propname="jmsPassword" propvalue="eys" />
</TECHNICIAN>
```

Running Unleashed POS

Run the Unleashed POS system by executing batch files or shell scripts, found in your installation bin directory. For each command, a Windows batch file (such as `dbstart.bat`) and equivalent Linux shell script (`dbstart.sh`) exist.

To run Unleashed POS:

1. Start the store database. The store database typically remains running; if it is not running, start it with the following command:
`c:\360Store\pos\bin\dbstart.bat`
2. Start the store server. The store server typically stays loaded. If it is not loaded, start it with the following command:
`c:\360Store\pos\bin\StoreServerConduit.bat`
3. Run Point-of-Sale from a register and open the store. The store must be open before transactions can be completed with Unleashed POS.
4. Start the Unleashed POS server.
 - a. If Tomcat is already running, use this script:
`c:\360Store\unleashed\bin\ulremotenotom.bat`
 - b. If it is not running, use this script:
`c:\360Store\unleashed\bin\ulremote.bat`
5. Open a browser. Enter the following for the URL, where `<storeserver-hostname>` is the hostname or IP address of the machine running the store server and the Unleashed POS process:
`http://<storeserver-hostname>/unleashed/WebServerCRFServlet`

CONFIGURATION

This chapter covers options for configuring the Unleashed POS application. Configuration of Unleashed POS is normally carried out by an administrator before the system goes into general use. This chapter covers the following topics:

- “Setting and Modifying Parameters”
- “Defining Security with Roles”
- “RMI Time-out Configuration”
- “Configuring RMI Hosts and Ports”
- “Configuring Logging”

Setting and Modifying Parameters

Most of the functionality of Unleashed POS depends directly on Point-of-Sale. See the *Point-of-Sale Administrator Guide* for detailed information on configuring the system. Note that the two applications access the same data, from the same store database.

Although it uses the same kinds of parameters as Point-of-Sale, Unleashed POS has its own `store.xml` and `application.xml` files for storing XML parameters, so it can use unique parameter values if desired. Because all wireless devices communicate with a single instance of Unleashed POS, the parameter values set for the Unleashed POS installation apply to all wireless devices.

Unleashed POS includes many configurable parameters; these parameters are used to control flow, set minimums and maximums for data, and enable flexibility without recompiling code.

The XML parameters are stored in a set of related parameter XML files. If you change parameter values, then all handheld devices will be affected. This is because there is only one set of parameters files for the Unleashed POS server.

Each parameter belongs to one and only one group and there is a security role for each group, so parameter access can be restricted to particular groups if desired. To define security roles for users, see “Defining Security with Roles”.

Understanding Parameters XML Tags

Refer to the example in the *Point-of-Sale Administrator Guide* to understand standard parameter properties.

Parameter File Hierarchy

The Unleashed POS application gets its parameter values from an interrelated set of XML files. More than one of these files can each contain values for the same parameters; a set of precedence rules determines which parameters actually take effect.

Note: The `application.xml` file contains all of the parameters and thus represents the default value set. The other files contain subsets of parameters.

The following table shows the parameter XML files in the order in which they are consulted by the Unleashed POS application.

Table 2-1 Parameter XML Files, In Precedence Order

Parameter File	Location	Notes
application.xml	c:\360store\unleashed\lib\config\parameter\application	Contains default values for all parameters
corporate.xml	c:\360store\unleashed\lib\config\parameter\corporate	Contains default values for corporate-level parameters
store.xml	c:\360store\unleashed\lib\config\parameter\store	Contains default values for store-level parameters
workstation.xml	c:\360store\unleashed\lib\config\parameter\register	Contains default values for Unleashed POS server-level parameters

Modifying Parameters in Parameter XML Files

Refer to the *Point-of-Sale Administrator Guide* for information about how to modify parameters in an XML file. Changes made will effect all handheld devices the same way.

Defining Security with Roles

Refer to the procedures in the *Point-of-Sale Administrator Guide* for information about how to modify existing roles or add new ones.

RMI Time-out Configuration

To configure remote method invocation (RMI) time-outs refer to the *Point-of-Sale Administration Guide*. The same settings apply to Unleashed POS except for the name of the file. In place of `\360store\pos\bin\comm.properties`, use `\360store\unleashed\bin\comm.properties`.

Configuring RMI Hosts and Ports

The RMI host and port configuration are done in the `ntier_rmihost.xml` file and the `web.xml` file. In the `ntier_rmihost.xml` file, both the Unleashed POS server name and port number and the store server name and port number can be configured. The `web.xml` file is used to configure the port number that the Web server uses to communicate to the Unleashed POS server. This port number must match the port number for the Unleashed POS server defined in the `ntier_rmihost.xml` file. In the following code samples, values in bold indicate default values set during installation.

To set the location of the RMI host system for Unleashed POS:

1. Edit the `ntier_rmihost.xml` file, found in your `unleashed\lib\com\extendyourstore\unleashed\config\startup` directory. On the URL tag with the tier UNLEASHED, set the name to the name of your RMI host. Set the port to the port number of the machine running Unleashed POS. See the following example:

```
<!DOCTYPE CRFHOSTS SYSTEM "classpath://com/extendyourstore/foundation/tour/dtd/crfhost.dtd" [
]
]
<CRFHOSTS transport="RMI">
  <URL name="store_server" port="1300" tier="DATATECHNICIAN"/>
  <URL name="rmi_hostname" port="1097" tier="UNLEASHED"/>
  <XMLMANAGER class="XMLManager" package="com.extendyourstore.foundation.manager.xml"/>
  <XMLTECHNICIAN class="XMLTechnician" package="com.extendyourstore.foundation.manager.xml"/>
</CRFHOSTS>
```

2. Edit the `web.xml` file found in `360store\360common\jakarta-tomcat-4.1.18\webapps\unleashed\WEB-INF`. For the WebManager servlet tag, set the port param-value to the port number of the machine running the web server. Unleashed POS must be started at least once for this file to exist. If editing is required, restart Tomcat. See the following example:

```
<servlet>
  <servlet-name>WebManager</servlet-name>
  <servlet-class>com.extendyourstore.foundation.manager.gui.web.
    WebServerCRFServlet</servlet-class>
  <init-param>
    <param-name>CRFhostname</param-name>
    <param-value>localhost</param-value>
  </init-param>
```

```
<init-param>
  <param-name>port</param-name>
  <param-value>1097</param-value>
</init-param>
<servlet>
```

Configuring Logging

Unleashed POS uses the Log4J tool. Configure Log4J by editing `\360store\unleashed\lib\config\log4j.xml`. For more information, see the Apache documentation for Log4J at <http://logging.apache.org/log4j>.